TECHNICAL DATA NOTEBOOK

RAINBOW VALLEY ADMP AREAS 1, 2, 3, AND 4 FLOODPLAIN DELINEATION STUDY (FDS)

Study Area 1 (Washes 1S2WS31 (A56), 2S2WS7A (A52), and 2S2WS7B (A51)); Study Area 2 (Wash 1S3WS24A (A60)); Study Area 3 (Washes 1S2WS18A (J27) and 1S2WS18B (J37)); Study Area 4 (Wash 1S2WS31B (I70))

Volume 1 of 2

Contract FCD 2011C003

November 2012

Prepared for:
The Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009
602.506.1501

Catherine Regester, P.E., CFM
Project Manager

Prepared by:
RBF Consulting
2929 North Central Avenue, Suite 800
Phoenix, Arizona 85012
602.279.1234

Nathan Ford, P.E.
Engineer

Federal Emergency Management Agency

Washington, D.C. 20472

FLOOD CONTROL DISTRICT
RECEIVED
CH & GM | FINANCE
PIO | R.E.D.
ADMIN | O & M
P & PM
ENG | FILE
CONTRACTS
ROUTING

September 30, 2013

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Max Wilson
Chairman, Maricopa County Board of Supervisors
301 West Jefferson, 10th Floor
Phoenix, AZ 85003

IN REPLY REFER TO:
Case No.: 13-09-0919P
Community Name: Maricopa County, AZ
Community No.: 040037
Effective Date of This Revision: **February 21, 2014**

Dear Chairman Wilson:

The Flood Insurance Study Report and Flood Insurance Rate Map for your community have been revised by this Letter of Map Revision (LOMR). Please use the enclosed annotated map panel(s) revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals issued in your community.

Additional documents are enclosed which provide information regarding this LOMR. Please see the List of Enclosures below to determine which documents are included. Other attachments specific to this request may be included as referenced in the Determination Document. If you have any questions regarding floodplain management regulations for your community or the National Flood Insurance Program (NFIP) in general, please contact the Consultation Coordination Officer for your community. If you have any technical questions regarding this LOMR, please contact the Director, Mitigation Division of the Department of Homeland Security's Federal Emergency Management Agency (FEMA) in Oakland, California, at (510) 627-7175, or the FEMA Map Information eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP). Additional information about the NFIP is available on our website at http://www.fema.gov/nfip.

Sincerely,

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

List of Enclosures:

- Letter of Map Revision Determination Document
- Annotated Flood Insurance Rate Map
- Annotated Flood Insurance Study Report

cc: The Honorable Georgia Lord
Mayor, City of Goodyear

Ms. Catherine Regester, P.E., CFM
Flood Control District of Maricopa County

Mr. Brian Cosson, CFM
Arizona Department of Water Resources

Mr. David Ramirez, P.E.
City of Goodyear Engineer

Mr. Timothy S. Phillips, P.E.
Chief Engineer and General Manager
Flood Control District of Maricopa County

Mr. Nathan Ford, P.E.
RBF Consulting

Federal Emergency Management Agency

Washington, D.C. 20472

September 30, 2013

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Georgia Lord
Mayor, City of Goodyear
190 North Litchfield Road
Goodyear, AZ 85338

IN REPLY REFER TO:

Case No.:	13-09-0919P
Community Name:	City of Goodyear, AZ
Community No.:	040046
Effective Date of This Revision:	**February 21, 2014**

Dear Mayor Lord:

The Flood Insurance Study Report and Flood Insurance Rate Map for your community have been revised by this Letter of Map Revision (LOMR). Please use the enclosed annotated map panel(s) revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals issued in your community.

Additional documents are enclosed which provide information regarding this LOMR. Please see the List of Enclosures below to determine which documents are included. Other attachments specific to this request may be included as referenced in the Determination Document. If you have any questions regarding floodplain management regulations for your community or the National Flood Insurance Program (NFIP) in general, please contact the Consultation Coordination Officer for your community. If you have any technical questions regarding this LOMR, please contact the Director, Mitigation Division of the Department of Homeland Security's Federal Emergency Management Agency (FEMA) in Oakland, California, at (510) 627-7175, or the FEMA Map Information eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP). Additional information about the NFIP is available on our website at http://www.fema.gov/nfip.

Sincerely,

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

List of Enclosures:

- Letter of Map Revision Determination Document
- Annotated Flood Insurance Rate Map
- Annotated Flood Insurance Study Report

cc: The Honorable Max Wilson
Chairman, Maricopa County Board of Supervisors

Ms. Catherine Regester, P.E., CFM
Flood Control District of Maricopa County

Mr. Brian Cosson, CFM
Arizona Department of Water Resources

Mr. David Ramirez, P.E.
City of Goodyear Engineer

Mr. Timothy S. Phillips, P.E.
Chief Engineer and General Manager
Flood Control District of Maricopa County

Mr. Nathan Ford, P.E.
RBF Consulting

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	Maricopa County Arizona (Unincorporated Areas)	NO PROJECT	FLOODWAY HYDRAULIC ANALYSIS HYDROLOGIC ANALYSIS NEW TOPOGRAPHIC DATA
	COMMUNITY NO.: 040037		
IDENTIFIER	Rainbow Valley ADMP Areas 1, 2, 3 and 4 Floodplain Delineation Study	APPROXIMATE LATITUDE & LONGITUDE: 33.334, -112.512 SOURCE: Other DATUM: NAD 27	

ANNOTATED MAPPING ENCLOSURES			ANNOTATED STUDY ENCLOSURES
TYPE: FIRM*	NO.: 04013C2585L	DATE: October 16, 2013	DATE OF EFFECTIVE FLOOD INSURANCE STUDY: October 16, 2013
TYPE: FIRM*	NO.: 04013C2595L	DATE: October 16, 2013	PROFILE(S): 1733P-1743P (NEW)
TYPE: FIRM*	NO.: 04013C2605L	DATE: October 16, 2013	FLOODWAY DATA TABLE: 6
TYPE: FIRM*	NO.: 04013C2625L	DATE: October 16, 2013	SUMMARY OF DISCHARGES TABLE: 3
TYPE: FIRM*	NO.: 04013C2960L	DATE: October 16, 2013	
TYPE: FIRM*	NO.: 04013C3000L	DATE: October 16, 2013	

Enclosures reflect changes to flooding sources affected by this revision.
* FIRM - Flood Insurance Rate Map

FLOODING SOURCE(S) & REVISED REACH(ES) See Page 2 for Additional Flooding Sources

Wash 1S3WS24A (A60) - from the confluence to approximately 1.04 miles upstream of the confluence with Waterman Wash

Wash 1S2WS18A (J27) - from the confluence to approximately 1.23 miles upstream of the confluence with J37

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Wash 1S3WS24A (A60)	Zone A	Zone AE	YES	YES
	No BFEs*	BFEs	YES	NONE
	No Floodway	Floodway	YES	NONE
Wash 1S2WS18A (J27)	Zone A	Zone AE	YES	YES

* BFEs - Base Flood Elevations

DETERMINATION

This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and/or National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at http://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

OTHER FLOODING SOURCES AFFECTED BY THIS REVISION

FLOODING SOURCE(S) & REVISED REACH(ES)

Wash 1S2WS18A (J27) - from the confluence to approximately 1.23 miles upstream of the confluence with J37
Wash 1S2WS18B (J37) - from approximately 0.36 miles upstream to approximately 1.7 miles upstream of the confluence with Gila River
Wash 1S2WS31B (I70) - from the confluence to approximately 1.22 miles upstream of the confluence with I67
Wash 1S2WS31 (A56) - from approximately 0.06 miles upstream to approximately 2.6 miles upstream of the confluence with Waterman Wash
Wash 2S2WS7A (A52) - from approximately 0.02 miles upstream to approximately 2.4 miles upstream of the confluence with A56
Wash 2S2WS7B (A51) - from just upstream to approximately 1.9 miles upstream of Ryan Street

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Wash 1S2WS18A (J27)	No BFEs*	BFEs	YES	NONE
Wash 1S2WS18B (J37)	Zone A	Zone AE	YES	YES
	No BFEs	BFEs	YES	NONE
Wash 1S2WS31B (I70)	Zone A	Zone AE	YES	YES
	No BFEs	BFEs	YES	NONE
	No Floodway	Floodway	YES	NONE
ash 1S2WS31 (A56)	No BFEs	BFEs	YES	NONE
	Zone A	Zone AE	YES	YES
Wash 2S2WS7A (A52)	Zone A	Zone AE	YES	YES
	No BFEs	BFEs	YES	NONE
Wash 2S2WS7B (A51)	Zone A	Zone AE	YES	YES
	No BFEs	BFEs	YES	NONE

* BFEs - Base Flood Elevations

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the OMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at ttp://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

OTHER COMMUNITIES AFFECTED BY THIS REVISION

CID Number: 040046 **Name:** City of Goodyear, Arizona

AFFECTED MAP PANELS	AFFECTED PORTIONS OF THE FLOOD INSURANCE STUDY REPORT
TYPE: FIRM* NO.: 04013C2625L DATE: October 16, 2013	DATE OF EFFECTIVE FLOOD INSURANCE STUDY: October 16, 2013 PROFILE(S): 1744P (NEW) FLOODWAY DATA TABLE: 6 SUMMARY OF DISCHARGES TABLE: 3

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the FEMA Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at http://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

COMMUNITY INFORMATION

APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

We have made this determination pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria, including adoption of the FIS report and FIRM, and the modifications made by this LOMR, are the minimum requirements for continued NFIP participation and do not supersede more stringent State/Commonwealth or local requirements to which the regulations apply.

We provide the floodway designation to your community as a tool to regulate floodplain development. Therefore, the floodway revision we have described in this letter, while acceptable to us, must also be acceptable to your community and adopted by appropriate community action, as specified in Paragraph 60.3(d) of the NFIP regulations.

COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance discharges computed in the submitted hydrologic model. Future development of projects upstream could cause increased discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on discharges and could, therefore, indicate that greater flood hazards exist in this area.

Your community must regulate all proposed floodplain development and ensure that permits required by Federal and/or State/Commonwealth law have been obtained. State/Commonwealth or community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If your State/Commonwealth or community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

We will not print and distribute this LOMR to primary users, such as local insurance agents or mortgage lenders; instead, the community will serve as a repository for the new data. We encourage you to disseminate the information in this LOMR by preparing a news release for publication in your community's newspaper that describes the revision and explains how your community will provide the data and help interpret the NFIP maps. In that way, interested persons, such as property owners, insurance agents, and mortgage lenders, can benefit from the information.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at http://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Ms. Sally M. Ziolkowski
Director, Mitigation Division
Federal Emergency Management Agency, Region IX
1111 Broadway Street, Suite 1200
Oakland, CA 94607-4052
(510) 627-7175

STATUS OF THE COMMUNITY NFIP MAPS

We are processing a revised FIRM and FIS report for your community, which will become effective on October 16, 2013. Because the effective date has already been established, we will not incorporate the modifications made by this LOMR into the revised FIRM and FIS report before they become effective. However, we will issue this LOMR after the revised maps and FIS report become effective.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at http://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

PUBLIC NOTIFICATION OF REVISION

A notice of changes will be published in the *Federal Register*. This information also will be published in your local newspaper on or about the dates listed below and through FEMA's Flood Hazard Mapping website at https://www.floodmaps.fema.gov/fhm/Scripts/bfe_main.asp.

LOCAL NEWSPAPER Name: *The Arizona Business Gazette*
Dates: October 17, 2013 and October 24, 2013

Within 90 days of the second publication in the local newspaper, a citizen may request that we reconsider this determination. Any request for reconsideration must be based on scientific or technical data. Therefore, this letter will be effective only after the 90-day appeal period has elapsed and we have resolved any appeals that we receive during this appeal period. Until this LOMR is effective, the revised flood hazard determination presented in this LOMR may be changed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at http://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	City of Goodyear Maricopa County Arizona	NO PROJECT	FLOODWAY HYDRAULIC ANALYSIS HYDROLOGIC ANALYSIS NEW TOPOGRAPHIC DATA
	COMMUNITY NO.: 040046		
IDENTIFIER	Rainbow Valley ADMP Areas 1, 2, 3 and 4 Floodplain Delineation Study	APPROXIMATE LATITUDE & LONGITUDE: 33.297, -112.458 SOURCE: Other DATUM: NAD 27	

ANNOTATED MAPPING ENCLOSURES	ANNOTATED STUDY ENCLOSURES
TYPE: FIRM* NO.: 04013C2625L DATE: October 16, 2013	DATE OF EFFECTIVE FLOOD INSURANCE STUDY: October 16, 2013 PROFILE(S): 1744P (NEW) FLOODWAY DATA TABLE: 6 SUMMARY OF DISCHARGES TABLE: 3

Enclosures reflect changes to flooding sources affected by this revision.
* FIRM - Flood Insurance Rate Map

FLOODING SOURCE(S) & REVISED REACH(ES)

Wash 1S2WS31 (A56) - from the confluence to approximately 1.22 miles upstream of the confluence with I67

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Wash 1S2WS31 (A56)	Zone A	Zone AE	YES	YES
	No Floodway	Floodway	YES	NONE
	No BFEs*	BFEs	YES	NONE

* BFEs - Base Flood Elevations

DETERMINATION

This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and/or National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at http://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

OTHER COMMUNITIES AFFECTED BY THIS REVISION

CID Number: 040037 **Name:** Unincorporated Areas of Maricopa County, Arizona

AFFECTED MAP PANELS	AFFECTED PORTIONS OF THE FLOOD INSURANCE STUDY REPORT
TYPE: FIRM* NO.: 04013C2585L DATE: October 16, 2013 TYPE: FIRM* NO.: 04013C2595L DATE: October 16, 2013 TYPE: FIRM* NO.: 04013C2605L DATE: October 16, 2013 TYPE: FIRM* NO.: 04013C2625L DATE: October 16, 2013 TYPE: FIRM* NO.: 04013C2960L DATE: October 16, 2013 TYPE: FIRM* NO.: 04013C3000L DATE: October 16, 2013	DATE OF EFFECTIVE FLOOD INSURANCE STUDY: October 16, 2013 PROFILE(S): 1733P-1743P (NEW) FLOODWAY DATA TABLE: 6 SUMMARY OF DISCHARGES TABLE: 3

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the FEMA Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at http://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

COMMUNITY INFORMATION

APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

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COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance discharges computed in the submitted hydrologic model. Future development of projects upstream could cause increased discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on discharges and could, therefore, indicate that greater flood hazards exist in this area.

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Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

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Director, Mitigation Division
Federal Emergency Management Agency, Region IX
1111 Broadway Street, Suite 1200
Oakland, CA 94607-4052
(510) 627-7175

STATUS OF THE COMMUNITY NFIP MAPS

We will not physically revise and republish the FIRM and FIS report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel(s) and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information exchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605. Additional Information about the NFIP is available on our website at http://www.fema.gov/nfip.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

PUBLIC NOTIFICATION OF REVISION

A notice of changes will be published in the *Federal Register*. This information also will be published in your local newspaper on or about the dates listed below and through FEMA's Flood Hazard Mapping website at https://www.floodmaps.fema.gov/fhm/Scripts/bfe_main.asp.

LOCAL NEWSPAPER Name: *The Arizona Business Gazette*
Dates: October 17, 2013 and October 24, 2013

Within 90 days of the second publication in the local newspaper, a citizen may request that we reconsider this determination. Any request for reconsideration must be based on scientific or technical data. Therefore, this letter will be effective only after the 90-day appeal period has elapsed and we have resolved any appeals that we receive during this appeal period. Until this LOMR is effective, the revised flood hazard determination presented in this LOMR may be changed.

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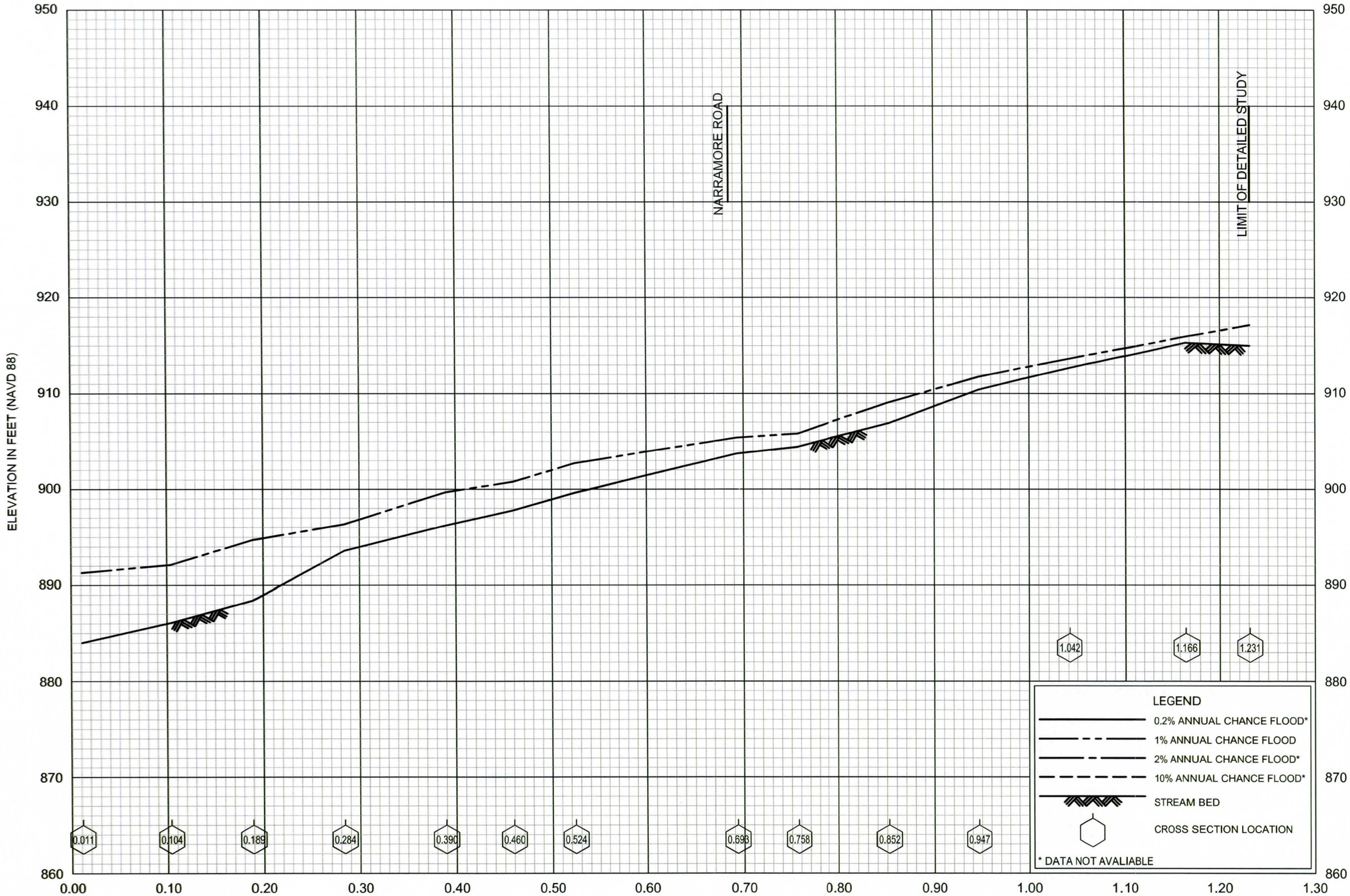
Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

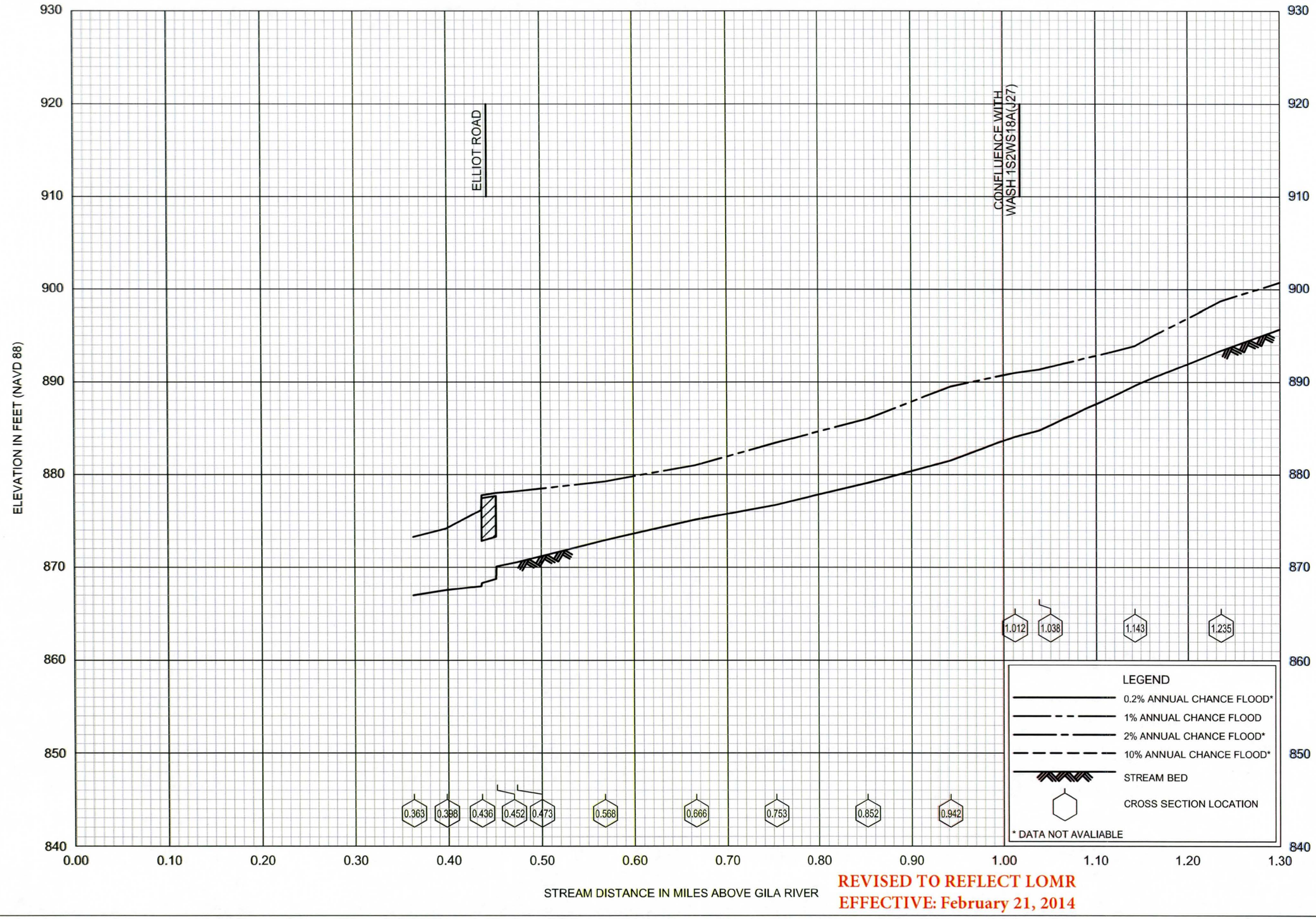
WASH 1S2WS18A(J27)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1741P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

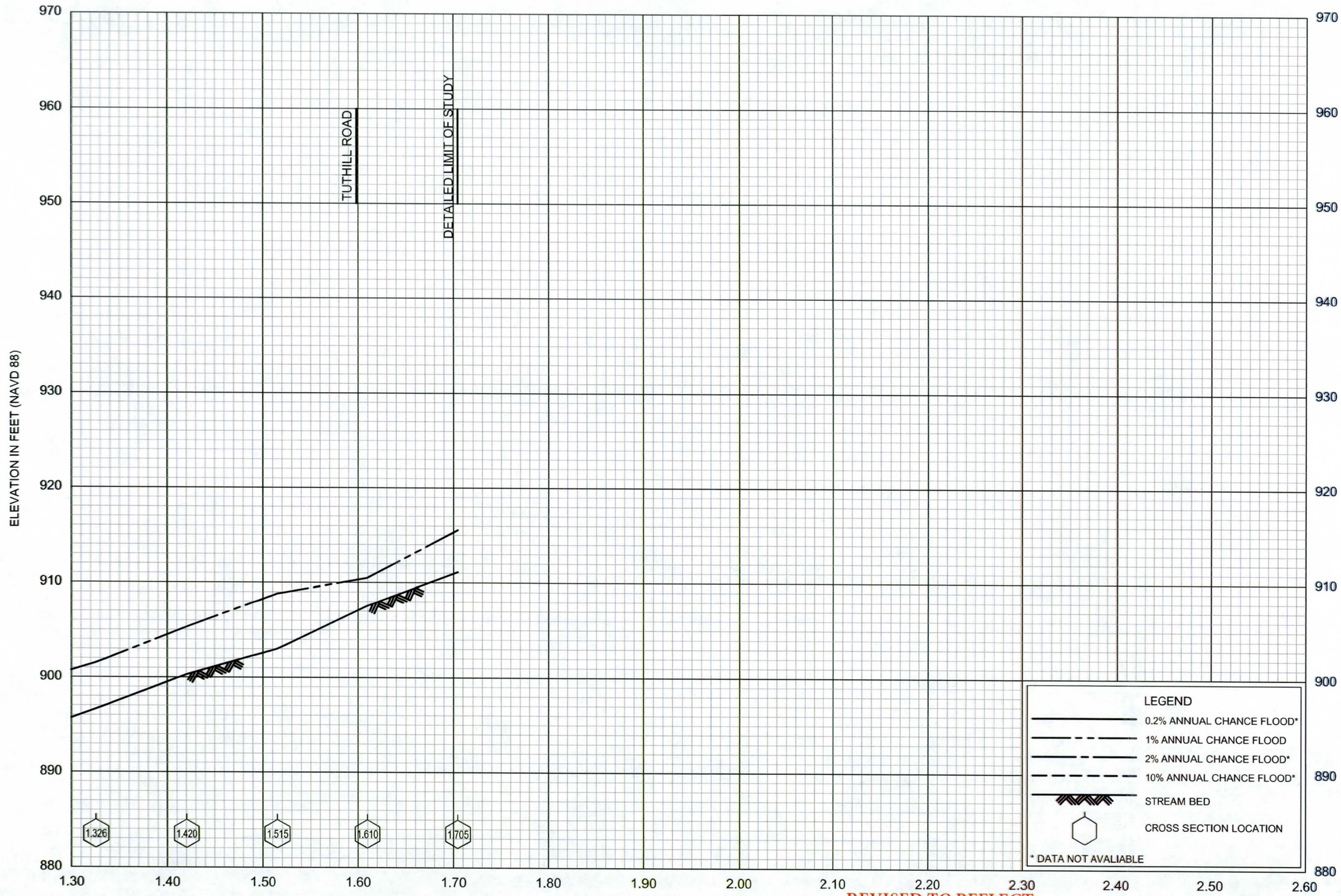
WASH 1S2WS18B(J37)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1742P



REVISED TO REFLECT
LOMR EFFECTIVE: February 21, 2014

FLOOD PROFILES

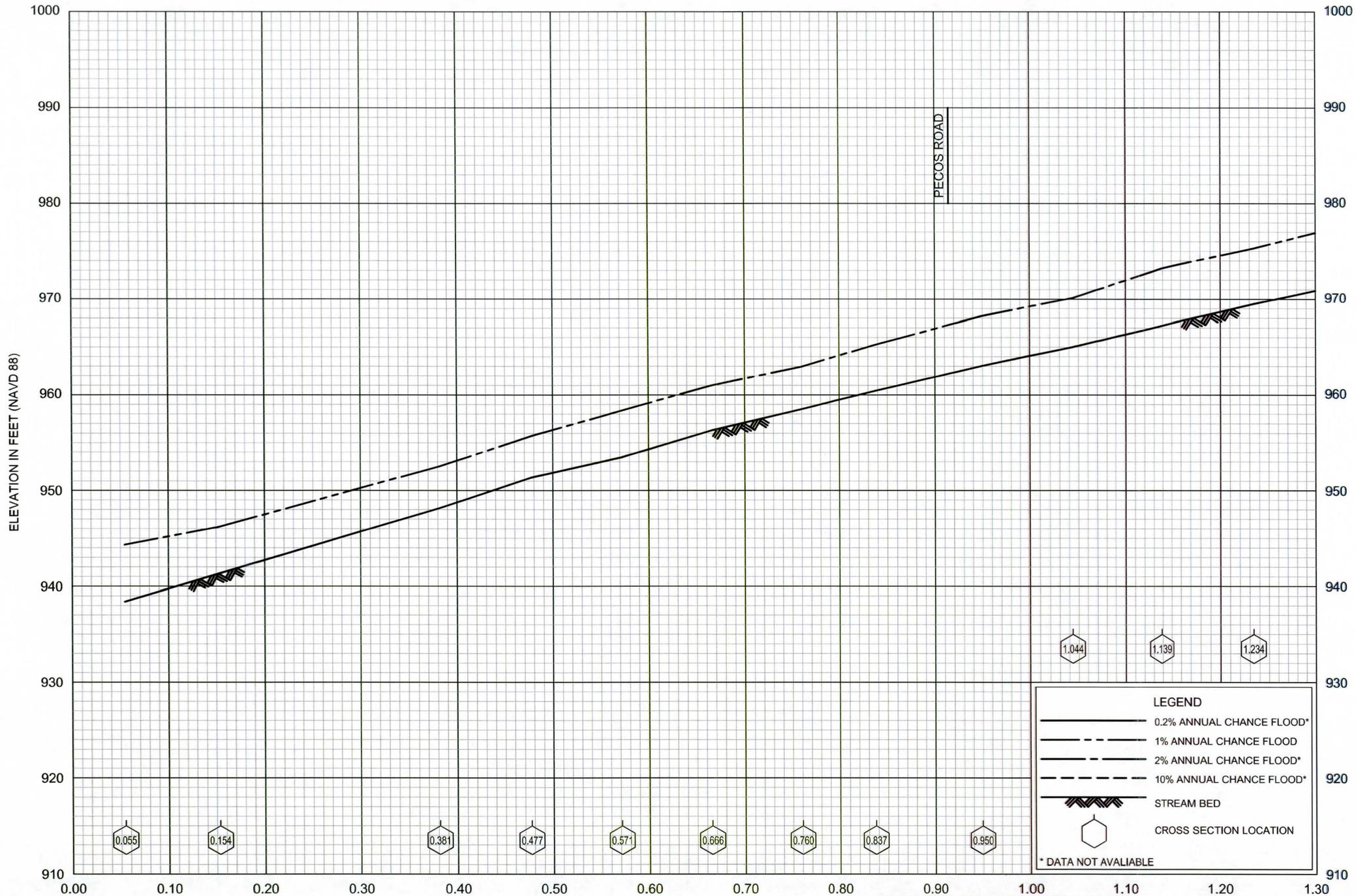
WASH 1S2WS18B(J37)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1743P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

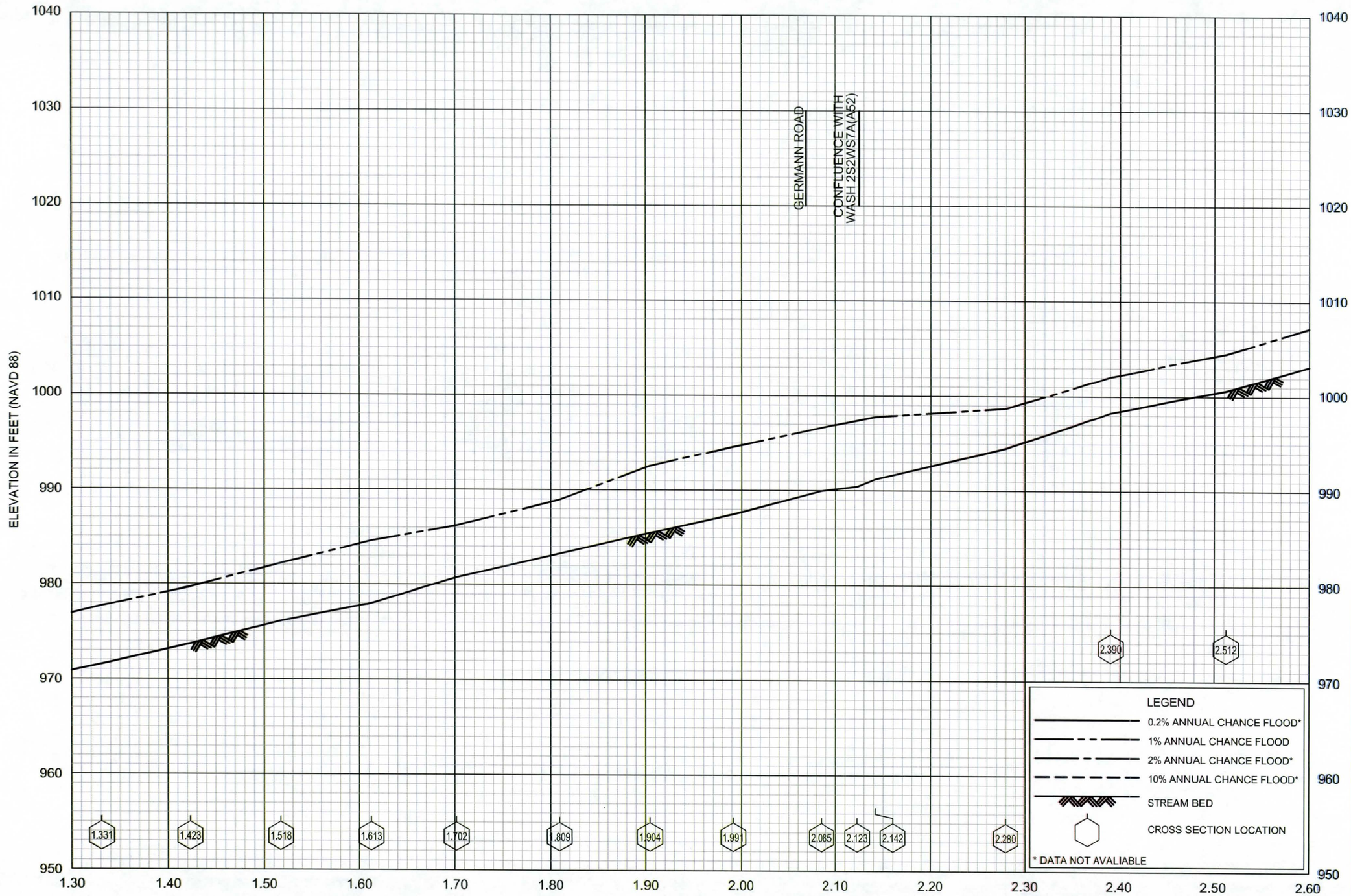
WASH 1S2WS31(A56)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1733P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

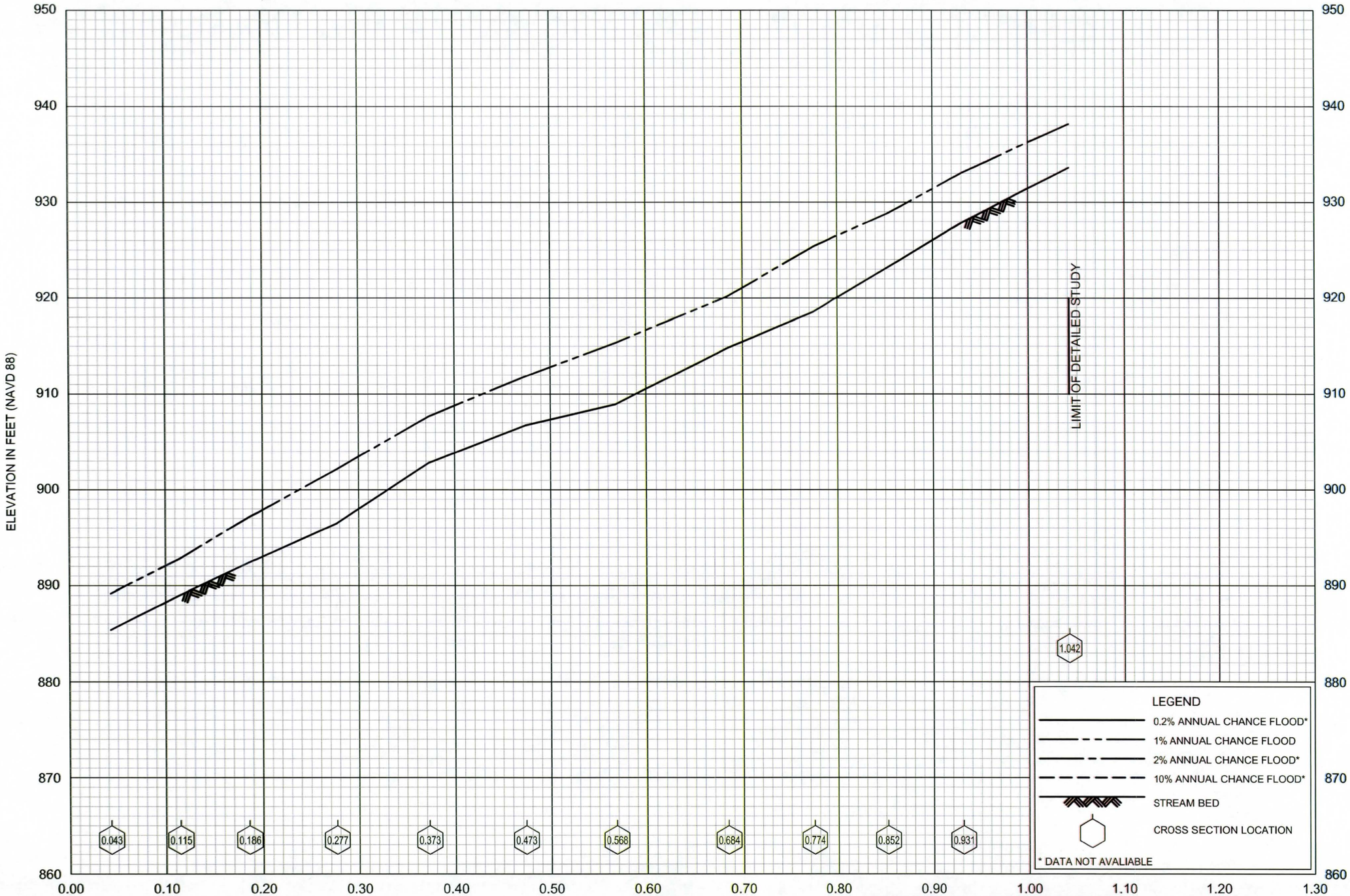
WASH 1S2WS31(A56)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1734P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

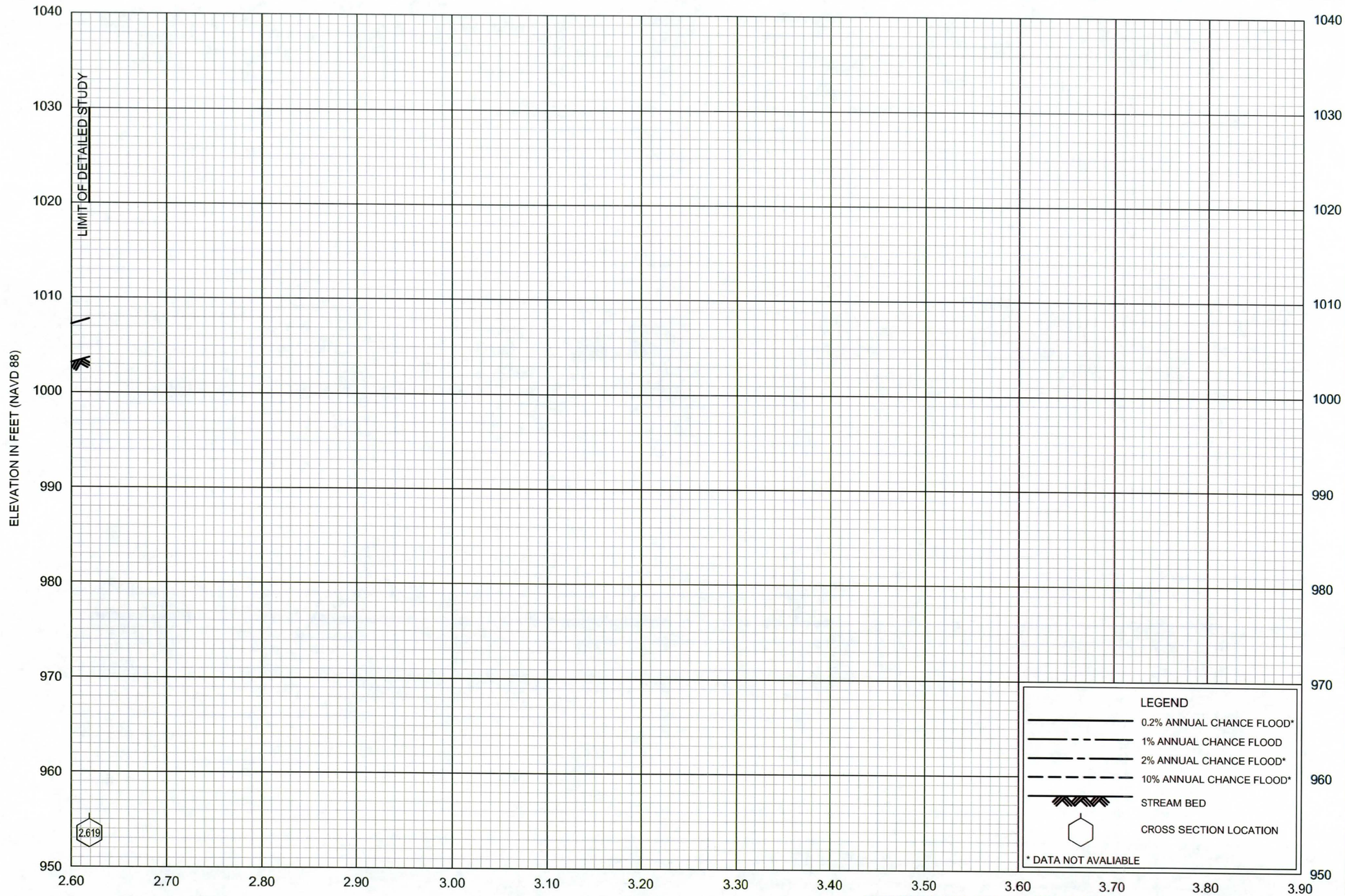
WASH 1S3WS24A(A60)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1740P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

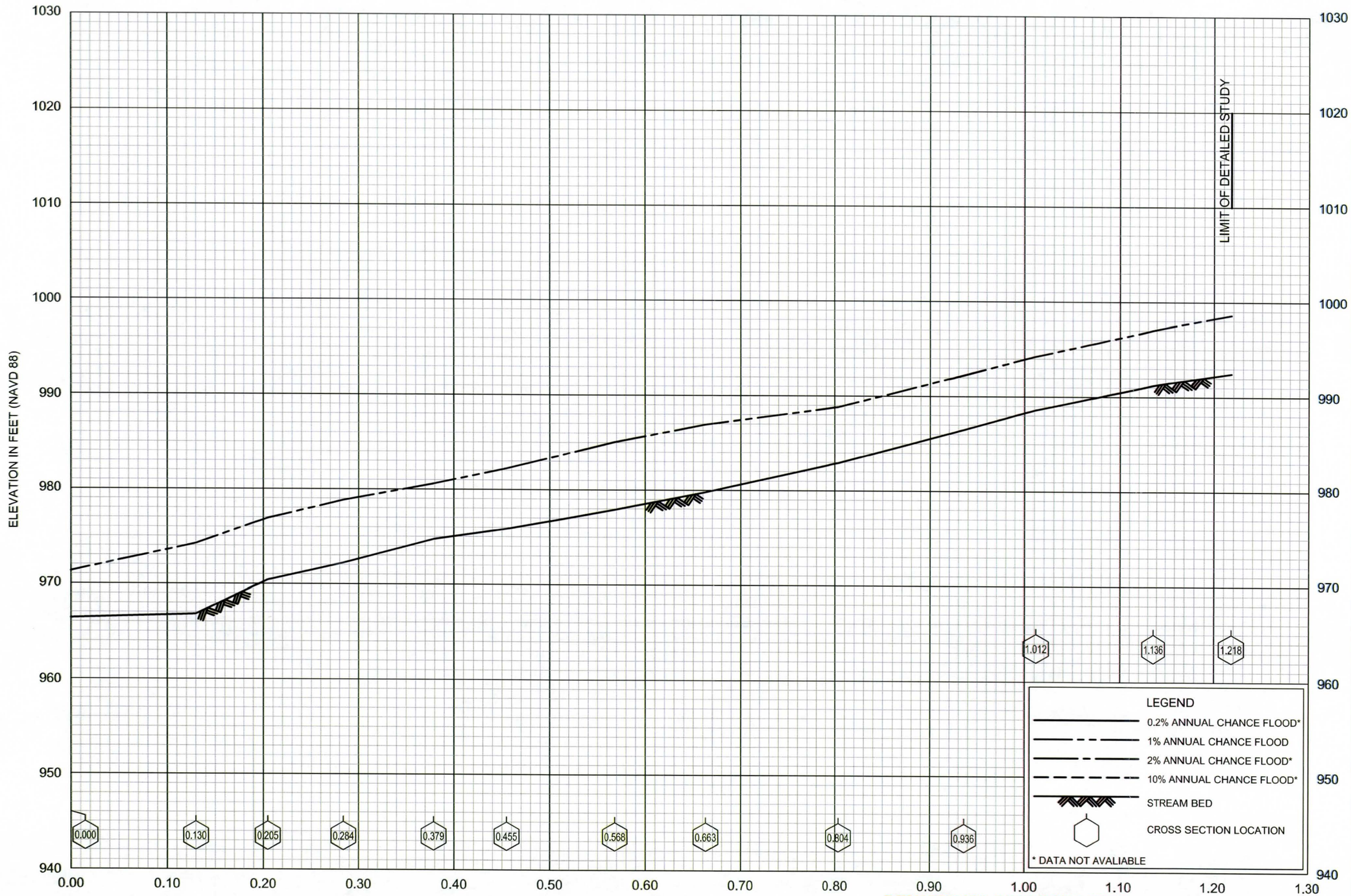
WASH 1S2WS31(A56)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1735P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

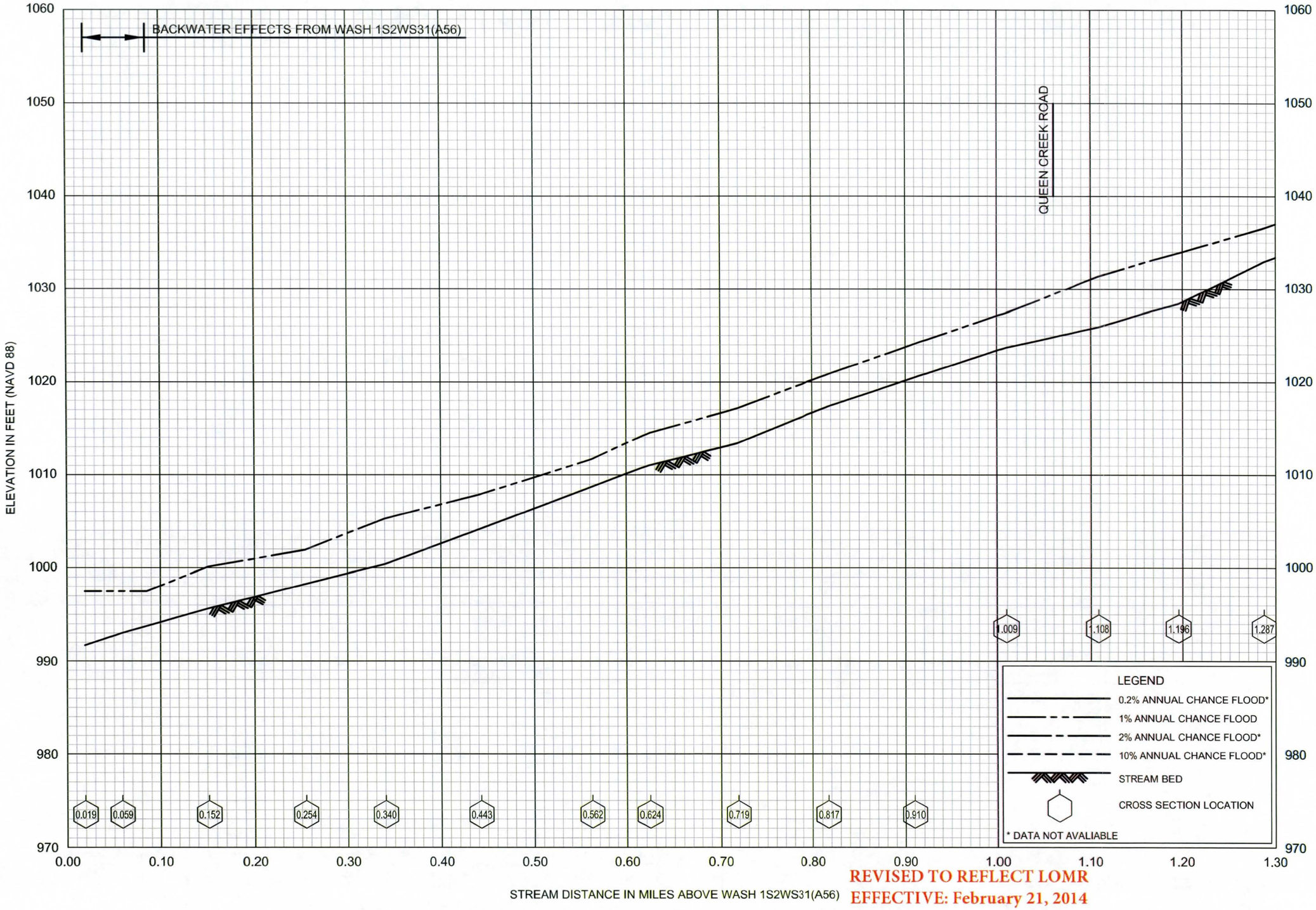
WASH 1S2WS31B(I70)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1744P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

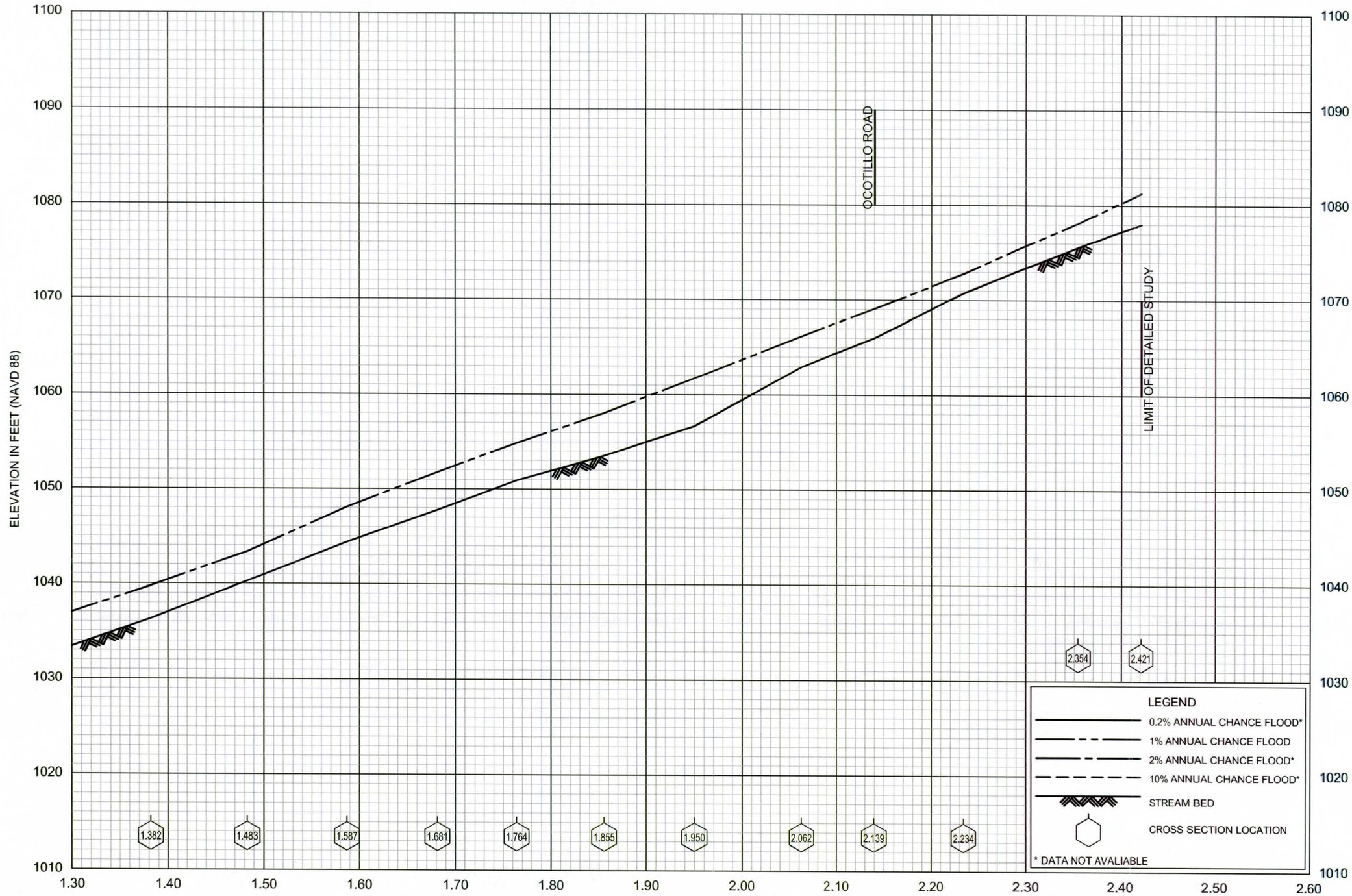
WASH 2S2WS7A(A52)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1736P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

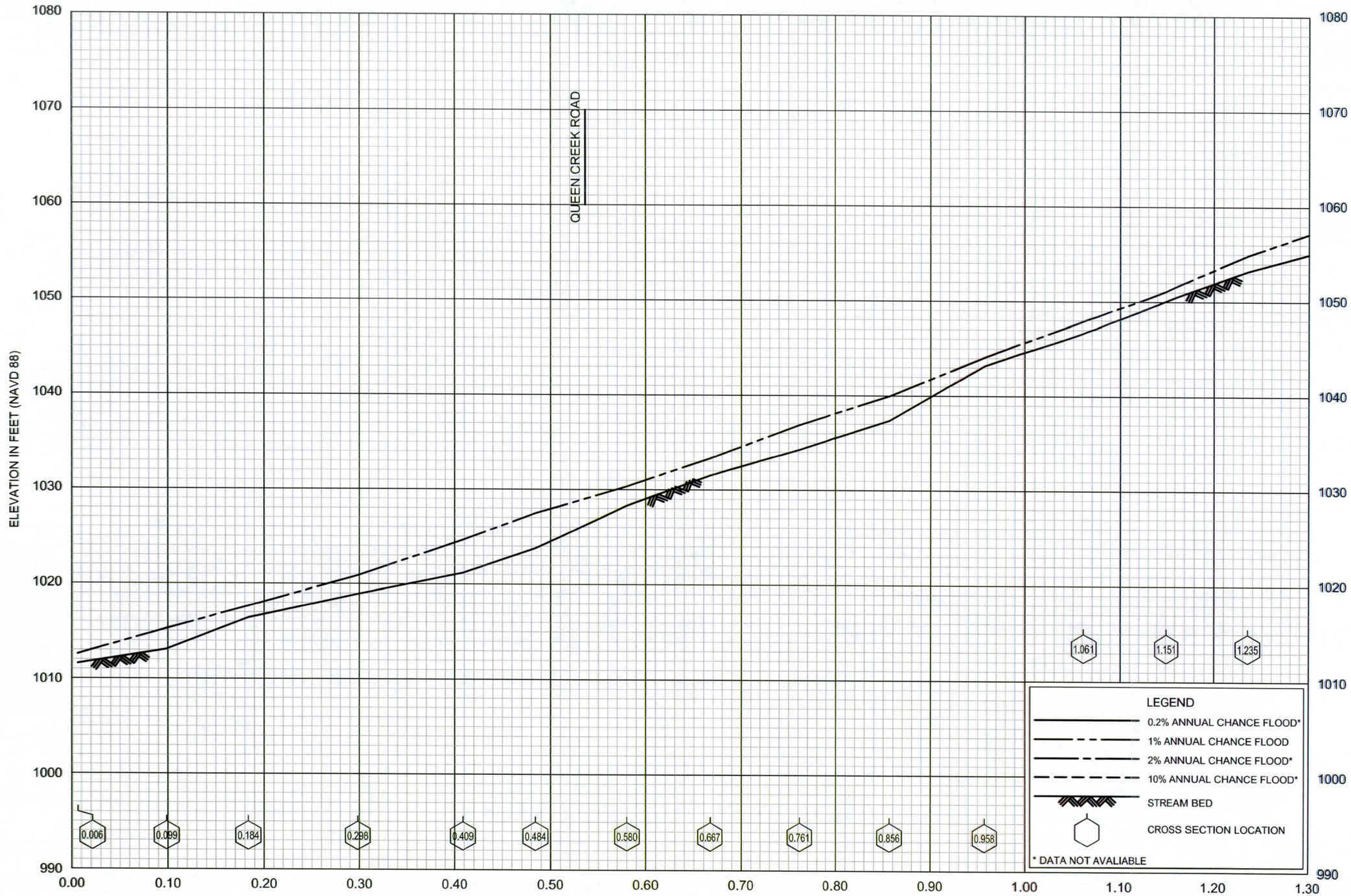
WASH 2S2WS7A(A52)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1737P



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

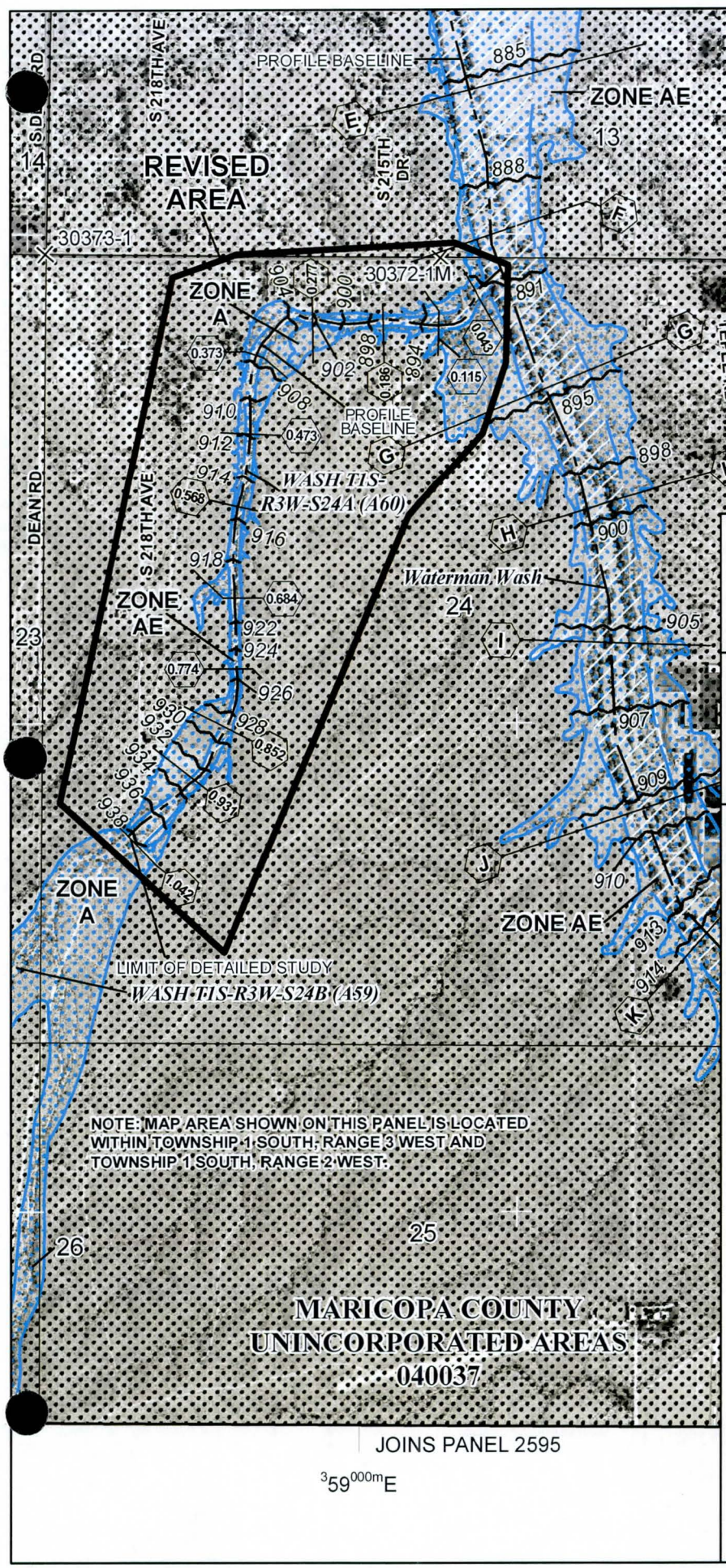
WASH 2S2WS7B(A51)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1738P



Legend

- 1% annual chance (100-Year) Floodplain
- 1% annual chance (100-Year) Floodway
- 0.2% annual chance (500-Year) Floodplain

MAP SCALE 1" = 1000'

500 0 1000 FEET

300 0 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2585L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

PANEL 2585 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2585	L
BUCKEYE, TOWN OF	040039	2585	L

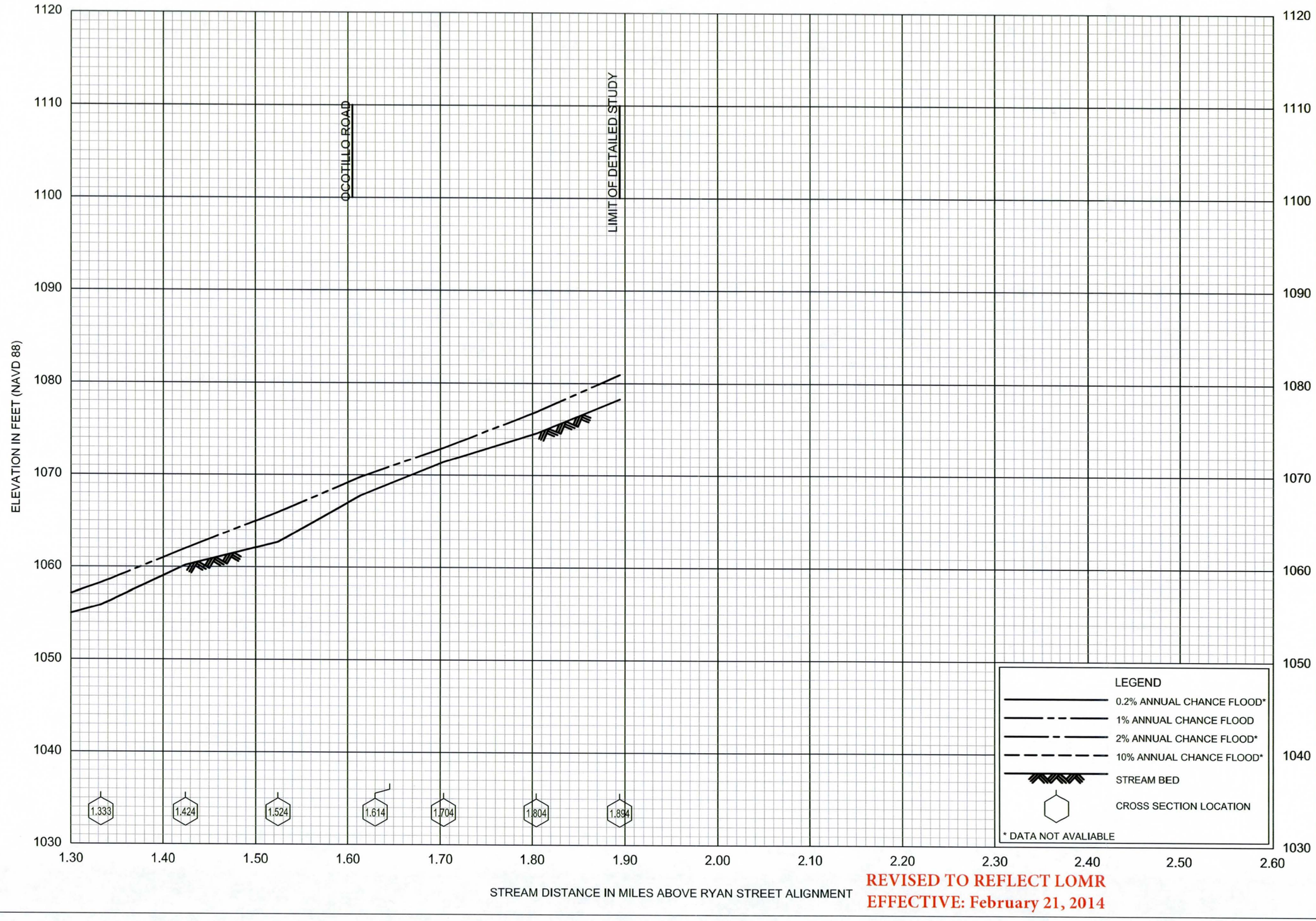
REVISED TO REFLECT LOMR EFFECTIVE: February 21, 2014

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04013C2585L

MAP REVISED
OCTOBER 16, 2013

Federal Emergency Management Agency



REVISED TO REFLECT LOMR
EFFECTIVE: February 21, 2014

FLOOD PROFILES

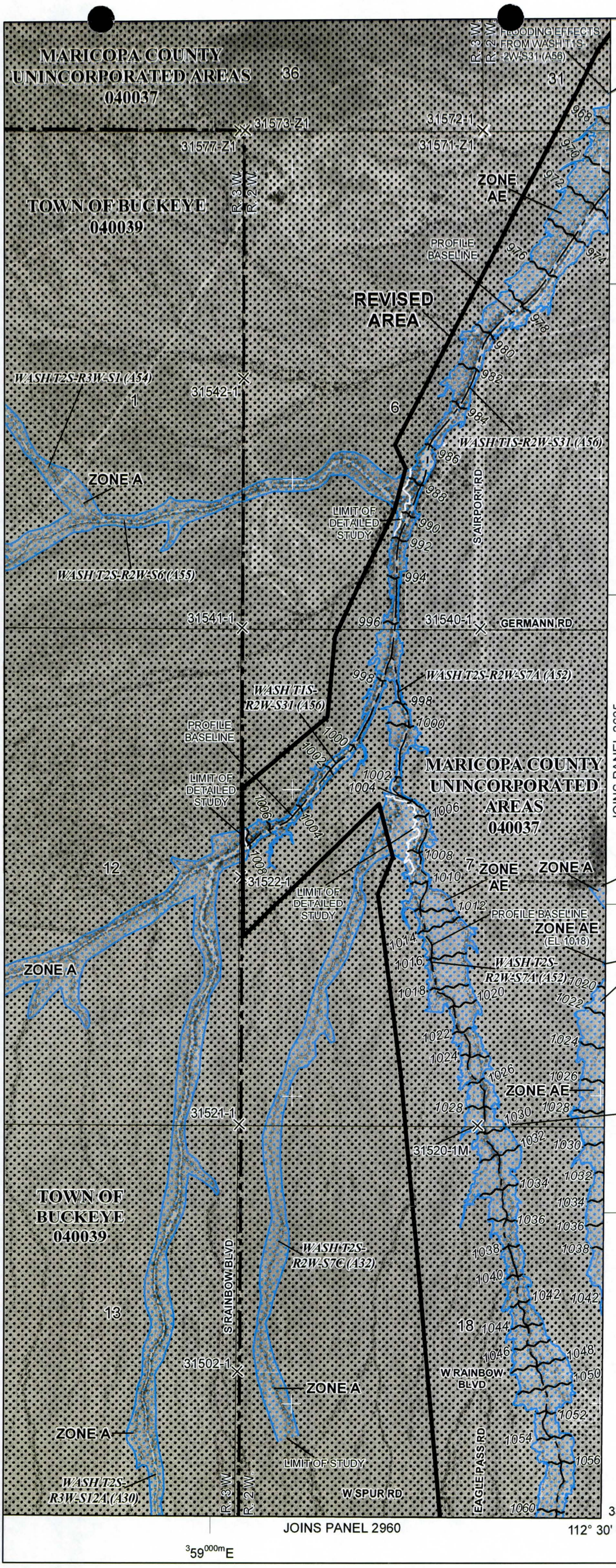
WASH 2S2WS7B(A51)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

1739P



Legend

- 1% annual chance (100-Year) Floodplain
- 1% annual chance (100-Year) Floodway
- 0.2% annual chance (500-Year) Floodplain

MAP SCALE 1" = 1000'

500 0 1000 FEET

300 0 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2595L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2595 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2595	L
BUCKEYE, TOWN OF	040039	2595	L

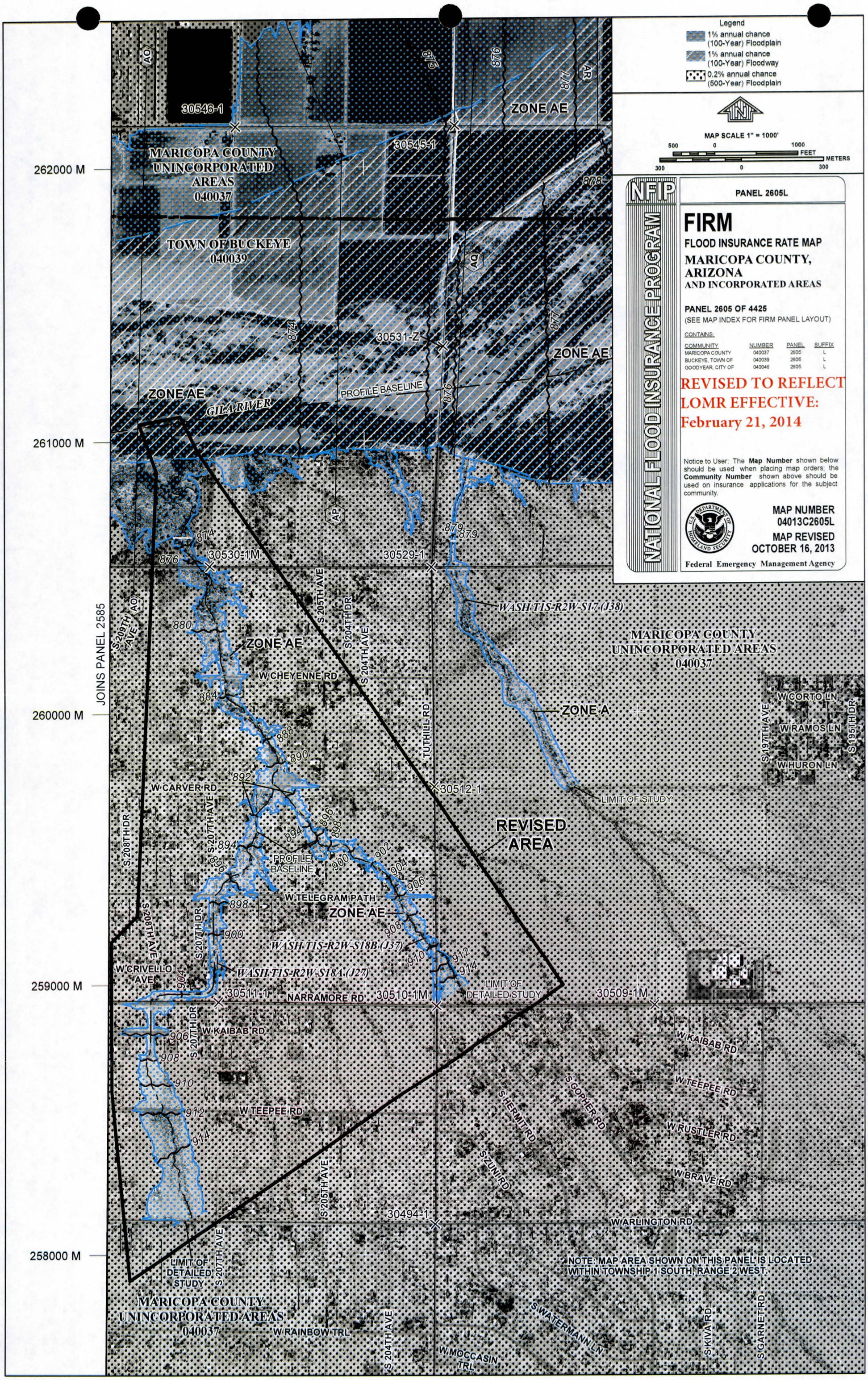
REVISED TO REFLECT LOMR EFFECTIVE: February 21, 2014

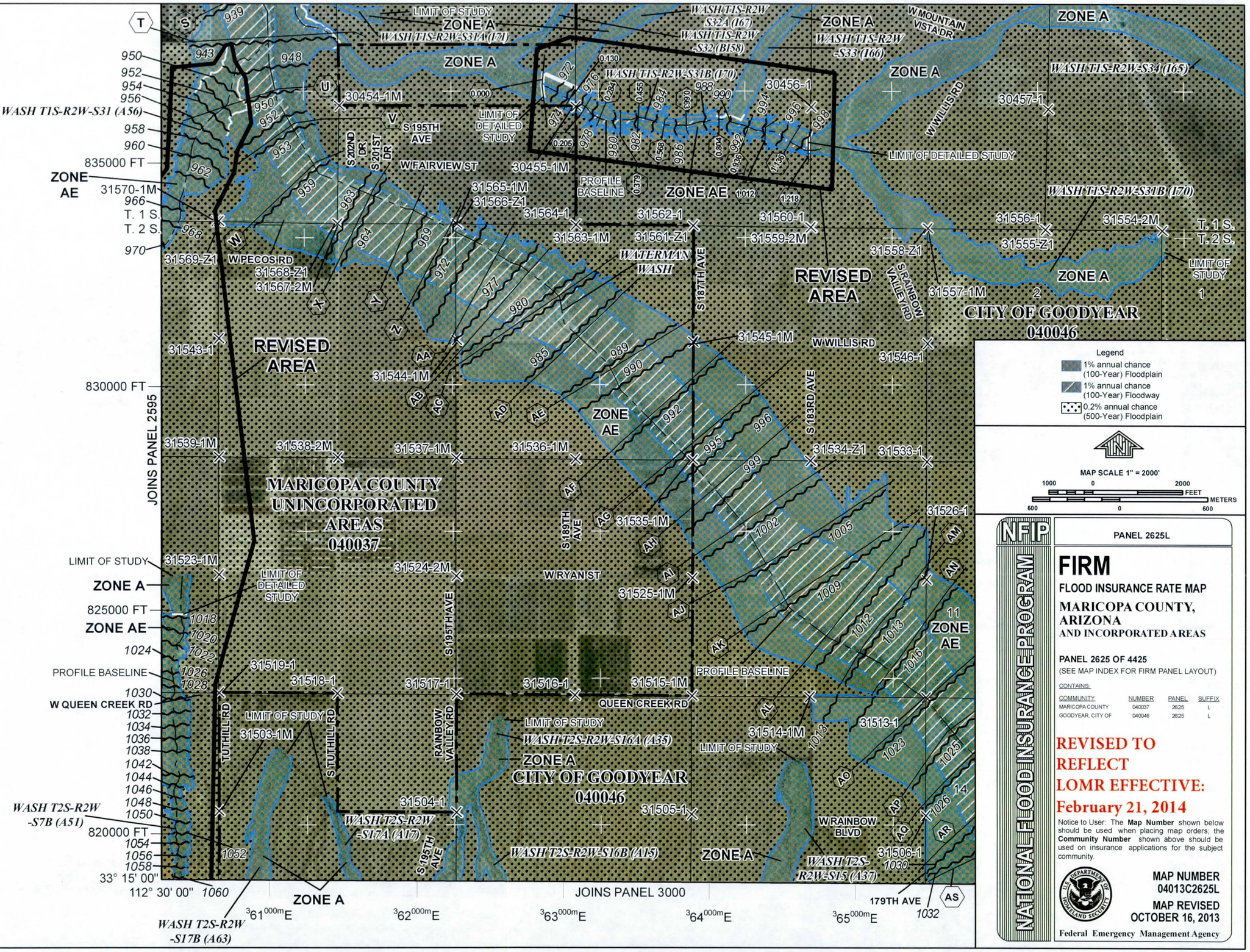
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04013C2595L

MAP REVISED
OCTOBER 16, 2013

Federal Emergency Management Agency


Legend
1% annual chance (100-Year) Floodplain
1% annual chance (100-Year) Floodway
0.2% annual chance (500-Year) Floodplain
MAP SCALE 1" = 1000'
500 0 1000 FEET
300 0 300 METERS
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 2605L
FIRM
FLOOD INSURANCE RATE MAP
MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS
PANEL 2605 OF 4425
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
MARICOPA COUNTY 040037 2605 L
BUCKEYE, TOWN OF 040039 2605 L
GOODYEAR, CITY OF 040046 2605 L
REVISED TO REFLECT LOMR EFFECTIVE: February 21, 2014
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 04013C2605L
MAP REVISED OCTOBER 16, 2013
Federal Emergency Management Agency
MARICOPA COUNTY UNINCORPORATED AREAS 040037
TOWN OF BUCKEYE 040039
ZONE AE
ZONE A
GILA RIVER
PROFILE BASELINE
WASH T1S-R2W-S17 (J38)
WASH T1S-R2W-S18B (J37)
WASH T1S-R2W-S18A (J27)
REVISED AREA
LIMIT OF STUDY
LIMIT OF DETAILED STUDY
JOINS PANEL 2585
262000 M
261000 M
260000 M
259000 M
258000 M
30546-1
30545-1
30531-Z
30530-1M
30529-1
30512-1
30511-1
30510-1M
30509-1M
30494-1
W CHEYENNE RD
W CARVER RD
W TELEGRAM PATH
NARRAMORE RD
W KAIBAB RD
W TEEPEE RD
W ARLINGTON RD
W RAINBOW TRL
W MOCCASIN TRL
W CRIVELLO AVE
S 209TH AVE
S 208TH DR
S 208TH AVE
S 207TH AVE
S 207TH DR
S 205TH AVE
S 204TH DR
S 204TH AVE
TUTHILL RD
W CORTO LN
W RAMOS LN
W HURON LN
S 197TH AVE
S 195TH DR
S HERMIT RD
S GOPHER RD
S ZUNI RD
W RUSTLER RD
W BRAVE RD
S WATERMANN LN
S KIVA RD
S GARNET RD
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 1 SOUTH, RANGE 2 WEST.



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2625L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS

PANEL 2625 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2625	L
GOODYEAR, CITY OF	040046	2625	L

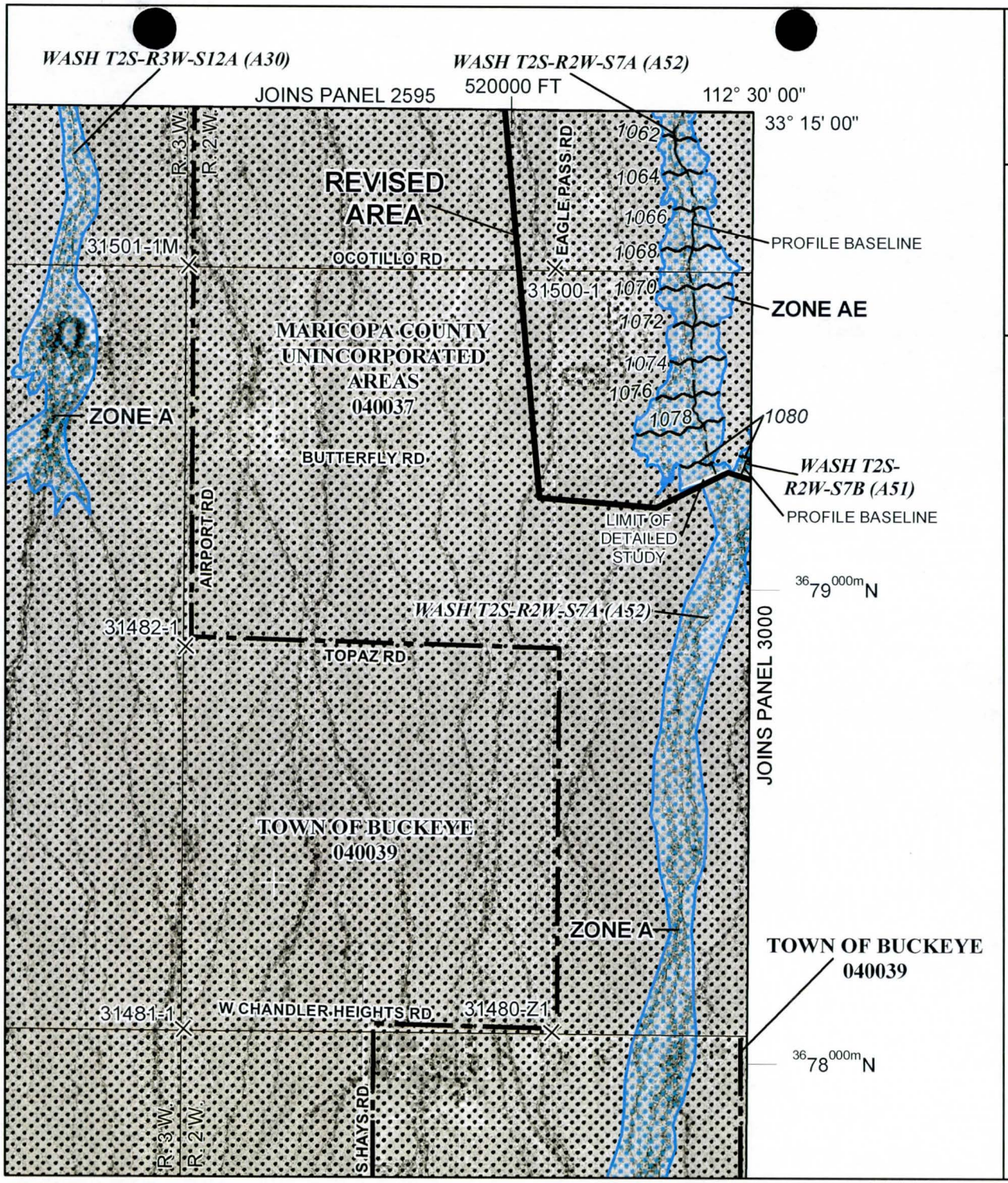
REVISED TO REFLECT LOMR EFFECTIVE: February 21, 2014

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04013C2625L

MAP REVISED
OCTOBER 16, 2013

Federal Emergency Management Agency



Legend

- 1% annual chance (100-Year) Floodplain
- 1% annual chance (100-Year) Floodway
- 0.2% annual chance (500-Year) Floodplain

MAP SCALE 1" = 1000'

500 0 1000 FEET

300 0 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2960L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

PANEL 2960 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2960	L
BUCKEYE, TOWN OF	040039	2960	L

REVISED TO REFLECT LOMR EFFECTIVE: February 21, 2014

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 04013C2960L

MAP REVISED OCTOBER 16, 2013

Federal Emergency Management Agency

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
1S3WS24A (A60)								
0.043	227	101	406	6.5	889.2	889.2	890.2	1.0
0.115	607	106	345	7.5	892.8	892.8	893.7	0.9
0.186	982	62	290	8.7	897.1	897.1	897.7	0.6
0.277	1461	56	288	8.8	902.1	902.1	902.6	0.5
0.373	1968	88	346	7.2	907.6	907.6	907.8	0.2
0.473	2500	63	315	8.0	911.8	911.8	912.4	0.6
0.568	3000	65	375	6.7	915.3	915.3	915.9	0.6
0.684	3614	84	297	8.3	920.2	920.2	920.4	0.2
0.774	4089	48	284	8.9	925.3	925.3	925.3	0.0
0.852	4499	83	351	7.1	928.8	928.8	929.2	0.4
0.931	4916	67	281	8.9	933.1	933.1	933.1	0.0
1.042	5500	147	514	4.8	938.2	938.2	938.5	0.3

Revised Data

REVISED TO REFLECT LOMR EFFECTIVE: February 21, 2014

[1] Feet Above Waterman Wash

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOODWAY DATA

Wash 1S3WS24A (A60)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
1S2WS31B (I70)								
0.000	0	75	209	9.9	971.3	971.3	971.6	0.3
0.130	687	89	395	5.5	974.2	974.2	975.2	1.0
0.205	1081	94	252	10.6	976.9	976.9	977.0	0.1
0.284	1500	149	592	5.7	978.8	978.8	979.8	1.0
0.379	2000	143	380	8.9	980.6	980.6	981.0	0.4
0.455	2401	95	408	7.3	982.2	982.2	983.2	1.0
0.568	3000	75	290	9.9	985.0	985.0	985.6	0.6
0.663	3500	151	628	5.0	986.9	986.9	987.9	1.0
0.804	4243	85	342	6.7	988.8	988.8	989.2	0.4
0.936	4942	119	365	7.5	992.2	992.2	992.6	0.4
1.012	5342	66	260	9.4	994.3	994.3	994.9	0.6
1.136	6000	108	511	4.5	997.0	997.0	998.0	1.0
1.218	6430	81	250	10.5	998.6	998.6	998.7	0.1

Revised Data

[1] Feet Above 1S2WS32A (I63)

REVISED TO REFLECT LOMR EFFECTIVE: February 21, 2014

TABLE 6

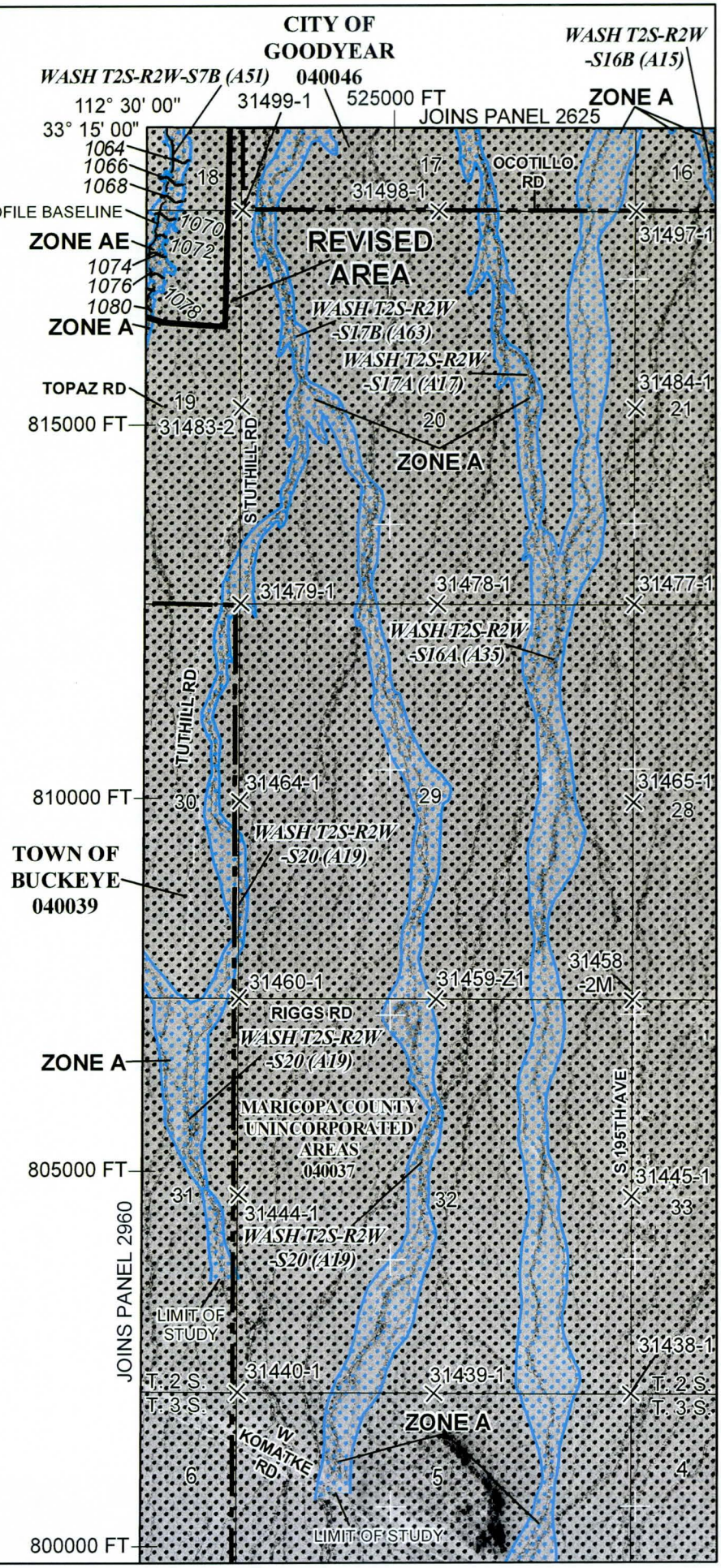
FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

FLOODWAY DATA

Wash 1S2WS31B (I70)



Legend

- 1% annual chance (100-Year) Floodplain
- 1% annual chance (100-Year) Floodway
- 0.2% annual chance (500-Year) Floodplain

MAP SCALE 1" = 2000'

1000 0 2000 FEET

600 0 600 METERS

NFIP

PANEL 3000L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 3000 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	3000	L
BUCKEYE, TOWN OF	040039	3000	L
GOODYEAR, CITY OF	040046	3000	L

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MAP NUMBER 04013C3000L

MAP REVISED OCTOBER 16, 2013

Federal Emergency Management Agency

Table 3. Summary of Discharges (Continued)

Flood Source and Location	Drainage Area (sq. mi.)	10-year	50-year	100-year	500-year
Wash 1S2WS31 (A56)					
At confluence with Waterman Wash	18.46	411	--[1]	2,051	--[1]
At 0.51 miles upstream of the confluence with Wash 2S2WS7A (A52)	10.47	190	--[1]	1,217	--[1]
Wash 2S2WS7A (A52)					
At confluence with Wash 1S2WS31 (A56)	3.07	331	--[1]	845	--[1]
Wash 2S2WS7B (A51)					
At Ryan Street	2.11	--[1]	--[1]	405	--[1]
Wash 1S3WS24A (A60)					
At confluence with Waterman Wash	4.35	1,032	--[1]	2,454	--[1]
Wash 1S2WS18A (J27)					
At Carver Road, confluence with Wash 1S2WS18B (J37)	1.42	452	--[1]	1,083	--[1]
At 0.15 miles upstream of the confluence with Wash 1S2WS18B (J37)	1.00	--[1]	--[1]	766	--[1]
At Narramore Road	0.54	--[1]	--[1]	416	--[1]
Wash 1S2WS18B (J37)					
At confluence with Gila River	3.18	908	--[1]	2,222	--[1]
At Carver Road, confluence with Wash 1S2WS18A (J27)	0.95	355	--[1]	855	--[1]
Wash 1S2WS31B (I70)					
At confluence with Wash 1S2WS32A (I63)	6.86	839	--[1]	1,888	--[1]
Downstream of Rainbow Valley Road	6.03	1,014	--[1]	2,290	--[1]

--[1] Not Computed

Revised Data

REVISED TO REFLECT LOMR EFFECTIVE: February 21, 2014

Technical Data Notebook

RAINBOW VALLEY ADMP AREAS 1, 2, 3, and 4 FLOODPLAIN DELINEATION STUDY (FDS)

Study Area 1 (Washes 1S2WS31 (A56), 2S2WS7A (A52), and 2S2WS7B (A51)) Study Area 2 (Wash 1S3WS24A (A60)) Study Area 3 (Washes 1S2WS18A (J27) and 1S2WS18B (J37)) and Study Area 4 (Wash 1S2WS31B (I70))

CONTRACT FCD 2011C003

Prepared for:
The Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009
(602) 506-1501

Project Manager:
Catherine Regester, P.E., CFM

Prepared By:
RBF Consulting
2929 North Central Avenue, Suite 800
Phoenix, Arizona 85012
(602) 279-1234

Engineer:
Nathan Ford, P.E.
November 20, 2012

Registered Professional Engineer (Civil)
CERTIFICATE NO.
40054
NATHAN E.
FORD
Date Signed 11/20/12
ARIZONA, U.S.A.
Nathan Ford
Expires 12/31/12

Rainbow Valley ADMP Areas 1, 2, 3, and 4
Floodplain Delineation Study

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Registered Professional Engineer (Civil)
CERTIFICATE NO.
40054
NATHAN E.
FORD
Date Signed 11/20/12
ARIZONA, U.S.A.
Nathan Ford
Expires 12/31/12

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Digital Files

Registered Professional Engineer (Civil)
CERTIFICATE NO.
40054
NATHAN E.
FORD
Date Signed 11/20/12
ARIZONA, U.S.A.
Nathan Ford
Expires 12/31/12

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Registered Professional Engineer (Civil)
CERTIFICATE NO.
40054
NATHAN E.
FORD
Date Signed 11/20/12
ARIZONA, U.S.A.
Nathan Ford
Expires 12/31/12

Section 1 Introduction

1.1. Purpose of Study

The purpose of this study is to delineate limited detail Zone AE 100-year floodplains (no floodway) for Study Areas 1 and 3 and detailed Zone AE floodplains (with floodway) for Study Areas 2 and 4 (Refer to Figure 1). The study area is located within a portion of the City of Goodyear and unincorporated Maricopa County.

1.2. Authority for the Study

The Flood Control District of Maricopa County (FCDMC) contracted RBF Consulting to perform the study based on existing 2 foot contour interval topographic mapping. The main contacts, addresses, and other information about the FCDMC and RBF Consulting are:

Flood Control District of Maricopa County

Address:	2801 West Durango Street Phoenix, Arizona 85009
Phone:	(602) 506-1501
Project Manager:	Catherine Regester P.E., CFM

RBF Consulting

Address:	2929 North Central Avenue, Suite 800 Phoenix, Arizona 85012
Phone:	(602) 279-1234
Principal-in-Charge:	Scott Larson, P.E.
Project Manager:	Nathan Ford, P.E.

1.3. Site Location and Description

The study watershed has a drainage area of about 36.8 square miles and is located in Maricopa County, Arizona (Refer to Figure 4.1). The Study Area 1 watershed is approximately 22.4 square miles. Study Area 1 includes Wash 1S2WS31 (A56), Wash 2S2WS7A (A52), and Wash 2S2WS7B (A51). The Study Area 2 watershed is approximately 4.4 square miles. Study Area 2 is Wash 1S3WS24A (A60). The Study Area 3 watershed is about 3.2 square miles. Study Area 3 includes Wash 1S2WS18A (J27) and 1S2WS18B (J37). The Study Area 4 watershed is about 6.9 square miles. Study Area 4 is Wash 1S2WS31B (I70).

Wash 1S2WS31 (A56) is tributary to Waterman Wash. Waterman Wash is a large desert wash with a 100-year peak discharge of approximately 11,053 cfs downstream of the confluence with Wash 1S2WS31 (A56). Waterman Wash has

a delineated 100-year floodplain and floodway. Wash 2S2WS7A (A52) is tributary to Wash 1S2WS31 (A56). Wash 2S2WS7B (A51) is tributary to Wash 2S2WS17B (A63).

Wash 1S3WS24A (A60) is tributary to Waterman Wash. Waterman Wash is a large desert wash with a 100-year peak discharge of approximately 11,421 cfs downstream of the confluence with Wash 1S3WS24A (A60). Waterman Wash has a delineated 100-year floodplain and floodway.

Wash 1S2WS18A (J27) is tributary to Wash 1S2WS18B (J37). Wash 1S2WS18B (J37) is tributary to the Gila River. The Gila River is a major watercourse in Maricopa County. The Gila River has a delineated 100-year floodplain and floodway.

Wash 1S2WS31B (I70) is tributary to Wash 1S2WS32A (I63). Wash 1S2WS32A (I63) is a desert wash that drains into Waterman Wash.

This report is organized according to Arizona State Standard 1-97 *Instructions for Organizing and Submitting Technical Documentation for Flood Studies* developed by the Arizona Department of Water Resources (ADWR), Flood Mitigation Section, dated November 1997 (ADWR, 1997).

1.4. Methodology

1.4.1. Hydrology

Peak flows were compared for both the 100-year 6-hour and 100-year 24-hour storms using the U.S. Army Corps of Engineers HEC-1 software package, version 4.1, dated June 1998, from the Rainbow Valley Area Drainage Master Plan (RVADMP) Hydrology. Additional subdivision of four sub-basins was performed as outlined in Section 4 of this report. A more detailed explanation of the hydrologic methodology and results are provided in Section 4.

1.4.2. Hydraulics and Floodplain Delineation

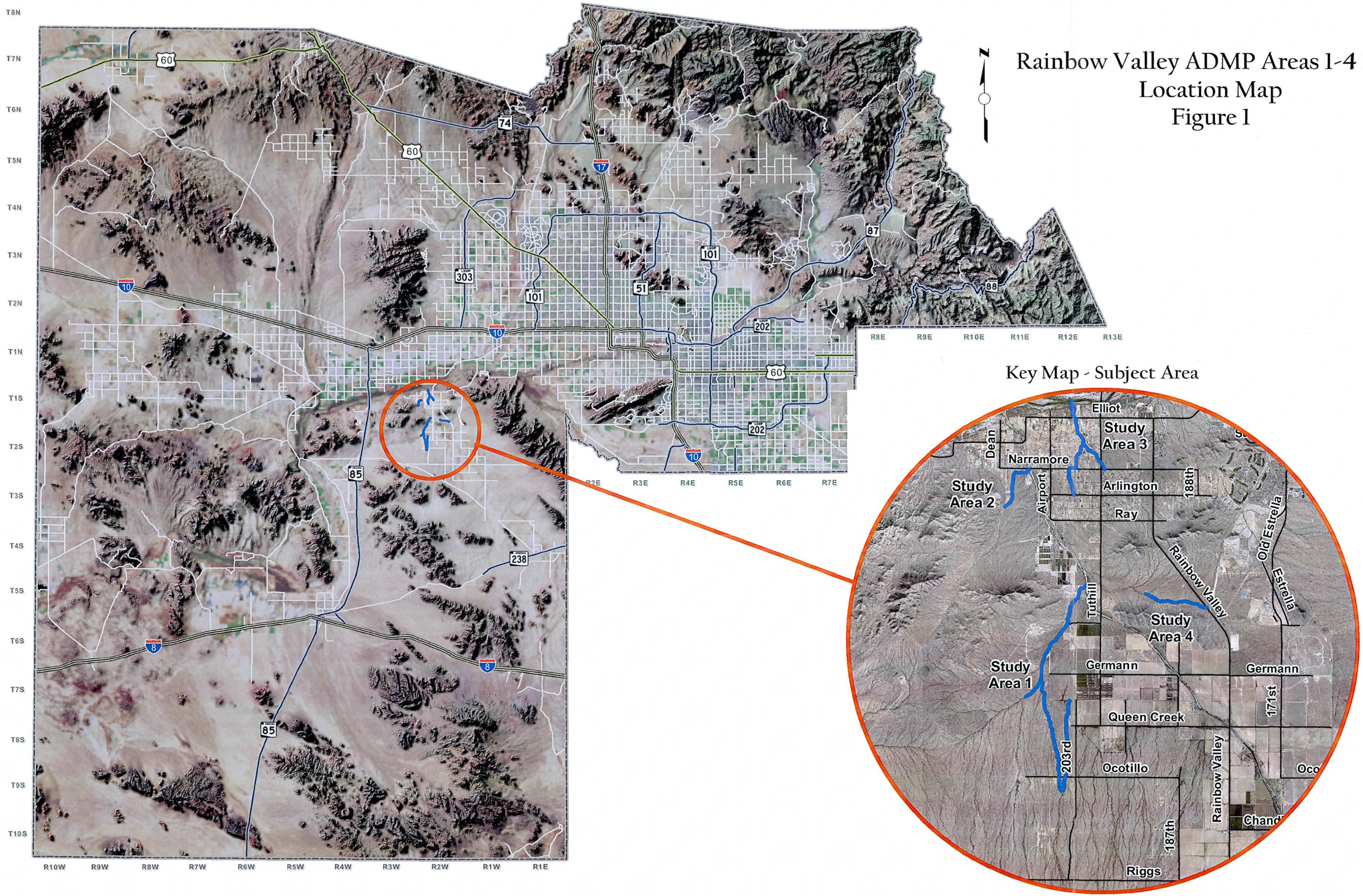
The higher peak flow from the 100-year 6-hour and 100-year 24-hour HEC-1 model was used to delineate the floodplain and floodway. The 100-year 24-hour storm was the governing storm for all study areas except for Wash 1S2WS18A (J27) and Wash 1S2WS18B (J37) upstream of the confluence with Wash 1S2WS18A (J27) in Study Area 3. The Zone AE floodplains and floodways were delineated using the U.S. Army Corps of Engineers Hydrologic Engineering Center River Analysis System (HEC-RAS) version 4.1.0 dated January 2010.

1.5. Summary of Results

The study resulted in the delineation of over twelve miles of detail Zone AE floodplains and two and one quarter miles of floodways. The floodplains and

floodways have been plotted on the Hydraulic Study Maps, located at the end of Appendix E.

Rainbow Valley ADMP Areas 1-4 FDS
Location Map
Figure 1



File: H:\PDATA\45104771\GIS\Location Map.mxd

Section 2 FEMA Forms

2.1. Study Documentation Abstract for FEMA Submittals

Study Documentation Abstract for FEMA Submittals		Initial Study		Restudy	X	CLOMR		LOMR	X
2.1.1	Date Study Accepted	N/A							
2.1.2	Study Contractor Contact Address Phone Internal Reference #	RBF Consulting Scott Larson, P.E. or Nathan Ford, P.E. 2929 North Central Avenue, Suite 800 Phoenix, Arizona 85012 602-279-1234 45-104771							
2.1.3	FEMA Technical Review Contractor	N/A							
2.1.4	FEMA Regional Reviewer	N/A							
2.1.5	State NFIP Coordinator Phone	Brian Cosson, CFM Arizona Department of Water Resources 602-771-8657							
2.1.6	Local Technical Reviewer Phone	Flood Control District of Maricopa County Catherine Regester, P.E., CFM 602-506-4001							
2.1.7	Reach Description	Wash 1S2WS31 (A56), Wash 2S2WS7A (A52), Wash 2S2WS7B (A51), Wash 1S3WS24A (A60), 1S2WS18A (J27), Wash 1S2WS18B (J37), and Wash 1S2WS31B (I70) in Maricopa County, Arizona							
2.1.8	USGS Quad Sheet Original photo date Latest photo revision date	Not used. Two foot topographic and aerial mapping provided by the FCDMC.							
2.1.9	Unique Conditions and Problems	N/A							
2.1.10	Coordination of Q's Discharges (Agency, Date, Comments)	N/A							

2.2. FEMA Forms

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

OVERVIEW & CONCURRENCE FORM

O.M.B No. 1660-0016
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20958-3005, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.

DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

A. REQUESTED RESPONSE FROM DHS-FEMA

This request is for a (check one):

☐ CLOMR: A letter from DHS-FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72).

☒ LOMR: A letter from DHS-FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See 44 CFR Ch. 1, Parts 60, 65 & 72)

B. OVERVIEW

1. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Example: 480301	City of Katy	TX	48473C	0005D	02/08/83
480287	Harris County	TX	48201C	0220G	09/28/90
	Refer to attached sheet				

2. a. Flooding Source: 1S2WS31 (A56), 2S2WS7A (A52), 2S2WS7B (A51), 1S3WS24A (A60), 1S2WS18A (J27), 1S2WS18B (J37), and 1S2WS31B (I70)

   b. Types of Flooding: ☒ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH) ☐ Alluvial fan ☐ Lakes ☐ Other (Attach Description)

3. Project Name/Identifier: Rainbow Valley ADMP Areas 1, 2, 3, and 4 Floodplain Delineation Study

4. FEMA zone designations affected: A, AE, and X (choices: A, AH, AO, A1-A30, A99, AE, AR, V, V1-V30, VE, B, C, D, X)

5. Basis for Request and Type of Revision:

   a. The basis for this revision request is (check all that apply)

   ☐ Physical Change ☒ Improved Methodology/Data ☒ Regulatory Floodway Revision ☐ Base Map Changes
   ☐ Coastal Analysis ☒ Hydraulic Analysis ☐ Hydrologic Analysis ☐ Corrections
   ☐ Weir-Dam Changes ☐ Levee Certification ☐ Alluvial Fan Analysis ☐ Natural Changes
   ☒ New Topographic Data ☐ Other (Attach Description)

   Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following structures (check all that apply)

Structures: ☐ Channelization ☐ Levee/Floodwall ☒ Bridge/Culvert

☐ Dam ☐ Fill ☐ Other (Attach Description)

6. ☐ Documentation of ESA compliance is submitted (required to initiate CLOMR review). Please refer to the instructions for more information.

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☐ Yes Fee amount: $_____

☒ No, Attach Explanation

Please see the DHS-FEMA Web site at http://www.fema.gov/plan/prevent/fhm/frm_fees.shtm **for Fee Amounts and Exemptions.**

D. SIGNATURE

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Catherine Regester, P.E., CFM	Company: FCDMC	
Mailing Address: 2801 W. Durango St Phoenix, AZ 85009	Daytime Telephone No.: (602) 506-4001	Fax No.: (602) 506-4601
	E-Mail Address: cwr@mail.maricopa.gov	
Signature of Requester (required): Catherine W. Regester	Date: 11/27/12	

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirements for when fill is placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. For Conditional LOMR requests, the applicant has documented Endangered Species Act (ESA) compliance to FEMA prior to FEMA's review of the Conditional LOMR application. For LOMR requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title: Timothy S. Phillips, P.E. Chief Engineer & General Manager	Community Name: FCDMC	
Mailing Address: 2801 W. Durango St Phoenix, AZ 85009	Daytime Telephone No.: (602) 506-4701	Fax No.: (602) 506-4601
	E-Mail Address: tsp@mail.maricopa.gov	
Community Official's Signature (required):	Date: 12/6/12	

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Nathan Ford	License No.: 40054	Expiration Date: 12/31/12
Company Name: RBF Consulting	Telephone No.: (602) 279-1234	Fax No.: (602) 279-1411
Signature: Nathan Ford	Date: 11/20/12	E-Mail Address: nford@rbf.com

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and (Number)	Required if ...
☒ Riverine Hydrology and Hydraulics Form (Form 2)	New or revised discharges or water-surface elevations
☒ Riverine Structures Form (Form 3)	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam
☐ Coastal Analysis Form (Form 4)	New or revised coastal elevations
☐ Coastal Structures Form (Form 5)	Addition/revision of coastal structure
☐ Alluvial Fan Flooding Form (Form 6)	Flood control measures on alluvial fans

Seal (Optional)

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

OVERVIEW & CONCURRENCE FORM

O.M.B No. 1660-0016
Expires February 28, 2014

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DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

A. REQUESTED RESPONSE FROM DHS-FEMA

This request is for a (check one):

☐ CLOMR: A letter from DHS-FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72).

☒ LOMR: A letter from DHS-FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See 44 CFR Ch. 1, Parts 60, 65 & 72)

B. OVERVIEW

1. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Example: 480301 480287	City of Katy Harris County	TX TX	48473C 48201C	0005D 0220G	02/08/83 09/28/90
	Refer to attached sheet				

2. a. Flooding Source: 1S2WS31 (A56), 2S2WS7A (A52), 2S2WS7B (A51), 1S3WS24A (A60), 1S2WS18A (J27), 1S2WS18B (J37), and 1S2WS31B (I70)

   b. Types of Flooding: ☒ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH) ☐ Alluvial fan ☐ Lakes ☐ Other (Attach Description)

3. Project Name/Identifier: Rainbow Valley ADMP Areas 1, 2, 3, and 4 Floodplain Delineation Study

4. FEMA zone designations affected: A, AE, and X (choices: A, AH, AO, A1-A30, A99, AE, AR, V, V1-V30, VE, B, C, D, X)

5. Basis for Request and Type of Revision:

   a. The basis for this revision request is (check all that apply)

   ☐ Physical Change ☒ Improved Methodology/Data ☒ Regulatory Floodway Revision ☐ Base Map Changes
   ☐ Coastal Analysis ☒ Hydraulic Analysis ☐ Hydrologic Analysis ☐ Corrections
   ☐ Weir-Dam Changes ☐ Levee Certification ☐ Alluvial Fan Analysis ☐ Natural Changes
   ☒ New Topographic Data ☐ Other (Attach Description)

   Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following structures (check all that apply)

Structures: ☐ Channelization ☐ Levee/Floodwall ☒ Bridge/Culvert

☐ Dam ☐ Fill ☐ Other (Attach Description)

6. ☐ Documentation of ESA compliance is submitted (required to initiate CLOMR review). Please refer to the instructions for more information.

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☐ Yes Fee amount: $_____

☒ No, Attach Explanation

Please see the DHS-FEMA Web site at http://www.fema.gov/plan/prevent/fhm/frm_fees.shtm **for Fee Amounts and Exemptions.**

D. SIGNATURE

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Catherine Regester, P.E., CFM	Company: FCDMC	
Mailing Address: 2801 W. Durango St Phoenix, AZ 85009	Daytime Telephone No.: (602) 506-4001	Fax No.: (602) 506-4601
	E-Mail Address: cwr@mail.maricopa.gov	
Signature of Requester (required): Catherine W. Regester	Date: 11/27/12	

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirements for when fill is placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. For Conditional LOMR requests, the applicant has documented Endangered Species Act (ESA) compliance to FEMA prior to FEMA's review of the Conditional LOMR application. For LOMR requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title: David Ramirez, P.E. City Engineer	Community Name: City of Goodyear	
Mailing Address: 195 N. 145th Ave., Bldg D Goodyear, AZ 85338	Daytime Telephone No.: (623) 882-3110	Fax No.: (623) 882-7949
	E-Mail Address: david.ramirez@goodyearaz.gov	
Community Official's Signature (required): David J. Ramirez	Date: 1/11/2013	

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Nathan Ford	License No.: 40054	Expiration Date: 12/31/12
Company Name: RBF Consulting	Telephone No.: (602) 279-1234	Fax No.: (602) 279-1411
Signature: Nathan Ford	Date: 11/20/12	E-Mail Address: nford@rbf.com

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and (Number)	Required if ...
☒ Riverine Hydrology and Hydraulics Form (Form 2)	New or revised discharges or water-surface elevations
☒ Riverine Structures Form (Form 3)	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam
☐ Coastal Analysis Form (Form 4)	New or revised coastal elevations
☐ Coastal Structures Form (Form 5)	Addition/revision of coastal structure
☐ Alluvial Fan Flooding Form (Form 6)	Flood control measures on alluvial fans

Seal (Optional)

The NFIP map panels affected for all impacted communities are:

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
040037	Maricopa County	AZ	04013C	2510G 2520G 2530G 2550G 2925G 2885E (Not Printed)	9/30/05

The Flood Control District of Maricopa County is requesting a fee exemption for the LOMR based on map changes proposed to show flood hazard information meant to improve upon that shown on the flood map or within the flood study.

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 1660-0016
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington VA 20958-3005, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.

DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a NFIP Flood Insurance Rate Maps (FIRM).

Flooding Source: 1S2WS31 (A56)

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model → Specify Model: _____
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit*	Conf w Waterman Wash	0.055	N/A	944.33
Upstream Limit*	2.619 miles from conf w Waterman Wash	2.619	N/A	1007.77

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS Version 4.1.0

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name: 1S2WS31.prj	Plan Name: 1S2WS31.p01	File Name:	Plan Name:	NAVD88
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: 2 ft contour data

Source: General Dynamics for the FCDMC Date: Flown in 2005

Accuracy: 1 Inch = 200 Feet

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

   a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
   - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

   b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☒ Yes ☐ No
   If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☒ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA).

For actions authorized, funded, or being carried out by Federal or State agencies, please submit documentation from the agency showing its compliance with Section 7(a)(2) of the ESA. Please see the MT-2 instructions for more detail.

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U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 1660-0016
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

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PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

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DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a NFIP Flood Insurance Rate Maps (FIRM).

Flooding Source: 2S2WS7A (A52)

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model → Specify Model: _____
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit*	0.19 miles from conf w 1S2SW31 (A56)	0.19	N/A	994.58
Upstream Limit*	2.421 miles from conf w 1S2SW31 (A56)	2.421	N/A	1081.27

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS Version 4.1.0

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name: 1S2WS31.prj	Plan Name: 1S2WS31.p01	File Name:	Plan Name:	NAVD88
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: 2 ft contour data

Source: General Dynamics for the FCDMC Date: Flown in 2005

Accuracy: 1 Inch = 200 Feet

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

   a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
   - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

   b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☒ Yes ☐ No

   If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☒ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA).

For actions authorized, funded, or being carried out by Federal or State agencies, please submit documentation from the agency showing its compliance with Section 7(a)(2) of the ESA. Please see the MT-2 instructions for more detail.

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U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

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O.M.B No. 1660-0016
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AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

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DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a NFIP Flood Insurance Rate Maps (FIRM).

Flooding Source: 2S2WS7B (A51)

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☐ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data
☒ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☒ Precipitation/Runoff Model → Specify Model: Modified RVADMP HEC-1
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☒ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit*	Ryan Street alignment	0.006	N/A	1012.60
Upstream Limit*	A52 Confluence	1.894	N/A	1080.92

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS Version 4.1.0

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name: 1S2WS31.prj	Plan Name: 1S2WS31.p01	File Name:	Plan Name:	
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: 2 ft contour data

Source: General Dynamics for the FCDMC Date: Flown in 2005

Accuracy: 1 Inch = 200 Feet

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

   a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

      - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
      - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

   b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☒ Yes ☐ No
      If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☒ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA).

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DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a NFIP Flood Insurance Rate Maps (FIRM).

Flooding Source: 1S3WS24A (A60)

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☐ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data
☒ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☒ Precipitation/Runoff Model → Specify Model: Modified RVADMP HEC-1
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☒ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit*	Confluence with Waterman Wash	0.043	N/A	889.21
Upstream Limit*	1.042 miles US from Conf w Waterman Wash	1.042	N/A	938.16

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS Version 4.1.0

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name: 1S3WS24A(A60).prj	Plan Name: 1S3WS24A(A60)p01	File Name: 1S3WS24A(A60).prj	Plan Name: 1S3WS24A(A60).p01	NAVD88
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: 2 ft contour data

Source: General Dynamics for the FCDMC Date: Flown in 2005

Accuracy: 1 Inch = 200 Feet

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

   a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

      - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
      - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

   b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☒ Yes ☐ No
      If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☒ Yes ☐ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

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PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

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Flooding Source: 1S2WS18A (J27)

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☐ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data
☒ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☒ Precipitation/Runoff Model → Specify Model: Proration / RVADMP HEC-1
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☒ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit*	Confluence with J37	0.011	N/A	891.31
Upstream Limit*	1.231 miles US of Conf w J37	1.231	N/A	917.16

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS Version 4.1.0

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name: 1S2WS18B.prj	Plan Name: 1S2WS18B.p01	File Name:	Plan Name:	NAVD88
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: 2 ft contour data

Source: General Dynamics for the FCDMC Date: Flown in 2005

Accuracy: 1 Inch = 200 Feet

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

   a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
   - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

   b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☒ Yes ☐ No

   If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☒ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA).

For actions authorized, funded, or being carried out by Federal or State agencies, please submit documentation from the agency showing its compliance with Section 7(a)(2) of the ESA. Please see the MT-2 instructions for more detail.

* Not inclusive of all applicable regulatory requirements. For details, see 44 CFR parts 60 and 65.

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 1660-0016
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: 1S2WS18B (J37)

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model → Specify Model: _____
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit*	Confluence with Gila River	0.363	N/A	873.27
Upstream Limit*	1.705 miles US of conf w Gila River	1.705	N/A	915.55

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS Version 4.1.0

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name: 1S2WS18B.prj	Plan Name: 1S2WS18B.p01	File Name:	Plan Name:	NAVD88
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: 2 ft contour data

Source: General Dynamics for the FCDMC Date: Flown in 2005

Accuracy: 1 Inch = 200 Feet

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

   a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
   - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

   b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☒ Yes ☐ No

   If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☒ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA).

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U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 1660-0016
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Flooding Source: 1S2WS31B (I70)

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model → Specify Model: _____
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit*	Confluence with I63	0.00	971.33	971.33
Upstream Limit*	Rainbow Valley Road	1.218	N/A	998.60

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS Version 4.1.0

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name: 1S2WS31B(I70).prj	Plan Name: 1S2WS31B(I70).p01	File Name: 1S2WS31B(I70).prj	Plan Name: 1S2WS31B(I70).p01	NAVD88
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: 2 ft contour data

Source: General Dynamics for the FCDMC Date: Flown in 2005

Accuracy: 1 Inch = 200 Feet

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

   a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
   - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

   b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☒ Yes ☐ No

   If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☒ Yes ☐ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

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DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. NO. 1660-0016
Expires February 28, 2014

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Flooding Source: 1S2WS18B (J37)

Note: Fill out one form for each flooding source studied.

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization.....complete Section B
Bridge/Culvert.....complete Section C
Dam.....complete Section D
Levee/Floodwall.....complete Section E
Sediment Transport.....complete Section F (if required)

Description Of Modeled Structure

1. Name of Structure: Elliot Road Culvert

   Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure: Sta 0.444 Elliot Road and 1S2WS18B (J37)

   Downstream Limit/Cross Section: 0.436

   Upstream Limit/Cross Section: 0.452

2. Name of Structure: _____

   Type (check one): ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure: _____

   Downstream Limit/Cross Section: _____

   Upstream Limit/Cross Section: _____

3. Name of Structure: _____

   Type (check one) ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure: _____

   Downstream Limit/Cross Section: _____

   Upstream Limit/Cross Section: _____

NOTE: FOR MORE STRUCTURES, ATTACH ADDITIONAL PAGES AS NEEDED.

B. CHANNELIZATION

Flooding Source: _____

Name of Structure: _____

1. Hydraulic Considerations

The channel was designed to carry _____ (cfs) and/or the _____-year flood.

The design elevation in the channel is based on (check one):

☐ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☐ At Transitions

☐ Other locations (specify): _____

2. Channel Design Plans

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Accessory Structures

The channelization includes (check one):

☐ Levees [Attach Section E (Levee/Floodwall)] ☐ Drop structures ☐ Superelevated sections

☐ Transitions in cross sectional geometry ☐ Debris basin/detention basin [Attach Section D (Dam/Basin)] ☐ Energy dissipator

☐ Weir ☐ Other (Describe):

4. Sediment Transport Considerations

Are the hydraulics of the channel affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: 1S2WS18B (J37)

Name of Structure: Elliot Road Culvert

1. This revision reflects (check one):

☒ Bridge/culvert not modeled in the FIS

☐ Modified bridge/culvert previously modeled in the FIS

☐ Revised analysis of bridge/culvert previously modeled in the FIS

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8): HEC-RAS Culvert Routines
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

☒ Dimensions (height, width, span, radius, length)

☒ Shape (culverts only)

☒ Material

☐ Beveling or Rounding

☐ Wing Wall Angle

☐ Skew Angle

☐ Distances Between Cross Sections

☐ Erosion Protection

☐ Low Chord Elevations – Upstream and Downstream

☒ Top of Road Elevations – Upstream and Downstream

☒ Structure Invert Elevations – Upstream and Downstream

☒ Stream Invert Elevations – Upstream and Downstream

☐ Cross-Section Locations

4. Sediment Transport Considerations

Are the hydraulics of the structure affected by sediment transport? ☐ Yes ☒ No

If Yes, then fill out Section F (Sediment Transport) of Form 3. If no, then attach an explanation.

D. DAM/BASIN

Flooding Source: _____
Name of Structure: _____

1. This request is for (check one): ☐ Existing dam/basin ☐ New dam/basin ☐ Modification of existing dam/basin

2. The dam/basin was designed by (check one): ☐ Federal agency ☐ State agency ☐ Private organization ☐ Local government agency

   Name of the agency or organization: _____

3. The Dam was permitted as (check one): ☐ Federal Dam ☐ State Dam

   Provide the permit or identification number (ID) for the dam and the appropriate permitting agency or organization

   Permit or ID number _____ Permitting Agency or Organization _____

   a. ☐ Local Government Dam ☐ Private Dam

   Provided related drawings, specification and supporting design information.

4. Does the project involve revised hydrology? ☐ Yes ☐ No

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2).

   Was the dam/basin designed using critical duration storm? (must account for the maximum volume of runoff)

   ☐ Yes, provide supporting documentation with your completed Form 2.

   ☐ No, provide a written explanation and justification for not using the critical duration storm.

5. Does the submittal include debris/sediment yield analysis? ☐ Yes ☐ No

   If Yes, then fill out Section F (Sediment Transport). If No, then attach your explanation for why debris/sediment analysis was not considered?

6. Does the Base Flood Elevation behind the dam/basin or downstream of the dam/basin change? ☐ Yes ☐ No

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.

	Stillwater Elevation Behind the Dam/Basin	
FREQUENCY (% annual chance)	FIS	REVISED
10-year (10%)	_____	_____
50-year (2%)	_____	_____
100-year (1%)	_____	_____
500-year (0.2%)	_____	_____
Normal Pool Elevation	_____	_____

7. Please attach a copy of the formal Operation and Maintenance Plan

E. LEVEE/FLOODWALL

1. System Elements

a. This Levee/Floodwall analysis is based on (check one):

☐ upgrading of an existing levee/floodwall system ☐ a newly constructed levee/floodwall system ☐ reanalysis of an existing levee/floodwall system

b. Levee elements and locations are (check one):

☐ earthen embankment, dike, berm, etc. Station _____ to _____
☐ structural floodwall Station _____ to _____
☐ Other (describe): Station _____ to _____

c. Structural Type (check one): ☐ monolithic cast-in place reinforced concrete ☐ reinforced concrete masonry block ☐ sheet piling
☐ Other (describe): _____

d. Has this levee/floodwall system been certified by a Federal agency to provide protection from the base flood?

☐ Yes ☐ No

If Yes, by which agency? _____

e. Attach certified drawings containing the following information (indicate drawing sheet numbers):

1. Plan of the levee embankment and floodwall structures. Sheet Numbers: _____
2. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system. Sheet Numbers: _____
3. A profile of the BFE, closure opening outlet and inlet invert elevations, type and size of opening, and kind of closure. Sheet Numbers: _____
4. A layout detail for the embankment protection measures. Sheet Numbers: _____
5. Location, layout, and size and shape of the levee embankment features, foundation treatment, Floodwall structure, closure structures, and pump stations. Sheet Numbers: _____

2. Freeboard

a. The minimum freeboard provided above the BFE is:

Riverine

3.0 feet or more at the downstream end and throughout	☐ Yes	☐ No
3.5 feet or more at the upstream end	☐ Yes	☐ No
4.0 feet within 100 feet upstream of all structures and/or constrictions	☐ Yes	☐ No

Coastal

1.0 foot above the height of the one percent wave associated with the 1%-annual-chance stillwater surge elevation or maximum wave runup (whichever is greater).	☐ Yes	☐ No
2.0 feet above the 1%-annual-chance stillwater surge elevation	☐ Yes	☐ No

Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Paragraph 65.10(b)(1)(ii) of the NFIP Regulations.

If No is answered to any of the above, please attach an explanation.

b. Is there an indication from historical records that ice-jamming can affect the BFE? ☐ Yes ☐ No

If Yes, provide ice-jam analysis profile and evidence that the minimum freeboard discussed above still exists.

3. Closures

a. Openings through the levee system (check one): ☐ exists ☐ does not exist

If opening exists, list all closures:

Channel Station	Left or Right Bank	Opening Type	Highest Elevation for Opening Invert	Type of Closure Device

(Extend table on an added sheet as needed and reference)

Note: Geotechnical and geologic data

In addition to the required detailed analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers [USACE] EM-1110-2-1906 Form 2086.)

4. Embankment Protection

a. The maximum levee slope land side is: _____

b. The maximum levee slope flood side is: _____

c. The range of velocities along the levee during the base flood is: _____ (min.) to _____ (max.)

d. Embankment material is protected by (describe what kind): _____

e. Riprap Design Parameters (check one): ☐ Velocity ☐ Tractive stress
Attach references

Reach		Sideslope	Flow Depth	Velocity	Curve or Straight	Stone Riprap			Depth of Toedown
						D_{100}	D_{50}	Thickness	
Sta	to								
Sta	to								
Sta	to								
Sta	to								
Sta	to								
Sta	to								

(Extend table on an added sheet as needed and reference each entry)

f. Is a bedding/filter analysis and design attached? ☐ Yes ☐ No

g. Describe the analysis used for other kinds of protection used (include copies of the design analysis):

Attach engineering analysis to support construction plans.

5. Embankment And Foundation Stability

a. Identify locations and describe the basis for selection of critical location for analysis:
_____

☐ Overall height: Sta.: _____, height _____ ft.

☐ Limiting foundation soil strength:

Strength ϕ = _____ degrees, c = _____ psf

Slope: SS = _____ (h) to _____ (v)

(Repeat as needed on an added sheet for additional locations)

b. Specify the embankment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):
_____

c. Summary of stability analysis results:

E. LEVEE/FLOODWALL (CONTINUED)

5. Embankment And Foundation Stability (continued)

Case	Loading Conditions	Critical Safety Factor	Criteria (Min.)
I	End of construction		1.3
II	Sudden drawdown		1.0
III	Critical flood stage		1.4
IV	Steady seepage at flood stage		1.4
VI	Earthquake (Case I)		1.0

(Reference: USACE EM-1110-2-1913 Table 6-1)

d. Was a seepage analysis for the embankment performed? ☐ Yes ☐ No

If Yes, describe methodology used:

e. Was a seepage analysis for the foundation performed? ☐ Yes ☐ No

f. Were uplift pressures at the embankment landside toe checked? ☐ Yes ☐ No

g. Were seepage exit gradients checked for piping potential? ☐ Yes ☐ No

h. The duration of the base flood hydrograph against the embankment is _____ hours.

Attach engineering analysis to support construction plans.

6. Floodwall And Foundation Stability

a. Describe analysis submittal based on Code (check one): ☐ UBC (1988) ☐ Other (specify): _____

b. Stability analysis submitted provides for: ☐ Overturning ☐ Sliding If not, explain: _____

c. Loading included in the analyses were: ☐ Lateral earth @ P_A = _____ psf; P_p = _____ psf

☐ Surcharge-Slope @ _____, ☐ surface _____ psf

☐ Wind @ P_w = _____ psf

☐ Seepage (Uplift); _____ ☐ Earthquake @ P_{eq} = _____ %g

☐ 1%-annual-chance significant wave height: _____ ft.

☐ 1%-annual-chance significant wave period: _____ sec.

d. Summary of Stability Analysis Results: Factors of Safety.
Itemize for each range in site layout dimension and loading condition limitation for each respective reach.

Loading Condition	Criteria (Min)		Sta	To	Sta	To
	Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead & Wind	1.5	1.5				
Dead & Soil	1.5	1.5				
Dead, Soil, Flood, & Impact	1.5	1.5				
Dead, Soil, & Seismic	1.3	1.3				

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)
Note: (Extend table on an added sheet as needed and reference)

E. LEVEE/FLOODWALL (CONTINUED)

6. Floodwall And Foundation Stability (continued)

e. Foundation bearing strength for each soil type:

Bearing Pressure	Sustained Load (psf)	Short Term Load (psf)
Computed design maximum		
Maximum allowable		

f. Foundation scour protection ☐ is, ☐ is not provided. If provided, attach explanation and supporting documentation:

Attach engineering analysis to support construction plans.

7. Settlement

a. Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin? ☐ Yes ☐ No

b. The computed range of settlement is _____ ft. to _____ ft.

c. Settlement of the levee crest is determined to be primarily from : ☐ Foundation consolidation ☐ Embankment compression ☐ Other (Describe): _____

d. Differential settlement of floodwalls ☐ has ☐ has not been accommodated in the structural design and construction.

Attach engineering analysis to support construction plans.

8. Interior Drainage

a. Specify size of each interior watershed:

Draining to pressure conduit: _____ acres
Draining to ponding area: _____ acres

b. Relationships Established

Ponding elevation vs. storage	☐ Yes	☐ No
Ponding elevation vs. gravity flow	☐ Yes	☐ No
Differential head vs. gravity flow	☐ Yes	☐ No

c. The river flow duration curve is enclosed: ☐ Yes ☐ No

d. Specify the discharge capacity of the head pressure conduit: _____ cfs

e. Which flooding conditions were analyzed?

• Gravity flow (Interior Watershed)	☐ Yes	☐ No
• Common storm (River Watershed)	☐ Yes	☐ No
• Historical ponding probability	☐ Yes	☐ No
• Coastal wave overtopping	☐ Yes	☐ No

If No for any of the above, attach explanation.

e. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection. ☐ Yes ☐ No If No, attach explanation.

g. The rate of seepage through the levee system for the base flood is _____ cfs

h. The length of levee system used to drive this seepage rate in item g: _____ ft.

E. LEVEE/FLOODWALL (CONTINUED)

8. Interior Drainage (continued)

i. Will pumping plants be used for interior drainage? ☐ Yes ☐ No

If Yes, include the number of pumping plants: _____ For each pumping plant, list:

	Plant #1	Plant #2
The number of pumps		
The ponding storage capacity		
The maximum pumping rate		
The maximum pumping head		
The pumping starting elevation		
The pumping stopping elevation		
Is the discharge facility protected?		
Is there a flood warning plan?		
How much time is available between warning and flooding?		

Will the operation be automatic? ☐ Yes ☐ No

If the pumps are electric, are there backup power sources? ☐ Yes ☐ No

(Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)

Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.

9. Other Design Criteria

a. The following items have been addressed as stated:

Liquefaction ☐ is ☐ is not a problem

Hydrocompaction ☐ is ☐ is not a problem

Heave differential movement due to soils of high shrink/swell ☐ is ☐ is not a problem

b. For each of these problems, state the basic facts and corrective action taken:

Attach supporting documentation

c. If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure?
☐ Yes ☐ No Attach supporting documentation

d. Sediment Transport Considerations:

Was sediment transport considered? ☐ Yes ☐ No
If Yes, then fill out Section F (Sediment Transport). If No, then attach your explanation for why sediment transport was not considered.

10. Operational Plan And Criteria

a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP Regulations? ☐ Yes ☐ No

b. Does the operation plan incorporate all the provisions for closure devices as required in Paragraph 65.10(c)(1) of the NFIP regulations?
☐ Yes ☐ No

c. Does the operation plan incorporate all the provisions for interior drainage as required in Paragraph 65.10(c)(2) of the NFIP regulations?
☐ Yes ☐ No If the answer is No to any of the above, please attach supporting documentation.

E. LEVEE/FLOODWALL (CONTINUED)

11. Maintenance Plan

Please attach a copy of the fomal maintenance plan for the levee/floodwall

12. Operations and Maintenance Plan

Please attach a copy of the formal Operations and Maintenance Plan for the levee/floodwall.

CERTIFICATION OF THE LEVEE DOCUMENTION

This certification is to be signed and sealed by a licensed registered professional engineer authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.10(e) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: _____ License No.: _____ Expiration Date: _____

Company Name: _____ Telephone No.: _____ Fax No.: _____

Signature: _____ Date: _____ E-Mail Address: _____

F. SEDIMENT TRANSPORT

Flooding Source: _____

Name of Structure: _____

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the Base Flood Elevation (BFE); and/or based on the stream morphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including scour and deposition) to affect the BFEs, then provide the following information along with the supporting documentation:

Sediment load associated with the base flood discharge: Volume _____ acre-feet

Debris load associated with the base flood discharge: Volume _____ acre-feet

Sediment transport rate _____ (percent concentration by volume)

Method used to estimate sediment transport: _____

Most sediment transport formulas are intended for a range of hydraulic conditions and sediment sizes; attach a detailed explanation for using the selected method.

Method used to estimate scour and/or deposition: _____

Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport: _____

Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

If a sediment analysis has not been performed, an explanation as to why sediment transport (including scour and deposition) will not affect the BFEs or structures must be provided.

Section 3 Mapping and Survey Information

3.1. Field Survey Information

Field survey was collected by RBF Consulting for the Elliot Road culvert on Wash 1S2WS18B (J37) between Cross Sections 0.436 and 0.452. Additional field survey was collected on November 9, 2012 to refine the floodplain delineation in the vicinity of structures that were located within the draft floodplain limits. Refer to the Survey Structure Notes and survey point list in Appendix C for additional information.

3.2. Mapping

RBF used the existing digital terrain models (DTM) and 2-foot contour data provided by the Flood Control District of Maricopa County. General Dynamics Advanced Information Systems created the DTM from digital ortho-photos that were flown in 2005 for the RVADMP mapping (FCD Contract 2003C067). The coordinate system is based on NAD 83 (1992 epoch), Arizona State Plane – Central Zone using international feet. The vertical coordinate system is NAVD 88.

Section 4 Hydrology

4.1 Method Description

The Rainbow Valley Area Drainage Master Plan (RVADMP) Technical Data Notebook, RVADMP Hydrology Report Volumes I through IV, Contract FCD 2006C029, dated October 2010 prepared by URS in cooperation with Dibble Engineering and JE Fuller Hydrology and Geomorphology was used as the source of the hydrologic analysis. The peak flows for the existing conditions 100-year 6-hour and 100-year 24-hour storm, with and without railroad scenarios, were compared to determine which storm generated the larger peak flows. The with railroad and without railroad scenario only impact the Study Area 1 results. Most of the concentration point flows within Study Area 1 are the same but the with railroad model was higher for a couple of concentration points. The difference in flows is extremely minor, less than 50 cfs. For Study Areas 2, 3, and 4 the flows are the same for either scenario or the railroad has no influence on the watershed. The 100-year 24-hour storm event generated higher peak flows than the 100-year 6-hour storm for all study areas except for Sub-basins J27 and J37 in Study Area 3.

Additional subdivision of four sub-basins (A51 of Study Area 1, A60 of Study Area 2, J27 of Study Area 3, and I67 of Study Area 4) was required for hydraulic modeling where the Rainbow Valley ADMP sub-basins were too large to accurately model portions of the study reaches. For Study Areas 1, 2, and 4, the Rainbow Valley ADMP HEC-1 model was modified using re-delineated, smaller sub-basins in order to obtain peak flows at the concentration point of interest. The peak flows for J27A and J27B within the Study Area 3 watershed were determined using the unit peak flows (cfs/sq mi) obtained from the larger Rainbow Valley ADMP sub-basin and prorating based on the sub-basin area.

4.2 Parameter Estimation

Hydrologic parameters were obtained from the Rainbow Valley ADMP Hydrology. The following sections briefly discuss the parameter estimation. For more detail refer to the Rainbow Valley ADMP.

4.2.1 Drainage Area Boundaries

The Rainbow Valley ADMP delineates the Waterman Wash into separate major basins labeled as A through J, and X. Study Areas 1 and 2 are located within Major Basin A, Study Area 3 is situated within Major Basin J, and Study Area 4 is found within Major Basin I.

Major Basin A of the Rainbow Valley ADMP is located along the west side of Waterman Wash and encompasses 64.2 square miles. The portion of Major Basin A that contributes to Study Area 1, 1S2WS31 (A56), Washes 2S2WS7A (A52), and 2S2WS7B (A51), encompasses 22.4 square miles and contains sub-

basins A04 to A56. These sub-basins are located west of Tuthill Road and South of Ray Road, and extend further south of Komatke Road. This drainage area is the largest of the four study areas. For this Study Area, Sub-basin A51 was truncated at Ryan Street, the downstream study limit of Wash 2S2WS7B (A51) and was re-named A51A in this study.

The portion of Major Basin A that contributes to Study Area 2, Wash 1S3WS24A (A60), encompasses 4.4 square miles and only contains basins A58 through A60. The north end of this sub-watershed extends to Narramore Road, and the south end extends nearly to Germann Road. The southern and western area of A60 was removed from the HEC-1 model because this area does not contribute to Wash 1S3WS24A (A60); it contributes directly to Waterman Wash. The new drainage sub-basin is re-named A60A.

Major Basin J is located east of Waterman Wash and south of the Gila River. This major basin is 36.7 square miles and is outside of the Waterman Wash watershed; it extends nearly 8-miles east of Waterman Wash. The portion of Major Basin J that contributes to Study Area 3, Wash 1S2WS18B (J37), encompasses 3.2 square miles and includes Sub-basins J27, J28, and J37. Ray Road is the basis of the upstream end of this small watershed; with J28 extending south of it and a portion of the western boundary of J27 is the ridgeline between the Waterman Wash watershed and the Gila River. J27 was divided into two additional sub-basins (J27A and J27B) and these two basins were prorated to calculate the peak flows. Sub-basin J27A was delineated at Narramore Road and J27B between Telegram Path Road and Carver Road upstream of a small tributary.

Lastly, the northwest corner of the Major Basin I watershed is located about three miles southeast of the confluence of the Gila River and Waterman Wash and contributes to Waterman Wash from the east. The total drainage area of Major Basin I is 30.3 square miles. The portion of Major Basin I that contributes to Study Area 4, Wash 1S2WS31B (I70), encompasses 6.9 square miles. Sub-basins included in this area are I51 through I57, I58A and I58B, I59, I60A, I60B and I60C, I64 through I67, and I72. This study reach along Wash 1S2WS31B (I70) extends west from Rainbow Valley Road about 1.2 miles. This is where Sub-basin I67 was truncated in the HEC-1 model and re-named I67A.

Figures 4.1 and 4.2 depict the sub-basin delineation for each of the study areas. Figure 4.1 overlays the sub-basins on aerial photos and Figure 4.2 overlays them on topographic contour lines.

4.2.2 Watershed Work Maps

Figure 4.3 shows the sub-basin boundaries overlain on top of the soil map units, according to the Gila Bend-Ajo Area, Parts of Maricopa and Pima Counties Arizona Soil Survey and Maricopa County, Arizona Central Part Soil Survey. Figure 4.4 shows the land use designation obtained from the Maricopa Association of Governments (MAG).

4.2.3 Gage Data

There are several rain gages near the watershed boundaries. Eight FCDMC operating gages are located within a distance of less than twelve miles from the watershed boundary. Figure 4.5 shows the location of the FCDMC gages. One precipitation gage FCDMC No. 6835 (installed on 9/20/2000) is located at an elevation of 865 feet and is about five and a half miles northwest of the western end of Study Area 2. The name of this gage is Buckeye Road @ SR85 and is located in Section 1, Township 1 South Range 4 West (latitude: 33°22'05.5"; longitude: 112°37'11.2").

Precipitation gage FCDMC No. 6950 (installed on 11/6/2000) is located at an elevation of 905 feet and is about eight miles due west of the southern end of Study Area 1. The name of this gage is Rainbow Wash and is located in Section 23, Township 2 South Range 4 West (latitude: 33°14'08"; longitude: 112°38'21").

Precipitation gage FCDMC No. 6840 (installed on 12/22/1994) is located at an elevation of 950 feet and is north of Ray Road within the drainage area of Study Area 3. The name of this gage is Tuthill Road @ Ray Road and is located in Section 20, Township 1 South Range 2 West (latitude: 33°19'12"; longitude: 112°28'58.6").

Precipitation gage FCDMC No. 6830 (installed on 3/18/1999) is located at an elevation of 1,020 feet and is about two and one-quarter miles due south of the east end of Study Area 4 and about three and one-quarter miles due east of Study Area 1. The name of this gage is Waterman Wash @ Rainbow Valley Road and is located in Section 14, Township 2 South Range 2 West (latitude: 33°15'42.2"; longitude: 112°26'38.5").

Precipitation gage FCDMC No. 6900 (installed on 6/23/1988) is located at an elevation of 1,600 feet and is about nine and one-half miles south of the south end of Study Area 1. The name of this gage is Upper Waterman Wash and is located in Section 12, Township 4 South Range 2 West (latitude: 33°05'57.3"; longitude: 112°26'07.5").

Precipitation gage FCDMC No. 6850 (installed on 2/28/1989) is located at an elevation of 905 feet and is about six and one-half miles northeast of the north end of Study Area 3. The name of this gage is Gila River @ Estrella Parkway and is located in Section 31, Township 1 North Range 1 West (latitude: 33°23'20.6"; longitude: 112°23'32.9").

Precipitation gage FCDMC No. 6890 (installed on 11/15/1992) is located at an elevation of 1,455 feet and is about two and one-half miles southeast of the east end of Study Area 4. The name of this gage is Estrella Fan and is located in Section 12, Township 2 South Range 1 West (latitude: 33°16'10.1"; longitude: 112°19'15.4").

Precipitation gage FCDMC No. 6880 (installed on 5/10/1983) is located at an elevation of 1,295 feet and is about eleven miles due east from Study Area 1.

The name of this gage is Waterman Wash and is located in Section 25, Township 2 South Range 1 West (latitude: 33°13'24.2"; longitude: 112°18'34.3").

4.2.4 Statistical Parameters

Statistical parameters were not considered as part of this study.

4.2.5 Precipitation

The Rainbow Valley ADMP used the NOAA Atlas 14 rainfall depths. The point rainfall depths of the 100-year 6-hour storm and 100-year 24-hour storm are 2.67 inches and 3.44 inches, respectively. The point rainfall depths were adjusted by areal reduction factors as outlined in the Rainbow Valley ADMP.

4.2.6 Physical Parameters

Rainfall Losses

The Rainbow Valley ADMP used the Green-Ampt infiltration equations within HEC-1 to estimate rainfall losses. Table 4.1 lists the map unit values that were used in the Rainbow ADMP within the study area major basins to compute the rainfall losses for the sub-basins within the Rainbow Valley watershed.

Table 4.1 Soil Characteristics for Green-Ampt Parameters

Soil ID	Description	XKSAT (in/hr)	% Impervious	% Effective
6512021	Agualt loam	0.26	0	100
6512042	Antho association	0.40	0	100
651202720	Antho gravelly sandy loam, 0 to 1 percent slopes	0.40	0	100
651202722	Antho gravelly sandy loam, 1 to 3 percent slopes	0.40	0	100
6512025	Antho sandy loam, saline-alkali	0.39	0	100
6512029	Antho-Brios sandy loams	0.39	0	100
651203222	Antho-Carrizo complex, 0 to 3 percent slopes	0.40	0	100
6512044	Antho-Valencia association	0.39	0	100
651202320	Anthosandy loam, 0 to 1 percent slopes	0.38	0	100
6512255	Brios loamy sand	1.05	0	100
6512257	Brios sandy loam	0.39	0	100
6536	Carrizo-Momoli complex, 0 to 3 percent slopes	1.17	0	100
6512435	Casa Grande loam	0.24	0	100
6512448	Cheriono-Rock outcrop complex	0.29	20	100
65310	Cipriano-Momoli complex, 1 to 7 percent slopes	1.01	0	100
651245522	Coolidge gravelly sandy loam, 1 to 3 percent slopes	0.40	0	100
6512451	Coolidge sandy loam	0.40	0	100
6512462	Coolidge-Laveen association	0.39	0	100
65314	Dateland-Cuerda complex, 0 to 3 percent slopes	0.27	0	100
65321	Denure-Rillito-Why complex, 1 to 5 percent slopes	0.70	0	100

Table 4.1 Soil Characteristics for Green-Ampt Parameters (Continued)

Soil ID	Description	XKSAT (in/hr)	% Impervious	% Effective
6512857	Estrella loam	0.25	0	100
6513220	Gachado-Rock outcrop complex	0.10	40	100
6513229	Gilman fine sandy loam	0.26	0	100
651323322	Gilman loam, 1 to 3 percent slopes	0.26	0	100
6513235	Gilman loam, saline-alkali	0.24	0	100
651323320	Gilman loan, 0 to 1 percent slopes	0.25	0	100
65132493	Gilman, Antho and Glenbar soils, severely eroded	0.19	0	100
6513244	Gilman-Antho association	0.29	0	100
6513246	Gilman-Laveen association	0.25	0	100
651326426	Gunsight-Pinal complex, 1 to 10 percent slopes	0.35	0	100
651326826	Gunsight-Rillito complex, 0 to 10 percent slopes	0.26	0	100
651326722	Gunsight-Rillito complex, 1 to 3 percent slopes	0.24	0	100
65337	Gunsight-Rillito-Carrizo complex, 1 to 15 percent slopes	0.79	0	100
651344224	Harqua-Gunsight complex, 0 to 5 percent slopes	0.14	0	100
6513444	Harqua-Laveen complex	0.15	0	100
651345522	Harqua-Rillito complex, 1 to 3 percent slopes	0.12	0	100
651422520	Laveen Loam, 0 to 1 percent slopes	0.25	0	100
6514227	Laveen loam, saline-alkali	0.25	0	100
6514421	Maripo sandy loam	0.40	0	100
6514449	Mohall sandy loam	0.39	0	100
65349	Momoli-Carrizo extremely gravelly sandy loams, 1 to 10 percent slopes	0.74	0	100
651502920	Perryville gravelly loam, 0 to 1 percent slopes	0.37	0	100
651505422	Perryville-Rillito complex, 0 to 3 percent slopes	0.28	0	100
6515058	Pinal gravelly loam	0.40	0	100
651505720	Pinal loam, 0 to 1 percent slopes	0.25	0	100
651505722	Pinal loam, 1 to 3 percent slopes	0.26	0	100
65353	Quilotosa-Momoli-Carrizo complex, 1 to 15 percent slopes	0.91	0	100
65354	Quilotosa-Rock outcrop complex, 15 to 55 percent slopes	0.86	0	100
651542320	Rillito loam, 0 to 1 percent slopes	0.26	0	100
651542322	Rillito loam, 1 to 3 percent slopes	0.25	0	100
6515456	Rock Outcrop – Cherioni complex	0.40	65	100
6515822	Torrifluvents	0.40	0	100
6515826	Torripsamments and Torrifluvents, frequently flooded	1.20	0	100
6515829	Tremant loam	0.25	0	100
651585624	Tremant-Rillito complex, 0 to 5 percent slopes	0.14	0	100
651585522	Tremant-Rillito complex, 1 to 3 percent slopes	0.13	0	100
6516221	Valencia sandy loam	0.39	0	100

The Rainbow Valley ADMP used a modified Maricopa Association of Governments (MAG) Land Use. The values used for surface retention loss values, percent impervious, and vegetation cover are shown in Table 4.2 for the Rainbow Valley ADMP watershed for the study areas.

Table 4.2 Land Use Characteristics for Green-Ampt Parameters

Land Use Description	Initial Abstraction (in)	% Impervious	% Vegetation	Soil Condition
Active Open Space	0.10	5	90	Normal
Agriculture	0.50	0	85	Normal
Commercial Low – Amusement/Movie Theater	0.10	80	75	Normal
Developing Residential	0.25	45	50	Normal
Educational/Religious	0.35	45	80	Normal
Industrial	0.15	55	60	Normal
Other Employment – Landfill/Proving Grounds/Sand	0.10	80	75	Normal
Passive/Restricted Open Space	0.35	0	25	Dry
Public/Special Event/Military	0.10	80	75	Normal
Religious	0.35	80	75	Normal
Single Family High Density – Greater than 4 du/ac	0.25	45	50	Normal
Single Family Low Density - Less than 1 du/ac	0.30	5	20	Normal
Single Family Medium Density – 1 to 4 du/ac	0.25	30	50	Normal
Vacant	0.35	0	25	Dry
Water	0	0	0	Wet

The Green-Ampt rainfall loss parameters from the modified Rainbow Valley ADMP drainage sub-basins can be found in Table 4.3.

Table 4.3 Green-Ampt Parameters

Study Area	SUB-BASIN	IA (in)	DTHETA	PSIF	XKSAT (in/hr)	RTIMP (%)
1	A04	0.35	0.35	2.80	1.05	0
	A05	0.35	0.35	3.01	0.90	0
	A06	0.35	0.35	2.91	0.97	0
	A07	0.35	0.35	2.86	1.00	0
	A08	0.35	0.35	3.17	0.81	0
	A09	0.35	0.35	2.94	0.95	0
	A20	0.35	0.36	5.00	0.27	0
	A21	0.35	0.35	4.60	0.33	0
	A22	0.35	0.35	3.71	0.55	0
	A23	0.35	0.35	3.11	0.84	0
	A24	0.35	0.35	3.17	0.81	0
	A25	0.35	0.35	3.19	0.79	0
	A26	0.35	0.35	3.74	0.54	0
	A27	0.35	0.35	3.60	0.58	0

Table 4.3 Green-Ampt Parameters (Continued)

Study Area	SUB-BASIN	IA (in)	DTHETA	PSIF	XKSAT (in/hr)	RTIMP (%)
	A28	0.35	0.35	3.45	0.65	0
	A29	0.35	0.35	3.09	0.85	0
	A30	0.35	0.35	3.88	0.49	0
	A31	0.34	0.37	5.60	0.21	0
	A32	0.35	0.39	5.70	0.20	0
	A51	0.34	0.34	4.70	0.31	0
	A51A*	0.35	0.35	5.10	0.26	0
	A52	0.35	0.35	4.60	0.33	0
	A53	0.35	0.35	3.07	0.86	0
	A54	0.35	0.35	3.33	0.71	19
	A55	0.35	0.35	3.67	0.56	1
	A56	0.35	0.35	4.45	0.37	13
2	A58	0.35	0.35	4.00	0.46	23
	A59	0.35	0.35	4.35	0.39	26
	A60	0.34	0.34	4.45	0.37	17
	A60A*	0.33	0.33	4.40	0.38	17
3	J27	0.30	0.27	4.80	0.30	12
	J28	0.32	0.31	4.70	0.31	10
	J37	0.33	0.31	4.60	0.33	5
4	I51	0.25	0.31	4.30	0.50	0
	I52	0.13	0.26	4.10	0.68	3
	I53	0.15	0.27	4.25	0.61	0
	I54	0.11	0.25	4.00	0.73	0
	I55	0.30	0.33	4.10	0.50	0
	I56	0.27	0.32	4.10	0.53	0
	I57	0.35	0.35	4.70	0.30	23
	I58A	0.35	0.39	6.20	0.16	27
	I58B	0.35	0.35	4.35	0.39	9
	I59	0.35	0.39	5.70	0.20	23
	I60A	0.31	0.32	5.00	0.29	27
	I60B	0.35	0.37	6.60	0.14	40
	I60C	0.35	0.35	4.30	0.40	0
	I64	0.31	0.3	6.60	0.15	32
	I65	0.34	0.36	5.20	0.25	7
	I66	0.34	0.38	5.70	0.20	25
	I67	0.35	0.36	5.10	0.26	14
	I67A*	0.35	0.36	5.00	0.27	14
	I72	0.35	0.35	4.50	0.35	12

*Sub-basins modified for the Rainbow Valley ADMP Areas 1, 2, 3, and 4 FDS.

Unit Hydrograph Procedure

The Rainbow Valley ADMP used the S-graph method to compute the unit hydrographs. The lag time, velocity, and Kn values for the basins as part of this study are listed in Table 4.4.

Table 4.4 Sub-Basin Time of Concentration Parameters

Study Area	SUB-BASIN	L (mi)	Slope (ft/mi)	Lca (mi)	Lag (min)	Velocity (ft/s)	Kn
1	A04	2.26	337.5	0.76	17.6	11.34	0.03
	A05	3.18	188.7	1.55	29.3	9.56	0.03
	A06	3.46	208.1	1.91	32.1	9.48	0.03
	A07	2.10	193.6	1.12	22.0	8.40	0.03
	A08	4.24	64.2	2.52	48.2	7.74	0.03
	A09	2.57	105.6	1.37	28.7	7.86	0.03
	A20	1.79	43.6	0.86	24.8	6.34	0.03
	A21	2.88	53.1	1.41	34.6	7.33	0.03
	A22	3.76	54.5	2.11	44.4	7.45	0.03
	A23	2.24	72.6	1.18	27.7	7.13	0.03
	A24	3.44	54.6	1.64	39.0	7.77	0.03
	A25	1.64	50.1	0.82	23.0	6.27	0.03
	A26	1.97	47.6	0.99	26.7	6.49	0.03
	A27	3.02	42.7	1.24	35.0	7.60	0.03
	A28	1.57	40.2	0.57	20.5	6.73	0.03
	A29	2.52	37.3	1.10	32.0	6.93	0.03
	A30	3.30	40.6	1.58	40.0	7.25	0.03
	A31	2.98	45.3	1.52	38.4	6.83	0.03
	A32	3.52	36.9	1.51	41.1	7.54	0.03
	A51	4.97	34.0	2.21	54.9	7.96	0.03
	A51A*	2.50	38.8	1.33	35.2	6.26	0.03
	A52	1.23	30.2	0.49	18.6	5.79	0.03
	A53	2.18	32.2	1.20	32.2	5.95	0.03
	A54	1.44	76.6	1.11	22.6	5.59	0.03
	A55	1.51	35.1	0.70	23.2	5.74	0.03
	A56	2.92	61.7	1.33	33.0	7.77	0.03
2	A58	3.85	105.3	2.12	39.6	8.55	0.03
	A59	2.57	216.2	1.51	26.0	8.68	0.03
	A60	2.65	149.2	1.19	26.7	8.74	0.03
	A60A*	2.65	149.2	1.04	25.3	9.19	0.03
3	J27	2.28	38.6	1.09	42.7	4.70	0.04
	J28	2.78	165.8	1.70	33.5	7.31	0.03

Table 4.4 Sub-Basin Time of Concentration Parameters (Continued)

Study Area	SUB-BASIN	L (mi)	Slope (ft/mi)	Lca (mi)	Lag (min)	Velocity (ft/s)	Kn
	J37	2.67	48.6	0.81	34.2	6.89	0.04
4	I51	1.46	242.6	0.57	12.3	10.44	0.03
	I52	1.67	398.2	0.57	9.5	15.42	0.02
	I53	2.16	185.4	0.83	14.7	12.96	0.02
	I54	0.97	85.6	0.47	9.2	9.30	0.02
	I55	1.06	58.6	0.52	14.8	6.28	0.03
	I56	1.02	59.9	0.49	13.7	6.53	0.03
	I57	0.61	46.1	0.31	11.1	4.84	0.03
	I58A	0.61	55.7	0.35	11.2	4.80	0.03
	I58B	1.54	43.5	0.79	22.7	5.96	0.03
	I59	0.58	281.8	0.42	8.7	5.91	0.03
	I60A	1.75	30.9	0.84	22.6	6.81	0.03
	I60B	0.38	391.5	0.29	6.0	5.55	0.03
	I60C	1.14	38.6	0.55	18.1	5.55	0.03
	I64	0.81	49.1	0.41	11.8	6.08	0.03
	I65	1.14	44.1	0.48	16.1	6.19	0.03
	I66	1.81	117.4	0.97	20.9	7.63	0.03
	I67	1.94	174.9	0.81	19.2	8.89	0.03
	I67A*	1.64	203.8	1.06	19.4	7.43	0.03
	I72	0.81	86.0	0.30	10.8	6.60	0.03

* Sub-basins modified for the Rainbow Valley ADMP Areas 1, 2, 3, and 4 FDS.

Channel Routing

The normal depth channel routing is used to route runoff hydrographs through sub-basins. The routing reach length, slope, and Manning's *n* values for the sub-basins for each study area are shown in Table 4.5.

Table 4.5 Channel Routing Summary

Study Area	Reach	Reach Length (ft)	Slope (ft/ft)	LOB *n* value	Channel *n* value	ROB *n* value
1	RCPA04	8,731	0.0128	0.050	0.045	0.050
	RCPA05	9,404	0.0089	0.050	0.045	0.050
	RCPA06	10,764	0.0089	0.050	0.045	0.050
	RCPA07	11,510	0.0097	0.050	0.045	0.050
	RCPA08	3,836	0.0089	0.050	0.045	0.050
	RCPA09	4,721	0.0068	0.050	0.045	0.050
	RCPA20	23,127	0.0061	0.050	0.045	0.050
	RCPA20*	10,102	0.0067	0.050	0.045	0.050
	RCPA21	5,790	0.0083	0.050	0.045	0.050
	RCPA22	1,522	0.0079	0.050	0.045	0.050
	RCPA23	9,082	0.0087	0.050	0.045	0.050
	RCPA24	8,429	0.0069	0.050	0.045	0.050
	RCPA25	3,353	0.0089	0.050	0.045	0.050
	RCPA26	7,992	0.0079	0.050	0.045	0.050
	RCPA27	4,127	0.0041	0.050	0.045	0.050
	RCPA28	2,223	0.0074	0.050	0.045	0.050
	RCPA30	3,039	0.0046	0.050	0.045	0.050
	RCPA31	7,801	0.0067	0.050	0.045	0.050
	RCPA32	1,533	0.0052	0.050	0.045	0.050
	RCPA52	1,963	0.0051	0.050	0.045	0.050
	RCPA54	3,855	0.0052	0.050	0.045	0.050
	RCPA55	9,154	0.0048	0.050	0.045	0.050
	RDA04	15,251	0.0121	0.050	0.045	0.050
	RDA07	16,606	0.0099	0.050	0.045	0.050
	RDA20	11,360	0.0070	0.050	0.045	0.050
	RDA21	17,399	0.0074	0.050	0.045	0.050
2	RCPA59	6,336	0.0096	0.050	0.045	0.050
3	RCPJ27	1,992	0.0065	0.050	0.045	0.050
4	RCI58A	1,040	0.0058	0.050	0.045	0.050
	RCI58B	3,103	0.0071	0.050	0.045	0.050
	RCI60A	2,269	0.0031	0.050	0.045	0.050
	RCI60B	9,401	0.0074	0.050	0.045	0.050
	RCPI51	4,034	0.0134	0.050	0.045	0.050
	RCPI52	5,121	0.0162	0.050	0.045	0.050
	RCPI53	5,589	0.0107	0.050	0.045	0.050
	RCPI54	5,373	0.0114	0.050	0.045	0.050
	RCPI55	3,210	0.0093	0.050	0.045	0.050
	RCPI56	11,740	0.0080	0.050	0.045	0.050
	RCPI57	2,914	0.0086	0.050	0.045	0.050

Table 4.5 Channel Routing Summary (Continued)

Study Area	Reach	Reach Length (ft)	Slope (ft/ft)	LOB *n* value	Channel *n* value	ROB *n* value
	RCPI59	9,289	0.0058	0.050	0.045	0.050
	RCPI64	3,559	0.0062	0.050	0.045	0.050
	RCPI66	5,800	0.0040	0.050	0.045	0.050
	RCPI66*	4,240	0.0038	0.050	0.045	0.050
	RCPI72	5,793	0.0074	0.050	0.045	0.050

* Routing reaches modified for the Rainbow Valley ADMP Areas 1, 2, 3, and 4 FDS.

4.3 Problems Encountered During the Study

4.3.1 Special Problems and Solutions

None were encountered.

4.3.2 Modeling Warning and Error Messages

The following warning appeared:

> *MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN (VALUE) TO (VALUE).*

The Rainbow Valley ADMP examined the hydrographs where this error occurred. According to their analysis, no instability was determined and therefore this error was ignored.

4.4 Calibration

According to the Rainbow Valley *ADMP*, the existing condition results were calibrated with the estimated discharge from regional regression, the Cella-Barr HEC-1 model, the EEC HEC-1 model, stream gage data for Waterman Wash, and the revised HEC-1 created for that study.

4.5 Final Results

4.5.1 Hydrologic Analysis Results

The peak discharge results associated with the study areas are shown in Table 4.6. The higher peak flow between the 100-year 6-hour and 100-year 24-hour storms are to be used for the floodplain delineation. The 100-year 24-hour storm was the governing storm that produced the higher peak flows for Study Areas 1, 2, and 4. The 100-year 6-hour produced higher peak flows for Sub-basins J27 and J28 of Study Area 3.

Table 4.6 Sub-basin Hydrologic Analysis Results

Study Area	Drainage ID	Area (sq mi)	100-YR Peak Discharge (cfs)		Unit Peak (cfs/sq mi)	
			6-Hr	24-Hr	6-Hr	24-Hr
1	CPA20	1.748	303	321	173	184
	CPA21	2.515	602	728	239	289
	CPA32	3.071	707	844	230	275
	CPA32A	2.533	741	845	293	334
	CPA51A	3.055	621	738	203	242
	A51A	0.540	-	405	-	750
	CP51A*	2.109	-	401	-	190
	CPA52	13.757	659	1,676	48	122
	CPA55	16.623	695	2,051	42	123
	CPA56	18.462	707	1,797	38	97
2	CPA59	3.386	1,999	2,454	590	725
	CPA60	5.054	2,241	2,712	443	537
	CPA60A*	4.344	-	2,265	-	521
3	J27	1.417	1,083	1,015	764	716
	J28	0.950	855	753	900	793
	CPJ37	3.180	1,926	2,222	606	699
4	CPI60A	5.120	1,472	2,001	288	391
	CPI66	6.027	1,829	2,290	303	380
	CPI67	7.461	1,293	1,888	173	253
	CPI67A*	6.862	-	1,713	-	250

* Modified for the Rainbow Valley ADMP Areas 1, 2, 3, and 4 FDS.

Table 4.7 shows the results for the two prorated basins within Sub-basin J27. The discharges used for the floodplain delineation are shown in Table 4.8.

Table 4.7 Prorated Basin Results

Study Area	Drainage ID	Area (sq mi)	Calculated Peak Flow (cfs)	
			6-Hr	24-Hr
3	J27A	0.544	416	390
3	J27B	1.003	766	718

Table 4.8 Discharges Used for Floodplain Delineation

Study Area	Wash	Description	Upstream Cross Section	Downstream Cross Section	100-Year Flow (cfs)
1	2S2WS7B (A51)	East Fork Downstream of Flow Split	1.894	0.006	405
	2S2WS7A (A52)	West Fork Downstream of Flow Split	2.421	0.019	845
	1S2WS31 (A56)	Upstream of 2S2WS7A (A52) Confluence	2.619	2.142	1,217
	1S2WS31 (A56)	Downstream of 2S2WS7A (A52) Confluence	2.123	0.055	2,051
2	1S3WS24A (A60)	Entire Reach	1.042	0.043	2,454
3	1S2WS18A (J27)	West Fork, Upstream of Narramore Rd	1.231	0.693	416
	1S2WS18A (J27)	West Fork, Downstream of Narramore Rd	0.524	0.189	766
	1S2WS18A (J27)	West Fork, Near Confluence with 1S2WS18B (J37)	0.104	0.011	1,083
	1S2WS18B (J37)	East Fork, Upstream of Carver Rd	1.705	1.038	855
	1S2WS18B (J37)	Downstream of Carver Rd	1.012	0.363	2,222
4	1S2WS31B (I70)	Downstream of Rainbow Valley Rd	1.218	0.205	2,290
	1S2WS31B (I70)	Near Confluence with T1SR2WS32A (I63)	0.130	0.000	1,888

4.5.2 Verification of Results

The verification of results was performed using three indirect methods. Indirect Method No. 1 makes a comparison between seven envelope curves of maximum observed flood discharges. The twenty point values as shown in Table 4.6 from the Rainbow Valley ADMP Study Areas 1-4 were lower than all seven envelope curves (Refer to the graphs located in Appendix D.6). Indirect Method No. 2

compares USGS data for Arizona. The twenty point values from the Rainbow Valley ADMP Study Areas 1-4 are located near the Log Pierson Type 3 Curve and within the 75% Tolerance Limits. Indirect Method No. 3 compares USGS Regional Regression Equations. The watershed for Rainbow Valley Study Areas 1, 2, 3, and 4 are located within the Central Arizona Region (R13). This regional regression equation computes the 100-year discharge by relating the 100-year peak discharge with drainage area where AREA is the drainage area in square miles.

Regional Regression Equation for Central Arizona Region (R13)

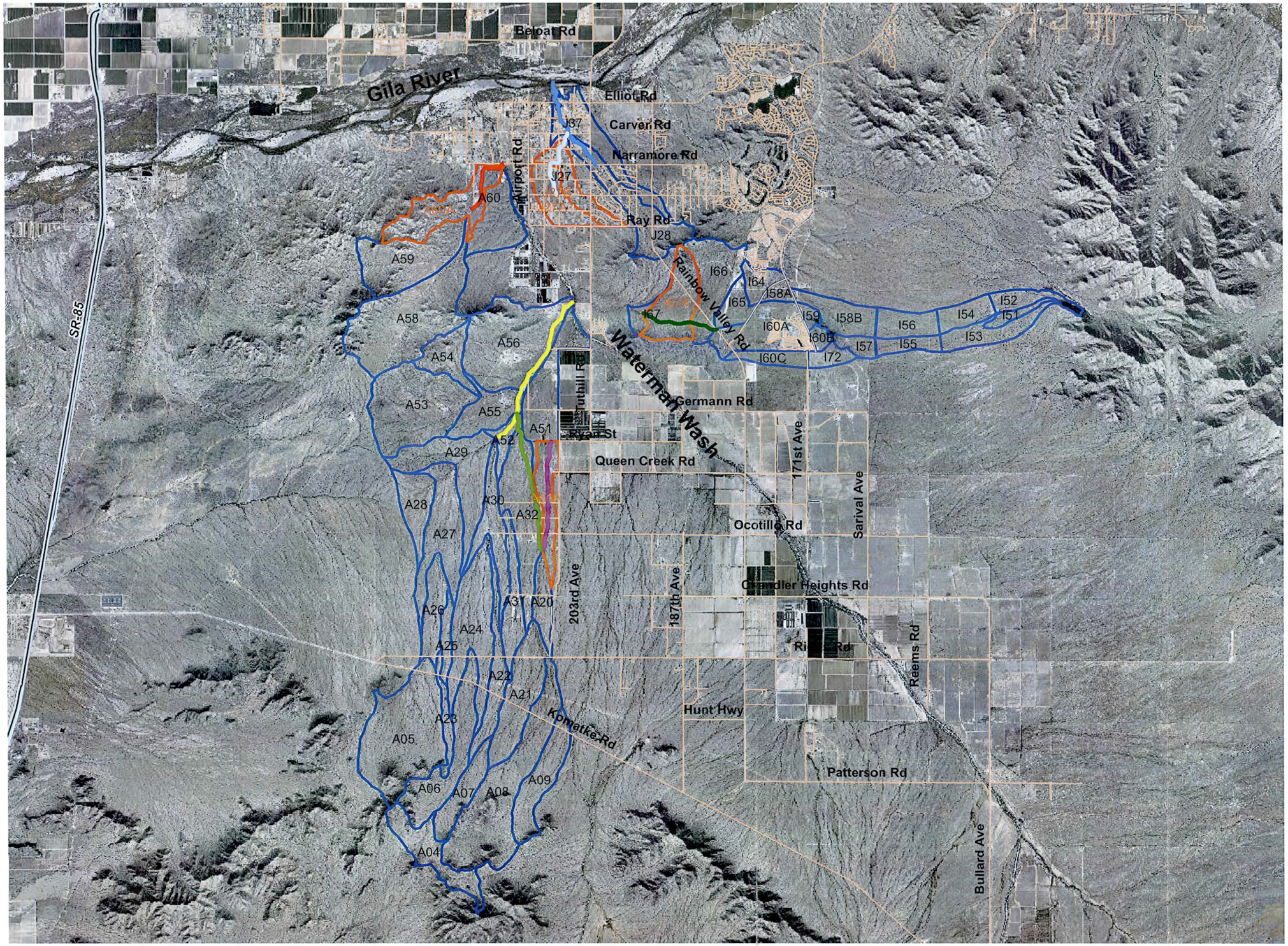
$$Q_{100} = 10^{(5.52-2.42\,AREA^{-0.12})}$$

As can be seen in Table 4.9, the comparison shows the results from this study are lower than the USGS regional regression equation. It should be mentioned that the results of the Rainbow Valley ADMP Study Areas 1, 2, 3, and 4 should be more accurate than those using the regression equation because the study was more detailed.

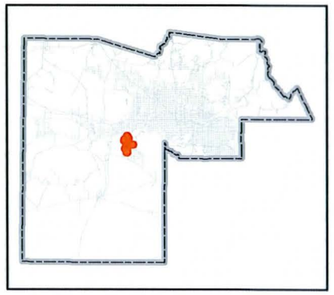
Table 4.9 USGS Regional Regression Peak Discharge Comparison (Indirect Method No. 3)

Study Area	Drainage ID	Area (sq mi)	100-YR Peak Discharge (cfs)		USGS Regional Regression Equation (R13) 100-YR
			6-HR	24-HR	
1	CPA20	1.748	303	321	1,807
	CPA21	2.515	602	728	2,257
	CPA32	3.071	707	844	2,540
	CPA32A	2.533	741	845	2,267
	CPA51A	3.055	621	738	2,532
	A51A*	0.540	-	405	821
	CP51A*	2.109	-	401	2,029
	CPA52	13.757	659	1,676	5,665
	CPA55	16.623	695	2,051	6,207
	CPA56	18.462	707	1,797	6,523
2	CPA59	3.386	1,999	2,454	2,688
	CPA60	5.054	2,241	2,712	3,370
	CPA60A*	4.344	-	2,265	3,098
3	J27	1.417	1,083	1,015	1,582
	J28	0.950	855	753	1,216
	CPJ37	3.180	1,926	2,222	2,592
4	CPI60A	5.120	1,472	2,001	3,394
	CPI66	6.027	1,829	2,290	3,709
	CPI67	7.461	1,293	1,888	4,155
	CPI67A*	6.862	-	1,713	3,975

* Modified for the Rainbow Valley ADMP Areas 1, 2, 3, and 4 FDS.



Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4
Floodplain Delineation Study

Legend

- Wash 1S2WS18A (J27)
- Wash 1S2WS18B (J37)
- Wash 1S2WS31 (A56)
- Wash 1S2WS31B (I70)
- Wash 1S3WS24A (A60)
- Wash 2S2WS7A (A52)
- Wash 2S2WS7B (A51)
- Streets
- Prorated Basins
- RVADMP Sub-basins

0 2,0004,000 8,000 Feet

1 inch = 8,000 feet

Sub-basin Boundaries W/ Aerial

RBF CONSULTING
PLANNING ▪ DESIGN ▪ CONSTRUCTION
2929 NORTH CENTRAL AVENUE, SUITE 800
PHOENIX, ARIZONA 85012-2794
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FIGURE 4.1

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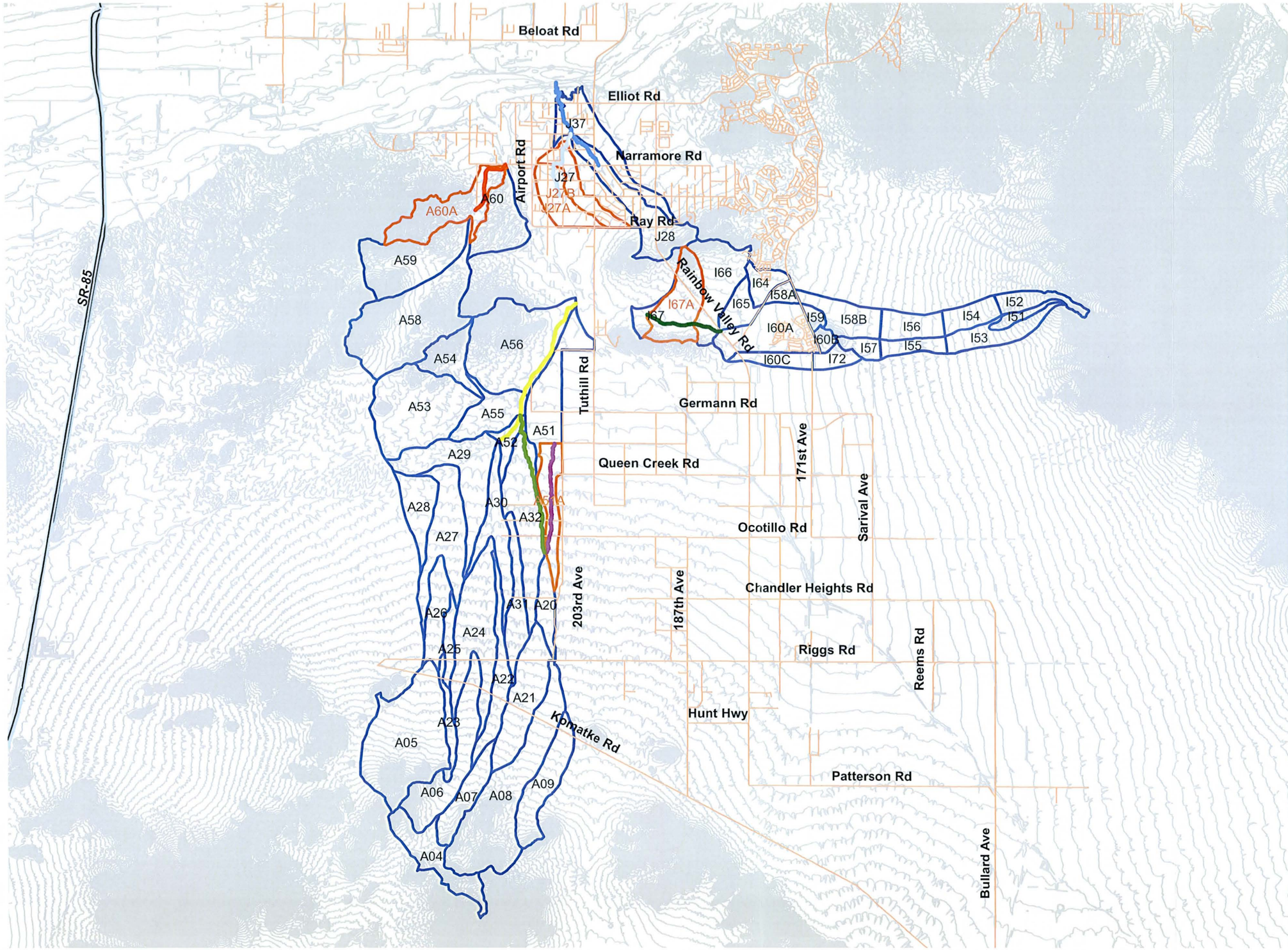
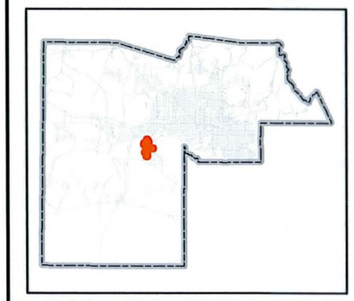


Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4
Floodplain Delineation Study

Legend

- Wash 1S2WS18A (J27)
- Wash 1S2WS18B (J37)
- Wash 1S2WS31 (A56)
- Wash 1S2WS31B (I70)
- Wash 1S3WS24A (A60)
- Wash 2S2WS7A (A52)
- Wash 2S2WS7B (A51)
- Streets
- Prorated Basins
- RVADMP Sub-basins
- Contours

0 2,0004,000 8,000 Feet

1 inch = 8,000 feet

Sub-basin Boundaries W/ Topo

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FIGURE 4.2

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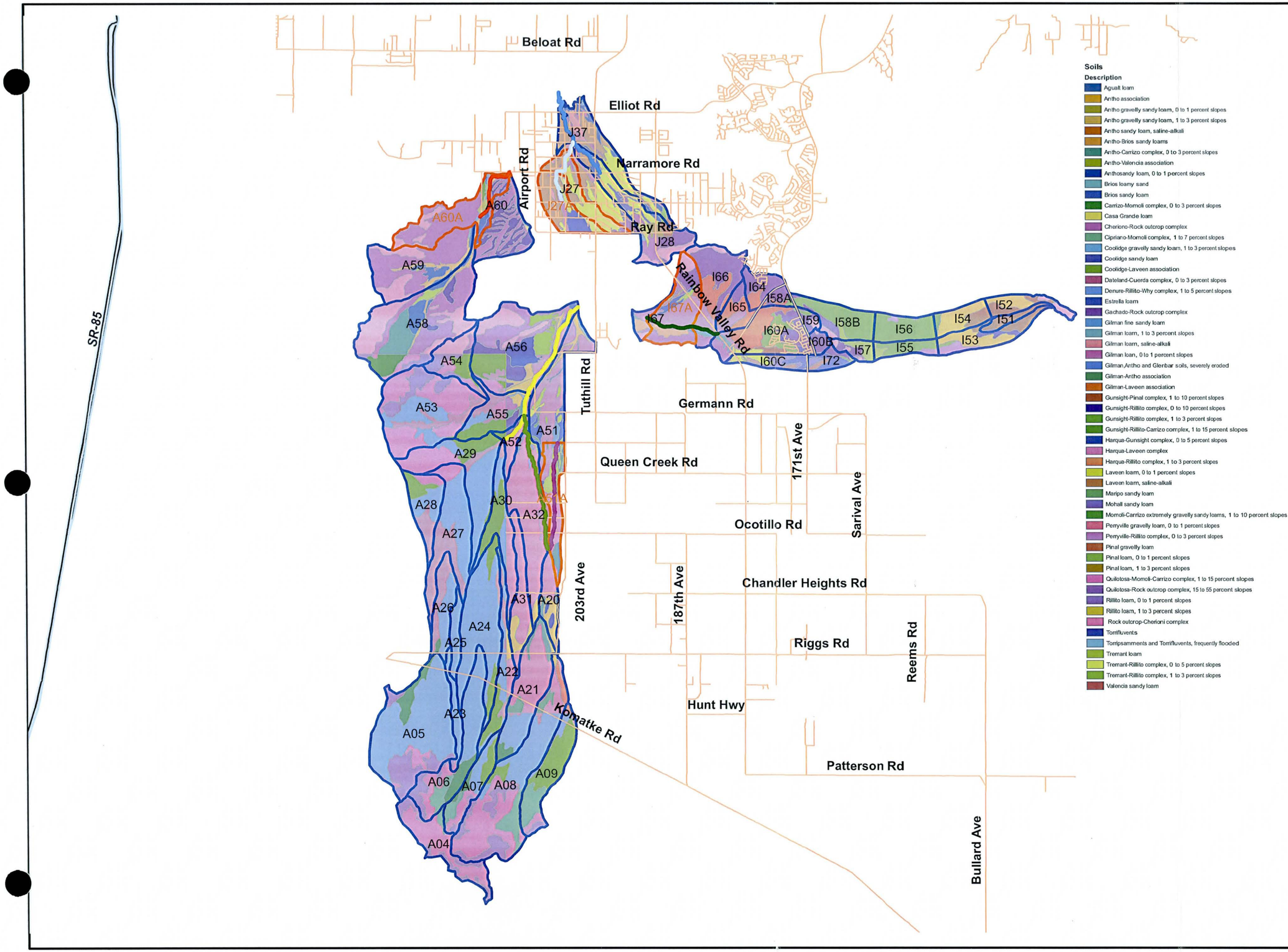
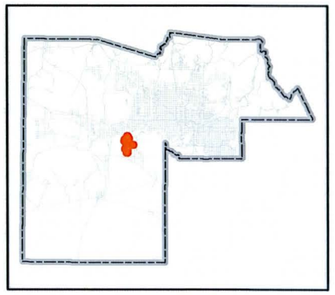


Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4 Floodplain Delineation Study

Legend

- Wash 1S2WS18A (J27)
- Wash 1S2WS18B (J37)
- Wash 1S2WS31 (A56)
- Wash 1S2WS31B (I70)
- Wash 1S3WS24A (A60)
- Wash 2S2WS7A (A52)
- Wash 2S2WS7B (A51)
- Streets
- Prorated Basins
- RVADMP Sub-basins

0 2,0004,000 8,000 Feet

1 inch = 8,000 feet

Sub-basin Boundaries W/ Soils

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FIGURE 4.3

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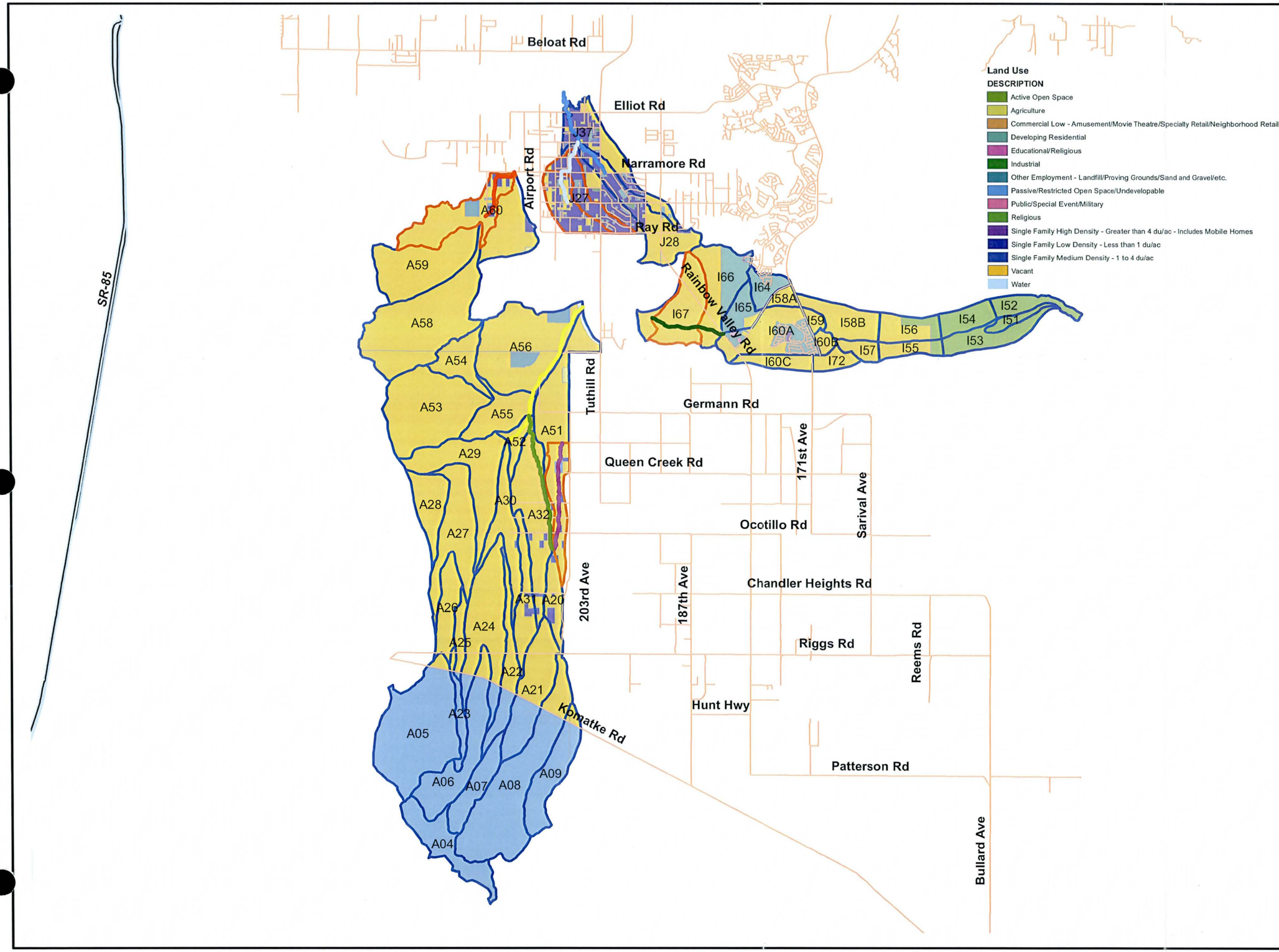
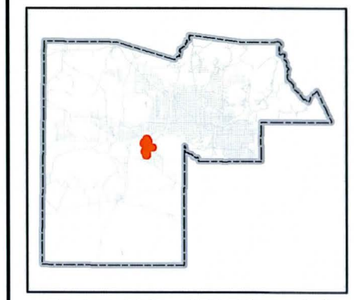


Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4 Floodplain Delineation Study

Legend

- Wash 1S2WS18A (J27)
- Wash 1S2WS18B (J37)
- Wash 1S2WS31 (A56)
- Wash 1S2WS31B (I70)
- Wash 1S3WS24A (A60)
- Wash 2S2WS7A (A52)
- Wash 2S2WS7B (A51)
- Streets
- Prorated Basins
- RVADMP Sub-basins

0 2,0004,000 8,000 Feet

1 inch = 8,000 feet

Sub-basin Boundaries W/ Land Use

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FIGURE 4.4

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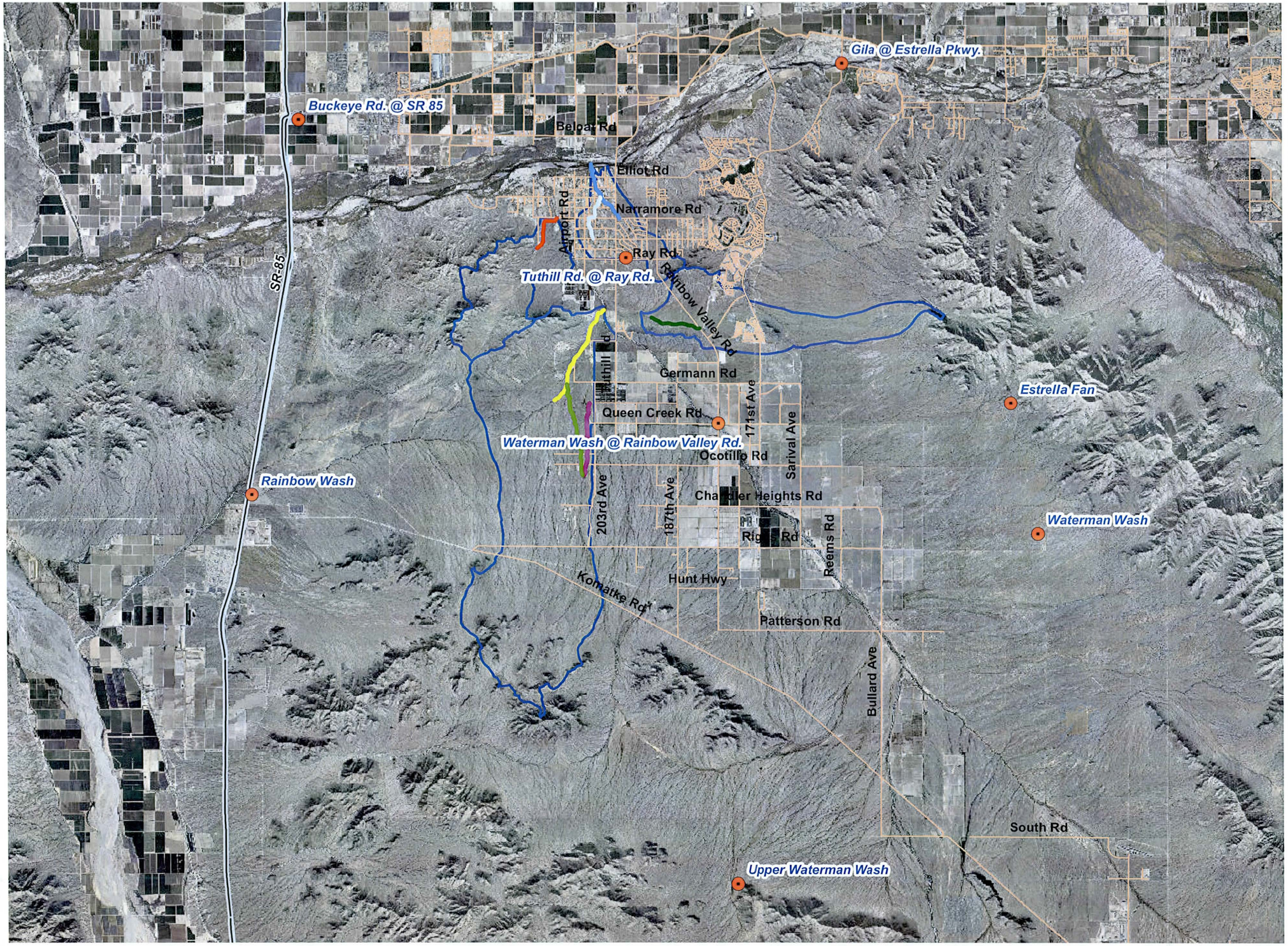
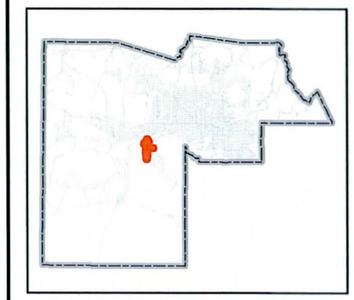


Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4
Floodplain Delineation Study

Legend

- Rain Gages
- Wash 1S2WS18A (J27)
- Wash 1S2WS18B (J37)
- Wash 1S2WS31 (A56)
- Wash 1S2WS31B (I70)
- Wash 1S3WS24A (A60)
- Wash 2S2WS7A (A52)
- Wash 2S2WS7B (A51)
- Streets
- Study Area Watersheds

0 3,0006,000 12,000 Feet

1 inch = 12,000 feet

Rain Gage Locations

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FIGURE 4.5

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Section 5 Hydraulics

5.1. Method Description

The purpose of this study is to delineate limited detail Zone AE 100-year floodplains (no floodway) for Study Area 1 and Study Area 3 and detailed Zone AE floodplains (with floodway) for Study Areas 2 and 4. Study Area 1 includes Wash 1S2WS31 (A56), Wash 2S2WS7A (A52), and Wash 2S2WS7B (A51). Study Area 2 is Wash 1S3WS24A (A60). Study Area 3 includes Wash 1S2WS18A (J27) and 1S2WS18B (J37). Study Area 4 is Wash 1S2WS31B (I70).

The study upgrades existing Zone A floodplains delineated by EEC as part of the Waterman Wash and Tributaries Floodplain Delineation Study (March 2006), Contract FCD 2002C024. The study floodplains and floodways tie into the redelineated Waterman Wash, Wash 1S2WS32A (I63), and 2S2WS7B (A51), which were recently completed by URS in the Rainbow Valley Area Drainage Master Plan (February 2012), Contract FCD 2006C029, or the Gila River.

The U.S. Army Corps of Engineers Hydrologic Engineering Center River Analysis System (HEC-RAS) version 4.1.0 dated January 2010 was used to create the hydraulic model and floodplain / floodway delineation for this study. There is one HEC-RAS model for each study area. Cross sections were created from the existing elevation data provided by the FCDMC.

The name for each wash was obtained from the RVADMP to maintain consistency. The name is based on the location (Township, Range, and Section) of the wash discharge point and the drainage basin associated with the wash.

The floodplain delineation used the larger flow between the 100-year 6-hour and 100-year 24-hour storm. In most cases, the 100-year 24-hour storm event produced the higher peak flows except for J27 and J37 upstream of Carver Road.

According to Appendix C of FEMA's Guidelines and Specifications for Flood Hazard Mapping Partners, starting water-surface elevations for tributaries should be based on normal depth (i.e., slope-area method) unless a coincident peak situation is assumed, or the tributary flow depths are higher than the corresponding main stream events. Table 5.1 describes the three conditions that must be met to assume coincident peaks. The downstream boundary condition for most of the washes used normal depth instead of the known water surface elevation. The exception is Wash 1S2WS31B (I70) which used a known water surface elevation of 971.33 from Wash 1S2WS32A (I63).

Table 5.1 Coincident Peak Criteria

Reach	Drainage Area (sq mi)	Drainage Area Ratio	Does the ratio fall between 0.6 and 1.4?	Are times of concentration similar?	Is the likelihood of both watersheds being covered by the same storm high?
1S2WS31 (A56)	18.46	0.05	No	No	No
Waterman Wash	388.64	No criteria met – model using normal depth			
2S2WS7A (A52)	3.07	0.29	No	Yes	Yes
1S2WS31 (A56)	10.69	Not all criteria met – model using normal depth			
1S3WS24A (A60)	4.35	0.01	No	No	No
Waterman Wash	414.97	No criteria met – model using normal depth			
1S2WS18B (J37)	0.95	0.67	Yes	Yes	Yes
1S2WS18A (J27)	1.42	All criteria met – model with junction			
1S2WS18B (J37)	3.18	0.00	No	No	No
Gila River	41,000	No criteria met – model using normal depth			
1S2WS31B (I70)	6.86	0.92	Yes	Yes	Yes
1S2WS32A (I63)	7.46	All criteria met – model using known water surface elevation			

5.2. Work Study Maps

Work Study Maps that show the floodplain and floodway delineations have been prepared at a scale of 1 inch = 200 feet, according to FEMA standards using the 2 foot contour interval topographic mapping. A cover sheet shows the location of the study area. Each Work Study Map shows the floodplain baseline, zone boundaries, and cross sections used in the delineation.

5.3. Parameter Estimation

5.3.1. Roughness Coefficients

Washes 1S2WS31 (A56), 2S2WS7A (A52), 2S2WS7B (A51), 1S3WS24A (A60), 1S2WS18A (J27), 1S2WS18B (J37) and 1S2WS31B (I70) are desert washes. The procedure used to determine the Manning's "n" value roughness coefficients is outlined in the USGS publication "Selection of Manning's Roughness Coefficients for Natural and Constructed Vegetated and Non-Vegetated Channels and Vegetation Maintenance Plan Guidelines for Vegetated Channels in Central Arizona" (2006). Based on field observations, the Manning's roughness coefficients were fairly similar for each wash channel and overbanks. A list of the roughness coefficients for each wash, photos of each wash, and a description of how the roughness coefficients were obtained is provided in Appendix E.1

5.3.2. Expansion and Contraction Coefficients

The expansion and contraction coefficients used in the HEC-RAS models are 0.1 and 0.3, respectively except at culverts. There is one culvert included in the

Study Area 3 model at Elliot Road. The cross sections associated with this culvert use expansion and contraction coefficients of 0.3 and 0.5, respectively.

5.4. Cross Section Description

Cross sections were located at approximately 500 ft intervals along the washes. Additionally, cross sections were located near confluences and at particular areas of interest including future road crossings. The cross sections are oriented left to right looking downstream. The intersection of the cross section and floodplain baseline is set to station 10,000. A plot of each cross section is provided in Appendix E.2.

5.5. Modeling Considerations

There is one culvert crossing on Wash 1S2WS18B (J37) at Elliot Road. This crossing includes four pipe culverts with a headwall. Two of the pipes are 54 inch reinforced concrete pipes, one is a 54 inch corrugated metal pipe, and the other is a 60 inch corrugated metal pipe. All associated dimensions and elevations were obtained from the field survey collected May 10, 2012. From inspection during the field investigation, these culverts are at different invert elevations and there is debris collected at the upstream culvert entrance. HEC-RAS results indicate that the culverts and Elliot Road are overtopped during the 100-year storm event.

There are many locations within each study area that show divided flow conditions creating islands of higher ground. The elevation difference between the island and the adjacent water surface elevation at the majority of these locations are shallow and include relatively small areas. Therefore, these island areas were shown as floodplain.

The ineffective flow option was used in a couple of locations for all study areas. Reasons for using ineffective flow include: to avoid double counting the conveyance area, to exclude areas beyond the expansion and contraction limits as effective, to avoid including areas not effectively conveying flow downstream such as tributary back water areas, and at culverts.

5.6. Floodway Modeling

Floodways have been modeled for Wash 1S3WS24A (A60) in Study Area 2 and Wash 1S2WS31B (I70) in Study Area 4. The floodways were determined using the equal conveyance reduction methodology with a 1-foot target for the rise in water surface elevations. Wash 1S3WS24A (A60) floodway limits defaulted to the bank stations for the majority of the cross sections. A two foot buffer beyond each bank station was added to the final floodway delineation to provide additional conveyance area. Wash 1S2WS31B (I70) had only a few cross

sections default to the bank station and several cross sections did reach the target of 1-foot of rise.

5.7. Problems Encountered During the Study

One issue was encountered in Study Area 2 on Wash 1S3WS24A (A60) in the vicinity of Cross Section 0.277. This cross section showed containment within the main channel. However, the upstream cross section 0.373 shows water spread into the right overbank area that is connected to the righ overbank area of Cross Section 0.277. To rectify this disconnect between the two cross sections, the right overbank area of Cross Section 0.277 was delineated as a Zone A floodplain.

5.8. Calibration

Calibration was not performed as part of this study due to a lack of gages on the delineated washes.

5.9. Final Results

Refer to the floodplain maps located in the Appendix.

Section 6 Erosion and Sediment Transport

Erosion and sediment transport were not considered in this study.

Section 7 Draft FIS Report Data

7.1. Summary of Discharges

A summary of discharges is shown in Table 7.1 below. Please note that the drainage area corresponds to the location indicated and may be different than the concentration point area. For example, CPA55 is located upstream of the confluence with Waterman Wash but the drainage area at the confluence is shown.

Table 7.1 Summary of Discharges

Flood Source and Location	Concentration Point	Drainage Area (sq. mi.)	10-year	50-year	100-year	500-year
Wash 1S2WS31 (A56)						
At confluence with Waterman Wash	CPA55	18.46	411	--[1]	2,051	--[1]
At 0.51 miles upstream of the confluence with Wash 2S2WS7A (A52)	CPA30	10.47	190	--[1]	1,217	--[1]
Wash 2S2WS7A (A52)						
At confluence with Wash 1S2WS31 (A56)	CPA32A	3.07	331	--[1]	845	--[1]
Wash 2S2WS7B (A51)						
At Ryan Street	A51A	2.11	--[1]	--[1]	405	--[1]
Wash 1S3WS24A (A60)						
At confluence with Waterman Wash	CPA59	4.35	1,032	--[1]	2,454	--[1]
Wash 1S2WS18A (J27)						
At Carver Road, confluence with Wash 1S2WS18B (J37)	J27	1.42	452	--[1]	1,083	--[1]
At 0.15 miles upstream of the confluence with Wash 1S2WS18B (J37)	J27B	1.00	--[1]	--[1]	766	--[1]
At Narramore Road	J27A	0.54	--[1]	--[1]	416	--[1]
Wash 1S2WS18B (J37)						
At confluence with Gila River	CPJ37	3.18	908	--[1]	2,222	--[1]
At Carver Road, confluence with Wash 1S2WS18A (J27)	J28	0.95	355	--[1]	855	--[1]
Wash 1S2WS31B (I70)						
At confluence with Wash 1S2WS32A (I63)	CPI67	6.86	839	--[1]	1,888	--[1]
Downstream of Rainbow Valley Road	CPI66	6.03	1,014	--[1]	2,290	--[1]

--[1] Not Computed.

7.2. Floodway Data

Floodway data is provided for Study Area 2 Wash 1S3WS24A (A60) and Study Area 4 Wash 1S2WS31B (I70).

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
1S3WS24A (A60)								
0.043	227	101	406	6.5	889.2	889.2	890.2	1.0
0.115	607	106	345	7.5	892.8	892.8	893.7	0.9
0.186	982	62	290	8.7	897.1	897.1	897.7	0.6
0.277	1461	56	288	8.8	902.1	902.1	902.6	0.5
0.373	1968	88	346	7.2	907.6	907.6	907.8	0.2
0.473	2500	63	315	8.0	911.8	911.8	912.4	0.6
0.568	3000	65	375	6.7	915.3	915.3	915.9	0.6
0.684	3614	84	297	8.3	920.2	920.2	920.4	0.2
0.774	4089	48	284	8.9	925.3	925.3	925.3	0.0
0.852	4499	83	351	7.1	928.8	928.8	929.2	0.4
0.931	4916	67	281	8.9	933.1	933.1	933.1	0.0
1.042	5500	147	514	4.8	938.2	938.2	938.5	0.3

[1] Feet Above Waterman Wash

TABLE 7.2

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOODWAY DATA

Wash 1S3WS24A (A60)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD 88)	WITHOUT FLOODWAY (FEET NAVD 88)	WITH FLOODWAY (FEET NAVD 88)	INCREASE (FEET)
1S2WS31B (I70)								
0.000	0	75	209	9.9	971.3	971.3	971.6	0.3
0.130	687	89	395	5.5	974.2	974.2	975.2	1.0
0.205	1081	94	252	10.6	976.9	976.9	977.0	0.1
0.284	1500	149	592	5.7	978.8	978.8	979.8	1.0
0.379	2000	143	380	8.9	980.6	980.6	981.0	0.4
0.455	2401	95	408	7.3	982.2	982.2	983.2	1.0
0.568	3000	75	290	9.9	985.0	985.0	985.6	0.6
0.663	3500	151	628	5.0	986.9	986.9	987.9	1.0
0.804	4243	85	342	6.7	988.8	988.8	989.2	0.4
0.936	4942	119	365	7.5	992.2	992.2	992.6	0.4
1.012	5342	66	260	9.4	994.3	994.3	994.9	0.6
1.136	6000	108	511	4.5	997.0	997.0	998.0	1.0
1.218	6430	81	250	10.5	998.6	998.6	998.7	0.1

[1] Feet Above 1S2WS32A (I63)

TABLE 7.2

FEDERAL EMERGENCY MANAGEMENT AGENCY

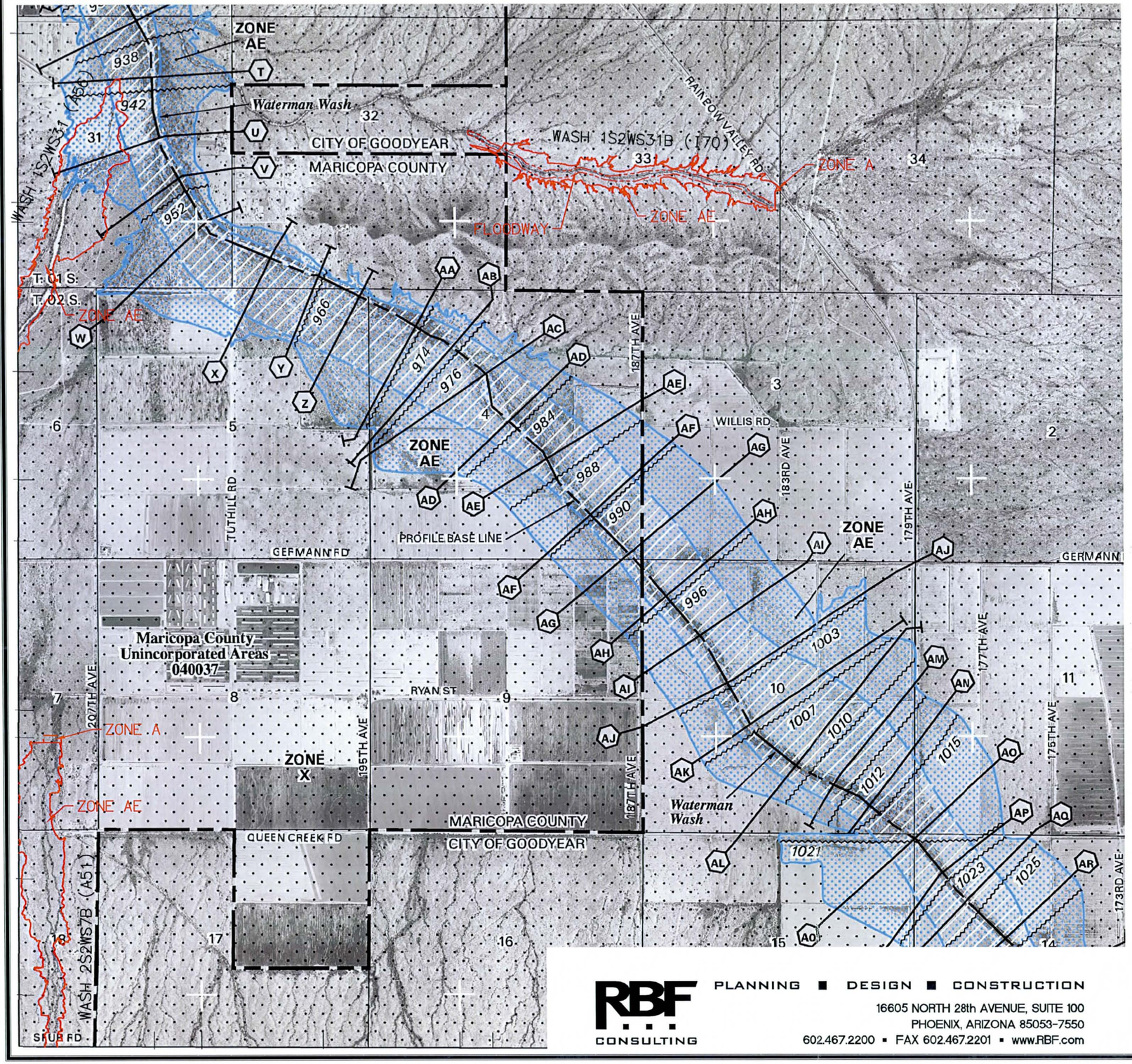
MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

FLOODWAY DATA

Wash 1S2WS31B (I70)

7.3. Annotated FIRMs



MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

600 0 600 1200 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2550G

FIRM
FLOOD INSURANCE RATE MAP
MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS

PANEL 2550 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GOODYEAR, CITY OF	040046	2550	G
MARICOPA COUNTY	040037	2550	G

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SEPTEMBER 30, 2005

Federal Emergency Management Agency

RAINBOW VALLEY ADMP AREAS 1-4 ANNOTATED FIRM PANEL 2550G

REVISED ZONE AE FLOODPLAIN

REVISED ZONE A FLOODPLAIN

REVISED FLOODWAY

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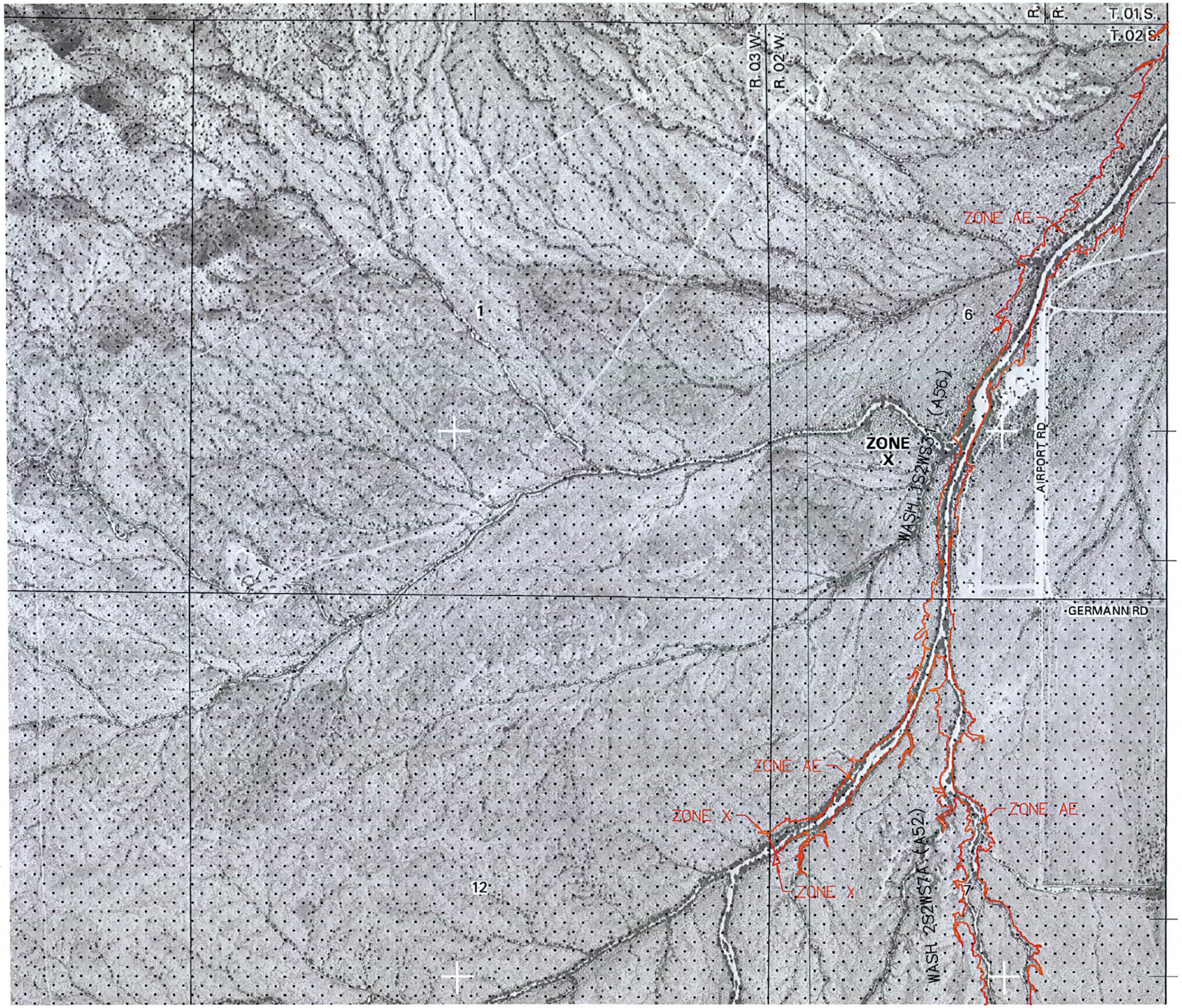

SEE SHEET 2 of 2

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

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NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2520G

FIRM
FLOOD INSURANCE RATE MAP
MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS

PANEL 2520 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
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Federal Emergency Management Agency

RAINBOW VALLEY ADMP AREAS 1-4
ANNOTATED FIRM PANEL 2520G
1 of 2

REVISED ZONE AE FLOODPLAIN

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REVISED FLOODWAY

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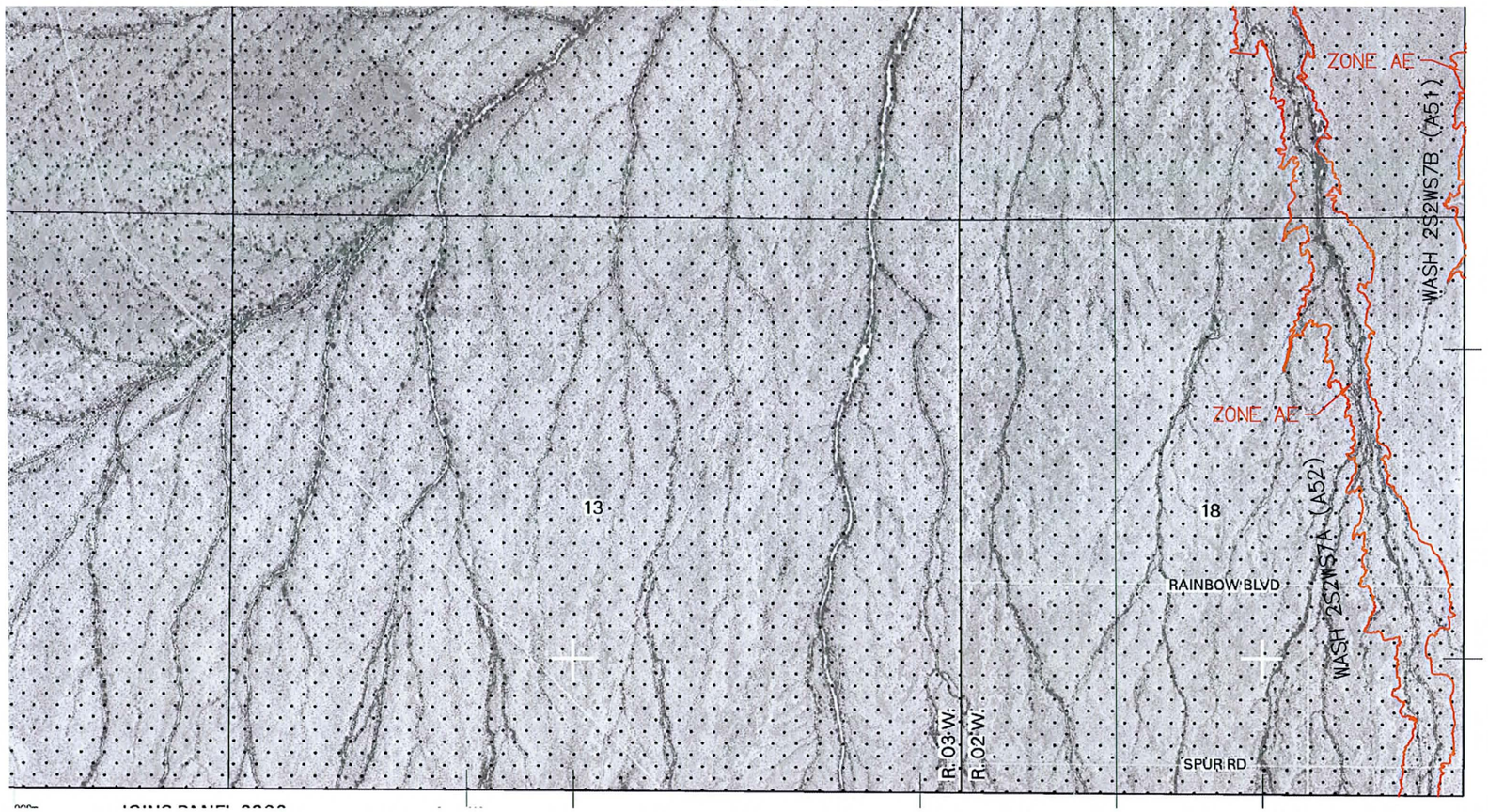
MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

SEE SHEET 1 of 2



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2520G

FIRM
FLOOD INSURANCE RATE MAP
MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS

PANEL 2520 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2520	G

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SEPTEMBER 30, 2005

Federal Emergency Management Agency

RAINBOW VALLEY ADMP AREAS 1-4
ANNOTATED FIRM PANEL 2520G
2 of 2

REVISED ZONE AE FLOODPLAIN

REVISED ZONE A FLOODPLAIN

REVISED FLOODWAY

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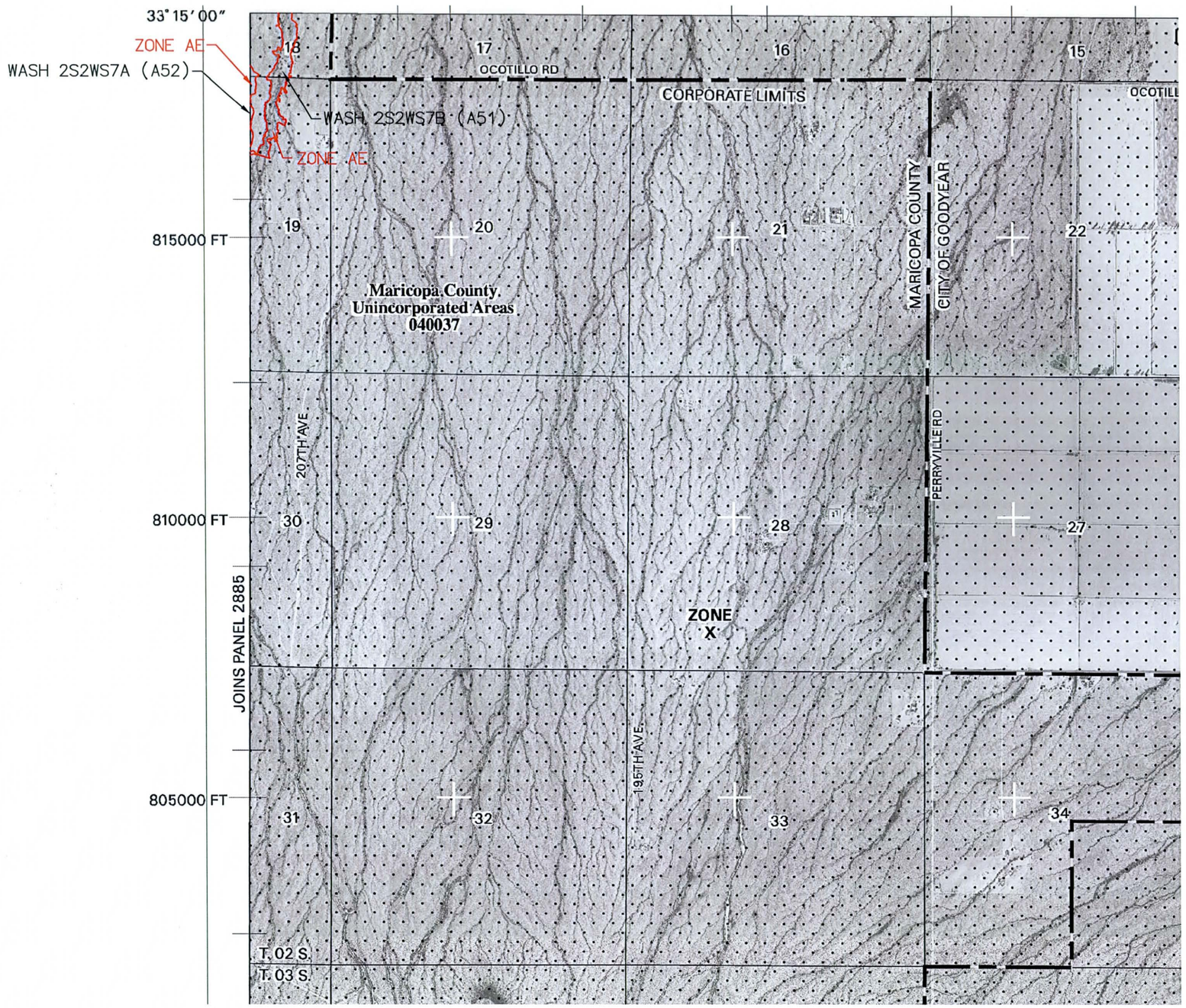

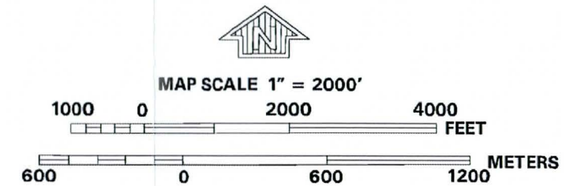

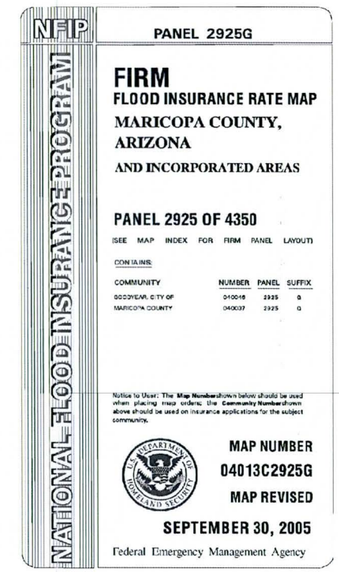

RAINBOW VALLEY ADMP AREAS 1-4
ANNOTATED FIRM PANEL 2925G

REVISED ZONE AE FLOODPLAIN

REVISED ZONE A FLOODPLAIN

REVISED FLOODWAY

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PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602.467.2200 ▪ FAX 602.467.2201 ▪ www.RBF.com

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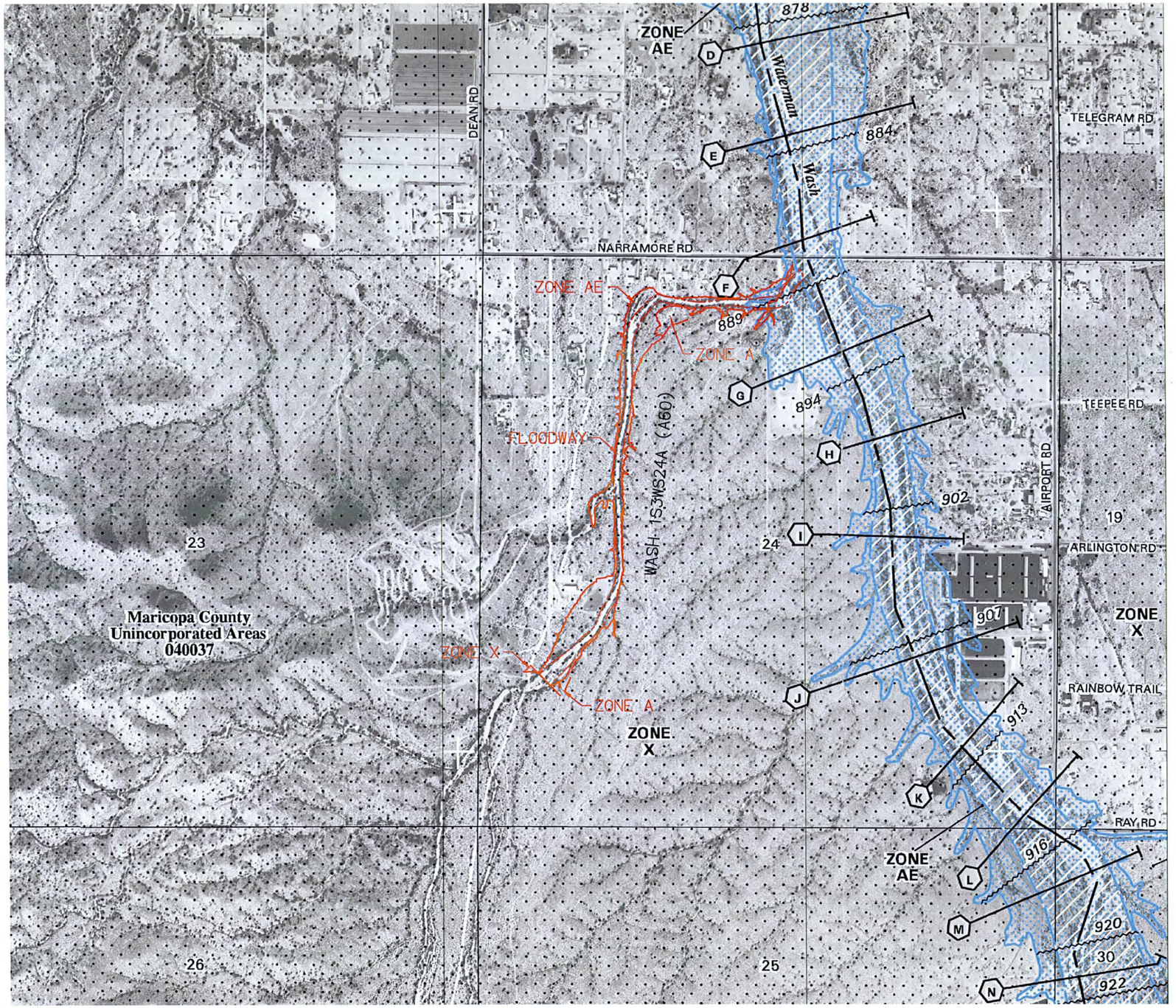

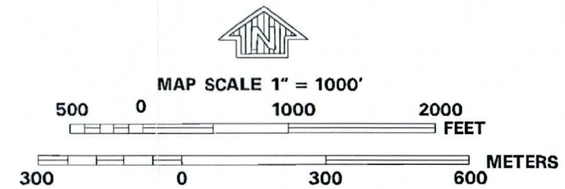

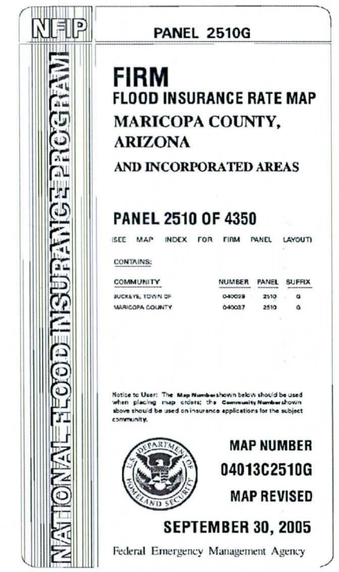

RAINBOW VALLEY ADMP AREAS 1-4
ANNOTATED FIRM PANEL 2510G

REVISED ZONE AE FLOODPLAIN

REVISED ZONE A FLOODPLAIN

REVISED FLOODWAY

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PHOENIX, ARIZONA 85053-7550
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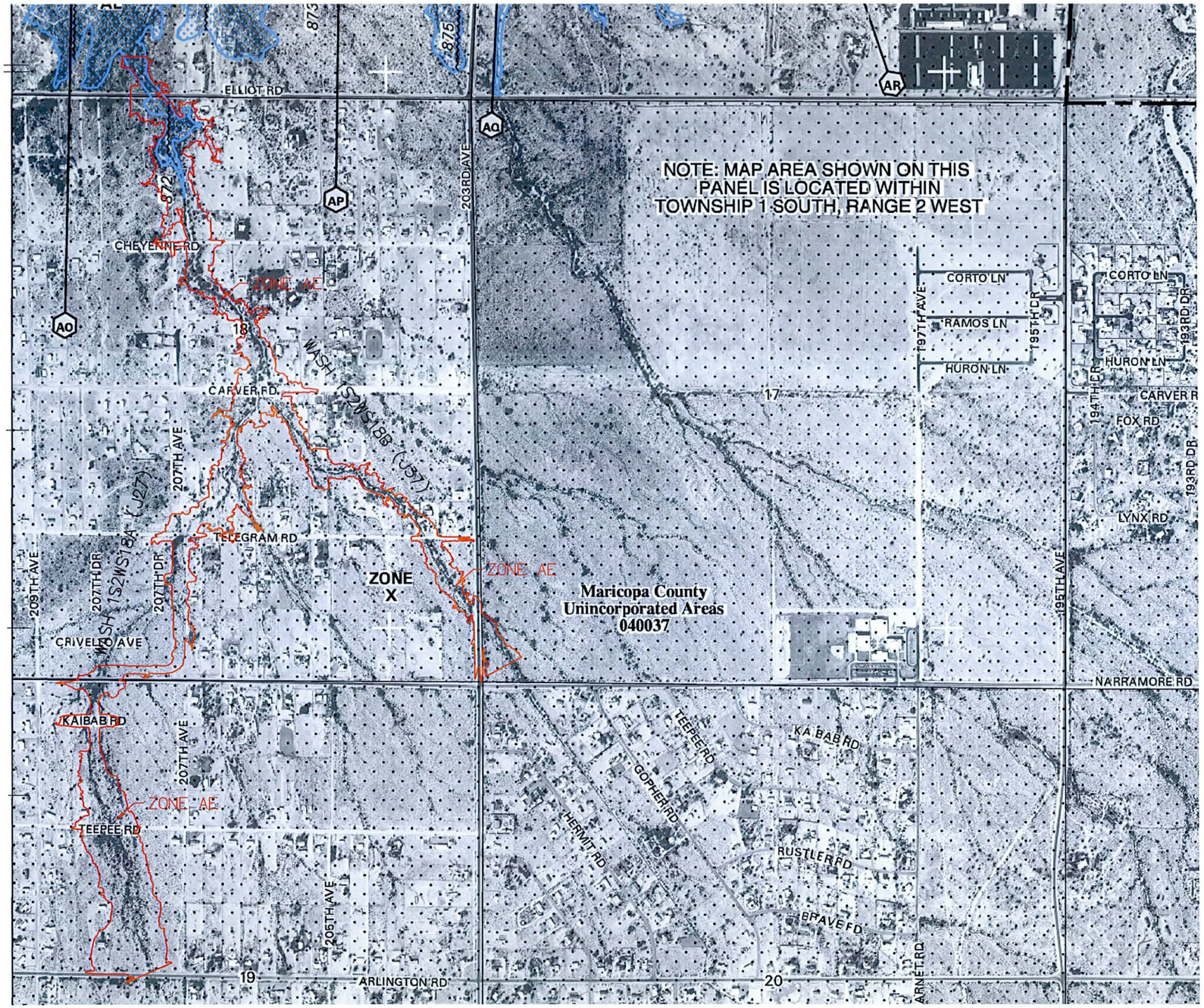

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2530G

FIRM
FLOOD INSURANCE RATE MAP
MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS

PANEL 2530 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BUCKEYE, TOWN OF	040039	2530	G
GOODYEAR, CITY OF	040049	2530	G
MARICOPA COUNTY	040037	2530	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04013C2530G

MAP REVISED
SEPTEMBER 30, 2005

Federal Emergency Management Agency

RAINBOW VALLEY ADMP AREAS 1-4 ANNOTATED FIRM PANEL 2530G

REVISED ZONE AE FLOODPLAIN

REVISED ZONE A FLOODPLAIN

REVISED FLOODWAY

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PLANNING ■ DESIGN ■ CONSTRUCTION
2929 NORTH CENTRAL AVENUE, SUITE 800
PHOENIX, ARIZONA 85012-2794
602.279.1234 ▪ FAX 602.279.1411 ▪ www.RBF.com

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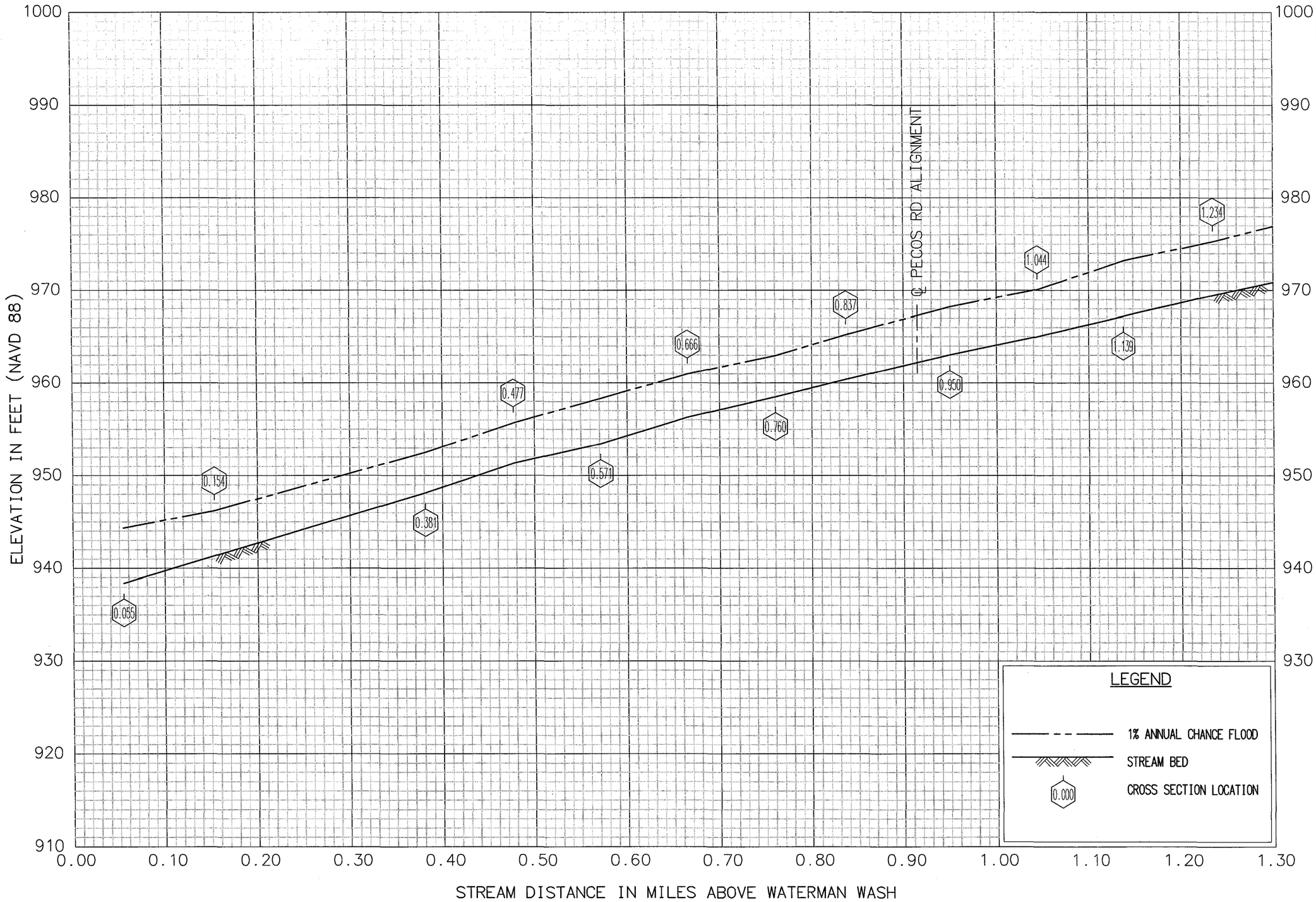
7.4. Flood Profiles



FLOOD PROFILES

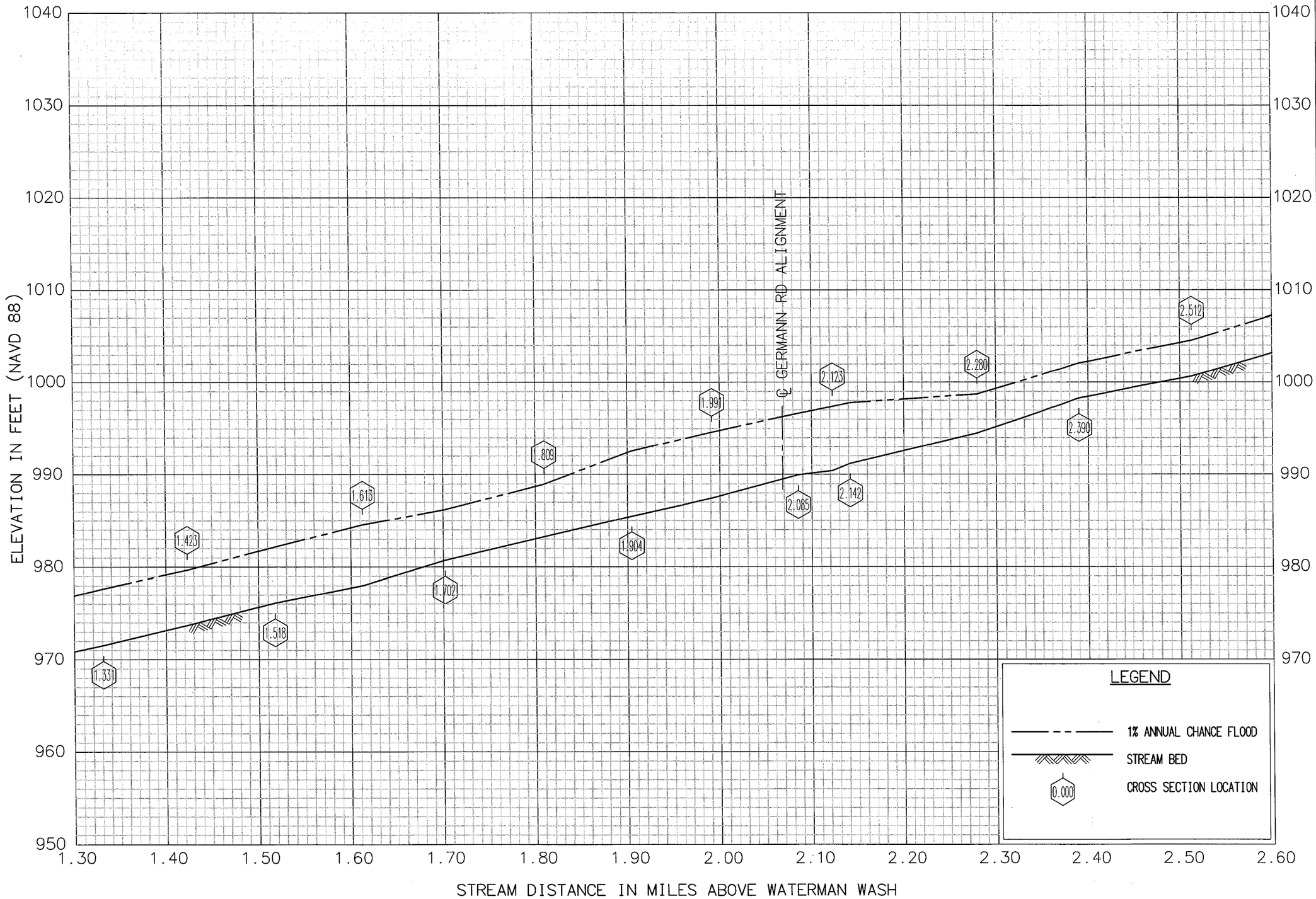
WASH 1S2WS31(A56)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

01P



FLOOD PROFILES

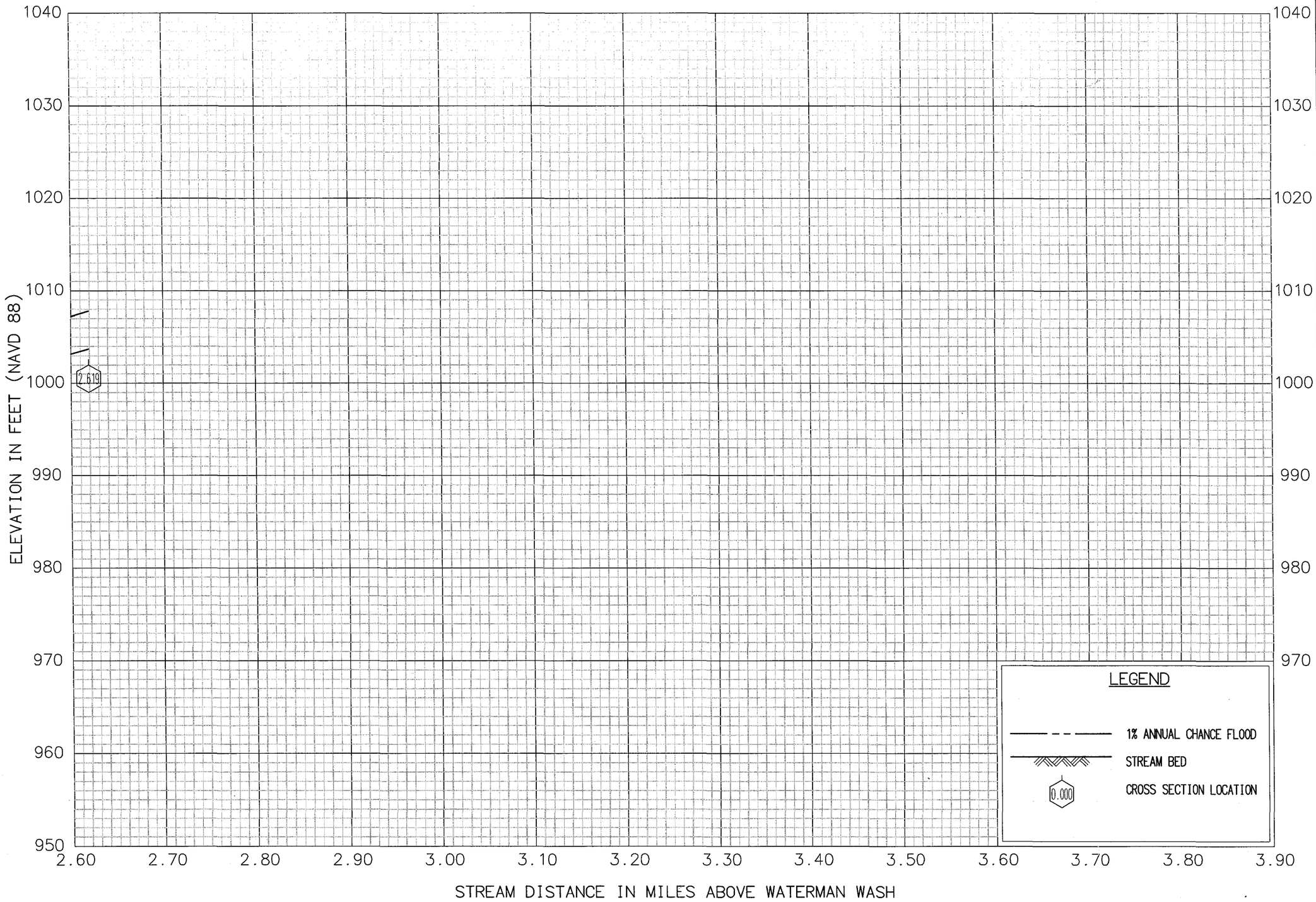
WASH 1S2WS31(A56)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

02P



FLOOD PROFILES

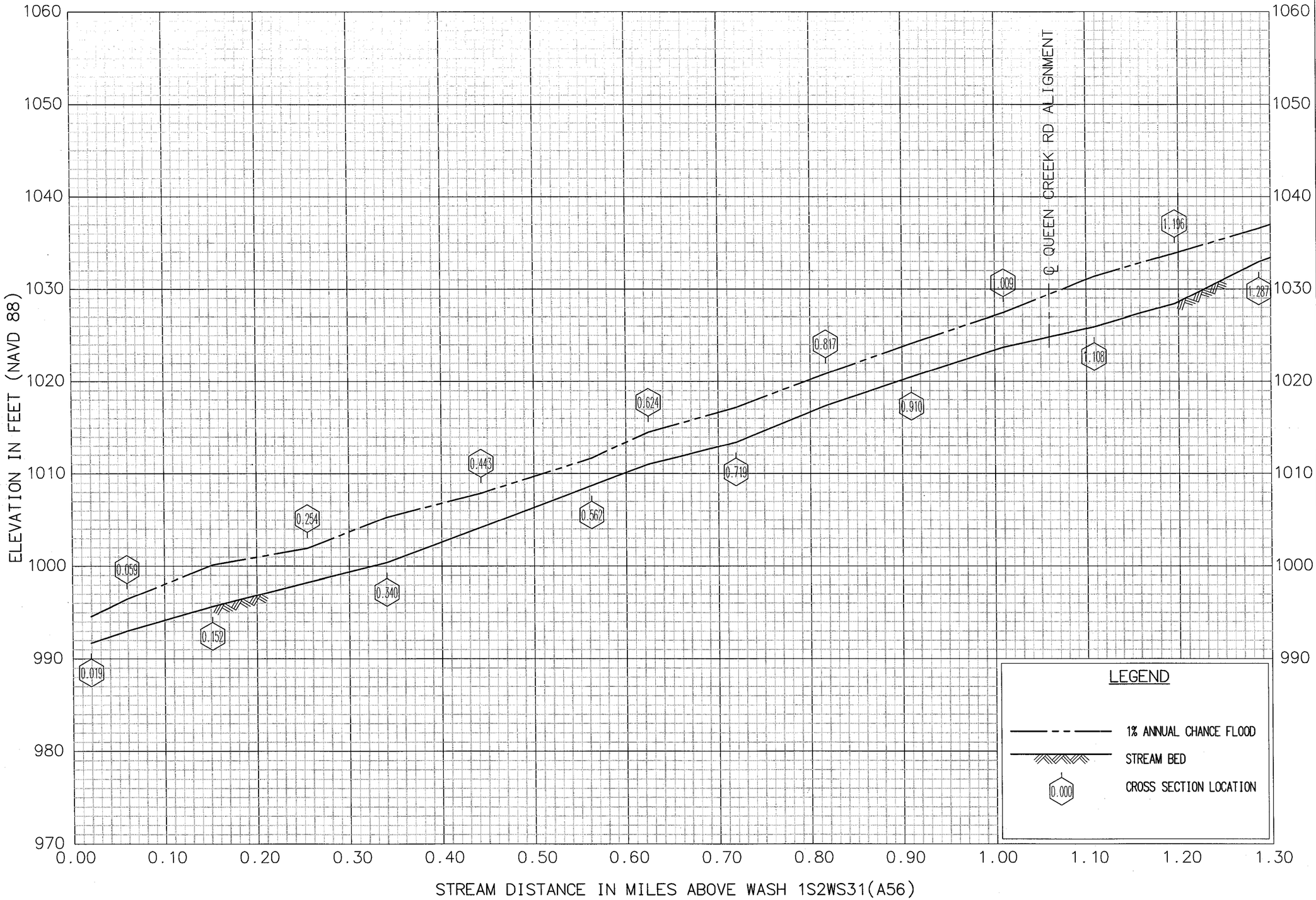
WASH 1S2WS31(A56)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

03P



FLOOD PROFILES

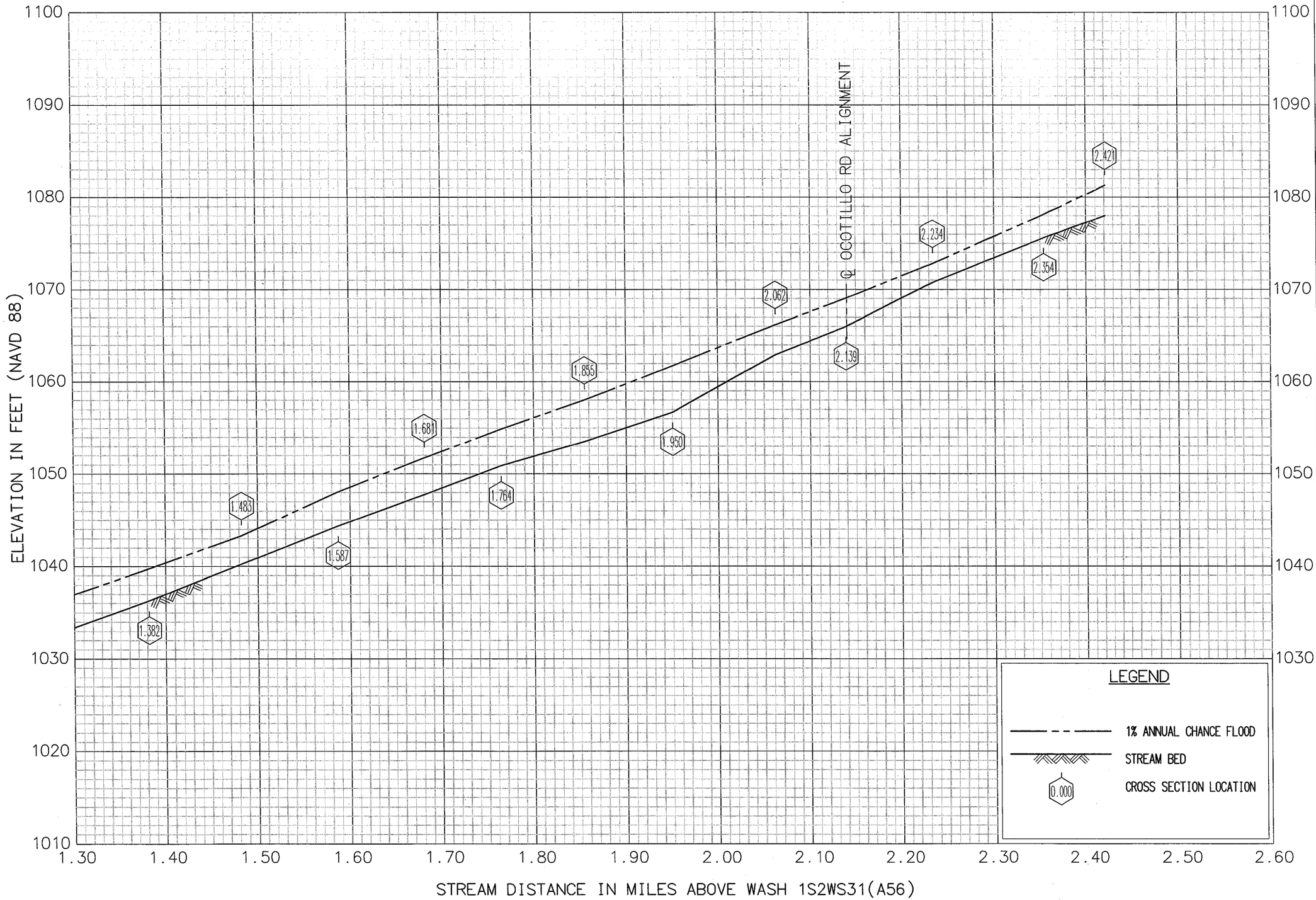
WASH 2S2WS7A(A52)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

01P



FLOOD PROFILES

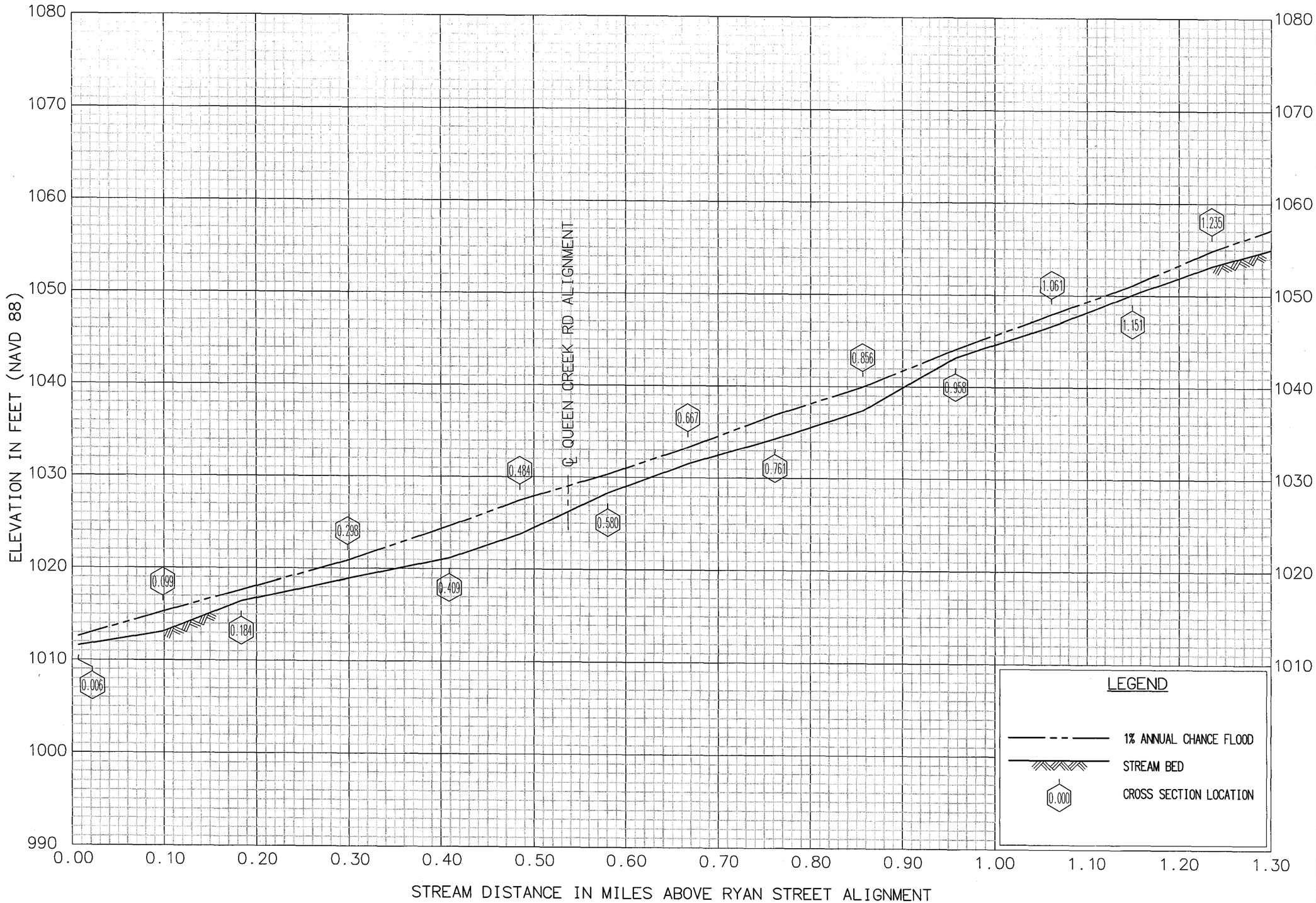
WASH 2S2WS7A(A52)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

02P



FLOOD PROFILES

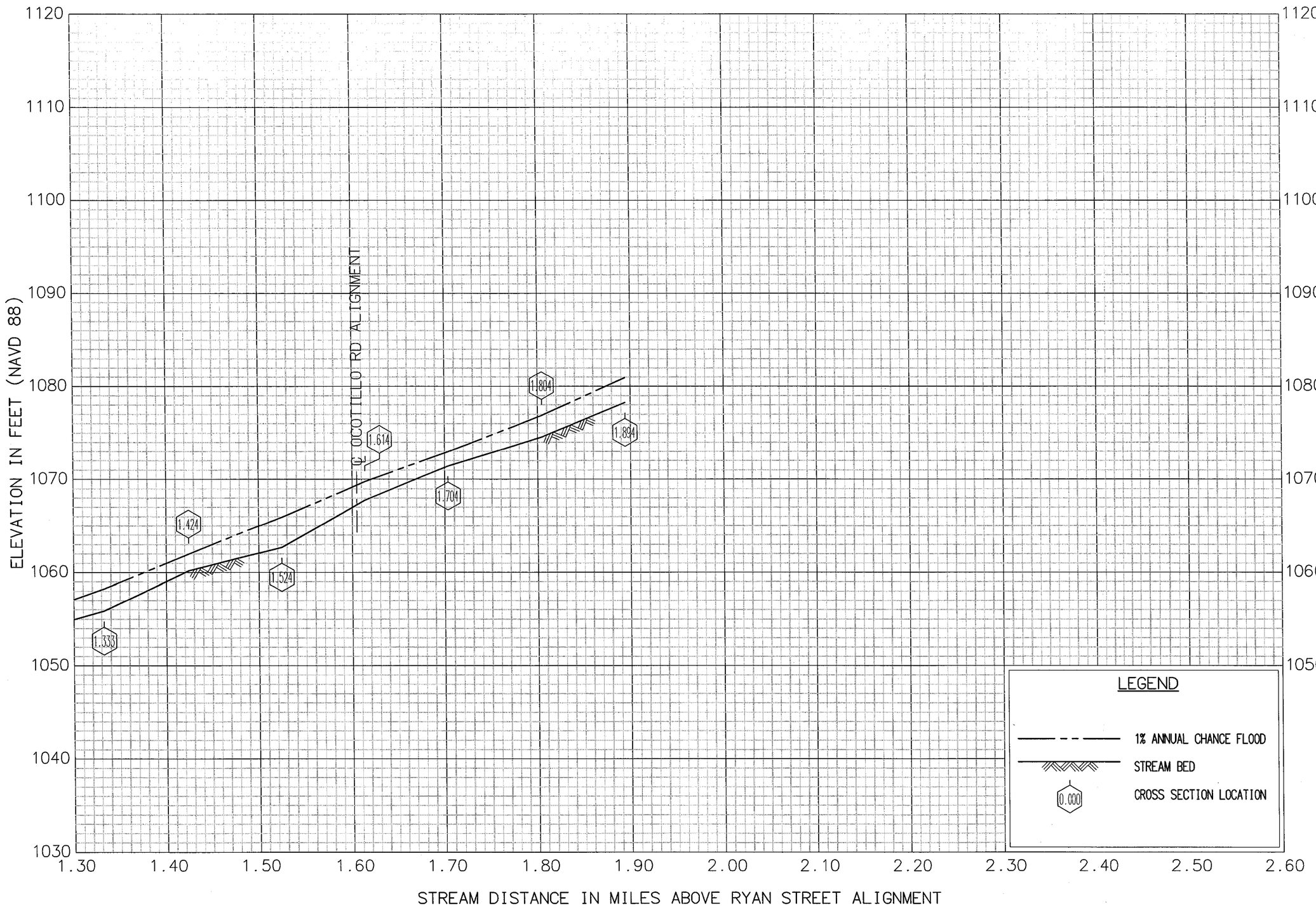
WASH 2S2WS7B(A51)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

01P



FLOOD PROFILES

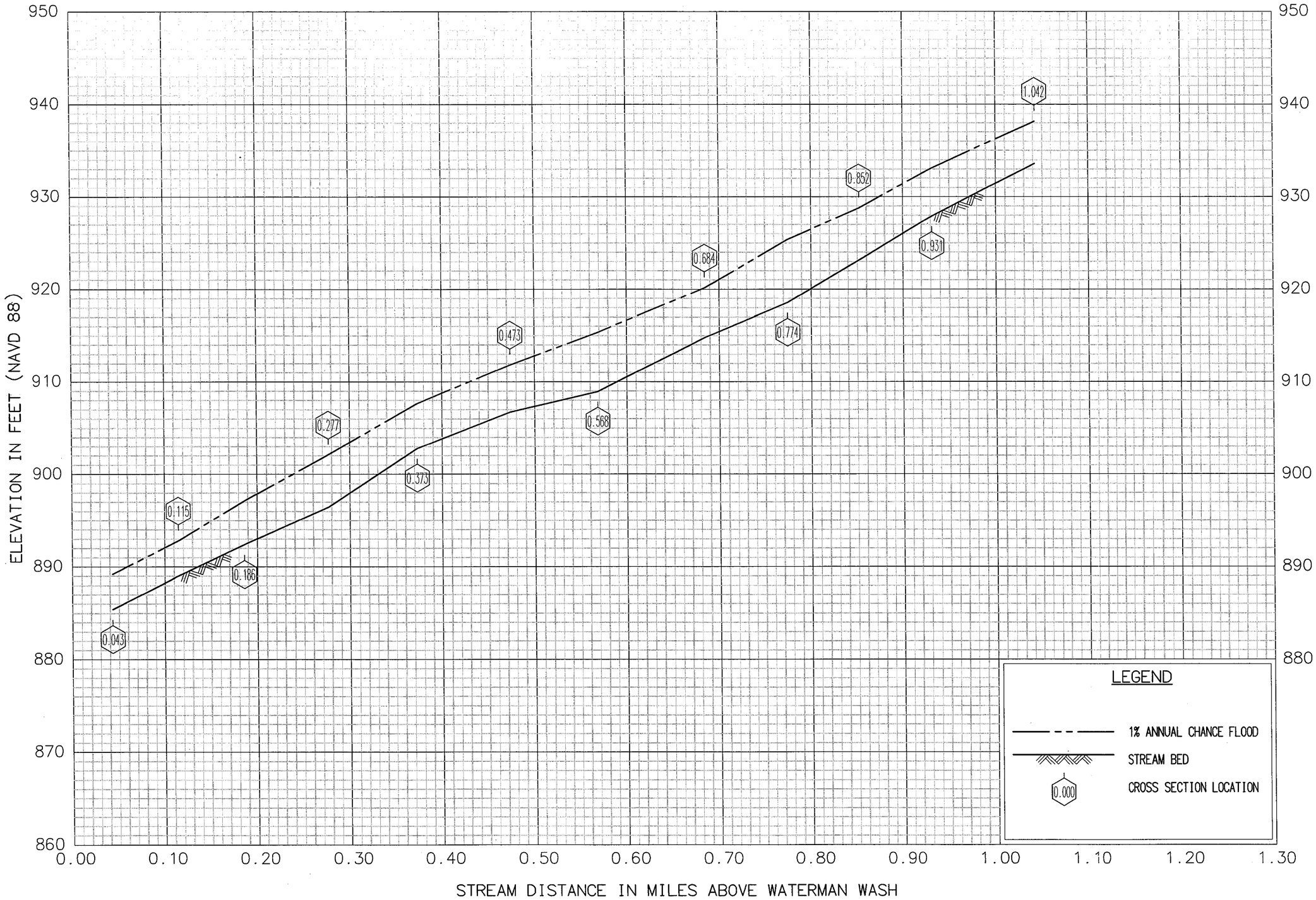
WASH 2S2WS7B(A51)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

02P



FLOOD PROFILES

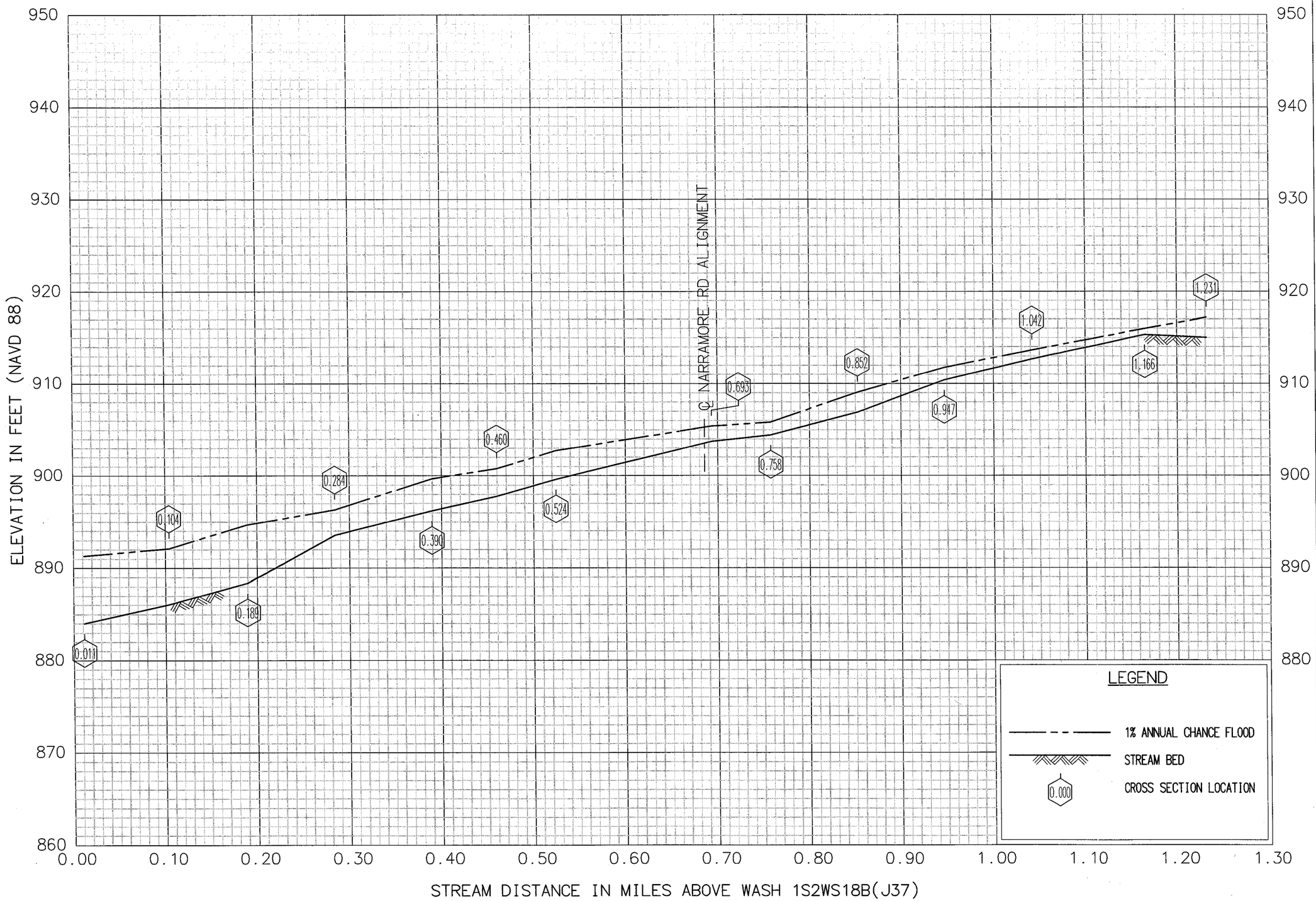
WASH 1S3WS24A(A60)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

01P



FLOOD PROFILES

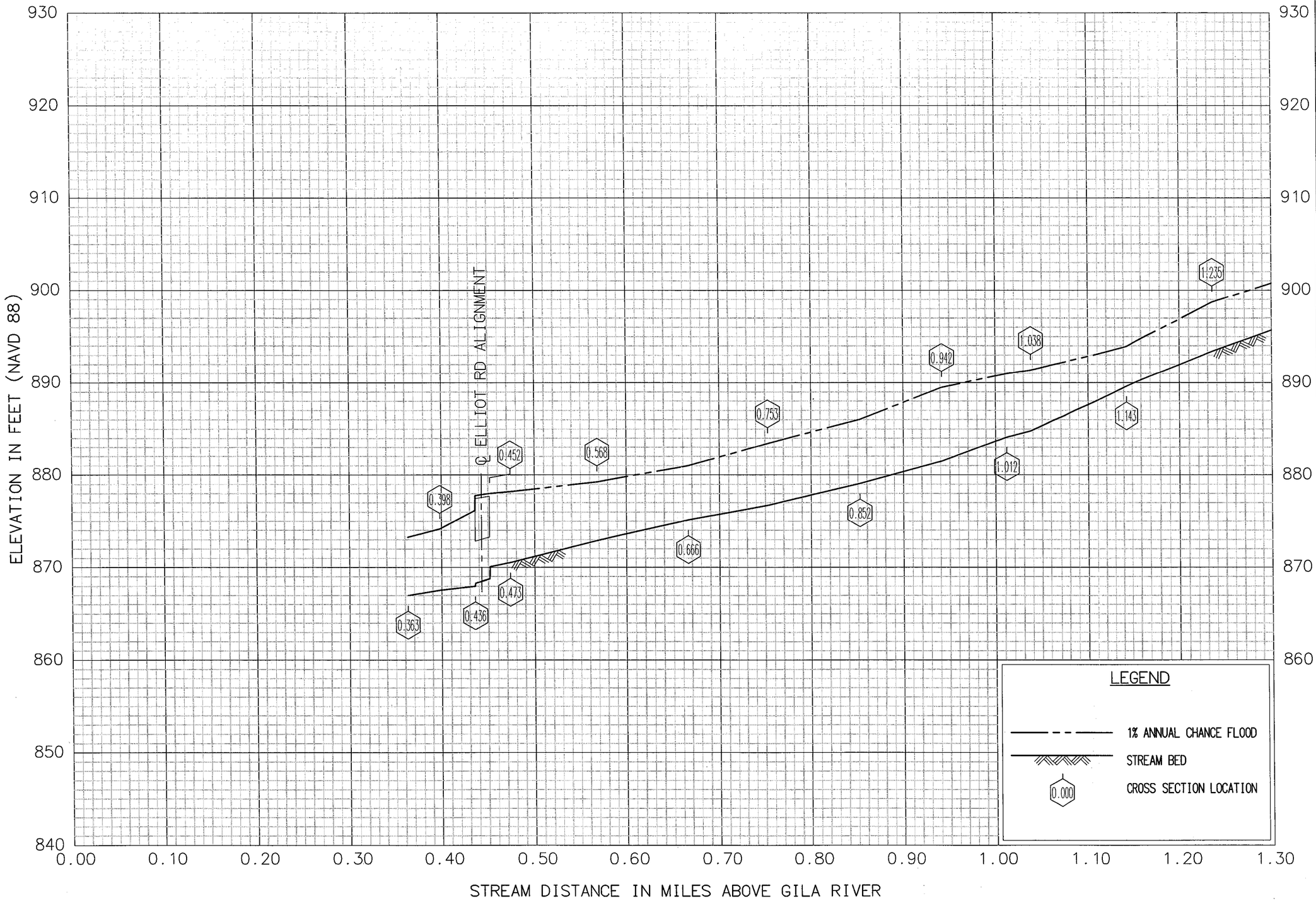
WASH 1S2WS18A(J27)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

01P



FLOOD PROFILES

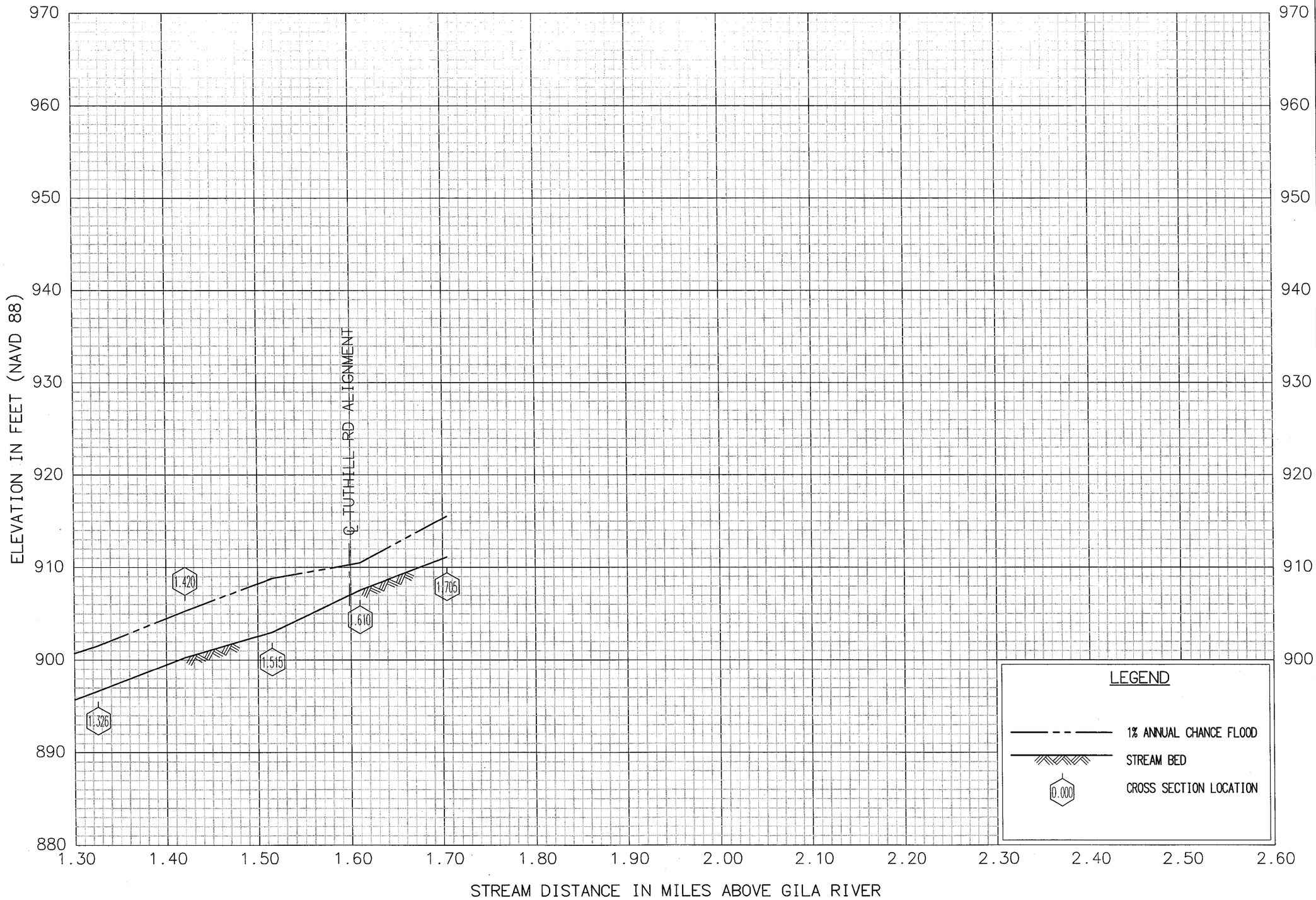
WASH 1S2WS18B(J37)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

01P



FLOOD PROFILES

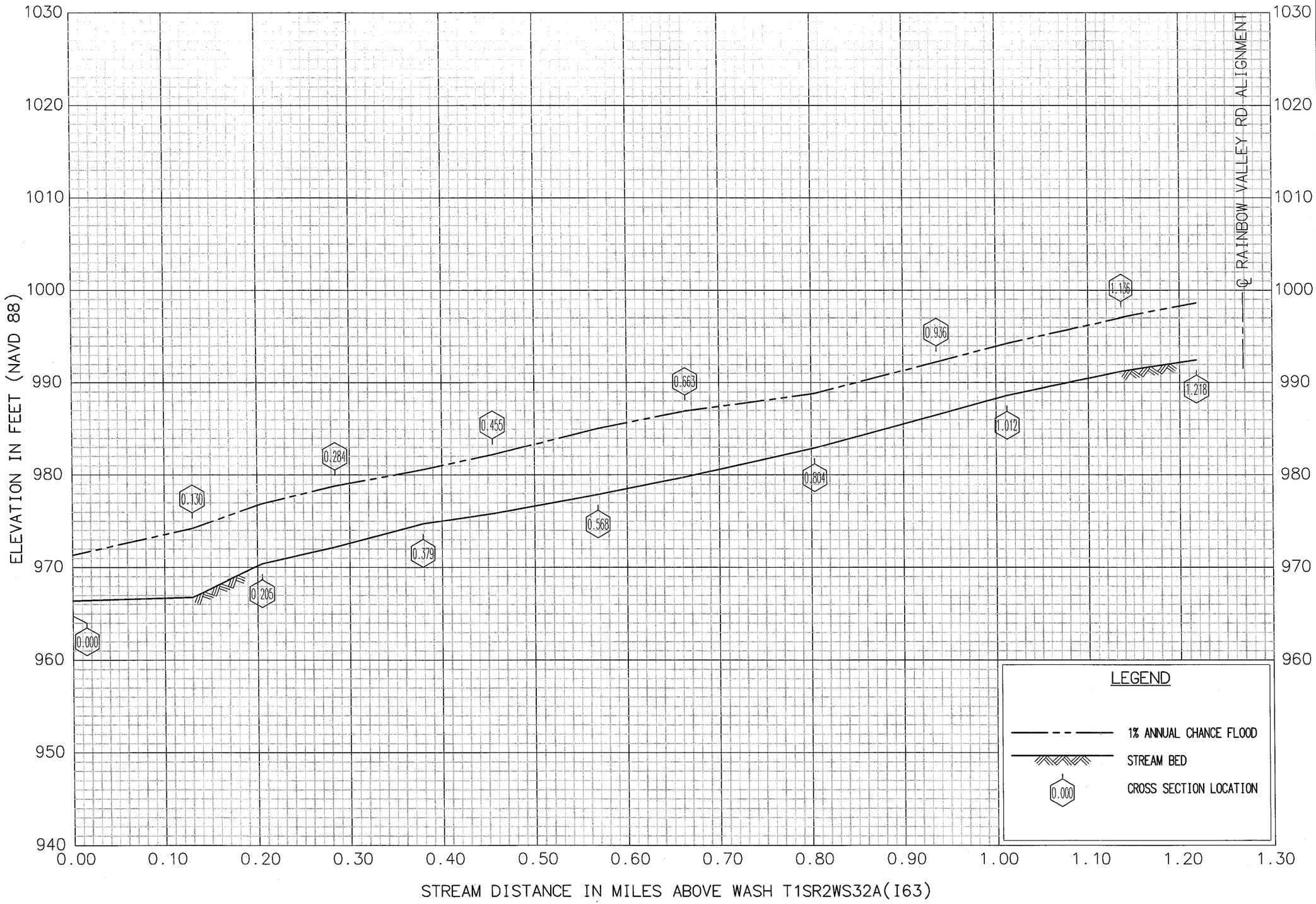
WASH 1S2WS18B(J37)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

02P



FLOOD PROFILES

WASH 1S2WS31B(I70)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

MARICOPA

01P

Appendix A References

A.1 Data Collection Summary

The following reports and studies were used in the preparation of this study.

Arizona Department of Water Resources (1997). "Instructions for Organizing and Submitting Technical Documentation for Flood Studies," Flood Mitigation Section, Arizona Department of Water Resources, Phoenix, Arizona 85004.

Mason, Robert R. Jr., King, Jeffrey N, and Thomas, Wilbert O. Jr. (1999). "National Flood-Frequency Program – Methods for Estimating Flood Magnitude and Frequency in Rural Areas In Arizona" U.S. Geological Survey Fact Sheet 111-98.

Maricopa Association of Goverments (MAG). The digital GIS land use maps for Maricopa County.

Rainbow Valley Area Drainage Master Plan Hydrology Report Volumes I-IV (October 2010), Contract FCD 2006C029 prepared by URS in cooperation with Dibble Engineering and JE Fuller Hydrology and Geomorphology for the Flood Control District of Maricopa County.

Rainbow Valley Area Drainage Master Plan Hydraulics Report Volumes I-II (February 2012), Contract FCD 2006C029 prepared by URS for the Flood Control District of Maricopa County.

Waterman Wash and Tributaries Floodplain Delineation Study (March 2006), Contract FCD 2002C024 prepared by Engineering and Environmental Consultants, Inc. (EEC) for the Flood Control District of Maricopa County.

Waterman Wash FDS Update Letter of Map Revision (November 2006), Contract FCD 2005C006 prepared by Engineering and Environmental Consultants, Inc. (EEC) for the Flood Control District of Maricopa County.

A.2 Referenced Documents

Hydrologic Engineering Center (1991). "HEC-1 Flood Hydrograph Package, User's Manual," US Army Corps of Engineers.

Sabol, G. V., Rumann, J. M., Khalili, D., Waters, S. D., and T. Lehman (January, 1995). "Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology," prepared for Flood Control District of Maricopa County.

United States Geological Survey (2006). "Selection of Manning's Roughness Coefficients for Natural and Constructed Vegetated and Non-Vegetated Channels, and Vegetation Maintenance Plan Guidelines for Vegetated Channels in Central Arizona".

Rainbow Valley ADMP Areas 1, 2, 3, and 4 Floodplain Delineation Study (FDS)
DATA COLLECTION REPORT

Prepared for

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, AZ 85009

Prepared by

RBF
A Baker Company

RBF Consulting
2929 North Central Avenue, Suite 800
Phoenix, Arizona 85012

August 2012

FCD 2011C003
Assignment 3
RBF 45104771

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   - *4.4 Reported Flooding* 2
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1. DATA COLLECTION AND FINDINGS

This section is intended to describe the data collection efforts for the Rainbow Valley ADMP Areas 1, 2, 3, and 4 Floodplain Delineation Study (FDS) and provide a list of the data materials received from agencies and stakeholders. Study Area 1 is approximately six and nine-tenths miles and includes Washes 1S2WS31 (A56), 2S2WS7A (A52), and 2S2WS7B (A51). Study Area 2 is approximately one mile of Wash 1S3WS24A (A60). Study Area 3 is approximately two and nine-tenths miles and includes Washes 1S2WS18B (J37) and 1S2WS18A (J27). Study Area 4 is approximately one and two-tenths miles of Wash 1S2WS31B (I70). Background information was gathered from the FCDMC and requested from other county agencies and the City of Goodyear. This report also outlines observations gathered during the project site visit on April 26, 2012.

2. DATA SOURCES

An extensive amount of information was sought and received from a variety of government agencies and stakeholders. Refer to Table 1 *List of Project Contacts* for those contacted during the data collection portion of the project. Some information was provided first hand from project stakeholders, supplemental information was also derived via email or through websites to complement the primary data sources. These stakeholders include:

- Flood Control District of Maricopa County
- FEMA
- Maricopa County Assessor
- Maricopa County Planning & Development
- Maricopa Association of Governments
- Maricopa County Department of Transportation
- City of Goodyear

3. DATA TYPES OBTAINED

The data received was provided in a variety of different formats. Table 2 *List of Collected Reports and Electronic Files* identifies and summarizes the data obtained and data types associated with each report, map, or piece of data received. A few examples of the various data types include:

- GIS Database layers
- Aerial Photography
- Area Topography
- Site Visit Photos
- Flood Insurance Rate Maps
- Land Ownership Data
- Hydrology and Hydraulic Models and Reports
- Land Use Plans

4. PRELIMINARY FINDINGS OF FACT

4.1 PROPERTY OWNERSHIP

The study area includes mostly private landowners with some Bureau of Land Management parcels. Most of the private parcels are single lots not associated with a subdivision except for the Rainbow Valley Ranch and Rainbow Valley Acres 2 subdivision. Refer to Figure 1 – Property Ownership

4.2 EXISTING FLOODPLAIN

Effective flood zones and pending flood zones (classified as Zone A) exist for each of the study areas. Study Area 1 is located within the effective FEMA Flood Insurance Rate Map (FIRM) panels 04013C2520G, 04013C2550G, 04013C2925G and 04013C2885E (not printed), which classify the study area as Zone X and Zone D. Study Area 2 is located within FIRM panel 04013C2510G which classifies the study area as Zone X. Study Area 3 is located within FIRM panel 04013C2530G which classifies the study area as Zones X. Finally, Study Area 4 is located within FIRM panel 04013C2550G which classifies the study area as Zone X. All of the printed panels are effective September 30, 2005. Refer to Figure 2 – Existing FEMA Floodplain.

Zone X is defined as "Areas of the 0.2% annual chance flood; areas of 1% annual chance flood with average depths less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood".

Zone D is defined as "Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk."

The Waterman Wash Floodplain Delineation Study delineated Areas 1, 2, 3, and 4 as Zone A floodplain with administrative floodways. The Waterman FDS was approved by FEMA as the best available data to use for floodplain management purposes in a letter dated February 28, 2006 FEMA case number 06-09-B012P. These floodplains will be published on the next effective FIRM publication without the administrative floodways. Refer to Figure 3 for additional information.

An update to the Waterman Wash FDS was performed for 1S2WS18A (J27) in Area 3 to account for development of a conveyance channel through the Rainbow Valley Ranch subdivision since the completion of the Waterman Wash FDS. This study delineated 1S2WS18A (J27) as Zone A floodplain. A Letter of Map Revision (LOMR) was obtained from FEMA on October 1, 2007.

4.3 PROPOSED FLOODPLAIN

There are no proposed floodplains located within the study areas.

4.4 REPORTED FLOODING

The Maricopa County Planning and Development, Flood Control District floodplain inspectors, and the City of Goodyear were contacted to determine if any reported flooding has occurred in the study area. These agencies had no records of reported flooding for this area.

4.5 GIS DATABASE, TOPOGRAPHY, AND AERIAL PHOTOGRAPHY

The FCDMC provided their most recent GIS database, topography, and aerial photography for the study area. This information has been very useful for a variety of applications relative to aerial surveys, assessing development, and evaluating potential changes to the hydrologic modeling.

4.6 REPORTS AND MODELS

RBF received the floodplain delineation study prepared by Engineering and Environmental Consultants, Inc (EEC) dated March 2006. EEC prepared the original hydrological subbasin delineation

used in the Waterman Wash FDS using NOAA 2 rainfall data. EEC used HEC-RAS to model the proposed Zone A floodplains over the study areas for this updated delineation. Refer to Figure 3 Waterman Wash Floodplain Delineation Study to see the existing Zone A floodplain for Study Areas 1, 2, 3, and 4.

RBF also received the existing hydrologic study prepared by URS in cooperation with Dibble Engineering and JE Fuller Hydrology and Geomorphology, Inc for the Rainbow Valley Area Drainage Master Plan (ADMP) dated October 2010 using NOAA 14 rainfall data. The peak flows are lower than those developed by EEC due to several factors including NOAA 14 precipitation values, refined land use parameters, percentage effective rock outcrop, and routing and diversion methodology. The twenty-five percent reduction in the 100-year 24-hour rainfall is the largest contributing factor to the reduction in peak discharges.

Study Area 1 consists of twenty-five subbasins with a watershed of approximately 3.06 square miles for the east fork and 18.46 square miles for the west fork. The Study Area 2 watershed is 5.05 square miles and is divided into three subbasins. The Study Area 3 watershed is 3.18 square miles and is divided into three subbasins. Study Area 4 consists of 18 subbasins and the watershed is approximately 7.0 square miles. Refer to Figure 4 to see a portion of the subbasin delineation and the Zone AE floodplains delineated as part of the Rainbow Valley ADMP.

4.7 GAGES

There are no stream gages located within any of the study areas, although there are several stream and rain gages located near the watershed boundaries. Refer to Figure 5 which shows the rain gage name and location in relationship to the watershed.

4.8 STRUCTURES

One culvert, a double-barrel concrete and double–barrel corrugated metal pipe was observed on Wash 1S2WS18B (J37) at Elliot Road in Study Area 3. Conversations with MCDOT indicated no roadway improvement projects or development plans are currently planned for this area.

4.9 SITE VISIT

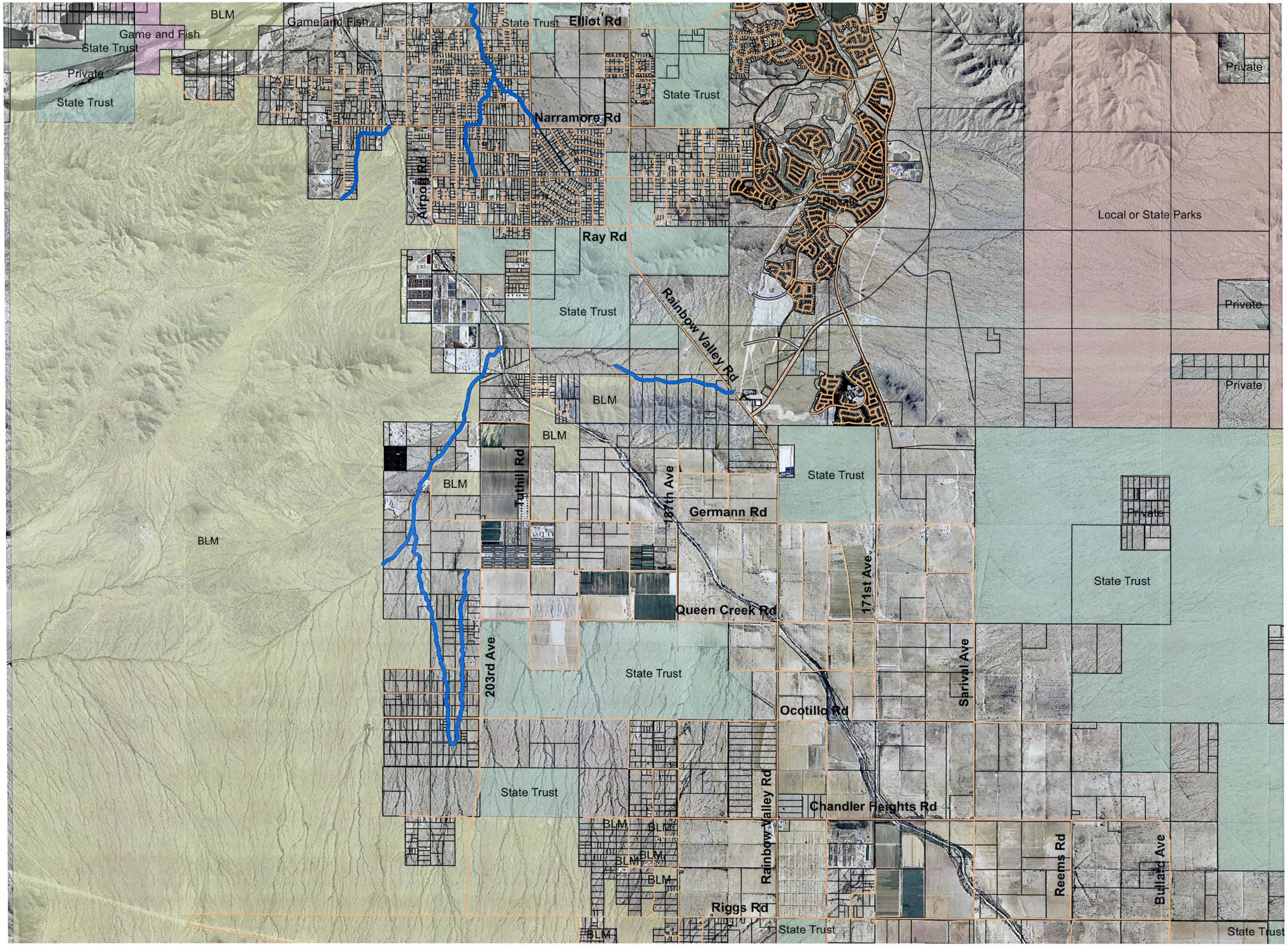
On April 26, 2012, RBF and Baker Staff conducted an initial site visit of the project study area. The field reconnaissance included a number of photographs and notations to obtain a preliminary understanding of the wash characteristics and other variables influencing the study area. Many characteristics within the study area were observed, many of the notable areas include:

- One culvert was observed during the site visit – everywhere else, washes flow over the dirt and paved roads.
- Study Area 1, as expected, was heavily braided except for the downstream portions of the wash where the two forks become well defined.
- Study Area 2 is well defined with minimal areas of exposed bedrock.
- Most of the channel and overbanks of each wash was composed of a sandy bottom and sparse vegetation except for Study Area 3, where the channel bottom was mostly compacted soil.
- The upstream forks of Study Area 3 meander within both developed lots and undeveloped areas before combining at Carver Road. On the north side of the road at this location, there appears to be some erosion or ponding that is visible on the aerial.

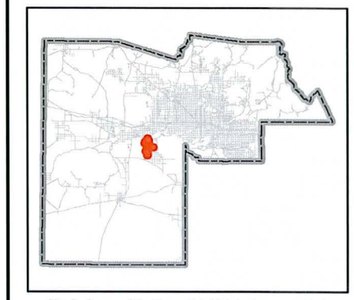
- Similar to the other study areas, Study Area 4 is very well defined with minimal meandering and braiding.

Please refer to the photographs illustrating the channel character and areas of interest.

Figure 1 – Property Ownership



Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4
Floodplain Delineation Study

Legend

- Flowline
- Streets
- Parcels

Land Ownership

- Bureau of Land Mgmt.
- Game and Fish
- Parks and Recreation
- Private Land
- State Trust Land

0 1,2502,500 5,000 Feet

1 inch = 5,000 feet

Property Ownership

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602-467-2200 FAX 602-467-2201 www.RBF.com

DRAFTED	CHECKED
DLP	NEF

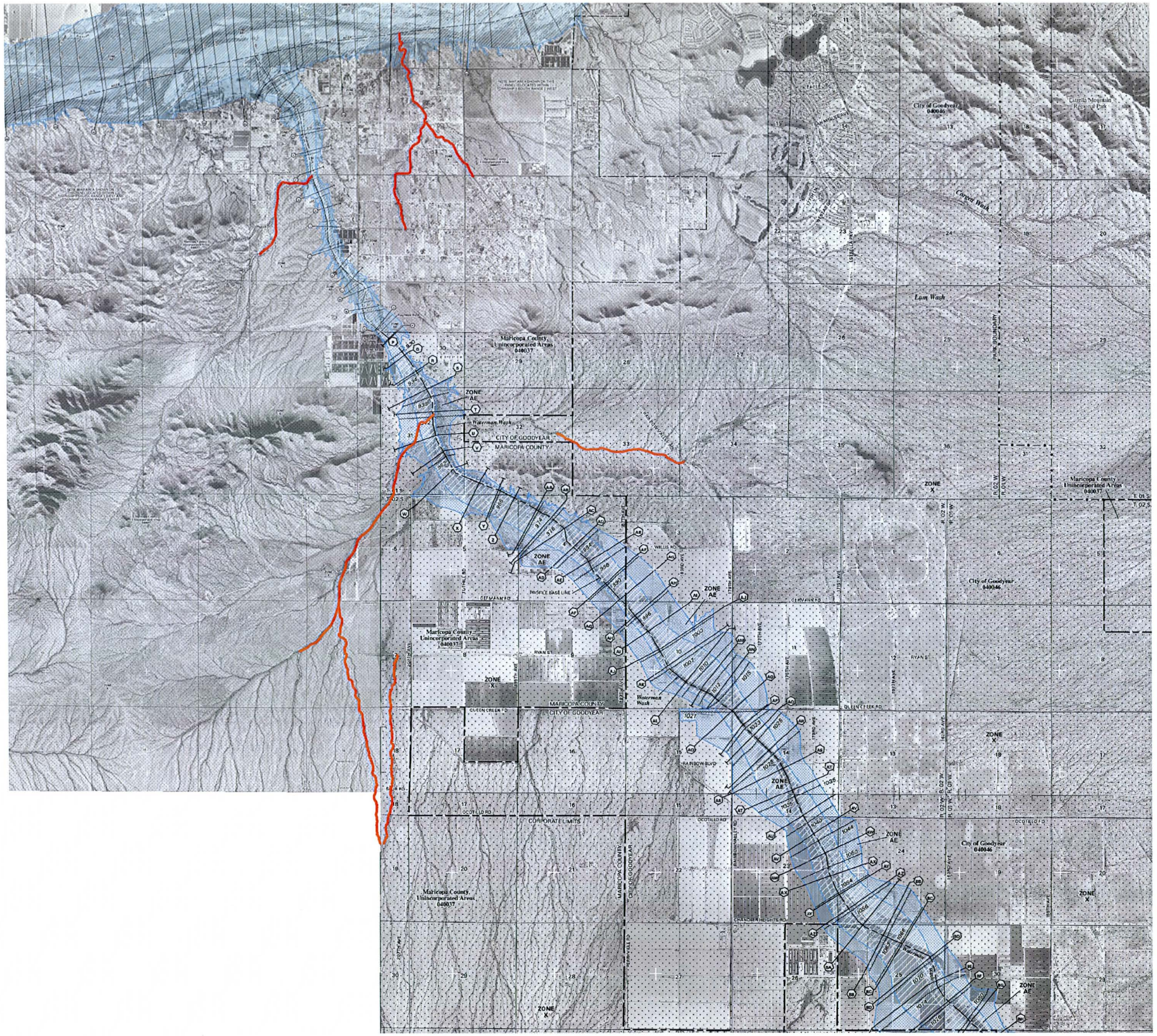
PROJECT NUMBER 45104771

DATE 8.22.12

FIGURE 1

File: H:\PDATA\45104771\GIS\Property Ownership.mxd

Figure 2 – Existing FEMA Floodplain



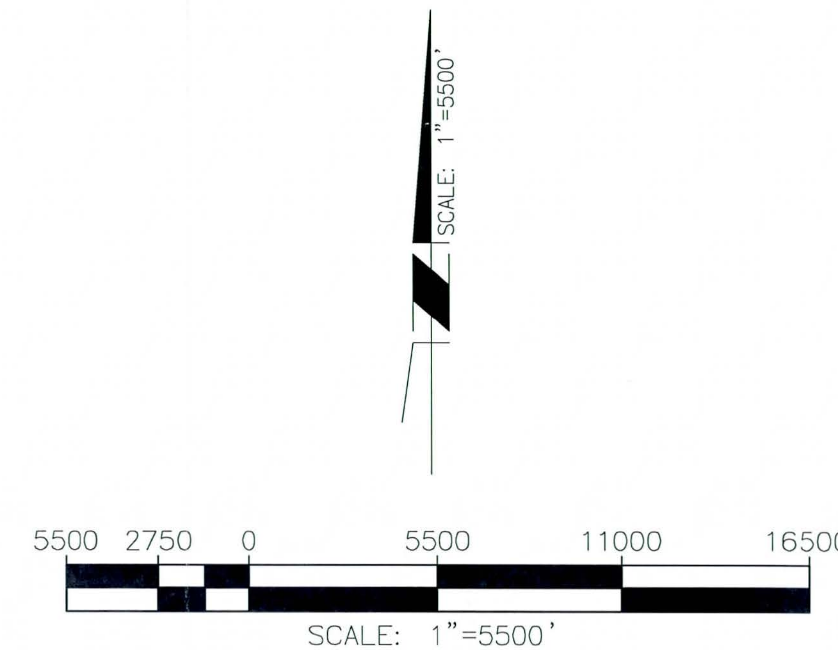


FIGURE 2
EXISTING FEMA FLOODPLAIN

SOURCE:
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04013C2530G, 04013C2550G, 0401C2925G AND
04013C2885E (Not Printed)
DATE: SEPTEMBER 30, 2005

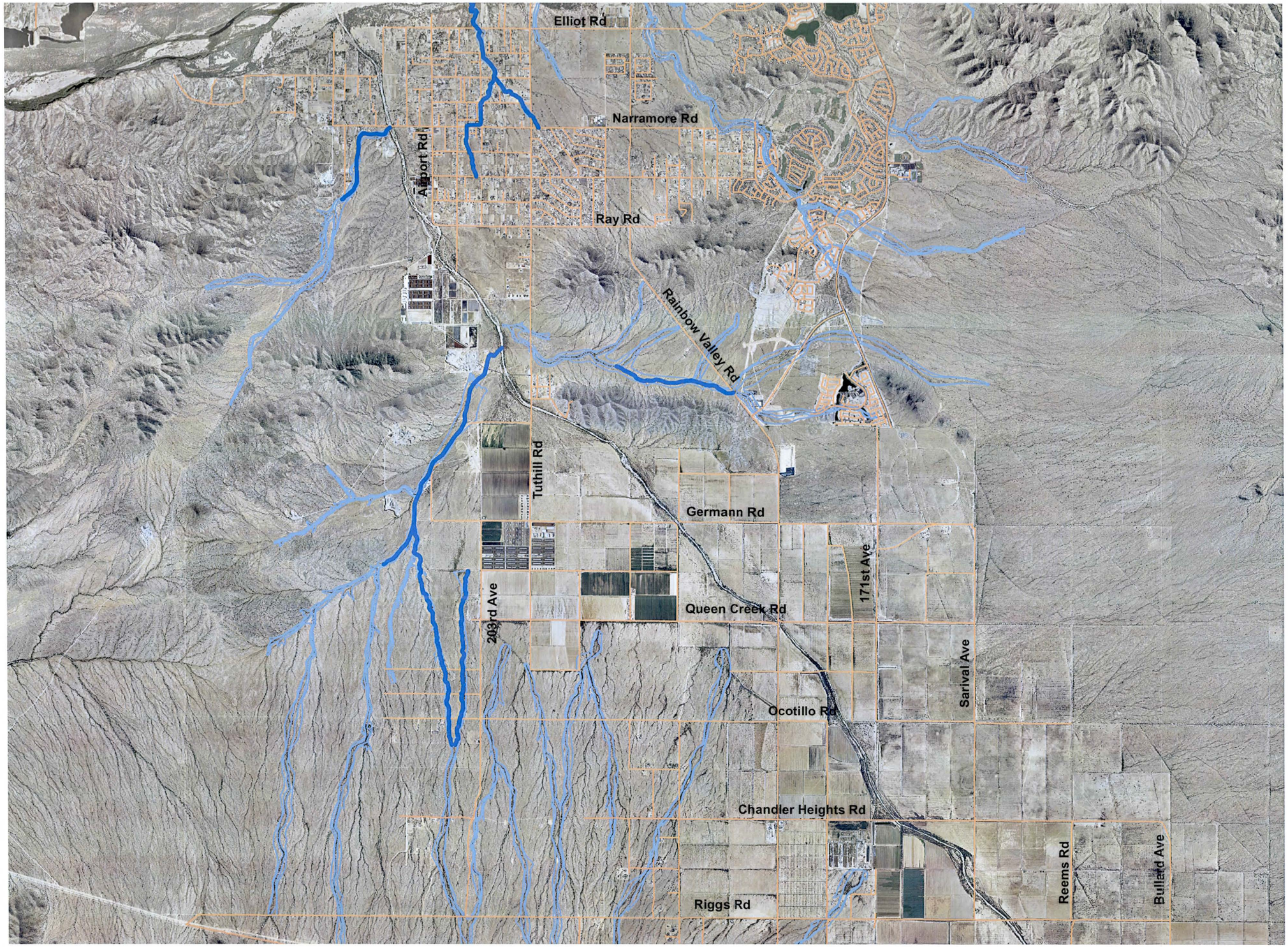
RBF CONSULTING

PLANNING ■ DESIGN ■ CONSTRUCTION

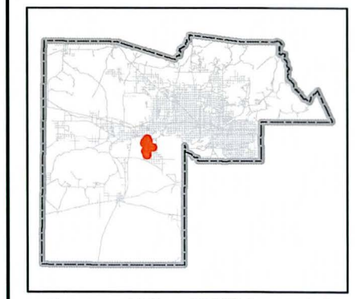
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602.467.2200 ▪ FAX 602.467.2201 ▪ www.RBF.com

H:\PDATA\45104771\CADD\STRMWATER\EXHIBITS\4771-FIRM.DWG DPEARCE 8/23/12 8:16 am

Figure 3 – Waterman Wash Floodplain Delineation Study



Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4
Floodplain Delineation Study

Legend

- Flowline
- Streets
- Zone A Floodplains

0 1,2502,500 5,000 Feet

1 inch = 5,000 feet

Waterman Wash
Floodplain Delineation Study

RBF CONSULTING
PLANNING ▪ DESIGN ▪ CONSTRUCTION
2929 NORTH CENTRAL AVENUE, SUITE 800
PHOENIX, ARIZONA 85012-2794
602-279-1234 FAX 602-279-1411 www.RBF.com

DRAFTED	CHECKED
DLP	NEF

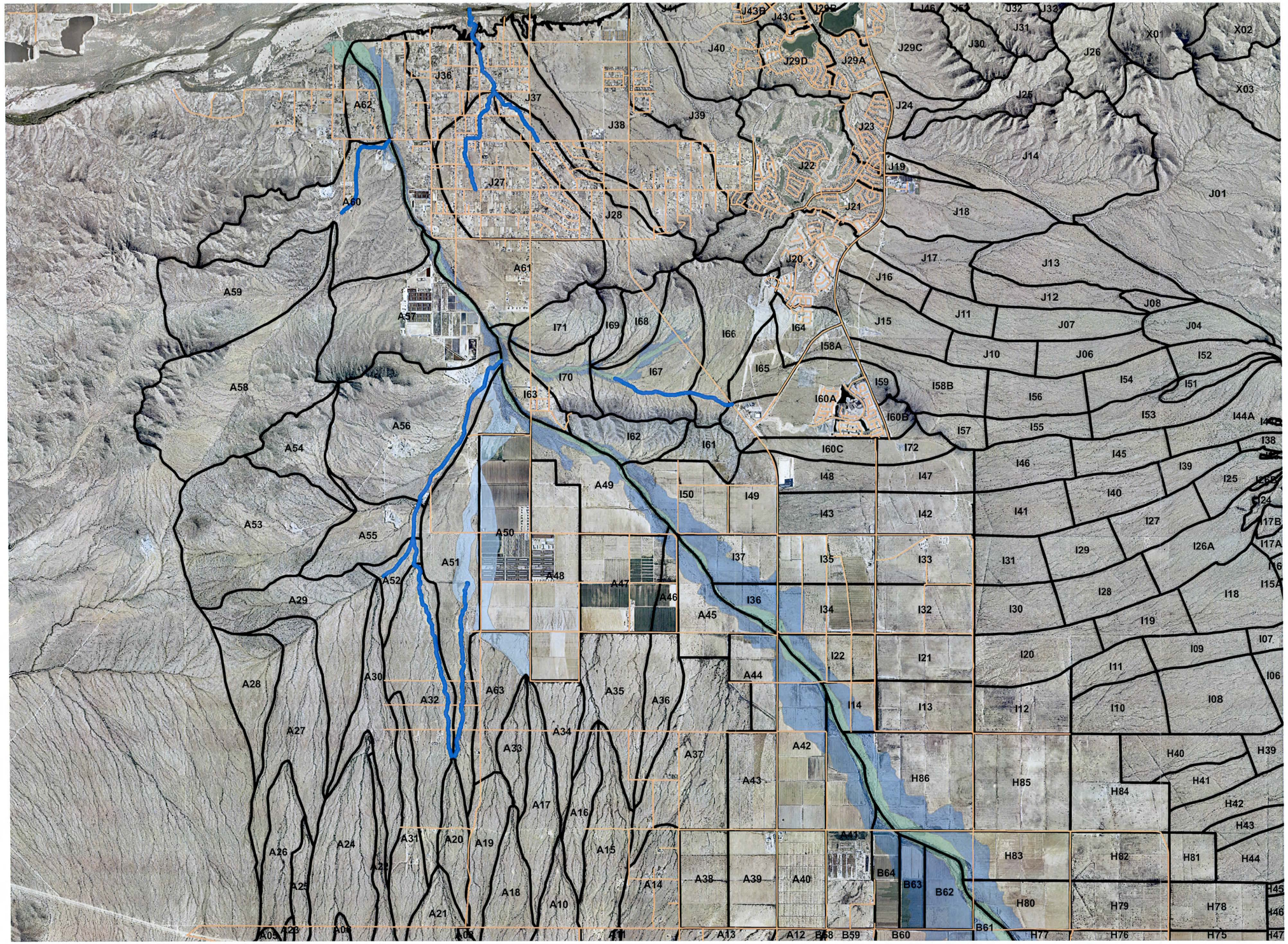
PROJECT NUMBER 45104771

DATE 8.22.12

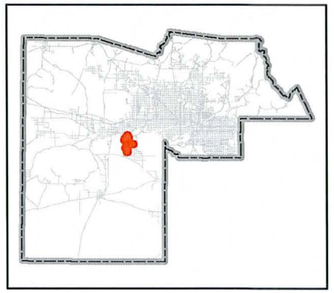
FIGURE 3

File: H:\PDATA\45104771\GIS\WatermanWashFDS.mxd

Figure 4 – Rainbow Valley Area Drainage Master Plan



Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4
Floodplain Delineation Study

Legend

- Flowline
- Streets
- Subbasins
- Zone A Floodplain
- Zone AE Floodplain
- Floodway

0 1,2502,500 5,000 Feet

1 inch = 5,000 feet

Rainbow Valley ADMP

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DLP	NEF

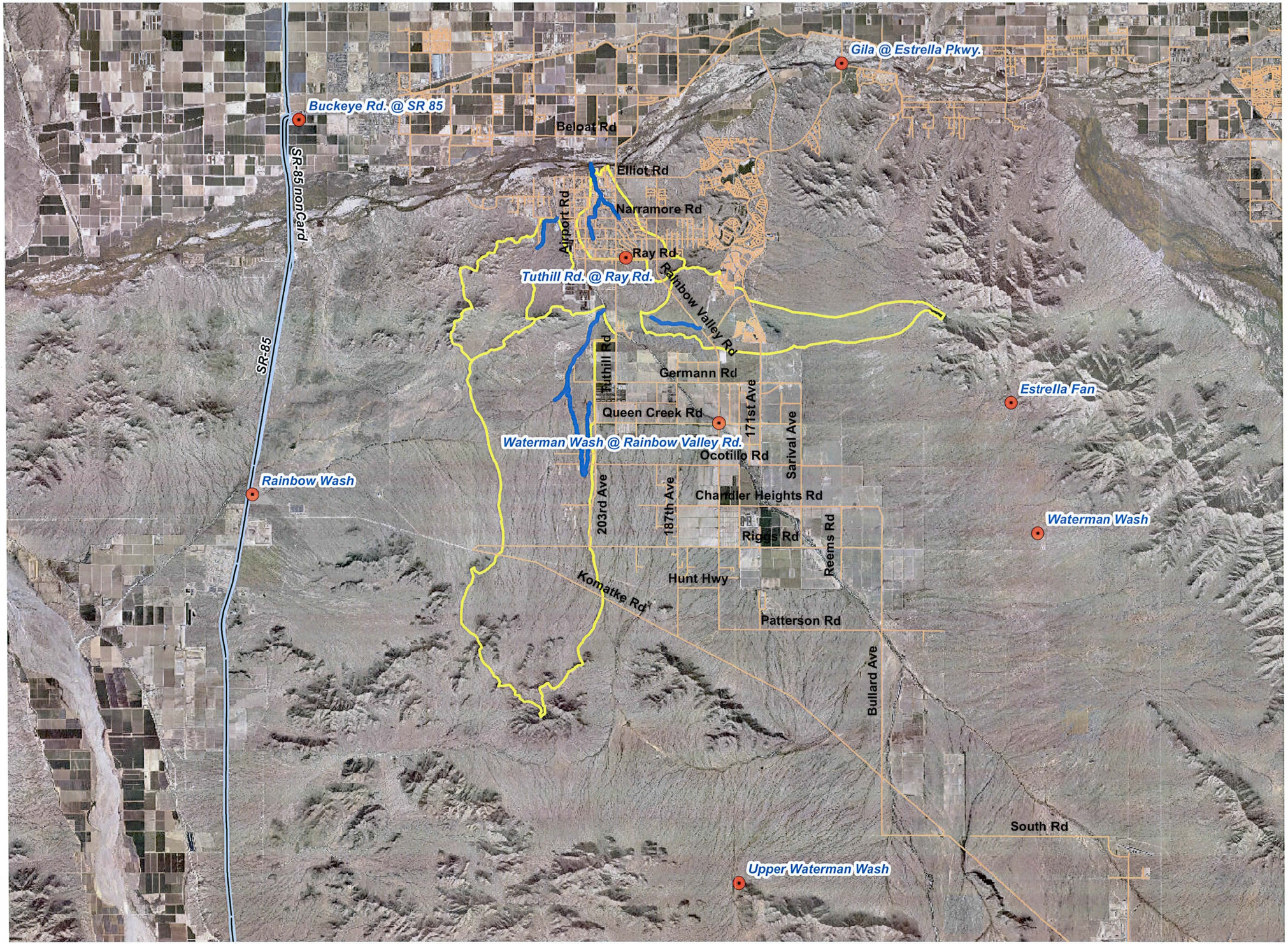
PROJECT NUMBER 45104771

DATE 8.22.12

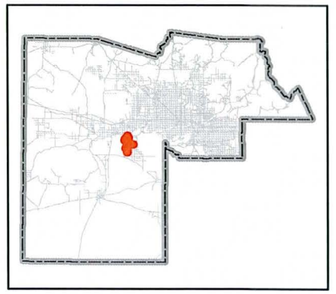
FIGURE 4

File: H:\PDATA\45104771\GIS\RainbowValleyADMP.mxd

Figure 5 – Rain Gage Locations



Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4
Floodplain Delineation Study

Legend

- Rain Gages
- Flowline
- Streets
- Study Area Watersheds

0 2,9505,900 11,800 Feet

1 inch = 12,000 feet

Rain Gage Locations

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PHOENIX, ARIZONA 85012-2794
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DRAFTED	CHECKED
DLP	NEF

PROJECT NUMBER 45104771

DATE 8.22.12

FIGURE 5

File: H:\PDATA\45104771\GIS\Gages.mxd

Site Visit Photos

Looking Upstream at Wash 1S2WS31 (A56) near Pecos Road alignment

Looking Upstream at confluence of Wash 2S2WS7A (A52) and Wash 1S2WS31 (A56)

Looking Upstream at Wash 2S2WS7B (A51) near Queen Creek Road alignment

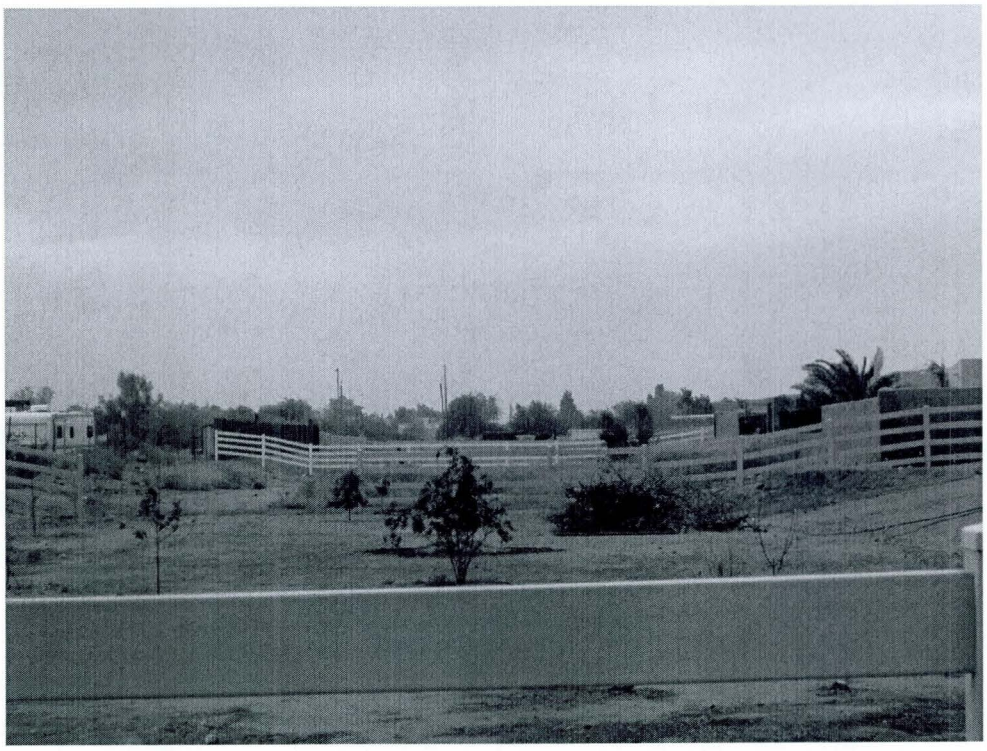
Looking Upstream at Wash 1S3WS24A (A60) near upstream limit of study

Looking Downstream at Wash 1S2WS18B (J37) Culverts on Elliot Road

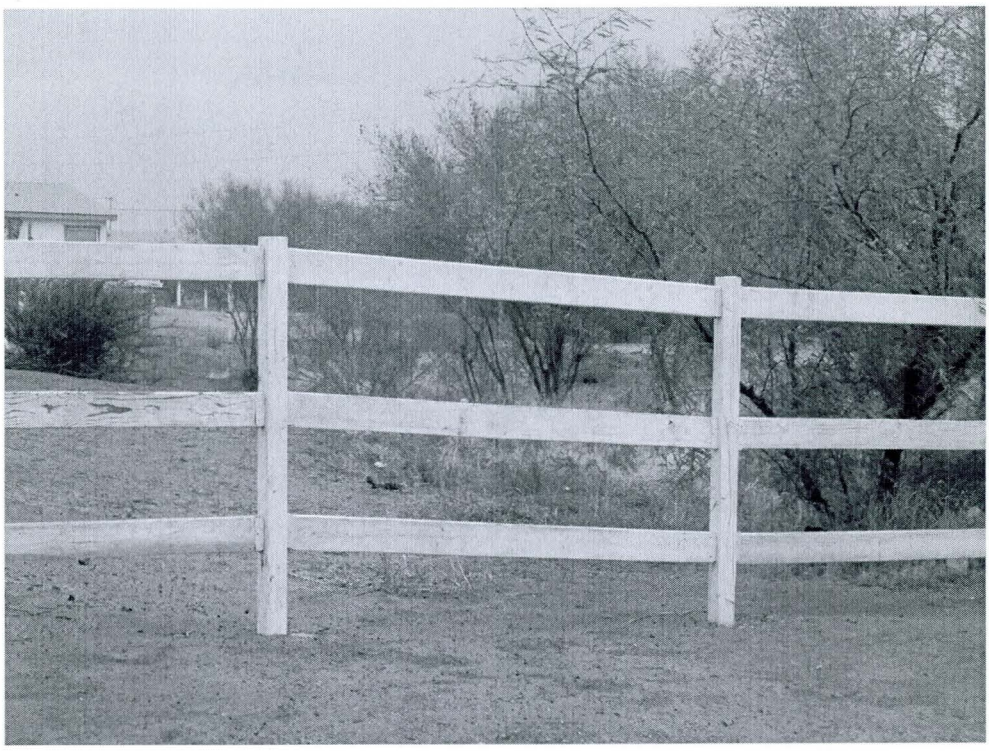
Looking Upstream at Wash 1S2WS18B (J37) Culverts on Elliot Road

Looking Upstream at Wash 1S2WS18A (J27) from the Carver Road

Looking Upstream at Wash 1S2WS18B (J37) from the Carver Road



Looking Upstream at Wash 1S2WS18A (J27) from the Telegram Path



Looking Downstream at Wash 1S2WS18A (J27) from the Telegram Path

Looking Downstream at Wash 1S2WS31B (I70)

Table 1 – List of Project Contacts

Table 1 Data Collection Contacts

Name	Organization	email	Phone	Address	City	State	Zip
Cathy Regester	FCDMC	cwr@mail.maricopa.gov	602-506-4001	2801 W Durango St	Phoenix	AZ	85009
Denise Lacey	MCDOT	deniselacey@mail.maricopa.gov	602-506-6172	2901 W Durango St	Phoenix	AZ	85009
Eric Mayer	MCDOT	ericmayer@mail.maricopa.gov	602-506-8367	2901 W Durango St	Phoenix	AZ	85009
Michael Norris	Maricopa County P&D	michaelnorris@mail.maricopa.gov	602-372-4114	501 N 44th Street, Ste 200	Phoenix	AZ	85008
Michael Smith	FCDMC	mis@mail.maricopa.gov	602-506-0538	2801 W Durango St	Phoenix	AZ	85009
Keith Brown	City of Goodyear	kbrown@goodyearaz.gov	623-882-7956	195 N 145th Avenue	Goodyear	AZ	85338

Table 2 – List of Collected Reports and Electronic Files

Table 2 List of Collected Reports and Electronic Files

Document	Data Description	Media Type	Prepared By
Waterman Wash and Tributaries Floodplain Delineation Study March 2006	Floodplain Delineation	PDF	EEC, Inc.
Waterman Wash Floodplain Delineation Study Update Letter of Map Revision November 2006	LOMR	PDF	EEC, Inc.
Rainbow Valley Area Drainage Master Plan Hydrology Report October 2010	Hydrology Report	PDF	URS
Rainbow Valley Area Drainage Master Plan Hydraulics Report February 2012	Hydraulics	PDF	URS

Appendix B General Documentation and Correspondence

B.1 Special Problem Reports

(No information included in this section)

B.2 Contact (Telephone) Reports

(No information included in this section)

B.3 Meeting Minutes or Reports

(No information included in this section)

B.4 General Correspondence

(No information included in this section)

B.5 Contract Documents

EXHIBIT A

SCOPE OF WORK

CONTRACT FCD 2011C003
Work Assignment No. 3

Rainbow Valley ADMP Areas 1 and 2; & OPTIONAL Areas 3, & 4

Floodplain Delineation Study of Washes 1S2WS31(A56), 2S2WS7A(A52), 2S2WS7B(A51), and 1S3WS24A(A60); Optional Washes: 1S2WS18B(J37), 1S2WS18A(J27), and 1S2WS31B(I70)

EXHIBIT A

SCOPE OF WORK

CONTRACT FCD 2011C003
Work Assignment No. 3

Floodplain Delineation Study of Washes: 1S2WS31(A56), 2S2WS7A(A52), 2S2WS7B(A51), and 1S3WS24A(A60); Optional Washes: 1S2WS18B(J37), 1S2WS18A(J27), and 1S2WS31B(I70)

GENERAL

This study will delineate limited detail (without floodway) Zone AE 100-year floodplains for washes 1S2WS31(A56), 2S2WS7A(A52), and 2S2WS7B(A51); and, detailed Zone AE with floodway for wash 1S3WS24A(A60). OPTIONAL limited detail (without floodway) Zone AE 100-year floodplains may be performed for Washes: 1S2WS18B(J37), 1S2WS18A(J27), and 1S2WS31B(I70) (Refer to Exhibit 1) The delineations will utilize existing 2-foot contour interval mapping provided by the Flood Control District of Maricopa County. Optional wash 1S2WS31B(I70) includes one and two-tenths (1.2) miles of floodway delineation. Approximately six and one-half (6.5) linear miles of limited detail 100-year floodplains (without floodway) and one (1.0) linear mile of detailed 100-year floodplain with floodway will be delineated. An additional three and nine-tenths (3.9) miles are identified as optional including 1.2 miles of floodway delineation.

The CONSULTANT will use existing hydrology both directly and to develop intermediate discharges, and will develop new HEC-RAS modeling to determine the revised floodplain boundaries.

All work must meet the requirements of the DISTRICT's Consultant Guidelines, Third Edition – December 1, 2003 - Revision 1. All work must also meet Arizona Department of Water Resources (ADWR) and Federal Emergency Management Agency (FEMA) requirements for limited detail Zone AE floodplain delineation studies. Prior to the finalization of this contract, the DISTRICT must review and accept the results of this study, and all items called for in this Scope of Work must be delivered to the DISTRICT.

All work must be completed within three hundred ninety five (395) days from the Notice to Proceed (NTP) which includes at least two hundred one (201) days for DISTRICT reviews and the FEMA review period or before the end of contract date 5/11/2013.

TASK 1 - COORDINATION

1.1 Within seven (7) days of the NTP the CONSULTANT will submit a project schedule to the DISTRICT's Project Manager showing coordination meetings and completion dates for each task identified in the Scope of Work (SOW). The schedule shall also show product submittal dates and DISTRICT product review periods. The CONSULTANT will update the project schedule as necessary and when otherwise directed by the DISTRICT.

1.2 The CONSULTANT will participate in regular coordination meetings (at least on a monthly basis) with the DISTRICT's Project Manager and in milestone coordination meetings in the development of the hydraulic analyses. The CONSULTANT is responsible for the minutes of any meetings.

Draft meeting minutes must be delivered to the DISTRICT within seven (7) working days of any monthly meeting. Coordination and milestone meetings should be combined whenever possible.

1.3 The CONSULTANT will submit an estimate of the total monthly billing projections within seven (7) days of the NTP. Thereafter, this estimate will be updated and submitted to the DISTRICT's Project Manager at least ten (10) days before the end of each quarter.

1.4 The CONSULTANT will submit monthly progress reports at submittal of monthly invoices. The report shall be brief and should be no longer than two (2) typed pages. At a minimum, the monthly report shall contain the following:

a. A description of the work accomplished by task during the reporting month.
b. Percent (%) completed for the month and percent (%) cumulative completed for each task.
c. A brief description of the work to be accomplished in the following month.
d. A description of any problems encountered.

1.5 The DISTRICT will be responsible for placing the legal advertising at the beginning of the study. The advertisement will run once in the Arizona Business Gazette. After the newspaper runs the ad, the DISTRICT will supply the CONSULTANT with the original affidavit of publication from the newspaper for each day that the ad ran.

1.6 The DISTRICT has prepared a separate set of guidelines for the CONSULTANT on conducting public involvement and public information activities for the DISTRICT. A copy of these guidelines will be provided to the CONSULTANT by the Public Information Office and shall be used by the CONSULTANT if or when preparing public information related materials.

1.7 The DISTRICT will provide any public notice beyond that described in task 1.5.

1.8 The CONSULTANT will participate in a public information open house meeting prior to sending the study Technical Data Notebook (TDN) to FEMA. The CONSULTANT will create the map and/or graphic portion of all exhibit displays for the meeting per DISTRICT specifications. The DISTRICT will create, print and mount the final exhibit displays using the CONSULTANT'S maps and/or graphics. The DISTRICT will reserve the meeting venue, secure a certificate of insurance and pay any facility rental fee. The CONSULTANT will provide refreshments for the open house meeting.

1.9 CONSULTANT/DISTRICT Performance Evaluations will be performed. A formal evaluation will be performed at the completion of the project upon receipt of all deliverables.

TASK 2 - DATA COLLECTION

2.1 The CONSULTANT will collect and review pertinent data from the DISTRICT and other outside sources. Data to be collected will include previous flood hazard reports and hydrology for the study area; existing readily available topographic mapping; proposed development plans, historical flooding information; as-built plans for existing structures; FEMA Flood Hazard Boundary Maps and any Letters of Map Amendment and/or Revisions, and other pertinent information.

2.2 The CONSULTANT will consult with officials from the DISTRICT and the City of Goodyear and the County and State transportation departments, in order to identify local flooding problems and to

obtain information on current and planned public works projects, channel modifications, storm drain systems, development, and corporate limits.

2.3 A written summary of the data collected will be included as a section in the Technical Data Notebook (TDN). A preliminary draft of this section is due within twenty-one (21) days of Notice to Proceed. The section will be updated to include information developed through continued research that may be necessary as the project proceeds.

TASK 3 - TOPOGRAPHIC MAPPING

3.1 Topographic mapping with 2-foot contour intervals (including digital terrain model data) will be provided for the study area by the DISTRICT. This topographic mapping will be referenced to the Arizona Central State Plane Coordinate System, which is tied to the North American Datum 1983 High-Accuracy Reference Network (NAD 83 HARN), horizontally; and the North American Vertical Datum 1988 (NAVD 88), vertically. The DISTRICT will provide the CONSULTANT with aerial photographic imagery that is recent enough to be appropriate to the level of study, and contiguous within the study area.

TASK 4 - FIELD SURVEY

4.1 Field surveys and measurements of bridges, culverts, hydraulic structures, and split flow areas are to be obtained by the CONSULTANT when as-built plans are not available, or when conditions have changed that may impact the delineation. Geodetic Densification and Cadastral Survey (GDACS) control will be the basis of field survey. This information should be reduced and compiled into an 11" x 17" (maximum size) drawing format approved by the DISTRICT, for inclusion in the TDN. The information presented in the drawing should be in a format appropriate for use in future HEC-RAS models. It may be necessary to field survey some structures since the as-built plans may not be on the same vertical datum as the study.

4.2 Copies of the survey field books and office calculations must be supplied by the CONSULTANT to the DISTRICT for inclusion in the TDN. An Arizona Registered Land Surveyor (RLS) must seal and sign the survey notes. This information can be submitted separately if approval is obtained from the DISTRICT's Project Manager.

4.3 [Optional] It is anticipated that field survey of finish floor elevations, finish lot grades adjacent to building, and finish garage floor elevations for up to five (5) habitable structures may be needed. The DISTRICT shall notify the property owners by letter before commencing the survey. The CONSULTANT shall also provide photographs and structure location in latitude and longitude. The CONSULTANT will use this information to complete the requested FEMA Elevation Certificates in accordance with Elevation Certificate Instructions provided by FEMA. This Task includes submittal and coordination with the FCDMC and making any corrections, if needed.

TASK 5 - HYDROLOGY

5.1 Hydrologic Modeling and Hydrologic Summary

The hydrology from the previous study for this area (Rainbow Valley Area Drainage Master Plan (ADMP) contract FCD 2006C029) will be used for this study. Therefore, the CONSULTANT will only need to complete minimal additional hydrologic calculations such as determination of intermediate discharges, if needed; and, re-evaluation of the split flow between Washes 2S2WS7A(A52) and 2S2WS7B(A51), also, if needed. However, the previous study models should

be included in the submittal of the hydrologic analysis documentation in order to provide a comprehensive package. A Hydrologic Summary of the documentation will be prepared by the CONSULTANT as a draft section in the TDN and it will be submitted for review and approval by the DISTRICT prior to commencing with floodplain modeling.

5.2 Review and Approval

The CONSULTANT shall obtain the DISTRICT's approval of the preliminary discharges to be used in the hydraulic modeling prior to commencement of the hydraulic modeling.

5.3 The Hydrologic Study and Report

The findings of the Hydrologic Summary will be finalized into a Hydrologic Report that will be presented as Section 4 of the Technical Data Notebook and will be prepared in accordance with ADWR State Standards Attachment 1-97 (SSA 1-97) or most recent version. The report will be organized as specified by the DISTRICT, following SSA 1-97 format. The report will include backup documentation from the existing hydrology as well as comprehensive drainage displays to show all sub-basins and concentration points with discharge tables. Specific deviations from this hydrologic scope shall not be undertaken without the specific written authorization from the DISTRICT's Project Manager.

TASK 6 - FLOODPLAIN DELINEATION

6.1 Limited detail Zone AE Floodplain delineations will be performed for approximately six and one-half (6.5) linear miles of washes and detailed (with floodway) delineations will be performed for approximately one linear mile of wash. Hydraulic information upon which the re-delineations will be based will be obtained by modeling using the U.S. Army Corps of Engineers latest release of HEC-RAS (version 4.1.0 or later) and methodology acceptable to FEMA as defined in their Guidelines and Specification for Flood Hazard Mapping Partners, April 2003 and FIA Document 12, Appeals, Revisions, and Amendments to Flood Insurance Maps, December 1993. The completed delineation work will meet the requirements for floodplain delineations as prescribed by FEMA and the ADWR, including the Arizona State Standard for Hydraulic Modeling (SS9-02). The modeling and re-delineations will tie-in vertically and horizontally at the downstream and upstream confluences with the effective or most recently delineated pending floodplain from the Waterman Wash FDS or the Rainbow Valley ADMP, whichever is more recent.

Optional: An additional 2.7 miles of limited detail Zone AE floodplains and 1.2 miles of detailed Zone AE floodplains with floodways will be performed if authorized by the DISTRICT. This optional task is not authorized with the Notice to Proceed; it may be authorized in writing by the DISTRICT based upon specific need as determined by the DISTRICT during the contract period.

6.2 The CONSULTANT will obtain DISTRICT approval at each of the following steps:

a. Draft field reconnaissance section of the TDN and estimation of Manning's "n" values.
b. Hydraulic cross-section location and orientation (with respect to channel geometric and bed slope changes, and mass-flow paths).
c. Methodology to be used for split-flow analyses, if appropriate.
d. Hydraulic model documentation
e. Draft and final floodplain (natural) delineation.

f. Draft floodway delineations for wash 1S3WS24A (A60) and OPTIONAL wash 1S2WS31B(I70)

g. Draft and final Hydraulics TDN section documentation (Section 5 of the TDN).

6.3 Field Reconnaissance

6.3.1 The CONSULTANT will conduct a field reconnaissance of the study area. This will include observation of channel and floodplain conditions for estimating Manning's "n" values; photographic documentation of floodplain characteristics; determination of channel bank characteristics; determination of channel bed particle size; observation of possible overflow area; observation and classification of levees or other flood control structures and nominal measurement of bridge and culvert dimensions not included in the survey task. Such measurements will be made to classify smaller cross-drainage structures as non-effective.

6.3.2 Manning's "n" values are to be determined using the methodology in the USGS report, *Selection of Manning's Roughness Coefficient for Natural and Constructed Vegetated and Non-Vegetated Channel, and Vegetation Maintenance Plan Guidelines for Vegetated Channels in Central Arizona, 2006.* If approved by the DISTRICT, another report entitled, *Estimated Manning's Roughness Coefficients for Stream Channels and Floodplains in Maricopa County, 1991*, may be substituted. Copies of these reports are available through the DISTRICT. Manning's "n" values can be presented for typical reach types observed in the project area, rather than specific reaches of specifically named watercourses. It is anticipated that several different reach types will be identified during the field reconnaissance. Supplemental field photos will be used to substantiate slight roughness value variations from otherwise typical reach types, for locations where slight roughness value variations can be applied without providing complete calculations. These variations will be fully documented in Section 5 of the TDN and in the hydraulic model's General Description.

6.3.3 Representative Manning's "n" values will be selected and documented in a reconnaissance, "n value" report. The report will present the calculated determination of channel and overbank "n" values using captioned color photographs for each type in the project area, and the extents of each type will be displayed on an exhibit. The "n value" report will also discuss floodplain conditions affecting the delineation, describe all structures and obstructions, and provide color photos or photocopies of major hydraulic structures. Photo location for channels, structures, and "n" value determinations will then be displayed on reduced scale mapping and included in the draft TDN Hydraulic documentation appendix and in all subsequent TDN versions.

6.4 Cross Sections

6.4.1 The location and alignment of cross sections and channel centerlines will be submitted for the DISTRICT's review and approval. Cross sections will be spaced approximately every five hundred (500) feet, unless geographic or structural constraints dictate otherwise, and will extend the full width of the area inundated by 100-year floodwaters. Cross section placement locations shall be selected with respect to grade-breaks in the channel profile, channel geometric variations, and existing structures such as roads, railways, drainage features and confluences, as well as at future roadway alignments and cadastral section lines. Cross

section spacing should be done in such a way as to minimize computational head loss and where natural channel bed grade breaks evidently occur in thalweg profile plots. Cross section stationing will be from left to right looking downstream with the hydraulic baseline at station 10,000. Identification of cross section will be in river miles, increasing upstream. The cross section stationing will tie into the specified river mile of any existing FEMA studies. The cross sections may need to be reoriented or altered after running the HEC-RAS model to ensure that they are perpendicular to the center of mass of flow per FEMA criteria. Cross sections developed by the HEC-RAS interpolation feature are not to be used. The CONSULTANT must coordinate and then document the methodology for generating the cross section geometric data. Acceptable methods might include use of a computer program to develop the data from the digital topographic information or from field surveys.

6.4.2 The HEC-RAS output in the TDN, in addition to summary tables and a full output report, shall include fully labeled profile and cross section plots.

6.5 Bridges and culverts must be modeled according to HEC-RAS modeling requirements for the selected routine. Where multiple bridges occur, each bridge will be modeled separately. The HEC-RAS modeling results for bridges, culverts, and other hydraulic structures must be checked by using independent methods approved by the DISTRICT to analyze these structures. The hydraulic effects of bridges and culverts shall be incorporated into assessing the floodplain around such structures, especially in areas where ponding will occur. Minor conveyance structures such as small culverts (i.e. less than 30" in diameter), or, structures considered likely to become clogged during the 100-year peak discharge, shall not be included in the hydraulic analyses.

6.6 It is possible that during the course of the hydraulic modeling, it will be discovered that the 100-year event flows break out of one or more of the reaches being studied. If the modeling suggests that any flow breakouts occur, the CONSULTANT will promptly contact the DISTRICT to coordinate an appropriate course of action, which may include modification of the SOW, schedule, and fee for the project.

6.7 Flood Zones will be determined according to FEMA criteria and will be clearly labeled on the final drawings. The drawing cover sheets shall show the study title and District contract number, and should show both location and vicinity maps, and a sheet index in a cadastral section background. A list of survey control monuments (or ERM's) with elevations and coordinates shall be shown along with topographic mapping contour interval, vertical and horizontal datums, coordinates, and the conversion factor between NAVD88 and NGVD29 vertical datums. A field survey certification note (if necessary) will be provided and will include the signature and seal of the RLS responsible for all ground survey. The names of the companies and dates for both the topographic flights and the aerial photography flights shall be listed.

6.8 For Floodway encroachment modeling, the CONSULTANT shall first use HEC-RAS Method 4 (equal conveyance) where practical then incorporate modifications and refinements, using HEC-RAS Method 1 (manual method). The final HEC-RAS files shall contain Method 1 information and shall not contain Method 4 information.

6.9 The main project Description box of the HEC-RAS models should include the following:

a. Project Name, FCD Contract Number, work assignment number, and project control number

b. Consultant Name, phone number, address, website address, and company Job Number
c. Study Purpose
d. File Name and latest run date/final date if completed
e. Vertical Datum of the model, base map date, and base map contractor information
f. Any notable features that are considered unique or unusual to the hydraulic modeling
g. HEC-RAS program version
h. Source of hydrology and discharges used
i. Wash names
j. Subsequent update information, if any

In addition, minor descriptions should be added to the model for hydraulic cross sections located above or below drainage structures, at section lines, at highways and railway crossings, at canals, and at confluences. Model descriptions should be added to culverts and lateral structures, and at any other features considered pertinent to the modeling.

6.10 The CONSULTANT will provide work maps using the DISTRICT's most recent contour mapping. The work map drawings will be 24" X 36" in size. The work map scale will be 1" = 200'. The cover sheet of the work map drawings shall be prepared in a manner to be approved by the DISTRICT. Each study sheet work map drawings shall include the project title, contract number, source of topographic mapping, and a location map showing the geographic range covered by each specific mapping sheet. Each study sheet will include watercourse names and existing floodplain boundaries, proposed floodplain boundaries, a north arrow, map scale section lines and section corners, current streets and highway names, subdivision boundary names, Horizontal and Vertical Datum references (State Plane Coordinate System, NAD 83, and NAVD 88) any of MCDOT's GDACS monuments and NGVD monuments located within individual sheet boundaries, major drainage features, corporate boundaries, hydraulic cross section lines, sheet index map, peak discharges, and relative Township and Range labels. A conversion factor from NAVD 88 to NGVD 29 should also be shown.

6.11 Technical Data Notebook (TDN)

6.10.1 The findings of the floodplain delineation study will be presented in Section 5 of the TDN and will be prepared in accordance with ADWR State Standards Attachment 1-97 (SSA 1-97) or most recent version. The report will be organized as specified by the DISTRICT standards, following SSA 1-97 format.

6.10.2 The hydraulic analysis/HEC-RAS output in the TDN, in addition to summary tables and full output report, should include fully labeled cross section plots. Section plots should be grouped per study reach, and reach groups should be separated and then indexed within the main report to expedite data recovery.

6.12 The CONSULTANT shall review the output of the HEC-RAS computer model to ensure the flow depths and velocities are reasonable and realistic with respect to those expected in this watershed. This will include a comparison of flow velocities in the hydraulic analysis with those related to hydrologic routing. Adjustments to the model input should be completed as necessary to obtain the most realistic results. The CONSULTANT shall provide proper QA/QC of the models and TDN before delivering to the DISTRICT.

6.13 The CONSULTANT shall fill out all the forms required by FEMA (MT-2 forms) for the submittal of a Floodplain Delineation Study as a Letter of Map Revision (LOMR) request and supply all necessary information required as specified in the MT-2 forms, including the annotated FIRM panels.

TASK 7 – DIGITAL DATA

Digital data shall be prepared and delivered in conformance with the DISTRICT's Hydrologic Information System Data Delivery Specifications, Revision 3.1, Computer Aided Drafting & Design (CADD) Data Delivery Specifications, Revision 1.0, or Shape File Data Delivery Specifications V1.2., date May 1st, 2007. The following themes will be submitted at the time of FEMA submittal for placement of the pending floodplains on the District's database:

- PRJ: Project Boundary
- PRJDAT: Project Identification
- DQ: Data Quality
- FPZNFCD: Floodplain Zones

The following themes, in addition to those listed for the above for the FEMA submittal will be required for the final data delivery after FEMA approval:

- FPSRFFCD: Water Surface Elevations (Base Flood Elevations)
- FPXFCD: Cross Sections
- FPBLN: Hydraulic Baseline

A HEC-RAS report (.rep) generated as described on page CP-319 of the Computer Aided Drafting & Design (CADD) Data Delivery Specifications, Revision 1.0 will be delivered for each wash studied.

The District will provide the consultant with the project ID (prj-rid).

TASK 8 – DELIVERABLES

8.1 The CONSULTANT will provide both paper and electronic deliverables at the completion of each task unless otherwise approved in advance by the DISTRICT.

8.2 Prior to FEMA Submittal: The CONSULTANT will deliver the following items to the DISTRICT.

8.2.1 One (1) copy of the Draft TDN including draft work maps according to ADWR State Standards Attachment 1-97 (SSA 1-97) or most recent version. The report shall be organized as specified by the DISTRICT standards, following SSA 1-97 format. All products will be labeled "Draft" or "Preliminary" prior to approval from FEMA.

8.2.2 Preliminary Digital Data Delivery including all digital files listed under Task 7 applicable to the final deliverable.

8.3 FEMA Submittal: The CONSULTANT will submit the following items to the DISTRICT for review by FEMA and any other appropriate governmental agency. All of the following products are considered deliverables for the FEMA submittal:

8.3.1 Two (2) complete sets of blackline paper topographic base maps with aerial photo background and the floodplain delineations shown. All drawings will be signed and sealed by persons of appropriate professional registration(s). Each registrant will provide a specific statement as to what service they performed.

8.3.2 Two (2) complete copies of the Technical Data Notebook, including completed FEMA forms, annotated Flood Insurance Rate Maps showing the proposed delineation and HEC-RAS input/output files on diskettes. The Technical Data Notebook will be prepared in accordance with ADWR State Standards Attachment 1-97 (SS 1-97) or most recent version. The notebook will be organized as specified by the DISTRICT, following SS 1-97 format.

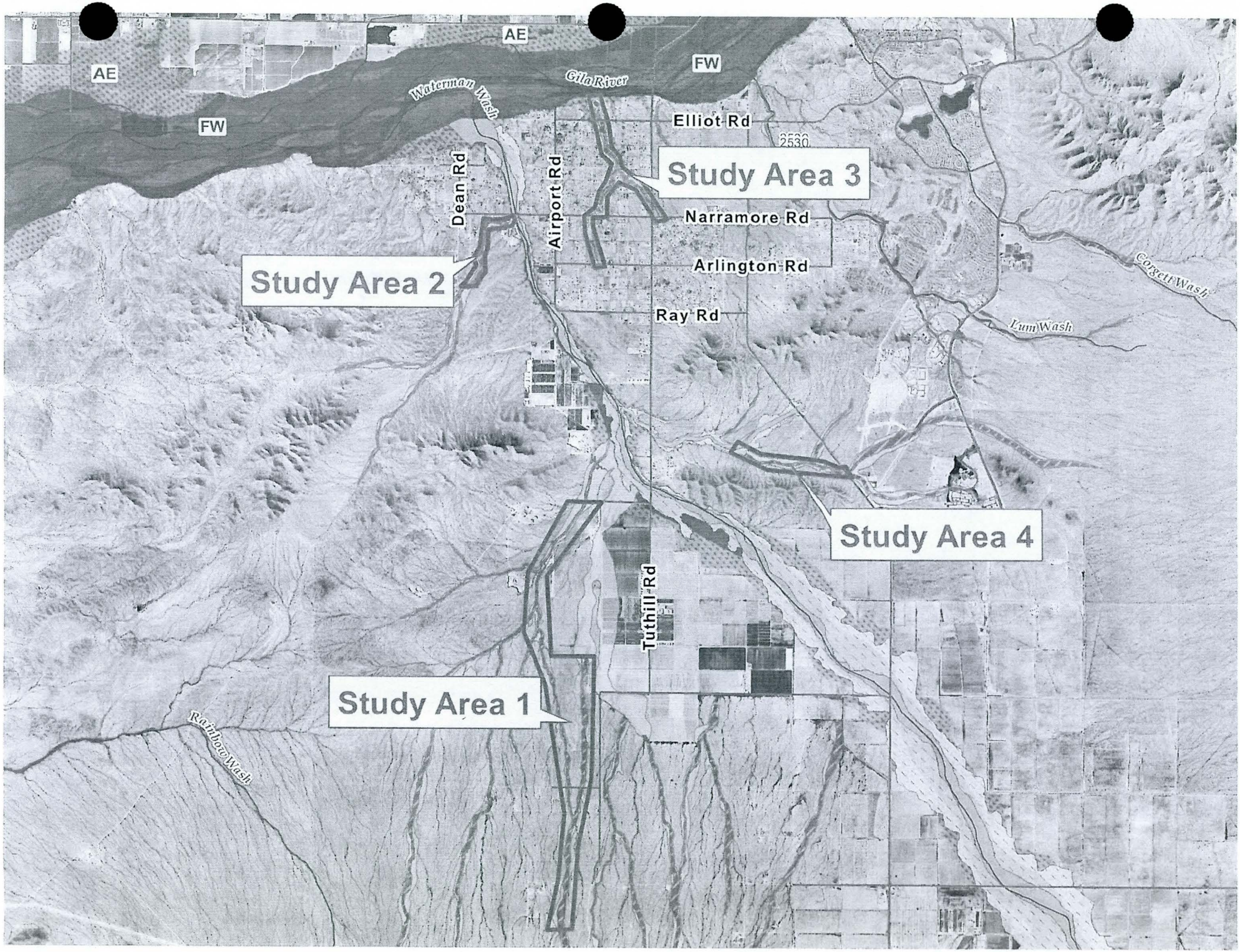
8.3.3 The digital data described in Task 7 as deliverable at FEMA submittal.

8.4 Final Submittal: The following products are considered deliverables for the final submittal to the DISTRICT after FEMA approval is issued.

8.4.1 One (1) complete set of Mylars and two (2) complete sets of sealed blackline paper flood study work topographic map sets with the aerial photo background and the floodplain delineations shown or sealed PDF copies. All drawings will be signed and sealed by persons of appropriate professional registration(s). Each registrant will provide a specific statement as to what service they performed.

8.4.2 All remaining floodplain delineation data in conformance with the DISTRICT's HIS Specifications.

8.4.3 Two (2) complete copies of the Technical Data Notebook including HEC-RAS input/output files on compact disc (based upon the level of changes during the FEMA review process, this may require only change-outs of modified pages and/or disks). The Technical Data Notebook will be prepared in accordance with ADWR State Standards Attachment 1-97 (SSA 1-97) or most recent version. The notebook will be organized as specified by the DISTRICT, following SS 1-97 format. This submittal of the Technical Data Notebook shall include any correspondence and/or meeting minutes with the reviewing agencies and shall reflect any revisions required by those reviewing agencies. Revisions may include, but are not limited to, addressing FEMA's comments, modifications to the delineation maps, the HEC-RAS model, and/or the Final Report. The report shall also be prepared in PDF format.


AE
AE
FW
FW
Waterman Wash
Gila River
Elliot Rd
2530
Study Area 3
Dean Rd
Airport Rd
Narramore Rd
Arlington Rd
Study Area 2
Ray Rd
Corgett Wash
Lum Wash
Study Area 4
Tuthill Rd
Study Area 1
Rainbow Wash

Flood Control District
of Maricopa County

www.fcd.maricopa.gov
2801 West Durango Street
Phoenix, Arizona 85009
Phone: 602-506-1501
Fax: 602-506-4601
TT: 602-505-5897

Board of Directors
Fulton Brock, District 1
Don Stapley, District 2
Andrew Kunasek, District 3
Max Wilson, District 4
Mary Rose Wilcox, District 5

April 26, 2012

Mr. Scott M. Larson, Vice President
RBF Consulting
16605 North 28th Ave, Suite 100
Phoenix, AZ 85053-7550

RE: Rainbow Valley ADMP Area Floodplain Delineation Study (FDS) – Areas 1, 2, 3, & 4
Contract Number 2011C003
Work Assignment #3

Dear Mr. Larson:

This letter serves as your formal Notice-to-Proceed on the optional floodplain delineation tasks for Areas 3 and 4 as detailed in the Scope of Work for the subject contract.

If you have any questions, please feel free to call me at 602-506-4001 or contact me by e-mail at cwr@mail.maricopa.gov.

Yours truly,

Catherine W. Regester

Catherine W. Regester, P.E., CFM
Senior Engineer

cc: Amir Motamedi
Sharon Rodgers
Nathan Ford
FCD Finance
File

Flood Control District
of Maricopa County

www.fcd.maricopa.gov

2801 West Durango Street
Phoenix, Arizona 85009
Phone: 602-506-1501
Fax: 602-506-4601
TT: 602-505-5897

Board of Directors
Fulton Brock, District 1
Don Stapley, District 2
Andrew Kunasek, District 3
Max Wilson, District 4
Mary Rose Wilcox, District 5

October 15, 2012

Mr. Scott M. Larson, Vice President
RBF Consulting
2929 North Central Ave, Suite 800
Phoenix, AZ 85012

RE: Rainbow Valley ADMP Area Floodplain Delineation Study (FDS) – Areas 1, 2, 3, & 4
Contract Number 2011C003, Work Assignment #3

Dear Mr. Larson:

This letter serves as documentation of a modification to the Scope of Work for the subject project as previously discussed with Mr. Nathan Ford, RBF's Study Project Manager.

The original Scope of Work included a detailed delineation of the 1.2 mile reach of Wash 2S2WS7A(A52) located upstream of the divergence of Wash 2S2WS7B(A51). Based on a closer examination of the reach, it was determined that a detailed delineation of this reach wasn't reasonable based on the currently available data. Therefore, it was agreed, in lieu of this reach, RBF will extend the delineation of Wash 1S2WS31(A56) from Pecos Road downstream to the confluence with Waterman Wash; and, perform an additional delineation of the west fork of Wash 1S2WS31(A56) at river mile 2.123 to approximately 0.5 miles upstream. The two new reaches of delineation are approximately 0.7 mile and 0.5 mile, respectively, and total 1.2 miles, resulting in a net change of zero river miles of delineation from the original scope.

If you have any questions or have a different understanding of the above, please feel free to call me at 602-506-4001 or contact me by e-mail at cwr@mail.maricopa.gov.

Yours truly,

Catherine W. Regester

Catherine W. Regester, P.E., CFM
Senior Engineer

cc: Amir Motamedi
Nathan Ford
FCD Project File

B.6 Public Information

AFFIDAVIT OF PUBLICATION
RAINBOW VALLEY FLOODPLAIN
DELINEATION STUDY

01

ANNOUNCEMENT OF INTENT TO PERFORM FLOODPLAIN/FLOODWAY DELINEATION STUDY FOR SEVERAL WASHES IN THE RAINBOW VALLEY AREA OF MARICOPA COUNTY, ARIZONA

The Flood Control District of Maricopa County (FCDMC), under authority of the National Flood Insurance Act of 1968 (PL-90-448), as amended, and the Flood Disaster Protection Act of 1973 (PL93-234), is funding a detailed re-study of flooding areas along washes 1S2WS31(A56), 2S2WS7A(A52), 2S2WS7B(A51), 1S3WS24A(A60), 1S2WS18A(J27), 1S2WS18B(J37), and 1S2WS31B(J79); and, an upstream extension of the flooding areas along washes 1S2WS18A(J27) and 1S2WS18B(J37), within the Rainbow Valley area of Maricopa County. The FCDMC has contracted with RBF Consulting to carry out the study. The study encompasses Sections 7, 17, 18, 19, 31, 32, and 33 of Township 1 South, Range 2 West; Section 24 of Township 1 South, Range 3 West; and Sections 6, 7, 18, and 19 of Township 2 South, Range 2 West.

This study will examine and evaluate the areal extent of flood-prone areas using detailed methodology. The results will be used by the FCDMC or the local jurisdiction to regulate development within the floodplain/floodway. The study will be submitted to the Federal Emergency Management Agency (FEMA) in order to update the Flood Insurance Rate Maps (FIRMs), which are used to determine federal flood insurance rates.

This announcement is intended to inform all interested persons and communities of the commencement of this study, and to provide concerned citizens with an opportunity to bring any relevant technical information to the attention of the FCDMC/FEMA. This information will be considered during the course of the study. Your comments should be addressed to Ms. Catherine Regester, Project Manager at the Flood Control District of Maricopa County, 2801 West Durango Street, Phoenix, Arizona 85009, (602) 506-4001.

Pub: September 6, 2012

Arizona Business Gazette
The business resource

PO BOX 194
Phoenix, Arizona 85001-0194
(602) 444-7315 FAX (602) 444-7364

STATE OF ARIZONA
COUNTY OF MARICOPA } SS.

Manny Vargas, being first duly sworn, upon oath deposes and says: That he is the Legal Ad Rep of the Arizona Business Gazette, a newspaper of general circulation in the county of Maricopa, State of Arizona, published weekly at Phoenix, Arizona, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates indicated.

9/6/2012

Sworn to before me this
6TH day of
SEPTEMBER 2012

ONDREA SHEPPARD
Notary Public - Arizona
Maricopa County
My Comm. Expires Aug 3, 2014

Notary Public

Project Schedule

The study started in April 2012. A public meeting, to be conducted in the fall of 2012, will present the new floodplain/floodway delineation for the study washes. District staff and study team members will host the meeting to discuss the study and answer any questions.

When the study is completed following the public meeting, the final results will be submitted to FEMA for approval and adoption. FEMA uses information from the studies to update the Flood Insurance Rate Maps for the National Flood Insurance Program. Changes in floodplain boundaries can affect local building and federal flood insurance requirements.

About Floodplain/Floodway Delineation Studies

The District conducts Floodplain/Floodway Delineation Studies throughout unincorporated Maricopa County and within other jurisdictions to determine the location of Special Flood Hazard Areas. These are areas subject to flood inundation by a 100-year storm (1-percent chance of occurring in any given year). The studies provide data for sound floodplain management so that future development will not negatively impact the movement of stormwater, reducing the risk of property damage from flooding.

More information can be found on the Rainbow Valley Floodplain/Floodway Delineation Study project page on the Flood Control District's Web site, www.fcd.maricopa.gov.

Contact

Catherine Regester, P.E., CFM
602-506-4001
cwr@mail.maricopa.gov

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

September 2012

Rainbow Valley Floodplain/ Floodway Delineation Study

Project Notification

Maricopa County Supervisor:
Mary Rose Wilcox, District 5

www.fcd.maricopa.gov

Rainbow Valley Floodplain/ Floodway Delineation Study

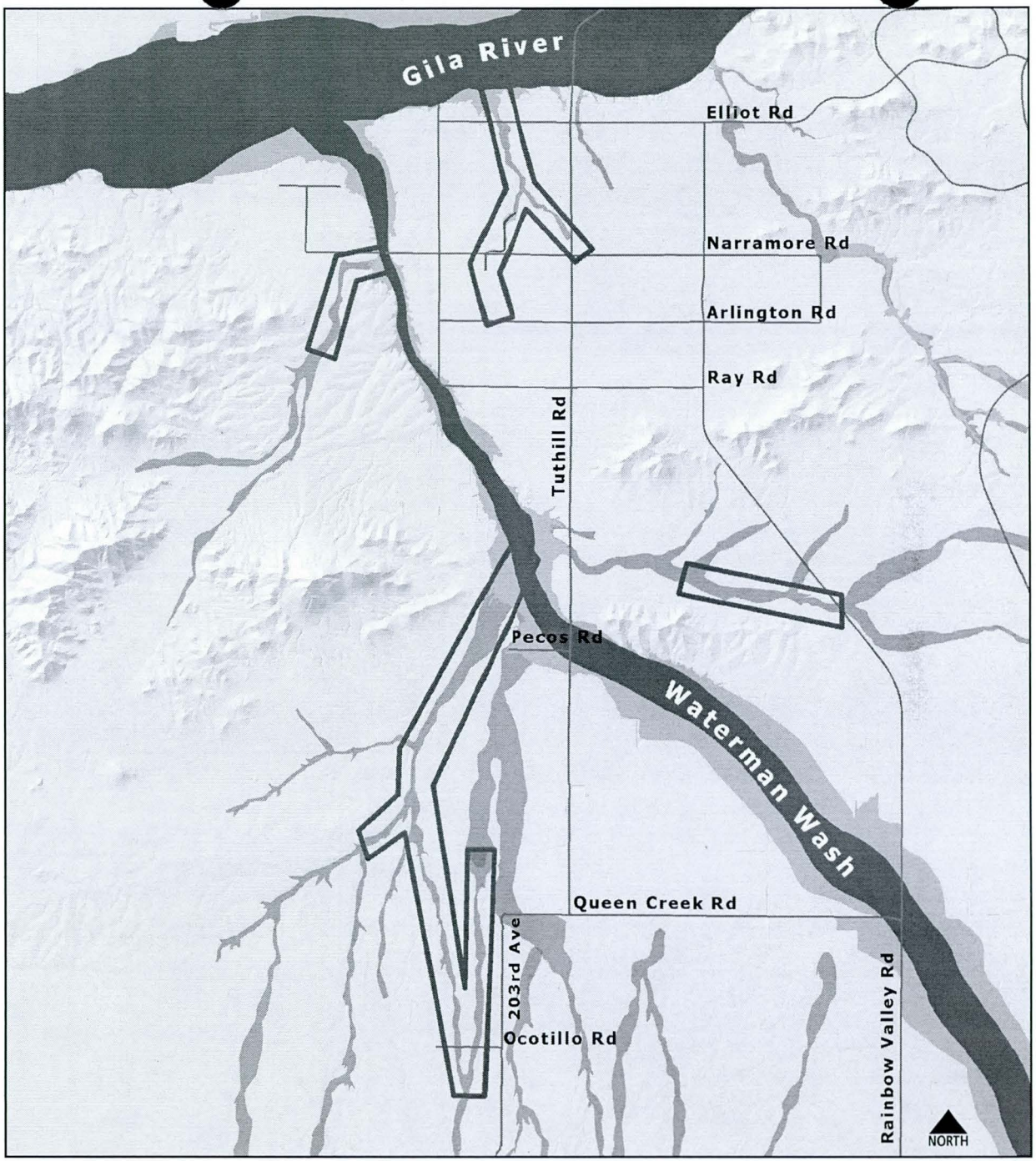
The Flood Control District of Maricopa County (District) is conducting a detailed Floodplain/Floodway Delineation Study along several washes in the Rainbow Valley area.

The study will use detailed topographic mapping and technical analyses to re-evaluate the extent of floodprone areas along the study washes. The results will be a re-delineation of the floodplain boundaries, and, for some washes, an upstream extension of the floodplain and/or the addition of a floodway. This detailed study will replace the results of portions of a previous delineation study which used approximate study methods.

You received this brochure because some portion of your property may be within or adjacent to the effective Federal Emergency Management Agency (FEMA) 100-year floodplain, within or adjacent to the previous approximate delineation study (shown as Future FEMA Floodplain on the map in this brochure), or possibly within or adjacent to the proposed new floodplain/floodway resulting from this study.

Legend

- Project Study Area
- Effective FEMA Floodway
- Effective FEMA 100-Year Floodplain
- Future FEMA Floodplain



Map not to scale.

You are Invited to a Public Meeting

Representatives from the Flood Control District and the consultant team will explain the delineation study results and show how your property may be affected. Please bring this brochure to the meeting. Your property's Assessor's Parcel Number (APN) is printed on the address label and the APN can help reference your property on study maps.

Public Meeting

Wednesday, November 14, 2012
6:00–7:30 p.m.
Rainbow Valley Elementary School
19716 West Narramore Road
Buckeye, Arizona 85326

Map not to scale.

Contact

Catherine Regester, P.E., CFM
Project Manager
602-506-4001
cwr@mail.maricopa.gov

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

November 2012

Rainbow Valley Floodplain/ Floodway Delineation Study

PUBLIC MEETING ANNOUNCEMENT

Maricopa County Supervisor:
Mary Rose Wilcox, District 5

www.fcd.maricopa.gov

Rainbow Valley Floodplain/ Floodway Delineation Study

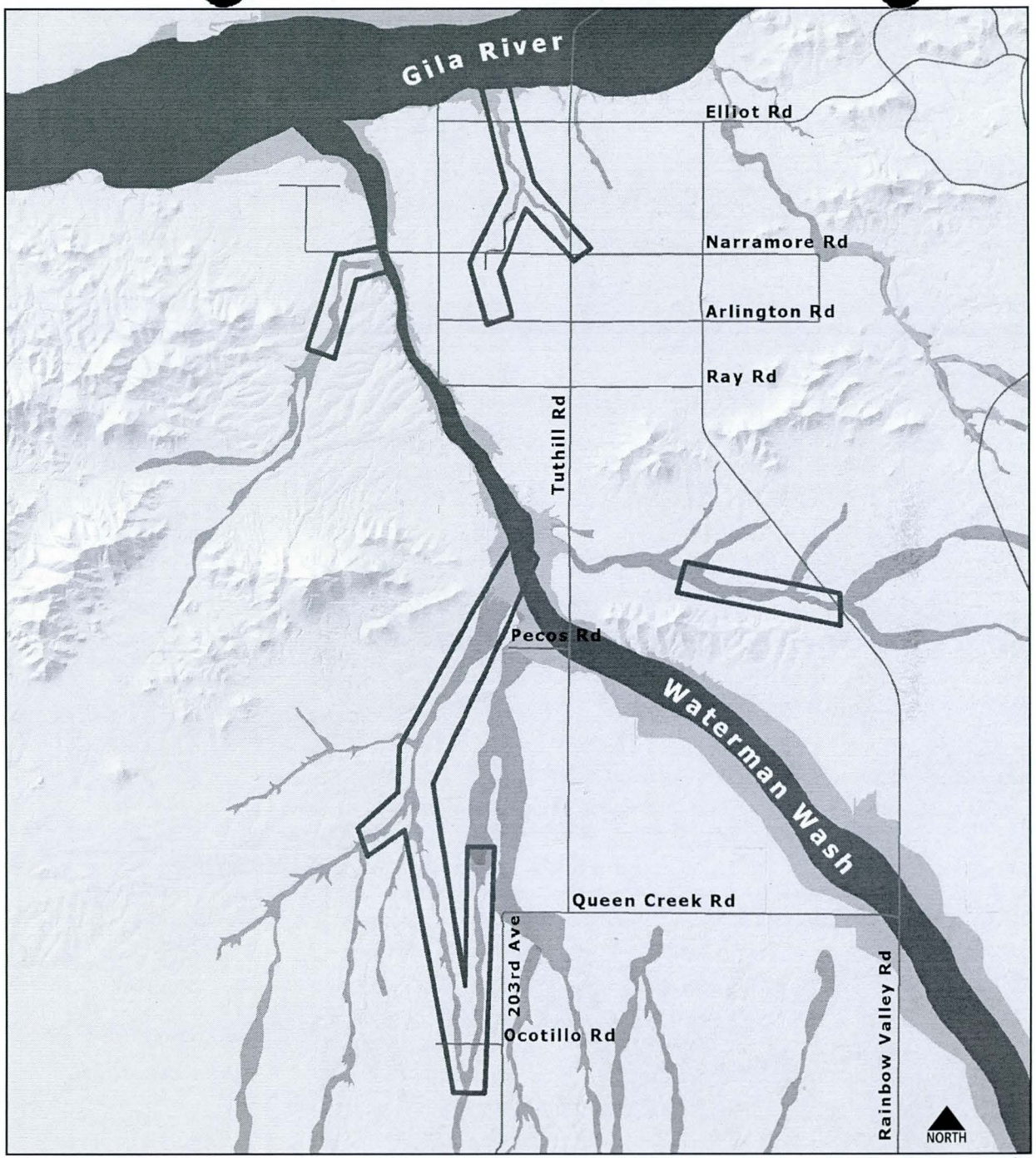
The Flood Control District of Maricopa County (District) is announcing the results of a detailed Floodplain/Floodway Delineation Study along several washes in the Rainbow Valley area. You received this brochure because some portion of your property may be within or adjacent to the effective Federal Emergency Management Agency (FEMA) 100-year floodplain, within or adjacent to the previous approximate delineation study (shown as Future FEMA Floodplain on the map in this brochure), or possibly within or adjacent to the proposed new floodplain/ floodway resulting from this study.

The study results are a detailed re-delineation of the floodplain boundaries, and, for some washes, an upstream extension of the floodplain and/or the addition of a floodway. This detailed study will replace the results of portions of a previous delineation study which used approximate study methods.

In November 2012, the study results will be submitted to FEMA for approval and adoption. FEMA uses information from the studies to update the Flood Insurance Rate Maps for the National Flood Insurance Program. Changes in floodplain boundaries can affect local building and flood insurance requirements.

Legend

- Project Study Area
- Effective FEMA Floodway
- Effective FEMA 100-Year Floodplain
- Future FEMA Floodplain



Map not to scale.

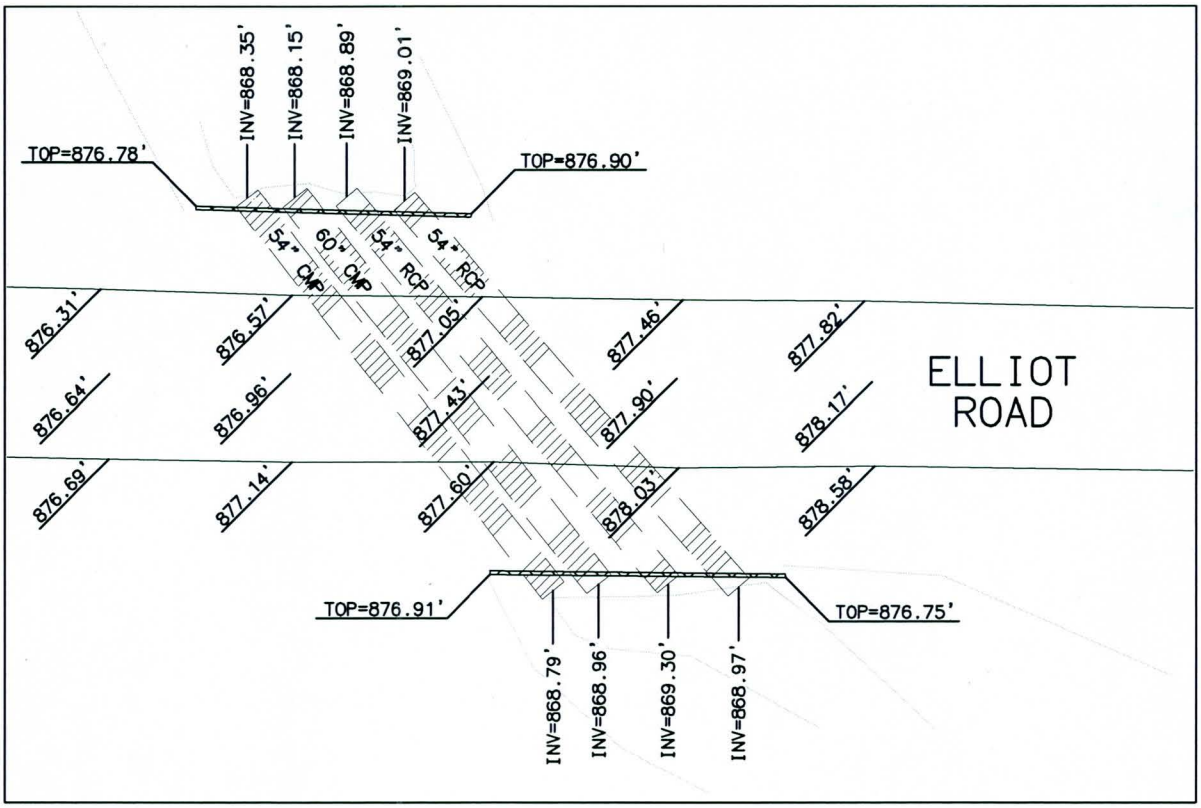
B.7 FEMA Correspondence

Appendix C Survey Field Notes

SURVEY STRUCTURE NOTES

WASH NAME:	1S2WS18B(J37)
LOCATION:	ELLIOT ROAD
GPS LAT:	33°20'54.36450" N
GPS LONG:	112°29'47.36450" W
NOTE: LATITUDE AND LONGITUDE LOCATION AT CENTERLINE OF ROAD AT CULVERT CROSSING.	

NOT TO SCALE



REGISTERED LAND SURVEYOR
CERTIFICATE NO.
37174
DANIEL K.
MARDOCK
Date Signed 5/17/12
ARIZONA, U.S.A.
Expires: 03/31/13

RBF CONSULTING

PLANNING
DESIGN
CONSTRUCTION

H:\PROJ\5104771\CADD\EXHIBITS\4771-CULVERT-EXHIBIT.DWG MBUCHANAN 5/17/12 1:16 pm

45-104771 Rainbow Valley FDS
Project Points for Topography Survey
NAD 1983 (2007),State Plane Arizona Central Zone, NAVD 1988, International Feet

Point	Northing	Easting	Elevation	Description
4AE1	866245.931	520688.775	869.22	AJ3826
100	854815.379	522939.77	876.36	CP 60D NL
100MAP	854815.38	522939.75	876.38	CP 60D NL
101	854772.977	522933.529	877.27	CP 60D NL
101MAP	854772.98	522933.54	877.25	CP 60D NL
102	854777.043	523124.462	879.89	CP 60D NL
102MAP	854777.04	523124.46	879.90	CP 60D NL
103	854821.138	522942.475	876.02	TOP1
104	854826.81	522940.735	873.33	TOP1
105	854848.122	522930.27	873.75	TOP1
106	854822.789	522892.191	875.40	TOP2
107	854864.359	522869.648	871.45	TOP2
108	854763.675	522941.276	875.09	TOP3
109	854748.56	522949.146	874.04	TOP3
110	854735.323	522963.498	874.79	TOP3
111	854712.282	523008.595	874.62	TOP3
112	854765.23	522989.973	876.61	TOP4
113	854763.493	523016.166	876.90	TOP4
114	854747.271	523053.239	879.47	TOP4
1000	854815.426	522939.887	876.38	100MAP
1001	854823.071	522894.012	876.79	RWALL1/TOP 8IN WIDE
1002	854821.713	522938.955	876.92	RWALL1/TOP 8IN WIDE
1003	854822.355	522938.994	876.88	RWALL1/TOP 8IN WIDE
1004	854823.63	522894.055	876.77	RWALL1/TOP 8IN WIDE
1005	854822.698	522895.448	875.99	GS
1006	854821.856	522916.693	876.27	GS
1007	854821.196	522938.743	876.04	GS
1010	854824.89	522902.32	868.35	INV/54IN CMP
1011	854824.994	522910.081	868.15	INV/60IN CMP
1012	854825.095	522918.521	868.89	INV/54IN RCP
1013	854824.408	522927.913	869.01	INV/54IN RCP
1015	854837.424	522894.777	868.40	TOE1
1016	854830.269	522896.609	868.38	TOE1
1017	854825.068	522900.224	868.45	TOE1
1018	854825.225	522901.878	868.20	TOE1
1019	854826.665	522904.841	868.93	TOE1
1020	854827.301	522912.458	868.71	TOE1
1021	854825.72	522917.841	867.72	TOE1
1022	854825.978	522923.239	866.88	TOE1
1023	854825.19	522927.919	867.16	TOE1
1024	854826.502	522929.59	867.87	TOE1
1025	854832.812	522929.404	867.56	TOE1

1026	854838.061	522927.65	868.63	TOE1
1027	854762.11	522971.058	869.30	INV/54IN RCP
1028	854761.621	522982.54	868.97	INV/54IN RCP
1029	854762.117	522959.735	868.96	INV/60IN CMP
1030	854761.118	522952.343	868.79	INV/54IN CMP
1031	854738.543	523014.781	870.27	TOE2
1032	854755.49	522996.451	870.32	TOE2
1033	854762.38	522986.943	869.84	TOE2
1034	854760.252	522972.431	868.91	TOE2
1035	854759.922	522951.542	868.96	TOE2
1036	854753.82	522955.946	869.65	TOE2
1037	854751.62	522961.742	870.43	TOE2
1038	854750.372	522974.734	870.55	TOE2
1039	854738.666	522995.767	870.18	TOE2
1040	854764.261	522941.982	876.91	RWALL2/TOP 8IN WIDE
1041	854763.761	522990.3	876.76	RWALL2/TOP 8IN WIDE
1042	854763.173	522990.341	876.74	RWALL2/TOP 8IN WIDE
1043	854763.662	522941.997	876.90	RWALL2/TOP 8IN WIDE
1044	854764.613	522941.526	875.76	GS
1045	854764.755	522944.743	876.90	GS
1046	854764.568	522966.497	876.51	GS
1047	854764.285	522988.665	876.71	GS
1048	854782.921	522850.079	876.35	EPAV1
1049	854796.666	522849.596	876.28	CL1
1050	854810.8	522849.011	876.05	EPAV2
1051	854810.193	522878.482	876.31	EPAV2
1052	854796.356	522879.887	876.64	CL1
1053	854782.469	522879.805	876.69	EPAV1
1054	854781.93	522909.605	877.14	EPAV1
1055	854796.336	522909.37	876.96	CL1
1056	854809.159	522909.674	876.57	EPAV2
1057	854808.857	522940.733	877.05	EPAV2
1058	854795.841	522941.767	877.43	CL1
1059	854781.937	522942.568	877.60	EPAV1
1060	854781.007	522972.787	878.03	EPAV1
1061	854795.559	522972.472	877.90	CL1
1062	854808.395	522973.476	877.46	EPAV2
1063	854808.109	523003.17	877.82	EPAV2
1064	854794.916	523004.414	878.17	CL1
1065	854781.307	523004.884	878.58	EPAV1
1066	854780.813	523036.186	879.03	EPAV1
1067	854794.655	523036.061	878.56	CL1
1068	854807.378	523036.189	878.22	EPAV2
1069	854770.307	522863.677	875.02	GS
1070	854769.649	522886.289	875.67	GS
1071	854769.803	522914.533	876.77	GS
1072	854777.044	523124.542	879.80	102MAP

45-104771 Rainbow Valley FDS
Project Points for Topography Survey 11/9/2012
NAD 1983 (2007),State Plane Arizona Central Zone, NAVD 1988, International Feet

Point	Northing	Easting	Elevation	Description
3BD3	850589.5	534183.8	989.4	AJ3817
100	851701.4	523955.2	894.4	GND
101	851700.6	523886.2	893.4	GND
102	851712.7	523819.0	891.8	GND
103	851764.5	523807.4	891.5	GND
104	851753.5	523837.2	894.2	GND
105	851750.2	523866.6	895	GND
106	851769.5	523928.5	893	GND
107	851782.6	523927.3	893.1	GND
108	851776.4	523905.9	894.8	GND
109	851823.9	523922.3	892.6	GND
110	851797.2	523902.0	895.1	PATIO
111	851798.0	523842.3	895	PATIO
112	851835.7	523828.1	891	GND
113	851835.5	523874.5	891.9	GND
114	851890.2	523879.0	891.7	GND
115	851916.8	523429.6	891.5	SWALE
116	851940.7	523462.2	891.4	SWALE@OPENING UNDER FNC
117	851948.8	523459.7	892.2	TOP
118	851925.5	523462.8	893.2	TOP
119	851916.6	523422.0	892.1	TOP
120	851909.4	523429.7	892.1	TOP
121	851851.4	523630.9	891.5	GND
122	851931.5	523626.1	891.6	GND
123	851967.1	523628.0	891.3	TOP
124	851972.8	523628.0	889.3	SWALE@OPENING IN FNC
125	851978.0	523627.9	890.7	TOP
126	852037.1	523625.6	891.3	GND
127	852036.7	523607.8	891.8	GND
128	852056.4	523579.7	894.1	GND
129	852003.6	523581.3	894.3	GND
130	851975.3	523572.4	894	GND
131	851970.0	523519.0	894.2	GND
132	851971.1	523482.6	893.6	GND
133	851891.4	523542.0	893.1	GND
134	851898.8	523592.0	892.1	GND
135	851954.9	523603.8	891.9	GND
136	851962.3	523593.2	889.6	INV TWIN 18 ADS
137	851952.2	523534.8	890.9	CHANNEL
138	851584.3	523452.0	895.1	GND
139	851579.2	523480.8	895	GND
140	851559.5	523493.6	894.6	GND

141	851541.9	523489.5	894.7	GND
142	851533.8	523466.7	894.1	GND
143	851544.7	523487.5	895	HVAC
144	851495.9	523540.4	891.8	GHD
145	851535.0	523546.7	892.4	GHD
146	851571.7	523550.2	892.1	GHD
147	851615.5	523552.6	891.8	GHD
148	851574.3	523459.8	897.1	PORCH
149	850973.7	523269.8	895.1	GND
150	850990.2	523297.0	894.9	GND
151	851028.6	523230.1	896	GND
152	851098.1	523234.0	897	GND
153	851100.6	523274.0	896.3	GND
154	851107.4	523302.5	895.1	GND
155	851142.6	523301.9	895.7	GND
156	851174.9	523300.0	896.6	GND
157	851174.9	523267.6	896.7	GND
158	851144.9	523272.5	896.2	GND
159	851107.5	523274.3	896.3	GND
160	851105.0	523256.8	899.2	PORCH EST 0.6 BELOW FF
161	850732.3	523247.3	897.5	GND
162	850773.2	523242.9	897.1	GND
163	850765.3	523196.0	897.1	GND
164	850761.0	523150.5	897.1	GND
165	850618.7	523151.0	897.8	GND
166	850576.4	523179.8	898.3	GND
167	850580.2	523238.0	899	GND
168	850611.8	523247.7	899.7	GND
169	850612.9	523223.7	899.7	GND
170	850717.2	523224.8	899.4	GND
171	850716.8	523260.7	899.4	GND
172	850750.6	523285.4	897.5	GND
173	850401.8	523262.4	900.5	GND
174	850396.3	523239.0	902	GND
175	850412.2	523231.8	901.8	GND
176	850445.0	523230.8	899.3	GND
177	850405.9	523199.5	901.6	GND
178	850445.0	523152.8	899.1	GND
179	850377.0	523191.0	901.6	GND
180	850370.3	523162.2	899.1	GND
181	850345.0	523209.1	901.7	GND
182	850298.1	523181.2	899.8	GND
183	850299.6	523276.3	901	GND
184	850356.3	523273.0	901.7	GND
185	849910.3	523034.7	902.8	GND
186	849895.1	523057.1	902.9	GND
187	849895.2	523073.8	902.6	GND

188	849866.7	523073.1	902.7	GND
189	849824.4	523073.0	902.9	GND
190	849804.2	523046.4	902.7	GND
191	849753.9	523046.1	902.6	GND
192	849748.8	523073.2	902.7	GND
193	849747.4	523083.0	899.9	GND
194	849801.4	523093.2	899.7	GND
195	849856.2	523092.3	899.4	GND
196	849896.8	523093.6	898.9	GND
197	849902.4	523139.7	899.1	GND
198	849837.4	523142.1	899.3	GND
199	849780.4	523140.2	899.5	GND
200	849736.3	523139.3	900.9	GND
201	849197.7	522502.3	905	GND
202	849203.2	522441.8	904.5	GND
203	849206.6	522381.3	904.1	GND
204	849213.0	522362.0	904.1	GND
205	849273.3	522361.4	904	GND
206	849272.2	522412.6	906.6	GND
207	849257.5	522414.2	906.5	GND
208	849246.9	522444.2	906.8	GND
209	849244.1	522480.9	906.7	GND
210	849247.9	522514.8	906.3	GND
211	849293.9	522513.4	906.2	GND
212	849296.6	522483.9	906.8	GND
213	849309.7	522415.5	906.6	GND
214	849309.4	522353.7	904	GND
215	846927.1	522160.4	916.9	GND
216	846931.9	522319.0	917	GND
217	847032.1	522293.2	916.3	GND
218	847031.7	522225.1	916.4	GND
219	847085.8	522211.6	916	GND
220	847064.2	522296.5	916.2	GND
221	847249.5	522322.0	915.4	GND
222	847248.7	522212.0	915.3	GND
223	847162.3	522246.1	916.3	GND
224	847065.5	522160.6	916	GND
225	846971.8	522236.2	916.5	GND
226	846933.4	522494.1	916.4	GND
227	847051.8	522494.7	916.2	GND
228	847230.5	522503.3	915.4	GND
229	851280.0	524535.7	898.6	GND
230	851341.5	524530.3	898.4	GND
231	851351.6	524510.7	898.4	GND
232	851349.9	524470.9	898	GND
233	851273.9	524468.8	897.5	GND
234	853574.7	523384.7	880.7	GND

235	853575.6	523301.5	880.3	GND
236	853617.4	523281.9	880.1	GND
237	853657.8	523280.0	879.9	GND
238	853693.6	523300.6	879.9	GND
239	853691.8	523383.8	880.4	GND
240	853661.5	523370.2	881.9	GND
241	853589.6	523374.2	881.8	GND
242	853574.7	523380.1	880.6	GND
243	853590.6	523327.2	881.8	GND
244	853618.5	523311.2	881.6	GND
245	853658.0	523308.4	881.4	GND
246	853715.2	523257.6	878.3	GND
247	853712.6	523221.7	879.6	TOP
248	853674.9	523231.6	879.5	TOP
249	853626.0	523251.3	881	TOP
250	853581.4	523265.5	881	TOP
251	853545.3	523272.1	881.2	TOP
30510-1M	849474.9	525794.8	914.2	SE COR 18

Appendix D Hydrologic Analysis Supporting Documentation

D.1 Precipitation Data

(Information obtained from October 2010 RVADMP Hydrology Report prepared by URS)

Flood Control District of Maricopa County
Drainage Design Management System
RAINFALL DATA
Project Reference: SUB BASIN A

Duration	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Rainfall Method: NOAA14						
5 MIN	0.269	0.367	0.439	0.535	0.607	0.679
10 MIN	0.410	0.558	0.669	0.815	0.924	1.034
15 MIN	0.508	0.692	0.829	1.010	1.146	1.281
30 MIN	0.684	0.932	1.116	1.360	1.543	1.726
1 HOUR	0.846	1.154	1.381	1.683	1.909	2.136
2 HOUR	0.926	1.246	1.492	1.823	2.076	2.342
3 HOUR	0.965	1.280	1.528	1.879	2.160	2.455
6 HOUR	1.117	1.446	1.711	2.075	2.365	2.668
12 HOUR	1.221	1.568	1.843	2.218	2.509	2.812
24 HOUR	1.444	1.871	2.209	2.681	3.050	3.438

D.2 Physical Parameter Calculations

(Information obtained from October 2010 RVADMP Hydrology Report prepared by URS)

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: A								
000A01	653	6	6536	0.022	0.20	1.17	-	100
	653	10	65310	0.774	8.00	1.01	-	100
	653	14	65314	1.768	18.40	0.27	-	100
	653	21	65321	3.197	33.20	0.70	-	100
	653	37	65337	0.829	8.60	0.79	-	100
	653	51	65351	0.037	0.40	0.95	-	100
	653	53	65353	1.276	13.30	0.91	-	100
	653	54	65354	1.717	17.90	0.86	-	100
000A03	653	6	6536	0.063	5.90	1.17	-	100
	653	10	65310	0.121	11.30	1.01	-	100
	653	14	65314	0.025	2.40	0.27	-	100
	653	21	65321	0.230	21.60	0.70	-	100
	653	51	65351	0.087	8.10	0.95	-	100
	653	53	65353	0.240	22.60	0.91	-	100
	653	54	65354	0.300	28.10	0.86	-	100
000A04	653	6	6536	0.000	0.00	1.17	-	100
	653	10	65310	0.037	5.00	1.01	-	100
	653	53	65353	0.481	64.80	0.91	-	100
	653	54	65354	0.224	30.20	0.86	-	100
000A05	653	6	6536	0.165	7.70	1.17	-	100
	653	21	65321	1.466	68.50	0.70	-	100
	653	53	65353	0.101	4.70	0.91	-	100
	653	54	65354	0.409	19.10	0.86	-	100
000A06	653	6	6536	0.153	13.80	1.17	-	100
	653	10	65310	0.106	9.60	1.01	-	100
	653	21	65321	0.533	48.10	0.70	-	100
	653	53	65353	0.172	15.50	0.91	-	100
	653	54	65354	0.143	12.90	0.86	-	100
000A07	653	6	6536	0.069	13.20	1.17	-	100
	653	10	65310	0.076	14.60	1.01	-	100
	653	21	65321	0.135	25.80	0.70	-	100
	653	37	65337	0.102	19.40	0.79	-	100
	653	53	65353	0.093	17.70	0.91	-	100
	653	54	65354	0.049	9.30	0.86	-	100
000A08	653	6	6536	0.004	0.20	1.17	-	100
	653	10	65310	0.183	8.60	1.01	-	100
	653	14	65314	0.014	0.60	0.27	-	100
	653	21	65321	0.569	26.80	0.70	-	100
	653	37	65337	0.064	3.00	0.79	-	100
	653	53	65353	0.677	31.80	0.91	-	100
	653	54	65354	0.334	15.70	0.86	-	100
	651	AL	6512042	0.013	0.60	0.40	-	100
	651	GM	6513244	0.050	2.30	0.29	-	100
	651	GN	6513246	0.066	3.10	0.25	-	100
	651	HM	6513444	0.155	7.30	0.15	-	100
000A09	653	10	65310	0.198	25.20	1.01	-	100
	653	14	65314	0.011	1.40	0.27	-	100
	653	21	65321	0.071	9.00	0.70	-	100
	653	37	65337	0.404	51.50	0.79	-	100
	653	53	65353	0.043	5.50	0.91	-	100
	653	54	65354	0.040	5.10	0.86	-	100
	651	GN	6513246	0.012	1.50	0.25	-	100
	651	HM	6513444	0.006	0.70	0.15	-	100
000A10	653	6	6536	0.021	2.30	1.17	-	100
	653	10	65310	0.020	2.10	1.01	-	100
	653	14	65314	0.092	9.90	0.27	-	100
	653	21	65321	0.017	1.80	0.70	-	100
	653	53	65353	0.049	5.20	0.91	-	100
	653	54	65354	0.031	3.40	0.86	-	100
	651	AL	6512042	0.033	3.50	0.40	-	100
	651	GN	6513246	0.202	21.70	0.25	-	100
	651	HM	6513444	0.010	1.10	0.15	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: A								
000A10	651	PT	6515058	0.049	5.30	0.40	-	100
	651	HLC	651344224	0.406	43.70	0.14	-	100
000A11	653	6	6536	0.097	5.40	1.17	-	100
	653	10	65310	0.083	4.60	1.01	-	100
	653	14	65314	0.263	14.60	0.27	-	100
	653	21	65321	0.217	12.00	0.70	-	100
	653	37	65337	0.436	24.20	0.79	-	100
	653	53	65353	0.194	10.70	0.91	-	100
	653	54	65354	0.301	16.70	0.86	-	100
	651	AL	6512042	0.101	5.60	0.40	-	100
	651	TB	6515822	0.063	3.50	0.40	-	100
	651	AGB	651203222	0.030	1.70	0.40	-	100
	651	HLC	651344224	0.018	1.00	0.14	-	100
000A12	653	10	65310	0.078	7.30	1.01	-	100
	653	21	65321	0.010	0.90	0.70	-	100
	653	37	65337	0.225	21.10	0.79	-	100
	653	54	65354	0.040	3.80	0.86	-	100
	651	Aa	6512021	0.001	0.10	0.26	-	100
	651	Cp	6512451	0.008	0.80	0.40	-	100
	651	Cs	6512457	0.122	11.50	0.19	-	100
	651	Ma	6514421	0.001	0.10	0.40	-	100
	651	AdA	651202720	0.016	1.50	0.40	-	100
	651	AGB	651203222	0.049	4.60	0.40	-	100
	651	GxA	651326720	0.003	0.30	0.23	-	100
	651	HLC	651344224	0.441	41.40	0.14	-	100
	651	TfA	651583120	0.000	0.00	0.37	-	100
	651	TfB	651583122	0.071	6.70	0.36	-	100
000A13	653	37	65337	0.009	1.50	0.79	-	100
	651	Aa	6512021	0.003	0.40	0.26	-	100
	651	AL	6512042	0.001	0.20	0.40	-	100
	651	Cs	6512457	0.006	1.10	0.19	-	100
	651	Es	6512857	0.011	1.80	0.25	-	100
	651	Ge	6513229	0.021	3.70	0.26	-	100
	651	AGB	651203222	0.004	0.60	0.40	-	100
	651	HLC	651344224	0.470	81.10	0.14	-	100
	651	LcA	651422520	0.056	9.60	0.25	-	100
000A14	653	37	65337	0.001	0.10	0.79	-	100
	651	Ae	6512029	0.006	0.70	0.39	-	100
	651	AL	6512042	0.142	16.60	0.40	-	100
	651	Bs	6512257	0.002	0.20	0.39	-	100
	651	Ge	6513229	0.012	1.30	0.26	-	100
	651	TB	6515822	0.010	1.20	0.40	-	100
	651	Te	6515829	0.008	0.90	0.25	-	100
	651	Va	6516221	0.028	3.30	0.39	-	100
	651	AbA	651202320	0.008	0.90	0.38	-	100
	651	AdB	651202722	0.011	1.30	0.40	-	100
	651	AGB	651203222	0.279	32.60	0.40	-	100
	651	GgA	651323320	0.001	0.10	0.25	-	100
	651	HLC	651344224	0.349	40.80	0.14	-	100
000A15	653	14	65314	0.000	0.00	0.27	-	100
	653	21	65321	0.022	2.30	0.70	-	100
	651	AL	6512042	0.091	9.60	0.40	-	100
	651	HM	6513444	0.158	16.80	0.15	-	100
	651	TB	6515822	0.006	0.60	0.40	-	100
	651	Te	6515829	0.004	0.40	0.25	-	100
	651	AGB	651203222	0.186	19.80	0.40	-	100
	651	GgA	651323320	0.007	0.70	0.25	-	100
	651	HLC	651344224	0.462	49.10	0.14	-	100
	651	RbA	651542320	0.005	0.60	0.26	-	100
000A16	651	GN	6513246	0.000	0.00	0.25	-	100
	651	HM	6513444	0.259	77.80	0.15	-	100
	651	Te	6515829	0.004	1.30	0.25	-	100
	651	HLC	651344224	0.061	18.20	0.14	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: A								
000A16	651	RbA	651542320	0.009	2.70	0.26	-	100
	651	TfA	651583120	0.000	0.10	0.37	-	100
000A17	651	Aa	6512021	0.000	0.00	0.26	-	100
	651	Es	6512857	0.001	0.20	0.25	-	100
	651	GN	6513246	0.024	4.10	0.25	-	100
	651	HM	6513444	0.541	94.80	0.15	-	100
	651	LcA	651422520	0.005	0.80	0.25	-	100
000A18	653	14	65314	0.000	0.00	0.27	-	100
	651	GN	6513246	0.079	11.40	0.25	-	100
	651	HM	6513444	0.615	88.60	0.15	-	100
000A19	651	AL	6512042	0.005	1.10	0.40	-	100
	651	HM	6513444	0.355	76.40	0.15	-	100
	651	AGB	651203222	0.087	18.80	0.40	-	100
	651	RbA	651542320	0.017	3.70	0.26	-	100
000A20	651	AL	6512042	0.106	31.20	0.40	-	100
	651	HM	6513444	0.169	49.70	0.15	-	100
	651	AGB	651203222	0.036	10.50	0.40	-	100
	651	HLC	651344224	0.029	8.60	0.14	-	100
000A21	653	6	6536	0.062	5.90	1.17	-	100
	653	14	65314	0.010	1.00	0.27	-	100
	653	21	65321	0.247	23.60	0.70	-	100
	653	37	65337	0.000	0.00	0.79	-	100
	651	AL	6512042	0.028	2.70	0.40	-	100
	651	GM	6513244	0.050	4.80	0.29	-	100
	651	HM	6513444	0.557	53.30	0.15	-	100
	651	AGB	651203222	0.090	8.60	0.40	-	100
000A22	653	6	6536	0.004	0.60	1.17	-	100
	653	14	65314	0.089	15.40	0.27	-	100
	653	21	65321	0.203	35.10	0.70	-	100
	653	37	65337	0.147	25.40	0.79	-	100
	651	AL	6512042	0.042	7.30	0.40	-	100
	651	GM	6513244	0.008	1.40	0.29	-	100
	651	HM	6513444	0.086	14.80	0.15	-	100
000A23	653	6	6536	0.002	0.90	1.17	-	100
	653	21	65321	0.211	90.80	0.70	-	100
	653	53	65353	0.009	4.00	0.91	-	100
	653	54	65354	0.010	4.30	0.86	-	100
000A24	653	14	65314	0.039	2.90	0.27	-	100
	653	21	65321	1.140	84.10	0.70	-	100
	653	37	65337	0.176	13.00	0.79	-	100
000A25	653	14	65314	0.006	2.60	0.27	-	100
	653	21	65321	0.210	97.40	0.70	-	100
000A26	653	6	6536	0.023	4.60	1.17	-	100
	653	14	65314	0.232	46.40	0.27	-	100
	653	21	65321	0.245	49.00	0.70	-	100
000A27	653	14	65314	0.418	37.80	0.27	-	100
	653	21	65321	0.587	53.10	0.70	-	100
	653	37	65337	0.000	0.00	0.79	-	100
	653	53	65353	0.101	9.10	0.91	-	100
000A28	653	14	65314	0.160	29.10	0.27	-	100
	653	21	65321	0.198	35.90	0.70	-	100
	653	37	65337	0.120	21.70	0.79	-	100
	653	53	65353	0.073	13.30	0.91	-	100
000A29	653	14	65314	0.064	5.40	0.27	-	100
	653	21	65321	0.602	50.70	0.70	-	100
	653	37	65337	0.205	17.30	0.79	-	100
	653	53	65353	0.317	26.70	0.91	-	100
000A30	653	14	65314	0.019	2.90	0.27	-	100
	653	21	65321	0.190	28.10	0.70	-	100
	653	37	65337	0.229	34.00	0.79	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: A								
000A30	651	AL	6512042	0.011	1.60	0.40	-	100
	651	HM	6513444	0.226	33.50	0.15	-	100
000A31	651	AL	6512042	0.106	19.70	0.40	-	100
	651	HM	6513444	0.431	80.00	0.15	-	100
	651	AGB	651203222	0.002	0.30	0.40	-	100
000A32	653	21	65321	0.001	0.10	0.70	-	100
	651	AL	6512042	0.040	3.30	0.40	-	100
	651	Bs	6512257	0.002	0.20	0.39	-	100
	651	Es	6512857	0.006	0.50	0.25	-	100
	651	HM	6513444	1.062	88.00	0.15	-	100
	651	TD	6515826	0.038	3.20	1.20	-	100
	651	AdA	651202720	0.012	1.00	0.40	-	100
	651	AGB	651203222	0.003	0.30	0.40	-	100
	651	GgA	651323320	0.010	0.80	0.25	-	100
	651	PRB	651505422	0.032	2.70	0.28	-	100
000A33	651	HM	6513444	0.284	100.00	0.15	-	100
000A34	651	Aa	6512021	0.000	0.00	0.26	-	100
	651	Cb	6512423	0.001	0.10	0.40	-	100
	651	Es	6512857	0.012	3.20	0.25	-	100
	651	GN	6513246	0.000	0.10	0.25	-	100
	651	HM	6513444	0.295	76.50	0.15	-	100
	651	Te	6515829	0.051	13.30	0.25	-	100
	651	LcA	651422520	0.013	3.40	0.25	-	100
	651	PeA	651502920	0.002	0.50	0.37	-	100
	651	RbA	651542320	0.001	0.30	0.26	-	100
	651	TfB	651583122	0.010	2.50	0.36	-	100
000A35	651	Bs	6512257	0.009	1.10	0.39	-	100
	651	Es	6512857	0.200	23.60	0.25	-	100
	651	HM	6513444	0.038	4.50	0.15	-	100
	651	Te	6515829	0.148	17.50	0.25	-	100
	651	AbA	651202320	0.016	1.90	0.38	-	100
	651	GgA	651323320	0.234	27.70	0.25	-	100
	651	HLC	651344224	0.123	14.50	0.14	-	100
	651	LcA	651422520	0.006	0.70	0.25	-	100
	651	RbA	651542320	0.036	4.20	0.26	-	100
	651	TfA	651583120	0.026	3.00	0.37	-	100
	651	TfB	651583122	0.011	1.30	0.36	-	100
000A36	651	Aa	6512021	0.008	1.80	0.26	-	100
	651	Es	6512857	0.144	33.00	0.25	-	100
	651	Te	6515829	0.013	3.00	0.25	-	100
	651	GgA	651323320	0.125	28.70	0.25	-	100
	651	HLC	651344224	0.082	18.90	0.14	-	100
	651	TfB	651583122	0.063	14.60	0.36	-	100
000A37	651	Aa	6512021	0.074	5.50	0.26	-	100
	651	Ae	6512029	0.017	1.30	0.39	-	100
	651	Bs	6512257	0.006	0.40	0.39	-	100
	651	Es	6512857	0.226	16.80	0.25	-	100
	651	Ge	6513229	0.010	0.80	0.26	-	100
	651	Te	6515829	0.170	12.60	0.25	-	100
	651	Va	6516221	0.027	2.00	0.39	-	100
	651	AbA	651202320	0.048	3.50	0.38	-	100
	651	AGB	651203222	0.035	2.60	0.40	-	100
	651	GgA	651323320	0.494	36.70	0.25	-	100
	651	HLC	651344224	0.238	17.70	0.14	-	100
	651	TfB	651583122	0.003	0.20	0.36	-	100
000A38	651	Aa	6512021	0.004	0.90	0.26	-	100
	651	Ae	6512029	0.020	4.10	0.39	-	100
	651	Bs	6512257	0.009	1.90	0.39	-	100
	651	Es	6512857	0.168	34.80	0.25	-	100
	651	Ge	6513229	0.043	8.80	0.26	-	100
	651	Ma	6514421	0.004	0.80	0.40	-	100
	651	Te	6515829	0.022	4.50	0.25	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: A								
000A38	651	Va	6516221	0.077	16.00	0.39	-	100
	651	AbA	651202320	0.006	1.20	0.38	-	100
	651	AdB	651202722	0.010	2.20	0.40	-	100
	651	AGB	651203222	0.013	2.60	0.40	-	100
	651	GgA	651323320	0.006	1.20	0.25	-	100
	651	LcA	651422520	0.102	21.10	0.25	-	100
000A39	651	Aa	6512021	0.019	3.90	0.26	-	100
	651	Cs	6512457	0.001	0.10	0.19	-	100
	651	Es	6512857	0.239	48.30	0.25	-	100
	651	Ge	6513229	0.002	0.50	0.26	-	100
	651	Mp	6514451	0.031	6.20	0.25	-	100
	651	Te	6515829	0.000	0.10	0.25	-	100
	651	GgA	651323320	0.052	10.40	0.25	-	100
	651	HLC	651344224	0.011	2.20	0.14	-	100
	651	LcA	651422520	0.141	28.40	0.25	-	100
000A40	651	Aa	6512021	0.005	1.00	0.26	-	100
	651	Cs	6512457	0.110	22.00	0.19	-	100
	651	Es	6512857	0.139	28.00	0.25	-	100
	651	Ge	6513229	0.028	5.70	0.26	-	100
	651	Ma	6514421	0.019	3.80	0.40	-	100
	651	Te	6515829	0.032	6.30	0.25	-	100
	651	AbA	651202320	0.006	1.30	0.38	-	100
	651	GgA	651323320	0.000	0.10	0.25	-	100
	651	GxA	651326720	0.037	7.30	0.23	-	100
	651	LcA	651422520	0.004	0.70	0.25	-	100
	651	RbA	651542320	0.118	23.80	0.26	-	100
000A41	651	Ae	6512029	0.002	0.20	0.39	-	100
	651	Cp	6512451	0.080	8.80	0.40	-	100
	651	Cs	6512457	0.158	17.30	0.19	-	100
	651	Es	6512857	0.284	31.00	0.25	-	100
	651	Ge	6513229	0.043	4.70	0.26	-	100
	651	Ma	6514421	0.078	8.50	0.40	-	100
	651	Mp	6514451	0.005	0.50	0.25	-	100
	651	TD	6515826	0.026	2.90	1.20	-	100
	651	Te	6515829	0.017	1.80	0.25	-	100
	651	AbA	651202320	0.058	6.30	0.38	-	100
	651	GgA	651323320	0.070	7.60	0.25	-	100
	651	LcA	651422520	0.006	0.60	0.25	-	100
	651	RbA	651542320	0.009	1.00	0.26	-	100
	651	TfA	651583120	0.069	7.50	0.37	-	100
	651	TfB	651583122	0.010	1.10	0.36	-	100
000A42	651	Ae	6512029	0.024	2.80	0.39	-	100
	651	Bs	6512257	0.021	2.50	0.39	-	100
	651	Es	6512857	0.463	54.30	0.25	-	100
	651	Ge	6513229	0.291	34.10	0.26	-	100
	651	Ma	6514421	0.004	0.50	0.40	-	100
	651	TD	6515826	0.001	0.10	1.20	-	100
	651	Te	6515829	0.008	0.90	0.25	-	100
	651	Vh	6516235	0.009	1.10	0.27	-	100
	651	AbA	651202320	0.000	0.00	0.38	-	100
	651	GgA	651323320	0.031	3.70	0.25	-	100
000A43	651	Aa	6512021	0.078	15.50	0.26	-	100
	651	Cb	6512423	0.006	1.20	0.40	-	100
	651	Es	6512857	0.140	27.70	0.25	-	100
	651	Ge	6513229	0.000	0.00	0.26	-	100
	651	GgA	651323320	0.281	55.70	0.25	-	100
000A44	651	Aa	6512021	0.017	4.50	0.26	-	100
	651	Ae	6512029	0.004	1.20	0.39	-	100
	651	Br	6512255	0.005	1.40	1.05	-	100
	651	Bs	6512257	0.002	0.60	0.39	-	100
	651	Es	6512857	0.166	45.30	0.25	-	100
	651	Ge	6513229	0.025	6.80	0.26	-	100
	651	TD	6515826	0.000	0.10	1.20	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: A								
000A44	651	Tu	6515861	0.020	5.60	0.25	-	100
	651	AbA	651202320	0.005	1.30	0.38	-	100
	651	GgA	651323320	0.122	33.30	0.25	-	100
000A45	651	Aa	6512021	0.003	0.60	0.26	-	100
	651	Ae	6512029	0.001	0.20	0.39	-	100
	651	Br	6512255	0.001	0.10	1.05	-	100
	651	Bs	6512257	0.007	1.20	0.39	-	100
	651	Es	6512857	0.109	20.40	0.25	-	100
	651	Ge	6513229	0.001	0.20	0.26	-	100
	651	Gh	6513235	0.026	4.90	0.24	-	100
	651	Ma	6514421	0.007	1.40	0.40	-	100
	651	TD	6515826	0.030	5.70	1.20	-	100
	651	Te	6515829	0.020	3.80	0.25	-	100
	651	AbA	651202320	0.090	16.80	0.38	-	100
	651	GgA	651323320	0.238	44.70	0.25	-	100
000A46	651	Es	6512857	0.091	46.10	0.25	-	100
	651	Ge	6513229	0.013	6.40	0.26	-	100
	651	Gh	6513235	0.001	0.30	0.24	-	100
	651	Ma	6514421	0.024	12.00	0.40	-	100
	651	TD	6515826	0.003	1.50	1.20	-	100
	651	AbA	651202320	0.001	0.60	0.38	-	100
	651	GgA	651323320	0.066	33.20	0.25	-	100
000A47	651	Bs	6512257	0.009	1.10	0.39	-	100
	651	Es	6512857	0.293	37.00	0.25	-	100
	651	Ge	6513229	0.261	33.00	0.26	-	100
	651	Ma	6514421	0.041	5.20	0.40	-	100
	651	Te	6515829	0.052	6.50	0.25	-	100
	651	AbA	651202320	0.106	13.40	0.38	-	100
	651	GgA	651323320	0.029	3.70	0.25	-	100
000A48	651	Aa	6512021	0.001	0.10	0.26	-	100
	651	Bs	6512257	0.014	1.40	0.39	-	100
	651	Cb	6512423	0.003	0.30	0.40	-	100
	651	Es	6512857	0.210	19.80	0.25	-	100
	651	Ge	6513229	0.429	40.50	0.26	-	100
	651	HM	6513444	0.003	0.30	0.15	-	100
	651	Ma	6514421	0.093	8.80	0.40	-	100
	651	Te	6515829	0.144	13.60	0.25	-	100
	651	AdA	651202720	0.044	4.20	0.40	-	100
	651	GgA	651323320	0.070	6.60	0.25	-	100
	651	LcA	651422520	0.040	3.80	0.25	-	100
	651	PeA	651502920	0.003	0.20	0.37	-	100
	651	TfA	651583120	0.006	0.60	0.37	-	100
000A49	651	Aa	6512021	0.025	3.40	0.26	-	100
	651	Br	6512255	0.048	6.40	1.05	-	100
	651	Bs	6512257	0.000	0.00	0.39	-	100
	651	Es	6512857	0.009	1.20	0.25	-	100
	651	Ge	6513229	0.156	20.80	0.26	-	100
	651	Ma	6514421	0.050	6.60	0.40	-	100
	651	TD	6515826	0.032	4.30	1.20	-	100
	651	Tu	6515861	0.003	0.30	0.25	-	100
	651	AbA	651202320	0.035	4.60	0.38	-	100
	651	AdA	651202720	0.006	0.70	0.40	-	100
	651	GgA	651323320	0.387	51.60	0.25	-	100
000A50	651	Ae	6512029	0.045	4.30	0.39	-	100
	651	Bs	6512257	0.017	1.70	0.39	-	100
	651	Es	6512857	0.313	30.30	0.25	-	100
	651	Ge	6513229	0.057	5.60	0.26	-	100
	651	Ma	6514421	0.035	3.40	0.40	-	100
	651	Pa	6515021	0.003	0.30	0.40	-	100
	651	Te	6515829	0.144	13.90	0.25	-	100
	651	AbA	651202320	0.014	1.30	0.38	-	100
	651	GgA	651323320	0.372	36.00	0.25	-	100
	651	RbA	651542320	0.006	0.60	0.26	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: A								
000A50	651	TfA	651583120	0.027	2.60	0.37	-	100
000A51	651	Ae	6512029	0.076	5.10	0.39	-	100
	651	Br	6512255	0.000	0.00	1.05	-	100
	651	Bs	6512257	0.041	2.80	0.39	-	100
	651	Es	6512857	0.118	7.90	0.25	-	100
	651	Ge	6513229	0.042	2.80	0.26	-	100
	651	HM	6513444	0.204	13.70	0.15	-	100
	651	Ma	6514421	0.046	3.10	0.40	-	100
	651	TD	6515826	0.024	1.60	1.20	-	100
	651	Te	6515829	0.197	13.20	0.25	-	100
	651	AbA	651202320	0.000	0.00	0.38	-	100
	651	AdA	651202720	0.001	0.10	0.40	-	100
	651	AGB	651203222	0.060	4.00	0.40	-	100
	651	GgA	651323320	0.649	43.60	0.25	-	100
	651	LcA	651422520	0.016	1.10	0.25	-	100
	651	PeA	651502920	0.005	0.40	0.37	-	100
	651	RbA	651542320	0.006	0.40	0.26	-	100
000A52	653	14	65314	0.003	1.60	0.27	-	100
	653	21	65321	0.016	7.20	0.70	-	100
	653	37	65337	0.020	9.30	0.79	-	100
	651	Bs	6512257	0.005	2.50	0.39	-	100
	651	Es	6512857	0.001	0.60	0.25	-	100
	651	GM	6513244	0.008	3.50	0.29	-	100
	651	HM	6513444	0.112	51.50	0.15	-	100
	651	TD	6515826	0.021	9.80	1.20	-	100
	651	GgA	651323320	0.007	3.10	0.25	-	100
	651	GYD	651326826	0.024	11.00	0.26	-	100
000A53	653	14	65314	0.197	11.30	0.27	-	100
	653	21	65321	0.375	21.50	0.70	-	100
	653	37	65337	0.007	0.40	0.79	-	100
	653	53	65353	0.910	52.10	0.91	-	100
	653	54	65354	0.258	14.80	0.86	-	100
000A54	653	14	65314	0.019	3.80	0.27	-	100
	653	37	65337	0.110	21.70	0.79	-	100
	653	53	65353	0.087	17.30	0.91	-	100
	653	54	65354	0.111	22.00	0.86	25.00 *	40
	651	CO	6512448	0.024	4.70	0.29	20.00	40
	651	RS	6515456	0.142	28.00	0.40	65.00	40
	651	GYD	651326826	0.013	2.60	0.26	-	100
000A55	653	14	65314	0.141	23.00	0.27	-	100
	653	21	65321	0.064	10.40	0.70	-	100
	653	37	65337	0.170	27.80	0.79	-	100
	653	53	65353	0.046	7.50	0.91	-	100
	651	AL	6512042	0.042	6.80	0.40	-	100
	651	CO	6512448	0.032	5.10	0.29	- *	100
	651	GM	6513244	0.040	6.50	0.29	-	100
	651	TD	6515826	0.018	2.90	1.20	-	100
	651	GgA	651323320	0.020	3.20	0.25	-	100
	651	GYD	651326826	0.041	6.60	0.26	-	100
000A56	653	14	65314	0.058	3.10	0.27	-	100
	653	37	65337	0.206	11.20	0.79	-	100
	653	53	65353	0.057	3.10	0.91	-	100
	651	Ae	6512029	0.080	4.30	0.39	-	100
	651	AL	6512042	0.053	2.90	0.40	-	100
	651	Bs	6512257	0.011	0.60	0.39	-	100
	651	CO	6512448	0.331	18.00	0.29	20.00	30
	651	Ld	6514227	0.018	1.00	0.25	-	100
	651	RS	6515456	0.251	13.60	0.40	65.00	30
	651	TD	6515826	0.039	2.10	1.20	-	100
	651	AbA	651202320	0.024	1.30	0.38	-	100
	651	GgA	651323320	0.196	10.70	0.25	-	100
	651	GYD	651326826	0.168	9.10	0.26	-	100
	651	HLC	651344224	0.179	9.80	0.14	-	100

* Non default value

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: A								
000A56	651	TrB	651585522	0.168	9.10	0.13	-	100
000A57	651	CO	6512448	0.472	32.10	0.29	20.00	90
	651	Ma	6514421	0.035	2.40	0.40	-	100
	651	RS	6515456	0.177	12.10	0.40	65.00	40
	651	TD	6515826	0.056	3.80	1.20	-	100
	651	AbA	651202320	0.059	4.00	0.38	-	100
	651	AdB	651202722	0.020	1.30	0.40	-	100
	651	GgA	651323320	0.226	15.40	0.25	-	100
	651	GYD	651326826	0.362	24.70	0.26	-	100
	651	TrA	651585520	0.019	1.30	0.11	-	100
	651	TrB	651585522	0.043	2.90	0.13	-	100
000A58	653	49	65349	0.156	7.30	0.74	-	100
	653	53	65353	0.073	3.40	0.91	-	100
	653	54	65354	0.077	3.60	0.86	-	100
	651	Ae	6512029	0.082	3.80	0.39	-	100
	651	CO	6512448	0.644	30.20	0.29	20.00	80
	651	RS	6515456	0.562	26.40	0.40	65.00	75
	651	TD	6515826	0.000	0.00	1.20	-	100
	651	Te	6515829	0.046	2.10	0.25	-	100
	651	AbA	651202320	0.176	8.30	0.38	-	100
	651	AGB	651203222	0.241	11.30	0.40	-	100
	651	GYD	651326826	0.075	3.50	0.26	-	100
000A59	651	Ae	6512029	0.109	8.70	0.39	-	100
	651	CO	6512448	0.755	60.10	0.29	20.00	100
	651	RS	6515456	0.263	21.00	0.40	65.00	75
	651	TD	6515826	0.006	0.50	1.20	-	100
	651	Te	6515829	0.003	0.30	0.25	-	100
	651	AbA	651202320	0.119	9.50	0.38	-	100
000A60	651	Ae	6512029	0.017	1.00	0.39	-	100
	651	CO	6512448	0.928	55.70	0.29	20.00	100
	651	Ma	6514421	0.001	0.00	0.40	-	100
	651	RS	6515456	0.137	8.20	0.40	65.00	75
	651	TD	6515826	0.058	3.40	1.20	-	100
	651	AbA	651202320	0.036	2.20	0.38	-	100
	651	AdA	651202720	0.044	2.60	0.40	-	100
	651	AdB	651202722	0.006	0.40	0.40	-	100
	651	GxB	651326722	0.036	2.20	0.24	-	100
	651	GYD	651326826	0.402	24.10	0.26	-	100
	651	RbA	651542320	0.002	0.10	0.26	-	100
000A61	651	Aa	6512021	0.009	0.40	0.26	-	100
	651	Ae	6512029	0.183	9.30	0.39	-	100
	651	Ch	6512435	0.017	0.90	0.24	-	100
	651	CO	6512448	0.136	6.90	0.29	- *	100
	651	Cp	6512451	0.006	0.30	0.40	-	100
	651	Es	6512857	0.275	14.00	0.25	-	100
	651	Gh	6513235	0.281	14.30	0.24	-	100
	651	Lb	6514223	0.002	0.10	0.40	-	100
	651	Ld	6514227	0.075	3.80	0.25	-	100
	651	Ma	6514421	0.018	0.90	0.40	-	100
	651	RS	6515456	0.136	6.90	0.40	- *	100
	651	TD	6515826	0.104	5.30	1.20	-	100
	651	Te	6515829	0.017	0.80	0.25	-	100
	651	Vg	6516233	0.003	0.10	0.91	-	100
	651	Vh	6516235	0.008	0.40	0.27	-	100
	651	Go3	65132493	0.085	4.30	0.19	-	100
	651	AbA	651202320	0.095	4.90	0.38	-	100
	651	AbB	651202322	0.015	0.80	0.39	-	100
	651	AdB	651202722	0.002	0.10	0.40	-	100
	651	AfA	651203120	0.016	0.80	0.38	-	100
	651	CrB	651245522	0.134	6.80	0.40	-	100
	651	GgA	651323320	0.112	5.70	0.25	-	100
	651	GYD	651326826	0.007	0.40	0.26	-	100
	651	LcA	651422520	0.226	11.50	0.25	-	100
	651	RbA	651542320	0.001	0.10	0.26	-	100

* Non default value

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: I								
I50	651	Gh	6513235	0.027	4.60	0.24	-	100
	651	Ma	6514421	0.029	4.80	0.40	-	100
	651	Mp	6514451	0.007	1.10	0.25	-	100
	651	TD	6515826	0.020	3.20	1.20	-	100
	651	Vb	6516223	0.059	9.80	0.39	-	100
	651	AbA	651202320	0.056	9.40	0.38	-	100
	651	GgA	651323320	0.206	34.30	0.25	-	100
	651	HrB	651345522	0.011	1.80	0.12	-	100
	651	TfB	651583122	0.001	0.20	0.36	-	100
I51	651	AL	6512042	0.000	0.10	0.40	-	100
	651	RS	6515456	0.001	0.50	0.40	- *	100
	651	GWD	651326426	0.135	93.50	0.35	-	100
	651	GYD	651326826	0.009	6.00	0.26	-	100
I52	651	AL	6512042	0.129	40.60	0.40	-	100
	651	RS	6515456	0.059	18.50	0.40	65.00	100
	651	TB	6515822	0.008	2.60	0.40	-	100
	651	GWD	651326426	0.122	38.30	0.35	-	100
	651	TSC	651585624	0.000	0.00	0.14	-	100
I53	651	AL	6512042	0.222	43.10	0.40	-	100
	651	CV	6512462	0.014	2.70	0.39	-	100
	651	RS	6515456	0.001	0.20	0.40	65.00	100
	651	GWD	651326426	0.146	28.30	0.35	-	100
	651	GYD	651326826	0.056	10.80	0.26	-	100
	651	PRB	651505422	0.077	14.90	0.28	-	100
I54	651	AL	6512042	0.229	64.90	0.40	-	100
	651	CV	6512462	0.029	8.20	0.39	-	100
	651	GWD	651326426	0.094	26.80	0.35	-	100
I55	651	AL	6512042	0.001	0.50	0.40	-	100
	651	AM	6512044	0.036	14.40	0.39	-	100
	651	CV	6512462	0.182	73.00	0.39	-	100
	651	Va	6516221	0.000	0.00	0.39	-	100
	651	AdA	651202720	0.000	0.10	0.40	-	100
	651	PRB	651505422	0.030	12.00	0.28	-	100
I56	651	AM	6512044	0.000	0.10	0.39	-	100
	651	CV	6512462	0.409	94.70	0.39	-	100
	651	PRB	651505422	0.023	5.20	0.28	-	100
I57	651	AM	6512044	0.091	47.90	0.39	-	100
	651	CO	6512448	0.006	3.10	0.29	20.00	100
	651	CV	6512462	0.003	1.70	0.39	-	100
	651	GA	6513220	0.056	29.70	0.10	40.00	100
	651	RS	6515456	0.028	14.90	0.40	65.00	100
	651	AdA	651202720	0.005	2.70	0.40	-	100
I58A	651	CV	6512462	0.018	13.80	0.39	-	100
	651	GA	6513220	0.086	67.10	0.10	40.00	100
	651	GN	6513246	0.025	19.00	0.25	-	100
I58B	651	AM	6512044	0.037	6.40	0.39	-	100
	651	CV	6512462	0.438	74.90	0.39	-	100
	651	GA	6513220	0.080	13.70	0.10	40.00	100
	651	RS	6515456	0.030	5.00	0.40	65.00	100
I59	651	CV	6512462	0.015	14.80	0.39	-	100
	651	GA	6513220	0.060	59.90	0.10	40.00	100
	651	RS	6515456	0.025	25.30	0.40	65.00	100
I60A	651	CO	6512448	0.070	7.20	0.29	20.00	100
	651	Cp	6512451	0.027	2.80	0.40	-	100
	651	CV	6512462	0.178	18.20	0.39	-	100
	651	GA	6513220	0.211	21.60	0.10	40.00	100
	651	GN	6513246	0.303	31.00	0.25	-	100
	651	GgA	651323320	0.032	3.30	0.25	-	100
	651	GgB	651323322	0.034	3.50	0.26	-	100
	651	GWD	651326426	0.051	5.20	0.35	-	100
	651	GYD	651326826	0.030	3.00	0.26	-	100

* Non default value

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: I								
I60A	651	LcA	651422520	0.033	3.40	0.25	-	100
	651	RbB	651542322	0.008	0.80	0.25	-	100
I60B	651	Cp	6512451	0.004	3.50	0.40	-	100
	651	GA	6513220	0.091	88.90	0.10	40.00	100
	651	RS	6515456	0.008	7.50	0.40	65.00	100
I60C	651	CO	6512448	0.003	1.30	0.29	20.00	100
	651	Cp	6512451	0.058	21.30	0.40	-	100
	651	Mo	6514449	0.084	31.00	0.39	-	100
	651	Va	6516221	0.028	10.30	0.39	-	100
	651	GWD	651326426	0.017	6.20	0.35	-	100
	651	LcA	651422520	0.052	19.30	0.25	-	100
	651	PsB	651505722	0.008	3.00	0.26	-	100
	651	RbB	651542322	0.021	7.60	0.25	-	100
I61	651	Ac	6512025	0.018	7.10	0.39	-	100
	651	Cg	6512433	0.010	3.90	0.24	-	100
	651	Ch	6512435	0.003	1.10	0.24	-	100
	651	CO	6512448	0.118	47.20	0.29	20.00	100
	651	Mp	6514451	0.000	0.00	0.25	-	100
	651	Vb	6516223	0.014	5.80	0.39	-	100
	651	GgA	651323320	0.011	4.30	0.25	-	100
	651	HrB	651345522	0.026	10.30	0.12	-	100
	651	RbB	651542322	0.042	16.70	0.25	-	100
	651	TfB	651583122	0.009	3.70	0.36	-	100
I62	651	CO	6512448	0.261	61.70	0.29	20.00	100
	651	RS	6515456	0.048	11.30	0.40	65.00	100
	651	TD	6515826	0.008	1.90	1.20	-	100
	651	AbA	651202320	0.027	6.40	0.38	-	100
	651	GgA	651323320	0.023	5.50	0.25	-	100
	651	HrB	651345522	0.056	13.20	0.12	-	100
I63	651	CO	6512448	0.024	8.10	0.29	20.00	100
	651	Es	6512857	0.001	0.20	0.25	-	100
	651	Ld	6514227	0.020	7.00	0.25	-	100
	651	RS	6515456	0.022	7.40	0.40	65.00	100
	651	TD	6515826	0.020	6.90	1.20	-	100
	651	AbA	651202320	0.084	28.60	0.38	-	100
	651	GgA	651323320	0.081	27.80	0.25	-	100
	651	HAB	651342022	0.040	13.70	0.07	-	100
	651	LcA	651422520	0.001	0.50	0.25	-	100
I64	651	GA	6513220	0.205	76.70	0.10	40.00	100
	651	GN	6513246	0.062	23.30	0.25	-	100
I65	651	GA	6513220	0.061	20.00	0.10	40.00	100
	651	GN	6513246	0.169	55.20	0.25	-	100
	651	GgA	651323320	0.076	24.80	0.25	-	100
I66	651	CO	6512448	0.049	5.40	0.29	20.00	100
	651	GA	6513220	0.439	48.40	0.10	40.00	100
	651	GN	6513246	0.212	23.40	0.25	-	100
	651	RS	6515456	0.066	7.30	0.40	65.00	100
	651	GgA	651323320	0.117	12.90	0.25	-	100
	651	GgB	651323322	0.024	2.60	0.26	-	100
I67	651	CO	6512448	0.160	16.50	0.29	20.00	100
	651	Es	6512857	0.056	5.70	0.25	-	100
	651	GA	6513220	0.107	11.00	0.10	40.00	100
	651	GN	6513246	0.029	2.90	0.25	-	100
	651	RS	6515456	0.088	9.00	0.40	65.00	100
	651	Te	6515829	0.027	2.80	0.25	-	100
	651	Va	6516221	0.012	1.20	0.39	-	100
	651	AbA	651202320	0.003	0.30	0.38	-	100
	651	GgA	651323320	0.348	35.90	0.25	-	100
	651	GgB	651323322	0.010	1.00	0.26	-	100
	651	HrB	651345522	0.116	11.90	0.12	-	100
	651	PsB	651505722	0.008	0.80	0.26	-	100
	651	RbA	651542320	0.009	1.00	0.26	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: I								
I68	651	CO	6512448	0.099	34.00	0.29	20.00	100
	651	GA	6513220	0.018	6.30	0.10	40.00	100
	651	Ld	6514227	0.035	12.00	0.25	-	100
	651	RS	6515456	0.034	11.50	0.40	65.00	100
	651	AbA	651202320	0.018	6.00	0.38	-	100
	651	GgA	651323320	0.032	11.10	0.25	-	100
	651	PsB	651505722	0.011	3.80	0.26	-	100
	651	TfB	651583122	0.045	15.30	0.36	-	100
I69	651	CO	6512448	0.079	45.90	0.29	20.00	100
	651	Ld	6514227	0.019	10.80	0.25	-	100
	651	RS	6515456	0.021	12.30	0.40	65.00	100
	651	AbA	651202320	0.015	8.90	0.38	-	100
	651	CrB	651245522	0.021	12.00	0.40	-	100
	651	GgA	651323320	0.003	1.60	0.25	-	100
	651	TfB	651583122	0.015	8.40	0.36	-	100
I70	651	CO	6512448	0.042	11.50	0.29	20.00	100
	651	Ld	6514227	0.007	1.90	0.25	-	100
	651	RS	6515456	0.053	14.40	0.40	65.00	100
	651	AbA	651202320	0.077	20.80	0.38	-	100
	651	CrB	651245522	0.022	6.00	0.40	-	100
	651	GgA	651323320	0.061	16.50	0.25	-	100
	651	GgB	651323322	0.007	1.90	0.26	-	100
	651	HAB	651342022	0.029	8.00	0.07	-	100
	651	HrB	651345522	0.070	19.10	0.12	-	100
I71	651	CO	6512448	0.192	45.50	0.29	20.00	100
	651	Es	6512857	0.032	7.50	0.25	-	100
	651	Ld	6514227	0.093	22.10	0.25	-	100
	651	RS	6515456	0.044	10.40	0.40	65.00	100
	651	AbA	651202320	0.000	0.00	0.38	-	100
	651	CrB	651245522	0.054	12.80	0.40	-	100
	651	GgA	651323320	0.007	1.70	0.25	-	100
I72	651	CO	6512448	0.001	0.40	0.29	20.00	100
	651	Cp	6512451	0.104	50.50	0.40	-	100
	651	GA	6513220	0.039	18.70	0.10	40.00	100
	651	Mo	6514449	0.024	11.70	0.39	-	100
	651	RS	6515456	0.002	1.00	0.40	65.00	100
	651	Va	6516221	0.027	12.90	0.39	-	100
	651	AdA	651202720	0.002	1.10	0.40	-	100
	651	PsA	651505720	0.006	2.90	0.25	-	100
	651	PsB	651505722	0.002	0.70	0.26	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: J								
J18	651	GYD	651326826	0.474	55.20	0.26	-	100
J19	651	CV	6512462	0.046	43.90	0.39	-	100
	651	GYD	651326826	0.058	56.10	0.26	-	100
J20	651	GA	6513220	0.476	66.60	0.10	40.00	80
	651	RS	6515456	0.078	10.80	0.40	65.00	100
	651	AGB	651203222	0.004	0.60	0.40	-	100
	651	GYD	651326826	0.157	21.90	0.26	-	100
J21	651	AL	6512042	0.004	1.40	0.40	-	100
	651	GA	6513220	0.025	9.80	0.10	40.00	10
	651	AGB	651203222	0.110	43.80	0.40	-	100
	651	GYD	651326826	0.113	45.10	0.26	-	100
J22	651	AL	6512042	0.070	4.60	0.40	-	100
	651	CV	6512462	0.017	1.10	0.39	-	100
	651	GA	6513220	0.561	37.30	0.10	40.00	80
	651	RS	6515456	0.270	17.90	0.40	65.00	80
	651	AGB	651203222	0.073	4.90	0.40	-	100
	651	GYD	651326826	0.514	34.20	0.26	-	100
J23	651	CV	6512462	0.078	25.30	0.39	-	100
	651	GA	6513220	0.019	6.20	0.10	40.00	100
	651	RS	6515456	0.003	1.10	0.40	65.00	100
	651	TB	6515822	0.049	16.00	0.40	-	100
	651	GYD	651326826	0.150	48.60	0.26	-	100
	651	HLC	651344224	0.009	2.80	0.14	-	100
J24	651	GA	6513220	0.043	22.50	0.10	40.00	50
	651	TB	6515822	0.000	0.20	0.40	-	100
	651	GWD	651326426	0.008	3.90	0.35	-	100
	651	GYD	651326826	0.066	34.20	0.26	-	100
	651	HLC	651344224	0.076	39.20	0.14	-	100
J25	651	GA	6513220	0.059	11.40	0.10	40.00	90
	651	RS	6515456	0.419	81.00	0.40	65.00	90
	651	TB	6515822	0.021	4.10	0.40	-	100
	651	GYD	651326826	0.018	3.40	0.26	-	100
J26	651	CO	6512448	0.085	16.50	0.29	20.00	100
	651	RS	6515456	0.429	83.40	0.40	65.00	100
	651	GWD	651326426	0.001	0.10	0.35	-	100
J27	651	Ac	6512025	0.008	0.50	0.39	-	100
	651	Ch	6512435	0.013	0.90	0.24	-	100
	651	CO	6512448	0.004	0.30	0.29	- *	100
	651	Cp	6512451	0.007	0.50	0.40	-	100
	651	Es	6512857	0.112	7.90	0.25	-	100
	651	Gh	6513235	0.024	1.70	0.24	-	100
	651	Ld	6514227	0.479	33.80	0.25	-	100
	651	PT	6515058	0.005	0.40	0.40	-	100
	651	CrB	651245522	0.005	0.40	0.40	-	100
	651	GgA	651323320	0.140	9.90	0.25	-	100
	651	GYD	651326826	0.000	0.00	0.26	-	100
	651	LcA	651422520	0.554	39.10	0.25	-	100
	651	RbA	651542320	0.067	4.70	0.26	-	100
J28	651	CO	6512448	0.127	13.40	0.29	20.00	20
	651	Cp	6512451	0.068	7.20	0.40	-	100
	651	CV	6512462	0.004	0.50	0.39	-	100
	651	GA	6513220	0.127	13.30	0.10	40.00	20
	651	Gh	6513235	0.000	0.00	0.24	-	100
	651	Ld	6514227	0.040	4.20	0.25	-	100
	651	PT	6515058	0.001	0.10	0.40	-	100
	651	RS	6515456	0.131	13.80	0.40	65.00	20
	651	Te	6515829	0.006	0.60	0.25	-	100
	651	AbA	651202320	0.055	5.70	0.38	-	100
	651	CrB	651245522	0.009	1.00	0.40	-	100
	651	GgA	651323320	0.041	4.30	0.25	-	100
	651	GWD	651326426	0.038	4.00	0.35	-	100
	651	LcA	651422520	0.203	21.30	0.25	-	100

* Non default value

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: J								
J28	651	PsB	651505722	0.041	4.30	0.26	-	100
	651	RbA	651542320	0.019	2.00	0.26	-	100
	651	RbB	651542322	0.040	4.20	0.25	-	100
J29A	651	GA	6513220	0.016	4.80	0.10	40.00	20
	651	RS	6515456	0.011	3.40	0.40	65.00	20
	651	TB	6515822	0.105	30.80	0.40	-	100
	651	GWD	651326426	0.040	11.80	0.35	-	100
	651	GYD	651326826	0.084	24.80	0.26	-	100
	651	HLC	651344224	0.083	24.40	0.14	-	100
J29B	651	CO	6512448	0.065	44.20	0.29	20.00	100
	651	RS	6515456	0.042	28.50	0.40	65.00	100
	651	TB	6515822	0.017	11.70	0.40	-	100
	651	GWD	651326426	0.023	15.60	0.35	-	100
J29C	651	CO	6512448	0.189	18.90	0.29	20.00	70
	651	GA	6513220	0.176	17.60	0.10	40.00	70
	651	PT	6515058	0.018	1.80	0.40	-	100
	651	RS	6515456	0.316	31.60	0.40	65.00	70
	651	TB	6515822	0.000	0.00	0.40	-	100
	651	GWD	651326426	0.143	14.30	0.35	-	100
	651	GYD	651326826	0.151	15.10	0.26	-	100
	651	HLC	651344224	0.007	0.70	0.14	-	100
J29D	651	CO	6512448	0.048	11.00	0.29	20.00	60
	651	GA	6513220	0.129	29.70	0.10	40.00	60
	651	RS	6515456	0.081	18.70	0.40	65.00	60
	651	TB	6515822	0.006	1.30	0.40	-	100
	651	GWD	651326426	0.017	4.00	0.35	-	100
	651	GYD	651326826	0.121	27.90	0.26	-	100
	651	HLC	651344224	0.032	7.40	0.14	-	100
J30	651	CO	6512448	0.026	7.70	0.29	20.00	100
	651	RS	6515456	0.305	91.60	0.40	65.00	100
	651	EPD	651285026	0.002	0.70	0.12	-	100
J31	651	CO	6512448	0.043	9.40	0.29	20.00	100
	651	RS	6515456	0.399	87.80	0.40	65.00	100
	651	GWD	651326426	0.013	2.80	0.35	-	100
J32	651	CO	6512448	0.034	10.40	0.29	20.00	85
	651	RS	6515456	0.151	46.70	0.40	65.00	85
	651	GWD	651326426	0.139	42.90	0.35	-	100
J33	651	CO	6512448	0.806	60.30	0.29	20.00	100
	651	GA	6513220	0.000	0.00	0.10	40.00	100
	651	RS	6515456	0.477	35.70	0.40	65.00	100
	651	GWD	651326426	0.054	4.10	0.35	-	100
J34	651	Bs	6512257	0.010	2.20	0.39	-	100
	651	CO	6512448	0.192	42.40	0.29	20.00	100
	651	RS	6515456	0.251	55.40	0.40	65.00	100
J35	651	Aa	6512021	0.006	0.90	0.26	-	100
	651	Bs	6512257	0.014	2.00	0.39	-	100
	651	Bt	6512259	0.006	0.90	0.25	-	100
	651	CF	6512430	0.006	0.90	0.50	-	100
	651	CO	6512448	0.108	16.10	0.29	20.00	50
	651	Ge	6513229	0.003	0.40	0.26	-	100
	651	Gh	6513235	0.069	10.40	0.24	-	100
	651	PT	6515058	0.014	2.10	0.40	-	100
	651	RS	6515456	0.282	42.20	0.40	65.00	50
	651	Vh	6516235	0.101	15.20	0.27	-	100
	651	CA2	65124202	0.008	1.20	0.38	-	100
	651	AbA	651202320	0.006	0.90	0.38	-	100
	651	GPI	651325036	0.003	0.50	0.00	-	100
	651	TrB	651585522	0.043	6.40	0.13	-	100
J36	651	Ac	6512025	0.004	0.80	0.39	-	100
	651	Ge	6513229	0.003	0.50	0.26	-	100
	651	Gh	6513235	0.268	50.90	0.24	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: J								
J36	651	Gp	6513251	0.012	2.20	0.24	-	100
	651	Ld	6514227	0.175	33.20	0.25	-	100
	651	Go3	65132493	0.050	9.50	0.19	-	100
	651	AbA	651202320	0.015	2.80	0.38	-	100
J37	651	Aa	6512021	0.006	0.80	0.26	-	100
	651	Ac	6512025	0.010	1.20	0.39	-	100
	651	CO	6512448	0.019	2.30	0.29	- *	100
	651	Cp	6512451	0.000	0.00	0.40	-	100
	651	CV	6512462	0.015	1.80	0.39	-	100
	651	GA	6513220	0.002	0.30	0.10	- *	100
	651	Ge	6513229	0.008	1.00	0.26	-	100
	651	Gh	6513235	0.086	10.60	0.24	-	100
	651	Ld	6514227	0.235	28.80	0.25	-	100
	651	PT	6515058	0.005	0.60	0.40	-	100
	651	TD	6515826	0.008	0.90	1.20	-	100
	651	Va	6516221	0.010	1.20	0.39	-	100
	651	Go3	65132493	0.009	1.20	0.19	-	100
	651	AbA	651202320	0.118	14.60	0.38	-	100
	651	GgA	651323320	0.056	6.90	0.25	-	100
	651	GWD	651326426	0.020	2.40	0.35	-	100
	651	LcA	651422520	0.207	25.50	0.25	-	100
J38	651	Aa	6512021	0.001	0.10	0.26	-	100
	651	Ac	6512025	0.221	10.70	0.39	-	100
	651	Bs	6512257	0.007	0.30	0.39	-	100
	651	CF	6512430	0.000	0.00	0.50	-	100
	651	Ch	6512435	0.017	0.80	0.24	-	100
	651	CO	6512448	0.085	4.10	0.29	20.00	10
	651	Cp	6512451	0.046	2.20	0.40	-	100
	651	CV	6512462	0.284	13.70	0.39	-	100
	651	GA	6513220	0.315	15.10	0.10	40.00	10
	651	Ge	6513229	0.009	0.50	0.26	-	100
	651	Gh	6513235	0.052	2.50	0.24	-	100
	651	Ld	6514227	0.222	10.70	0.25	-	100
	651	RS	6515456	0.093	4.50	0.40	65.00	10
	651	Go3	65132493	0.098	4.70	0.19	-	100
	651	AbA	651202320	0.236	11.30	0.38	-	100
	651	GgA	651323320	0.028	1.30	0.25	-	100
	651	GWD	651326426	0.150	7.20	0.35	-	100
	651	LcA	651422520	0.183	8.80	0.25	-	100
	651	PeA	651502920	0.007	0.40	0.37	-	100
	651	PeB	651502922	0.010	0.50	0.38	-	100
	651	PRB	651505422	0.015	0.70	0.28	-	100
J39	651	Ac	6512025	0.087	8.30	0.39	-	100
	651	AL	6512042	0.198	19.00	0.40	-	100
	651	Cp	6512451	0.006	0.60	0.40	-	100
	651	CV	6512462	0.131	12.50	0.39	-	100
	651	GA	6513220	0.214	20.50	0.10	40.00	20
	651	RS	6515456	0.036	3.40	0.40	65.00	20
	651	Go3	65132493	0.048	4.60	0.19	-	100
	651	AGB	651203222	0.159	15.20	0.40	-	100
	651	GWD	651326426	0.004	0.40	0.35	-	100
	651	GYD	651326826	0.078	7.50	0.26	-	100
	651	PRB	651505422	0.084	8.00	0.28	-	100
J40	651	AL	6512042	0.073	8.10	0.40	-	100
	651	CO	6512448	0.183	20.40	0.29	20.00	80
	651	GA	6513220	0.166	18.50	0.10	40.00	40
	651	RS	6515456	0.099	10.90	0.40	65.00	80
	651	Go3	65132493	0.018	2.00	0.19	-	100
	651	GYD	651326826	0.358	39.80	0.26	-	100
	651	PRB	651505422	0.003	0.30	0.28	-	100
J41	651	AL	6512042	0.033	18.10	0.40	-	100
	651	CF	6512430	0.000	0.10	0.50	-	100
	651	CO	6512448	0.076	41.60	0.29	20.00	85
	651	RS	6515456	0.039	21.60	0.40	65.00	85

* Non default value

Flood Control District of Maricopa County
Drainage Design Management System
LAND USE
Project Reference: SUB BASIN A

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: A								
000A01	730	9.619	100.0	0.35	0	25.0	DRY	0.030
		9.619	**100.0**					
000A03	730	1.064	100.0	0.35	0	25.0	DRY	0.030
		1.064	**100.0**					
000A04	730	0.743	100.0	0.35	0	25.0	DRY	0.030
		0.743	**100.0**					
000A05	730	2.141	100.0	0.35	0	25.0	DRY	0.030
		2.141	**100.0**					
000A06	730	1.108	100.0	0.35	0	25.0	DRY	0.030
		1.108	**100.0**					
000A07	730	0.523	100.0	0.35	0	25.0	DRY	0.030
		0.523	**100.0**					
000A08	730	2.116	99.4	0.35	0	25.0	DRY	0.030
	900	0.012	0.6	0.35	0	25.0	DRY	0.030
		2.128	**100.0**					
000A09	730	0.736	93.9	0.35	0	25.0	DRY	0.030
	900	0.048	6.1	0.35	0	25.0	DRY	0.030
		0.784	**100.0**					
000A10	730	0.113	12.2	0.35	0	25.0	DRY	0.030
	900	0.815	87.8	0.35	0	25.0	DRY	0.030
		0.928	**100.0**					
000A11	161	0.000		0.25	45	50.0	NORMAL	0.030
	730	1.156	64.1	0.35	0	25.0	DRY	0.030
	900	0.648	35.9	0.35	0	25.0	DRY	0.030
		1.804	**100.0**					
000A12	110	0.015	1.4	0.30	5	30.0	NORMAL	0.050
	120	0.008	0.8	0.30	5	20.0	NORMAL	0.050
	750	0.007	0.7	0.50	0	85.0	NORMAL	0.100
	900	0.988	92.8	0.35	0	25.0	DRY	0.030
	910	0.046	4.3	0.25	45	50.0	NORMAL	0.020
		1.064	**100.0**					
000A13	120	0.008	1.3	0.30	5	20.0	NORMAL	0.050
	130	0.002	0.3	0.30	15	50.0	NORMAL	0.050
	161	0.023	4.0	0.25	45	50.0	NORMAL	0.030
	210	0.001	0.2	0.10	80	65.0	NORMAL	0.020
	552	0.002	0.3	0.10	80	75.0	NORMAL	0.020
	750	0.005	0.8	0.50	0	85.0	NORMAL	0.100
	900	0.540	93.1	0.35	0	25.0	DRY	0.030
		0.580	**100.0**					
000A14	110	0.016	1.9	0.30	5	30.0	NORMAL	0.050
	120	0.023	2.7	0.30	5	20.0	NORMAL	0.050
	161	0.035	4.1	0.25	45	50.0	NORMAL	0.030
	714	0.038	4.4	0.35	0	25.0	DRY	0.030
	900	0.735	85.9	0.35	0	25.0	DRY	0.030
	910	0.009	1.0	0.25	45	50.0	NORMAL	0.020
		0.856	**100.0**					
000A15	110	0.012	1.3	0.30	5	30.0	NORMAL	0.050
	161	0.034	3.6	0.25	45	50.0	NORMAL	0.030
	714	0.252	26.7	0.35	0	25.0	DRY	0.030
	900	0.643	68.4	0.35	0	25.0	DRY	0.030

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: A								
		0.941	**100.0**					
000A16	714	0.159	47.8	0.35	0	25.0	DRY	0.030
	900	0.174	52.2	0.35	0	25.0	DRY	0.030
		0.333	**100.0**					
000A17	714	0.122	21.4	0.35	0	25.0	DRY	0.030
	900	0.449	78.6	0.35	0	25.0	DRY	0.030
		0.570	**100.0**					
000A18	730	0.010	1.4	0.35	0	25.0	DRY	0.030
	900	0.685	98.6	0.35	0	25.0	DRY	0.030
		0.694	**100.0**					
000A19	730	0.108	23.2	0.35	0	25.0	DRY	0.030
	750	0.012	2.6	0.50	0	85.0	NORMAL	0.100
	900	0.345	74.3	0.35	0	25.0	DRY	0.030
		0.465	**100.1**					
000A20	161	0.007	1.9	0.25	45	50.0	NORMAL	0.030
	730	0.087	25.6	0.35	0	25.0	DRY	0.030
	900	0.246	72.5	0.35	0	25.0	DRY	0.030
		0.340	**100.0**					
000A21	730	1.044	100.0	0.35	0	25.0	DRY	0.030
	900	0.000		0.35	0	25.0	DRY	0.030
		1.044	**100.0**					
000A22	730	0.578	100.0	0.35	0	25.0	DRY	0.030
		0.578	**100.0**					
000A23	730	0.233	100.0	0.35	0	25.0	DRY	0.030
		0.233	**100.0**					
000A24	730	1.355	100.0	0.35	0	25.0	DRY	0.030
		1.355	**100.0**					
000A25	730	0.215	100.0	0.35	0	25.0	DRY	0.030
		0.215	**100.0**					
000A26	730	0.499	100.0	0.35	0	25.0	DRY	0.030
		0.499	**100.0**					
000A27	730	1.106	100.0	0.35	0	25.0	DRY	0.030
		1.106	**100.0**					
000A28	730	0.551	100.0	0.35	0	25.0	DRY	0.030
		0.551	**100.0**					
000A29	730	1.188	100.0	0.35	0	25.0	DRY	0.030
		1.188	**100.0**					
000A30	161	0.007	1.0	0.25	45	50.0	NORMAL	0.030
	730	0.549	81.4	0.35	0	25.0	DRY	0.030
	900	0.119	17.6	0.35	0	25.0	DRY	0.030
		0.675	**100.0**					
000A31	110	0.009	1.7	0.30	5	30.0	NORMAL	0.050
	120	0.008	1.4	0.30	5	20.0	NORMAL	0.050
	161	0.019	3.5	0.25	45	50.0	NORMAL	0.030
	730	0.305	56.6	0.35	0	25.0	DRY	0.030
	900	0.198	36.7	0.35	0	25.0	DRY	0.030

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA *	Kn
Major Basin ID: A								
		0.539	**99.9**					
000A32	161	0.042	3.5	0.25	45	50.0	NORMAL	0.030
	730	0.125	10.3	0.35	0	25.0	DRY	0.030
	900	1.040	86.2	0.35	0	25.0	DRY	0.030
		1.207	**100.0**					
000A33	714	0.147	51.8	0.35	0	25.0	DRY	0.030
	900	0.137	48.2	0.35	0	25.0	DRY	0.030
		0.284	**100.0**					
000A34	714	0.113	29.4	0.35	0	25.0	DRY	0.030
	900	0.272	70.6	0.35	0	25.0	DRY	0.030
		0.385	**100.0**					
000A35	110	0.015	1.7	0.30	5	30.0	NORMAL	0.050
	161	0.001	0.1	0.25	45	50.0	NORMAL	0.030
	714	0.126	14.9	0.35	0	25.0	DRY	0.030
	900	0.705	83.3	0.35	0	25.0	DRY	0.030
		0.847	**100.0**					
000A36	110	0.000		0.30	5	30.0	NORMAL	0.050
	161	0.007	1.7	0.25	45	50.0	NORMAL	0.030
	900	0.425	97.7	0.35	0	25.0	DRY	0.030
	910	0.003	0.6	0.25	45	50.0	NORMAL	0.020
		0.435	**100.0**					
000A37	110	0.063	4.6	0.30	5	30.0	NORMAL	0.050
	120	0.009	0.6	0.30	5	20.0	NORMAL	0.050
	161	0.018	1.3	0.25	45	50.0	NORMAL	0.030
	714	0.338	25.1	0.35	0	25.0	DRY	0.030
	900	0.884	65.7	0.35	0	25.0	DRY	0.030
	910	0.036	2.7	0.25	45	50.0	NORMAL	0.020
		1.346	**100.0**					
000A38	120	0.000		0.30	5	20.0	NORMAL	0.050
	161	0.000		0.25	45	50.0	NORMAL	0.030
	713	0.481	99.8	0.10	5	5.0	NORMAL	0.020
	900	0.001	0.2	0.35	0	25.0	DRY	0.030
		0.482	**100.0**					
000A39	713	0.495	100.0	0.10	5	5.0	NORMAL	0.020
		0.495	**100.0**					
000A40	110	0.004	0.7	0.30	5	30.0	NORMAL	0.050
	713	0.488	98.0	0.10	5	5.0	NORMAL	0.020
	900	0.006	1.3	0.35	0	25.0	DRY	0.030
		0.498	**100.0**					
000A41	110	0.019	2.1	0.30	5	30.0	NORMAL	0.050
	714	0.620	67.8	0.35	0	25.0	DRY	0.030
	730	0.087	9.5	0.35	0	25.0	DRY	0.030
	900	0.189	20.6	0.35	0	25.0	DRY	0.030
		0.915	**100.0**					
000A42	713	0.389	45.7	0.10	5	5.0	NORMAL	0.020
	730	0.296	34.7	0.35	0	25.0	DRY	0.030
	750	0.167	19.6	0.50	0	85.0	NORMAL	0.100
		0.852	**100.0**					
000A43	110	0.000		0.30	5	30.0	NORMAL	0.050
	713	0.503	99.7	0.10	5	5.0	NORMAL	0.020
	730	0.000		0.35	0	25.0	DRY	0.030

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: A								
000A43	900	0.001	0.2	0.35	0	25.0	DRY	0.030
		0.505	**99.9**					
000A44	713	0.344	94.1	0.10	5	5.0	NORMAL	0.020
	730	0.019	5.2	0.35	0	25.0	DRY	0.030
	900	0.002	0.7	0.35	0	25.0	DRY	0.030
		0.366	**100.0**					
000A45	713	0.326	61.1	0.10	5	5.0	NORMAL	0.020
	730	0.080	15.1	0.35	0	25.0	DRY	0.030
	900	0.127	23.8	0.35	0	25.0	DRY	0.030
		0.533	**100.0**					
000A46	713	0.123	61.9	0.10	5	5.0	NORMAL	0.020
	730	0.001	0.5	0.35	0	25.0	DRY	0.030
	900	0.075	37.6	0.35	0	25.0	DRY	0.030
		0.198	**100.0**					
000A47	713	0.510	64.4	0.10	5	5.0	NORMAL	0.020
	750	0.057	7.2	0.50	0	85.0	NORMAL	0.100
	900	0.225	28.4	0.35	0	25.0	DRY	0.030
		0.792	**100.0**					
000A48	713	0.960	90.6	0.10	5	5.0	NORMAL	0.020
	900	0.099	9.4	0.35	0	25.0	DRY	0.030
		1.059	**100.0**					
000A49	110	0.001	0.1	0.30	5	30.0	NORMAL	0.050
	713	0.372	49.5	0.10	5	5.0	NORMAL	0.020
	900	0.377	50.3	0.35	0	25.0	DRY	0.030
	910	0.001	0.1	0.25	45	50.0	NORMAL	0.020
		0.751	**100.0**					
000A50	161	0.000		0.25	45	50.0	NORMAL	0.030
	750	0.998	96.5	0.50	0	85.0	NORMAL	0.100
	900	0.036	3.5	0.35	0	25.0	DRY	0.030
		1.034	**100.0**					
000A51	110	0.048	3.2	0.30	5	30.0	NORMAL	0.050
	161	0.028	1.9	0.25	45	50.0	NORMAL	0.030
	730	0.141	9.5	0.35	0	25.0	DRY	0.030
	900	1.201	80.8	0.35	0	25.0	DRY	0.030
	910	0.068	4.6	0.25	45	50.0	NORMAL	0.020
		1.486	**100.0**					
000A52	730	0.108	49.4	0.35	0	25.0	DRY	0.030
	900	0.110	50.6	0.35	0	25.0	DRY	0.030
		0.218	**100.0**					
000A53	730	1.746	100.0	0.35	0	25.0	DRY	0.030
		1.746	**100.0**					
000A54	730	0.351	69.3	0.35	0	25.0	DRY	0.030
	900	0.155	30.7	0.35	0	25.0	DRY	0.030
		0.507	**100.0**					
000A55	110	0.020	3.2	0.30	5	30.0	NORMAL	0.050
	730	0.474	77.4	0.35	0	25.0	DRY	0.030
	900	0.119	19.4	0.35	0	25.0	DRY	0.030
		0.613	**100.0**					
000A56	110	0.014	0.8	0.30	5	30.0	NORMAL	0.050
	572	0.033	1.8	0.10	80	75.0	NORMAL	0.020

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: A								
000A56	714	0.052	2.8	0.35	0	25.0	DRY	0.030
	730	0.367	20.0	0.35	0	25.0	DRY	0.030
	900	1.369	74.5	0.35	0	25.0	DRY	0.030
	910	0.004	0.2	0.25	45	50.0	NORMAL	0.020
		1.839	**100.1**					
000A57	110	0.022	1.5	0.30	5	30.0	NORMAL	0.050
	120	0.001	0.1	0.30	5	20.0	NORMAL	0.050
	750	0.579	39.4	0.50	0	85.0	NORMAL	0.100
	900	0.867	59.0	0.35	0	25.0	DRY	0.030
		1.469	**100.0**					
000A58	730	1.067	50.1	0.35	0	25.0	DRY	0.030
	900	1.064	49.9	0.35	0	25.0	DRY	0.030
		2.131	**100.0**					
000A59	730	0.619	49.3	0.35	0	25.0	DRY	0.030
	900	0.636	50.7	0.35	0	25.0	DRY	0.030
		1.255	**100.0**					
000A60	110	0.034	2.0	0.30	5	30.0	NORMAL	0.050
	120	0.047	2.8	0.30	5	20.0	NORMAL	0.050
	572	0.036	2.2	0.10	80	75.0	NORMAL	0.020
	714	0.036	2.2	0.35	0	25.0	DRY	0.030
	730	0.110	6.6	0.35	0	25.0	DRY	0.030
	900	1.404	84.2	0.35	0	25.0	DRY	0.030
	910	0.000		0.25	45	50.0	NORMAL	0.020
		1.667	**100.0**					
000A61	110	0.232	11.8	0.30	5	30.0	NORMAL	0.050
	120	0.119	6.1	0.30	5	20.0	NORMAL	0.050
	130	0.042	2.2	0.30	15	50.0	NORMAL	0.050
	203	0.053	2.7	0.10	80	75.0	NORMAL	0.020
	533	0.015	0.8	0.10	80	75.0	NORMAL	0.020
	900	0.150	7.7	0.35	0	25.0	DRY	0.030
	900	1.293	65.8	0.35	0	25.0	DRY	0.030
	910	0.058	3.0	0.25	45	50.0	NORMAL	0.020
		1.964	**100.1**					
000A62	110	0.034	11.7	0.30	5	30.0	NORMAL	0.050
	120	0.110	38.3	0.30	5	20.0	NORMAL	0.050
	130	0.005	1.6	0.30	15	50.0	NORMAL	0.050
	714	0.031	10.9	0.35	0	25.0	DRY	0.030
	900	0.073	25.2	0.35	0	25.0	DRY	0.030
	910	0.036	12.3	0.25	45	50.0	NORMAL	0.020
		0.288	**100.0**					
000A63	110	0.017	2.9	0.30	5	30.0	NORMAL	0.050
	714	0.084	13.8	0.35	0	25.0	DRY	0.030
	900	0.505	83.3	0.35	0	25.0	DRY	0.030
		0.607	**100.0**					
000A64	900	0.231	100.0	0.35	0	25.0	DRY	0.030
		0.231	**100.0**					
000A65	730	0.500	91.3	0.35	0	25.0	DRY	0.030
	900	0.048	8.7	0.35	0	25.0	DRY	0.030
		0.547	**100.0**					

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: I								
I47	714	0.347	99.4	0.35	0	25.0	DRY	0.030
	900	0.002	0.6	0.35	0	25.0	DRY	0.030
		0.349	**100.0**					
I48	750	0.005	1.6	0.50	0	85.0	NORMAL	0.100
	900	0.332	98.4	0.35	0	25.0	DRY	0.030
		0.338	**100.0**					
I49	713	0.273	71.3	0.10	5	5.0	NORMAL	0.020
	900	0.110	28.7	0.35	0	25.0	DRY	0.030
		0.383	**100.0**					
I50	713	0.590	98.2	0.10	5	5.0	NORMAL	0.020
	730	0.001	0.1	0.35	0	25.0	DRY	0.030
	900	0.010	1.7	0.35	0	25.0	DRY	0.030
		0.600	**100.0**					
I51	712	0.058	40.2	0.10	5	90.0	NORMAL	0.020
	730	0.086	59.8	0.35	0	25.0	DRY	0.030
		0.144	**100.0**					
I52	712	0.274	86.1	0.10	5	90.0	NORMAL	0.020
	730	0.044	13.9	0.35	0	25.0	DRY	0.030
		0.318	**100.0**					
I53	712	0.418	81.2	0.10	5	90.0	NORMAL	0.020
	730	0.097	18.8	0.35	0	25.0	DRY	0.030
		0.515	**100.0**					
I54	712	0.338	96.1	0.10	5	90.0	NORMAL	0.020
	730	0.014	3.9	0.35	0	25.0	DRY	0.030
		0.352	**100.0**					
I55	712	0.051	20.6	0.10	5	90.0	NORMAL	0.020
	730	0.094	37.6	0.35	0	25.0	DRY	0.030
	900	0.104	41.8	0.35	0	25.0	DRY	0.030
		0.249	**100.0**					
I56	712	0.131	30.3	0.10	5	90.0	NORMAL	0.020
	730	0.117	27.0	0.35	0	25.0	DRY	0.030
	900	0.184	42.6	0.35	0	25.0	DRY	0.030
		0.432	**99.9**					
I57	714	0.023	12.0	0.35	0	25.0	DRY	0.030
	730	0.027	14.4	0.35	0	25.0	DRY	0.030
	900	0.140	73.6	0.35	0	25.0	DRY	0.030
		0.190	**100.0**					
I58A	730	0.032	24.9	0.35	0	25.0	DRY	0.030
	900	0.097	75.1	0.35	0	25.0	DRY	0.030
		0.129	**100.0**					
I58B	730	0.027	4.7	0.35	0	25.0	DRY	0.030
	900	0.558	95.3	0.35	0	25.0	DRY	0.030
		0.585	**100.0**					
I59	730	0.002	1.6	0.35	0	25.0	DRY	0.030
	900	0.098	98.4	0.35	0	25.0	DRY	0.030
		0.099	**100.0**					
I60A	555	0.002	0.2	0.35	80	75.0	NORMAL	0.020
	730	0.005	0.5	0.35	0	25.0	DRY	0.030
	750	0.002	0.2	0.50	0	85.0	NORMAL	0.100

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: I								
I60A	900	0.609	62.4	0.35	0	25.0	DRY	0.030
	910	0.359	36.7	0.25	45	50.0	NORMAL	0.020
		0.977	**100.0**					
I60B	730	0.068	66.2	0.35	0	25.0	DRY	0.030
	900	0.035	33.8	0.35	0	25.0	DRY	0.030
		0.102	**100.0**					
I60C	714	0.020	7.3	0.35	0	25.0	DRY	0.030
	900	0.250	92.7	0.35	0	25.0	DRY	0.030
	910	0.000		0.25	45	50.0	NORMAL	0.020
		0.270	**100.0**					
I61	555	0.000	0.1	0.35	80	75.0	NORMAL	0.020
	714	0.135	53.8	0.35	0	25.0	DRY	0.030
	730	0.009	3.7	0.35	0	25.0	DRY	0.030
	900	0.106	42.4	0.35	0	25.0	DRY	0.030
		0.250	**100.0**					
I62	110	0.015	3.6	0.30	5	30.0	NORMAL	0.050
	120	0.001	0.2	0.30	5	20.0	NORMAL	0.050
	714	0.108	25.5	0.35	0	25.0	DRY	0.030
	730	0.094	22.2	0.35	0	25.0	DRY	0.030
	900	0.205	48.6	0.35	0	25.0	DRY	0.030
		0.423	**100.1**					
I63	110	0.058	19.7	0.30	5	30.0	NORMAL	0.050
	120	0.003	1.0	0.30	5	20.0	NORMAL	0.050
	161	0.054	18.5	0.25	45	50.0	NORMAL	0.030
	900	0.131	44.8	0.35	0	25.0	DRY	0.030
	910	0.047	16.0	0.25	45	50.0	NORMAL	0.020
		0.293	**100.0**					
I64	730	0.018	6.9	0.35	0	25.0	DRY	0.030
	900	0.144	53.7	0.35	0	25.0	DRY	0.030
	910	0.105	39.4	0.25	45	50.0	NORMAL	0.020
		0.267	**100.0**					
I65	730	0.077	25.1	0.35	0	25.0	DRY	0.030
	750	0.000	0.1	0.50	0	85.0	NORMAL	0.100
	900	0.196	64.0	0.35	0	25.0	DRY	0.030
	910	0.033	10.9	0.25	45	50.0	NORMAL	0.020
		0.307	**100.1**					
I66	714	0.102	11.3	0.35	0	25.0	DRY	0.030
	730	0.254	28.1	0.35	0	25.0	DRY	0.030
	900	0.466	51.4	0.35	0	25.0	DRY	0.030
	910	0.084	9.3	0.25	45	50.0	NORMAL	0.020
		0.907	**100.1**					
I67	714	0.151	15.6	0.35	0	25.0	DRY	0.030
	730	0.140	14.4	0.35	0	25.0	DRY	0.030
	900	0.679	70.0	0.35	0	25.0	DRY	0.030
		0.970	**100.0**					
I68	730	0.058	19.8	0.35	0	25.0	DRY	0.030
	900	0.234	80.2	0.35	0	25.0	DRY	0.030
		0.292	**100.0**					
I69	900	0.173	100.0	0.35	0	25.0	DRY	0.030
		0.173	**100.0**					
I70	110	0.008	2.3	0.30	5	30.0	NORMAL	0.050

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: I								
I70	120	0.001	0.1	0.30	5	20.0	NORMAL	0.050
	161	0.005	1.4	0.25	45	50.0	NORMAL	0.030
	900	0.354	96.2	0.35	0	25.0	DRY	0.030
		0.368	**100.0**					
I71	900	0.421	100.0	0.35	0	25.0	DRY	0.030
		0.421	**100.0**					
I72	730	0.037	17.8	0.35	0	25.0	DRY	0.030
	900	0.151	73.3	0.35	0	25.0	DRY	0.030
	900	0.018	8.9	0.35	0	25.0	DRY	0.030
		0.206	**100.0**					

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: J								
J19	150	0.001	0.9	0.25	35	50.0	NORMAL	0.040
	521	0.004	3.7	0.35	45	80.0	NORMAL	0.020
	730	0.026	25.0	0.35	0	25.0	DRY	0.030
	900	0.073	70.3	0.35	0	25.0	DRY	0.030
	910	0.000	0.1	0.25	45	50.0	NORMAL	0.020
		0.104	**100.0**					
J20	730	0.127	17.8	0.35	0	25.0	DRY	0.030
	900	0.118	16.4	0.35	0	25.0	DRY	0.030
	910	0.471	65.8	0.25	45	50.0	NORMAL	0.020
		0.715	**100.0**					
J21	140	0.003	1.2	0.25	30	50.0	NORMAL	0.050
	150	0.023	9.2	0.25	35	50.0	NORMAL	0.040
	555	0.012	4.7	0.35	80	75.0	NORMAL	0.020
	730	0.011	4.3	0.35	0	25.0	DRY	0.030
	900	0.004	1.4	0.35	0	25.0	DRY	0.030
	910	0.175	69.5	0.25	45	50.0	NORMAL	0.020
	950	0.024	9.6	0.25	45	50.0	NORMAL	0.020
		0.251	**99.9**					
J22	140	0.024	1.6	0.25	30	50.0	NORMAL	0.050
	150	0.032	2.1	0.25	35	50.0	NORMAL	0.040
	555	0.007	0.4	0.35	80	75.0	NORMAL	0.020
	720	0.318	21.1	0.20	5	90.0	NORMAL	0.100
	730	0.240	16.0	0.35	0	25.0	DRY	0.030
	900	0.631	42.0	0.35	0	25.0	DRY	0.030
	910	0.252	16.8	0.25	45	50.0	NORMAL	0.020
		1.503	**100.0**					
J23	140	0.013	4.1	0.25	30	50.0	NORMAL	0.050
	150	0.130	42.3	0.25	35	50.0	NORMAL	0.040
	553	0.004	1.2	0.10	80	75.0	NORMAL	0.020
	720	0.004	1.2	0.20	5	90.0	NORMAL	0.100
	730	0.098	31.9	0.35	0	25.0	DRY	0.030
	900	0.047	15.4	0.35	0	25.0	DRY	0.030
	910	0.012	3.9	0.25	45	50.0	NORMAL	0.020
		0.308	**100.0**					
J24	150	0.001	0.4	0.25	35	50.0	NORMAL	0.040
	730	0.028	14.4	0.35	0	25.0	DRY	0.030
	900	0.164	85.2	0.35	0	25.0	DRY	0.030
		0.193	**100.0**					
J25	712	0.228	44.0	0.10	5	90.0	NORMAL	0.020
	730	0.145	27.9	0.35	0	25.0	DRY	0.030
	900	0.145	28.1	0.35	0	25.0	DRY	0.030
		0.518	**100.0**					
J26	712	0.515	100.0	0.10	5	90.0	NORMAL	0.020
		0.515	**100.0**					
J27	110	0.034	2.4	0.30	5	30.0	NORMAL	0.050
	120	0.794	56.1	0.30	5	20.0	NORMAL	0.050
	130	0.101	7.1	0.30	15	50.0	NORMAL	0.050
	210	0.015	1.1	0.10	80	65.0	NORMAL	0.020
	532	0.019	1.4	0.35	80	75.0	NORMAL	0.020
	900	0.259	18.3	0.35	0	25.0	DRY	0.030
	910	0.195	13.7	0.25	45	50.0	NORMAL	0.020
		1.417	**100.1**					
J28	110	0.039	4.1	0.30	5	30.0	NORMAL	0.050
	120	0.186	19.6	0.30	5	20.0	NORMAL	0.050

* Non default value

Flood Control District of Maricopa County
Drainage Design Management System
LAND USE
Project Reference: SUB BASIN J

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: J								
J28	130	0.018	1.9	0.30	15	50.0	NORMAL	0.050
	161	0.007	0.7	0.25	45	50.0	NORMAL	0.030
	550	0.009	1.0	0.10	80	75.0	NORMAL	0.020
	730	0.076	8.0	0.35	0	25.0	DRY	0.030
	900	0.525	55.3	0.35	0	25.0	DRY	0.030
	910	0.090	9.4	0.25	45	50.0	NORMAL	0.020
		0.950	**100.0**					
J29A	140	0.145	42.6	0.25	30	50.0	NORMAL	0.050
	150	0.039	11.5	0.25	35	50.0	NORMAL	0.040
	712	0.006	1.9	0.10	5	90.0	NORMAL	0.020
	730	0.114	33.5	0.35	0	25.0	DRY	0.030
	900	0.036	10.6	0.35	0	25.0	DRY	0.030
		0.340	**100.1**					
J29B	150	0.017	11.7	0.25	35	50.0	NORMAL	0.040
	160	0.004	2.8	0.25	40	50.0	NORMAL	0.020
	210	0.004	3.0	0.10	80	65.0	NORMAL	0.020
	712	0.005	3.4	0.10	5	90.0	NORMAL	0.020
	730	0.039	27.0	0.35	0	25.0	DRY	0.030
	900	0.076	52.0	0.35	0	25.0	DRY	0.030
		0.146	**99.9**					
J29C	140	0.009	0.9	0.25	30	50.0	NORMAL	0.050
	150	0.037	3.7	0.25	35	50.0	NORMAL	0.040
	210	0.005	0.5	0.10	80	65.0	NORMAL	0.020
	552	0.008	0.7	0.10	80	75.0	NORMAL	0.020
	553	0.013	1.2	0.10	80	75.0	NORMAL	0.020
	712	0.104	10.4	0.10	5	90.0	NORMAL	0.020
	730	0.255	25.5	0.35	0	25.0	DRY	0.030
	900	0.565	56.5	0.35	0	25.0	DRY	0.030
	920	0.006	0.6	0.25	45	50.0	NORMAL	0.020
		1.002	**100.0**					
J29D	130	0.008	1.9	0.30	15	50.0	NORMAL	0.050
	140	0.105	24.3	0.25	30	50.0	NORMAL	0.050
	150	0.037	8.6	0.25	35	50.0	NORMAL	0.040
	160	0.009	2.1	0.25	40	50.0	NORMAL	0.020
	712	0.078	18.1	0.10	5	90.0	NORMAL	0.020
	730	0.095	22.0	0.35	0	25.0	DRY	0.030
	900	0.044	10.1	0.35	0	25.0	DRY	0.030
	910	0.056	12.9	0.25	45	50.0	NORMAL	0.020
		0.434	**100.0**					
J30	730	0.277	83.2	0.35	0	25.0	DRY	0.030
	900	0.056	16.8	0.35	0	25.0	DRY	0.030
		0.333	**100.0**					
J31	712	0.145	31.9	0.10	5	90.0	NORMAL	0.020
	730	0.138	30.4	0.35	0	25.0	DRY	0.030
	900	0.171	37.7	0.35	0	25.0	DRY	0.030
		0.454	**100.0**					
J32	130	0.009	2.7	0.30	15	50.0	NORMAL	0.050
	712	0.060	18.4	0.10	5	90.0	NORMAL	0.020
	730	0.051	15.7	0.35	0	25.0	DRY	0.030
	900	0.205	63.3	0.35	0	25.0	DRY	0.030
		0.324	**100.1**					
J33	130	0.025	1.9	0.30	15	50.0	NORMAL	0.050
	712	1.027	76.8	0.10	5	90.0	NORMAL	0.020
	730	0.049	3.6	0.35	0	25.0	DRY	0.030
	900	0.234	17.5	0.35	0	25.0	DRY	0.030

* Non default value

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: J								
J33	910	0.003	0.2	0.25	45	50.0	NORMAL	0.020
		1.338	**100.0**					
J34	712	0.446	98.2	0.10	5	90.0	NORMAL	0.020
	730	0.008	1.8	0.35	0	25.0	DRY	0.030
		0.454	**100.0**					
J35	712	0.603	90.1	0.10	5	90.0	NORMAL	0.020
	730	0.063	9.5	0.35	0	25.0	DRY	0.030
	750	0.003	0.4	0.50	0	85.0	NORMAL	0.100
		0.669	**100.0**					
J36	110	0.062	11.8	0.30	5	30.0	NORMAL	0.050
	120	0.289	54.9	0.30	5	20.0	NORMAL	0.050
	130	0.009	1.7	0.30	15	50.0	NORMAL	0.050
	203	0.001	0.2	0.10	80	75.0	NORMAL	0.020
	532	0.003	0.6	0.35	80	75.0	NORMAL	0.020
	900	0.118	22.4	0.35	0	25.0	DRY	0.030
	910	0.044	8.3	0.25	45	50.0	NORMAL	0.020
		0.526	**99.9**					
J37	110	0.030	3.7	0.30	5	30.0	NORMAL	0.050
	120	0.225	27.7	0.30	5	20.0	NORMAL	0.050
	130	0.062	7.6	0.30	15	50.0	NORMAL	0.050
	161	0.005	0.6	0.25	45	50.0	NORMAL	0.030
	521	0.001	0.1	0.35	45	80.0	NORMAL	0.020
	532	0.004	0.5	0.35	80	75.0	NORMAL	0.020
	553	0.000		0.10	80	75.0	NORMAL	0.020
	900	0.457	56.2	0.35	0	25.0	DRY	0.030
	910	0.030	3.6	0.25	45	50.0	NORMAL	0.020
		0.813	**100.0**					
J38	120	0.206	9.9	0.30	5	20.0	NORMAL	0.050
	130	0.017	0.8	0.30	15	50.0	NORMAL	0.050
	161	0.086	4.1	0.25	45	50.0	NORMAL	0.030
	521	0.032	1.5	0.35	45	80.0	NORMAL	0.020
	713	0.787	37.9	0.10	5	5.0	NORMAL	0.020
	900	0.863	41.5	0.35	0	25.0	DRY	0.030
	910	0.088	4.2	0.25	45	50.0	NORMAL	0.020
		2.079	**99.9**					
J39	120	0.123	11.8	0.30	5	20.0	NORMAL	0.050
	130	0.061	5.8	0.30	15	50.0	NORMAL	0.050
	161	0.081	7.7	0.25	45	50.0	NORMAL	0.030
	210	0.005	0.4	0.10	80	65.0	NORMAL	0.020
	555	0.000		0.35	80	75.0	NORMAL	0.020
	714	0.066	6.3	0.35	0	25.0	DRY	0.030
	730	0.028	2.7	0.35	0	25.0	DRY	0.030
	740	0.005	0.4	0.00	0	0.0	WET	0.020
	900	0.605	57.9	0.35	0	25.0	DRY	0.030
	910	0.071	6.8	0.25	45	50.0	NORMAL	0.020
		1.046	**99.8**					
J40	120	0.002	0.2	0.30	5	20.0	NORMAL	0.050
	130	0.013	1.4	0.30	15	50.0	NORMAL	0.050
	140	0.036	4.0	0.25	30	50.0	NORMAL	0.050
	150	0.004	0.4	0.25	35	50.0	NORMAL	0.040
	730	0.097	10.7	0.35	0	25.0	DRY	0.030
	900	0.636	70.7	0.35	0	25.0	DRY	0.030
	910	0.112	12.5	0.25	45	50.0	NORMAL	0.020
		0.900	**99.9**					
J41	740	0.108	59.5	0.00	0	0.0	WET	0.020

* Non default value

Flood Control District of Maricopa County
Drainage Design Management System
SUB BASINS

Project Reference: SUB BASIN A

9/11/2010

Area ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Velocity (f/s)	Kn	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: A													
000A01	9.619	6.51	225.0	VALLEY	2.77	46.30	12.37	0.03	0.35	0.35	3.23	0.77*	*
000A03	1.064	3.50	189.9	VALLEY	1.51	30.00	10.27	0.03	0.35	0.35	2.88	0.99*	*
000A04	0.743	2.26	337.5	VALLEY	0.76	17.60	11.34	0.03	0.35	0.35	2.80	1.05*	*
000A05	2.141	3.18	188.7	VALLEY	1.55	29.30	9.56	0.03	0.35	0.35	3.01	0.90*	*
000A06	1.108	3.46	208.1	VALLEY	1.91	32.10	9.48	0.03	0.35	0.35	2.91	0.97*	*
000A07	0.523	2.10	193.6	VALLEY	1.12	22.00	8.40	0.03	0.35	0.35	2.86	1.00*	*
000A08	2.128	4.24	64.2	VALLEY	2.52	48.20	7.74	0.03	0.35	0.35	3.17	0.81*	*
000A09	0.784	2.57	105.6	VALLEY	1.37	28.70	7.86	0.03	0.35	0.35	2.94	0.95*	*
000A10	0.928	3.60	43.6	VALLEY	1.57	40.70	7.78	0.03	0.35	0.35	4.80	0.29	*
000A11	1.804	4.42	215.4	VALLEY	2.35	37.90	10.27	0.03	0.35	0.35	3.25	0.76*	*
000A12	1.064	2.71	97.6	VALLEY	1.49	31.80	7.51	0.03	0.35	0.34	4.50	0.35	*
000A13	0.580	1.99	38.2	VALLEY	0.83	27.00	6.48	0.03	0.35	0.38	5.80	0.19	2 *
000A14	0.856	2.34	42.3	VALLEY	1.00	30.30	6.80	0.03	0.34	0.34	4.70	0.31	2 *
000A15	0.941	3.58	43.0	VALLEY	1.72	42.20	7.47	0.03	0.35	0.36	5.30	0.24	*
000A16	0.333	1.97	42.1	VALLEY	1.01	27.60	6.29	0.03	0.35	0.40	6.00	0.18	*
000A17	0.570	2.72	40.4	VALLEY	1.41	35.70	6.71	0.03	0.35	0.39	5.80	0.19	*
000A18	0.694	2.45	42.9	VALLEY	1.28	32.60	6.59	0.03	0.35	0.39	5.80	0.19	*
000A19	0.464	1.99	40.3	VALLEY	0.80	27.20	6.42	0.03	0.35	0.38	5.40	0.22	
000A20	0.340	1.79	43.6	VALLEY	0.86	24.80	6.34	0.03	0.35	0.36	5.00	0.27	*
000A21	1.044	2.88	53.1	VALLEY	1.41	34.60	7.33	0.03	0.35	0.35	4.60	0.33	
000A22	0.578	3.76	54.5	VALLEY	2.11	44.40	7.45	0.03	0.35	0.35	3.71	0.55*	
000A23	0.233	2.24	72.6	VALLEY	1.18	27.70	7.13	0.03	0.35	0.35	3.11	0.84*	*
000A24	1.355	3.44	54.6	VALLEY	1.64	39.00	7.77	0.03	0.35	0.35	3.17	0.81*	
000A25	0.215	1.64	50.1	VALLEY	0.82	23.00	6.27	0.03	0.35	0.35	3.19	0.79*	
000A26	0.499	1.97	47.6	VALLEY	0.99	26.70	6.49	0.03	0.35	0.35	3.74	0.54*	
000A27	1.105	3.02	42.7	VALLEY	1.24	35.00	7.60	0.03	0.35	0.35	3.60	0.58*	*
000A28	0.551	1.57	40.2	VALLEY	0.57	20.50	6.73	0.03	0.35	0.35	3.45	0.65*	*
000A29	1.188	2.52	37.3	VALLEY	1.10	32.00	6.93	0.03	0.35	0.35	3.09	0.85*	*
000A30	0.675	3.30	40.6	VALLEY	1.58	40.00	7.25	0.03	0.35	0.35	3.88	0.49*	
000A31	0.538	2.98	45.3	VALLEY	1.52	38.40	6.83	0.03	0.34	0.37	5.60	0.21	*
000A32	1.207	3.52	36.9	VALLEY	1.51	41.10	7.54	0.03	0.35	0.39	5.70	0.20	*
000A33	0.284	1.58	43.1	VALLEY	0.79	23.00	6.05	0.03	0.35	0.40	6.00	0.18	
000A34	0.385	1.75	33.1	VALLEY	0.60	22.60	6.80	0.03	0.35	0.39	5.70	0.20	
000A35	0.847	2.04	35.4	VALLEY	0.79	26.30	6.82	0.03	0.35	0.36	5.00	0.27	
000A36	0.435	1.91	40.4	VALLEY	0.74	24.40	6.88	0.03	0.35	0.35	4.90	0.28	1 *

* Non default value

Area ID	Sub Basin Parameters								Rainfall Losses					
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)	
Major Basin ID: A														
000A37	1.346	2.55	38.4	VALLEY	1.18	33.90	6.62	0.03	0.34	0.34	4.90	0.28	1	*
000A38	0.482	1.44	31.2	AGRICULTURE	0.58	14.00	9.07	0.02	0.10	0.25	4.55	0.29	5	
000A39	0.495	1.46	28.7	AGRICULTURE	0.59	14.40	8.95	0.02	0.10	0.25	4.80	0.25	5	
000A40	0.498	1.47	26.6	VALLEY	0.59	14.60	8.83	0.02	0.10	0.25	4.90	0.24	5	
000A41	0.915	2.65	21.9	AGRICULTURE	1.58	41.40	5.62	0.03	0.35	0.35	4.55	0.34	9	*
000A42	0.852	2.21	24.5	AGRICULTURE	0.69	35.90	5.41	0.04	0.27	0.28	4.70	0.31	2	
000A43	0.505	1.47	31.3	AGRICULTURE	0.60	14.30	9.07	0.02	0.10	0.25	4.80	0.25	5	
000A44	0.366	0.99	29.3	AGRICULTURE	0.49	12.10	7.21	0.02	0.11	0.26	4.70	0.26	5	
000A45	0.533	1.34	28.3	VALLEY	0.82	19.00	6.22	0.02	0.20	0.29	4.50	0.31	3	
000A46	0.198	1.25	26.4	AGRICULTURE	0.58	16.40	6.71	0.02	0.20	0.29	4.65	0.28	3	
000A47	0.791	1.48	22.3	AGRICULTURE	0.55	21.40	6.08	0.03	0.20	0.28	4.60	0.30	3	
000A48	1.059	2.24	34.4	VALLEY	1.22	22.60	8.70	0.02	0.12	0.26	4.65	0.27	7	*
000A49	0.751	2.09	16.3	VALLEY	0.97	27.70	6.64	0.03	0.23	0.30	4.45	0.33	3	
000A50	1.034	2.11	33.3	VALLEY	1.03	97.30	1.90	0.10	0.49	0.25	4.65	0.49	14	*
000A51	1.486	4.97	34.0	VALLEY	2.21	54.90	7.96	0.03	0.34	0.34	4.70	0.31		*
000A52	0.218	1.23	30.2	VALLEY	0.49	18.60	5.79	0.03	0.35	0.35	4.60	0.33		
000A53	1.746	2.18	32.2	VALLEY	1.20	32.20	5.95	0.03	0.35	0.35	3.07	0.86*		*
000A54	0.507	1.44	76.6	VALLEY	1.11	22.60	5.59	0.03	0.35	0.35	3.33	0.71*	19	*
000A55	0.613	1.51	35.1	VALLEY	0.70	23.20	5.74	0.03	0.35	0.35	3.67	0.56*	1	*
000A56	1.839	2.92	61.7	VALLEY	1.33	33.00	7.77	0.03	0.35	0.35	4.45	0.37	13	*
000A57	1.469	1.91	271.7	VALLEY	0.98	36.60	4.61	0.06	0.41	0.31	4.50	0.43	33	*
000A58	2.131	3.85	105.3	VALLEY	2.12	39.60	8.55	0.03	0.35	0.35	4.00	0.46	23	*
000A59	1.255	2.57	216.2	VALLEY	1.51	26.00	8.68	0.03	0.35	0.35	4.35	0.39	26	*
000A60	1.667	2.65	149.2	VALLEY	1.19	26.70	8.74	0.03	0.34	0.34	4.45	0.37	17	*
000A61	1.964	3.42	84.7	VALLEY	1.25	35.50	8.48	0.03	0.33	0.32	4.45	0.37	10	*
000A62	0.288	0.93	43.1	VALLEY	0.52	20.80	3.92	0.04	0.31	0.29	4.10	0.45	5	*
000A63	0.607	1.76	31.9	VALLEY	0.68	24.70	6.25	0.03	0.35	0.37	5.30	0.23		*
000A64	0.231	1.23	85.4	VALLEY	0.65	17.00	6.35	0.03	0.35	0.35	4.15	0.43		*
000A65	0.547	1.91	170.6	VALLEY	0.73	18.40	9.09	0.03	0.35	0.35	3.48	0.64*		

* Non default value

Flood Control District of Maricopa County
Drainage Design Management System
SUB BASINS
Project Reference: SUB BASIN I

Area ID	Sub Basin Parameters								Rainfall Losses					
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)	
Major Basin ID: I														
I34	0.510	1.00	28.9	VALLEY	0.51	35.30	2.50	0.06	0.30	0.25	4.40	0.44	3	
I35	0.507	1.01	35.8	VALLEY	0.51	20.40	4.34	0.04	0.18	0.25	4.70	0.29	4	
I36	0.194	0.59	33.8	VALLEY	0.29	9.40	5.51	0.03	0.23	0.30	4.45	0.33	2	
I37	0.409	0.77	28.6	VALLEY	0.37	10.40	6.51	0.02	0.14	0.27	5.20	0.21	4	
I38	0.115	0.98	521.5	VALLEY	0.45	8.30	10.31	0.03	0.26	0.31	4.80	0.36	41	*
I39	0.217	0.86	85.1	VALLEY	0.35	11.80	6.42	0.03	0.35	0.35	4.25	0.41		
I40	0.408	0.97	59.5	VALLEY	0.46	14.60	5.85	0.03	0.35	0.35	4.20	0.42		
I41	0.476	0.98	54.3	VALLEY	0.50	15.40	5.58	0.03	0.35	0.35	4.00	0.46		
I42	0.422	0.99	45.3	VALLEY	0.50	16.00	5.45	0.03	0.35	0.35	3.95	0.47*	5	*
I43	0.432	1.01	38.7	VALLEY	0.52	17.40	5.09	0.03	0.35	0.35	4.50	0.35		
I44A	0.653	1.69	426.5	VALLEY	0.89	13.30	11.17	0.03	0.22	0.30	4.15	0.57	6	
I44B	0.186	1.10	1096.5	VALLEY	0.61	6.50	14.77	0.02	0.10	0.25	4.00	0.73	66	
I45	0.351	0.98	62.1	VALLEY	0.49	14.40	5.99	0.03	0.32	0.34	4.45	0.39		*
I46	0.460	1.02	55.9	VALLEY	0.53	15.90	5.64	0.03	0.35	0.35	4.10	0.44		
I47	0.349	0.99	44.4	VALLEY	0.54	16.60	5.26	0.03	0.35	0.35	4.00	0.46	6	*
I48	0.337	1.02	39.4	VALLEY	0.46	16.60	5.37	0.03	0.35	0.35	4.30	0.40		
I49	0.383	0.52	22.9	VALLEY	0.23	8.20	5.63	0.02	0.17	0.28	4.60	0.28	4	
I50	0.600	0.81	24.8	VALLEY	0.35	9.70	7.33	0.02	0.10	0.25	4.50	0.30	5	
I51	0.144	1.46	242.6	VALLEY	0.57	12.30	10.44	0.03	0.25	0.31	4.30	0.50		*
I52	0.318	1.67	398.2	VALLEY	0.57	9.50	15.42	0.02	0.13	0.26	4.10	0.68	3	*
I53	0.515	2.16	185.4	VALLEY	0.83	14.70	12.96	0.02	0.15	0.27	4.25	0.61		*
I54	0.352	0.97	85.6	VALLEY	0.47	9.20	9.30	0.02	0.11	0.25	4.00	0.73		*
I55	0.249	1.06	58.6	VALLEY	0.52	14.80	6.28	0.03	0.30	0.33	4.10	0.50		*
I56	0.432	1.02	59.9	VALLEY	0.49	13.70	6.53	0.03	0.27	0.32	4.10	0.53		*
I57	0.190	0.61	46.1	VALLEY	0.31	11.10	4.84	0.03	0.35	0.35	4.70	0.30	23	*
I58A	0.129	0.61	55.7	VALLEY	0.35	11.20	4.80	0.03	0.35	0.39	6.20	0.16	27	
I58B	0.585	1.54	43.5	VALLEY	0.79	22.70	5.96	0.03	0.35	0.35	4.35	0.39	9	
I59	0.099	0.58	281.8	VALLEY	0.42	8.70	5.91	0.03	0.35	0.39	5.70	0.20	23	*
I60A	0.976	1.75	30.9	VALLEY	0.84	22.60	6.81	0.03	0.31	0.32	5.00	0.29	27	
I60B	0.102	0.38	391.5	VALLEY	0.29	6.00	5.55	0.03	0.35	0.37	6.60	0.14	40	
I60C	0.270	1.14	38.6	VALLEY	0.55	18.10	5.55	0.03	0.35	0.35	4.30	0.40		
I61	0.250	0.47	97.5	VALLEY	0.21	7.50	5.52	0.03	0.35	0.35	4.65	0.32	9	*
I62	0.422	0.95	91.0	VALLEY	0.46	13.80	6.02	0.03	0.35	0.35	4.60	0.33	20	
I63	0.293	1.21	129.2	VALLEY	0.72	17.90	5.94	0.03	0.31	0.29	4.60	0.36	6	*
I64	0.267	0.81	49.1	VALLEY	0.41	11.80	6.08	0.03	0.31	0.30	6.60	0.15	32	*

* Non default value

Flood Control District of Maricopa County
Drainage Design Management System
SUB BASINS
Project Reference: SUB BASIN I

Area ID	Sub Basin Parameters								Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: I													
I65	0.307	1.14	44.1	VALLEY	0.48	16.10	6.19	0.03	0.34	0.36	5.20	0.25	7 *
I66	0.907	1.81	117.4	VALLEY	0.97	20.90	7.63	0.03	0.34	0.38	5.70	0.20	25 *
I67	0.970	1.94	174.9	VALLEY	0.81	19.20	8.89	0.03	0.35	0.36	5.10	0.26	14
I68	0.292	1.33	254.9	VALLEY	0.71	14.80	7.95	0.03	0.35	0.35	4.55	0.34	17
I69	0.173	0.94	244.2	VALLEY	0.46	11.10	7.49	0.03	0.35	0.35	4.40	0.37	17
I70	0.368	1.44	116.6	VALLEY	0.78	18.30	6.94	0.03	0.35	0.35	4.90	0.28	12
I71	0.421	1.18	217.9	VALLEY	0.64	14.00	7.45	0.03	0.35	0.35	4.50	0.35	16
I72	0.206	0.81	86.0	VALLEY	0.30	10.80	6.60	0.03	0.35	0.35	4.50	0.35	12 *

* Non default value

Area ID	Sub Basin Parameters								Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: J													
J01	7.184	5.05	462.2	VALLEY	2.13	22.10	20.09	0.02	0.10	0.25	4.25	0.66	35
J04	0.394	1.53	124.6	VALLEY	0.65	11.50	11.69	0.02	0.10	0.25	5.10	0.42	5
J06	0.369	1.38	87.5	VALLEY	0.56	11.20	10.89	0.02	0.10	0.25	4.00	0.74	5
J07	0.452	1.59	79.7	VALLEY	0.69	14.30	9.81	0.02	0.15	0.27	4.00	0.68	4
J08	0.096	0.96	99.2	VALLEY	0.47	8.90	9.49	0.02	0.10	0.25	5.70	0.32	5
J10	0.295	0.96	54.3	VALLEY	0.46	13.80	6.10	0.03	0.31	0.33	4.00	0.50	1
J11	0.244	0.77	53.3	VALLEY	0.41	13.10	5.17	0.03	0.35	0.35	4.10	0.44	
J12	0.411	1.88	78.3	VALLEY	0.77	17.40	9.52	0.02	0.19	0.29	4.25	0.57	3
J13	0.859	2.58	83.1	VALLEY	1.19	20.90	10.82	0.02	0.15	0.27	4.30	0.60	4
J14	2.126	3.38	146.2	VALLEY	1.80	26.60	11.17	0.02	0.19	0.29	4.30	0.55	23
J15	0.576	1.45	116.9	VALLEY	0.68	17.40	7.33	0.03	0.35	0.35	4.55	0.34	6
J16	0.269	1.01	49.7	VALLEY	0.48	15.60	5.68	0.03	0.35	0.35	4.55	0.34	2
J17	0.522	1.59	47.9	VALLEY	0.83	23.00	6.07	0.03	0.35	0.35	4.35	0.39	
J18	0.857	1.96	53.1	VALLEY	0.82	22.70	7.59	0.03	0.32	0.33	4.40	0.41	4
J19	0.104	1.01	46.6	VALLEY	0.38	14.50	6.14	0.03	0.35	0.35	4.45	0.37	2
J20	0.715	1.26	41.3	VALLEY	0.51	13.80	8.03	0.02	0.28	0.30	6.00	0.20	58
J21	0.251	1.02	45.1	VALLEY	0.52	12.60	7.11	0.02	0.26	0.26	4.55	0.42	43
J22	1.503	1.73	45.7	VALLEY	0.64	31.80	4.77	0.04	0.30	0.32	5.20	0.29	31
J23	0.308	1.01	43.5	VALLEY	0.46	18.40	4.84	0.04	0.29	0.30	4.55	0.38	22
J24	0.193	0.88	226.8	VALLEY	0.24	8.50	9.08	0.03	0.35	0.39	5.70	0.20	5
J25	0.518	2.16	284.3	VALLEY	1.26	18.70	10.15	0.03	0.24	0.31	4.30	0.50	54
J26	0.514	1.12	446.8	VALLEY	0.52	7.40	13.39	0.02	0.10	0.25	4.10	0.72	63
J27	1.417	2.28	38.6	VALLEY	1.09	42.70	4.70	0.04	0.30	0.27	4.80	0.30	12
J28	0.950	2.78	165.8	VALLEY	1.70	33.50	7.31	0.03	0.32	0.31	4.70	0.31	10
J29A	0.340	1.45	72.6	VALLEY	0.75	26.30	4.84	0.04	0.29	0.29	4.70	0.35	18
J29B	0.146	0.71	86.8	VALLEY	0.31	10.40	6.02	0.03	0.32	0.33	4.30	0.42	35
J29C	1.001	2.17	326.9	VALLEY	0.90	17.90	10.64	0.03	0.31	0.33	4.65	0.34	26
J29D	0.434	0.96	262.4	VALLEY	0.30	10.30	8.24	0.03	0.26	0.29	5.20	0.30	34
J30	0.333	1.58	454.5	VALLEY	0.92	15.60	8.94	0.03	0.35	0.35	4.00	0.46	61
J31	0.454	1.85	356.8	VALLEY	1.22	17.30	9.39	0.03	0.27	0.32	4.00	0.55	61
J32	0.324	0.93	454.1	VALLEY	0.48	9.60	8.49	0.03	0.30	0.33	4.15	0.48	29
J33	1.338	2.38	240.0	VALLEY	0.95	15.90	13.12	0.02	0.16	0.27	4.35	0.57	39
J34	0.454	1.10	455.8	VALLEY	0.54	7.40	13.09	0.02	0.10	0.25	4.25	0.66	49
J35	0.668	1.70	316.9	VALLEY	0.77	11.20	13.36	0.02	0.13	0.26	4.45	0.56	20
J36	0.526	1.23	29.2	VALLEY	0.41	25.20	4.31	0.04	0.31	0.27	4.90	0.28	8

* Non default value

Flood Control District of Maricopa County
Drainage Design Management System
SUB BASINS
Project Reference: SUB BASIN J

Area ID	Sub Basin Parameters								Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: J													
J37	0.813	2.67	48.6	VALLEY	0.81	34.20	6.89	0.04	0.33	0.31	4.60	0.33	5
J38	2.079	2.95	167.2	VALLEY	1.44	26.40	9.84	0.03	0.24	0.29	4.65	0.30	15 *
J39	1.046	2.88	109.8	VALLEY	1.50	33.90	7.46	0.03	0.32	0.32	4.65	0.33	10
J40	0.900	1.68	203.9	VALLEY	0.96	18.90	7.84	0.03	0.33	0.33	4.90	0.29	19
J41	0.182	0.53	255.2	VALLEY	0.20	5.20	9.11	0.02	0.14	0.14	4.45	0.31	19
J42	0.201	0.56	242.4	VALLEY	0.20	6.40	7.70	0.03	0.33	0.33	4.35	0.38	31
J43A	0.365	1.26	155.7	VALLEY	0.43	12.70	8.74	0.03	0.30	0.30	4.45	0.41	22
J43B	0.108	0.50	100.2	VALLEY	0.25	10.30	4.25	0.04	0.29	0.29	4.45	0.41	41
J43C	0.122	0.44	478.6	VALLEY	0.16	5.10	7.71	0.03	0.29	0.31	4.55	0.39	24
J44	0.147	0.32	119.1	VALLEY	0.09	4.50	6.21	0.03	0.33	0.33	4.70	0.32	10
J45	0.322	0.83	129.8	VALLEY	0.35	10.70	6.83	0.03	0.32	0.32	4.60	0.35	37
J46	0.564	1.99	160.6	VALLEY	1.02	22.30	7.88	0.03	0.35	0.35	4.60	0.33	29
J47	0.456	1.63	86.0	VALLEY	0.72	19.70	7.28	0.03	0.35	0.35	4.90	0.28	1
J48	0.869	1.78	78.5	VALLEY	0.90	22.60	6.95	0.03	0.35	0.35	4.55	0.34	14
J49	0.191	0.63	191.7	VALLEY	0.25	19.70	2.80	0.08	0.45	0.29	4.25	0.56	14
J50	0.588	1.23	292.9	VALLEY	0.30	13.40	8.07	0.04	0.37	0.34	4.10	0.48	47
J51	0.166	0.72	251.0	VALLEY	0.37	9.10	6.91	0.03	0.34	0.34	4.00	0.48	61
J52	0.182	0.51	1.9	VALLEY	0.22	45.70	0.99	0.08	0.46	0.28	4.45	0.51	5
J53	0.050	0.48	305.3	VALLEY	0.21	6.10	6.89	0.03	0.35	0.35	4.55	0.34	25
J54	0.219	0.91	253.9	VALLEY	0.45	7.20	11.15	0.02	0.10	0.25	4.40	0.60	16

* Non default value

D.3 Hydrograph Routing Data

(Information obtained from October 2010 RVADMP Hydrology Report prepared by URS)

RVADMP Routing Reach Cross-section Summary Table - Basin A

Label	Solve For	Roughness Coefficient	Channel Slope (ft/ft)	Water Surface Elevation	Elevation Range	Discharge (ft^3/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)	Normal Depth (ft)	Critical Depth (ft)	Critical Slope (ft/ft)	Velocity (ft/s)	Velocity Head (ft)	Specific Energy (ft)	Froude Number	Flow Type
RCPA06	Normal Depth	0.045	0.0087	1116.89	1115.90 to 1118.25 ft	223	99.78	161.28	161.26	0.99	0.71	0.03863	2.24	0.08	1.07	0.5	Subcritical
RCPA05	Normal Depth	0.047	0.0089	1154.42	1153.80 to 1155.30 ft	447	298.14	833.65	833.65	0.62	0.43	0.05157	1.5	0.03	0.66	0.44	Subcritical
RCPA23	Normal Depth	0.05	0.0087	1156.97	1156.40 to 1158.70 ft	51	40.19	129.53	129.53	0.57	0.38	0.06118	1.27	0.03	0.59	0.4	Subcritical
RCPA25	Normal Depth	0.05	0.0089	1102.96	1102.20 to 1104.00 ft	76	47.89	112.49	112.47	0.76	0.51	0.05433	1.59	0.04	0.8	0.43	Subcritical
RCPA26	Normal Depth	0.05	0.0079	1049.39	1048.00 to 1050.30 ft	409	180.65	227.75	227.73	1.39	0.97	0.04433	2.26	0.08	1.47	0.45	Subcritical
RCPA28	Normal Depth	0.045	0.0074	1032.1	1031.20 to 1035.00 ft	304	152.49	259.43	259.42	0.9	0.62	0.04026	1.99	0.06	0.96	0.46	Subcritical
RCPA27	Normal Depth	0.05	0.0041	1016.1	1014.00 to 1020.10 ft	717	370.16	360.45	360.41	2.1	1.28	0.03998	1.94	0.06	2.16	0.34	Subcritical
RCPA30	Normal Depth	0.049	0.0046	1004.55	1001.40 to 1006.00 ft	1152	488.36	392.12	392.05	3.15	2.17	0.03557	2.36	0.09	3.24	0.37	Subcritical
RCPA52	Normal Depth	0.046	0.0051	995.89	992.70 to 997.20 ft	1558	817.2	1098.36	1098.29	3.19	2.58	0.03403	1.91	0.06	3.25	0.39	Subcritical
RCPA55	Normal Depth	0.05	0.0048	977.24	975.60 to 977.80 ft	1796	808.96	725.67	725.22	1.64	1.04	0.04194	2.22	0.08	1.72	0.37	Subcritical
RCPA56	Normal Depth	0.046	0.0046	943.02	937.40 to 948.00 ft	11309	2956.54	1281.47	1281.34	5.62	4.32	0.0259	3.83	0.23	5.85	0.44	Subcritical
RCPA51	Normal Depth	0.046	0.0057	942.99	937.40 to 949.00 ft	11236	2776.88	1310.49	1310.33	5.59	4.5	0.02591	4.05	0.25	5.85	0.49	Subcritical
RCPA57	Normal Depth	0.047	0.0019	933.76	926.60 to 939.00 ft	11267	4196.13	1522.44	1521.54	7.16	4.1	0.02566	2.69	0.11	7.28	0.29	Subcritical
RCPA60	Normal Depth	0.05	0.0054	887.33	880.00 to 895.30 ft	11277	1834.48	388.47	386.43	7.33	5.41	0.02484	6.15	0.59	7.91	0.5	Subcritical
RCPA59	Normal Depth	0.05	0.0096	916.24	912.90 to 922.30 ft	2006	478.31	276.76	276.65	3.34	2.63	0.03285	4.19	0.27	3.61	0.56	Subcritical
RCPA54	Normal Depth	0.047	0.0052	1002.34	999.90 to 1004.00 ft	829	392.67	444.03	443.44	2.44	2	0.04025	2.11	0.07	2.51	0.4	Subcritical
DRA04	Normal Depth	0.05	0.0121	1249.61	1249.30 to 1250.00 ft	43	37.29	177.86	177.85	0.31	0.21	0.07167	1.15	0.02	0.33	0.44	Subcritical
RCPA06	Normal Depth	0.05	0.0089	1117.02	1115.90 to 1118.30 ft	223	97.08	130.89	130.82	1.12	0.77	0.0456	2.3	0.08	1.21	0.47	Subcritical
RCPA22	Normal Depth	0.05	0.0079	1074.39	1072.50 to 1076.70 ft	255	100.42	106.55	106.39	1.89	1.38	0.04126	2.54	0.1	1.99	0.46	Subcritical
RCPA24	Normal Depth	0.05	0.0069	1044.48	1042.10 to 1045.90 ft	522	243.26	300.2	300.13	2.38	1.97	0.04566	2.15	0.07	2.45	0.42	Subcritical
RCPA31	Normal Depth	0.05	0.0067	1014.68	1014.00 to 1016.00 ft	251	152.29	272.99	272.98	0.68	0.38	0.05246	1.65	0.04	0.73	0.39	Subcritical
RCPA32	Normal Depth	0.05	0.0052	1001.77	1000.00 to 1002.00 ft	697	335.27	351.04	350.84	1.77	1.2	0.04286	2.08	0.07	1.84	0.37	Subcritical
RDA07	Normal Depth	0.05	0.0099	1186.68	1186.40 to 1188.80 ft	58	59.02	307.8	307.8	0.28	0.17	0.07506	0.98	0.02	0.29	0.4	Subcritical
RCPA07	Normal Depth	0.048	0.0097	1173.49	1173.00 to 1174.40 ft	40	33.43	137.33	137.32	0.49	0.32	0.05545	1.2	0.02	0.51	0.43	Subcritical
RCPA09	Normal Depth	0.046	0.0068	1175.61	1174.00 to 1176.60 ft	174	139.32	436.04	435.77	1.61	1.03	0.03704	1.25	0.02	1.63	0.39	Subcritical
RCPA08	Normal Depth	0.046	0.0089	1141.71	1140.90 to 1143.00 ft	287	158.74	345.81	345.8	0.81	0.58	0.04492	1.81	0.05	0.86	0.47	Subcritical
RDA08	Normal Depth	0.047	0.008	1146.32	1145.40 to 1147.00 ft	277	201.64	600.16	600.15	0.92	0.67	0.04725	1.37	0.03	0.95	0.42	Subcritical
RDA20	Normal Depth	0.05	0.007	1070.55	1070.00 to 1072.00 ft	21	20.03	73.27	73.26	0.55	0.36	0.06449	1.05	0.02	0.56	0.35	Subcritical
RCPA20	Normal Depth	0.049	0.0061	1064.73	1064.00 to 1065.10 ft	179	142.33	370.73	370.59	0.73	0.44	0.05249	1.26	0.02	0.75	0.36	Subcritical
RDA09	Normal Depth	0.274	0.008	1170.12	1168.50 to 1170.00 ft	42	162.52	418.29	418	1.62	0.41	1.70948	0.26	0	1.62	0.07	Subcritical
RDA64	Normal Depth	0.046	0.0076	1158.12	1157.00 to 1159.00 ft	774	423.94	816.73	816.73	1.12	0.81	0.04159	1.83	0.05	1.17	0.45	Subcritical
RCPA18	Normal Depth	0.452	0.0074	1095.92	1092.80 to 1094.60 ft	397	795.9	339.51	336.26	3.12	0.92	3.74368	0.5	0	3.12	0.06	Subcritical
RDA18	Normal Depth	0.048	0.0079	1093.08	1092.00 to 1093.40 ft	361	177.13	275.79	275.59	1.08	0.67	0.04207	2.04	0.06	1.14	0.45	Subcritical
RCPA50	Normal Depth	0.493	0.0051	959.46	954.00 to 956.00 ft	1092	1759.97	359.91	352	5.46	1.11	4.02036	0.62	0.01	5.47	0.05	Subcritical
RCPA49	Normal Depth	0.046	0.003	957.03	950.60 to 960.00 ft	10984	3343.37	1305.92	1305.8	6.43	4.66	0.02592	3.29	0.17	6.6	0.36	Subcritical
RCPA03	Normal Depth	0.048	0.0077	1231.13	1230.00 to 1232.10 ft	1492	623.77	760.77	760.76	1.13	0.7	0.03954	2.39	0.09	1.22	0.47	Subcritical
RCPA64	Normal Depth	0.048	0.0082	1154.76	1154.00 to 1155.70 ft	225	150.83	394.33	394.32	0.76	0.52	0.04926	1.49	0.03	0.79	0.43	Subcritical
RCPA33	Normal Depth	0.05	0.0046	2.03	0.00 to 6.00 ft	597	256.26	206.23	206.17	2.03	1.21	0.0389	2.33	0.08	2.12	0.37	Subcritical
RDA01A	Normal Depth	0.05	0.0081	5.01	0.00 to 6.00 ft	1575	673.28	823.03	821.6	5.01	4.52	0.0422	2.34	0.09	5.09	0.46	Subcritical
RCPA19	Normal Depth	0.05	0.0081	1.66	0.00 to 6.00 ft	519	185.94	174.38	174.33	1.66	1.13	0.0397	2.79	0.12	1.78	0.48	Subcritical

RVADMP Routing Reach Cross-section Summary Table - Basin A

Label	Solve For	Roughness Coefficient	Channel Slope (ft/ft)	Water Surface Elevation (ft)	Elevation Range	Discharge (ft³/s)	Flow Area (ft²)	Wetted Perimeter (ft)	Top Width (ft)	Normal Depth (ft)	Critical Depth (ft)	Critical Slope (ft/ft)	Velocity (ft/s)	Velocity Head (ft)	Specific Energy (ft)	Froude Number	Flow Type
RCPA01	Normal Depth	0.05	0.0077	1218.9	1217.50 to 1221.00 ft	532	222	252.45	252.35	1.4	1	0.04429	2.4	0.09	1.49	0.45	Subcritical
RCPA11	Normal Depth	0.035	0.0082	1074.39	1074.00 to 1075.50 ft	200	113.04	362.75	362.75	0.39	0.28	0.02946	1.77	0.05	0.43	0.56	Subcritical
RCPA14	Normal Depth	0.035	0.0067	1074.53	1074.00 to 1075.50 ft	453	217.95	471.19	471.18	0.53	0.36	0.02607	2.08	0.07	0.59	0.54	Subcritical
RCPA38	Normal Depth	0.05	0.0069	1070.14	1068.80 to 1071.10 ft	320	127.05	124.96	124.85	1.34	0.87	0.04189	2.52	0.1	1.43	0.44	Subcritical
RCPA13	Normal Depth	0.048	0.0053	4.34	0.00 to 6.00 ft	420	260.4	433.88	423.76	4.34	3.71	0.04227	1.61	0.04	4.39	0.36	Subcritical
RCPA12	Normal Depth	0.05	0.004	4.33	0.00 to 6.00 ft	347	255.34	417.95	416.53	4.33	3.61	0.04392	1.36	0.03	4.36	0.31	Subcritical
RCPA39	Normal Depth	0.035	0.0061	1099.68	1099.00 to 1100.00 ft	467	228.39	471.93	471.92	0.68	0.47	0.02519	2.04	0.06	0.74	0.52	Subcritical
RCPA40	Normal Depth	0.035	0.0048	1099.64	1099.00 to 1100.00 ft	373	211.91	457.74	457.74	0.64	0.41	0.02612	1.76	0.05	0.69	0.46	Subcritical
RCPA43	Normal Depth	0.035	0.0061	1099.78	1099.00 to 1100.00 ft	619	279.86	513.71	513.7	0.78	0.55	0.02409	2.21	0.08	0.86	0.53	Subcritical
RCPA37	Normal Depth	0.035	0.0048	1100.02	1099.00 to 1100.00 ft	937	410.46	600.04	600	1.02	0.69	0.0226	2.28	0.08	1.1	0.49	Subcritical
RCPA36	Normal Depth	0.047	0.0062	1005.54	1004.60 to 1006.50 ft	245	161.31	339.99	339.98	0.94	0.64	0.04648	1.52	0.04	0.98	0.39	Subcritical
RCPA35	Normal Depth	0.035	0.0067	1004.43	1003.70 to 1005.30 ft	746	319.39	579.62	579.62	0.73	0.53	0.0242	2.34	0.08	0.82	0.55	Subcritical
RCPA47	Normal Depth	0.035	0.0067	971.87	971.00 to 972.50 ft	627	319.32	751.91	751.91	0.87	0.69	0.02601	1.96	0.06	0.93	0.53	Subcritical
RCPA48	Normal Depth	0.035	0.0071	966.66	965.70 to 968.20 ft	910	424.9	917.28	917.28	0.96	0.77	0.02494	2.14	0.07	1.03	0.55	Subcritical
RCPA63	Normal Depth	0.047	0.0064	2.02	0.00 to 5.00 ft	949	315.8	242.48	242.4	2.02	1.31	0.03261	3.01	0.14	2.16	0.46	Subcritical
RDA11	Normal Depth	0.035	0.008	1120.21	1119.50 to 1121.30 ft	180	109.53	385.09	385.09	0.71	0.6	0.03043	1.64	0.04	0.75	0.54	Subcritical
RCPA16	Normal Depth	0.035	0.0054	1048.8	1048.00 to 1049.30 ft	626	264.95	402.14	402.12	0.8	0.53	0.02315	2.36	0.09	0.88	0.51	Subcritical
RCPA34	Normal Depth	0.046	0.0064	1030.77	1029.90 to 1031.70 ft	260	157.06	302.9	302.89	0.87	0.58	0.04498	1.66	0.04	0.91	0.41	Subcritical
RDA21	Normal Depth	0.046	0.0074	1078.62	1078.00 to 1078.80 ft	126	150.6	909.07	909.07	0.62	0.37	0.04773	0.84	0.01	0.63	0.36	Subcritical
RCPA21	Normal Depth	0.048	0.0083	1109.35	1108.00 to 1110.40 ft	303	184.52	416.83	416.82	1.35	0.94	0.0425	1.64	0.04	1.39	0.44	Subcritical
RCPA65	Normal Depth	0.047	0.0083	1200.39	1198.36 to 1200.00 ft	1201	433.78	456.81	456	2.03	1.5	0.03372	2.77	0.12	2.14	0.5	Subcritical
RDA10	Normal Depth	0.05	0.007	1076.15	1074.20 to 1078.00 ft	260	110.31	119.52	119.44	1.95	1.41	0.04159	2.36	0.09	2.04	0.43	Subcritical
RCPA10	Normal Depth	0.045	0.0071	1069.26	1068.30 to 1070.70 ft	205	114	219.41	219.4	0.96	0.67	0.04105	1.8	0.05	1.01	0.44	Subcritical
RDA1B	Normal Depth	0.049	0.0083	1218.52	1217.50 to 1221.00 ft	336	168.35	276.88	276.87	1.02	0.74	0.04741	2	0.06	1.08	0.45	Subcritical
RCPA41	Normal Depth	0.05	0.0032	1030.26	1026.90 to 1031.50 ft	11005	6092.09	5485.58	5485.55	3.36	2.5	0.04091	1.81	0.05	3.41	0.3	Subcritical
RCPA42	Normal Depth	0.049	0.0024	1029.91	1026.90 to 1031.50 ft	11035	6599.83	5527.65	5527.64	3.01	2.02	0.03896	1.67	0.04	3.06	0.27	Subcritical
RCPA44	Normal Depth	0.05	0.0033	1014.39	1007.50 to 1017.00 ft	11015	3496.81	1414.25	1414.05	6.89	5.01	0.02924	3.15	0.15	7.04	0.35	Subcritical
RCPA46	Normal Depth	0.05	0.0029	989.83	982.00 to 991.00 ft	10979	4082.85	1899.33	1898.91	7.83	5.73	0.02886	2.69	0.11	7.94	0.32	Subcritical
RCPA56	Normal Depth	0.049	0.0046	943.14	937.40 to 948.00 ft	11309	3108.97	1314.29	1314.17	5.74	4.32	0.02961	3.64	0.21	5.95	0.42	Subcritical

RVADMP Routing Reach Cross-section Summary Table - Basin I

Label	Solve For	Roughness Coefficient	Channel Slope (ft/ft)	Water Surface Elevation (ft)	Elevation Range	Discharge (ft³/s)	Flow Area (ft²)	Wetted Perimeter (ft)	Top Width (ft)	Normal Depth (ft)	Critical Depth (ft)	Critical Slope (ft/ft)	Velocity (ft/s)	Velocity Head (ft)	Specific Energy (ft)	Froude Number	Flow Type
RCI44A	Normal Depth	0.035	0.0118	1288.86	1288.00 to 1289.00 ft	520	160.45	272.37	272.36	0.86	0.74	0.02225	3.24	0.16	1.03	0.74	Subcritical
RCPI45	Normal Depth	0.035	0.0106	1122.92	1122.00 to 1123.00 ft	558	175.57	283.26	283.25	0.92	0.76	0.02202	3.18	0.16	1.07	0.71	Subcritical
RCPI46	Normal Depth	0.035	0.0088	1076.94	1076.00 to 1077.00 ft	536	182.45	288.07	288.06	0.94	0.75	0.02215	2.94	0.13	1.07	0.65	Subcritical
RCPI47	Normal Depth	0.035	0.0071	1036.96	1036.00 to 1037.00 ft	506	189.19	292.72	292.71	0.96	0.72	0.02234	2.67	0.11	1.07	0.59	Subcritical
RCPI43	Normal Depth	0.035	0.0047	1006.95	1006.00 to 1007.00 ft	402	185.91	290.46	290.45	0.95	0.64	0.02314	2.16	0.07	1.02	0.48	Subcritical
RCPI48	Normal Depth	0.035	0.0055	1007.01	1006.00 to 1007.00 ft	491	202.58	300.03	300	1.01	0.71	0.02244	2.42	0.09	1.1	0.52	Subcritical
RCPI49	Normal Depth	0.035	0.0052	993.28	992.00 to 993.00 ft	831	282.7	300.56	300	1.28	0.94	0.02076	2.94	0.13	1.41	0.53	Subcritical
RCPI51	Normal Depth	0.035	0.0134	1194.33	1194.00 to 1195.00 ft	88	43.63	165.69	165.68	0.33	0.26	0.02966	2.02	0.06	0.39	0.69	Subcritical
RCPI52	Normal Depth	0.035	0.0162	1204.48	1204.00 to 1205.00 ft	197	71.49	196.46	196.46	0.48	0.43	0.02589	2.76	0.12	0.6	0.81	Subcritical
RCPI53	Normal Depth	0.035	0.0107	1142.69	1142.00 to 1143.00 ft	321	117.36	238.64	238.63	0.69	0.56	0.02396	2.74	0.12	0.81	0.69	Subcritical
RCPI54	Normal Depth	0.035	0.0114	1142.61	1142.00 to 1143.00 ft	259	98.36	222.14	222.13	0.61	0.5	0.02478	2.63	0.11	0.72	0.7	Subcritical
RCPI55	Normal Depth	0.035	0.0093	1101.7	1101.00 to 1102.00 ft	308	119.78	240.66	240.65	0.7	0.55	0.02411	2.57	0.1	0.81	0.64	Subcritical
RCI58B	Normal Depth	0.048	0.0071	1031.59	1030.00 to 1033.37 ft	465	218.78	293.26	292.95	1.59	1.22	0.04311	2.13	0.07	1.66	0.43	Subcritical
RCPI56	Normal Depth	0.035	0.0086	1076.44	1076.00 to 1079.60 ft	222	116.12	343.42	343.42	0.44	0.33	0.02836	1.91	0.06	0.5	0.58	Subcritical
RCPI59	Normal Depth	0.035	0.0058	1029.32	1029.00 to 1030.00 ft	54	41.52	163.13	163.12	0.32	0.19	0.03238	1.3	0.03	0.34	0.45	Subcritical
RCI60B	Normal Depth	0.035	0.0074	1029.25	1029.00 to 1030.00 ft	41	31.72	150.63	150.62	0.25	0.16	0.03409	1.29	0.03	0.28	0.5	Subcritical
RCPI72	Normal Depth	0.035	0.0074	1029.74	1029.00 to 1030.00 ft	301	127.9	247.32	247.31	0.74	0.54	0.0242	2.35	0.09	0.82	0.58	Subcritical
RCPI71	Normal Depth	0.035	0.0032	942.36	940.21 to 945.31 ft	1301	506.84	458.6	458.56	2.15	1.57	0.01962	2.57	0.1	2.25	0.43	Subcritical
RCI58A	Normal Depth	0.035	0.0058	1019.96	1019.00 to 1020.00 ft	458	189.36	292.83	292.82	0.96	0.69	0.02268	2.42	0.09	1.06	0.53	Subcritical
RCPI64	Normal Depth	0.035	0.0062	1009.54	1008.30 to 1010.00 ft	419	216.72	492.73	492.58	1.24	0.97	0.02351	1.93	0.06	1.3	0.51	Subcritical
RCI60A	Normal Depth	0.035	0.0031	994.29	992.00 to 995.50 ft	1459	542.68	447.38	447.35	2.29	1.59	0.01868	2.69	0.11	2.4	0.43	Subcritical
RCPI66	Normal Depth	0.035	0.004	978.93	976.70 to 979.10 ft	1327	477.3	453.13	453.11	2.23	1.64	0.01891	2.78	0.12	2.35	0.48	Subcritical
RCPI67	Normal Depth	0.035	0.0052	954.19	952.50 to 956.90 ft	1300	412.64	395.23	395.21	1.69	1.27	0.01942	3.15	0.15	1.84	0.54	Subcritical
RCPI57	Normal Depth	0.035	0.0086	1070.71	1070.00 to 1071.00 ft	303	121.76	242.29	242.29	0.71	0.54	0.02417	2.49	0.1	0.81	0.62	Subcritical
RCPI04	Normal Depth	0.046	0.0128	1245.31	1244.70 to 1245.60 ft	251	148.05	466.61	466.6	0.61	0.48	0.04912	1.7	0.04	0.66	0.53	Subcritical
RCPI63	Normal Depth	0.049	0.0046	934.17	926.60 to 936.00 ft	11330	2224.91	575.85	572.68	7.57	5.94	0.02614	5.09	0.4	7.97	0.46	Subcritical
RCPI36	Normal Depth	0.05	0.003	1014.48	1007.50 to 1017.00 ft	11008	3628.43	1445.21	1445.01	6.98	5.01	0.02925	3.03	0.14	7.12	0.34	Subcritical
RCPI37	Normal Depth	0.05	0.0021	1014.91	1007.50 to 1017.50 ft	11008	4155.6	1551.1	1550.9	7.41	5.06	0.0292	2.65	0.11	7.52	0.29	Subcritical
RCPI50	Normal Depth	0.049	0.0047	989.4	982.00 to 991.00 ft	10973	3320.03	1642.32	1641.9	7.4	5.73	0.02853	3.31	0.17	7.57	0.41	Subcritical
RCPI62	Normal Depth	0.049	0.0032	989.73	982.00 to 991.00 ft	10944	3896.74	1839.94	1839.52	7.73	5.72	0.02863	2.81	0.12	7.85	0.34	Subcritical
RCPI61 - TSFF	Normal Depth	0.045	0.0056	0.82	0.00 to 5.00 ft	190	95.71	132.92	132.88	0.82	0.47	0.03909	1.99	0.06	0.88	0.41	Subcritical
RCPI59 - TSFF	Normal Depth	0.045	0.0058	0.39	0.00 to 5.00 ft	54	42.11	115.64	115.62	0.39	0.21	0.05067	1.28	0.03	0.42	0.37	Subcritical

RVADMP Routing Reach Cross-section Summary Table - Basin J

Label	Solve For	Roughness Coefficient	Channel Slope (ft/ft)	Water Surface Elevation (ft)	Elevation Range	Discharge (ft^3/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)	Normal Depth (ft)	Critical Depth (ft)	Critical Slope (ft/ft)	Velocity (ft/s)	Velocity Head (ft)	Specific Energy (ft)	Froude Number	Flow Type
RDJ04	Normal Depth	0.048	0.0144	1202.26	1201.80 to 1202.70 ft	72	48.33	193.15	193.15	0.46	0.35	0.05721	1.49	0.03	0.5	0.53	Subcritical
RCPJ04	Normal Depth	0.048	0.0149	1142.49	1142.00 to 1143.00 ft	142	72.58	197.57	197.56	0.49	0.35	0.05042	1.96	0.06	0.55	0.57	Subcritical
RCPJ06	Normal Depth	0.045	0.0109	0.94	0.00 to 6.00 ft	212	80.56	120.79	120.76	0.94	0.69	0.03686	2.63	0.11	1.05	0.57	Subcritical
RCPJ07	Normal Depth	0.045	0.0045	1508.31	1506.00 to 1520.00 ft	470	193.57	168.69	167.95	2.31	1.6	0.032	2.43	0.09	2.4	0.4	Subcritical
RCPJ08	Normal Depth	0.046	0.0141	1152.37	1151.70 to 1152.90 ft	132	67.92	186.59	186.59	0.67	0.52	0.04746	1.94	0.06	0.73	0.57	Subcritical
RCPJ01	Normal Depth	0.049	0.0099	1100.85	1096.70 to 1102.80 ft	5326	1097.98	543.69	543.42	4.15	3.27	0.02857	4.85	0.37	4.51	0.6	Subcritical
RCPJ10	Normal Depth	0.046	0.0092	1044.05	1043.40 to 1045.30 ft	231	123.55	263.46	263.46	0.65	0.44	0.04512	1.87	0.05	0.71	0.48	Subcritical
RCPJ11	Normal Depth	0.045	0.0045	1508.67	1506.00 to 1520.00 ft	694	259.29	195.24	194.38	2.67	1.86	0.03038	2.68	0.11	2.78	0.41	Subcritical
RCPJ12	Normal Depth	0.045	0.0092	1067.25	1066.67 to 1067.52 ft	230	143.11	390.97	390.96	0.58	0.4	0.04715	1.61	0.04	0.62	0.47	Subcritical
RCPJ13	Normal Depth	0.047	0.0081	1076.71	1075.00 to 1077.20 ft	465	187.71	228.76	228.72	1.71	1.27	0.03792	2.48	0.1	1.8	0.48	Subcritical
RCPJ15	Normal Depth	0.05	0.0028	1016.91	1014.00 to 1024.20 ft	382	189.24	130.12	129.98	2.91	1.79	0.03788	2.02	0.06	2.98	0.29	Subcritical
RCPJ16	Normal Depth	0.046	0.0033	1019.82	1016.00 to 1028.00 ft	629	225.03	120.58	120.32	3.82	2.56	0.02906	2.8	0.12	3.94	0.36	Subcritical
RCPJ17	Normal Depth	0.048	0.005	1011.36	1010.00 to 1015.60 ft	564	261.73	269.15	269.12	1.36	0.8	0.0393	2.15	0.07	1.43	0.39	Subcritical
RCPJ18	Normal Depth	0.049	0.0057	1025.52	1023.00 to 1027.00 ft	492	202.7	183.59	183.29	2.52	1.89	0.0392	2.43	0.09	2.61	0.41	Subcritical
RCPJ20	Normal Depth	0.046	0.0069	993.6	990.00 to 997.50 ft	1278	316.99	174.4	174.25	3.6	2.79	0.02709	4.03	0.25	3.86	0.53	Subcritical
RCPJ21	Normal Depth	0.045	0.0054	992.45	990.00 to 997.50 ft	417	148.73	119.74	119.64	2.45	1.76	0.03062	2.8	0.12	2.57	0.44	Subcritical
RCPJ19	Normal Depth	0.045	0.0072	997.68	997.00 to 1000.00 ft	60	34.61	71.11	71.09	0.68	0.43	0.04271	1.73	0.05	0.73	0.44	Subcritical
RCPJ23	Normal Depth	0.048	0.0101	980	974.40 to 980.90 ft	5473	793.47	240.36	237.62	5.6	4.73	0.02454	6.9	0.74	6.34	0.67	Subcritical
RCJ29D	Normal Depth	0.045	0.0157	955.56	952.25 to 973.25 ft	586	101.63	61.78	61.41	3.31	3.01	0.02595	5.77	0.52	3.83	0.79	Subcritical
RCPJ27	Normal Depth	0.047	0.0065	885.69	881.16 to 888.42 ft	1625	466.57	287.83	287.6	4.53	3.3	0.02785	3.48	0.19	4.72	0.48	Subcritical
RCPJ22	Normal Depth	0.049	0.0073	940.72	936.95 to 945.90 ft	2239	471.86	193.33	192.83	3.77	2.81	0.0285	4.75	0.35	4.12	0.53	Subcritical
RCJ29A	Normal Depth	0.048	0.0086	939.75	934.00 to 941.00 ft	5182	943.48	351.71	351.49	5.75	4.71	0.02632	5.49	0.47	6.22	0.59	Subcritical
RCJ43C	Normal Depth	0.045	0.0113	923.68	922.10 to 936.30 ft	111	36.58	45.52	45.41	1.58	1.28	0.03409	3.03	0.14	1.73	0.6	Subcritical
RCJ43B	Normal Depth	0.048	0.0119	911.65	909.95 to 918.70 ft	128	41.22	47.49	47.31	1.7	1.37	0.03719	3.11	0.15	1.85	0.59	Subcritical
RCJ29C	Normal Depth	0.046	0.0171	977.17	974.40 to 980.90 ft	1156	199.59	123.85	123.7	2.77	2.51	0.02726	5.79	0.52	3.3	0.8	Subcritical
RCPJ40	Normal Depth	0.046	0.0132	885.03	881.80 to 888.21 ft	1104	184.56	89.83	89.37	3.23	2.8	0.02589	5.98	0.56	3.78	0.73	Subcritical
RCPJ25	Normal Depth	0.366	0.0135	1038.96	1035.10 to 1038.60 ft	651	804.03	357.41	356	3.86	1.43	2.14236	0.81	0.01	3.87	0.09	Subcritical
RCPJ14	Normal Depth	0.049	0.0116	1015.79	1010.00 to 1018.00 ft	5859	1063.16	482.06	481.48	5.79	5.23	0.02969	5.51	0.47	6.26	0.65	Subcritical
RCPJ24	Normal Depth	0.045	0.0193	1021.71	1020.00 to 1027.00 ft	249	43.88	31.89	31.38	1.71	1.54	0.02771	5.68	0.5	2.21	0.85	Subcritical
RCPJ30	Normal Depth	0.045	0.02	1033.04	1030.00 to 1040.00 ft	372	48.98	23.62	22.18	3.04	2.87	0.02499	7.59	0.9	3.94	0.9	Subcritical
RCPJ53	Normal Depth	0.045	0.0201	970.65	970.00 to 975.00 ft	37	11.82	21.61	21.48	0.65	0.54	0.03828	3.13	0.15	0.8	0.74	Subcritical
RCPJ31	Normal Depth	0.045	0.0122	962.24	960.00 to 970.00 ft	460	83.95	45.6	44.94	2.24	1.81	0.02593	5.48	0.47	2.71	0.71	Subcritical
RCPJ32	Normal Depth	0.045	0.0123	961.64	960.00 to 970.00 ft	266	58	41.39	40.91	1.64	1.28	0.02862	4.59	0.33	1.96	0.68	Subcritical
RCPJ26	Normal Depth	0.045	0.0099	1001.65	1000.00 to 1013.00 ft	472	118.2	88.22	88.05	1.65	1.22	0.02926	3.99	0.25	1.9	0.61	Subcritical
RCPJ33	Normal Depth	0.045	0.0057	933.55	930.00 to 950.00 ft	1655	316.62	104.27	103.4	3.55	2.37	0.02313	5.23	0.42	3.97	0.53	Subcritical
RCPJ34	Normal Depth	0.045	0.0069	923.15	920.00 to 940.00 ft	1966	364.4	132.11	131.48	3.15	2.2	0.02351	5.4	0.45	3.6	0.57	Subcritical
RCPJ51 - TSFF	Normal Depth	0.045	0.0045	0.89	0.00 to 5.00 ft	197	105.34	135.79	135.75	0.89	0.48	0.03881	1.87	0.05	0.95	0.37	Subcritical

D.4 Reservoir Routing Data

(Not Applicable to This Study)

D.5 Flow Splits and Diversion Data

(Not modified from the October 2010 RVADMP Hydrology Report prepared by URS)

D.6 Hydrologic Calculations

100-Year 6-Hour Storm HEC-1 Model

(RVADMP ADMP model)

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1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *             JUN   1998                *
 *           VERSION 4.1                 *
 *                                       *
 *  RUN DATE   05OCT12  TIME  13:52:38   *
 *                                       *
 *****************************************
```

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

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

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

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1                                          HEC-1 INPUT                                          PAGE  1

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

   1          ID   WATERMAN WASH - Contract # FCD 2006C029
   2          ID
   3          ID   Prepared by:
   4          ID   URS Corporation
   5          ID   7720 N. 16th Street, Suite 100
   6          ID   Phoenix, Arizona   85020
   7          ID
   8          ID   01/09/09  Filename:  With Railroad.IH1
   9          ID            Last Revised: 04/25/11
  10          ID
  11          ID   1. The following model is modeled with the Union Pacific railroad
  12          ID      embankment located adjacent to SR-238.
  13          ID   2. The storm used was 100-year,6-hour.
  14          ID   3. S-graph was the unit hydrograph.
  15          ID   4. Time step of 10 minutes.
  16          ID   5. A point rainfall of 2.668 inches from NOAA 14 with Maricopa County Areal
  17          ID      reduction.
  18          ID   6. Green-Ampt loss methods were used. Normal depth Channel routing.
  19          ID   7. The sub-basin parameters were generated using FCDMC's DDMSW software.
  20          ID   8. The contributing area was calculated by estimating the amount of flow
  21          ID      in each routing reach.
              *DIAGRAM
  22          IT      10                    300
  23          IO       5
  24          IN      15
              *
  25          JD   2.668  0.0001
  26          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  27          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
  28          PC   0.962   0.972   0.983   0.991   1.000
  29          JD   2.652  0.5000
  30          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  31          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
  32          PC   0.962   0.972   0.983   0.991   1.000
  33          JD   2.601     2.8
  34          PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
  35          PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
  36          PC   0.950   0.963   0.975   0.988   1.000
  37          JD   2.460    16.0
  38          PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
  39          PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
  40          PC   0.946   0.960   0.973   0.987   1.000
  41          JD   2.161    90.0
  42          PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
  43          PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
  44          PC   0.927   0.945   0.964   0.982   1.000
              * ******************************************************************************
              *
              * ******************************************************************************
1                                          HEC-1 INPUT                                          PAGE  2

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

  45          KK     C04
  46          KM     URS 2009
  47          KM    Customized XKSAT Values
  48          BA   0.234
  49          LG    0.35    0.35    2.88    0.99       0
  50          UI       0     492     309      79      21       0       0       0       0       0
  51          UI       0       0       0       0       0       0       0       0       0       0
  52          UI       0       0       0       0       0       0       0       0       0       0
  53          UI       0       0       0       0       0       0       0       0       0       0
              *

  54          KK  RCPC04
  55          KM        Route flow from CP C04 to CP C12
  56          KM    This is in the 10-foot contour area, used the EEC route.
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 57          RS       4    FLOW      -1
 58          RC   0.050   0.045   0.050    7890  0.0232
 59          RX       0      85     170     175     180     190     280     375
 60          RY    1667    1666    1665    1663    1663    1665    1666    1667
             *

 61          KK     C12   BASIN
 62          KM    Customized XKSAT Values
 63          KM     URS 2009
 64          BA   0.201
 65          LG    0.35    0.35    3.09    0.85       0
 66          UI       0     139     397     193      39       0       0       0       0       0
 67          UI       0       0       0       0       0       0       0       0       0       0
 68          UI       0       0       0       0       0       0       0       0       0       0
 69          UI       0       0       0       0       0       0       0       0       0       0
 70          UI       0       0       0       0       0       0       0       0       0       0
             *

 71          KK   CPC12
 72          KM        Combine C04 with C12
 73          HC       2   0.435
             *

 74          KK    DC12
 75          KM      Divert flow into C31
 76          KM        Natural divergence of flow due to a braided channel network.
 77          DT   DVC12
 78          DI       0      39     144     291     788    1940    3606    5426    7538
 79          DQ       0      20      72     150     391     941    1739    2610    3620
             *

 80          KK  RCPC12
 81          KM        Route remainder flow from CP C12 to CP C13
 82          KM    This is in the 10-foot contour area, used the EEC route.
 83          RS       2    FLOW      -1
 84          RC   0.050   0.045   0.050    5110  0.0119
 85          RX       0      80     130     135     155     160     230     280
 86          RY    1529    1528    1527    1525    1525    1527    1528    1529
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 87          KK     C13   BASIN
 88          KM     URS 2009
 89          KM    Customized XKSAT Values
 90          BA   0.520
 91          LG    0.35    0.35    3.21    0.78       0
 92          UI       0     170     498     763     394     125      39      23       0       0
 93          UI       0       0       0       0       0       0       0       0       0       0
 94          UI       0       0       0       0       0       0       0       0       0       0
 95          UI       0       0       0       0       0       0       0       0       0       0
 96          UI       0       0       0       0       0       0       0       0       0       0
             *
 97          KM    URS 2009

 98          KK   CPC13
 99          KM        Combine C12 with C13
100          HC       2   0.733
             *

101          KK    DC13
102          KM    URS 2009
103          KM    Divert flow into C33A
104          KM        Flow is split between what passes through/over the structure and
105          KM        what is diverted parallel to the railroad.
106          KM    UPRR Structure 1 - MP875.2 (18' Bridge)
107          DT   DVC13
108          DI       0      22     103     204     345     513     950    1875
109          DQ       0      22     103     204     301     389     468     541
             *

110          KK  RCPC13
111          KM    This is in the 10-foot contour area, used the EEC route.
112          KM        Route remainder flow from CP C13 to CP C31
113          RS       1    FLOW      -1
114          RC   0.050   0.045   0.050     630  0.0045
115          RX       0      20      30     230     430     630     830    1030
116          RY    1513    1513    1506  1508.8  1511.6  1514.4  1517.2    1520
             *

117          KK     C11   BASIN
118          KM     URS 2009
119          KM    Customized XKSAT Values
120          BA   0.289
121          LG    0.35    0.35    3.11    0.84       0
122          UI       0     113     343     417     174      52      14       0       0       0
123          UI       0       0       0       0       0       0       0       0       0       0
124          UI       0       0       0       0       0       0       0       0       0       0
125          UI       0       0       0       0       0       0       0       0       0       0
126          UI       0       0       0       0       0       0       0       0       0       0
             *
```



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

127          KK    DC11
128          KM      Divert flow into C14
129          KM        Natural divergence of flow due to a braided channel network.
130          DT   DVC11
131          DI       0      22      92     211     667    1801    3293    5031    7054
132          DQ       0       9      38      96     330     943    1686    2597    3659
             *
```

```
133          KK  RCPC11
134          KM        Route remainder flow from CP C11 to CP C31
135          KM    This is in the 10-foot contour area, used the EEC route.
136          RS       4    FLOW      -1
137          RC   0.050   0.045   0.050    4490  0.0116
138          RX       0     100     190     195     205     210     300     420
139          RY    1537    1536    1535    1534    1534    1535    1536    1537
             *

140          KK   DRC12
141          KM        Return diverted flow from CP C12
142          DR   DVC12
             *

143          KK   RDC12
144          KM        Route flow from CP C12 to CP C31
145          KM    This is in the 10-foot contour area, used the EEC route.
146          RS       4    FLOW      -1
147          RC   0.050   0.045   0.050    5320  0.0118
148          RX       0     100     190     195     205     210     300     420
149          RY    1537    1536    1535    1534    1534    1535    1536    1537
             *

150          KK     C31   BASIN
151          KM     URS 2009
152          KM    Customized XKSAT Values
153          BA   0.101
154          LG    0.35    0.35    3.15    0.82       0
155          UI       0      79     211      83      14       0       0       0       0       0
156          UI       0       0       0       0       0       0       0       0       0       0
157          UI       0       0       0       0       0       0       0       0       0       0
158          UI       0       0       0       0       0       0       0       0       0       0
159          UI       0       0       0       0       0       0       0       0       0       0
             *

160          KK   CPC31
161          KM    URS 2009
162          KM        Combine C11, DRC12, RCP13, with C31
163          HC       4   0.651
             *
```



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

164          KK    DC31
165          KM    URS 2009
166          KM    Divert flow into C33A
167          KM        Flow is split between what passes through/over the structure and
168          KM        what is diverted parallel to the railroad.
169          KM    UPRR Structure 2 - MP875.32 (2-36" CMP's)
170          DT   DVC31
171          DI       0       2      19      76     221     434     658    1096
172          DQ       0       2      19      48      81     109     132     172
             *

173          KK  RCPC31
174          KM    This is in the 10-foot contour area, used the EEC route.
175          KM        Route remainder flow from CP C31 to CP C14
176          RS       1    FLOW      -1
177          RC   0.050   0.045   0.050     690  0.0041
178          RX       0      20      30     230     430     630     830    1030
179          RY    1510    1510    1504  1506.8  1509.6  1512.4  1515.2    1518
             *

180          KK   DRC11
181          KM        Return diverted flow from CP C11
182          DR   DVC11
             *

183          KK   RDC11
184          KM    This is in the 10-foot contour area, used the EEC route.
185          KM        Route flow from CP C11 to CP C14
186          RS       7    FLOW      -1
187          RC   0.050   0.045   0.050    4960  0.0103
188          RX       0      90     210     215     230     235     350     430
189          RY    1537    1536    1536    1535    1535    1536    1536    1537
             *

190          KK     C14   BASIN
191          KM     URS 2009
192          KM    Customized XKSAT Values
193          BA   0.224
194          LG    0.35    0.35    3.15    0.82       0
195          UI       0     107     340     290      97      22       0       0       0       0
196          UI       0       0       0       0       0       0       0       0       0       0
197          UI       0       0       0       0       0       0       0       0       0       0
198          UI       0       0       0       0       0       0       0       0       0       0
199          UI       0       0       0       0       0       0       0       0       0       0
             *

200          KK   CPC14
201          KM    URS 2009
202          KM        Combine DRC11, C14, RCPC31
203          HC       3   0.771
             *
```



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

204          KK    DC14
205          KM    URS 2009
206          KM    Divert flow into C33A
207          KM        Flow is split between what passes through/over the structure and
208          KM        what is diverted parallel to the railroad.
```

```
 209          KM    UPRR Structure 3 - MP875.44 (10' Bridge)
 210          DT   DVC14
 211          DI       0      15      57     113     215     356     456    1050
 212          DQ       0      15      57     113     180     233     280     324
              *

 213          KK  RCPC14
 214          KM    This is in the 10-foot contour area, used the EEC route.
 215          KM        Route remainder flow from CP C14 to CP C10
 216          RS       1    FLOW      -1
 217          RC   0.050   0.045   0.050    1310  0.0039
 218          RX       0      20      30     210     390     570     750     930
 219          RY    1506    1506    1500  1502.6  1505.2  1507.8  1510.4    1513
              *

 220          KK     C05   BASIN
 221          KM     URS 2009
 222          KM    Customized XKSAT Values
 223          BA   0.228
 224          LG    0.35    0.35    2.95    0.93       0
 225          UI       0     432     412      38       0       0       0       0       0       0
 226          UI       0       0       0       0       0       0       0       0       0       0
 227          UI       0       0       0       0       0       0       0       0       0       0
 228          UI       0       0       0       0       0       0       0       0       0       0
              *

 229          KK  RCPC05
 230          KM        Route flow from CP C05 to CP C10
 231          KM    This is in the 10-foot contour area, used the EEC route.
 232          RS       6    FLOW      -1
 233          RC   0.050   0.045   0.050   13200  0.0153
 234          RX       0      60     120     135     150     165     250     320
 235          RY    1616    1615    1615    1613    1613    1615    1615    1616
              *

 236          KK     C03   BASIN
 237          KM     URS 2009
 238          KM    Customized XKSAT Values
 239          BA   0.295
 240          LG    0.35    0.35    2.94    0.95       0
 241          UI       0     277     651     184      27       0       0       0       0       0
 242          UI       0       0       0       0       0       0       0       0       0       0
 243          UI       0       0       0       0       0       0       0       0       0       0
 244          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

 245          KK    DC03
 246          KM      Divert flow into C06
 247          KM        Natural divergence of flow due to a braided channel network.
 248          DT   DVC03
 249          DI       0      43     176     373    1014    2415    4457    6668    9228
 250          DQ       0      25      98     201     545    1265    2332    3481    4810
              *

 251          KK  RCPC03
 252          KM    This is in the 10-foot contour area, used the EEC route.
 253          KM        Route remainder flow from CP C03 to CP C09
 254          RS       2    FLOW      -1
 255          RC   0.050   0.045   0.050    6060  0.0167
 256          RX       0      90     210     220     230     240     350     450
 257          RY    1615    1614    1614    1612    1612    1614    1614    1615
              *

 258          KK     C09   BASIN
 259          KM     URS 2009
 260          KM    Customized XKSAT Values
 261          BA   0.138
 262          LG    0.35    0.35    3.13    0.83       0
 263          UI       0      81     248     157      38       8       0       0       0       0
 264          UI       0       0       0       0       0       0       0       0       0       0
 265          UI       0       0       0       0       0       0       0       0       0       0
 266          UI       0       0       0       0       0       0       0       0       0       0
 267          UI       0       0       0       0       0       0       0       0       0       0
              *

 268          KK   CPC09
 269          KM        Combine C03 with C09
 270          HC       2   0.433
              *

 271          KK    DC09
 272          KM      Divert flow into C16
 273          KM        Natural divergence of flow due to a braided channel network.
 274          DT   DVC09
 275          DI       0      31     111     249     519    1155    2695    4796    7315    9984
 276          DQ       0      15      52     115     227     540    1299    2444    3606    4952
              *

 277          KK  RCPC09
 278          KM        Route remainder flow from CP C09 to CP C15
 279          KM    This is in the 10-foot contour area, used the EEC route.
 280          RS       2    FLOW      -1
 281          RC   0.050   0.045   0.050    3650  0.0139
 282          RX       0      40     120     130     155     165     245     300
 283          RY    1553    1552    1552    1550    1550    1552    1552    1553
              *
```



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

 284          KK     C15   BASIN
```

```
 285          KM     URS 2009
 286          BA   0.095
 287          LG    0.35    0.35    4.20    0.42       0
 288          UI       0      85     208      64      10       0       0       0       0       0
 289          UI       0       0       0       0       0       0       0       0       0       0
 290          UI       0       0       0       0       0       0       0       0       0       0
 291          UI       0       0       0       0       0       0       0       0       0       0
 292          UI       0       0       0       0       0       0       0       0       0       0
              *

 293          KK   CPC15
 294          KM       Combine C09 with C15
 295          HC       2   0.241
              *

 296          KK    DC15
 297          KM      Divert flow into C30
 298          KM        Natural divergence of flow due to a braided channel network.
 299          DT   DVC15
 300          DI       0      22      83     202     409     591    1269    2894    5081    7600
 301          DQ       0      22      83     191     355     456     852    1738    3056    4514
              *

 302          KK  RCPC15
 303          KM        Route remainder flow from CP C15 to CP C10
 304          KM    This is in the 10-foot contour area, used the EEC route.
 305          RS       4    FLOW      -1
 306          RC   0.050   0.045   0.050    3210  0.0095
 307          RX       0      50     150     160     170     180     280     350
 308          RY    1617    1616    1616    1614    1614    1616    1616    1617
              *

 309          KK     C10   BASIN
 310          KM     URS 2009
 311          KM    Customized XKSAT Values
 312          BA   0.548
 313          LG    0.35    0.35    3.19    0.79       0
 314          UI       0     118     361     667     521     284      99      39      20       0
 315          UI       0       0       0       0       0       0       0       0       0       0
 316          UI       0       0       0       0       0       0       0       0       0       0
 317          UI       0       0       0       0       0       0       0       0       0       0
 318          UI       0       0       0       0       0       0       0       0       0       0
              *

 319          KK   CPC10
 320          KM    URS 2009
 321          KM        Combine C05, C15, RCPC14 with C10
 322          HC       4   0.999
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 323          KK    DC10
 324          KM    URS 2009
 325          KM    Divert flow into C33A
 326          KM        Flow is split between what passes through/over the structure and
 327          KM        what is diverted parallel to the railroad.
 328          KM    UPRR Structure 4 - MP875.69 (2-36" CMP's)
 329          DT   DVC10
 330          DI       0       8      23      52     142     271     834    1467
 331          DQ       0       8      23      35      44      52      66     179
              *

 332          KK  RCPC10
 333          KM    This is in the 10-foot contour area, used the EEC route.
 334          KM        Route remainder flow from CP C10 to CP C30
 335          RS       2    FLOW      -1
 336          RC   0.050   0.045   0.050    2070  0.0039
 337          RX       0      20      30     180     330     480     630     780
 338          RY    1500    1500    1493  1495.4  1497.8  1500.2  1502.6    1505
              *

 339          KK   DRC03
 340          KM        Return diverted flow from CP C03
 341          DR   DVC03
              *

 342          KK   RDC03
 343          KM        Route flow from CP C03 to CP C06
 344          KM    This is in the 10-foot contour area, used the EEC route.
 345          RS       3    FLOW      -1
 346          RC   0.050   0.045   0.050    6650  0.0161
 347          RX       0      55     150     160     180     190     300     350
 348          RY    1629    1628    1628    1626    1626    1628    1628    1629
              *

 349          KK     C06   BASIN
 350          KM    Customized XKSAT Values
 351          KM     URS 2009
 352          BA   0.349
 353          LG    0.35    0.35    3.19    0.79       0
 354          UI       0     164     519     458     158      37       0       0       0       0
 355          UI       0       0       0       0       0       0       0       0       0       0
 356          UI       0       0       0       0       0       0       0       0       0       0
 357          UI       0       0       0       0       0       0       0       0       0       0
              *

 358          KK   CPC06
 359          KM        Combine DRC03 with C06
 360          HC       2   0.511
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 361          KK    DC06
 362          KM      Divert flow into C18
 363          KM        Natural divergence of flow due to a braided channel network.
 364          DT   DVC06
 365          DI       0      16      68     167     324     409     941    2213    4100    6021
 366          DQ       0       8      34      83     162     204     470    1106    2050    3010
              *

 367          KK  RCPC06
 368          KM        Route remainder flow from CP C06 to CP C16
 369          KM    This is in the 10-foot contour area, used the EEC route.
 370          RS       1    FLOW      -1
 371          RC   0.050   0.045   0.050    1800  0.0127
 372          RX       0     120     240     250     270     280     400     500
 373          RY    1568    1567    1567    1564    1564    1567    1567    1568
              *

 374          KK   DRC09
 375          KM        Return diverted flow from CP C09
 376          DR   DVC09
              *

 377          KK   RDC09
 378          KM    This is in the 10-foot contour area, used the EEC route.
 379          KM        Route flow from CP C09 to CP C16
 380          RS       1    FLOW      -1
 381          RC   0.050   0.045   0.050    2380  0.0132
 382          RX       0     120     240     250     270     280     400     500
 383          RY    1568    1567    1567    1564    1564    1567    1567    1568
              *

 384          KK     C16   BASIN
 385          KM     URS 2009
 386          KM    Customized XKSAT Values
 387          BA   0.127
 388          LG    0.35    0.35    3.23    0.77       0
 389          UI       0      78     235     139      31       8       0       0       0       0
 390          UI       0       0       0       0       0       0       0       0       0       0
 391          UI       0       0       0       0       0       0       0       0       0       0
 392          UI       0       0       0       0       0       0       0       0       0       0
 393          UI       0       0       0       0       0       0       0       0       0       0
              *

 394          KK   CPC16
 395          KM        Combine C06, DRC09 with C16
 396          HC       3   0.508
              *

 397          KK  RCPC16
 398          KM    This is in the 10-foot contour area, used the EEC route.
 399          KM        Route flow from CP C16 to CP C30
 400          RS       5    FLOW      -1
 401          RC   0.050   0.045   0.050    5730  0.0106
 402          RX       0      70     200     210     225     235     360     450
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 403          RY    1517    1516    1516    1514    1514    1516    1516    1517
              *

 404          KK   DRC06
 405          KM        Return diverted flow from CP C06
 406          DR   DVC06
              *

 407          KK   RDC06
 408          KM    This is in the 10-foot contour area, used the EEC route.
 409          KM        Route flow from CP C06 to CP C18
 410          RS       1    FLOW      -1
 411          RC   0.050   0.045   0.050    2640  0.0117
 412          RX       0     200     240     247     272     280     330     450
 413          RY    1597    1596    1595    1593    1593    1595    1596    1597
              *

 414          KK     C18   BASIN
 415          KM     URS 2009
 416          BA   0.078
 417          LG    0.35    0.35    4.00    0.46       0
 418          UI       0     169     124       0       0       0       0       0       0       0
 419          UI       0       0       0       0       0       0       0       0       0       0
 420          UI       0       0       0       0       0       0       0       0       0       0
 421          UI       0       0       0       0       0       0       0       0       0       0
 422          UI       0       0       0       0       0       0       0       0       0       0
              *

 423          KK   CPC18
 424          KM        Combine DRC06 with C18
 425          HC       2   0.334
              *

 426          KK    DC18
 427          KM      Divert flow into C19
 428          KM        Natural divergence of flow due to a braided channel network.
 429          DT   DVC18
 430          DI       0      69     169     349     503    1348    3477    6348    9552
 431          DQ       0       0      18      79     205     641    1775    3142    4817
              *

 432          KK  RCPC18
 433          KM    This is in the 10-foot contour area, used the EEC route.
 434          KM        Route remainder flow from CP C18 to CP C17
 435          RS       1    FLOW      -1
 436          RC   0.050   0.045   0.050    2210  0.0103
```

```
437          RX       0      60     170     180     200     210     300     350
438          RY    1527    1526    1526    1524    1524    1526    1526    1527
             *
1                                          HEC-1 INPUT                                                    PAGE 12

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

439          KK     C17   BASIN
440          KM     URS 2009
441          KM    Customized XKSAT Values
442          BA   0.121
443          LG    0.35    0.35    3.48    0.64       0
444          UI       0     142     273      47       0       0       0       0       0       0
445          UI       0       0       0       0       0       0       0       0       0       0
446          UI       0       0       0       0       0       0       0       0       0       0
447          UI       0       0       0       0       0       0       0       0       0       0
448          UI       0       0       0       0       0       0       0       0       0       0
             *

449          KK   CPC17
450          KM        Combine C18 with C17
451          HC       2   0.424
             *

452          KK    DC17
453          KM      Divert flow into C29
454          KM        Natural divergence of flow due to a braided channel network.
455          DT   DVC17
456          DI       0      23      83     189     360     459    1038    2490    4238    6610
457          DQ       0      23      83     181     324     369     727    1601    2650    4163
             *

458          KK  RCPC17
459          KM        Route remainder flow from CP C17 to CP C30
460          KM    This is in the 10-foot contour area, used the EEC route.
461          RS       2    FLOW      -1
462          RC   0.050   0.045   0.050    2920  0.0106
463          RX       0      40     120     150     160     170     250     300
464          RY    1510    1509    1509    1506    1506    1509    1509    1510
             *

465          KK   DRC15
466          KM        Return diverted flow from CP C15
467          DR   DVC15
             *

468          KK   RDC15
469          KM    This is in the 10-foot contour area, used the EEC route.
470          KM        Route flow from CP C15 to CP C30
471          RS       2    FLOW      -1
472          RC   0.050   0.045   0.050    4430  0.0092
473          RX       0      70     200     210     225     235     360     450
474          RY    1517    1516    1516    1514    1514    1516    1516    1517
             *

475          KK     C30   BASIN
476          KM     URS 2009
477          BA   0.235
478          LG    0.35    0.35    4.20    0.42       0
479          UI       0     188     495     188      31       0       0       0       0       0
480          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                                    PAGE 13

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

481          UI       0       0       0       0       0       0       0       0       0       0
482          UI       0       0       0       0       0       0       0       0       0       0
483          UI       0       0       0       0       0       0       0       0       0       0
             *

484          KK   CPC30
485          KM    URS 2009
486          KM        Combine C16, C17, DRC15, RCPC10 with C30
487          HC       5   1.991
             *

488          KK    DC30
489          KM    URS 2009
490          KM    Divert flow into C33A
491          KM        Flow is split between what passes through/over the structure and
492          KM        what is diverted parallel to the railroad.
493          KM    UPRR Structure 5 - MP876.09 (3-48" SSP's)
494          DT   DVC30
495          DI       0      38      83     151     252     401     644    1464
496          DQ       0      38      83     151     230     312     381     792
             *

497          KK  RCPC30
498          KM    This is in the 10-foot contour area, used the EEC route.
499          KM        Route remainder flow from CP C30 to CP C29
500          RS       2    FLOW      -1
501          RC   0.050   0.045   0.050    2920  0.0050
502          RX       0      20      30     170     310     450     590     730
503          RY    1488    1488    1483  1485.4  1487.8  1490.2  1492.6    1495
             *

504          KK     C02   BASIN
505          KM     URS 2009
506          KM    Customized XKSAT Values
507          BA   0.129
508          LG    0.35    0.35    2.91    0.97       0
509          UI       0     310     180       0       0       0       0       0       0       0
510          UI       0       0       0       0       0       0       0       0       0       0
511          UI       0       0       0       0       0       0       0       0       0       0
512          UI       0       0       0       0       0       0       0       0       0       0
```

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                 *

 513             KK  RCPC02
 514             KM        Route flow from CP C02 to CP C07
 515             KM    This is in the 10-foot contour area, used the EEC route.
 516             RS       5    FLOW      -1
 517             RC   0.050   0.045   0.050   11040  0.0220
 518             RX       0     200     250     265     285     300     350     550
 519             RY    1628    1627    1626    1624    1624    1626    1627    1628
                 *
1                                          HEC-1 INPUT                                                    PAGE 14

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

 520             KK     C01   BASIN
 521             KM     URS 2009
 522             KM    Customized XKSAT Values
 523             BA   0.450
 524             LG    0.35    0.35    2.89    0.98       0
 525             UI       0     860     628     186      49       0       0       0       0       0
 526             UI       0       0       0       0       0       0       0       0       0       0
 527             UI       0       0       0       0       0       0       0       0       0       0
 528             UI       0       0       0       0       0       0       0       0       0       0
                 *

 529             KK  RCPC01
 530             KM        Route flow from CP C01 to CP C07
 531             KM    This is in the 10-foot contour area, used the EEC route.
 532             RS       5    FLOW      -1
 533             RC   0.050   0.045   0.050   12650  0.0210
 534             RX       0     200     270     280     300     310     380     580
 535             RY    1619    1618    1617    1615    1615    1617    1618    1619
                 *

 536             KK     C08   BASIN
 537             KM     URS 2009
 538             KM    Customized XKSAT Values
 539             BA   0.873
 540             LG    0.35    0.35    3.13    0.83       0
 541             UI       0     248     729    1236     732     281      97      35       0       0
 542             UI       0       0       0       0       0       0       0       0       0       0
 543             UI       0       0       0       0       0       0       0       0       0       0
 544             UI       0       0       0       0       0       0       0       0       0       0
                 *

 545             KK  RCPC08
 546             KM        Route flow from CP C08 to CP C07
 547             KM    This is in the 10-foot contour area, used the EEC route.
 548             RS       1    FLOW      -1
 549             RC   0.050   0.045   0.050    3060  0.0099
 550             RX       0     300     514     530     570     590     612     806
 551             RY    1573    1570    1569    1566    1566    1569    1570    1580
                 *

 552             KK     C07   BASIN
 553             KM     URS 2009
 554             KM    Customized XKSAT Values
 555             BA   1.183
 556             LG    0.35    0.35    3.07    0.86       0
 557             UI       0     422    1253    1738     814     245      65       0       0       0
 558             UI       0       0       0       0       0       0       0       0       0       0
 559             UI       0       0       0       0       0       0       0       0       0       0
 560             UI       0       0       0       0       0       0       0       0       0       0
                 *
1                                          HEC-1 INPUT                                                    PAGE 15

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

 561             KK   CPC07
 562             KM        Combine C02, C01, C08 with C07
 563             HC       4   2.411
                 *

 564             KK    DC07
 565             KM      Divert flow into C20
 566             KM        Natural divergence of flow due to a braided channel network.
 567             DT   DVC07
 568             DI       0      88     310     730    1418    1808    4633   11215
 569             DQ       0      23      79     209     453     669    2050    5243
                 *

 570             KK  RCPC07
 571             KM    This is in the 10-foot contour area, used the EEC route.
 572             KM        Route remainder flow from CP C07 to CP C19
 573             RS       1    FLOW      -1
 574             RC   0.050   0.045   0.050    3830  0.0106
 575             RX       0       8      60      70      85      95     135     143
 576             RY    1558  1556.5    1555    1553    1553    1555  1556.5    1558
                 *

 577             KK   DRC18
 578             KM        Return diverted flow from CP C18
 579             DR   DVC18
                 *

 580             KK   RDC18
 581             KM    This is in the 10-foot contour area, used the EEC route.
 582             KM        Route flow from CP C18 to CP C19
 583             RS       2    FLOW      -1
 584             RC   0.050   0.045   0.050    3080  0.0130
 585             RX       0     100     210     220     245     255     320     450
 586             RY    1528    1527    1526    1523    1523    1526    1527    1528
                 *
```

```
587          KK     C19   BASIN
588          KM     URS 2009
589          KM    Customized XKSAT Values
590          BA   0.257
591          LG    0.35    0.35    3.60    0.58       0
592          UI       0     222     555     183      28       0       0       0       0       0
593          UI       0       0       0       0       0       0       0       0       0       0
594          UI       0       0       0       0       0       0       0       0       0       0
595          UI       0       0       0       0       0       0       0       0       0       0
596          UI       0       0       0       0       0       0       0       0       0       0
             *

597          KK   CPC19
598          KM        Combine C07, DRC18 with C19
599          HC       3    2.08
             *
1                                        HEC-1 INPUT                                          PAGE 16

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

600          KK    DC19
601          KM      Divert flow into C27
602          KM        Natural divergence of flow due to a braided channel network.
603          DT   DVC19
604          DI       0      35     126     336     751    1155    2993    7167   12787
605          DQ       0      24      84     211     432     595    1357    3021    5467
             *

606          KK  RCPC19
607          KM        Route remainder flow from CP C19 to CP C29
608          KM    This is in the 10-foot contour area, used the EEC route.
609          RS       3    FLOW      -1
610          RC   0.050   0.045   0.050    3370  0.0091
611          RX       0      50     250     260     275     285     400     450
612          RY    1497    1496    1496    1494    1494    1496    1496    1497
             *

613          KK   DRC17
614          KM        Return diverted flow from CP C17
615          DR   DVC17
             *

616          KK   RDC17
617          KM        Route flow from CP C17 to CP C29
618          KM    This is in the 10-foot contour area, used the EEC route.
619          RS       4    FLOW      -1
620          RC   0.050   0.045   0.050    4890  0.0083
621          RX       0     100     195     200     210     215     260     335
622          RY    1512    1511    1510    1508    1508    1510    1511    1512
             *

623          KK     C29   BASIN
624          KM     URS 2009
625          KM    Customized XKSAT Values
626          BA   0.339
627          LG    0.35    0.35    3.92    0.48       0
628          UI       0     226     656     340      70       0       0       0       0       0
629          UI       0       0       0       0       0       0       0       0       0       0
630          UI       0       0       0       0       0       0       0       0       0       0
631          UI       0       0       0       0       0       0       0       0       0       0
632          UI       0       0       0       0       0       0       0       0       0       0
             *

633          KK   CPC29
634          KM    URS 2009
635          KM        Combine C19, DRC17, RCPC30 with C29
636          HC       4   3.954
             *
1                                        HEC-1 INPUT                                          PAGE 17

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

637          KK    DC29
638          KM    URS 2009
639          KM    Divert flow into C33B
640          KM        Flow is split between what passes through/over the structure and
641          KM        what is diverted parallel to the railroad.
642          KM    UPRR Structure 6 - MP876.64 (3-48" SSP's)
643          DT   DVC29
644          DI       0      38     133     351     656    1040    1202    2870
645          DQ       0      27      59     122     198     280     349     585
             *

646          KK  RCPC29
647          KM    This is in the 10-foot contour area, used the EEC route.
648          KM        Route remainder flow from CP C29 to CP C28
649          RS       1    FLOW      -1
650          RC   0.050   0.045   0.050     520  0.0052
651          RX       0      20      30     130     230     330     430     530
652          RY    1480    1480    1475  1477.0  1479.0  1481.0  1483.0    1485
             *

653          KK     C28   BASIN
654          KM     URS 2009
655          BA   0.050
656          LG    0.35    0.35    4.65    0.32       0
657          UI       0     158      35       0       0       0       0       0       0       0
658          UI       0       0       0       0       0       0       0       0       0       0
659          UI       0       0       0       0       0       0       0       0       0       0
660          UI       0       0       0       0       0       0       0       0       0       0
661          UI       0       0       0       0       0       0       0       0       0       0
             *

662          KK   CPC28
```

```
KM    URS 2009
KM        Combine C28 AND RCPC29
HC       2   2.778
*

KK    DC28
KM    URS 2009
KM    Divert flow into C33B
KM        Flow is split between what passes through/over the structure and
KM        what is diverted parallel to the railroad.
KM    UPRR Structure 7 - MP876.78 (3-60" SSP's)
DT   DVC28
DI       0      29      73     245     523     888    1331    1356    3369
DQ       0      29      68     143     237     344     458     570    1200
*

KK  RCPC28
KM    This is in the 10-foot contour area, used the EEC route.
KM        Route remainder flow from CP C28 to CP C27
RS       1    FLOW      -1
RC   0.050   0.045   0.050    1940  0.0050
RX       0      20      30     110     190     270     350     430
```



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

RY    1474    1474    1467  1468.6  1470.2  1471.8  1473.4    1475
*

KK   DRC19
KM        Return diverted flow from CP C19
DR   DVC19
*

KK   RDC19
KM        Route flow from CP C19 to CP C27
KM    This is in the 10-foot contour area, used the EEC route.
RS       2    FLOW      -1
RC   0.050   0.045   0.050    5130  0.0081
RX       0     100     220     240     270     290     390     480
RY    1499    1498    1497    1494    1494    1497    1498    1499
*

KK     C27   BASIN
KM     URS 2009
KM    Customized XKSAT Values
BA   0.214
LG    0.35    0.35    3.60    0.58       0
UI       0     190     466     146      22       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK   CPC27
KM    URS 2009
KM        Combine DRC19, C27, AND RCPC28
HC       3   2.817
*

KK    DC27
KM    URS 2009
KM    Divert flow into C33B
KM        Flow is split between what passes through/over the structure and
KM        what is diverted parallel to the railroad.
KM    UPRR Structure 8 (3-48" SSP's)
DT   DVC27
DI       0      24      54     151     354     633    1419    2829
DQ       0      24      54     115     190     270     342     395
*

KK  RCPC27
KM    This is in the 10-foot contour area, used the EEC route.
KM        Route remainder flow from CP C27 to CP C20
RS       1    FLOW      -1
RC   0.050   0.045   0.050    1360  0.0051
RX       0      20      30     170     310     450     590     730
RY    1465    1465    1458  1460.0  1462.0  1464.0  1466.0    1468
*
```



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

KK   DRC07
KM        Return diverted flow from CP C07
DR   DVC07
*

KK   RDC07
KM        Route flow from CP C07 to CP C20
KM    This is in the 10-foot contour area, used the EEC route.
RS       3    FLOW      -1
RC   0.050   0.045   0.050    9400  0.0096
RX       0     110     200     220     250     270     350     450
RY    1494    1493    1493    1490    1490    1493    1493    1494
*

KK     C21   BASIN
KM     URS 2009
KM    Customized XKSAT Values
BA   0.563
LG    0.35    0.35    2.86    1.00       0
UI       0     976    1086     111       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
```

```
739          UI       0       0       0       0       0       0       0       0       0       0
740          UI       0       0       0       0       0       0       0       0       0       0
741          UI       0       0       0       0       0       0       0       0       0       0
             *

742          KK    DC21
743          KM      Divert flow into C22
744          KM        Natural divergence of flow due to a braided channel network.
745          DT   DVC21
746          DI       0      59     141     365     858    2108    3600    5595    7685
747          DQ       0      59     129     260     531    1191    1992    3142    4249
             *

748          KK  RCPC21
749          KM        Route remainder flow from CP C21 to CP C20
750          KM    This is in the 10-foot contour area, used the EEC route.
751          RS       2    FLOW      -1
752          RC   0.050   0.045   0.050    4340  0.0093
753          RX       0     110     200     220     250     270     350     450
754          RY    1494    1493    1493    1490    1490    1493    1493    1494
             *

755          KK     C20   BASIN
756          KM     URS 2009
757          KM    Customized XKSAT Values
758          BA   0.464
759          LG    0.35    0.35    3.25    0.76       0
760          UI       0     131     385     655     391     152      53      19       0       0
761          UI       0       0       0       0       0       0       0       0       0       0
762          UI       0       0       0       0       0       0       0       0       0       0
763          UI       0       0       0       0       0       0       0       0       0       0
764          UI       0       0       0       0       0       0       0       0       0       0
             *
```



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

765          KK   CPC20
766          KM    URS 2009
767          KM        Combine DRC07, C21, RCPC27 with C20
768          HC       4   3.257
             *

769          KK    DC20
770          KM    URS 2009
771          KM    Divert flow into C33B
772          KM        Flow is split between what passes through/over the structure and
773          KM        what is diverted parallel to the railroad.
774          KM    UPRR Structure 9 - MP877.34 (5-60" SSP's)
775          DT   DVC20
776          DI       0      38     112     248     480     738    1583    3258    5995
777          DQ       0      38     112     237     395     574     763     951    1103
             *

778          KK  RCPC20
779          KM    This is in the 10-foot contour area, used the EEC route.
780          KM        Route remainder flow from CP C20 to CP C26
781          RS       1    FLOW      -1
782          RC   0.050   0.045   0.050    2300  0.0066
783          RX       0      20      30     210     390     570     750     930
784          RY    1455    1455    1448  1450.4  1452.8  1455.2  1457.6    1460
             *

785          KK     C26   BASIN
786          KM     URS 2009
787          KM    Customized XKSAT Values
788          BA   0.101
789          LG    0.35    0.35    3.15    0.82       0
790          UI       0     102     226      56       8       0       0       0       0       0
791          UI       0       0       0       0       0       0       0       0       0       0
792          UI       0       0       0       0       0       0       0       0       0       0
793          UI       0       0       0       0       0       0       0       0       0       0
794          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

795          KK   CPC26
796          KM    URS 2009
797          KM        Combine Basin C26 and RCPC20
798          HC       2    .785
             *

799          KK    DC26
800          KM    URS 2009
801          KM    Divert flow into C33C
802          KM        Flow is split between what passes through/over the structure and
803          KM        what is diverted parallel to the railroad.
804          KM    UPRR Structure 10 - MP877.77 (2-60" CSP's)
805          DT   DVC26
806          DI       0      33      63     118     213     369     782    2377    5876
807          DQ       0      33      63     118     184     254     319     377     530
             *
```



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

808          KK  RCPC26
809          KM    This is in the 10-foot contour area, used the EEC route.
810          KM        Route remainder flow from CP C26 to CP C22
811          RS       2    FLOW      -1
812          RC   0.050   0.045   0.050    3100  0.0066
813          RX       0      20      30     170     310     450     590     730
814          RY    1437    1437    1429  1431.2  1433.4  1435.6  1437.8    1440
             *
```

```
 815          KK   DRC21
 816          KM        Return diverted flow from CP C21
 817          DR   DVC21
              *

 818          KK   RDC21
 819          KM        Route flow from CP C21 to CP C22
 820          KM    This is in the 10-foot contour area, used the EEC route.
 821          RS       4    FLOW      -1
 822          RC   0.050   0.045   0.050    8780  0.0092
 823          RX       0      30     170     190     210     230     280     320
 824          RY    1445    1444    1444    1440    1440    1444    1444    1445
              *

 825          KK     C23   BASIN
 826          KM     URS 2009
 827          KM    Customized XKSAT Values
 828          BA   0.496
 829          LG    0.35    0.35    3.03    0.89       0
 830          UI       0     839     972     102       0       0       0       0       0       0
 831          UI       0       0       0       0       0       0       0       0       0       0
 832          UI       0       0       0       0       0       0       0       0       0       0
 833          UI       0       0       0       0       0       0       0       0       0       0
 834          UI       0       0       0       0       0       0       0       0       0       0
              *

 835          KK  RCPC23
 836          KM        Route flow from CP C23 to CP C22
 837          KM    This is in the 10-foot contour area, used the EEC route.
 838          RS       1    FLOW      -1
 839          RC   0.050   0.045   0.050    2310  0.0044
 840          RX       0       8      35      50      70      85     110     118
 841          RY    1431  1429.5    1429    1425    1425    1429  1429.5    1431
              *

 842          KK     C22   BASIN
 843          KM     URS 2009
 844          KM    Customized XKSAT Values
 845          BA   0.804
 846          LG    0.35    0.35    3.11    0.84       0
 847          UI       0     518    1526     839     179      49       0       0       0       0
 848          UI       0       0       0       0       0       0       0       0       0       0
 849          UI       0       0       0       0       0       0       0       0       0       0
 850          UI       0       0       0       0       0       0       0       0       0       0
 851          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

 852          KK   CPC22
 853          KM    URS 2009
 854          KM        Combine DRC21, C23, C22, AND RCPC22
 855          HC       4   1.690
              *

 856          KK     C24   BASIN
 857          KM    Customized XKSAT Values
 858          KM     URS 2009
 859          BA   0.162
 860          LG    0.35    0.35    3.19    0.79       0
 861          UI       0     136     347     121      19       0       0       0       0       0
 862          UI       0       0       0       0       0       0       0       0       0       0
 863          UI       0       0       0       0       0       0       0       0       0       0
 864          UI       0       0       0       0       0       0       0       0       0       0
 865          UI       0       0       0       0       0       0       0       0       0       0
              *

 866          KK   CPC24
 867          KM    URS 2009
 868          KM        Combine C24 AND CPC22
 869          HC       2   1.852
              *

 870          KK  PNDC01
 871          KM        Pond C01
 872          KM    FROM EEC STUDY
 873          KM        Common storage area between CPC22 and CPC24 (behind SPRR embankment)
 874          RS       1    STOR      -1
 875          SV       0     0.5     2.4     5.9    11.4    19.5    30.7    44.8    62.5    84.3
 876          SE  1417.6    1419    1420    1421    1422    1423    1424    1425    1426    1427
 877          SQ       0     210     437     759    1197    1715    2230    2676    3109    3630
              *

 878          KK    DC24
 879          KM    FROM EEC STUDY
 880          KM    Divert flow to Subbasin C33C
 881          KM        Flow is split between what passes through/over the structure and
 882          KM        what is diverted parallel to the railroad.
 883          KM    UPRR Structures 11 and 12 (2-30' Prestressed Concrete Box and 12' Bridge)
 884          DT   DVC24
 885          DI       0     210     437     759    1197    1715    2230    2676    3109    3630
 886          DQ       0     210     437     759    1197    1715    2230    2676    3109    3630
              *

 887          KK  RCPC24
 888          KM    FROM EEC STUDY
 889          KM        Artificial route to reduce hydrographs, no flow from CP C24 gets to CP C
 890          KM        Route remainder flow from CP C24 to CP C25
 891          RS       1    FLOW      -1
 892          RC   0.050   0.045   0.050    1500   0.002
 893          RX       0     100     115     120     320     520     720     920
 894          RY    1424    1424    1420    1420    1421    1422    1424    1425
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 895          KK     C25   BASIN
 896          KM     URS 2009
 897          KM    Customized XKSAT Values
 898          BA   0.076
 899          LG    0.35    0.35    3.15    0.82       0
 900          UI       0     228      64       0       0       0       0       0       0       0
 901          UI       0       0       0       0       0       0       0       0       0       0
 902          UI       0       0       0       0       0       0       0       0       0       0
 903          UI       0       0       0       0       0       0       0       0       0       0
 904          UI       0       0       0       0       0       0       0       0       0       0
              *

 905          KK   CPC25
 906          KM        Artificial combine to reduce hydrographs, no flow from CP C24 gets to CP
 907          KM        Since this is an artificial combine, the area does not carry over to CP
 908          KM        And therefore, the area associated with the HC record reflects only the
 909          KM        subbasin C25
 910          HC       2   0.076
              *

 911          KK  PNDC02
 912          KM    FROM EEC STUDY
 913          KM        POND C02
 914          KM        Storage area for CPC25
 915          RS       1    STOR      -1
 916          SV       0     0.1     1.1     3.1     5.9    10.2    15.6    22.2    30.2    39.6
 917          SE  1417.4    1418    1419    1420    1421    1422    1423    1424    1425    1426
 918          SQ       0      32      86     141     233     352     551     836    1278    1890
              *

 919          KK    DC25
 920          KM    URS 2009
 921          KM    Divert flow to Subbasin C33C
 922          KM        Flow is split between what passes through/over the structure and
 923          KM        what is diverted parallel to the railroad.
 924          KM    UPRR Structure 13 - MP878.77 (13' Bridge)
 925          DT   DVC25
 926          DI       0      65     137     229     351     550     842    1270    2806
 927          DQ       0      65     136     223     321     429     535     616    1625
              *

 928          KK  RCPC25
 929          KM        Route remainder flow from CP C25 to CP D09
 930          RS       1    FLOW      -1
 931          RC   0.050   0.045   0.050    4950  0.0048
 932          RX       0     275     490     550     575     620     810    1110
 933          RY    1405    1404    1403    1400    1400    1403    1404    1405
              *
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 934          KK     D02   BASIN
 935          KM     URS 2009
 936          KM    Customized XKSAT Values
 937          BA   0.496
 938          LG    0.35    0.35    3.15    0.82       0
 939          UI       0     459    1091     317      47       0       0       0       0       0
 940          UI       0       0       0       0       0       0       0       0       0       0
 941          UI       0       0       0       0       0       0       0       0       0       0
 942          UI       0       0       0       0       0       0       0       0       0       0
 943          UI       0       0       0       0       0       0       0       0       0       0
              *

 944          KK    DD02
 945          KM      Divert flow into D01
 946          KM        Natural divergence of flow due to a braided channel network.
 947          DT   DVD02
 948          DI       0     113     266     523     752    1330    2297    3723    6492    9369
 949          DQ       0       0      20      83     183     425     847    1490    2820    4139
              *

 950          KK  RCPD02
 951          KM        Route remainder flow from CP D02 to CP D03
 952          KM    This is in the 10-foot contour area, used the EEC route.
 953          RS       1    FLOW      -1
 954          RC   0.050   0.045   0.050    2200  0.0190
 955          RX     175     185     210     215     225     230     255     265
 956          RY    1685    1684    1683    1682    1682    1683    1684    1685
              *

 957          KK     D03   BASIN
 958          KM     URS 2009
 959          KM    Customized XKSAT Values
 960          BA   0.340
 961          LG    0.35    0.35    2.99    0.91       0
 962          UI       0     180     564     417     117      26       0       0       0       0
 963          UI       0       0       0       0       0       0       0       0       0       0
 964          UI       0       0       0       0       0       0       0       0       0       0
 965          UI       0       0       0       0       0       0       0       0       0       0
 966          UI       0       0       0       0       0       0       0       0       0       0
              *
 967          KM    URS 2009

 968          KK   CPD03
 969          KM        Combine D02 with D03
 970          HC       2   0.769
              *
```

```
 971          KK    DD03
 972          KM      Divert flow into D01
 973          KM        Natural divergence of flow due to a braided channel network.
 974          DT   DVD03
 975          DI       0       75      252      555     1005     1218     2090     3899     6173     9828
 976          DQ       0       44      145      327      608      733     1309     2622     4116     6233
              *
1                                          HEC-1 INPUT                                                    PAGE 25

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


 977          KK  RCPD03
 978          KM        Route remainder flow from CP D03 to CP D04
 979          KM    This is in the 10-foot contour area, used the EEC route.
 980          RS       1    FLOW      -1
 981          RC   0.050   0.045   0.050    4290  0.0133
 982          RX       0      70     153     165     185     195     250     340
 983          RY    1643    1642    1641    1638    1638    1641    1642    1643
              *

 984          KK     D04   BASIN
 985          KM     URS 2009
 986          KM    Customized XKSAT Values
 987          BA   0.198
 988          LG    0.35    0.35    2.85    1.02       0
 989          UI       0     106     331     241      67      15       0       0       0       0
 990          UI       0       0       0       0       0       0       0       0       0       0
 991          UI       0       0       0       0       0       0       0       0       0       0
 992          UI       0       0       0       0       0       0       0       0       0       0
 993          UI       0       0       0       0       0       0       0       0       0       0
              *
 994          KM    URS 2009

 995          KK   CPD04
 996          KM        Combine D03 with D04
 997          HC       2   0.513
              *

 998          KK    DD04
 999          KM      Divert flow into D05
1000          KM        Natural divergence of flow due to a braided channel network.
1001          DT   DVD04
1002          DI       0       34      123      274      496     1091     1962     3285     5668     8777
1003          DQ       0       20       71      154      276      598     1097     1864     3244     5216
              *

1004          KK  RCPD04
1005          KM        Route remainder flow from CP D04 to CP D01
1006          KM    This is in the 10-foot contour area, used the EEC route.
1007          RS       4    FLOW      -1
1008          RC   0.050   0.045   0.050    7990  0.0120
1009          RX       0     220     360     370     385     395     510     710
1010          RY    1577    1576    1575    1573    1573    1575    1576    1577
              *

1011          KK   DRD02
1012          KM        Return diverted flow from CP D02
1013          DR   DVD02
              *
1                                          HEC-1 INPUT                                                    PAGE 26

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


1014          KK   RDD02
1015          KM        Route flow from CP D02 to CP D01
1016          KM    This is in the 10-foot contour area, used the EEC route.
1017          RS       9    FLOW      -1
1018          RC   0.050   0.045   0.050   14130  0.0120
1019          RX       0     160     295     305     320     330     420     575
1020          RY    1588    1587    1586    1584    1584    1586    1587    1588
              *

1021          KK   DRD03
1022          KM        Return diverted flow from CP D03
1023          DR   DVD03
              *

1024          KK   RDD03
1025          KM        Route flow from CP D03 to CP D01
1026          KM    This is in the 10-foot contour area, used the EEC route.
1027          RS       5    FLOW      -1
1028          RC   0.050   0.045   0.050   12100  0.0120
1029          RX     310     330     360     370     385     395     425     445
1030          RY    1577    1576    1575    1573    1573    1575    1576    1577
              *

1031          KK     D01   BASIN
1032          KM     URS 2009
1033          KM    Customized XKSAT Values
1034          BA   2.428
1035          LG    0.35    0.35    3.11    0.84       0
1036          UI       0     421    1335    2351    2554    1523     681     320      99      79
1037          UI       0       0       0       0       0       0       0       0       0       0
1038          UI       0       0       0       0       0       0       0       0       0       0
1039          UI       0       0       0       0       0       0       0       0       0       0
1040          UI       0       0       0       0       0       0       0       0       0       0
              *
1041          KM    URS 2009

1042          KK   CPD01
1043          KM        Combine DRD02, DRD03, D04 with D01
1044          HC       4   3.169
              *
```

```
1045          KK    DD01
1046          KM      Divert flow into D09
1047          KM        Natural divergence of flow due to a braided channel network.
1048          DT    DVD01
1049          DI       0      83     190     360     603     930    1599    2843    4760    8253
1050          DQ       0      83     176     305     473     686     979    1623    2628    4474
              *
1                                          HEC-1 INPUT                                          PAGE 27

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

1051          KK   RDD01
1052          KM        Route diverted flow from CP D01 to CP D09
1053          RS       4    FLOW     -1
1054          RC   0.050   0.045   0.050   12290  0.0088
1055          RX       0     150     280     290     330     340     500     650
1056          RY    1487    1486    1485    1482    1482    1485    1486    1487
              *

1057          KK     D09
1058          KM     URS 2009
1059          KM    Customized XKSAT Values
1060          BA   0.544
1061          LG    0.35    0.35    3.40    0.68       0
1062          UI       0     178     521     798     412     131      41      24       0       0
1063          UI       0       0       0       0       0       0       0       0       0       0
1064          UI       0       0       0       0       0       0       0       0       0       0
1065          UI       0       0       0       0       0       0       0       0       0       0
1066          UI       0       0       0       0       0       0       0       0       0       0
              *

1067          KK   CPD09
1068          KM    URS 2009
1069          KM        Combine RCPD01, D09, and RCPC25
1070          HC       3   1.748
              *

1071          KK    DD09
1072          KM    URS 2009
1073          KM    Divert flow into Watershed C, to CP C33C
1074          KM        Flow is split between what passes through/over the structure and
1075          KM        what is diverted parallel to the railroad.
1076          KM    UPRR Structure 14 - MP878.92 (30' PreStressed Concrete Box (PCB) Girder(30" d
1077          DT    DVD09
1078          DI       0      63     191     310     404     487     568    1775
1079          DQ       0      63     191     310     404     487     563    1750
              *

1080          KK  RCPD09
1081          KM    This is in the 10-foot contour area, used the EEC route.
1082          KM        Route remainder flow from CP D09 to CP D12
1083          RS       1    FLOW     -1
1084          RC   0.050   0.045   0.050    1190  0.0048
1085          RX       0      20      30     170     310     450     590     730
1086          RY    1426    1426    1419  1421.2  1423.4  1425.6  1427.8    1430
              *

1087          KK     D12
1088          KM     URS 2009
1089          KM    Customized XKSAT Values
1090          BA   0.128
1091          LG    0.35    0.35    3.17    0.81       0
1092          UI       0     114     279      88      13       0       0       0       0       0
1093          UI       0       0       0       0       0       0       0       0       0       0
1094          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 28

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

1095          UI       0       0       0       0       0       0       0       0       0       0
              *

1096          KK   CPD12
1097          KM    URS 2009
1098          KM       Combine RCPD09 and Basin D12
1099          HC       2   0.145
              *

1100          KK    DD12
1101          KM    URS 2009
1102          KM    Divert flow into Watershed C, to CP C33C
1103          KM        Flow is split between what passes through/over the structure and
1104          KM        what is diverted parallel to the railroad.
1105          KM    UPRR Structure 15 - MP879.14 (2-48" SSP's)
1106          DT    DVD12
1107          DI       0      41      78     127     189     256     315     470    1513
1108          DQ       0      41      78     127     180     226     263     295    1050
              *

1109          KK  RCPD12
1110          KM    This is in the 10-foot contour area, used the EEC route.
1111          KM        Route remainder flow from CP D12 to CP D13
1112          RS       1    FLOW     -1
1113          RC   0.050   0.045   0.050     590  0.0024
1114          RX       0      20      30     170     310     450     590     730
1115          RY    1425    1425    1417  1419.6  1422.2  1424.8  1427.4    1430
              *

1116          KK   DRD01
1117          KM        Return diverted flow from CP D01 in basin D09
1118          DR    DVD01
              *

1119          KK  RCPD01
1120          KM        Route remainder flow from CP D01 to CP D05
```

```
1121          KM    This is in the 10-foot contour area, used the EEC route.
1122          RS       7    FLOW      -1
1123          RC   0.050   0.045   0.050    7540  0.0092
1124          RX      80      90     192     197     207     212     325     335
1125          RY  1489.5    1488    1487    1486    1486    1487    1488  1489.5
              *
              *

1126          KK   DRD04
1127          KM        Return diverted flow from CP D04
1128          DR   DVD04
              *

1129          KK   RDD04
1130          KM        Route flow from CP D04 to CP D05
1131          KM    This is in the 10-foot contour area, used the EEC route.
1132          RS      15    FLOW      -1
1133          RC   0.050   0.045   0.050   15200  0.0092
1134          RX       0      90     192     197     207     212     325     590
```



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

1135          RY    1489    1488    1487    1486    1486    1487    1488    1489
              *

1136          KK     D05   BASIN
1137          KM     URS 2009
1138          KM    Customized XKSAT Values
1139          BA   1.927
1140          LG    0.35    0.35    3.17    0.81       0
1141          UI       0     143     548     835    1220    1663    1165     820     497     243
1142          UI     154      61      44      44       0       0       0       0       0       0
1143          UI       0       0       0       0       0       0       0       0       0       0
1144          UI       0       0       0       0       0       0       0       0       0       0
1145          UI       0       0       0       0       0       0       0       0       0       0
              *
1146          KM    URS 2009

1147          KK   CPD05
1148          KM        Combine D01, DRD04 with D05
1149          HC       3   4.184
              *

1150          KK    DD05
1151          KM    URS 2009
1152          KM    Divert flow into D11
1153          KM        Natural divergence of flow due to a braided channel network.
1154          DT   DVD05
1155          DI       0      60     202     425     738    1146    1656    2420    4086
1156          DQ       0       0       4      12      26      45      70     132     248
              *

1157          KK   RDD05
1158          KM        Route flow from CP D05 to CP D13
1159          RS       2    FLOW      -1
1160          RC   0.050   0.045   0.050    5890  0.0080
1161          RX      90     100     200     210     240     250     375     385
1162          RY  1457.5    1456    1455    1453    1453    1455    1456  1457.5
              *

1163          KK     D13   BASIN
1164          KM     URS 2009
1165          BA   0.559
1166          LG    0.35    0.35    4.40    0.37       0
1167          UI       0     290     912     695     201      46       0       0       0       0
1168          UI       0       0       0       0       0       0       0       0       0       0
1169          UI       0       0       0       0       0       0       0       0       0       0
1170          UI       0       0       0       0       0       0       0       0       0       0
1171          UI       0       0       0       0       0       0       0       0       0       0
              *

1172          KK   CPD13
1173          KM    URS 2009
1174          KM        Combine Basin D13, RCPD12 and RCPD05
1175          HC       3   4.579
              *
```



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

1176          KK    DD13
1177          KM    URS 2009
1178          KM    Divert flow into D22
1179          KM        Flow is split between what passes through/over the structure and
1180          KM        what is diverted parallel to the railroad.
1181          KM    UPRR Structure 16 - MP879.78 (4-60" SSP's AND 2-60" CSP's)
1182          DT   DVD13
1183          DI       0     580     813    1101    1509    2553    5155
1184          DQ       0     580     800    1017    1193    1348    2088
              *

1185          KK  RCPD13
1186          KM    This is in the 10-foot contour area, used the EEC route.
1187          KM        Route remainder flow from CP D13 to CP D46
1188          RS       3    FLOW      -1
1189          RC   0.050   0.045   0.050    4420  0.0040
1190          RX       0      20      30     230     430     630     830    1030
1191          RY    1411    1411    1405  1408.0  1411.0  1414.0  1417.0    1420
              *

1192          KK     D46   BASIN
1193          KM     URS 2009
1194          BA   0.055
1195          LG    0.35    0.35    4.65    0.32       0
```

```
1196    UI      0     124      84       0       0       0       0       0       0       0
1197    UI      0       0       0       0       0       0       0       0       0       0
1198    UI      0       0       0       0       0       0       0       0       0       0
1199    UI      0       0       0       0       0       0       0       0       0       0
1200    UI      0       0       0       0       0       0       0       0       0       0
        *
1201    KM    URS 2009

1202    KK   CPD46
1203    KM        Combine Basin D46 and RCPD13
1204    HC       2   0.147
        *

1205    KK    DD46
1206    KM    URS 2009
1207    KM    Divert flow into D22
1208    KM        Flow is split between what passes through/over the structure and
1209    KM        what is diverted parallel to the railroad.
1210    KM    UPRR Structure 17 - MP880.08 (17' bridge)
1211    DT   DVD46
1212    DI       0      47     125     251     421     945    2258    5382    9762
1213    DQ       0      47     125     230     348     431     591    1700    3067
        *

1214    KK  RCPD46
1215    KM    This is in the 10-foot contour area, used the EEC route.
1216    KM        Route remainder flow from CP D46 to CP D10
1217    RS       2    FLOW      -1
1218    RC   0.050   0.045   0.050    1100  0.0040
1219    RX       0      20      30     230     430     630     830    1030
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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1220    RY    1409    1409    1403  1406.0  1409.0  1412.0  1415.0    1418
        *

1221    KK     D06   BASIN
1222    KM     URS 2009
1223    KM    Customized XKSAT Values
1224    BA   1.216
1225    LG    0.35    0.35    2.82    1.04       0
1226    UI       0     165     552     873    1310     860     523     217     116      35
1227    UI      35       0       0       0       0       0       0       0       0       0
1228    UI       0       0       0       0       0       0       0       0       0       0
1229    UI       0       0       0       0       0       0       0       0       0       0
1230    UI       0       0       0       0       0       0       0       0       0       0
        *

1231    KK    DD06
1232    KM      Divert flow into D08
1233    KM        Natural divergence of flow due to a braided channel network.
1234    DT   DVD06
1235    DI       0      34     133     276     658    1341    2396    4365    6763    9307
1236    DQ       0      23      89     184     418     826    1445    2534    4013    5489
        *

1237    KK  RCPD06
1238    KM        Route flow from CP D06 to CP D10
1239    KM    This is in the 10-foot contour area, used the EEC route.
1240    RS       8    FLOW      -1
1241    RC   0.050   0.045   0.050   16830  0.0078
1242    RX       0     140     310     320     340     350     540     835
1243    RY    1459    1458    1457    1455    1455    1457    1458    1459
        *

1244    KK   DRD06
1245    KM        Return diverted flow from CP D06
1246    DR   DVD06
        *

1247    KK   RDD06
1248    KM        Route flow from CP D06 to CP D08
1249    KM    This is in the 10-foot contour area, used the EEC route.
1250    RS       2    FLOW      -1
1251    RC   0.050   0.045   0.050    3320  0.0081
1252    RX     290     310     340     350     360     370     390     410
1253    RY    1523    1522    1521    1520    1520    1521    1522    1523
        *

1254    KK     D08   BASIN
1255    KM     URS 2009
1256    KM    Customized XKSAT Values
1257    BA   0.280
1258    LG    0.35    0.35    3.13    0.83       0
1259    UI       0     131     416     367     127      29       0       0       0       0
1260    UI       0       0       0       0       0       0       0       0       0       0
1261    UI       0       0       0       0       0       0       0       0       0       0
1262    UI       0       0       0       0       0       0       0       0       0       0
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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1263    UI       0       0       0       0       0       0       0       0       0       0
        *
1264    KM    URS 2009

1265    KK   CPD08
1266    KM        Combine DRD06 with D08
1267    HC       2    0.73
        *

1268    KK  RCPD08
1269    KM        Route flow from CP D08 to CP D10
1270    KM    This is in the 10-foot contour area, used the EEC route.
1271    RS       6    FLOW      -1
```

```
1272          RC   0.050   0.045   0.050   13880  0.0078
1273          RX     280     290     310     320     340     350     370     380
1274          RY    1459    1458    1457    1455    1455    1457    1458    1459
              *
              *

1275          KK   DRD05
1276          KM        Return diverted flow from CP D05
1277          DR   DVD05
              *
              *

1278          KK  RCPD05
1279          KM        Route flow from CP D05 to CP D11
1280          KM    This is in the 10-foot contour area, used the EEC route.
1281          RS       4    FLOW      -1
1282          RC   0.050   0.045   0.050    6030  0.0084
1283          RX       0    1025    1052    1056    1060    1064    1090    1615
1284          RY    1465    1464    1463  1460.5  1460.5    1463    1464    1465
              *

1285          KK     D11   BASIN
1286          KM     URS 2009
1287          KM    Customized XKSAT Values
1288          BA   0.395
1289          LG    0.35    0.35    3.64    0.57       0
1290          UI       0     127     371     578     305      98      31      17       0       0
1291          UI       0       0       0       0       0       0       0       0       0       0
1292          UI       0       0       0       0       0       0       0       0       0       0
1293          UI       0       0       0       0       0       0       0       0       0       0
              *
1294          KM    URS 2009

1295          KK   CPD11
1296          KM        Combine D05 with D11
1297          HC       2   .562
              *
```



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

1298          KK  RCPD11
1299          KM        Route flow from CP D11 to CP D10
1300          KM    This is in the 10-foot contour area, used the EEC route.
1301          RS       3    FLOW      -1
1302          RC   0.050   0.045   0.050    3640  0.0073
1303          RX     140     650     700     750     800     850     900    1410
1304          RY    1416    1415    1415    1414    1414    1415    1415    1416
              *

1305          KK     D10   BASIN
1306          KM     URS 2009
1307          KM    Customized XKSAT Values
1308          BA   0.841
1309          LG    0.35    0.35    3.85    0.50       0
1310          UI       0      84     307     465     773     662     446     266     120      69
1311          UI      22      22       0       0       0       0       0       0       0       0
1312          UI       0       0       0       0       0       0       0       0       0       0
1313          UI       0       0       0       0       0       0       0       0       0       0
1314          UI       0       0       0       0       0       0       0       0       0       0
              *
1315          KM    URS 2009

1316          KK   CPD10
1317          KM        Combine D06, D08, D11, CPD46 with D10
1318          HC       5   2.953
              *

1319          KK    DD10
1320          KM    URS 2009
1321          KM    Divert flow into D22
1322          KM        Flow is split between what passes through/over the structure and
1323          KM        what is diverted parallel to the railroad.
1324          KM    UPRR Structure 18 - MP880.29 (3-72" SSP's)
1325          DT   DVD10
1326          DI       0     515     678     902    1642    3759
1327          DQ       0     515     663     812     992    1663
              *

1328          KK  RCPD10
1329          KM    This is in the 10-foot contour area, used the EEC route.
1330          KM        Route remainder flow from CP D10 to CP D47
1331          RS       1    FLOW      -1
1332          RC   0.050   0.045   0.050     910  0.0033
1333          RX       0      20      30     170     310     450     590     730
1334          RY    1403    1403    1397  1399.6  1402.2  1404.8  1407.4    1410
              *

1335          KK     D47   BASIN
1336          KM     URS 2009
1337          KM    Customized XKSAT Values
1338          BA   0.040
1339          LG    0.35    0.35    3.40    0.68       0
1340          UI       0      84      66       0       0       0       0       0       0       0
1341          UI       0       0       0       0       0       0       0       0       0       0
```



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

1342          UI       0       0       0       0       0       0       0       0       0       0
1343          UI       0       0       0       0       0       0       0       0       0       0
1344          UI       0       0       0       0       0       0       0       0       0       0
              *

1345          KK   CPD47
```

```
KM    URS 2009
KM        Combine Basin D47 and RCPD10
HC       2   0.158
*

KK    DD47
KM    URS 2009
KM    Divert flow into D22
KM        Flow is split between what passes through/over the structure and
KM        what is diverted parallel to the railroad.
KM           UPRR Structure 19 - MP880.45 (12' Bridge)
DT   DVD47
DI       0     101     130     208     478    1462    2490
DQ       0     101     123     163     197     428     810
*

KK  RCPD47
KM    This is in the 10-foot contour area, used the EEC route.
KM        Route remainder flow from CP D47 to CP D15
RS       2    FLOW      -1
RC   0.050   0.045   0.050    2150  0.0040
RX       0      20      30     230     430     630     830    1030
RY    1399    1399    1393  1396.0  1399.0  1402.0  1405.0    1408
*

KK     D07   BASIN
KM     URS 2009
KM    Customized XKSAT Values
BA   1.050
LG    0.35    0.35    3.27    0.75       0
UI       0     121     422     645    1060     789     519     253     130      59
UI      29      29       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK    DD07
KM      Divert flow into D17
KM        Natural divergence of flow due to a braided channel network.
DT   DVD07
DI       0      53     127     249     354     652    1157    2011    3786    5850
DQ       0      53     121     220     288     474     779    1253    2178    3304
*
```



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

KK   RDD07
KM        Route remainder flow from CP D07 to CP D15
KM    This is in the 10-foot contour area, used the EEC route.
RS       6    FLOW      -1
RC   0.050   0.045   0.050    8710  0.0071
RX     440     455     485     495     510     537     567     582
RY    1425    1424    1423    1422    1422    1423    1424    1425
*

KK     D15   BASIN
KM     URS 2009
BA   0.653
LG    0.35    0.35    4.40    0.37       0
UI       0     121     378     686     666     392     160      76      22      22
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK   CPD15
KM    URS 2009
KM        Combine Basin D15, RCPD07, and RCPD47
HC       3   0.947
*

KK    DD15
KM    URS 2009
KM    Divert flow into D22
KM        Flow is split between what passes through/over the structure and
KM        what is diverted parallel to the railroad.
KM    UPRR Structure 20 - MP880.88 (2-60" SSP's 2-60" CSP's)
DT   DVD15
DI       0     264     415     624    1100    2059    3838    7307
DQ       0     264     401     547     688     800     936    1700
*

KK  RCPD15
KM    This is in the 10-foot contour area, used the EEC route.
KM        Route remainder flow from CP D15 to CP D17
RS       2    FLOW      -1
RC   0.050   0.045   0.050    1810  0.0029
RX       0      20      30     210     390     570     750     930
RY    1394    1394    1386  1388.8  1391.6  1394.4  1397.2    1400
*

KK   DRD07
KM        Return diverted flow from CP D07
DR   DVD07
*
```



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

KK  RCPD07
KM        Route flow from CP D07 to CP D17
```

```
1422          KM    This is in the 10-foot contour area, used the EEC route.
1423          RS       6    FLOW      -1
1424          RC   0.050   0.045   0.050    9970  0.0066
1425          RX     330     340     360     405     425     480     500     510
1426          RY    1425    1424    1423    1422    1422    1423    1424    1425
              *

1427          KK     D17   BASIN
1428          KM     URS 2009
1429          KM    Customized XKSAT Values
1430          BA   0.778
1431          LG    0.35    0.35    3.50    0.63       0
1432          UI       0     105     352     555     837     552     337     140      76      23
1433          UI      23       0       0       0       0       0       0       0       0       0
1434          UI       0       0       0       0       0       0       0       0       0       0
1435          UI       0       0       0       0       0       0       0       0       0       0
1436          UI       0       0       0       0       0       0       0       0       0       0
              *
1437          KM    URS 2009

1438          KK   CPD17
1439          KM        Combine D17 with RDD07 and RCPD15
1440          HC       3   1.534
              *

1441          KK    DD17
1442          KM    URS 2009
1443          KM    Divert flow into D23
1444          KM        Flow is split between what passes through/over the structure and
1445          KM        what is diverted parallel to the railroad.
1446          KM    UPRR Structure 21 - MP881.2 (3-60" SSP's)
1447          DT   DVD17
1448          DI       0     390     527     780    1385    3337    5201
1449          DQ       0     390     503     602     684    1300    2117
              *

1450          KK  RCPD17
1451          KM    This is in the 10-foot contour area, used the EEC route.
1452          KM        Route remainder flow from CP D17 to CP D18
1453          RS       2    FLOW      -1
1454          RC   0.050   0.045   0.050    1410  0.0038
1455          RX       0      20      30     270     510     750     990    1230
1456          RY    1388    1388    1380  1383.0  1386.0  1389.0  1392.0    1395
              *

1457          KK     D18   BASIN
1458          KM     URS 2009
1459          BA   0.432
1460          KM    Customized XKSAT Values
1461          LG    0.35    0.35    3.21    0.78       0
1462          UI       0     103     311     563     394     189      71      22      16       0
1463          UI       0       0       0       0       0       0       0       0       0       0
```



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

1464          UI       0       0       0       0       0       0       0       0       0       0
1465          UI       0       0       0       0       0       0       0       0       0       0
1466          UI       0       0       0       0       0       0       0       0       0       0
              *

1467          KK   CPD18
1468          KM    URS 2009
1469          KM        Combine D18 with RCPD17
1470          HC       2   1.199
              *

1471          KK    DD18
1472          KM    URS 2009
1473          KM    Divert flow into D23
1474          KM        Flow is split between what passes through/over the structure and
1475          KM        what is diverted parallel to the railroad.
1476          KM    UPRR Structure 22 - MP881.45 (3-48" SSP's)
1477          DT   DVD18
1478          DI       0     151     261     476    1269    3091    6707
1479          DQ       0     151     230     309     369     444     980
              *

1480          KK  RCPD18
1481          KM    This is in the 10-foot contour area, used the EEC route.
1482          KM        Route remainder flow from CP D18 to CP D19
1483          RS       1    FLOW      -1
1484          RC   0.050   0.045   0.050    1290  0.0045
1485          RX       0      20      30     210     390     570     750     930
1486          RY    1381    1381    1375  1377.0  1379.0  1381.0  1383.0    1385
              *

1487          KK     D19   BASIN
1488          KM     URS 2009
1489          KM    Customized XKSAT Values
1490          BA   0.247
1491          LG    0.35    0.35    3.21    0.78       0
1492          UI       0     126     396     310      94      22       0       0       0       0
1493          UI       0       0       0       0       0       0       0       0       0       0
1494          UI       0       0       0       0       0       0       0       0       0       0
1495          UI       0       0       0       0       0       0       0       0       0       0
1496          UI       0       0       0       0       0       0       0       0       0       0
              *

1497          KK   CPD19
1498          KM    URS 2009
1499          KM        Combine D19 with RCPD18
1500          HC       2   0.517
              *

1501          KK    DD19
```

```
1502          KM    URS 2009
1503          KM    Divert flow into D24
1504          KM        Flow is split between what passes through/over the structure and
1505          KM        what is diverted parallel to the railroad.
1506          KM    UPRR Structure 23 - MP881.75 (3-48" SSP)
```



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

1507          DT   DVD19
1508          DI       0     159     262     449     733    2029
1509          DQ       0       0      24     132     348    1329
              *

1510          KK  RCPD19
1511          KM    This is in the 10-foot contour area, used the EEC route.
1512          KM        Route remainder flow from CP D19 to CP D20
1513          RS       2    FLOW      -1
1514          RC   0.050   0.045   0.050    1700  0.0038
1515          RX       0      20      30     200     370     540     710     880
1516          RY    1375    1375    1368  1370.4  1372.8  1375.2  1377.6    1380
              *

1517          KK     D20   BASIN
1518          KM    Customized XKSAT Values
1519          KM     URS 2009
1520          BA   0.110
1521          LG    0.35    0.35    3.21    0.78       0
1522          UI       0     111     246      61       8       0       0       0       0       0
1523          UI       0       0       0       0       0       0       0       0       0       0
1524          UI       0       0       0       0       0       0       0       0       0       0
1525          UI       0       0       0       0       0       0       0       0       0       0
1526          UI       0       0       0       0       0       0       0       0       0       0
              *

1527          KK   CPD20
1528          KM    URS 2009
1529          KM        Combine D20 with RCPD19
1530          HC       2   0.586
              *

1531          KK    DD20
1532          KM    URS 2009
1533          KM    Divert flow into D25
1534          KM        Flow is split between what passes through/over the structure and
1535          KM        what is diverted parallel to the railroad.
1536          KM    UPRR Structure 24 - MP881.99 (2-72" SSP)
1537          DT   DVD20
1538          DI       0     189     305     484     709    1529    3192    6277    8644
1539          DQ       0     189     277     373     472     571     656    1100    1663
              *

1540          KK  RCPD20
1541          KM    This is in the 10-foot contour area, used the EEC route.
1542          KM        Route remainder flow from CP D20 to CP D21
1543          RS      17    FLOW      -1
1544          RC   0.050   0.045   0.050     850  0.0039
1545          RX       0      20      30     180     330     480     630     780
1546          RY    1371    1371    1364  1366.2  1368.4  1370.6  1372.8    1375
              *
```



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

1547          KK     D21   BASIN
1548          KM     URS 2009
1549          KM    Customized XKSAT Values
1550          BA   0.077
1551          LG    0.35    0.35    3.21    0.78       0
1552          UI       0     133     148      15       0       0       0       0       0       0
1553          UI       0       0       0       0       0       0       0       0       0       0
1554          UI       0       0       0       0       0       0       0       0       0       0
1555          UI       0       0       0       0       0       0       0       0       0       0
1556          UI       0       0       0       0       0       0       0       0       0       0
              *

1557          KK   CPD21
1558          KM    URS 2009
1559          KM        Combine D21 with RCPD20
1560          HC       2    .089
              *

1561          KK    DD21
1562          KM    URS 2009
1563          KM        Divert flow into D25
1564          KM        Flow is split between what passes through/over the structure and
1565          KM        what is diverted parallel to the railroad.
1566          KM    UPRR Structure 25-MP882.15 (2-48" CMP's)
1567          DT   DVD21
1568          DI       0      37      92     198     428     951    1674    3459
1569          DQ       0      37      68     116     168     216     257     299
              *

1570          KK  RCPD21
1571          KM    This is in the 10-foot contour area, used the EEC route.
1572          KM        Route remainder flow from CP D21 to CP E33
1573          RS      52    FLOW      -1
1574          RC   0.050   0.045   0.050    1550   0.004
1575          RX       0      20      97     107     177     247     317     390
1576          RY  1369.8  1368.5    1368    1364  1365.5    1367  1368.5    1370
              *

1577          KK     E33   BASIN
1578          KM     URS 2009
1579          KM        Customized XKSAT Values
```

```
1580          BA   0.049
1581          LG    0.35    0.35    3.21    0.78       0
1582          UI       0     101      82       0       0       0       0       0       0       0
1583          UI       0       0       0       0       0       0       0       0       0       0
1584          UI       0       0       0       0       0       0       0       0       0       0
1585          UI       0       0       0       0       0       0       0       0       0       0
1586          UI       0       0       0       0       0       0       0       0       0       0
              *
1587          KM    URS 2009
```



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

1588          KK   CPE33
1589          KM        Combine E33 with RCPD21
1590          HC       2   0.072
              *

1591          KK    DE33
1592          KM    URS 2009
1593          KM    Divert flow into E42
1594          KM        Flow is split between what passes through/over the structure and
1595          KM        what is diverted parallel to the railroad.
1596          KM    UPRR Structure 26 - MP882.37 (2-58"x36" CMP's)
1597          DT   DVE33
1598          DI       0     162     214     310     427     924    2720
1599          DQ       0     162     203     236     267     297     675
              *

1600          KK  RCPE33
1601          KM    URS 2009
1602          KM        Route remainder flow from CP E33 to CP E32
1603          RS       1    FLOW      -1
1604          RC   0.050   0.045   0.050    1486  0.0034
1605          RX       0       5      10      90     100     250     400     588
1606          RY  1361.4 1362.12 1362.12 1362.54 1359.17  1359.5  1359.7    1360
              *

1607          KK     E17   BASIN
1608          KM     URS 2009
1609          KM        Customized XKSAT Values
1610          BA   1.478
1611          LG    0.35    0.35    3.21    0.78       0
1612          UI       0     121     481     721    1132    1249     844     570     267     159
1613          UI      80      36      36       0       0       0       0       0       0       0
1614          UI       0       0       0       0       0       0       0       0       0       0
1615          UI       0       0       0       0       0       0       0       0       0       0
1616          UI       0       0       0       0       0       0       0       0       0       0
              *

1617          KK  RCPE17
1618          KM        URS 2009
1619          KM        Route flow from CP E17 to CP E32
1620          RS       4    FLOW      -1
1621          RC   0.050   0.045   0.050    5189  0.0062
1622          RX       0     249     401     425     450     490     527     710
1623          RY  1369.9  1370.1  1367.9  1367.9  1367.9  1367.9  1368.6  1369.3
              *

1624          KK     E32   BASIN
1625          KM     URS 2009
1626          KM        Customized XKSAT Values
1627          BA   0.284
1628          LG    0.35    0.35    3.55    0.61       0
1629          UI       0     142     447     361     113      26       0       0       0       0
1630          UI       0       0       0       0       0       0       0       0       0       0
1631          UI       0       0       0       0       0       0       0       0       0       0
```



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

1632          UI       0       0       0       0       0       0       0       0       0       0
1633          UI       0       0       0       0       0       0       0       0       0       0
              *
1634          KM    URS 2009

1635          KK   CPE32
1636          KM        Combine RCPE17 with E32 and RCPE33
1637          HC       3   1.762
              *

1638          KK    DE32
1639          KM    URS 2009
1640          KM    Divert flow into E40
1641          KM        Flow is split between what passes through/over the structure and
1642          KM        what is diverted parallel to the railroad.
1643          KM    UPRR Structure 27 - MP882.66 (3-60" SSP's)
1644          DT   DVE32
1645          DI       0     345     705    2069    3392
1646          DQ       0     345     459     600     814
              *

1647          KK  RCPE32
1648          KM    URS 2009
1649          KM        Route remainder flow from CP E32 to CP E53
1650          RS       1    FLOW      -1
1651          RC   0.050   0.045   0.050    1024  0.0059
1652          RX       0       5      16      79     102     400     500     880
1653          RY  1355.1  1355.5 1356.08 1356.23 1353.15 1354.25 1354.61    1356
              *

1654          KK     E53   BASIN
1655          KM     URS 2009
1656          KM        Customized XKSAT Values
1657          BA   0.110
```

```
1658    LG    0.35    0.35    3.23    0.77       0
1659    UI       0     129     248      42       0       0       0       0       0       0
1660    UI       0       0       0       0       0       0       0       0       0       0
1661    UI       0       0       0       0       0       0       0       0       0       0
1662    UI       0       0       0       0       0       0       0       0       0       0
1663    UI       0       0       0       0       0       0       0       0       0       0
        *
1664    KM    URS 2009

1665    KK   CPE53
1666    KM        Combine Basin E53 and RCPE32
1667    HC       2   0.709
        *

1668    KK    DE53
1669    KM    URS 2009
1670    KM    Divert flow into E42
1671    KM        Flow is split between what passes through/over the structure and
1672    KM        what is diverted parallel to the railroad.
1673    KM    UPRR Structure 28 - MP882.91 (12' Bridge)
1674    DT   DVE53
```



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

1675    DI       0      76     180     348    1239    3445    7823
1676    DQ       0      76     144     196     238     294     638
        *

1677    KK  RCPE53
1678    KM    URS 2009
1679    KM        Route remainder flow from CP E53 to CP E31
1680    RS       7    FLOW      -1
1681    RC   0.050   0.045   0.050    1922  0.0021
1682    RX       0      10      15      97     117     200     300     460
1683    RY  1348.1  1347.5  1348.8  1348.8 1345.51 1346.11  1346.8    1348
        *

1684    KK     E18   BASIN
1685    KM     URS 2009
1686    KM        Customized XKSAT Values
1687    BA   0.730
1688    LG    0.35    0.35    3.35    0.70       0
1689    UI       0     159     485     894     692     374     131      51      26       0
1690    UI       0       0       0       0       0       0       0       0       0       0
1691    UI       0       0       0       0       0       0       0       0       0       0
1692    UI       0       0       0       0       0       0       0       0       0       0
1693    UI       0       0       0       0       0       0       0       0       0       0
        *

1694    KK  RCPE18
1695    KM          URS 2009
1696    KM        Route flow from CP E18 to CP E31
1697    RS      11    FLOW      -1
1698    RC   0.050   0.045   0.050    9291  0.0060
1699    RX       0     550     600     659     780    1150    1180    1703
1700    RY  1381.0  1380.0  1380.0  1380.0  1378.9  1380.0  1380.0  1381.0
        *

1701    KK     E31   BASIN
1702    KM     URS 2009
1703    BA   0.380
1704    LG    0.35    0.35    4.15    0.43       0
1705    UI       0      76     235     434     374     213      81      33      13       0
1706    UI       0       0       0       0       0       0       0       0       0       0
1707    UI       0       0       0       0       0       0       0       0       0       0
1708    UI       0       0       0       0       0       0       0       0       0       0
1709    UI       0       0       0       0       0       0       0       0       0       0
        *
1710    KM    URS 2009

1711    KK   CPE31
1712    KM        Combine E53, E18 with E31
1713    HC       3   1.280
        *
```



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

1714    KK    DE31
1715    KM    URS 2009
1716    KM    Divert flow into E43
1717    KM        Flow is split between what passes through/over the structure and
1718    KM        what is diverted parallel to the railroad.
1719    KM    UPRR Structure 29 - MP883.25 (3-60" SSP's)
1720    DT   DVE31
1721    DI       0      75     187     473    1426    3395    6758   11973   19739
1722    DQ       0      75     151     247     356     469     576     729    1430
        *

1723    KK  RCPE31
1724    KM    URS 2009
1725    KM        Route remainder flow from CP E31 to CP E30
1726    RS       2    FLOW      -1
1727    RC   0.050   0.045   0.050    1105  0.0057
1728    RX       0      10      17      93     108     400     650     830
1729    RY  1318.5  1318.3  1318.2  1318.3  1318.2  1318.3  1318.9  1318.9
        *

1730    KK     E01   BASIN
1731    KM     URS 2009
1732    KM        Customized XKSAT Values
1733    BA   4.541
1734    LG    0.35    0.35    3.38    0.69       0
1735    UI       0     500    1900    3236    3716    2254    1728    1199     910     605
```

```
1736          UI     460     315     218     193      77      77      77      77       0       0
1737          UI       0       0       0       0       0       0       0       0       0       0
1738          UI       0       0       0       0       0       0       0       0       0       0
              *

1739          KK  RCPE01
1740          KM        Route flow from CP E01 to CP E02
1741          KM    This is in the 10-foot contour area, used the EEC route.
1742          RS       4    FLOW      -1
1743          RC   0.050   0.045   0.050   12040  0.0118
1744          RX       0       8      60     100     130     160     230     238
1745          RY  1630.5  1628.5    1628    1626    1626    1628  1628.5  1630.5
              *

1746          KK     E02   BASIN
1747          KM     URS 2009
1748          KM        Customized XKSAT Values
1749          BA   6.365
1750          LG    0.35    0.35    2.86    1.00       0
1751          UI       0     776    2668    4122    6622    4683    3026    1359     736     287
1752          UI     178     178       0       0       0       0       0       0       0       0
1753          UI       0       0       0       0       0       0       0       0       0       0
1754          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

1755          KK   CPE02
1756          KM        Combine E01 with E02
1757          HC       2  10.907
              *

1758          KK  RCPE02
1759          KM        Route flow from CP E02 to CP E03
1760          KM    This is in the 10-foot contour area, used the EEC route.
1761          RS       3    FLOW      -1
1762          RC   0.050   0.045   0.050    8490  0.0083
1763          RX       0       8     240     260     290     310     500     508
1764          RY    1551  1549.5    1548    1545    1545    1548  1549.5    1551
              *

1765          KK     E03   BASIN
1766          KM     URS 2009
1767          KM        Customized XKSAT Values
1768          BA   2.027
1769          LG    0.35    0.35    2.94    0.95       0
1770          UI       0     495    1490    2678    1828     853     327      91      77       0
1771          UI       0       0       0       0       0       0       0       0       0       0
1772          UI       0       0       0       0       0       0       0       0       0       0
1773          UI       0       0       0       0       0       0       0       0       0       0
1774          UI       0       0       0       0       0       0       0       0       0       0
              *

1775          KK   CPE03
1776          KM        Combine E02 with E03
1777          HC       2  12.934
              *

1778          KK  RCPE03
1779          KM        Route flow from CP E03 to CP E16
1780          KM    This is in the 10-foot contour area, used the EEC route.
1781          RS       3    FLOW      -1
1782          RC   0.050   0.045   0.050    8400  0.0084
1783          RX       0       8     100     170     205     270     370     378
1784          RY  1510.5    1509    1508    1505    1505    1508    1509  1510.5
              *

1785          KK     E16   BASIN
1786          KM     URS 2009
1787          KM        Customized XKSAT Values
1788          BA   0.785
1789          LG    0.35    0.35    3.35    0.70       0
1790          UI       0     266     781    1155     574     176      53       0       0       0
1791          UI       0       0       0       0       0       0       0       0       0       0
1792          UI       0       0       0       0       0       0       0       0       0       0
1793          UI       0       0       0       0       0       0       0       0       0       0
              *
1794          KM    URS 2009
```



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

1795          KK   CPE16
1796          KM        Combine E03 with E16
1797          HC       2  13.719
              *

1798          KK    DE16
1799          KM      Divert flow into E20
1800          KM        Natural divergence of flow due to a braided channel network.
1801          DT   DVE16
1802          DI       0     104     236     439     719    1082    1357    1881    3316    7597
1803          DQ       0       0      16      56     123     219     271     473    1230    2975
              *

1804          KK   RDE16
1805          KM    This is in the 10-foot contour area, used the EEC route.
1806          KM        Route flow from CP E16 to CP E19
1807          RS       8    FLOW      -1
1808          RC   0.050   0.045   0.050  4978.5  0.0061
1809          RX       0       5     205     225     235     255     455     460
1810          RY    1445    1443    1442    1440    1440    1442    1443    1445
              *
```

```
1811          KK     E19   BASIN
1812          KM     URS 2009
1813          KM        Customized XKSAT Values
1814          BA   0.466
1815          LG    0.35    0.35    3.71    0.55       0
1816          UI       0      88     274     502     471     275     110      50      16      16
1817          UI       0       0       0       0       0       0       0       0       0       0
1818          UI       0       0       0       0       0       0       0       0       0       0
1819          UI       0       0       0       0       0       0       0       0       0       0
1820          UI       0       0       0       0       0       0       0       0       0       0
              *
1821          KM    URS 2009

1822          KK   CPE19
1823          KM        Combine DRE16 with E19
1824          HC       2  10.481
              *

1825          KK    DE19
1826          KM      Divert flow into E29
1827          KM        Natural divergence of flow due to a braided channel network.
1828          DT   DVE19
1829          DI       0      89     198     366     600     910    1172    2364    4042    6060
1830          DQ       0       0      10      39      92     174     354     850    1571    2457
              *

1831          KK   RDE19
1832          KM        Route flow from CP E19 to CP E30
1833          KM     URS 2009
1834          RS       6    FLOW      -1
1835          RC   0.050   0.045   0.050   13440  0.0064
1836          RX       0    1218    1286    1288    1296    1300    1332    3526
```



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

1837          RY  1409.8  1408.7  1408.1  1407.9  1407.9  1408.2  1408.4  1410.7
              *

1838          KK     E30   BASIN
1839          KM     URS 2009
1840          BA   0.637
1841          LG    0.35    0.35    4.40    0.37       0
1842          UI       0      89     297     474     690     445     264     109      53      19
1843          UI      19       0       0       0       0       0       0       0       0       0
1844          UI       0       0       0       0       0       0       0       0       0       0
1845          UI       0       0       0       0       0       0       0       0       0       0
              *

1846          KK   CPE30
1847          KM    URS 2009
1848          KM        Combine E31, E19 with E30
1849          HC       3   8.422
              *

1850          KK    DE30
1851          KM    URS 2009
1852          KM    Divert flow into E44
1853          KM        Flow is split between what passes through/over the structure and
1854          KM        what is diverted parallel to the railroad.
1855          KM    UPRR Structure 30-MP883.46 (3-20' Spans of Prestressed Concrete Slab (PCS))
1856          DT   DVE30
1857          DI       0    1030    1368    1800    3231    6609
1858          DQ       0    1030    1257    1433    1789    2817
              *

1859          KK  RCPE30
1860          KM    URS 2009
1861          KM        Route remainder flow from CP E30 to CP E38
1862          RS       3    FLOW      -1
1863          RC   0.050   0.045   0.050    2859  0.0031
1864          RX       0      10      16      95     105     350     500     760
1865          RY  1333.6  1333.9 1334.04 1334.55 1332.42 1333.75  1334.6    1336
              *

1866          KK     E28   BASIN
1867          KM     URS 2009
1868          BA   0.204
1869          LG    0.35    0.35    4.65    0.32       0
1870          UI       0      79     239     295     125      37      10       0       0       0
1871          UI       0       0       0       0       0       0       0       0       0       0
1872          UI       0       0       0       0       0       0       0       0       0       0
1873          UI       0       0       0       0       0       0       0       0       0       0
1874          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

1875          KK    DE28
1876          KM      Divert flow into E29
1877          KM        Natural divergence of flow due to a braided channel network.
1878          DT   DVE28
1879          DI       0     257    1038    2194    3666    5421    7434    9688   12167    1775
1880          DQ       0     155     585    1211    2004    2947    4026    5232    6558     954
              *

1881          KK  RCPE28
1882          KM         URS 2009
1883          KM        Route remainder flow from CP E28 to CP E20
1884          RS      14    FLOW      -1
1885          RC   0.050   0.045   0.050    7115  0.0059
1886          RX       0     242     312     328     351     371     523     524
1887          RY  1382.3  1381.3  1380.8  1380.8  1380.8  1380.9  1381.5  1381.5
```

```
                *

1888            KK     E21   BASIN
1889            KM     URS 2009
1890            KM        Customized XKSAT Values
1891            BA   0.349
1892            LG    0.35    0.35    3.25    0.76       0
1893            UI       0     114     334     512     265      84      26      15       0       0
1894            UI       0       0       0       0       0       0       0       0       0       0
1895            UI       0       0       0       0       0       0       0       0       0       0
1896            UI       0       0       0       0       0       0       0       0       0       0
1897            UI       0       0       0       0       0       0       0       0       0       0
                *

1898            KK    DE21
1899            KM      Divert flow into E20
1900            KM        Natural divergence of flow due to a braided channel network.
1901            DT   DVE21
1902            DI       0      41      91     216     444    1025    2232    3785    5647    7789
1903            DQ       0       0       6      28     109     359     887    1587    2438    3426
                *

1904            KK   RDE21
1905            KM        Route flow from CP E21 to CP E20
1906            KM     URS 2009
1907            RS      17    FLOW      -1
1908            RC   0.050   0.045   0.050   11991  0.0058
1909            RX       0     548     688     690     820     881     882    1456
1910            RY  1407.1  1406.0  1405.9  1405.9  1405.9  1406.0  1406.0  1407.2
                *

1911            KK   DRE16
1912            KM        Return diverted flow from CP E16
1913            DR   DVE16
                *
```



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

1914            KK  RCPE16
1915            KM        Route remainder flow from CP E16 to CP E20
1916            KM     URS 2009
1917            RS      22    FLOW      -1
1918            RC   0.050   0.045   0.050   16012  0.0064
1919            RX       0     689     690     700     712     800     821    1456
1920            RY  1407.1  1405.9  1405.9  1405.9  1405.9  1405.9  1405.9  1407.2
                *

1921            KK     E20   BASIN
1922            KM     URS 2009
1923            BA   0.508
1924            LG    0.35    0.35    4.20    0.42       0
1925            UI       0      40     161     242     372     435     294     201      99      57
1926            UI      31      12      12       0       0       0       0       0       0       0
1927            UI       0       0       0       0       0       0       0       0       0       0
1928            UI       0       0       0       0       0       0       0       0       0       0
1929            UI       0       0       0       0       0       0       0       0       0       0
                *
1930            KM    URS 2009

1931            KK   CPE20
1932            KM        Combine E28, DRE21, DRE16 with E20
1933            HC       4   4.578
                *

1934            KK   DRE28
1935            KM        Return diverted flow from CP E28
1936            DR   DVE28
                *

1937            KK   RDE28
1938            KM        Route flow from CP E28 to CP E29
1939            KM     URS 2009
1940            RS       9    FLOW      -1
1941            RC   0.050   0.045   0.050     797  0.0056
1942            RX       0     575     616     692     766     766     766    1266
1943            RY  1391.3  1390.0  1389.9  1389.9  1390.1  1390.1  1390.1  1391.1
                *

1944            KK   DRE19
1945            KM        Return diverted flow from CP E19
1946            DR   DVE19
                *

1947            KK  RCPE19
1948            KM        Route remainder flow from CP E19 to CP E29
1949            KM    URS 2009
1950            RS       7    FLOW      -1
1951            RC   0.050   0.045   0.050   10970  0.0065
1952            RX       0     500     700     750     800     900    1100    1600
1953            RY       6       4       2       0       0       2       4       6
                *
```



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

1954            KK     E29   BASIN
1955            KM     URS 2009
1956            BA   0.561
1957            LG    0.35    0.35    4.65    0.32       0
1958            UI       0      85     279     462     606     378     204      85      38      17
1959            UI      17       0       0       0       0       0       0       0       0       0
1960            UI       0       0       0       0       0       0       0       0       0       0
1961            UI       0       0       0       0       0       0       0       0       0       0
```

```
                 *
1962             KM    URS 2009

1963             KK  CPE29A
1964             KM        Combine DRE28, DRE19 with E29
1965             HC       3   3.829
                 *
1966             KM    URS 2009

1967             KK   CPE29
1968             KM        Combine E20 with E29
1969             HC       2   8.407
                 *

1970             KK  RCPE29
1971             KM          URS 2009
1972             KM       Route flow from CP E29 to CP E38
1973             KM       Typical Sheet Flow Route
1974             RS       4    FLOW      -1
1975             RC   0.050   0.045   0.050    5934  0.0051
1976             RX       0     500     700     750     800     900    1100    1600
1977             RY       6       4       2       0       0       2       4       6
                 *

1978             KK     E07   BASIN
1979             KM     URS 2009
1980             KM        Customized XKSAT Values
1981             BA   1.070
1982             LG    0.35    0.35    2.86    1.00       0
1983             UI       0     200     623    1134    1088     639     259     121      36      36
1984             UI       0       0       0       0       0       0       0       0       0       0
1985             UI       0       0       0       0       0       0       0       0       0       0
1986             UI       0       0       0       0       0       0       0       0       0       0
1987             UI       0       0       0       0       0       0       0       0       0       0
                 *

1988             KK  RCPE07
1989             KM       Route flow from CP E07 to CP E15
1990             KM    This is in the 10-foot contour area, used the EEC route.
1991             RS       4    FLOW      -1
1992             RC   0.050   0.045   0.050    9640  0.0074
1993             RX       0       9      30      40      50      70      90      99
1994             RY  1490.5 1488.25    1488    1486    1486    1488 1488.25  1490.5
                 *
1                                          HEC-1 INPUT                                                    PAGE 50

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

1995             KK     E14   BASIN
1996             KM     URS 2009
1997             KM        Customized XKSAT Values
1998             BA   0.816
1999             LG    0.35    0.35    2.99    0.91       0
2000             UI       0    1514    1498     143       0       0       0       0       0       0
2001             UI       0       0       0       0       0       0       0       0       0       0
2002             UI       0       0       0       0       0       0       0       0       0       0
2003             UI       0       0       0       0       0       0       0       0       0       0
                 *

2004             KK  RCPE14
2005             KM       Route flow from CP E14 to CP E15
2006             KM    This is in the 10-foot contour area, used the EEC route.
2007             RS       3    FLOW      -1
2008             RC   0.050   0.045   0.050    5980  0.0051
2009             RX       0       9      40      50      60      80     110     119
2010             RY  1490.5 1488.25    1488    1486    1486    1488 1488.25  1490.5
                 *

2011             KK     E15   BASIN
2012             KM     URS 2009
2013             KM        Customized XKSAT Values
2014             BA   0.922
2015             LG    0.35    0.35    3.35    0.70       0
2016             UI       0     315     926    1357     669     203      60       0       0       0
2017             UI       0       0       0       0       0       0       0       0       0       0
2018             UI       0       0       0       0       0       0       0       0       0       0
2019             UI       0       0       0       0       0       0       0       0       0       0
2020             UI       0       0       0       0       0       0       0       0       0       0
                 *
2021             KM    URS 2009

2022             KK   CPE15
2023             KM        Combine E07, E14 with E15
2024             HC       3   2.808
                 *

2025             KK  RCPE15
2026             KM       Route flow from CP E15 to CP E22
2027             KM    URS 2009
2028             RS      21    FLOW      -1
2029             RC   0.050   0.045   0.050   15473  0.0063
2030             RX       0     185     222     304     448     512     569    1187
2031             RY  1438.3  1437.7  1437.5  1437.6  1437.4  1437.6  1437.2  1438.7
                 *

2032             KK     E27   BASIN
2033             KM     URS 2009
2034             BA   0.128
2035             LG    0.35    0.35    4.65    0.32       0
2036             UI       0      52     159     182      73      21       6       0       0       0
2037             UI       0       0       0       0       0       0       0       0       0       0
2038             UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                                    PAGE 51

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

```
2039          UI       0       0       0       0       0       0       0       0       0       0
2040          UI       0       0       0       0       0       0       0       0       0       0
              *

2041          KK  RCPE27
2042          KM        Route flow from CP E27 to CP E22
2043          KM     URS 2009
2044          RS       7    FLOW      -1
2045          RC   0.050   0.045   0.050    2590  0.0062
2046          RX       0     638     696     700     724     785     942    1445
2047          RY  1383.4  1382.0  1382.0  1382.0  1382.0  1382.0  1382.2  1383.3
              *

2048          KK   DRE21
2049          KM        Return diverted flow from CP E21
2050          DR   DVE21
              *

2051          KK  RCPE21
2052          KM    URS 2009
2053          KM        Route flow from CP E21 to CP E22
2054          RS      38    FLOW      -1
2055          RC   0.050   0.045   0.050    9499  0.0065
2056          RX       0     209     212     310     350     413     414     415
2057          RY  1421.8  1421.6  1421.6  1421.6  1421.7  1421.9  1421.9  1421.9
              *

2058          KK     E22   BASIN
2059          KM     URS 2009
2060          KM        Customized XKSAT Values
2061          BA   1.103
2062          LG    0.35    0.35    3.95    0.47       0
2063          UI       0      98     376     565     918     904     614     397     177     109
2064          UI      46      27      27       0       0       0       0       0       0       0
2065          UI       0       0       0       0       0       0       0       0       0       0
2066          UI       0       0       0       0       0       0       0       0       0       0
2067          UI       0       0       0       0       0       0       0       0       0       0
              *
2068          KM    URS 2009

2069          KK   CPE22
2070          KM        Combine E15, E27, E21 with E22
2071          HC       4   4.102
              *

2072          KK  RCPE22
2073          KM         URS 2009
2074          KM        Route flow from CP E22 to CP E37
2075          RS       6    FLOW      -1
2076          RC   0.050   0.045   0.050    4296  0.0056
2077          RX       0     749     787     809     886     926    1116    1617
2078          RY  1363.3  1362.4  1362.2  1362.3  1362.2  1362.2  1362.5  1363.5
              *
```



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

2079          KK     E37   BASIN
2080          KM     URS 2009
2081          BA   0.182
2082          LG    0.35    0.35    4.65    0.32       0
2083          UI       0     143     382     148      25       0       0       0       0       0
2084          UI       0       0       0       0       0       0       0       0       0       0
2085          UI       0       0       0       0       0       0       0       0       0       0
2086          UI       0       0       0       0       0       0       0       0       0       0
2087          UI       0       0       0       0       0       0       0       0       0       0
              *
2088          KM    URS 2009

2089          KK   CPE37
2090          KM        Combine E22 with E37
2091          HC       2   4.284
              *

2092          KK  RCPE37
2093          KM        Route flow from CP E37 to CP E38
2094          KM     URS 2009
2095          RS       3    FLOW      -1
2096          RC   0.050   0.045   0.050    4260  0.0053
2097          RX       0     500     700     750     800     900    1100    1600
2098          RY       6       4       2       0       0       2       4       6
              *

2099          KK     E04   BASIN
2100          KM     URS 2009
2101          KM        Customized XKSAT Values
2102          BA   1.771
2103          LG    0.35    0.35    2.91    0.97       0
2104          UI       0     747    2322    2464     951     263      87       0       0       0
2105          UI       0       0       0       0       0       0       0       0       0       0
2106          UI       0       0       0       0       0       0       0       0       0       0
2107          UI       0       0       0       0       0       0       0       0       0       0
2108          UI       0       0       0       0       0       0       0       0       0       0
              *

2109          KK  RCPE04
2110          KM        Route flow from CP E04 to CP E05
2111          KM    This is in the 10-foot contour area, used the EEC route.
2112          RS      27    FLOW      -1
2113          RC   0.050   0.045   0.050   31530  0.0090
2114          RX       0     100     200     240     250     290     410     530
2115          RY    1471    1469    1469    1468    1468    1469    1469    1471
              *
```

```
2116          KK     E06   BASIN
2117          KM     URS 2009
2118          KM        Customized XKSAT Values
2119          BA   1.056
2120          LG    0.35    0.35    2.89    0.98       0
2121          UI       0     549    1723    1312     381      87       0       0       0       0
2122          UI       0       0       0       0       0       0       0       0       0       0
```



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

2123          UI       0       0       0       0       0       0       0       0       0       0
2124          UI       0       0       0       0       0       0       0       0       0       0
2125          UI       0       0       0       0       0       0       0       0       0       0
              *

2126          KK  RCPE06
2127          KM        Route flow from CP E06 to CP E05
2128          KM    This is in the 10-foot contour area, used the EEC route.
2129          RS      19    FLOW      -1
2130          RC   0.050   0.045   0.050   19520  0.0080
2131          RX       0     100     200     240     250     290     410     530
2132          RY  1470.5    1469    1469    1468    1468    1469    1469  1470.5
              *

2133          KK     E11   BASIN
2134          KM     URS 2009
2135          KM        Customized XKSAT Values
2136          BA   2.267
2137          LG    0.35    0.35    3.11    0.84       0
2138          UI       0     250     887    1348    2238    1727    1143     594     295     144
2139          UI      61      61       0       0       0       0       0       0       0       0
2140          UI       0       0       0       0       0       0       0       0       0       0
2141          UI       0       0       0       0       0       0       0       0       0       0
              *

2142          KK    DE11
2143          KM      Divert flow into E12
2144          KM        Natural divergence of flow due to a braided channel network.
2145          DT   DVE11
2146          DI       0      32     130     326     648     922    1642    2906    4664    7677
2147          DQ       0      10      42     111     233     330     659    1302    2172    3568
              *

2148          KK  RCPE11
2149          KM        Route remainder flow from CP E11 to CP E05
2150          KM    This is in the 10-foot contour area, used the EEC route.
2151          RS       8    FLOW      -1
2152          RC   0.050   0.045   0.050    8860  0.0058
2153          RX       0     100     200     240     250     290     410     530
2154          RY  1470.5    1469    1469    1468    1468    1469    1469  1470.5
              *

2155          KK     E09   BASIN
2156          KM     URS 2009
2157          KM        Customized XKSAT Values
2158          BA   0.303
2159          LG    0.35    0.35    2.92    0.96       0
2160          UI       0     242     638     243      40       0       0       0       0       0
2161          UI       0       0       0       0       0       0       0       0       0       0
2162          UI       0       0       0       0       0       0       0       0       0       0
2163          UI       0       0       0       0       0       0       0       0       0       0
2164          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

2165          KK    DE09
2166          KM      Divert flow into E13
2167          KM        Natural divergence of flow due to a braided channel network.
2168          DT   DVE09
2169          DI       0      22      90     197     422     756    1421    2780    4781    6794
2170          DQ       0       8      37      85     190     349     673    1336    2304    3291
              *

2171          KK  RCPE09
2172          KM        Route remainder flow from CP E09 to CP E10
2173          KM    This is in the 10-foot contour area, used the EEC route.
2174          RS       3    FLOW      -1
2175          RC   0.050   0.045   0.050    2830  0.0110
2176          RX       0     100     185     195     200     210     300     400
2177          RY    1530    1529    1529    1528    1528    1529    1529    1530
              *

2178          KK     E10   BASIN
2179          KM     URS 2009
2180          KM        Customized XKSAT Values
2181          BA   0.098
2182          LG    0.35    0.35    3.55    0.61       0
2183          UI       0     126     218      31       0       0       0       0       0       0
2184          UI       0       0       0       0       0       0       0       0       0       0
2185          UI       0       0       0       0       0       0       0       0       0       0
2186          UI       0       0       0       0       0       0       0       0       0       0
2187          UI       0       0       0       0       0       0       0       0       0       0
              *
2188          KM    URS 2009

2189          KK   CPE10
2190          KM        Combine E09 with E10
2191          HC       2   0.268
              *

2192          KK    DE10
2193          KM      Divert flow into E13
```

```
2194          KM        Natural divergence of flow due to a braided channel network.
2195          DT   DVE10
2196          DI       0      34     132     283     683    1405    2576    4977    7479   10398
2197          DQ       0      25      95     199     453     917    1597    2901    4193    5679
              *

2198          KK  RCPE10
2199          KM        Route remainder flow from CP E10 to CP E05
2200          KM    This is in the 10-foot contour area, used the EEC route.
2201          RS      14    FLOW      -1
2202          RC   0.050   0.045   0.050   11570  0.0071
2203          RX       0     100     200     240     250     290     410     530
2204          RY    1470    1469    1469    1468    1468    1469    1469    1470
              *
1                                          HEC-1 INPUT                                                    PAGE 55

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

2205          KK     E05   BASIN
2206          KM     URS 2009
2207          KM        Customized XKSAT Values
2208          BA   4.177
2209          LG    0.35    0.35    3.21    0.78       0
2210          UI       0     211     434     919    1189    1481    2039    2563    1950    1563
2211          UI    1223     935     524     358     265     201      65      65      65      65
2212          UI       0       0       0       0       0       0       0       0       0       0
              *
2213          KM    URS 2009

2214          KK   CPE05
2215          KM        Combine E04, E06, E11, E10 with E05
2216          HC       5   8.462
              *

2217          KK    DE05
2218          KM      Divert flow into E25
2219          KM     FLOW-2D 2009
2220          KM        Natural divergence of flow due to a braided channel network.
2221          DT   DVE05
2222          DI       0      97     239     454     676     869    1147    1534    1901    2244
2223          DQ       0      97     208     333     466     578     741     961    1170    1364
              *

2224          KK   RDE05
2225          KM        Route flow from CP E05 to CP E24
2226          KM     URS 2009
2227          RS      11    FLOW      -1
2228          RC   0.050   0.045   0.050    8455  0.0054
2229          RX       0     147     302     359     380     407     717    1012
2230          RY  1425.5  1425.2  1424.4  1424.0  1424.0  1424.0  1425.9  1426.9
              *

2231          KK   DRE09
2232          KM        Return diverted flow from CP E09
2233          DR   DVE09
              *

2234          KK   RDE09
2235          KM    This is in the 10-foot contour area, used the EEC route.
2236          KM        Route flow from CP E09 to CP E13
2237          RS      16    FLOW      -1
2238          RC   0.050   0.045   0.050   17190  0.0076
2239          RX       0     100     200     220     225     245     345     445
2240          RY  1480.5    1479    1479    1478    1478    1479    1479  1480.5
              *

2241          KK   DRE10
2242          KM        Return diverted flow from CP E10
2243          DR   DVE10
              *
1                                          HEC-1 INPUT                                                    PAGE 56

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

2244          KK   RDE10
2245          KM    This is in the 10-foot contour area, used the EEC route.
2246          KM        Route flow from CP E10 to CP E13
2247          RS      26    FLOW      -1
2248          RC   0.050   0.045   0.050   14450  0.0069
2249          RX       0     100     200     220     225     245     345     445
2250          RY    1480    1479    1479    1478    1478    1479    1479    1480
              *

2251          KK     E13   BASIN
2252          KM     URS 2009
2253          KM        Customized XKSAT Values
2254          BA   1.531
2255          LG    0.35    0.35    3.95    0.47       0
2256          UI       0     118     479     718    1098    1316     892     614     309     177
2257          UI      98      36      36      36       0       0       0       0       0       0
2258          UI       0       0       0       0       0       0       0       0       0       0
2259          UI       0       0       0       0       0       0       0       0       0       0
2260          UI       0       0       0       0       0       0       0       0       0       0
              *

2261          KK   CPE13
2262          KM        Combine DRE09, DRE10 with E13
2263          HC       3   1.932
              *

2264          KK    DE13
2265          KM      Divert flow into E23
2266          KM        Natural divergence of flow due to a braided channel network.
2267          DT   DVE13
```

```
2268          DI       0       7      94     560    1442    2739    4362    6275    8456
2269          DQ       0       0       1      89     391     939    1661    2536    3550
              *

2270          KK  RCPE13
2271          KM        Route remainder flow from CP E13 to CP E24
2272          KM     URS 2009
2273          RS       4    FLOW      -1
2274          RC   0.050   0.045   0.050    5104  0.0059
2275          RX       0     500     700     750     800     900    1100    1600
2276          RY       6       4       2       0       0       2       4       6
              *

2277          KK     E24   BASIN
2278          KM     URS 2009
2279          BA   0.261
2280          LG    0.35    0.35    4.35    0.39       0
2281          UI       0      47     147     262     271     161      69      33       9       9
2282          UI       0       0       0       0       0       0       0       0       0       0
2283          UI       0       0       0       0       0       0       0       0       0       0
2284          UI       0       0       0       0       0       0       0       0       0       0
              *
2285          KM    URS 2009
```



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

2286          KK   CPE24
2287          KM        Combine DRE05, E13 with E24
2288          HC       3   4.698
              *

2289          KK  RCPE24
2290          KM        Route flow from CP E24 to CP E34
2291          KM     URS 2009
2292          RS       1    FLOW      -1
2293          RC   0.050   0.045   0.050    1512  0.0060
2294          RX       0     500     700     750     800     900    1100    1600
2295          RY       6       4       2       0       0       2       4       6
              *

2296          KK     E08   BASIN
2297          KM     URS 2009
2298          KM        Customized XKSAT Values
2299          BA   0.959
2300          LG    0.35    0.35    3.29    0.74       0
2301          UI       0      95     349     527     876     757     511     307     137      81
2302          UI      25      25       0       0       0       0       0       0       0       0
2303          UI       0       0       0       0       0       0       0       0       0       0
2304          UI       0       0       0       0       0       0       0       0       0       0
              *

2305          KK  RCPE08
2306          KM        Route flow from CP E08 to CP E23
2307          KM     URS 2009
2308          RS      18    FLOW      -1
2309          RC   0.050   0.045   0.050   10345  0.0063
2310          RX       0       5      62     189     336     459     466     467
2311          RY  1428.0  1428.0  1428.0  1427.6 1427.5  1428.0  1428.0  1428.0
              *

2312          KK   DRE13
2313          KM        Return diverted flow from CP E13
2314          DR   DVE13
              *

2315          KK   RDE13
2316          KM        Route flow from CP E13 to CP E23
2317          KM     URS 2009
2318          RS       3    FLOW      -1
2319          RC   0.050   0.045   0.050    6485  0.0060
2320          RX       0     119     264     383     383     411     657     664
2321          RY  1412.6  1412.6  1412.5  1412.1  1412.1  1412.1  1412.7  1412.7
              *

2322          KK     E23   BASIN
2323          KM     URS 2009
2324          BA   0.325
2325          LG    0.35    0.35    4.65    0.32       0
2326          UI       0      52     168     284     351     213     107      47      18      10
2327          UI       0       0       0       0       0       0       0       0       0       0
```



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

2328          UI       0       0       0       0       0       0       0       0       0       0
2329          UI       0       0       0       0       0       0       0       0       0       0
2330          UI       0       0       0       0       0       0       0       0       0       0
              *
2331          KM    URS 2009

2332          KK   CPE23
2333          KM        Combine E08, DRE13, CPE24 with E23
2334          HC       4   6.279
              *

2335          KK  RCPE23
2336          KM        Route flow from CP E23 to CP E34
2337          KM     URS 2009
2338          RS       2    FLOW      -1
2339          RC   0.050   0.045   0.050    1512  0.0060
2340          RX       0     510     546     640     651     797     922    1425
2341          RY  1362.8  1361.8  1361.8  1361.6  1361.5  1361.7  1361.9  1362.9
              *
```

```
2342          KK     E34   BASIN
2343          KM     URS 2009
2344          BA   0.268
2345          LG    0.35    0.35    4.65    0.32       0
2346          UI       0      63     191     346     246     120      45      14      10       0
2347          UI       0       0       0       0       0       0       0       0       0       0
2348          UI       0       0       0       0       0       0       0       0       0       0
2349          UI       0       0       0       0       0       0       0       0       0       0
2350          UI       0       0       0       0       0       0       0       0       0       0
              *
2351          KM    URS 2009

2352          KK   CPE34
2353          KM        Combine E23 with E34
2354          HC       2   6.547
              *

2355          KK  RCPE34
2356          KM        Route flow from CP E34 to CP E38
2357          KM     URS 2009
2358          RS       3    FLOW      -1
2359          RC   0.050   0.045   0.050    4360  0.0053
2360          RX       0     500     700     750     800     900    1100    1600
2361          RY       6       4       2       0       0       2       4       6
              *

2362          KK     E38   BASIN
2363          KM     URS 2009
2364          BA   0.480
2365          LG    0.35    0.35    4.30    0.40       0
2366          UI       0     202     629     668     258      71      24       0       0       0
2367          UI       0       0       0       0       0       0       0       0       0       0
2368          UI       0       0       0       0       0       0       0       0       0       0
2369          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

2370          KM    URS 2009

2371          KK   CPE38
2372          KM        Combine E30, E29A, E37, E34 with E38
2373          HC       5  19.718
              *

2374          KK    DE38
2375          KM    URS 2009
2376          KM    Divert flow into E44
2377          KM        Flow is split between what passes through/over the structure and
2378          KM        what is diverted parallel to the railroad.
2379          KM    UPRR Structure 31-MP884 (3-72" SSP's)
2380          DT   DVE38
2381          DI       0     271     420     626     875    1747    3716    7914
2382          DQ       0     271     401     544     693     841    1011    1788
              *

2383          KK  RCPE38
2384          KM        Route flow from CP E38 to CP E44
2385          KM        Crossing at SR-238
2386          KM     URS 2009
2387          RS       3    FLOW      -1
2388          RC   0.050   0.045   0.050    7038  0.0051
2389          RX       0    1050    1062    1243    1244    1432    1476    2810
2390          RY  1319.1  1318.1  1318.1  1318.0  1318.0  1317.5  1317.6  1319.8
              *

2391          KK   DRE11
2392          KM        Return diverted flow from CP E11
2393          DR   DVE11
              *

2394          KK   RDE11
2395          KM        Route flow from CP E11 to CP E12
2396          RS      12    FLOW      -1
2397          RC   0.050   0.045   0.050   13860  0.0065
2398          RX       0     125     250     280     310     340     490     640
2399          RY    1490    1489    1488    1487    1487    1488    1489    1490
              *

2400          KK     E12   BASIN
2401          KM     URS 2009
2402          KM        Customized XKSAT Values
2403          BA   1.048
2404          LG    0.35    0.34    3.78    0.53       0
2405          UI       0     147     488     780    1136     732     434     179      87      31
2406          UI      31       0       0       0       0       0       0       0       0       0
2407          UI       0       0       0       0       0       0       0       0       0       0
2408          UI       0       0       0       0       0       0       0       0       0       0
              *
2409          KM    URS 2009
```



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

2410          KK   CPE12
2411          KM        Combine DRE11 with E12
2412          HC       2   1.932
              *

2413          KK  RCPE12
2414          KM        Route flow from CP E12 to CP E25
2415          KM     URS 2009
2416          RS      25    FLOW      -1
2417          RC   0.050   0.045   0.050   15780  0.0053
```

```
2418          RX       0     159     175     200     250     300     329     435
2419          RY  1397.4  1396.0  1396.0  1396.0  1396.0  1396.0  1396.0  1396.4
              *

2420          KK   DRE05
2421          KM        Return diverted flow from CP E05
2422          DR   DVE05
              *

2423          KK  RCPE05
2424          KM        Route remainder flow from CP E05 to CP E25
2425          KM     URS 2009
2426          RS      27    FLOW      -1
2427          RC   0.050   0.045   0.050   21390  0.0063
2428          RX       0     642     675     700     750     850     881    1457
2429          RY  1433.4  1432.0  1432.0  1432.0  1432.0  1432.0  1432.0  1433.3
              *

2430          KK     E25   BASIN
2431          KM     URS 2009
2432          BA   1.638
2433          LG    0.35    0.35    4.15    0.43       0
2434          UI       0     104     321     545     718    1084    1146     827     611     419
2435          UI     206     146      93      32      32      32       0       0       0       0
2436          UI       0       0       0       0       0       0       0       0       0       0
2437          UI       0       0       0       0       0       0       0       0       0       0
2438          UI       0       0       0       0       0       0       0       0       0       0
              *
2439          KM    URS 2009

2440          KK   CPE25
2441          KM        Combine E12, E05, E38 with E25
2442          HC       4  21.774
              *

2443          KK    DE25
2444          KM    URS 2009
2445          KM    Divert flow into E45
2446          KM        Flow is split between what passes through/over the structure and
2447          KM        what is diverted parallel to the railroad.
2448          KM    UPRR Structures 32 and 33 (3-72" SSP's and 3-30' Prestressed Concrete Boxes a
2449          DT   DVE25
2450          DI       0      21     215     644    1096    1982    3881    7565   13748   23631
2451          DQ       0      21     210     588     983    1378    1764    2138    2495    3090
              *
1                                          HEC-1 INPUT                                          PAGE 61

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

2452          KK  RCPE25
2453          KM    URS 2009
2454          KM        Route remainder flow from CP E25 to CP E36
2455          RS       1    FLOW      -1
2456          RC   0.050   0.045   0.050    1183  0.0042
2457          RX       0       5       7      87     101     500     600     832
2458          RY  1318.5 1319.75 1320.28 1320.36 1313.48  1317.3 1318.24    1320
              *

2459          KK     E26   BASIN
2460          KM     URS 2009
2461          BA   0.253
2462          LG    0.35    0.35    4.65    0.32       0
2463          UI       0      95     287     368     161      49      12       0       0       0
2464          UI       0       0       0       0       0       0       0       0       0       0
2465          UI       0       0       0       0       0       0       0       0       0       0
2466          UI       0       0       0       0       0       0       0       0       0       0
              *

2467          KK  RCPE26
2468          KM        Route flow from CP E26 to CP E35
2469          KM     URS 2009; Typical Section;
2470          RS       7    FLOW      -1
2471          RC   0.050   0.045   0.050    6112  0.0056
2472          RX       0     500     700     750     800     900    1100    1600
2473          RY       6       4       2       0       0       2       4       6
              *

2474          KK     E35   BASIN
2475          KM     URS 2009
2476          BA   0.366
2477          LG    0.35    0.35    4.65    0.32       0
2478          UI       0     179     566     470     152      35       0       0       0       0
2479          UI       0       0       0       0       0       0       0       0       0       0
2480          UI       0       0       0       0       0       0       0       0       0       0
2481          UI       0       0       0       0       0       0       0       0       0       0
              *

2482          KK   CPE35
2483          KM        Combine E26 with E35
2484          HC       2   0.690
              *

2485          KK    DE35
2486          KM      Divert flow into E54
2487          KM        Natural divergence of flow due to a braided channel network.
2488          DT   DVE35
2489          DI       0      20      50     100     200     400     800    1600    3200    6400
2490          DQ       0      10      25      50     100     200     400     800    1600    3200
              *
1                                          HEC-1 INPUT                                          PAGE 62

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

2491          KK  RCPE35
```

```
2492          KM        Route remainder flow from CP E35 to CP E36
2493          KM     URS 2009
2494          RS       8    FLOW      -1
2495          RC   0.050   0.045   0.050    5068  0.0055
2496          RX       0     500     700     750     800     900    1100    1600
2497          RY       6       4       2       0       0       2       4       6
              *

2498          KK     E36   BASIN
2499          KM     URS 2009
2500          BA   0.163
2501          LG    0.35    0.35    4.10    0.44       0
2502          UI       0      96     293     185      45      10       0       0       0       0
2503          UI       0       0       0       0       0       0       0       0       0       0
2504          UI       0       0       0       0       0       0       0       0       0       0
2505          UI       0       0       0       0       0       0       0       0       0       0
2506          UI       0       0       0       0       0       0       0       0       0       0
              *

2507          KK   CPE36
2508          KM    URS 2009
2509          KM        Combine E25, E35 with E36
2510          HC       3   6.443
              *

2511          KK    DE36
2512          KM    URS 2009
2513          KM    Divert flow into E45
2514          KM        Flow is split between what passes through/over the structure and
2515          KM        what is diverted parallel to the railroad.
2516          KM    UPRR Structure 34-MP884.73 (2-48" SSP's).
2517          DT   DVE36
2518          DI       1      92     270     918    2319    4700    8265   13113   20023
2519          DQ       0       0      20      41      78     127     180     231     415
              *

2520          KK  RCPE36
2521          KM    URS 2009
2522          KM        Route remainder flow from CP E36 to CP E54
2523          RS       3    FLOW      -1
2524          RC   0.050   0.045   0.050    1425  0.0038
2525          RX       0       6      12      90      99     600     750     950
2526          RY  1312.6  1313.5 1315.02 1315.43 1309.85 1313.47  1314.6    1316
              *

2527          KK   DRE35
2528          KM        Return diverted flow from CP E35
2529          DR   DVE35
              *
```



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

2530          KK   RDE35
2531          KM        Route flow from CP E35 to CP E54
2532          KM     URS 2009; Typical Section
2533          RS       1    FLOW      -1
2534          RC   0.050   0.045   0.050    5829  0.0055
2535          RX       0     500     700     750     800     900    1100    1600
2536          RY       6       4       2       0       0       2       4       6
              *

2537          KK     E54   BASIN
2538          KM     URS 2009
2539          BA   0.122
2540          LG    0.35    0.35    4.50    0.35       0
2541          UI       0      61     192     155      48      11       0       0       0       0
2542          UI       0       0       0       0       0       0       0       0       0       0
2543          UI       0       0       0       0       0       0       0       0       0       0
2544          UI       0       0       0       0       0       0       0       0       0       0
2545          UI       0       0       0       0       0       0       0       0       0       0
              *

2546          KK   CPE54
2547          KM    URS 2009
2548          KM        Combine Basin E54, RCPE36, and RDE35
2549          HC       3   6.400
              *

2550          KK    DE54
2551          KM    URS 2009
2552          KM    Divert flow into E46
2553          KM        Flow is split between what passes through/over the structure and
2554          KM        what is diverted parallel to the railroad.
2555          KM    UPRR Structure 35-MP884.97 (3-48" SSP's)
2556          DT   DVE54
2557          DI       0      38      99     232     762    2095    4591    8808
2558          DQ       0      38      83     151     230     309     375     625
              *

2559          KK  RCPE54
2560          KM    URS 2009
2561          KM        Route remainder flow from CP E54 to CP F26
2562          RS       3    FLOW      -1
2563          RC   0.050   0.045   0.050    1760  0.0017
2564          RX       0       5      10      85      96     500     750     815
2565          RY  1307.3    1308 1309.73 1310.53 1306.05  1309.4  1311.5    1312
              * ******************************************************************************
              *      Runoff Watershed F (south of SR-238/Railroad) divert all flows north of r
              *      and route remainder east along Highway, ultimately into the storage ponds
              *      in subbasins F25, F27, F28, F36, F29 and F20.  At F20 all the flow is rou
              *      through the structure or over the railroad.
              *
              *      Beginning at F31 (Waterman Wash) runoff from the east side (Watershed G)
              *      to the total flow (denoted RIV in the nomenclature)
```

```
                    * ******************************************************************************
1                                                HEC-1 INPUT                                          PAGE 64

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

2566          KK     F26   BASIN
2567          KM     URS 2009
2568          BA   0.495
2569          LG    0.35    0.35    4.65    0.32       0
2570          UI       0      94     291     534     500     292     117      53      17      17
2571          UI       0       0       0       0       0       0       0       0       0       0
2572          UI       0       0       0       0       0       0       0       0       0       0
2573          UI       0       0       0       0       0       0       0       0       0       0
2574          UI       0       0       0       0       0       0       0       0       0       0
              *
2575          KM    URS 2009

2576          KK   CPF26
2577          KM        Combine Basin F26 and RCPE54
2578          HC       2   4.380
              *

2579          KK    DF26
2580          KM    URS 2009
2581          KM    Divert flow into F35
2582          KM        Flow is split between what passes through/over the structure and
2583          KM        what is diverted parallel to the railroad.
2584          KM    UPRR Structure 36-MP885.29 (3-48" SSP's)
2585          DT   DVF26
2586          DI       0      53     153     365     634    1558    3545    7569
2587          DQ       0      53     115     190     270     342     488    1438
              *

2588          KK  RCPF26
2589          KM    URS 2009
2590          KM        Route remainder flow from CP F26 to CP F25
2591          RS      14    FLOW      -1
2592          RC   0.050   0.045   0.050    1492  0.0027
2593          RX       0       5     8.3     105     113     400     750     900
2594          RY  1305.1 1305.75 1306.68  1306.2 1302.85 1304.73  1307.1    1308
              *

2595          KK     F14   BASIN
2596          KM     URS 2009
2597          KM    Customized XKSAT Values
2598          BA   0.388
2599          LG    0.35    0.35    3.09    0.85       0
2600          UI       0     244     727     415      90      23       0       0       0       0
2601          UI       0       0       0       0       0       0       0       0       0       0
2602          UI       0       0       0       0       0       0       0       0       0       0
2603          UI       0       0       0       0       0       0       0       0       0       0
2604          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                                HEC-1 INPUT                                          PAGE 65

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

2605          KK  RCPF14
2606          KM        Route flow from CP F14 to CP F15
2607          KM     URS 2009; Typical Section
2608          RS       7    FLOW      -1
2609          RC   0.050   0.045   0.050    8348  0.0066
2610          RX       0     500     700     750     800     900    1100    1600
2611          RY       6       4       2       0       0       2       4       6
              *

2612          KK     F13   BASIN
2613          KM     URS 2009
2614          KM    Customized XKSAT Values
2615          BA   0.260
2616          LG    0.35    0.35    2.97    0.92       0
2617          UI       0     287     586     117       0       0       0       0       0       0
2618          UI       0       0       0       0       0       0       0       0       0       0
2619          UI       0       0       0       0       0       0       0       0       0       0
2620          UI       0       0       0       0       0       0       0       0       0       0
2621          UI       0       0       0       0       0       0       0       0       0       0
              *

2622          KK    DF13
2623          KM      Divert flow into F12
2624          KM        Natural divergence of flow due to a braided channel network.
2625          DT   DVF13
2626          DI       0      23      96     371    1090    2412    4125    6119    8417
2627          DQ       0      17      68     158     447    1147    2078    3148    4392
              *

2628          KK   RDF13
2629          KM        Route flow from CP F13 to CP F15
2630          RS       2    FLOW      -1
2631          RC   0.050   0.045   0.050    9300  0.0064
2632          RX       0     100     200     215     225     240     365     490
2633          RY    1390    1389    1389    1388    1388    1389    1389    1390
              *

2634          KK   DRF13
2635          KM        Return diverted flow from CP F13
2636          DR   DVF13
              *

2637          KK  RCPF13
2638          KM        Route remainder flow from CP F13 to CP F12
2639          KM     URS 2009 ; Typical Section
2640          RS      13    FLOW      -1
2641          RC   0.050   0.045   0.050    1730  0.0059
```

```
2642          RX       0     500     700     750     800     900    1100    1600
2643          RY       6       4       2       0       0       2       4       6
              *
```



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

2644          KK     F12   BASIN
2645          KM     URS 2009
2646          KM    Customized XKSAT Values
2647          BA   0.312
2648          LG    0.35    0.35    3.05    0.88       0
2649          UI       0     215     615     300      60       0       0       0       0       0
2650          UI       0       0       0       0       0       0       0       0       0       0
2651          UI       0       0       0       0       0       0       0       0       0       0
2652          UI       0       0       0       0       0       0       0       0       0       0
2653          UI       0       0       0       0       0       0       0       0       0       0
              *
2654          KM    URS 2009

2655          KK   CPF12
2656          KM        Combine F13 with F12
2657          HC       2   0.439
              *

2658          KK  RCPF12
2659          KM        Route flow from CP F12 to CP F11
2660          KM     URS 2009; Typical Section
2661          RS       7    FLOW      -1
2662          RC   0.050   0.045   0.050    7741  0.0065
2663          RX       0     500     700     750     800     900    1100    1600
2664          RY       6       4       2       0       0       2       4       6
              *

2665          KK     F15   BASIN
2666          KM     URS 2009
2667          BA   0.784
2668          LG    0.35    0.35    4.40    0.37       0
2669          UI       0     138     436     774     819     488     213     102      29      26
2670          UI       0       0       0       0       0       0       0       0       0       0
2671          UI       0       0       0       0       0       0       0       0       0       0
2672          UI       0       0       0       0       0       0       0       0       0       0
2673          UI       0       0       0       0       0       0       0       0       0       0
              *
2674          KM    URS 2009

2675          KK   CPF15
2676          KM        Combine DRF13, F14, F12 with F15
2677          HC       4   1.744
              *

2678          KK  RCPF15
2679          KM        Route flow from CP F15 to CP F25
2680          RS      18    FLOW      -1
2681          RC   0.050   0.045   0.050   14254  0.0053
2682          RX       0     588     686     765     857     889    1028    1604
2683          RY  1363.2    1362  1361.7  1361.5  1361.8  1361.9  1362.1  1363.5
              *
```



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

2684          KK     F11   BASIN
2685          KM     URS 2009
2686          KM    Customized XKSAT Values
2687          BA   1.485
2688          LG    0.35    0.35    3.01    0.90       0
2689          UI       0     241     777    1323    1598     965     474     210      80      47
2690          UI       0       0       0       0       0       0       0       0       0       0
2691          UI       0       0       0       0       0       0       0       0       0       0
2692          UI       0       0       0       0       0       0       0       0       0       0
2693          UI       0       0       0       0       0       0       0       0       0       0
              *

2694          KK    DF11
2695          KM      Divert flow into F17
2696          KM        Natural divergence of flow due to a braided channel network.
2697          DT   DVF11
2698          DI       0      43     182     744    1996    3920    6343    9203   12467
2699          DQ       0      13      59     288     785    1525    2446    3530    4764
              *

2700          KK  RCPF11
2701          KM        Route remainder flow from CP F11 to CP F16
2702          KM       Typical Sheet Flow Route
2703          RS       3    FLOW      -1
2704          RC   0.050   0.045   0.050    3487  0.0054
2705          RX       0     500     700     750     800     900    1100    1600
2706          RY       6       4       2       0       0       2       4       6
              *

2707          KK     F16   BASIN
2708          KM     URS 2009
2709          BA   0.110
2710          LG    0.35    0.35    4.60    0.33       0
2711          UI       0      99     240      74      11       0       0       0       0       0
2712          UI       0       0       0       0       0       0       0       0       0       0
2713          UI       0       0       0       0       0       0       0       0       0       0
2714          UI       0       0       0       0       0       0       0       0       0       0
              *
2715          KM    URS 2009

2716          KK   CPF16
2717          KM        Combine F11 with F16
```

```
2718          HC       2   1.016
              *

2719          KK    DF16
2720          KM      Divert flow into F24
2721          KM        Natural divergence of flow due to a braided channel network.
2722          DT   DVF16
2723          DI       0      21      90     219     746    1987    3664    5722    8125
2724          DQ       0      10      38      85     287     764    1406    2193    3112
              *
```



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

2725          KK   RDF16
2726          KM        Route flow from CP F16 to CP F25
2727          KM     URS 2009; Typical XS
2728          RS       8    FLOW      -1
2729          RC   0.050   0.045   0.050    9334  0.0047
2730          RX       0     500     700     750     800     900    1100    1600
2731          RY       6       4       2       0       0       2       4       6
              *

2732          KK     F25   BASIN
2733          KM     URS 2009
2734          BA   2.994
2735          LG    0.35    0.35    4.40    0.37       1
2736          UI       0     187     560     969    1268    1867    2134    1533    1142     813
2737          UI     405     286     187      64      57      57      57       0       0       0
2738          UI       0       0       0       0       0       0       0       0       0       0
2739          UI       0       0       0       0       0       0       0       0       0       0
2740          UI       0       0       0       0       0       0       0       0       0       0
              *
2741          KM    URS 2009

2742          KK   CPF25
2743          KM        Combine F15, DRF16, F26 with F25
2744          HC       4   7.110
              *

2745          KK   DRF11
2746          KM        Return diverted flow from CP F11
2747          DR   DVF11
              *

2748          KK   RDF11
2749          KM        Route flow from CP F11 to CP F17
2750          KM     URS 2009
2751          RS       6    FLOW      -1
2752          RC   0.050   0.045   0.050    3949  0.0046
2753          RX       0     129     445     491     551     942    1047    1111
2754          RY  1376.5    1376    1376 1375.86    1376    1376  1376.3  1376.4
              *

2755          KK     F17   BASIN
2756          KM     URS 2009
2757          KM    Customized XKSAT Values
2758          BA   1.159
2759          LG    0.35    0.35    3.35    0.70       2
2760          UI       0     273     829    1504    1061     514     193      60      43       0
2761          UI       0       0       0       0       0       0       0       0       0       0
2762          UI       0       0       0       0       0       0       0       0       0       0
2763          UI       0       0       0       0       0       0       0       0       0       0
2764          UI       0       0       0       0       0       0       0       0       0       0
              *
2765          KM    URS 2009
```



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

2766          KK   CPF17
2767          KM        Combine DRF11 with F17
2768          HC       2    1.73
              *

2769          KK  RCPF17
2770          KM        Route flow from CP F17 to CP F24
2771          KM     URS 2009 ; Typical XS
2772          RS       8    FLOW      -1
2773          RC   0.050   0.045   0.050    8449  0.0047
2774          RX       0     500     700     750     800     900    1100    1600
2775          RY       6       4       2       0       0       2       4       6
              *

2776          KK   DRF16
2777          KM        Return diverted flow from CP F16
2778          DR   DVF16
              *

2779          KK  RCPF16
2780          KM        Route flow from CP F16 to CP F24
2781          KM     URS 2009; Typical Section
2782          RS      17    FLOW      -1
2783          RC   0.050   0.045   0.050    8930  0.0048
2784          RX       0     500     700     750     800     900    1100    1600
2785          RY       6       4       2       0       0       2       4       6
              *

2786          KK     F24   BASIN
2787          KM     URS 2009
2788          BA   0.799
2789          LG    0.35    0.35    4.60    0.33      14
2790          UI       0     122     399     664     863     536     286     121      53      25
2791          UI      25       0       0       0       0       0       0       0       0       0
```

```
2792          UI       0       0       0       0       0       0       0       0       0       0
2793          UI       0       0       0       0       0       0       0       0       0       0
2794          UI       0       0       0       0       0       0       0       0       0       0
              *
2795          KM    URS 2009

2796          KK   CPF24
2797          KM        Combine F17, F16 with F24
2798          HC       3   2.933
              *

2799          KK  RCPF24
2800          KM        Route flow from CP F24 to CP F27
2801          KM     URS 2009 ; Typical XS
2802          RS       5    FLOW      -1
2803          RC   0.050   0.045   0.050    6612  0.0045
2804          RX       0     500     700     750     800     900    1100    1600
2805          RY       6       4       2       0       0       2       4       6
              *
```



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

2806          KK     F23   BASIN
2807          KM     URS 2009
2808          BA   0.670
2809          LG    0.35    0.35    4.45    0.36      22
2810          UI       0      93     310     495     725     469     280     116      58      20
2811          UI      20       0       0       0       0       0       0       0       0       0
2812          UI       0       0       0       0       0       0       0       0       0       0
2813          UI       0       0       0       0       0       0       0       0       0       0
2814          UI       0       0       0       0       0       0       0       0       0       0
              *

2815          KK  RCPF23
2816          KM        Route flow from CP F23 to CP F27
2817          KM     URS 2009 ; Typical XS
2818          RS       6    FLOW      -1
2819          RC   0.050   0.045   0.050    7018  0.0043
2820          RX       0     500     700     750     800     900    1100    1600
2821          RY       6       4       2       0       0       2       4       6
              *

2822          KK     F27   BASIN
2823          KM     URS 2009
2824          BA   0.671
2825          LG    0.35    0.35    4.60    0.33       5
2826          UI       0     168     503     899     598     271     106      27      26       0
2827          UI       0       0       0       0       0       0       0       0       0       0
2828          UI       0       0       0       0       0       0       0       0       0       0
2829          UI       0       0       0       0       0       0       0       0       0       0
2830          UI       0       0       0       0       0       0       0       0       0       0
              *

2831          KK   CPF27
2832          KM    URS 2009
2833          KM        Combine F25, F24, F23 with F27
2834          HC       4   9.632
              *

2835          KK  PNDF01
2836          KM    FROM EEC STUDY
2837          KM        POND F1
2838          KM    Common storage area for CPF25 and CPF27
2839          RS       1    STOR      -1
2840          SV       0     0.4     0.6     2.3     9.2    26.8    56.8    99.6   155.8
2841          SE  1297.4    1299    1300    1301    1302    1303    1304    1305    1306
2842          SQ       0     245     442     721    1020    1312    1694    3507    9422
              *

2843          KK    DF27
2844          KM    FROM EEC STUDY
2845          KM    Divert flow into F34
2846          KM        Flow is split between what passes through/over the structures and
2847          KM        what is diverted parallel to the railroad.
2848          KM    UPRR Structures 37 and 38 (2-48" SSP and 20' PRESTRESSED CONCRETE SLAB (PCS)
2849          KM    UPRR STRUCTURES MP885.53 , MP885.82
```



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

2850          DT   DVF27
2851          DI       0     442     721    1020    1312    1694    3507    9422
2852          DQ       0     442     721    1020    1312    1574    2234    4860
              *

2853          KK  RCPF27
2854          KM    URS 2009
2855          KM        Route remainder flow from CP F27 to CP F28
2856          RS       7    FLOW      -1
2857          RC   0.050   0.045   0.050    2036  0.0005
2858          RX       0       1      28     106     116     250     500     980
2859          RY  1303.9 1303.99 1303.99 1304.48 1300.58 1301.11  1302.1    1304
              *

2860          KK     F10   BASIN
2861          KM     URS 2009
2862          KM    Customized XKSAT Values
2863          BA   2.247
2864          LG    0.35    0.35    3.15    0.82       0
2865          UI       0     514    1565    2857    2083    1052     385     132      83       0
2866          UI       0       0       0       0       0       0       0       0       0       0
2867          UI       0       0       0       0       0       0       0       0       0       0
2868          UI       0       0       0       0       0       0       0       0       0       0
2869          UI       0       0       0       0       0       0       0       0       0       0
```

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                 *

2870             KK  RCPF10
2871             KM        Route flow from CP F10 to CP F18
2872             KM     URS 2009
2873             RS       3    FLOW      -1
2874             RC   0.050   0.045   0.050    4086  0.0049
2875             RX       0     121     221     381     976    1068    1205    1388
2876             RY  1384.6  1384.5  1384.4    1384  1383.0    1383  1382.9    1384
                 *

2877             KK     F18   BASIN
2878             KM     URS 2009
2879             BA   0.302
2880             LG    0.35    0.35    4.50    0.35      20
2881             UI       0     178     542     344      83      18       0       0       0       0
2882             UI       0       0       0       0       0       0       0       0       0       0
2883             UI       0       0       0       0       0       0       0       0       0       0
2884             UI       0       0       0       0       0       0       0       0       0       0
2885             UI       0       0       0       0       0       0       0       0       0       0
                 *

2886             KK   CPF18
2887             KM    URS 2009
2888             KM        Combine F10 with F18
2889             HC       2   2.549
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2890             KK    DF18
2891             KM      Divert flow into F21
2892             KM        Natural divergence of flow due to a braided channel network.
2893             DT   DVF18
2894             DI       0      43     174     376    1053    2437    4429    7527   11245
2895             DQ       0      14      53     115     360     866    1628    2872    4381
                 *

2896             KK  RCPF18
2897             KM        Route remainder flow from CP F18 to CP F22;
2898             KM     URS 2009 ; Typical XS
2899             RS       5    FLOW      -1
2900             RC   0.050   0.045   0.050    6820  0.0053
2901             RX       0     500     700     750     800     900    1100    1600
2902             RY       6       4       2       0       0       2       4       6
                 *

2903             KK     F22   BASIN
2904             KM     URS 2009
2905             BA   0.366
2906             LG    0.35    0.35    4.60    0.33       8
2907             UI       0     106     310     521     304     114      38      15       0       0
2908             UI       0       0       0       0       0       0       0       0       0       0
2909             UI       0       0       0       0       0       0       0       0       0       0
2910             UI       0       0       0       0       0       0       0       0       0       0
2911             UI       0       0       0       0       0       0       0       0       0       0
                 *
2912             KM    URS 2009

2913             KK   CPF22
2914             KM        Combine F18 with F22
2915             HC       2   2.074
                 *

2916             KK    DF22
2917             KM      Divert flow into F29
2918             KM        Natural divergence of flow due to a braided channel network.
2919             DT   DVF22
2920             DI       0      61     238     618    1809    4167    7458   11472
2921             DQ       0      35     138     402    1099    2367    4039    6046
                 *

2922             KK   RDF22
2923             KM        Route flow from CP F22 to CP F28
2924             RS      12    FLOW      -1
2925             RC   0.050   0.045   0.050    7882  0.0036
2926             RX       0     200     400     495     505     600     800    1000
2927             RY    1328    1327    1326    1325    1325    1326    1327    1328
                 *
1                                          HEC-1 INPUT                                                    PAGE 73

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

2928             KK     F28   BASIN
2929             KM     URS 2009
2930             BA   0.474
2931             LG    0.34    0.33    4.50    0.36      19
2932             UI       0     126     373     653     411     173      65      19       0       0
2933             UI       0       0       0       0       0       0       0       0       0       0
2934             UI       0       0       0       0       0       0       0       0       0       0
2935             UI       0       0       0       0       0       0       0       0       0       0
2936             UI       0       0       0       0       0       0       0       0       0       0
                 *
2937             KM    URS 2009

2938             KK   CPF28
2939             KM        Combine F27, F22 with F28
2940             HC       3   1.262
                 *

2941             KK  PNDF02
2942             KM    FROM EEC STUDY
2943             KM        POND F2
```

```
2944          KM    Storage area for structure 39 and 40
2945          RS       1    STOR      -1
2946          SV       0    0.05     0.4     3.2    13.3    31.7    58.2    69.9
2947          SE  1298.6    1299    1300    1301    1302    1303    1304    1305
2948          SQ       0      34     129     250     398     597    1319    2177
              *

2949          KK   DF28A
2950          KM    FROM EEC STUDY
2951          KM    Divert flow from F28 into F34
2952          KM        Flow is split between what passes through/over the structure and
2953          KM        what is diverted parallel to the railroad.
2954          KM    UPRR Structure 39 (17' Bridge), MP885.98
2955          DT  DVF28A
2956          DI       0      34     129     250     398     597    1319    2177
2957          DQ       0      23      89     158     263     355     440     572
              *

2958          KK   DF28B
2959          KM    FROM EEC STUDY
2960          KM    Divert flow from F28 into F33
2961          KM        Flow is split between what passes through/over the structure and
2962          KM        what is diverted parallel to the railroad.
2963          KM    UPRR Structure 40 (4-38" steel pipes),MP886.22
2964          DT  DVF28B
2965          DI       0      11      40      92     135     242     879    1602
2966          DQ       0      11      40      92     135     203     269     299
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2967          KK  RCPF28
2968          KM    URS 2009
2969          KM        Route remainder flow from CPF28 to CPF36
2970          RS       9    FLOW      -1
2971          RC   0.050   0.045   0.050    2363  0.0017
2972          RX       0       1      22     103     111     250     600    1020
2973          RY  1299.3 1301.38  1303.7 1303.81 1300.12 1300.71 1302.21    1304
              *

2974          KK     F36   BASIN
2975          KM     URS 2009
2976          BA   0.167
2977          LG    0.34    0.33    4.45    0.39      25
2978          UI       0     101     304     187      43      10       0       0       0       0
2979          UI       0       0       0       0       0       0       0       0       0       0
2980          UI       0       0       0       0       0       0       0       0       0       0
2981          UI       0       0       0       0       0       0       0       0       0       0
2982          UI       0       0       0       0       0       0       0       0       0       0
              *
2983          KM    URS 2009

2984          KK   CPF36
2985          KM        Combine F28 with F36
2986          HC       2   0.167
              *

2987          KK  PNDF03
2988          KM    FROM EEC STUDY
2989          KM        POND F3
2990          KM    Storage area for structure 41
2991          RS       1    STOR      -1
2992          SV       0     0.1     0.3     0.7     1.5     2.5     5.9    10.5    21.1
2993          SE  1295.9    1297    1298    1299    1300    1301    1302  1302.5 1303.15
2994          SQ       0      31      65     111     152     182     210     378    1475
              *

2995          KK  RCPF36
2996          KM        Route flow from CP F36 to CP F32
2997          KM        Crossing at SR-238
2998          KM        URS 2009 ; Typical XS
2999          RS       8    FLOW      -1
3000          RC   0.050   0.045   0.050    5687  0.0028
3001          RX       0     500     700     750     800     900    1100    1600
3002          RY       6       4       2       0       0       2       4       6
              *

3003          KK    F02A   BASIN
3004          KM     URS 2009
3005          KM    Customized XKSAT Values
3006          BA   0.636
3007          LG    0.35    0.35    2.92    0.96       0
3008          UI       0     623    1414     370      53       0       0       0       0       0
3009          UI       0       0       0       0       0       0       0       0       0       0
3010          UI       0       0       0       0       0       0       0       0       0       0
```



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

3011          UI       0       0       0       0       0       0       0       0       0       0
3012          UI       0       0       0       0       0       0       0       0       0       0
              *

3013          KK  RCF02A
3014          KM        Route flow from basin F02A to CPF02
3015          KM       URS 2009
3016          KM       Typical Sheet Flow Route
3017          RS      30    FLOW      -1
3018          RC   0.050   0.045   0.050    6330  0.0169
3019          RX       0     500     700     750     800     900    1100    1600
3020          RY       6       4       2       0       0       2       4       6
              *

3021          KK     F02   BASIN
```

```
3022          KM    Customized XKSAT Values
3023          KM     URS 2009
3024          BA   0.387
3025          LG    0.35    0.35    2.94    0.95       0
3026          UI       0     231     700     436     103      23       0       0       0       0
3027          UI       0       0       0       0       0       0       0       0       0       0
3028          UI       0       0       0       0       0       0       0       0       0       0
3029          UI       0       0       0       0       0       0       0       0       0       0
3030          UI       0       0       0       0       0       0       0       0       0       0
              *

3031          KK   CPF02
3032          KM        Combine F02A with F02
3033          HC       2
              *

3034          KK    DF02
3035          KM      Divert flow into F05
3036          KM        Natural divergence of flow due to a braided channel network.
3037          DT   DVF02
3038          DI       0      15      72     171     373     668    1245    2417    4142    5875
3039          DQ       0       8      40      99     211     372     675    1285    2190    3085
              *

3040          KK  RCPF02
3041          KM        Route remainder flow from CP F02 to CP F04
3042          RS      30    FLOW      -1
3043          RC   0.050   0.045   0.050   18300  0.0079
3044          RX       0     200     400     430     445     475     700     900
3045          RY    1625    1624    1624    1623    1623    1624    1624    1625
              *

3046          KK    F01A   BASIN
3047          KM    Customized XKSAT Values
3048          KM     URS 2009
3049          BA   0.410
3050          LG    0.35    0.35    2.89    0.98       0
3051          UI       0     517     916     134       0       0       0       0       0       0
3052          UI       0       0       0       0       0       0       0       0       0       0
3053          UI       0       0       0       0       0       0       0       0       0       0
```



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

3054          UI       0       0       0       0       0       0       0       0       0       0
3055          UI       0       0       0       0       0       0       0       0       0       0
              *

3056          KK  RCF01A
3057          KM        Route flow from basin F01A to CPF01
3058          KM       URS 2009
3059          KM       Typical Sheet Flow Route
3060          RS      30    FLOW      -1
3061          RC   0.050   0.045   0.050   16405  0.0114
3062          RX       0     500     700     750     800     900    1100    1600
3063          RY       6       4       2       0       0       2       4       6
              *

3064          KK     F01   BASIN
3065          KM    Customized XKSAT Values
3066          KM     URS 2009
3067          BA   1.777
3068          LG    0.35    0.35    2.94    0.95       0
3069          UI       0     208     724    1110    1815    1326     870     409     215      94
3070          UI      49      49       0       0       0       0       0       0       0       0
3071          UI       0       0       0       0       0       0       0       0       0       0
3072          UI       0       0       0       0       0       0       0       0       0       0
3073          UI       0       0       0       0       0       0       0       0       0       0
              *

3074          KK   CPF01
3075          KM        Combine F01A with F01
3076          HC       2
              *

3077          KK  RCPF01
3078          KM        Route flow from CP F01 to CP F04
3079          RS       6    FLOW      -1
3080          RC   0.050   0.045   0.050   10320  0.0053
3081          RX       0       9      35      90     130     185     235     244
3082          RY    1580 1578.25    1578    1577    1577    1578 1578.25    1580
              *

3083          KK     F04   BASIN
3084          KM    Customized XKSAT Values
3085          KM     URS 2009
3086          BA   2.198
3087          LG    0.35    0.35    2.94    0.95       0
3088          UI       0     151     524     835    1141    1778    1408    1029     727     368
3089          UI     234     146      46      46      46       0       0       0       0       0
3090          UI       0       0       0       0       0       0       0       0       0       0
3091          UI       0       0       0       0       0       0       0       0       0       0
3092          UI       0       0       0       0       0       0       0       0       0       0
              *
3093          KM    URS 2009
```



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

3094          KK   CPF04
3095          KM        Combine F02, F01 with F04
3096          HC       3   4.825
              *

3097          KK  RCPF04
```

```
3098          KM        Route flow from CP F04 to CP F05 ; Typical XS-Sheet Flow
3099          KM     URS 2009
3100          RS       5    FLOW      -1
3101          RC   0.050   0.045   0.050    8226  0.0053
3102          RX       0     500     700     750     800     900    1100    1600
3103          RY       6       4       2       0       0       2       4       6
              *

3104          KK     F03   BASIN
3105          KM    Customized XKSAT Values
3106          KM     URS 2009
3107          BA   1.629
3108          LG    0.35    0.35    2.94    0.95       0
3109          UI       0     209     711    1108    1730    1176     745     311     177      56
3110          UI      46       0       0       0       0       0       0       0       0       0
3111          UI       0       0       0       0       0       0       0       0       0       0
3112          UI       0       0       0       0       0       0       0       0       0       0
3113          UI       0       0       0       0       0       0       0       0       0       0
              *

3114          KK  RCPF03
3115          KM        Route flow from CP F03 to CP F06
3116          KM    This is in the 10-foot contour area, used the EEC route.
3117          RS       2    FLOW      -1
3118          RC   0.050   0.045   0.050    4460  0.0087
3119          RX       0       6      80     100     110     130     215     221
3120          RY    1580 1578.75    1578    1577    1577    1578 1578.75    1580
              *

3121          KK     F06   BASIN
3122          KM    Customized XKSAT Values
3123          KM     URS 2009
3124          BA   1.001
3125          LG    0.35    0.35    2.91    0.97       0
3126          UI       0     515    1619    1250     370      85       0       0       0       0
3127          UI       0       0       0       0       0       0       0       0       0       0
3128          UI       0       0       0       0       0       0       0       0       0       0
3129          UI       0       0       0       0       0       0       0       0       0       0
              *
3130          KM    URS 2009

3131          KK   CPF06
3132          KM        Combine F03 with F06
3133          HC       2   2.630
              *
```



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

3134          KK  RCPF06
3135          KM        Route flow from CP F06 to CP F05
3136          KM     URS 2009
3137          RS       5    FLOW      -1
3138          RC   0.050   0.045   0.050    8095  0.0059
3139          RX       0     278     396     448     660     798     850     924
3140          RY    1524    1524  1521.8  1521.9    1522    1524    1524    1524
              *

3141          KK   DRF02
3142          KM        Return diverted flow from CP F02
3143          DR   DVF02
              *

3144          KK   RDF02
3145          KM        Route flow from CP F02 to CP F05
3146          KM    This is in the 10-foot contour area, used the EEC route.
3147          RS      24    FLOW      -1
3148          RC   0.050   0.045   0.050   24410  0.0075
3149          RX       0     125     250     270     280     300     425     550
3150          RY    1595    1594    1593    1592    1592    1593    1594    1595
              *

3151          KK     F05   BASIN
3152          KM    Customized XKSAT Values
3153          KM     URS 2009
3154          BA   2.967
3155          LG    0.35    0.35    3.23    0.77       0
3156          UI       0     209     747    1173    1628    2476    1867    1354     926     440
3157          UI     290     167      64      64      64       0       0       0       0       0
3158          UI       0       0       0       0       0       0       0       0       0       0
3159          UI       0       0       0       0       0       0       0       0       0       0
3160          UI       0       0       0       0       0       0       0       0       0       0
              *
3161          KM    URS 2009

3162          KK   CPF05
3163          KM        Combine F04, F06, DRF02 with F05
3164          HC       4  11.005
              *

3165          KK  RCPF05
3166          KM        Route flow from CP F05 to CP F08
3167          KM     URS 2009
3168          RS       6    FLOW      -1
3169          RC   0.050   0.045   0.050    9238  0.0049
3170          RX       0     185     396     442     522     648     719     946
3171          RY  1482.9    1482  1481.4    1481  1481.2  1481.4  1481.9  1482.4
              *
```



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

3172          KK     F07   BASIN
3173          KM    Customized XKSAT Values
```

```
3174          KM     URS 2009
3175          BA   3.678
3176          LG    0.35    0.35    3.11    0.84       0
3177          UI       0     354    1314    1985    3283    2931    1983    1226     534     330
3178          UI     106      94      94       0       0       0       0       0       0       0
3179          UI       0       0       0       0       0       0       0       0       0       0
3180          UI       0       0       0       0       0       0       0       0       0       0
3181          UI       0       0       0       0       0       0       0       0       0       0
              *

3182          KK  RCPF07
3183          KM        Route flow from CP F07 to CP F08; Typical XS-Sheet Flow
3184          KM     URS 2009
3185          RS       6    FLOW      -1
3186          RC   0.050   0.045   0.050    1304  0.0038
3187          RX       0     500     700     750     800     900    1100    1600
3188          RY       6       4       2       0       0       2       4       6
              *

3189          KK     F08   BASIN
3190          KM    Customized XKSAT Values
3191          KM     URS 2009
3192          BA   0.878
3193          LG    0.35    0.35    3.88    0.49       0
3194          UI       0     132     434     717     950     593     323     135      61      27
3195          UI      27       0       0       0       0       0       0       0       0       0
3196          UI       0       0       0       0       0       0       0       0       0       0
3197          UI       0       0       0       0       0       0       0       0       0       0
3198          UI       0       0       0       0       0       0       0       0       0       0
              *
3199          KM    URS 2009

3200          KK   CPF08
3201          KM        Combine F05, F07 with F08
3202          HC       3  15.561
              *

3203          KK  RCPF08
3204          KM        Route flow from CP F08 to CP F09
3205          KM     URS 2009
3206          RS       1    FLOW      -1
3207          RC   0.050   0.045   0.050   14421  0.0049
3208          RX       0     549     818     853     939    1093    1112    1758
3209          RY  1432.8 1431.75  1430.6  1430.6  1430.7  1431.5  1431.6  1432.7
              *

3210          KK     F09   BASIN
3211          KM    Customized XKSAT Values
3212          KM     URS 2009
3213          BA   2.691
3214          LG    0.35    0.35    3.53    0.62       2
3215          UI       0     169     508     876    1148    1701    1911    1375    1021     721
```



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

3216          UI     359     253     169      53      52      52      52       0       0       0
3217          UI       0       0       0       0       0       0       0       0       0       0
3218          UI       0       0       0       0       0       0       0       0       0       0
3219          UI       0       0       0       0       0       0       0       0       0       0
              *
3220          KM    URS 2009

3221          KK   CPF09
3222          KM        Combine F08 with F09
3223          HC       2  18.252
              *

3224          KK  RCPF09
3225          KM        Route flow from CP F09 to CP F19;Typical XS-Sheet Flow
3226          KM     URS 2009
3227          RS      10    FLOW      -1
3228          RC   0.050   0.045   0.050    9900  0.0051
3229          RX       0     500     700     750     800     900    1100    1600
3230          RY       6       4       2       0       0       2       4       6
              *

3231          KK     F19   BASIN
3232          KM     URS 2009
3233          BA   0.849
3234          LG    0.35    0.35    4.55    0.34      14
3235          UI       0     106     363     563     893     619     396     172      95      34
3236          UI      24       0       0       0       0       0       0       0       0       0
3237          UI       0       0       0       0       0       0       0       0       0       0
3238          UI       0       0       0       0       0       0       0       0       0       0
3239          UI       0       0       0       0       0       0       0       0       0       0
              *
3240          KM    URS 2009

3241          KK   CPF19
3242          KM        Combine F09 with F19
3243          HC       2  19.101
              *

3244          KK    DF19
3245          KM      Divert flow into F21
3246          KM        Natural divergence of flow due to a braided channel network.
3247          DT   DVF19
3248          DI       0      10      39     619    1929    3960    6529    9583   13081
3249          DQ       0       5      21     313     971    1991    3281    4814    6570
              *

3250          KK   RDF19
3251          KM        Route flow from CP F19 to CP F21
3252          KM     URS 2009
3253          RS      12    FLOW      -1
```

```
3254          RC   0.050   0.045   0.050    4510  0.0044
3255          RX       0     101     369     431     529     607     782     800
3256          RY  1319.2  1318.5  1317.4  1317.3  1317.4  1317.5  1318.4  1318.4
              *
```



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

3257          KK   DRF18
3258          KM        Return diverted flow from CP F18
3259          DR   DVF18
              *

3260          KK   RDF18
3261          KM        Route flow from CP F18 to CP F21
3262          KM     URS 2009
3263          RS       7    FLOW      -1
3264          RC   0.050   0.045   0.050   10383  0.0048
3265          RX       0     214     322     516     638     860     920     925
3266          RY    1336    1336  1335.7  1335.5  1335.3    1336    1336    1336
              *

3267          KK     F21
3268          KM     URS 2009
3269          BA   0.533
3270          LG    0.35    0.35    4.60    0.33       8
3271          UI       0     109     334     617     521     294     110      45      19       0
3272          UI       0       0       0       0       0       0       0       0       0       0
3273          UI       0       0       0       0       0       0       0       0       0       0
3274          UI       0       0       0       0       0       0       0       0       0       0
3275          UI       0       0       0       0       0       0       0       0       0       0
              *
3276          KM    URS 2009

3277          KK   CPF21
3278          KM        Combine DRF19, DRF18 with F21
3279          HC       3  11.116
              *

3280          KK  RCPF21
3281          KM        Route flow from CP F21 to CP F29 ; Typical XS - Sheet Flow
3282          KM     URS 2009
3283          RS       5    FLOW      -1
3284          RC   0.050   0.045   0.050    5939  0.0040
3285          RX       0     500     700     750     800     900    1100    1600
3286          RY       6       4       2       0       0       2       4       6
              *

3287          KK   DRF22
3288          KM        Return diverted flow from Basin F22
3289          DR   DVF22
              *

3290          KK  RCPF22
3291          KM        Route remainder flow from CP F22 to CP F29
3292          KM        URS 2009 ; Typical XS
3293          RS       8    FLOW      -1
3294          RC   0.050   0.045   0.050    8910  0.0043
3295          RX       0     500     700     750     800     900    1100    1600
3296          RY       6       4       2       0       0       2       4       6
              *
```



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

3297          KK     F29   BASIN
3298          KM     URS 2009
3299          BA   0.594
3300          LG    0.35    0.35    4.55    0.34      12
3301          UI       0     125     381     706     573     318     115      46      21       0
3302          UI       0       0       0       0       0       0       0       0       0       0
3303          UI       0       0       0       0       0       0       0       0       0       0
3304          UI       0       0       0       0       0       0       0       0       0       0
3305          UI       0       0       0       0       0       0       0       0       0       0
              *
3306          KM    URS 2009

3307          KK   CPF29
3308          KM        Combine F21, F22 with F29
3309          HC       3  12.996
              *

3310          KK  PNDF04
3311          KM    FROM EEC STUDY
3312          KM        POND F4
3313          KM    Storage area for structure 42 and 43
3314          RS       1    STOR      -1
3315          SV       0     0.8     3.3     8.4    19.9    27.2    33.1    41.9    58.9
3316          SE  1296.6    1298    1299    1300    1301  1301.5  1301.8    1302  1302.5
3317          SQ       0      79     137     170     243     298     795    1637    2501
              *

3318          KK    DF29
3319          KM    Divert flow into F32
3320          KM        Flow is split between what passes through/over the structure and
3321          KM        what is diverted parallel to the railroad.
3322          KM    UPRR Structure 42 and 43 (3'x3' wooden box, 4'x2.5' wooden box)
3323          KM    UPRR STRUCTURES MP886.91, MP886.95
3324          DT   DVF29
3325          DI       0     170     445     761    1414    2360    4618
3326          DQ       0     170     243     298     795    1637    2501
              *

3327          KK  RCPF29
```

```
3328          KM    URS 2009
3329          KM        Route remainder flow from CP F29 to CP F20
3330          KM
3331          RS       5    FLOW      -1
3332          RC   0.050   0.045   0.050    2160  0.0005
3333          RX       0       5       7      95     101     500     750     950
3334          RY  1298.2    1299 1299.67 1300.12 1297.49  1298.7 1299.41    1300
              *

3335          KK   DRF19
3336          KM        Return diverted flow from CP F19
3337          DR   DVF19
              *
1                                        HEC-1 INPUT                                                    PAGE 83

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

3338          KK  RCPF19
3339          KM        Route remainder flow from CP F19 to CP F20; Typical XS- Sheet Flow
3340          KM     URS 2009
3341          RS       7    FLOW      -1
3342          RC   0.050   0.045   0.050   10693  0.0047
3343          RX       0     500     700     750     800     900    1100    1600
3344          RY       6       4       2       0       0       2       4       6
              *

3345          KK     F20   BASIN
3346          KM     URS 2009
3347          BA   0.797
3348          LG    0.34    0.34    4.55    0.34      16
3349          UI       0      97     334     516     829     586     379     170      92      36
3350          UI      22      22       0       0       0       0       0       0       0       0
3351          UI       0       0       0       0       0       0       0       0       0       0
3352          UI       0       0       0       0       0       0       0       0       0       0
              *
3353          KM    URS 2009

3354          KK   CPF20
3355          KM        Combine F19, F29 with F20
3356          HC       3  16.524
              *

3357          KK  PNDF05
3358          KM    EEC POND DATA USED, URS 2009
3359          KM        POND F5
3360          KM    Storage area for structure 44 and 45
3361          KM    UPRR Structures 44 and 45 (3'x3' wooden box, 2-4'x2.5' wooden boxes)
3362          KM    UPRR STRUCTURES MP887.19, MP887.32
3363          RS       1    STOR      -1
3364          SV       0     2.5     8.6    20.3    38.2    61.8    77.3    92.7
3365          SE  1294.3    1296    1297    1298    1299    1300  1300.5    1301
3366          SQ       0      60     119     180     241     484    1909    2689
              * ******************************************************************************
              * All flow from Pond F5 crosses SR-238.  Hereafter, runoff arrives in Waterman
              * Wash from both sides of the wash.
              * ******************************************************************************

3367          KK  RCPF20
3368          KM        Route flow from CP F20 to CP F31;Typical Section - Sheet Flow
3369          KM     URS 2009
3370          KM        Crossing at SR-238
3371          RS      11    FLOW      -1
3372          RC   0.050   0.045   0.050    3982  0.0015
3373          RX       0     500     700     750     800     900    1100    1600
3374          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3375          KK     F31   BASIN
3376          KM     URS 2009
3377          BA   0.272
3378          LG    0.34    0.34    4.60    0.34       4
3379          UI       0     144     452     334      94      21       0       0       0       0
3380          UI       0       0       0       0       0       0       0       0       0       0
3381          UI       0       0       0       0       0       0       0       0       0       0
3382          UI       0       0       0       0       0       0       0       0       0       0
3383          UI       0       0       0       0       0       0       0       0       0       0
              *

3384          KK     G21   BASIN
3385          KM     URS 2009
3386          KM    CUSTOM XKSAT VALUE
3387          BA   1.955
3388          LG    0.35    0.35    3.15    0.82       0
3389          UI       0     590    1728    2822    1581     558     178      82       0       0
3390          UI       0       0       0       0       0       0       0       0       0       0
3391          UI       0       0       0       0       0       0       0       0       0       0
              *

3392          KK     G20   BASIN
3393          KM     URS 2009
3394          KM    CUSTOM XKSAT VALUE
3395          BA   0.236
3396          LG    0.35    0.35    3.38    0.69       0
3397          UI       0     196     504     179      28       0       0       0       0       0
3398          UI       0       0       0       0       0       0       0       0       0       0
3399          UI       0       0       0       0       0       0       0       0       0       0
3400          UI       0       0       0       0       0       0       0       0       0       0
              *

3401          KK    DG20
3402          KM      Divert flow from G20
```

```
3403          KM      Divert flow into G20
3404          KM     URS 2009
3405          KM        Natural divergence of flow due to a braided channel network.
3406          DT   DVG20
3407          DI       0       6     115     574    1598    3192    5238    7681   10486
3408          DQ       0       0       0      14     310     959    1865    2992    4319
              *

3409          KK  RCPG20
3410          KM        Route remainder of flow from Basin G20 to CPF31
3411          KM       URS 2009
3412          KM       Typical Sheet Flow Route
3413          RS      10    FLOW      -1
3414          RC   0.050   0.035   0.050    8983  0.0065
3415          RX       0     500     700     750     800     900    1100    1600
3416          RY       6       4       2       0       0       2       4       6
              *
3417          KM    URS 2009
```



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

3418          KK  CPF31
3419          KM        Combine CPF20, F31, G20 with G21
3420          HC       4  18.992
              *

3421          KK  RCPF31
3422          KM        Route flow from CP F31 to CP F32RIV (WATERMAN WASH)
3423          KM    THIS ROUTE IS FROM THE EEC STUDY
3424          RS       2    FLOW      -1
3425          RC   0.050   0.035   0.050    2940  0.0029
3426          RX       0    1100    2400    2625    2675    2900    3700    4500
3427          RY    1295    1290    1287    1285    1285    1287    1290    1295
              *

3428          KK   DRF29
3429          KM        Return diverted flow from CPF29
3430          DR   DVF29
              *

3431          KK  RDF29
3432          KM        Route flow from CP F29 to CP F32
3433          KM        Crossing at SR-238
3434          KM     URS 2009 ; Typical XS
3435          RS       6    FLOW      -1
3436          RC   0.050   0.045   0.050    5810  0.0038
3437          RX       0     500     700     750     800     900    1100    1600
3438          RY       6       4       2       0       0       2       4       6
              *

3439          KK     F32   BASIN
3440          KM     URS 2009
3441          BA   0.287
3442          LG    0.35    0.35    4.65    0.32       0
3443          UI       0     102     300     423     200      60      16       0       0       0
3444          UI       0       0       0       0       0       0       0       0       0       0
3445          UI       0       0       0       0       0       0       0       0       0       0
3446          UI       0       0       0       0       0       0       0       0       0       0
              *
3447          KM    URS 2009

3448          KK   CPF32
3449          KM        Combine F36, F29 with F32
3450          HC       3   7.082
              * ******************************************************************************
              * Begin Watershed G
              * ******************************************************************************

3451          KK   DRG20
3452          KM        Return diverted flow from G20
3453          DR   DVG20
              *
```



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

3454          KK   RDG20
3455          KM        Route remainder of flow from CP G20 to CP G22
3456          KM       URS 2009
3457          KM       Typical Sheet Flow Route
3458          RS       8    FLOW      -1
3459          RC   0.050   0.045   0.050    9213  0.0074
3460          RX       0     500     700     750     800     900    1100    1600
3461          RY       6       4       2       0       0       2       4       6
              *
3462          KM    URS 2009

3463          KK     G19   BASIN
3464          KM        Customized XKSAT Values
3465          BA   0.670
3466          LG    0.35    0.35    3.05    0.88      12
3467          UI       0     603    1464     448      68       0       0       0       0       0
3468          UI       0       0       0       0       0       0       0       0       0       0
3469          UI       0       0       0       0       0       0       0       0       0       0
3470          UI       0       0       0       0       0       0       0       0       0       0
3471          UI       0       0       0       0       0       0       0       0       0       0
              *

3472          KK  RCPG19
3473          KM        Route flow from CP G19 to CP G22
3474          KM       URS 2009
3475          KM       Typical Sheet Flow Route
3476          RS       8    FLOW      -1
```

```
3477          RC   0.050   0.045   0.050   10270  0.0068
3478          RX       0     500     700     750     800     900    1100    1600
3479          RY       6       4       2       0       0       2       4       6
              *

3480          KK     G22   BASIN
3481          KM     URS 2009
3482          KM    CUSTOM XKSAT VALUE
3483          BA   1.124
3484          LG    0.35    0.35    3.15    0.82       0
3485          UI       0     237     726    1345    1080     596     215      86      40       0
3486          UI       0       0       0       0       0       0       0       0       0       0
3487          UI       0       0       0       0       0       0       0       0       0       0
3488          UI       0       0       0       0       0       0       0       0       0       0
              *
3489          KM    URS 2009

3490          KK   CPG22
3491          KM        Combine G20, G19 with G22
3492          HC       3   1.796
              *
```



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

3493          KK  F32RIV
3494          KM        Combine F31RIV, G22 with F32
3495          KM        83rd Avenue crossing at F32RIV
3496          HC       3  27.841
              *

3497          KK  RCPF32
3498          KM        Route flow from CP F32RIV to CP F33RIV (WATERMAN WASH)
3499          KM        THIS ROUTE IS FROM THE EEC STUDY
3500          RS       2    FLOW      -1
3501          RC   0.050   0.035   0.050    2810  0.0033
3502          RX       0    1000    2100    2280    2320    2500    2900    3700
3503          RY    1285    1280    1277    1275    1275    1277    1280    1285
              *

3504          KK  DRF28B
3505          KM    URS 2009
3506          KM        Return diverted flow from CP F28B
3507          DR  DVF28B
              *

3508          KK  RDF28B
3509          KM        Route remainder flow from CP F28B to CP F33
3510          KM        Crossing at SR-238
3511          KM     URS 2009 ; Typical Section
3512          RS       3    FLOW      -1
3513          RC   0.050   0.045   0.050    7475  0.0035
3514          RX       0     500     700     750     800     900    1100    1600
3515          RY       6       4       2       0       0       2       4       6
              *

3516          KK     F33   BASIN
3517          KM     URS 2009
3518          BA   0.492
3519          LG    0.35    0.35    4.60    0.33       5
3520          UI       0     141     414     699     411     156      53      20       0       0
3521          UI       0       0       0       0       0       0       0       0       0       0
3522          UI       0       0       0       0       0       0       0       0       0       0
3523          UI       0       0       0       0       0       0       0       0       0       0
              *
3524          KM    URS 2009

3525          KK   CPF33
3526          KM        Combine F28 with F33
3527          HC       2   0.946
              *

3528          KK  F33RIV
3529          KM    URS 2009
3530          KM        Combine F32RIV with F33
3531          HC       2  28.787
              *
```



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

3532          KK  RCPF33
3533          KM        Route flow from CP F33RIV to CP F34RIV (WATERMAN WASH)
3534          KM        THIS ROUTE IS FROM THE EEC STUDY
3535          RS       1    FLOW      -1
3536          RC   0.050   0.035   0.050    2280  0.0028
3537          RX       0       9     110     290     330     510     610     619
3538          RY    1274 1272.25    1272    1270    1270    1272 1272.25    1274
              *

3539          KK  DRF28A
3540          KM    URS 2009
3541          KM        Return diverted flow from CP F28A
3542          DR  DVF28A
              *

3543          KK  RDF28A
3544          KM        Route flow from CP F28 to CP F34
3545          KM     URS 2009 ; Typical XS
3546          KM        Crossing at SR-238
3547          RS       4    FLOW      -1
3548          RC   0.050   0.045   0.050    4428  0.0045
3549          RX       0     500     700     750     800     900    1100    1600
3550          RY       6       4       2       0       0       2       4       6
```

```
                 *

3551             KK   DRF27
3552             KM    URS 2009
3553             KM        Return diverted flow from CP F27
3554             DR   DVF27
                 *

3555             KK    DF25
3556             KM    Divert flow into F34
3557             KM        Divert included to break flows between structures 37 and 38 (10' bridge
3558             KM        The purpose is to seperate the downstream flows for hydraulic modeling.
3559             DT   DVF25
3560             DI       0     245     442     721    1020    1312    1574    2234    4864
3561             DQ       0      17      58      98     165     232     291     348     425
                 *

3562             KK   RDF27
3563             KM        Route remainder flow from CP F27 to CP F34
3564             KM        Crossing at SR-238
3565             KM     URS 2009 ; Typical XS
3566             RS       1    FLOW      -1
3567             RC   0.050   0.045   0.050    9440  0.0036
3568             RX       0     500     700     750     800     900    1100    1600
3569             RY       6       4       2       0       0       2       4       6
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3570             KK   DRF25
3571             KM        Return diverted flow from CP F25
3572             DR   DVF25
                 *

3573             KK   RDF25
3574             KM        Route flow from CP F25 to CP F34
3575             KM     URS 2009 ; Typical XS
3576             KM        Crossing at SR-238
3577             RS       7    FLOW      -1
3578             RC   0.050   0.045   0.050    9282  0.0037
3579             RX       0     500     700     750     800     900    1100    1600
3580             RY       6       4       2       0       0       2       4       6
                 *

3581             KK     F34   BASIN
3582             KM     URS 2009
3583             BA   0.597
3584             LG    0.35    0.35    4.65    0.32       2
3585             UI       0     107     336     600     620     368     157      76      21      20
3586             UI       0       0       0       0       0       0       0       0       0       0
3587             UI       0       0       0       0       0       0       0       0       0       0
3588             UI       0       0       0       0       0       0       0       0       0       0
3589             UI       0       0       0       0       0       0       0       0       0       0
                 *
3590             KM    URS 2009

3591             KK   CPF34
3592             KM        Combine DRF28A, DRF27, DRF25 with F34
3593             HC       4  18.089
                 *

3594             KK     G23   BASIN
3595             KM    CUSTOM XKSAT VALUES
3596             KM     URS 2009
3597             BA   1.197
3598             LG    0.35    0.35    3.01    0.90       0
3599             UI       0     318     942    1649    1039     437     164      47       0       0
3600             UI       0       0       0       0       0       0       0       0       0       0
3601             UI       0       0       0       0       0       0       0       0       0       0
3602             UI       0       0       0       0       0       0       0       0       0       0
3603             UI       0       0       0       0       0       0       0       0       0       0
                 *

3604             KK  F34RIV
3605             KM        Combine F33RIV, G23 with F34
3606             HC       3  40.147
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3607             KK  RCPF34
3608             KM        Route flow from CP F34RIV to CP F35RIV (WATERMAN WASH)
3609             KM        THIS ROUTE IS FROM THE EEC STUDY
3610             RS       2    FLOW      -1
3611             RC   0.050   0.035   0.050    2250  0.0025
3612             RX       0      20    1510    1690    1730    1910    3410    3430
3613             RY  1272.5    1268    1261    1259    1259    1261    1268  1272.5
                 *

3614             KK   DRF26
3615             KM        Return diverted flow from CP F26
3616             DR   DVF26
                 *

3617             KK   RDF26
3618             KM        Route flow from CP F26 to CP F35
3619             KM     URS 2009; Typical XS
3620             KM        Crossing at SR-238
3621             RS       2    FLOW      -1
3622             RC   0.050   0.045   0.050   11049  0.0040
3623             RX       0     500     700     750     800     900    1100    1600
3624             RY       6       4       2       0       0       2       4       6
```

```
                 *

3625             KK     F35   BASIN
3626             KM     URS 2009
3627             BA   0.666
3628             LG    0.35    0.35    4.65    0.32       1
3629             UI       0     111     354     610     712     428     204      92      33      21
3630             UI       0       0       0       0       0       0       0       0       0       0
3631             UI       0       0       0       0       0       0       0       0       0       0
3632             UI       0       0       0       0       0       0       0       0       0       0
3633             UI       0       0       0       0       0       0       0       0       0       0
                 *
3634             KM    URS 2009

3635             KK   CPF35
3636             KM        Combine F26 with F35
3637             HC       2   3.294
                 *

3638             KK     G24   BASIN
3639             KM     URS 2009
3640             KM    CUSTOM XKSAT VALUES
3641             BA   0.349
3642             LG    0.35    0.35    2.99    0.91       0
3643             UI       0     131     396     507     222      68      16       0       0       0
3644             UI       0       0       0       0       0       0       0       0       0       0
3645             UI       0       0       0       0       0       0       0       0       0       0
3646             UI       0       0       0       0       0       0       0       0       0       0
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3647             KK  RCPG24
3648             KM        Route flow from CP G24 to CP F35RIV
3649             KM        THIS ROUTE IS FROM THE EEC STUDY
3650             RS       1    FLOW      -1
3651             RC   0.050   0.035   0.050     750  0.0027
3652             RX       0       9     110     140     190     220     300     309
3653             RY    1262 1260.25    1260    1257    1257    1260 1260.25    1262
                 *

3654             KK     G25   BASIN
3655             KM     URS 2009
3656             KM    CUSTOM XKSAT VALUES
3657             BA   0.358
3658             LG    0.35    0.35    2.94    0.95       0
3659             UI       0      80     243     446     336     176      63      23      13       0
3660             UI       0       0       0       0       0       0       0       0       0       0
3661             UI       0       0       0       0       0       0       0       0       0       0
3662             UI       0       0       0       0       0       0       0       0       0       0
                 *

3663             KK  F35RIV
3664             KM        Combine F34RIV, G24, G25 with F35
3665             HC       4  42.145
                 *

3666             KK  RCPF35
3667             KM        Route flow from CP F35RIV to CP E48RIV (WATERMAN WASH)
3668             KM        THIS ROUTE IS FROM THE EEC STUDY
3669             RS       1    FLOW      -1
3670             RC   0.050   0.035   0.050    1660  0.0025
3671             RX       0      10    1200    1380    1420    1600    1800    1810
3672             RY    1272    1270    1262    1260    1260    1262    1270    1272
                 *
3673             KM    URS 2009

3674             KK   DRE54
3675             KM        Return diverted flow from CP E54
3676             DR   DVE54
                 *

3677             KK   RDE54
3678             KM    URS 2009
3679             KM        Route remainder flow from CP E54 to CP E46
3680             KM        Crossing at SR-238
3681             RS       6    FLOW      -1
3682             RC   0.050   0.045   0.050    2647  0.0045
3683             RX       0     500     700     750     800     900    1100    1600
3684             RY       6       4       2       0       0       2       4       6
                 *
1                                                HEC-1 INPUT                                                PAGE 92

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

3685             KK     E46   BASIN
3686             KM     URS 2009
3687             BA   0.238
3688             LG    0.35    0.35    4.50    0.35       5
3689             UI       0     360     497      57       0       0       0       0       0       0
3690             UI       0       0       0       0       0       0       0       0       0       0
                 *
3691             KM    URS 2009

3692             KK   CPE46
3693             KM        Combine E54 with E46
3694             HC       2   2.753
                 *

3695             KK  RCPE46
3696             KM        Route flow from CP E46 to CP E47
3697             KM     URS 2009; Typical Section
3698             RS       3    FLOW      -1
```

```
3699          RC   0.050   0.045   0.050    2766  0.0040
3700          RX       0     500     700     750     800     900    1100    1600
3701          RY       6       4       2       0       0       2       4       6
              *

3702          KK   DRE25
3703          KM    URS 2009
3704          KM        Return diverted flow from CP E25
3705          DR   DVE25
              *

3706          KK   RDE25
3707          KM        Route flow from CP E25 to CP E45
3708          KM        Crossing at SR-238
3709          KM     URS 2009; Typical Section;
3710          RS       1    FLOW      -1
3711          RC   0.050   0.045   0.050    3337  0.0060
3712          RX       0     500     700     750     800     900    1100    1600
3713          RY       6       4       2       0       0       2       4       6
              *

3714          KK   DRE36
3715          KM    URS 2009
3716          KM        Return diverted flow from CP E36
3717          DR   DVE36
              *

3718          KK   RDE36
3719          KM        Route flow from CP E36 to CP E45
3720          KM        Crossing at SR-238
3721          KM     URS 2009; Typical Section
3722          RS       2    FLOW      -1
3723          RC   0.050   0.045   0.050    3266  0.0037
3724          RX       0     500     700     750     800     900    1100    1600
3725          RY       6       4       2       0       0       2       4       6
              *
```



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

3726          KK     E45   BASIN
3727          KM     URS 2009
3728          BA   0.320
3729          LG    0.35    0.34    4.55    0.34       5
3730          UI       0     288     699     214      32       0       0       0       0       0
              *
3731          KM    URS 2009

3732          KK   CPE45
3733          KM        Combine E25, E36 with E45
3734          HC       3  16.345
              *

3735          KK  RCPE45
3736          KM        Route flow from CP E45 to CP E47
3737          KM     URS 2009; Typical Section
3738          RS       3    FLOW      -1
3739          RC   0.050   0.045   0.050    2982  0.0050
3740          RX       0     500     700     750     800     900    1100    1600
3741          RY       6       4       2       0       0       2       4       6
              *

3742          KK     E47   BASIN
3743          KM     URS 2009
3744          BA   0.493
3745          LG    0.35    0.35    4.65    0.32       5
3746          UI       0     633    1097     155       0       0       0       0       0       0
3747          UI       0       0       0       0       0       0       0       0       0       0
3748          UI       0       0       0       0       0       0       0       0       0       0
3749          UI       0       0       0       0       0       0       0       0       0       0
3750          UI       0       0       0       0       0       0       0       0       0       0
              *
3751          KM    URS 2009

3752          KK   CPE47
3753          KM        Combine E45, E46 with E47
3754          HC       3  19.591
              *

3755          KK  RCPE47
3756          KM        Route flow from CP E47 to CP E48
3757          KM     URS 2009; Typical Section
3758          RS       2    FLOW      -1
3759          RC   0.050   0.045   0.050    7173  0.0046
3760          RX       0     500     700     750     800     900    1100    1600
3761          RY       6       4       2       0       0       2       4       6
              *

3762          KK     E48   BASIN
3763          KM     URS 2009
3764          BA   0.861
3765          LG    0.35    0.35    4.60    0.33       0
3766          UI       0     284     832    1264     647     204      63      38       0       0
3767          UI       0       0       0       0       0       0       0       0       0       0
```



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

3768          UI       0       0       0       0       0       0       0       0       0       0
3769          UI       0       0       0       0       0       0       0       0       0       0
              *
3770          KM    URS 2009

3771          KK   CPE48
3772          KM        Combine E47 with E48
```

```
3773          HC       2  20.452
              *

3774          KK    G26A   BASIN
3775          KM     URS 2009
3776          KM    CUSTOM XKSAT VALUES
3777          BA   0.997
3778          LG    0.35    0.35    2.97    0.92       1
3779          UI       0     311     912    1451     787     262      84      42       0       0
3780          UI       0       0       0       0       0       0       0       0       0       0
3781          UI       0       0       0       0       0       0       0       0       0       0
              *

3782          KK    G26B   BASIN
3783          KM     URS 2009
3784          KM    CUSTOM XKSAT VALUES
3785          BA   0.170
3786          LG    0.35    0.35    2.86    1.00       2
3787          UI       0     218     378      54       0       0       0       0       0       0
3788          UI       0       0       0       0       0       0       0       0       0       0
3789          UI       0       0       0       0       0       0       0       0       0       0
3790          UI       0       0       0       0       0       0       0       0       0       0
              *

3791          KK  RCG26B
3792          KM       Route flow from Basin G26B to E48RIV
3793          KM       URS 2009
3794          KM       Typical Sheet Flow Route
3795          RS      30    FLOW      -1
3796          RC   0.050   0.045   0.050   11180  0.0106
3797          RX       0     500     700     750     800     900    1100    1600
3798          RY       6       4       2       0       0       2       4       6
              *

3799          KK  E48RIV
3800          KM        Combine F35RIV, G26A and G26B with E48
3801          HC       4
              *

3802          KK  RCPE48
3803          KM        Route flow from CP E48RIV to CP E49RIV (WATERMAN WASH)
3804          KM     THIS ROUTE IS FROM THE EEC STUDY
3805          RS       1    FLOW      -1
3806          RC   0.050   0.035   0.050    1620  0.0033
3807          RX       0      10     110     290     330     510     610     620
3808          RY  1254.5    1252    1252    1250    1250    1252    1252  1254.5
              *
```



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

3809          KK   DRE38
3810          KM    URS 2009
3811          KM        Return diverted flow from CP E38
3812          DR   DVE38
              *

3813          KK   RDE38
3814          KM        Route flow from CP E38 to CP E44
3815          KM        Crossing at SR-238
3816          KM     URS 2009
3817          RS       2    FLOW      -1
3818          RC   0.050   0.045   0.050    7038  0.0051
3819          RX       0      50      62     243     244     432     476     810
3820          RY  1318.1  1318.1  1318.1  1318.0  1318.0  1317.5  1317.6  1318.8
              *

3821          KK   DRE30
3822          KM    URS 2009
3823          KM        Return diverted flow from CP E30
3824          DR   DVE30
              *

3825          KK   RDE30
3826          KM        Route flow from CP E30 to CP E44
3827          KM        Crossing at SR-238
3828          KM     URS 2009
3829          RS       8    FLOW      -1
3830          RC   0.050   0.045   0.050    9020  0.0058
3831          RX       0     500     700     750     800     900    1100    1600
3832          RY       6       4       2       0       0       2       4       6
              *

3833          KK     E44   BASIN
3834          KM     URS 2009
3835          KM       Customized XKSAT Values
3836          BA   0.629
3837          LG    0.35    0.35    3.95    0.47       0
3838          UI       0     156     468     839     563     258     100      26      24       0
3839          UI       0       0       0       0       0       0       0       0       0       0
3840          UI       0       0       0       0       0       0       0       0       0       0
3841          UI       0       0       0       0       0       0       0       0       0       0
              *
3842          KM    URS 2009

3843          KK   CPE44
3844          KM        Combine E38, E30, with E44
3845          HC       3  16.149
              *
```



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

3846          KK  RCPE44
```

```
3847          KM        Route flow from CP E44 to CP E50
3848          KM     URS 2009
3849          RS       2    FLOW      -1
3850          RC   0.050   0.045   0.050    5228  0.0061
3851          RX       0      89      95     100     125     155     181     224
3852          RY  1284.0  1280.0  1280.0  1280.0  1280.0  1280.0  1288.0  1288.0
              *

3853          KK   DRE31
3854          KM    URS 2009
3855          KM        Return diverted flow from CP E31
3856          DR   DVE31
              *

3857          KK   RDE31
3858          KM        Route flow from CP E31 to CP E43
3859          KM        Crossing at SR-238
3860          KM     URS 2009
3861          RS       2    FLOW      -1
3862          RC   0.050   0.045   0.050    8524  0.0056
3863          RX       0      75     153     193     293     387     598     622
3864          RY  1318.5  1318.3  1318.2  1318.3  1318.2  1318.3  1318.9  1318.9
              *

3865          KK     E43   BASIN
3866          KM     URS 2009
3867          BA   0.714
3868          LG    0.35    0.35    4.30    0.40       0
3869          UI       0     223     653    1039     564     187      60      30       0       0
3870          UI       0       0       0       0       0       0       0       0       0       0
3871          UI       0       0       0       0       0       0       0       0       0       0
3872          UI       0       0       0       0       0       0       0       0       0       0
              *
3873          KM    URS 2009

3874          KK   CPE43
3875          KM        Combine E31 with E43
3876          HC       2   1.546
              *

3877          KK  RCPE43
3878          KM        Route flow from CP E43 to CP E50
3879          KM     URS 2009
3880          RS       6    FLOW      -1
3881          RC   0.050   0.045   0.050    8524  0.0042
3882          RX       0      89      95     100     125     155     181     224
3883          RY  1284.0  1280.0  1280.0  1280.0  1280.0  1280.0  1288.0  1288.0
              *
```



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

3884          KK     E50   BASIN
3885          KM     URS 2009
3886          BA   0.699
3887          LG    0.10    0.25    4.60    0.48      54
3888          UI       0     537    1452     587     103       0       0       0       0       0
3889          UI       0       0       0       0       0       0       0       0       0       0
3890          UI       0       0       0       0       0       0       0       0       0       0
3891          UI       0       0       0       0       0       0       0       0       0       0
              *
3892          KM    URS 2009

3893          KK   CPE50
3894          KM        Combine E44, E43, with E50
3895          HC       3  18.782
              *

3896          KK  RCPE50
3897          KM        Route flow from CP E50 to CP E49
3898          KM     URS 2009
3899          RS       2    FLOW      -1
3900          RC   0.050   0.045   0.050    3300  0.0031
3901          RX       0     500     700     750     800     900    1100    1600
3902          RY       6       4       2       0       0       2       4       6
              *

3903          KK     E52   BASIN
3904          KM     URS 2009
3905          BA   0.164
3906          LG    0.10    0.25    4.65    0.46      52
3907          UI       0     557       0       0       0       0       0       0       0       0
3908          UI       0       0       0       0       0       0       0       0       0       0
3909          UI       0       0       0       0       0       0       0       0       0       0
3910          UI       0       0       0       0       0       0       0       0       0       0
              *

3911          KK  RCPE52
3912          KM        Route flow from CP E52 to CP E49
3913          KM       Typical Sheet Flow Small Wash
3914          KM     URS 2009
3915          RS       5    FLOW      -1
3916          RC   0.050   0.045   0.050    3467  0.0031
3917          RX       0     600     700     706     711     717     817    1417
3918          RY       6       4       3       0       0       3       4       6
              *

3919          KK     E49   BASIN
3920          KM     URS 2009
3921          KM        Customized XKSAT Values
3922          BA   0.224
3923          LG    0.32    0.34    3.48    0.67       4
3924          UI       0      78     230     330     160      48      14       0       0       0
3925          UI       0       0       0       0       0       0       0       0       0       0
3926          UI       0       0       0       0       0       0       0       0       0       0
```

```
3927          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                PAGE 98

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

3928          KM    URS 2009

3929          KK   CPE49
3930          KM        Combine E50, E52 with E49
3931          HC       3  19.707
              *

3932          KK  E49RIV
3933          KM        Combine E48RIV with E49
3934          HC       2  86.188
              *

3935          KK  RCPE49
3936          KM        Route flow from CP E49RIV to CP G27RIV (WATERMAN WASH)
3937          KM      THIS ROUTE IS FROM THE EEC STUDY
3938          RS       1    FLOW     -1
3939          RC   0.050   0.035   0.050    2650  0.0027
3940          RX       0      15     310     390     430     510     760     775
3941          RY    1246    1243    1242    1240    1240    1242    1243    1246
              *

3942          KK     G18   BASIN
3943          KM     URS 2009
3944          KM        Customized XKSAT Values
3945          BA   0.322
3946          LG    0.35    0.35    3.48    0.64      29
3947          UI       0     244     665     275      49       0       0       0       0       0
3948          UI       0       0       0       0       0       0       0       0       0       0
3949          UI       0       0       0       0       0       0       0       0       0       0
3950          UI       0       0       0       0       0       0       0       0       0       0
              *

3951          KK    DG18
3952          KM      Divert flow into G17
3953          KM        Natural divergence of flow due to a braided channel network.
3954          DT   DVG18
3955          DI       0     188     910    2093    3687    5813    8374   11292   14543
3956          DQ       0     142     567    1218    2049    3042    4181    5456    6858
              *

3957          KK  RCPG18
3958          KM        Route remainder flow from CP G18 to CP G27
3959          KM       URS 2009
3960          KM       Typical Sheet Flow Route
3961          RS      40    FLOW     -1
3962          RC   0.050   0.045   0.050    8216  0.0078
3963          RX       0     500     700     750     800     900    1100    1600
3964          RY       6       4       2       0       0       2       4       6
              *
1                                          HEC-1 INPUT                                                PAGE 99

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

3965          KK     G27   BASIN
3966          KM     URS 2009
3967          KM    CUSTOM XKSAT VALUE
3968          BA   1.408
3969          LG    0.35    0.35    3.13    0.83       0
3970          UI       0     353    1056    1886    1256     569     222      56      54       0
3971          UI       0       0       0       0       0       0       0       0       0       0
              *
3972          KM    URS 2009

3973          KK   CPG27
3974          KM        Combine G18 with G27
3975          HC       2   1.514
              *

3976          KK  G27RIV
3977          KM        Combine F35RIV with G27
3978          HC       2  87.918
              *

3979          KK  RCPG27
3980          KM        Route flow from CP G27RIV to CP G28RIV (WATERMAN WASH)
3981          KM     THIS ROUTE IS FROM THE EEC STUDY
3982          RS       2    FLOW     -1
3983          RC   0.050   0.035   0.050    3180  0.0025
3984          RX       0       8    2500    2540    2590    2630    3010    3018
3985          RY    1249  1247.5    1237    1234    1234    1237  1247.5    1249
              *

3986          KK     G28   BASIN
3987          KM     URS 2009
3988          KM    Customized XKSAT Values
3989          BA   0.282
3990          LG    0.35    0.35    3.64    0.57       0
3991          UI       0     141     444     358     112      26       0       0       0       0
3992          UI       0       0       0       0       0       0       0       0       0       0
3993          UI       0       0       0       0       0       0       0       0       0       0
3994          UI       0       0       0       0       0       0       0       0       0       0
              *

3995          KK  G28RIV
3996          KM        Combine G27RIV with G28
3997          HC       2  88.226
              *

3998          KK  RCPG28
```

```
3999          KM        Route flow from CP G28RIV to CP E51RIV (WATERMAN WASH)
4000          KM    THIS ROUTE IS FROM THE EEC STUDY
4001          RS       1    FLOW      -1
4002          RC   0.050   0.035   0.050    1930  0.0027
4003          RX       0      10    2010    2090    2130    2210    4260    4270
4004          RY  1245.5    1243    1232    1230    1230    1232    1243  1245.5
              *
1                                        HEC-1 INPUT                                                    PAGE100

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

4005          KK     E51   BASIN
4006          KM     URS 2009
4007          BA   1.253
4008          LG    0.34    0.35    4.65    0.32       0
4009          UI       0     181     599     967    1364     863     495     200      96      38
4010          UI      38       0       0       0       0       0       0       0       0       0
4011          UI       0       0       0       0       0       0       0       0       0       0
4012          UI       0       0       0       0       0       0       0       0       0       0
4013          UI       0       0       0       0       0       0       0       0       0       0
              *

4014          KK  E51RIV
4015          KM        Combine G28RIV with E51
4016          HC       2  89.479
              *

4017          KK  RCPE51
4018          KM        Route flow from CP E51RIV to CP E41RIV (WATERMAN WASH)
4019          KM    THIS ROUTE IS FROM THE EEC STUDY
4020          RS       2    FLOW      -1
4021          RC   0.050   0.035   0.050     817  0.0048
4022          RX       0    1200    2400    2480    2520    2600    3400    4200
4023          RY    1230    1225    1222    1220    1220    1222    1225    1230
              *

4024          KK   DRG18
4025          KM        Return diverted flow from CP G18
4026          DR   DVG18
              *
4027          KM    URS 2009

4028          KK   RDG18
4029          KM        Route flow from CP G18 to CP G17
4030          RS      19    FLOW      -1
4031          RC   0.050   0.045   0.050   11367  0.0070
4032          RX       0     504     612     700     950    1160    1161    1162
4033          RY    1270  1269.5  1269.7  1269.8  1269.9  1270.2  1270.2  1270.2
              *

4034          KK     G17   BASIN
4035          KM     URS 2009
4036          KM        Customized XKSAT Values
4037          BA   0.602
4038          LG    0.23    0.29    3.55    0.73      47
4039          UI       0     242     740     858     348     101      29       0       0       0
4040          UI       0       0       0       0       0       0       0       0       0       0
4041          UI       0       0       0       0       0       0       0       0       0       0
4042          UI       0       0       0       0       0       0       0       0       0       0
              *
4043          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE101

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

4044          KK  G17RIV
4045          KM        COMBINE DRG18, G17, G28RIV
4046          HC       3  90.297
              *

4047          KK  RCPG17
4048          KM        Route flow from CP G17RIV to CP E41RIV (WATERMAN WASH)
4049          RS       1    FLOW      -1
4050          RC   0.050   0.035   0.050    2119  0.0018
4051          RX       0      20     280     290     330     340     635     655
4052          RY    1216    1212    1210    1207    1207    1210    1212    1216
              *

4053          KK   DRE53
4054          KM        Return diverted flow from CP E53
4055          DR   DVE53
              *

4056          KK   RDE53
4057          KM        Route flow from CP E53 to CP E42
4058          KM        Crossing at SR-238
4059          KM     URS 2009
4060          RS       3    FLOW      -1
4061          RC   0.050   0.045   0.050    8852  0.0059
4062          RX       0     241     279     280     400     500     671     776
4063          RY  1336.4  1336.2  1336.0  1336.0  1336.0  1336.0  1336.0  1336.4
              *

4064          KK   DRE32
4065          KM    URS 2009
4066          KM        Return diverted flow from CP E32
4067          DR   DVE32
              *

4068          KK   RDE32
4069          KM        Route flow from CP E32 to CP E42
4070          KM        Crossing at SR-238
4071          KM     URS 2009
4072          RS       1    FLOW      -1
```

```
4073          RC   0.050   0.045   0.050    2750  0.0055
4074          RX       0     500     700     750     800     900    1100    1600
4075          RY       6       4       2       0       0       2       4       6
              *

4076          KK   DRE33
4077          KM    URS 2009
4078          KM        Return diverted flow from CP E33
4079          DR   DVE33
              *
1                                        HEC-1 INPUT                                                    PAGE102

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

4080          KK   RDE33
4081          KM        Route flow from CP E33 to CP E42
4082          KM     URS 2009
4083          KM        Crossing at SR-238
4084          RS       1    FLOW      -1
4085          RC   0.050   0.045   0.050   10473  0.0057
4086          RX       0     128     201     259     334     396     456     588
4087          RY  1352.0  1352.0  1350.9  1350.6  1350.7  1351.4  1352.0  1352.0
              *

4088          KK     E42   BASIN
4089          KM     URS 2009
4090          KM        Customized XKSAT Values
4091          BA   0.926
4092          LG    0.35    0.35    3.88    0.49       0
4093          UI       0     183     566    1044     916     528     202      84      32       0
4094          UI       0       0       0       0       0       0       0       0       0       0
4095          UI       0       0       0       0       0       0       0       0       0       0
4096          UI       0       0       0       0       0       0       0       0       0       0
              *
4097          KM    URS 2009

4098          KK   CPE42
4099          KM        Combine E53, E33, E32 with E42
4100          HC       4   2.70
              *

4101          KK  RCPE42
4102          KM        Route flow from CP E42 to CP E41
4103          KM     URS 2009
4104          RS       9    FLOW      -1
4105          RC   0.050   0.045   0.050   13700  0.0051
4106          RX       0     500     700     750     800     900    1100    1600
4107          RY       6       4       2       0       0       2       4       6
              *

4108          KK     E41   BASIN
4109          KM     URS 2009
4110          BA   0.670
4111          LG    0.35    0.35    4.70    0.30       0
4112          UI       0      74     263     401     664     509     336     173      87      42
4113          UI      18      18       0       0       0       0       0       0       0       0
              *

4114          KK   CPE41
4115          KM    URS 2009
4116          KM        Combine E42 with E41
4117          HC       2   3.374
              *
1                                        HEC-1 INPUT                                                    PAGE103

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

4118          KK     G16   BASIN
4119          KM     URS 2009
4120          KM        Customized XKSAT Values
4121          BA   1.423
4122          LG    0.35    0.35    3.60    0.58      10
4123          UI       0     328     997    1810    1287     630     235      75      52       0
4124          UI       0       0       0       0       0       0       0       0       0       0
4125          UI       0       0       0       0       0       0       0       0       0       0
4126          UI       0       0       0       0       0       0       0       0       0       0
4127          UI       0       0       0       0       0       0       0       0       0       0
              *

4128          KK     G29   BASIN
4129          KM     URS 2009
4130          BA   2.812
4131          LG    0.35    0.35    4.10    0.44       0
4132          UI       0     658    1999    3630    2582    1264     471     151     105       0
4133          UI       0       0       0       0       0       0       0       0       0       0
              *

4134          KK  E41RIV
4135          KM        Combine G17RIV, G29, G16 with CPE41
4136          HC       4 111.167
              *

4137          KK  RCPE41
4138          KM        Route flow from CP E41RIV to CP G30RIV (WATERMAN WASH)
4139          KM     THIS ROUTE IS FROM THE EEC STUDY
4140          RS       1    FLOW      -1
4141          RC   0.050   0.035   0.050    3070  0.0025
4142          RX       0      20     280     290     330     340     635     655
4143          RY    1216    1212    1210    1207    1207    1210    1212    1216
              *

4144          KK    DE41
4145          KM      Temporary Diversion to reduce hydrograph stack.
4146          KM      Divert flow into G30
```

```
4147          KM        Natural divergence of flow due to a braided channel network.
4148          DT   DVE41
4149          DI       0      10     100    1000   10000  100000
4150          DQ       0      10     100    1000   10000  100000
              * ******************************************************************************
              *

4151          KK     G44   BASIN
4152          KM     URS 2009
4153          KM    Customized XKSAT Values
4154          BA   0.728
4155          LG    0.35    0.35    2.52    1.32       0
4156          UI       0    1108    1143     381     131      41       0       0       0       0
4157          UI       0       0       0       0       0       0       0       0       0       0
4158          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4159          KK  RCPG44
4160          KM        Route flow from CP G44 to CP G06
4161          KM     URS 2009
4162          RS       7    FLOW      -1
4163          RC   0.050   0.045   0.050   11803  0.0159
4164          RX       0     223     289     336     385     409     410     412
4165          RY    1583    1582    1581    1580    1580    1581    1582    1583
              *

4166          KK     G06   BASIN
4167          KM     URS 2009
4168          KM        Customized XKSAT Values
4169          BA   2.155
4170          LG    0.35    0.35    3.85    0.50       3
4171          UI       0    1540    4329    1986     382       0       0       0       0       0
4172          UI       0       0       0       0       0       0       0       0       0       0
4173          UI       0       0       0       0       0       0       0       0       0       0
4174          UI       0       0       0       0       0       0       0       0       0       0
              *
4175          KM    URS 2009

4176          KK   CPG06
4177          KM        Combine G44 with G06
4178          HC       2   2.883
              *

4179          KK    DG06
4180          KM      Divert flow into G45
4181          KM        Natural divergence of flow due to a braided channel network.
4182          DT   DVG06
4183          DI       0     588    1874    3877    6503    9711   13493   23541   29420   35904
4184          DQ       0     300     943    1953    3306    4980    6976   12685   16022   19659
              *

4185          KK  RCPG06
4186          KM        Route remainder flow from CP G06 to CP G07
4187          KM     URS 2009
4188          KM       Typical Sheet Flow Route
4189          RS       8    FLOW      -1
4190          RC   0.050   0.045   0.050   14760  0.0110
4191          RX       0    1000    1200    1250    1300    1400    1600    2600
4192          RY       6       4       2       0       0       2       4       6
              *

4193          KK     G07   BASIN
4194          KM     URS 2009
4195          BA   1.357
4196          LG    0.35    0.35    4.15    0.43       8
4197          UI       0     328     991    1785    1229     578     221      63      51       0
4198          UI       0       0       0       0       0       0       0       0       0       0
4199          UI       0       0       0       0       0       0       0       0       0       0
4200          UI       0       0       0       0       0       0       0       0       0       0
4201          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4202          KM    URS 2009

4203          KK   CPG07
4204          KM        Combine G06 with G07
4205          HC       2   2.790
              *

4206          KK   DG07E
4207          KM      Divert flow into G30
4208          KM     FLOW-2D 2009
4209          KM        Natural divergence of flow due to a braided channel network.
4210          DT  DVG07E
4211          DI       0      62     178     303     479     661     783    1253    1587    1727
4212          DQ       0      51     116     174     246     316     364     613     693     716
              *

4213          KK   DG07W
4214          KM      Divert flow into G47
4215          KM     FLOW-2D 2009
4216          KM        Natural divergence of flow due to a braided channel network.
4217          DT  DVG07W
4218          DI       0      84     135     260     329     574    1189    2393    3481    4755
4219          DQ       0      82     130     248     312     549    1142    2306    3380    4603
              *

4220          KK  RCPG07
4221          KM        Route flow from CP G07 to CP G43
```

```
4222          KM       URS 2009
4223          KM       Typical Sheet Flow Route
4224          RS      29    FLOW      -1
4225          RC   0.050   0.045   0.050   19180  0.0127
4226          RX       0     500     700     750     800     900    1100    1600
4227          RY       6       4       2       0       0       2       4       6
              *

4228          KK     G08   BASIN
4229          KM     URS 2009
4230          KM       Customized XKSAT Values
4231          BA   0.401
4232          LG    0.35    0.35    3.95    0.47       0
4233          UI       0     107     316     552     348     146      55      16       0       0
4234          UI       0       0       0       0       0       0       0       0       0       0
4235          UI       0       0       0       0       0       0       0       0       0       0
4236          UI       0       0       0       0       0       0       0       0       0       0
4237          UI       0       0       0       0       0       0       0       0       0       0
              *

4238          KK    DG08
4239          KM      Divert flow into G09
4240          KM     URS 2009
4241          KM       Natural divergence of flow due to a braided channel network.
4242          DT   DVG08
4243          DI       0     141     543    1272    2332    3777    5505    7489    9708   12149
4244          DQ       0       0      37     217     582    1202    1987    2918    3982    5170
              *
1                                          HEC-1 INPUT                                          PAGE106

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

4245          KK  RCPG08
4246          KM       Route remainder flow from CP G08 to CP G45
4247          KM     URS 2009
4248          RS       1    FLOW      -1
4249          RC   0.050   0.045   0.050    1505  0.0080
4250          RX       0      64     171     180     185     190     194     298
4251          RY    1377  1376.6    1376    1376    1376    1376    1376    1378
              *

4252          KK     G05   BASIN
4253          KM     URS 2009
4254          KM       Customized XKSAT Values
4255          BA   1.587
4256          LG    0.35    0.35    2.53    1.31       0
4257          UI       0    1101    2616    1293     612     288     129      61       0       0
4258          UI       0       0       0       0       0       0       0       0       0       0
4259          UI       0       0       0       0       0       0       0       0       0       0
              *

4260          KK  RCPG05
4261          KM       Route flow from CP G05 to CP G46
4262          KM     URS 2009
4263          RS       9    FLOW      -1
4264          RC   0.050   0.045   0.050   16730  0.0179
4265          RX       0     500     700     750     800     900    1100    1600
4266          RY       6       4       2       0       0       2       4       6
              *

4267          KK     G46   BASIN
4268          KM     URS 2009
4269          KM     Customized XKSAT Values
4270          BA   1.413
4271          LG    0.35    0.35    3.95    0.47       6
4272          UI       0     342    1032    1858    1280     602     230      66      53       0
4273          UI       0       0       0       0       0       0       0       0       0       0
4274          UI       0       0       0       0       0       0       0       0       0       0
              *
4275          KM    URS 2009

4276          KK   CPG46
4277          KM       Combine G05 with G46
4278          HC       2     3.0
              *

4279          KK     G04   BASIN
4280          KM     URS 2009
4281          KM       Customized XKSAT Values
4282          BA   2.343
4283          LG    0.35    0.35    3.85    0.50       5
4284          UI       0     713    2088    3389    1883     656     210      98       0       0
4285          UI       0       0       0       0       0       0       0       0       0       0
4286          UI       0       0       0       0       0       0       0       0       0       0
4287          UI       0       0       0       0       0       0       0       0       0       0
4288          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4289          KM    URS 2009

4290          KK   CPG04
4291          KM       Combine G46 with G04
4292          HC       2   5.343
              *

4293          KK  RCPG04
4294          KM       Route flow from CP G04 to CP G45
4295          KM     URS 2009
4296          RS       2    FLOW      -1
4297          RC   0.050   0.045   0.050    5660  0.0088
4298          RX       0    1082    1111    1164    1218    1249    1388    2390
4299          RY    1395    1394  1393.4  1393.3    1394    1394  1394.3  1394.3
```

```
                 *

4300             KK   DRG06
4301             KM        Return diverted flow from CP G06
4302             DR   DVG06
                 *

4303             KK   RDG06
4304             KM        Route flow from CP G06 to CP G45
4305             KM     URS 2009
4306             RS      14    FLOW      -1
4307             RC   0.050   0.045   0.050   16252  0.0105
4308             RX       0    1092    1100    1105    1110    1151    1290    2427
4309             RY    1457  1456.3  1456.1  1456.1  1456.1  1456.5  1456.6  1456.8
                 *

4310             KK     G45   BASIN
4311             KM     URS 2009
4312             BA   1.997
4313             LG    0.35    0.35    4.40    0.37       0
4314             UI       0     147     565     861    1254    1724    1210     852     522     252
4315             UI     161      65      45      45       0       0       0       0       0       0
                 *
4316             KM    URS 2009

4317             KK   CPG45
4318             KM        Combine G08, G04, DRG06, with G45
4319             HC       4   9.170
                 *

4320             KK  RCPG45
4321             KM        Route flow from CP G45 to CP G31
4322             KM     URS 2009
4323             RS       2    FLOW      -1
4324             RC   0.050   0.045   0.050    3174  0.0088
4325             RX       0    1583    1650    1675    1700    1750    1809    2870
4326             RY  1360.7    1358    1358    1358    1358    1358    1358  1360.7
                 *
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4327             KK     G31   BASIN
4328             KM     URS 2009
4329             BA   0.182
4330             LG    0.35    0.35    4.10    0.44       0
4331             UI       0     130     366     168      32       0       0       0       0       0
4332             UI       0       0       0       0       0       0       0       0       0       0
4333             UI       0       0       0       0       0       0       0       0       0       0
                 *
4334             KM    URS 2009

4335             KK   CPG31
4336             KM        Combine G45 with G31
4337             HC       2   9.352
                 *

4338             KK  DG31E
4339             KM    Divert flow from CP G31 East into basin G43
4340             KM    FLOW-2D 2009
4341             KM        Natural divergence of flow due to a braided channel network.
4342             DT  DVG31E
4343             DI       0     153     285     444     820    1254    1574    2300    3367    5525
4344             DQ       0     153     246     386     733    1120    1395    2039    3039    4980
                 *

4345             KK  DG31W
4346             KM    Divert flow from CP G31 West into basin G13
4347             KM    FLOW-2D 2009
4348             KM        Natural divergence of flow due to a braided channel network.
4349             DT  DVG31W
4350             DI       0     257     303     569     994    1305    1813    2037    3903    6260
4351             DQ       0      53      99     183     261     312     417     472     864    1238
                 *

4352             KK  RCPG31
4353             KM        Route remainder flow from CP G31 to CP G47
4354             KM       URS 2009
4355             KM       Typical Sheet Flow Route
4356             RS       3    FLOW      -1
4357             RC   0.050   0.045   0.050    4120  0.0103
4358             RX       0     500     700     750     800     900    1100    1600
4359             RY       6       4       2       0       0       2       4       6
                 *

4360             KK  DG47E
4361             KM    Divert flow from G47 East into basin G14 and G13
4362             KM        Remainder of flows goes into G47
4363             KM    FLOW-2D 2009
4364             KM        Natural divergence of flow due to a braided channel network.
4365             DT  DVG47E
4366             DI       0     104     450     828    1308    1605    1951    2529    2945    3210
4367             DQ       0     103     442     784    1182    1414    1672    2084    2385    2551
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4368             KK  DRG07W
4369             KM        RETURN DIVERTED FLOW FROM CPG07W
4370             DR  DVG07W
                 *
```

```
4371          KK     G47   BASIN
4372          KM     URS 2009
4373          KM    Customized XKSAT Values
4374          BA   0.121
4375          LG    0.35    0.35    3.95    0.47       0
4376          UI       0     106     262      85      13       0       0       0       0       0
4377          UI       0       0       0       0       0       0       0       0       0       0
4378          UI       0       0       0       0       0       0       0       0       0       0
4379          UI       0       0       0       0       0       0       0       0       0       0
              *
4380          KM    FLOW-2D 2009

4381          KK   CPG47
4382          KM        COMBINE G47E, DG07W, WITH G47
4383          HC       3   1.502
              *

4384          KK  DG47
4385          KM    FLOW-2D 2009
4386          KM      Divert flow from CP G47 into basin G32
4387          KM        Natural divergence of flow due to a braided channel network.
4388          DT  DVG47
4389          DI       0     119     489     834    1322    1782    1978    2413    3168    3800
4390          DQ       0      56     199     311     462     599     658     786    1019    1200
              *

4391          KK  RCPG47
4392          KM        ROUTE REMAINDER FLOW FROM CP G47 TO CP G43
4393          KM     URS 2009
4394          RS       9    FLOW      -1
4395          RC   0.050   0.045   0.050   12079  0.0078
4396          RX       0     134     306     350     375     399     441     445
4397          RY  1263.8  1263.2    1262    1262    1262    1262  1263.1  1263.2
              *

4398          KK  DRG31E
4399          KM        RETURN DIVERTED FLOW FROM CP G31
4400          DR  DVG31E
              *

4401          KK  RDG31E
4402          KM        Return diverted flow from CP G31 to CP G43
4403          KM       URS 2009
4404          KM       Typical Sheet Flow Route
4405          RS       7    FLOW      -1
4406          RC   0.050   0.045   0.050   16700  0.0073
4407          RX       0     500     700     750     800     900    1100    1600
4408          RY       6       4       2       0       0       2       4       6
              *
```



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

4409          KK     G43   BASIN
4410          KM     URS 2009
4411          BA   2.170
4412          LG    0.35    0.35    4.10    0.44       0
4413          UI       0     206     769    1160    1914    1737    1177     733     321     198
4414          UI      68      55      55       0       0       0       0       0       0       0
              *
4415          KM    URS 2009

4416          KK   CPG43
4417          KM        Combine G07, DRG31, G47 with G43
4418          HC       4   11.48
              *

4419          KK  DRG07E
4420          KM        Return diverted flow from CPG07E
4421          DR  DVG07E
              *

4422          KK  RDG07E
4423          KM        Route flow from CP G07 to CP G30
4424          KM        FLOW-2D 2009
4425          KM        Typical Sheet Flow Route
4426          RS      12    FLOW      -1
4427          RC   0.050   0.045   0.050   20349  0.0083
4428          RX       0    1000    1200    1250    1300    1400    1600    2600
4429          RY       6       4       2       0       0       2       4       6
              *

4430          KK     G30   BASIN
4431          KM     URS 2009
4432          BA   3.704
4433          LG    0.35    0.35    4.10    0.44       0
4434          UI       0     512    1708    2718    4005    2599    1558     645     327     109
4435          UI     109       0       0       0       0       0       0       0       0       0
4436          UI       0       0       0       0       0       0       0       0       0       0
4437          UI       0       0       0       0       0       0       0       0       0       0
              *

4438          KK   DRE41
4439          KM        Return diverted flow from CP E41
4440          DR   DVE41
              *

4441          KK  G30RIV
4442          KM        Combine DVE41,G30 with DVG07E
4443          HC       3 103.146
              *
```



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

```
4444          KK  RCPG30
4445          KM        Route flow from CP G30RIV to CP D27RIV (WATERMAN WASH)
4446          KM     THIS ROUTE IS FROM THE EEC STUDY
4447          RS       2    FLOW      -1
4448          RC   0.050   0.035   0.050    4340  0.0020
4449          RX       0       9      40     440     480     530     780     789
4450          RY    1210 1208.25    1207    1204    1204    1207 1208.25    1210
              *

4451          KK   DRD17
4452          KM        Return diverted flow from CP D17
4453          DR   DVD17
              *

4454          KK   RDD17
4455          KM    This is in the 10-foot contour area, used the EEC route.
4456          KM        Route flow from CP D17 to CP D23
4457          KM        Crossing at SR-238
4458          RS       6    FLOW      -1
4459          RC   0.050   0.045   0.050   12320  0.0061
4460          RX     280     300     320     330     340     350     370     390
4461          RY    1344    1342    1341    1340    1340    1341    1342    1344
              *

4462          KK   DRD18
4463          KM        Return diverted flow from CP D18
4464          DR   DVD18
              *

4465          KK   RDD18
4466          KM    This is in the 10-foot contour area, used the EEC route.
4467          KM        Route flow from CP D18 to CP D23
4468          KM        Crossing at SR-238
4469          RS       9    FLOW      -1
4470          RC   0.050   0.045   0.050   11500  0.0061
4471          RX     270     290     320     330     340     350     380     400
4472          RY    1343    1342    1341    1340    1340    1341    1342    1343
              *

4473          KK     D23   BASIN
4474          KM     URS 2009
4475          KM    Customized XKSAT Values
4476          BA   0.709
4477          LG    0.35    0.35    3.95    0.47       0
4478          UI       0     109     358     597     766     473     248     106      45      22
4479          UI       0       0       0       0       0       0       0       0       0       0
4480          UI       0       0       0       0       0       0       0       0       0       0
4481          UI       0       0       0       0       0       0       0       0       0       0
              *
4482          KM    URS 2009
```



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

4483          KK   CPD23
4484          KM        Combine D17, D18 with D23
4485          HC       3   3.095
              *

4486          KK   DRD19
4487          KM        Return diverted flow from CP D19
4488          DR   DVD19
              *

4489          KK   RDD19
4490          KM    This is in the 10-foot contour area, used the EEC route.
4491          KM        Route flow from CP D19 to CP D24
4492          KM        Crossing at SR-238
4493          RS       6    FLOW      -1
4494          RC   0.050   0.045   0.050   10380  0.0073
4495          RX       0     210     430     445     455     470     790     975
4496          RY    1343    1342    1342    1340    1340    1342    1342    1343
              *

4497          KK     D24   BASIN
4498          KM    Customized XKSAT Values
4499          KM     URS 2009
4500          BA   0.431
4501          LG    0.35    0.35    3.64    0.57       0
4502          UI       0      94     286     528     409     221      77      30      16       0
4503          UI       0       0       0       0       0       0       0       0       0       0
4504          UI       0       0       0       0       0       0       0       0       0       0
4505          UI       0       0       0       0       0       0       0       0       0       0
4506          UI       0       0       0       0       0       0       0       0       0       0
              *
4507          KM    URS 2009

4508          KK  CPD24A
4509          KM        Combine D19 with D24
4510          HC       2   0.472
              *
4511          KM    URS 2009

4512          KK   CPD24
4513          KM        Combine D23 with D24
4514          HC       2   3.567
              *

4515          KK  RCPD24
4516          KM        Route flow from CP D24 to CP D25
4517          KM     URS 2009
4518          RS       6    FLOW      -1
4519          RC   0.050   0.045   0.050    4389  0.0050
4520          RX       0     647     728     800     900    1000    1379    2024
```

```
4521          RY  1301.7  1300.0  1300.0  1300.0  1300.0  1300.0  1300.0  1301.7
              *
1                                   HEC-1 INPUT                                                    PAGE113

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

4522          KK   DRD20
4523          KM        Return diverted flow from CP D20
4524          DR   DVD20
              *

4525          KK  RDD20
4526          KM        Route flow from CP D20 to CP D25
4527          KM        Crossing at SR-238
4528          RS      25    FLOW      -1
4529          RC   0.050   0.045   0.050   13680  0.0063
4530          RX       0     175     335     355     365     390     540     710
4531          RY    1344    1343    1342    1340    1340    1342    1343    1344
              *

4532          KK   DRD21
4533          KM        Return diverted flow from CP D21
4534          DR   DVD21
              *

4535          KK  RDD21
4536          KM        Route flow from CP D21 to CP D25
4537          KM     URS 2009
4538          KM        Crossing at SR-238
4539          RS      93    FLOW      -1
4540          RC   0.050   0.045   0.050   13351  0.0061
4541          RX       0     114     358     430     500     600     848    1051
4542          RY  1301.2  1301.2  1300.3  1300.0  1300.0  1300.0  1300.0  1300.9
              *

4543          KK     D25   BASIN
4544          KM     URS 2009
4545          KM    Customized XKSAT Values
4546          BA   1.334
4547          LG    0.35    0.35    3.35    0.70       0
4548          UI       0     173     585     913    1420     960     606     253     144      44
4549          UI      38       0       0       0       0       0       0       0       0       0
4550          UI       0       0       0       0       0       0       0       0       0       0
4551          UI       0       0       0       0       0       0       0       0       0       0
4552          UI       0       0       0       0       0       0       0       0       0       0
              *
4553          KM    URS 2009

4554          KK   CPD25
4555          KM        Combine D24, D20, D21 with D25
4556          HC       4   5.541
              *

4557          KK  RCPD25
4558          KM        Route flow from CP D25 to CP D26
4559          KM     URS 2009
4560          RS      13    FLOW      -1
4561          RC   0.050   0.045   0.050   14043  0.0050
4562          RX       0    1120    1381    1469    1491    1500    1505    2020
4563          RY  1231.5  1229.8  1229.8  1230.0  1230.0  1230.0  1230.0  1231.5
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4564          KK     D26   BASIN
4565          KM     URS 2009
4566          BA   1.546
4567          LG    0.35    0.35    4.35    0.39       0
4568          UI       0     111     406     630     886    1313     961     688     458     214
4569          UI     142      75      34      34      34       0       0       0       0       0
4570          UI       0       0       0       0       0       0       0       0       0       0
4571          UI       0       0       0       0       0       0       0       0       0       0
4572          UI       0       0       0       0       0       0       0       0       0       0
              *
4573          KM    URS 2009

4574          KK   CPD26
4575          KM        Combine D25 with D26
4576          HC       2   7.087
              *

4577          KK  RCPD26
4578          KM        Route flow from CP D26 to CP D27
4579          KM     URS 2009
4580          RS       3    FLOW      -1
4581          RC   0.050   0.045   0.050    4758  0.0034
4582          RX       0      81      97     108     108     125     150     192
4583          RY  1208.2  1204.0  1204.0  1207.5  1208.0  1208.0  1208.0  1209.0
              *

4584          KK     D27   BASIN
4585          KM     URS 2009
4586          BA   0.259
4587          LG    0.35    0.36    5.00    0.27       0
4588          UI       0      60     182     331     239     120      44      15      10       0
4589          UI       0       0       0       0       0       0       0       0       0       0
4590          UI       0       0       0       0       0       0       0       0       0       0
4591          UI       0       0       0       0       0       0       0       0       0       0
4592          UI       0       0       0       0       0       0       0       0       0       0
              *
4593          KM    URS 2009

4594          KK   CPD27
```

```
4595          KM        Combine D26 with D27
4596          HC       2   7.346
              *

4597          KK  D27RIV
4598          KM    URS 2009
4599          KM        Combine G30RIV, G43, E41 (no Flow) with D27
4600          HC       4 123.216
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4601          KK  RCPD27
4602          KM        Route flow from CP D27RIV to CP D28RIV (WATERMAN WASH)
4603          KM    THIS ROUTE IS FROM THE EEC STUDY
4604          RS       1    FLOW      -1
4605          RC   0.050   0.035   0.050     830  0.0066
4606          RX       0     600    1300    1500    1520    1800    2300    2800
4607          RY    1208    1205    1203    1200    1200    1203    1205    1208
              *

4608          KK     D28   BASIN
4609          KM    URS 2009
4610          BA   1.808
4611          LG    0.35    0.35    4.60    0.33       0
4612          UI       0     131     494     758    1085    1554    1109     787     507     232
4613          UI     156      72      40      40       0       0       0       0       0       0
4614          UI       0       0       0       0       0       0       0       0       0       0
4615          UI       0       0       0       0       0       0       0       0       0       0
4616          UI       0       0       0       0       0       0       0       0       0       0
              *

4617          KK  D28RIV
4618          KM        Combine D27RIV with D28
4619          HC       2 124.903
              *

4620          KK  RCPD28
4621          KM        Route flow from CP D28RIV to CP D29RIV (WATERMAN WASH)
4622          KM    THIS ROUTE IS FROM THE EEC STUDY
4623          RS       1    FLOW      -1
4624          RC   0.050   0.035   0.050     670  0.0044
4625          RX       0     900    1500    1685    1705    1900    2500    3200
4626          RY    1205    1200    1198    1195    1195    1198    1200    1205
              *

4627          KK     D29   BASIN
4628          KM    Customized XKSAT Values
4629          KM    URS 2009
4630          BA   3.395
4631          LG    0.35    0.35    3.31    0.72       0
4632          UI       0     324    1208    1823    3012    2711    1836    1139     498     308
4633          UI     102      86      86       0       0       0       0       0       0       0
4634          UI       0       0       0       0       0       0       0       0       0       0
4635          UI       0       0       0       0       0       0       0       0       0       0
4636          UI       0       0       0       0       0       0       0       0       0       0
              *

4637          KK  D29RIV
4638          KM        Combine D28RIV with D29
4639          HC       2 128.409
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4640          KK  RCPD29
4641          KM        Route flow from CP D29RIV to CP D30RIV (WATERMAN WASH)
4642          KM    THIS ROUTE IS FROM THE EEC STUDY
4643          RS       1    FLOW      -1
4644          RC   0.050   0.035   0.050    1640  0.0026
4645          RX     730     750    1000    1100    1120    1300    1500    1520
4646          RY    1200    1195    1193    1190    1190    1193    1195    1200
              *

4647          KK     D30   BASIN
4648          KM    URS 2009
4649          KM    Customized XKSAT Values
4650          BA   0.426
4651          LG    0.35    0.35    3.85    0.50       0
4652          UI       0     104     313     563     384     179      69      19      16       0
4653          UI       0       0       0       0       0       0       0       0       0       0
4654          UI       0       0       0       0       0       0       0       0       0       0
4655          UI       0       0       0       0       0       0       0       0       0       0
4656          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

4657          KK  DRG47
4658          KM        Return diverted flow from CP G47
4659          DR  DVG47
              *

4660          KK  RDG47
4661          KM        Route flow from CP G47 to CP G32
4662          KM       URS 2009
4663          KM       Typical Sheet Flow Route
4664          RS      10    FLOW      -1
4665          RC   0.050   0.045   0.050   13439  0.0079
4666          RX       0     500     700     750     800     900    1100    1600
4667          RY       6       4       2       0       0       2       4       6
              *
```

```
4668          KK     G32   BASIN
4669          KM     URS 2009
4670          BA   1.142
4671          LG    0.35    0.35    4.20    0.42       0
4672          UI       0     243     743    1374    1094     601     214      85      41       0
4673          UI       0       0       0       0       0       0       0       0       0       0
4674          UI       0       0       0       0       0       0       0       0       0       0
              *
4675          KM    URS 2009

4676          KK   CPG32
4677          KM        Combine DRG47 with G32
4678          HC       2   1.713
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


4679          KK  D30RIV
4680          KM        Combine D29RIV, G32 with D30
4681          HC       3 129.978
              *
              *

4682          KK  RCPD30
4683          KM        Route flow from CP D30RIV to CP D31RIV (WATERMAN WASH)
4684          KM    THIS ROUTE IS FROM THE EEC STUDY
4685          RS       1    FLOW      -1
4686          RC   0.050   0.035   0.050     960  0.0027
4687          RX     730     750    1000    1100    1120    1300    1600    1620
4688          RY    1199    1194    1192    1189    1189    1192    1194    1199
              *

4689          KK     D31   BASIN
4690          KM     URS 2009
4691          KM    Customized XKSAT Values
4692          BA   0.670
4693          LG    0.35    0.35    3.64    0.57       0
4694          UI       0      90     303     478     720     475     291     121      66      19
4695          UI      19       0       0       0       0       0       0       0       0       0
4696          UI       0       0       0       0       0       0       0       0       0       0
4697          UI       0       0       0       0       0       0       0       0       0       0
4698          UI       0       0       0       0       0       0       0       0       0       0
              *

4699          KK  D31RIV
4700          KM        Combine D30RIV with D31
4701          HC       2 130.647
              *

4702          KK  RCPD31
4703          KM        Route flow from CP D31RIV to CP G33RIV (WATERMAN WASH)
4704          KM    THIS ROUTE IS FROM THE EEC STUDY
4705          RS       1    FLOW      -1
4706          RC   0.050   0.035   0.050    1330  0.0034
4707          RX    1210    1230    1400    1480    1500    1600    1820    1840
4708          RY    1195    1190    1188    1185    1185    1188    1190    1195
              *
4709          KM    URS 2009

4710          KK     G33   BASIN
4711          BA   0.744
4712          LG    0.35    0.35    4.00    0.46       0
4713          UI       0     206     607    1044     632     251      90      30       0       0
4714          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


4715          KK  G33RIV
4716          KM        Combine D31RIV with G33
4717          HC       2 131.391
              *

4718          KK  RCPG33
4719          KM        Route flow from CP G33RIV to CP D32RIV (WATERMAN WASH)
4720          RS       1    FLOW      -1
4721          RC   0.050   0.035   0.050     340  0.0030
4722          RX       0      10    2020    2040    2080    2100    4180    4190
4723          RY    1198    1196    1184    1180    1180    1184    1196    1198
              *

4724          KK     D32   BASIN
4725          KM     URS 2009
4726          BA   0.501
4727          LG    0.35    0.35    4.15    0.43       0
4728          UI       0     162     475     734     383     122      38      22       0       0
4729          UI       0       0       0       0       0       0       0       0       0       0
4730          UI       0       0       0       0       0       0       0       0       0       0
4731          UI       0       0       0       0       0       0       0       0       0       0
4732          UI       0       0       0       0       0       0       0       0       0       0
              *

4733          KK  DRG47E
4734          KM        Return diverted flow from G47 to G14
4735          DR  DVG47E
              *

4736          KK    DG13
4737          KM    Divert flow from G47 East into basin G13
4738          KM        Remainder of flows goes into G14
4739          KM    FLOW-2D 2009
4740          KM        Natural divergence of flow due to a braided channel network.
```

```
4741          DT   DVG13
4742          DI       0      70     542     784    1000    1414    1943    2238    2385    2551
4743          DQ       0      62     352     479     596     808    1101    1287    1385    1497
              *

4744          KK  RDG47E
4745          KM        Return diverted flow from G47 to CP G14
4746          KM       FLOW-2D 2009
4747          KM       Typical Sheet Flow Route
4748          RS       6    FLOW      -1
4749          RC   0.050   0.045   0.050    5227  0.0092
4750          RX       0     500     700     750     800     900    1100    1600
4751          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4752          KK     G14   BASIN
4753          KM     URS 2009
4754          KM        Customized XKSAT Values
4755          BA   0.136
4756          LG    0.35    0.35    3.95    0.47       0
4757          UI       0     100     276     122      23       0       0       0       0       0
4758          UI       0       0       0       0       0       0       0       0       0       0
4759          UI       0       0       0       0       0       0       0       0       0       0
4760          UI       0       0       0       0       0       0       0       0       0       0
              *

4761          KK  CPG14
4762          KM        Combine G14 with divert from G47
4763          HC       2   0.350
              *

4764          KK  RCPG14
4765          KM        Route flow from CP G14 to CP G34
4766          KM     URS 2009
4767          RS       6    FLOW      -1
4768          RC   0.050   0.045   0.050    5485  0.0088
4769          RX       0     197     250     339     443     445     445     450
4770          RY  1245.6  1244.2  1244.5    1245  1245.5  1245.5  1245.5  1245.5
              *

4771          KK     G34   BASIN
4772          KM     URS 2009
4773          KM    Customized XKSAT Values
4774          BA   0.205
4775          LG    0.35    0.35    3.95    0.47       0
4776          UI       0     141     404     197      39       0       0       0       0       0
4777          UI       0       0       0       0       0       0       0       0       0       0
4778          UI       0       0       0       0       0       0       0       0       0       0
4779          UI       0       0       0       0       0       0       0       0       0       0
              *

4780          KK  CPG34A
4781          KM    URS 2009
4782          KM        Combine G14 with G34
4783          HC       2   0.555
              *

4784          KK  DRG31W
4785          KM        RETURN DIVERTED FLOW FROM CP G31
4786          DR  DVG31W
              *

4787          KK  RDG31W
4788          KM        Return diverted flow from CP G31 to CP G13
4789          KM       URS 2009
4790          KM       Typical Sheet Flow Route
4791          RS      14    FLOW      -1
4792          RC   0.050   0.045   0.050   11948  0.0095
4793          RX       0     500     700     750     800     900    1100    1600
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4794          RY       6       4       2       0       0       2       4       6
              *

4795          KK     G13   BASIN
4796          KM     URS 2009
4797          KM        Customized XKSAT Values
4798          BA   0.498
4799          LG    0.35    0.35    3.95    0.47       0
4800          UI       0     100     308     569     490     279     106      43      17       0
4801          UI       0       0       0       0       0       0       0       0       0       0
4802          UI       0       0       0       0       0       0       0       0       0       0
4803          UI       0       0       0       0       0       0       0       0       0       0
              *

4804          KK   DRG13
4805          KM        Return diverted flow from G14
4806          DR   DVG13
              *

4807          KK   CPG13
4808          KM        Combine G13, DG13 and DRG31W
4809          KM      URS 2009
4810          HC       3   1.299
              *
              *

4811          KK   CPG34
4812          KM        Combine CPG13 with G34
4813          KM    URS 2009
```

```
4814          HC       2   1.854
              *

4815          KK  RCPG34
4816          KM         URS 2009
4817          KM        Route flow from CP G34 to CP G35
4818          RS       4    FLOW      -1
4819          RC   0.050   0.045   0.050    5390  0.0087
4820          RX       0      45     101     206     300     400     527     566
4821          RY    1205    1205  1204.6    1204    1204    1204  1204.7  1204.8
              *

4822          KK     G35   BASIN
4823          KM     URS 2009
4824          BA   0.527
4825          LG    0.35    0.35    4.00    0.46       0
4826          UI       0     133     398     709     468     210      82      20      20       0
4827          UI       0       0       0       0       0       0       0       0       0       0
4828          UI       0       0       0       0       0       0       0       0       0       0
4829          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

4830          KK   CPG35
4831          KM    URS 2009
4832          KM        Combine G34 with G35
4833          HC       2   2.381
              *

4834          KK  D32RIV
4835          KM        Combine G33RIV, G35 with D32
4836          HC       3 133.259
              *

4837          KK  RCPD32
4838          KM        Route flow from CP D32RIV to CP D33RIV (WATERMAN WASH)
4839          KM     THIS ROUTE IS FROM THE EEC STUDY
4840          RS       1    FLOW      -1
4841          RC   0.050   0.035   0.050    2800  0.0027
4842          RX    1080    1100    1400    1480    1500    1600    1800    1820
4843          RY    1188    1183    1180    1178    1178    1181    1183    1188
              *

4844          KK   DRD13
4845          KM        Return diverted flow from CP D13
4846          DR   DVD13
              *

4847          KK   RDD13
4848          KM    This is in the 10-foot contour area, used the EEC route.
4849          KM        Route diverted flow from CP D13 to CP D22
4850          KM        Crossing at SR-238
4851          RS      16    FLOW      -1
4852          RC   0.050   0.045   0.050   34330  0.0050
4853          RX     430     450     500     520     570     590     620     640
4854          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *

4855          KK   DRD46
4856          KM        Return diverted flow from CP D46
4857          DR   DVD46
              *

4858          KK   RDD46
4859          KM    This is in the 10-foot contour area, used the EEC route.
4860          KM        Route diverted flow from CP D46 to CP D22
4861          KM        Crossing at SR-238
4862          RS      24    FLOW      -1
4863          RC   0.050   0.045   0.050   31100  0.0050
4864          RX       0     300     500     520     570     590     700     940
4865          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *
```



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

4866          KK   DRD10
4867          KM        Return diverted flow from CP D10
4868          DR   DVD10
              *

4869          KK   RDD10
4870          KM    This is in the 10-foot contour area, used the EEC route.
4871          KM        Route diverted flow from CP D10 to CP D22
4872          KM        Crossing at SR-238
4873          RS      16    FLOW      -1
4874          RC   0.050   0.045   0.050   30930  0.0050
4875          RX       0     300     500     520     570     590     700     940
4876          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *

4877          KK   DRD47
4878          KM        Return diverted flow from CP D47
4879          DR   DVD47
              *

4880          KK   RDD47
4881          KM    This is in the 10-foot contour area, used the EEC route.
4882          KM        Route diverted flow from CP D47 to CP D22
4883          KM        Crossing at SR-238
4884          RS      24    FLOW      -1
4885          RC   0.050   0.045   0.050   31080  0.0050
```

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4886          RX       0     300     500     520     570     590     700     940
4887          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *

4888          KK   DRD15
4889          KM        Return diverted flow from CP D15
4890          DR   DVD15
              *

4891          KK   RDD15
4892          KM    This is in the 10-foot contour area, used the EEC route.
4893          KM        Route diverted flow from CP D15 to CP D22
4894          KM        Crossing at SR-238
4895          RS      16    FLOW      -1
4896          RC   0.050   0.045   0.050   29860  0.0050
4897          RX       0     300     500     520     570     590     700     940
4898          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *

4899          KK     D22   BASIN
4900          KM     URS 2009
4901          KM    Customized XKSAT Values
4902          BA   7.722
4903          LG    0.35    0.35    3.88    0.49       0
4904          UI       0     341     534    1322    1755    2104    2591    3567    4173    3194
4905          UI    2639    2127    1711    1226     690     570     404     341     114     105
4906          UI     105     105     105       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4907          KM    URS 2009

4908          KK   CPD22
4909          KM        Combine D13, D46, D10, D47, D15 with D22
4910          HC       6  16.269
              *

4911          KK  RCPD22
4912          KM        Route flow from CP D22 to CP D33
4913          KM     URS 2009
4914          RS       5    FLOW      -1
4915          RC   0.050   0.045   0.050   11430  0.0058
4916          RX       0     142     173     213     268     316     423     509
4917          RY  1210.9  1210.0  1210.0  1208.0  1208.0  1209.0  1210.0  1212.0
              *

4918          KK     D33   BASIN
4919          KM     URS 2009
4920          BA   0.650
4921          LG    0.35    0.35    4.25    0.41       0
4922          UI       0     112     355     624     686     409     185      86      27      21
4923          UI       0       0       0       0       0       0       0       0       0       0
4924          UI       0       0       0       0       0       0       0       0       0       0
4925          UI       0       0       0       0       0       0       0       0       0       0
4926          UI       0       0       0       0       0       0       0       0       0       0
              *
4927          KM    URS 2009

4928          KK   CPD33
4929          KM        Combine D22 with D33
4930          HC       2  16.919
              *

4931          KK  D33RIV
4932          KM        Combine D32RIV with D33
4933          HC       2 151.283
              *

4934          KK  RCPD33
4935          KM        Route flow from CP D33RIV to CP G36RIV (WATERMAN WASH)
4936          KM     THIS ROUTE IS FROM THE EEC STUDY
4937          RS       1    FLOW      -1
4938          RC   0.050   0.035   0.050     520  0.0030
4939          RX     680     700    1000    1050    1070    1120    1400    1420
4940          RY    1185    1180    1178    1175    1175    1178    1180    1185
              *

4941          KK     D45   BASIN
4942          KM     URS 2009
4943          BA   0.262
4944          LG    0.35    0.35    4.30    0.40       0
4945          UI       0     124     393     342     116      27       0       0       0       0
4946          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4947          KK     G36   BASIN
4948          KM     URS 2009
4949          BA   0.997
4950          LG    0.35    0.35    4.00    0.46       0
4951          UI       0     136     455     721    1076     703     425     177      93      29
4952          UI      29       0       0       0       0       0       0       0       0       0
4953          UI       0       0       0       0       0       0       0       0       0       0
4954          UI       0       0       0       0       0       0       0       0       0       0
              *

4955          KK  G36RIV
4956          KM        Combine D33RIV, D45 with G36
4957          HC       3 152.542
              *
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```
4958          KK  RCPG36
4959          KM        Route flow from CP G36RIV to CP G37RIV (WATERMAN WASH)
4960          KM     THIS ROUTE IS FROM THE EEC STUDY
4961          RS       2    FLOW      -1
4962          RC   0.050   0.035   0.050    2960  0.0020
4963          RX       0      10    1540    1570    1610    1640    3190    3200
4964          RY  1192.5  1190.5    1178    1175    1175    1178  1190.5  1192.5
              *

4965          KK     D44   BASIN
4966          KM     URS 2009
4967          BA   0.332
4968          LG    0.35    0.35    4.20    0.42       0
4969          UI       0     140     435     462     178      49      16       0       0       0
4970          UI       0       0       0       0       0       0       0       0       0       0
4971          UI       0       0       0       0       0       0       0       0       0       0
4972          UI       0       0       0       0       0       0       0       0       0       0
4973          UI       0       0       0       0       0       0       0       0       0       0
              *

4974          KK     G37   BASIN
4975          KM     URS 2009
4976          BA   0.408
4977          LG    0.35    0.35    4.00    0.46       0
4978          UI       0     159     484     588     246      73      19       0       0       0
4979          UI       0       0       0       0       0       0       0       0       0       0
4980          UI       0       0       0       0       0       0       0       0       0       0
4981          UI       0       0       0       0       0       0       0       0       0       0
              *

4982          KK  G37RIV
4983          KM        Combine G36RIV, D44 with G37
4984          HC       3 153.281
              *
```

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

4985          KK  RCPG37
4986          KM        Route flow from CP G37RIV to CP G38RIV (WATERMAN WASH)
4987          KM     THIS ROUTE IS FROM THE EEC STUDY
4988          RS       1    FLOW      -1
4989          RC   0.050   0.035   0.050    1450  0.0020
4990          RX       0      10    1590    1615    1670    1700    3260    3270
4991          RY  1185.5  1183.5    1170    1166    1166    1170  1183.5  1185.5
              *

4992          KK     D43   BASIN
4993          KM     URS 2009
4994          BA   0.151
4995          LG    0.35    0.35    4.15    0.43       0
4996          UI       0     146     335      90      13       0       0       0       0       0
4997          UI       0       0       0       0       0       0       0       0       0       0
4998          UI       0       0       0       0       0       0       0       0       0       0
4999          UI       0       0       0       0       0       0       0       0       0       0
5000          UI       0       0       0       0       0       0       0       0       0       0
              *

5001          KK     G38   BASIN
5002          KM     URS 2009
5003          BA   0.336
5004          LG    0.35    0.35    4.10    0.44       0
5005          UI       0      92     272     470     287     115      42      13       0       0
5006          UI       0       0       0       0       0       0       0       0       0       0
5007          UI       0       0       0       0       0       0       0       0       0       0
              *

5008          KK  G38RIV
5009          KM        Combine G37RIV, D43 with G38
5010          HC       3 154.800
              *

5011          KK  RCPG38
5012          KM        Route flow from CP G38RIV to CP D42RIV (WATERMAN WASH)
5013          KM     THIS ROUTE IS FROM THE EEC STUDY
5014          RS       1    FLOW      -1
5015          RC   0.050   0.035   0.050    1820  0.0020
5016          RX       0      10    1710    1720    1760    1770    3400    3410
5017          RY    1172    1170    1160    1156    1156    1160    1170    1172
              *

5018          KK     G12   BASIN
5019          KM     URS 2009
5020          BA   1.032
5021          LG    0.35    0.35    4.00    0.46       0
5022          UI       0     149     493     797    1124     711     408     165      79      31
5023          UI      31       0       0       0       0       0       0       0       0       0
5024          UI       0       0       0       0       0       0       0       0       0       0
5025          UI       0       0       0       0       0       0       0       0       0       0
5026          UI       0       0       0       0       0       0       0       0       0       0
              *
```

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

5027          KK  RCPG12
5028          KM        Route flow from CP G12 to CP G39
5029          KM     URS 2009
5030          RS       7    FLOW      -1
5031          RC   0.050   0.045   0.050   10250  0.0079
5032          RX       0    1067    1162    1232    1247    1284    1547    2548
5033          RY  1204.3  1203.2  1203.1    1202    1202  1202.2  1203.4  1204.4
              *
```

```
5034          KK     G39   BASIN
5035          KM     URS 2009
5036          BA   0.763
5037          LG    0.35    0.35    4.00    0.46       0
5038          UI       0      59     239     358     547     656     445     306     154      88
5039          UI      49      18      18      18       0       0       0       0       0       0
5040          UI       0       0       0       0       0       0       0       0       0       0
5041          UI       0       0       0       0       0       0       0       0       0       0
5042          UI       0       0       0       0       0       0       0       0       0       0
              *

5043          KK   CPG39
5044          KM        Combine DRG12 with G39
5045          HC       2   1.795
              *

5046          KK     D34   BASIN
5047          KM     URS 2009
5048          BA   1.202
5049          LG    0.16    0.27    4.55    0.29       4
5050          UI       0     478    1461    1721     705     206      57       0       0       0
5051          UI       0       0       0       0       0       0       0       0       0       0
5052          UI       0       0       0       0       0       0       0       0       0       0
5053          UI       0       0       0       0       0       0       0       0       0       0
5054          UI       0       0       0       0       0       0       0       0       0       0
              *

5055          KK  RCPD34
5056          KM        Route flow from CP D34 to CP D42
5057          KM     URS 2009
5058          RS       1    FLOW      -1
5059          RC   0.050   0.045   0.050    4786  0.0058
5060          RX       0     167     230     248     256     271     407     542
5061          RY  1175.3  1172.0  1174.0  1169.8  1169.8  1173.8  1172.6  1174.4
              *

5062          KK     D42   BASIN
5063          KM     URS 2009
5064          BA   0.208
5065          LG    0.35    0.35    4.00    0.46       0
5066          UI       0     160     432     175      31       0       0       0       0       0
5067          UI       0       0       0       0       0       0       0       0       0       0
5068          UI       0       0       0       0       0       0       0       0       0       0
5069          UI       0       0       0       0       0       0       0       0       0       0
5070          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

5071          KK   CPD42
5072          KM        Combine D34 with D42
5073          HC       2   1.410
              *

5074          KK  D42RIV
5075          KM        Combine G38RIV, G39 with D42
5076          HC       3 156.973
              *

5077          KK  RCPD42
5078          KM        Route flow from CP D42RIV to CP D41RIV (WATERMAN WASH)
5079          KM     THIS ROUTE IS FROM THE EEC STUDY
5080          RS       1    FLOW      -1
5081          RC   0.050   0.035   0.050    3000  0.0047
5082          RX       0     900    1300    1350    1370    1420    1750    1770
5083          RY    1165    1160    1154    1150    1150    1154    1160    1165
              *

5084          KK     D41
5085          KM     URS 2009
5086          BA   0.295
5087          LG    0.35    0.35    4.40    0.37       0
5088          UI       0     155     486     365     104      24       0       0       0       0
5089          UI       0       0       0       0       0       0       0       0       0       0
5090          UI       0       0       0       0       0       0       0       0       0       0
5091          UI       0       0       0       0       0       0       0       0       0       0
5092          UI       0       0       0       0       0       0       0       0       0       0
              *

5093          KK  D41RIV
5094          KM        Combine D42RIV with D41
5095          HC       2 157.267
              *

5096          KK  RCPD41
5097          KM        Route flow from CP D41RIV to CP G40RIV (WATERMAN WASH)
5098          KM     THIS ROUTE IS FROM THE EEC STUDY
5099          RS       1    FLOW      -1
5100          RC   0.050   0.035   0.050     220  0.0020
5101          RX     780     800    1400    1450    1475    1525    1880    1900
5102          RY    1160    1155    1153    1150    1150    1153    1155    1160
              *

5103          KK     G02   BASIN
5104          KM        Customized XKSAT Values
5105          KM     URS 2009
5106          BA   2.061
5107          LG    0.35    0.35    3.95    0.47       6
5108          UI       0     432    1323    2451    1987    1102     400     160      73       0
5109          UI       0       0       0       0       0       0       0       0       0       0
5110          UI       0       0       0       0       0       0       0       0       0       0
5111          UI       0       0       0       0       0       0       0       0       0       0
              *
```

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

5112          KK     G03   BASIN
5113          KM     URS 2009
5114          KM        Customized XKSAT Values
5115          BA   2.460
5116          LG    0.35    0.35    3.92    0.48      11
5117          UI       0     527    1612    2978    2348    1284     453     180      88       0
5118          UI       0       0       0       0       0       0       0       0       0       0
5119          UI       0       0       0       0       0       0       0       0       0       0
5120          UI       0       0       0       0       0       0       0       0       0       0
5121          UI       0       0       0       0       0       0       0       0       0       0
              *

5122          KK   CPG03
5123          KM        COMBINE G02 WITH G03
5124          HC       2   4.521
              *

5125          KK  RCPG03
5126          KM        Route flow from CP G03 to CP G09
5127          KM     URS 2009
5128          RS       4    FLOW      -1
5129          RC   0.050   0.045   0.050   10974  0.0091
5130          RX       0    2581    2672    2674    2675    2677    2723    5262
5131          RY  1357.5  1357.2    1356    1356    1356    1356    1358    1358
              *

5132          KK   DRG08
5133          KM        Return diverted flow from CP G08
5134          DR   DVG08
              *

5135          KK   RDG08
5136          KM        Route flow from CP G08 to CP G09
5137          KM     URS 2009
5138          RS      19    FLOW      -1
5139          RC   0.050   0.045   0.050   10242  0.0088
5140          RX       0      70      89     213     315     417     418     420
5141          RY  1352.2  1352.2    1352  1350.4  1351.6  1351.9  1351.9  1351.9
              *

5142          KK     G09   BASIN
5143          KM     URS 2009
5144          KM        Customized XKSAT Values
5145          BA   0.702
5146          LG    0.35    0.35    3.95    0.47       0
5147          UI       0      93     312     491     751     501     312     130      74      20
5148          UI      20       0       0       0       0       0       0       0       0       0
5149          UI       0       0       0       0       0       0       0       0       0       0
5150          UI       0       0       0       0       0       0       0       0       0       0
5151          UI       0       0       0       0       0       0       0       0       0       0
              *
5152          KM    URS 2009
```



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

5153          KK   CPG09
5154          KM        Combine G03, DRG08 with G09
5155          HC       3   5.244
              *

5156          KK  RCPG09
5157          KM        Route flow from CP G09 to CP G11
5158          KM     URS 2009
5159          RS       3    FLOW      -1
5160          RC   0.050   0.045   0.050    6827  0.0088
5161          RX       0    3525    3525    3577    3603    3722    3792    6292
5162          RY  1270.9  1270.9  1270.9    1270    1270  1271.1  1271.2  1271.2
              *

5163          KK     G48   BASIN
5164          KM     URS 2009
5165          KM    Customized XKSAT Values
5166          BA   1.909
5167          LG    0.35    0.35    3.95    0.47      58
5168          UI       0     937    2847    1692     922     480     252     132      63      63
5169          UI       0       0       0       0       0       0       0       0       0       0
5170          UI       0       0       0       0       0       0       0       0       0       0
              *

5171          KK  RCPG48
5172          KM        Route flow from CP G48 to CP G01
5173          KM     URS 2009
5174          RS      12    FLOW      -1
5175          RC   0.050   0.045   0.050   19532  0.0131
5176          RX       0     604     745     755     802     854     983    1485
5177          RY  1432.1  1430.8  1430.4    1430    1430    1431    1431    1432
              *

5178          KK     G01   BASIN
5179          KM        Customized XKSAT Values
5180          KM     URS 2009
5181          BA   1.584
5182          LG    0.35    0.35    3.95    0.47       0
5183          UI       0     147     554     835    1371    1278     867     546     241     149
5184          UI      55      40      40       0       0       0       0       0       0       0
5185          UI       0       0       0       0       0       0       0       0       0       0
5186          UI       0       0       0       0       0       0       0       0       0       0
5187          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
5188          KK   CPG01
5189          KM        Combine G48 with G01
5190          HC       2   3.493
              *
1                                          HEC-1 INPUT                                                    PAGE130

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

5191          KK     G10   BASIN
5192          KM     URS 2009
5193          KM        Customized XKSAT Values
5194          BA   0.439
5195          LG    0.35    0.35    3.95    0.47       0
5196          UI       0     105     318     575     399     189      72      21      17       0
5197          UI       0       0       0       0       0       0       0       0       0       0
5198          UI       0       0       0       0       0       0       0       0       0       0
5199          UI       0       0       0       0       0       0       0       0       0       0
              *

5200          KK   CPG10
5201          KM        Combine G01 with G10
5202          HC       2   3.932
              *

5203          KK  RCPG10
5204          KM        Route flow from CP G10 to CP G11
5205          KM     URS 2009
5206          RS       7    FLOW      -1
5207          RC   0.050   0.045   0.050   7355  0.0079
5208          RX       0     153     320     323     338     474     507     510
5209          RY  1273.1  1272.3  1272.4  1272.4  1272.2  1273.4  1273.6  1273.6
              *

5210          KK     G11   BASIN
5211          KM     URS 2009
5212          KM        Customized XKSAT Values
5213          BA   0.605
5214          LG    0.35    0.35    3.95    0.47       0
5215          UI       0     192     563     884     471     152      49      26       0       0
5216          UI       0       0       0       0       0       0       0       0       0       0
5217          UI       0       0       0       0       0       0       0       0       0       0
5218          UI       0       0       0       0       0       0       0       0       0       0
              *
5219          KM    URS 2009

5220          KK   CPG11
5221          KM        Combine G09, G10 with G11
5222          HC       3  9.781
              *

5223          KK    DG11
5224          KM      Divert flow into G42
5225          KM     URS 2009
5226          KM        Natural divergence of flow due to a braided channel network.
5227          DT   DVG11
5228          DI       0      17     413    1344    2903    5179    8274   11917   16067   20691
5229          DQ       0       5     187     604    1316    2289    3790    5574    7620    9910
              *
1                                          HEC-1 INPUT                                                    PAGE131

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

5230          KK  RCPG11
5231          KM        Route remainder flow from CP G11 to CP G40
5232          KM     URS 2009
5233          RS      11    FLOW      -1
5234          RC   0.050   0.045   0.050  13894  0.0068
5235          RX       0     124     180     265     450     621     685     850
5236          RY  1193.4  1192.9  1192.4    1192    1192    1192  1192.3  1193.4
              *

5237          KK     G40   BASIN
5238          KM     URS 2009
5239          BA   1.521
5240          LG    0.35    0.35    4.00    0.46       0
5241          UI       0     183     632     973    1573    1125     730     333     179      73
5242          UI      42      42       0       0       0       0       0       0       0       0
5243          UI       0       0       0       0       0       0       0       0       0       0
5244          UI       0       0       0       0       0       0       0       0       0       0
              *
5245          KM    URS 2009

5246          KK   CPG40
5247          KM        Combine G11 with G40
5248          HC       2   6.901
              *

5249          KK  G40RIV
5250          KM        Combine D41RIV with G40
5251          HC       2 168.548
              *

5252          KK  RCPG40
5253          KM        Route flow from CP G40RIV to CP D40RIV (WATERMAN WASH)
5254          KM    THIS ROUTE IS FROM THE EEC STUDY
5255          RS       1    FLOW      -1
5256          RC   0.050   0.035   0.050    1350  0.0017
5257          RX       0      10     750     770     820     870    1590    1600
5258          RY    1160    1158    1150    1146    1146    1150    1156    1158
              *

5259          KK     D40
5260          KM     URS 2009
5261          BA   0.232
```

```
5262          LG    0.35    0.35    4.50    0.35       0
5263          UI       0     137     417     264      64      14       0       0       0       0
5264          UI       0       0       0       0       0       0       0       0       0       0
5265          UI       0       0       0       0       0       0       0       0       0       0
5266          UI       0       0       0       0       0       0       0       0       0       0
5267          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                    PAGE132

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

5268          KK     G41   BASIN
5269          KM        Customized XKSAT Values
5270          KM     URS 2009
5271          BA   0.423
5272          LG    0.35    0.35    4.00    0.46       0
5273          UI       0     141     413     622     315      98      30      19       0       0
5274          UI       0       0       0       0       0       0       0       0       0       0
5275          UI       0       0       0       0       0       0       0       0       0       0
              *

5276          KK  D40RIV
5277          KM        Combine G40RIV, G41 with D40
5278          HC       3 169.203
              *

5279          KK  RCPD40
5280          KM        Route flow from CP D40RIV to CP D39RIV (WATERMAN WASH)
5281          KM    THIS ROUTE IS FROM THE EEC STUDY
5282          RS       1    FLOW      -1
5283          RC   0.050   0.035   0.050    2270  0.0032
5284          RX    1455    1480    2150    2200    2225    2275    2700    2725
5285          RY    1150    1147    1145    1142    1142    1145    1147    1150
              *

5286          KK     D36   BASIN
5287          KM     URS 2009
5288          BA   0.248
5289          LG    0.35    0.35    4.65    0.32       0
5290          UI       0     102     313     350     139      40      12       0       0       0
5291          UI       0       0       0       0       0       0       0       0       0       0
5292          UI       0       0       0       0       0       0       0       0       0       0
5293          UI       0       0       0       0       0       0       0       0       0       0
5294          UI       0       0       0       0       0       0       0       0       0       0
              *

5295          KK     D35   BASIN
5296          KM    Customized XKSAT Values
5297          KM     URS 2009
5298          BA   1.234
5299          LG    0.35    0.35    3.95    0.47       0
5300          UI       0     102     404     605     952    1040     703     474     220     132
5301          UI      65      30      30       0       0       0       0       0       0       0
5302          UI       0       0       0       0       0       0       0       0       0       0
5303          UI       0       0       0       0       0       0       0       0       0       0
5304          UI       0       0       0       0       0       0       0       0       0       0
              *

5305          KK   CPD35
5306          KM        Combine D36 with D35
5307          HC       2   1.426
              *
1                                          HEC-1 INPUT                                                    PAGE133

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

5308          KK  RCPD35
5309          KM        Route flow from CP D35 to CP D37
5310          KM     URS 2009
5311          KM     Typical Sheet Flow Farmfield
5312          RS       4    FLOW      -1
5313          RC   0.050   0.045   0.050    6604  0.0055
5314          RX       0     500     600     620     720     740     840    1340
5315          RY       5       3       1       0       0       1       3       5
              *

5316          KK     D37   BASIN
5317          KM     URS 2009
5318          BA   0.279
5319          LG    0.35    0.35    4.45    0.37       0
5320          UI       0      64     196     357     258     129      47      16      10       0
5321          UI       0       0       0       0       0       0       0       0       0       0
5322          UI       0       0       0       0       0       0       0       0       0       0
5323          UI       0       0       0       0       0       0       0       0       0       0
5324          UI       0       0       0       0       0       0       0       0       0       0
              *

5325          KK   CPD37
5326          KM        Combine D35 with D37
5327          HC       2   1.705
              *

5328          KK     D38   BASIN
5329          KM     URS 2009
5330          BA   0.365
5331          LG    0.35    0.35    4.55    0.34       0
5332          UI       0      93     277     493     323     143      56      14       0       0
5333          UI       0       0       0       0       0       0       0       0       0       0
5334          UI       0       0       0       0       0       0       0       0       0       0
5335          UI       0       0       0       0       0       0       0       0       0       0
5336          UI       0       0       0       0       0       0       0       0       0       0
              *

5337          KK   CPD38
```

```
5338          KM        COMBINE D37 WITH D38
5339          HC       2   2.071
              *

5340          KK  RCPD38
5341          KM        Route flow from CP D38 to CP D39
5342          KM     URS 2009
5343          RS       6    FLOW      -1
5344          RC   0.050   0.045   0.050    5564  0.0039
5345          RX       1     421     433     435     449     459     461     593
5346          RY  1205.0  1204.0  1200.0  1200.0  1200.0  1203.4  1204.0  1205.0
              *
1                                          HEC-1 INPUT                                                    PAGE134

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

5347          KK     D39   BASIN
5348          KM     URS 2009
5349          BA   0.292
5350          LG    0.35    0.35    4.80    0.29       0
5351          UI       0      81     238     410     248      99      35      12       0       0
5352          UI       0       0       0       0       0       0       0       0       0       0
5353          UI       0       0       0       0       0       0       0       0       0       0
5354          UI       0       0       0       0       0       0       0       0       0       0
5355          UI       0       0       0       0       0       0       0       0       0       0
              *

5356          KK   CPD39
5357          KM        Combine D38 with D39
5358          HC       2   2.363
              *

5359          KK  D39RIV
5360          KM        Combine D40RIV with D39
5361          HC       2 171.566
              *

5362          KK  RCPD39
5363          KM        Route flow from CP D39RIV to CP G42RIV (WATERMAN WASH)
5364          KM    THIS ROUTE IS FROM THE EEC STUDY
5365          RS       1    FLOW      -1
5366          RC   0.050   0.035   0.050    1730  0.0027
5367          RX       0      10     740     750     800     810    1500    1510
5368          RY    1152    1150    1144    1140    1140    1144    1150    1152
              *

5369          KK   DRG11
5370          KM        Return diverted flow from CP G11
5371          DR   DVG11
              *

5372          KK   RDG11
5373          KM        Route flow from CP G11 to CP G42
5374          KM     URS 2009
5375          RS      10    FLOW      -1
5376          RC   0.050   0.045   0.050   13894  0.0067
5377          RX       0     155     266     294     326     464     550     574
5378          RY  1186.6    1186  1185.4    1184    1184  1185.3  1185.2 1185.35
              *

5379          KK     G42   BASIN
5380          KM     URS 2009
5381          BA   0.694
5382          LG    0.35    0.35    4.00    0.46       0
5383          UI       0     102     335     546     754     475     268     109      52      21
5384          UI      21       0       0       0       0       0       0       0       0       0
5385          UI       0       0       0       0       0       0       0       0       0       0
5386          UI       0       0       0       0       0       0       0       0       0       0
              *
5387          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE135

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

5388          KK   CPG42
5389          KM        Combine DRG11 with G42
5390          HC       2   5.095
              *

5391          KK  G42RIV
5392          KM        Combine D39RIV with G42
5393          HC       2 172.259
              *

5394          KK  RCPG42
5395          KM        Route flow from CP G42RIV to CP B08RIV (WATERMAN WASH)
5396          KM    THIS ROUTE IS FROM THE EEC STUDY
5397          RS       1    FLOW      -1
5398          RC   0.050   0.035   0.050    2400  0.0050
5399          RX       0    1800    2200    2350    2430    2580    3400    5200
5400          RY    1155    1145    1135    1130    1130    1135    1145    1155
              *

5401          KK     C51   BASIN
5402          KM     URS 2009
5403          BA   0.392
5404          LG    0.50    0.25    4.70    0.47       0
5405          UI       0      18      23      49      99     106     141     148     148     127
5406          UI     133      95      92      66      51      47      31      26      21      16
5407          UI      15      10      10       9       2       2       2       2       2       2
5408          UI       2       2       2       2       2       2       2       0       0       0
              *

5409          KK     C52   BASIN
```

```
5410          KM     URS 2009
5411          BA   0.382
5412          LG    0.50    0.25    4.80    0.46       0
5413          UI       0      16      19      41      82      94     122     136     136     129
5414          UI     114     113      88      77      58      47      42      29      24      20
5415          UI      15      15      10       9       9       4       2       2       2       2
5416          UI       2       2       2       2       2       2       2       2       2       0
              *

5417          KK   CPC52
5418          KM        Combine C51, C52,
5419          HC       2   0.774
              *

5420          KK  RCPC52
5421          KM        Route flow from CP C52 to CP B07
5422          KM     URS 2009
5423          KM       Typical Sheet Flow Farmfield
5424          RS       3    FLOW      -1
5425          RC   0.050   0.045   0.050    2590   .0054
5426          RX       0     500     600     620     720     740     840    1340
5427          RY       5       3       1       0       0       1       3       5
              *
1                                          HEC-1 INPUT                                                    PAGE136

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

5428          KK     C53   BASIN
5429          KM     URS 2009
5430          BA   0.373
5431          LG    0.50    0.25    4.80    0.46       0
5432          UI       0      16      21      44      90      96     127     138     138     124
5433          UI     120     100      92      65      52      50      31      26      20      17
5434          UI      15      12       9       9       6       2       2       2       2       2
5435          UI       2       2       2       2       2       2       2       2       0       0
              *

5436          KK  RCPC53
5437          KM        Route flow from CP C53 to CP B07
5438          KM     URS 2009
5439          KM       Typical Sheet Flow Farmfield
5440          RS       4    FLOW      -1
5441          RC   0.050   0.045   0.050    3865  0.0016
5442          RX       0     500     600     620     720     740     840    1340
5443          RY       5       3       1       0       0       1       3       5
              *

5444          KK     B07
5445          KM     URS 2009
5446          BA   0.338
5447          LG    0.24    0.25    4.70    0.32       3
5448          UI       0     145     440     397     194      76      38       8       7       7
5449          UI       0       0       0       0       0       0       0       0       0       0
5450          UI       0       0       0       0       0       0       0       0       0       0
5451          UI       0       0       0       0       0       0       0       0       0       0
              *

5452          KK   CPB07
5453          KM        Combine CP52, C53 with B07
5454          HC       3   1.574
              *

5455          KK  RCPB07
5456          KM       Route flow from CP B07 to CP B08
5457          KM       URS 2009
5458          KM       Typical Sheet Flow Farmfield
5459          RS       6    FLOW      -1
5460          RC   0.050   0.045   0.050    5954  0.0037
5461          RX       0     500     600     620     720     740     840    1340
5462          RY       5       3       1       0       0       1       3       5
              *

5463          KK     B08
5464          KM     URS 2009
5465          BA   0.430
5466          LG    0.49    0.26    4.50    0.54       0
5467          UI       0      22      33      80     123     157     183     183     161     162
5468          UI     116     103      74      65      42      33      27      20      18      12
5469          UI      12       7       3       3       3       3       3       3       3       3
5470          UI       3       3       3       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                    PAGE137

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

5471          KK   CPB08
5472          KM        Combine B07 with B08
5473          HC       2   2.004
              *

5474          KK  B08RIV
5475          KM        Combine G42RIV with B08
5476          HC       2 174.263
              *

5477          KK  RCPB08
5478          KM        Route flow from CP B08RIV to CP B12RIV (WATERMAN WASH)
5479          KM     THIS ROUTE IS FROM THE EEC STUDY
5480          RS       1    FLOW      -1
5481          RC   0.050   0.035   0.050     230  0.0050
5482          RX       0    1800    2200    2350    2430    2580    3400    5200
5483          RY    1150    1140    1130    1125    1125    1130    1140    1150
              * ******************************************************************************
              * RETURNING FLOWS FROM DIVERTS IN C TO C33
```

```
                 * ROUTES AND DIVERTS DIFFER FROM INDIVIDUAL MODEL
                 * ***********************************************************************

5484             KK   DRC13
5485             KM        Return diverted flow from CP C13
5486             DR   DVC13
                 *

5487             KK   RDC13
5488             KM    This is in the 10-foot contour area, used the EEC route.
5489             KM        Route flow from CP C13 to CP C33A
5490             KM        Crossing at SR-238
5491             RS       4    FLOW      -1
5492             RC   0.050   0.045   0.050    9170  0.0054
5493             RX       0     230     360     370     405     415     525     780
5494             RY    1485    1484    1483    1480    1480    1483    1484    1485
                 *

5495             KK   DRC31
5496             KM        Return diverted flow from CP C31
5497             DR   DVC31
                 *

5498             KK   RDC31
5499             KM    This is in the 10-foot contour area, used the EEC route.
5500             KM        Route flow from CP C31 to CP C33A
5501             KM        Crossing at SR-238
5502             RS       7    FLOW      -1
5503             RC   0.050   0.045   0.050    8840  0.0055
5504             RX       0     230     360     370     405     415     525     780
5505             RY    1485    1484    1483    1480    1480    1483    1484    1485
                 *
1                                          HEC-1 INPUT                                          PAGE138

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

5506             KK   DRC14
5507             KM        Return diverted flow from CP C14
5508             DR   DVC14
                 *

5509             KK   RDC14
5510             KM    This is in the 10-foot contour area, used the EEC route.
5511             KM        Route flow from CP C14 to CP C33A
5512             KM        Crossing at SR-238
5513             RS       4    FLOW      -1
5514             RC   0.050   0.045   0.050    8160  0.0056
5515             RX       0     230     360     370     405     415     525     780
5516             RY    1485    1484    1483    1480    1480    1483    1484    1485
                 *

5517             KK   DRC10
5518             KM        Return diverted flow from CP C10
5519             DR   DVC10
                 *

5520             KK   RDC10
5521             KM    This is in the 10-foot contour area, used the EEC route.
5522             KM        Route flow from CP C10 to CP C33A
5523             KM        Crossing at SR-238
5524             RS       5    FLOW      -1
5525             RC   0.050   0.045   0.050    6920  0.0055
5526             RX       0     230     360     370     405     415     525     780
5527             RY    1485    1484    1483    1480    1480    1483    1484    1485
                 *

5528             KK   DRC30
5529             KM        Return diverted flow from CP C30
5530             DR   DVC30
                 *

5531             KK   RDC30
5532             KM    This is in the 10-foot contour area, used the EEC route.
5533             KM        Route flow from CP C30 to CP C33A
5534             KM        Crossing at SR-238
5535             RS       3    FLOW      -1
5536             RC   0.050   0.045   0.050    5210  0.0055
5537             RX       0     230     360     370     405     415     525     780
5538             RY    1485    1484    1483    1480    1480    1483    1484    1485
                 *

5539             KK  CPC33A
5540             KM    URS 2009
5541             KM        Temporary combine to reduce hydrographs
5542             KM        Combine DRC13, DRC31, DRC14, DRC10 with DRC30
5543             HC       5   2.688
                 *
1                                          HEC-1 INPUT                                          PAGE139

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

5544             KK   RC33A
5545             KM        Route flow from CP C33A to CP C33E
5546             KM    This is in the 10-foot contour area, used the EEC route.
5547             RS       6    FLOW      -1
5548             RC   0.050   0.045   0.050   18680  0.0059
5549             RX       0       8      50      75     110     135     180     188
5550             RY    1378  1376.5    1376    1372    1372    1376  1376.5    1378
                 *
                 *

5551             KK   DRC29
5552             KM        Return diverted flow from CP C29
5553             DR   DVC29
```

```
                 *

5554             KK   RDC29
5555             KM    This is in the 10-foot contour area, used the EEC route.
5556             KM        Route flow from CP C29 to CP C33B
5557             KM        Crossing at SR-238
5558             RS      11    FLOW      -1
5559             RC   0.050   0.045   0.050   11170  0.0057
5560             RX       0       9      35      55      65      85     110     119
5561             RY    1446 1444.25    1444    1443    1443    1444 1444.25    1446
                 *

5562             KK   DRC28
5563             KM        Return diverted flow from CP C28
5564             DR   DVC28
                 *

5565             KK   RDC28
5566             KM    This is in the 10-foot contour area, used the EEC route.
5567             KM        Route flow from CP C28 to CP C33B
5568             KM        Crossing at SR-238
5569             RS      10    FLOW      -1
5570             RC   0.050   0.045   0.050   10700  0.0059
5571             RX       0     240     420     440     450     470     600     750
5572             RY    1446    1445    1444    1443    1443    1444    1445    1446
                 *

5573             KK   DRC27
5574             KM        Return diverted flow from CP C27
5575             DR   DVC27
                 *

5576             KK   RDC27
5577             KM    This is in the 10-foot contour area, used the EEC route.
5578             KM        Route flow from CP C27 to CP C33B
5579             KM        Crossing at SR-238
5580             RS       4    FLOW      -1
5581             RC   0.050   0.045   0.050    8740  0.0059
5582             RX       0     215     465     470     485     490     700     965
5583             RY    1420    1419    1418    1415    1415    1418    1419    1420
                 *
1                                          HEC-1 INPUT                                                    PAGE140

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

5584             KK   DRC20
5585             KM        Return diverted flow from CP C20
5586             DR   DVC20
                 *

5587             KK   RDC20
5588             KM    This is in the 10-foot contour area, used the EEC route.
5589             KM        Route flow from CP C20 to CP C33B
5590             KM        Crossing at SR-238
5591             RS       3    FLOW      -1
5592             RC   0.050   0.045   0.050    7860  0.0056
5593             RX       0       9      35      40      55      60      85      94
5594             RY    1420 1418.25    1418    1415    1415    1418 1418.25    1420
                 *

5595             KK  CPC33B
5596             KM    URS 2009
5597             KM        Combine DRC29, DRC28, DRC27, with DRC20
5598             HC       4   6.399
                 *

5599             KK  RC33B
5600             KM    This is in the 10-foot contour area, used the EEC route.
5601             KM        Route flow from CP C33B to CP C33D
5602             RS       3    FLOW      -1
5603             RC   0.050   0.045   0.050    5650  0.0058
5604             RX       0      10      50      75     110     135     180     188
5605             RY    1378  1376.5    1376    1372    1372    1376  1376.5    1378
                 *

5606             KK   DRC24
5607             KM        Return diverted flow from CP C24
5608             DR   DVC24
                 *

5609             KK   RDC24
5610             KM    This is in the 10-foot contour area, used the EEC route.
5611             KM        Route flow from CP C22 and C24 to CP C33C
5612             KM        Crossing at SR-238
5613             RS       5    FLOW      -1
5614             RC   0.050   0.045   0.050    5920  0.0048
5615             RX       0     275     490     550     575     620     810    1110
5616             RY    1405    1404    1403    1400    1400    1403    1404    1405
                 *

5617             KK   DRC25
5618             KM        Return diverted flow from CP C25
5619             DR   DVC25
                 *
1                                          HEC-1 INPUT                                                    PAGE141

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

5620             KK   RDC25
5621             KM    This is in the 10-foot contour area, used the EEC route.
5622             KM        Route flow from CP C25 to CP C33C
5623             KM        Crossing at SR-238
5624             RS       5    FLOW      -1
5625             RC   0.050   0.045   0.050    4950  0.0048
```

```
5626          RX       0     275     490     550     575     620     810    1110
5627          RY    1405    1404    1403    1400    1400    1403    1404    1405
              *

5628          KK   DRC26
5629          KM        Return diverted flow from CP C26
5630          DR   DVC26
              *

5631          KK   RDC26
5632          KM    This is in the 10-foot contour area, used the EEC route.
5633          KM        Route flow from CP C26 to CP C33C
5634          KM        Crossing at SR-238
5635          RS       8    FLOW      -1
5636          RC   0.050   0.045   0.050    8370  0.0056
5637          RX       0     230     420     430     440     450     610     880
5638          RY    1414    1413    1412    1410    1410    1412    1413    1414
              *

5639          KK   DRD09
5640          KM        Return diverted flow from CP D09
5641          DR   DVD09
              *

5642          KK   RDD09
5643          KM    This is in the 10-foot contour area, used the EEC route.
5644          KM        Route flow from CP D09 to CP C33C
5645          KM        Crossing at SR-238
5646          RS       3    FLOW      -1
5647          RC   0.050   0.045   0.050    4890  0.0048
5648          RX       0     275     490     550     575     620     810    1110
5649          RY    1405    1404    1403    1400    1400    1403    1404    1405
              *

5650          KK  CPC33C
5651          KM    URS 2009
5652          KM        Temporary combine to reduce hydrographs
5653          KM        Combine DRC24, DRC25, DRC26 with DRD09
5654          HC       4   4.427
              *

5655          KK   RC33C
5656          KM    This is in the 10-foot contour area, used the EEC route.
5657          KM        Route flow from CP C33C to CP C33D
5658          RS       2    FLOW      -1
5659          RC   0.050   0.045   0.050    3420  0.0050
5660          RX       0     100     300     330     370     400     550     650
5661          RY    1380    1378    1375    1372    1372    1375    1378    1380
              *
```



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

5662          KK  CPC33D
5663          KM    URS 2009
5664          KM        Temporary combine to reduce hydrographs
5665          KM        Combine CPC33B WITH CPC33C
5666          HC       2  10.826
              *

5667          KK   RC33D
5668          KM        Route flow from CP C33D to CP C33E
5669          KM    This is in the 10-foot contour area, used the EEC route.
5670          RS       2    FLOW      -1
5671          RC   0.050   0.045   0.050    4530  0.0050
5672          RX       0      20     180     230     290     340     430     450
5673          RY    1350    1348    1345    1340    1340    1345    1348    1350
              *

5674          KK  CPC33E
5675          KM    URS 2009
5676          KM        Temporary combine to reduce hydrographs
5677          KM        Combine CPC33A WITH CPC33D
5678          HC       2  13.514
              *

5679          KK  RC33E
5680          KM    This is in the 10-foot contour area, used the EEC route.
5681          KM        Route flow from CP C33E to CP C33F
5682          RS       2    FLOW      -1
5683          RC   0.050   0.045   0.050    6050  0.0045
5684          RX       0    1400    2000    2045    2125    2170    2770    4170
5685          RY    1340    1328    1325    1320    1320    1325    1328    1340
              *

5686          KK   DRD12
5687          KM        Return diverted flow from CP D12
5688          DR   DVD12
              *

5689          KK   RDD12
5690          KM    This is in the 10-foot contour area, used the EEC route.
5691          KM        Route flow from CP D12 to CP C33F
5692          KM        Crossing at SR-238
5693          RS      15    FLOW      -1
5694          RC   0.050   0.045   0.050   16830  0.0048
5695          RX       0     275     490     550     575     620     810    1110
5696          RY    1405    1404    1403    1400    1400    1403    1404    1405
              *

5697          KK  CPC33F
5698          KM    URS 2009
5699          KM        Temporary combine to reduce hydrographs
5700          KM        Combine CPC33E WITH DRD12
5701          HC       2  13.656
```

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                    *
1                                          HEC-1 INPUT                                                          PAGE143
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5702          KK  RC33F
5703          KM    This is in the 10-foot contour area, used the EEC route.
5704          KM        Route flow from CP C33F to CP CP C33
5705          RS       1    FLOW      -1
5706          RC   0.050   0.045   0.050    2940  0.0045
5707          RX       0    1400    2000    2045    2125    2170    2770    4170
5708          RY    1320    1308    1305    1300    1300    1305    1308    1320
              *

5709          KK     C33   BASIN
5710          KM     URS 2009
5711          KM    Customized XKSAT Values
5712          BA  32.518
5713          LG    0.35    0.35    3.48    0.64       0
5714          UI       0    1427    2197    5498    7308    8744   10759   14662   17629   13516
5715          UI   11181    9014    7282    5328    3023    2401    1782    1427     586     438
5716          UI     438     438     438       0       0       0       0       0       0       0
              *

5717          KK   CPC33
5718          KM    URS 2009
5719          KM        Combine sum of all routed flows C33F with C33
5720          HC       2  46.176
              *

5721          KK  RCPC33
5722          KM        Route flow from CP C33 to CP C34
5723          KM     URS 2009
5724          RS      10    FLOW      -1
5725          RC   0.050   0.045   0.050   15966  0.0057
5726          RX       0    1684    1713    1741    1780    1790    1793    3028
5727          RY  1233.2 1229.99 1228.98 1228.01 1228.01 1229.44 1229.99 1233.20
              *

5728          KK     C34   BASIN
5729          KM     URS 2009
5730          KM    Customized XKSAT Values
5731          BA   0.861
5732          LG    0.35    0.35    3.48    0.64       0
5733          UI       0      70     279     418     654     729     493     334     158      93
5734          UI      48      21      21       0       0       0       0       0       0       0
5735          UI       0       0       0       0       0       0       0       0       0       0
5736          UI       0       0       0       0       0       0       0       0       0       0
5737          UI       0       0       0       0       0       0       0       0       0       0
              *
5738          KM    URS 2009

5739          KK  CPC34A
5740          KM        Combine C33 with C34
5741          HC       2  47.037
              *
1                                          HEC-1 INPUT                                                          PAGE144
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5742          KK     C35   BASIN
5743          KM    Customized XKSAT Values
5744          KM     URS 2009
5745          BA   5.805
5746          LG    0.35    0.35    3.38    0.69       0
5747          UI       0    1217    3727    6902    5597    3103    1127     451     205       0
5748          UI       0       0       0       0       0       0       0       0       0       0
5749          UI       0       0       0       0       0       0       0       0       0       0
5750          UI       0       0       0       0       0       0       0       0       0       0
5751          UI       0       0       0       0       0       0       0       0       0       0
              *

5752          KK  RCPC35
5753          KM        Route flow from CP C35 to CP C34
5754          KM     URS 2009
5755          RS       1    FLOW      -1
5756          RC   0.050   0.045   0.050    1279  0.0047
5757          RX       0    1645    1691    1725    1735    1773    1791    2536
5758          RY  1223.8    1222    1222    1216    1216    1218    1222    1224
              *
5759          KM    URS 2009

5760          KK   CPC34
5761          KM        COMBINE C35 WITH C34
5762          HC       2  52.842
              *

5763          KK  RCPC34
5764          KM        Route flow from CP C34 to CP C36
5765          KM     URS 2009
5766          RS       1    FLOW      -1
5767          RC   0.050   0.045   0.050    3254  0.0061
5768          RX      48     669     701     733     740     852     969    1490
5769          RY    1213    1212 1206.91 1206.91    1210    1208    1208    1213
              *

5770          KK     C36   BASIN
5771          KM    Customized XKSAT Values
5772          KM     URS 2009
5773          BA   3.084
5774          LG    0.35    0.35    3.71    0.55       0
5775          UI       0     303    1116    1688    2801    2441    1647    1000     441     267
5776          UI      79      79      79       0       0       0       0       0       0       0
5777          UI       0       0       0       0       0       0       0       0       0       0
```

```
5778          UI       0       0       0       0       0       0       0       0       0       0
5779          UI       0       0       0       0       0       0       0       0       0       0
              *
5780          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE145

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


5781          KK   CPC36
5782          KM        Combine C34 with C36
5783          HC       2  55.926
              *

5784          KK  RCPC36
5785          KM        Route flow from CP C36 to CP C49
5786          KM     URS 2009
5787          RS       2    FLOW      -1
5788          RC   0.050   0.045   0.050    2404  0.0042
5789          RX      54    1685    1737    1779    1793    1881    1902    3051
5790          RY    1197    1194 1194.92    1192    1190    1190    1194    1197
              *

5791          KK     C49   BASIN
5792          KM     URS 2009
5793          BA   0.186
5794          LG    0.35    0.35    4.45    0.36       0
5795          UI       0     147     390     151      25       0       0       0       0       0
5796          UI       0       0       0       0       0       0       0       0       0       0
5797          UI       0       0       0       0       0       0       0       0       0       0
5798          UI       0       0       0       0       0       0       0       0       0       0
5799          UI       0       0       0       0       0       0       0       0       0       0
              *
5800          KM    URS 2009

5801          KK   CPC49
5802          KM        Combine C36 with C49
5803          HC       2  56.112
              *

5804          KK  RCPC49
5805          KM        Route flow from CP C49 to CP C48
5806          KM     URS 2009
5807          RS       1    FLOW      -1
5808          RC   0.050   0.045   0.050    2303  0.0048
5809          RX      66    1575    1659    1667    1718    1724    1757    1819
5810          RY    1187    1184    1184    1180    1180  1181.9    1186  1186.9
              *

5811          KK     C40   BASIN
5812          KM     URS 2009
5813          KM    Customized XKSAT Values
5814          BA   0.170
5815          LG    0.35    0.35    3.07    0.86       0
5816          UI       0      93     289     205      55      12       0       0       0       0
5817          UI       0       0       0       0       0       0       0       0       0       0
5818          UI       0       0       0       0       0       0       0       0       0       0
5819          UI       0       0       0       0       0       0       0       0       0       0
5820          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


5821          KK    DC40
5822          KM      Divert flow into C43
5823          KM        Natural divergence of flow due to a braided channel network.
5824          DT   DVC40
5825          DI       0      51     126     264     376    1016    2615    4789    7190
5826          DQ       0       0      11      51     127     396    1097    1920    2926
              *

5827          KK  RCPC40
5828          KM        Route remainder flow from CP C40 to CP C42
5829          KM    This is in the 10-foot contour area, used the EEC route.
5830          RS       2    FLOW      -1
5831          RC   0.050   0.045   0.050    3270  0.0125
5832          RX       0      95     190     220     230     260     330     400
5833          RY    1310    1309    1308    1305    1305    1308    1309    1310
              *

5834          KK     C41   BASIN
5835          KM     URS 2009
5836          KM    Customized XKSAT Values
5837          BA   0.078
5838          LG    0.35    0.35    2.97    0.92       0
5839          UI       0      93     176      29       0       0       0       0       0       0
5840          UI       0       0       0       0       0       0       0       0       0       0
5841          UI       0       0       0       0       0       0       0       0       0       0
5842          UI       0       0       0       0       0       0       0       0       0       0
5843          UI       0       0       0       0       0       0       0       0       0       0
              *

5844          KK    DC41
5845          KM      Divert flow into C46
5846          KM        Natural divergence of flow due to a braided channel network.
5847          DT   DVC41
5848          DI       0      25     111     291     888    2325    4280    6549    9192
5849          DQ       0       8      37     106     385    1111    2018    3136    4444
              *

5850          KK  RCPC41
5851          KM        Route remainder flow from CP C41 to CP C42
5852          KM    This is in the 10-foot contour area, used the EEC route.
5853          RS       3    FLOW      -1
```

```
5854          RC   0.050   0.045   0.050    3750  0.0111
5855          RX       0     100     200     225     235     260     315     370
5856          RY    1320    1319    1318    1316    1316    1318    1319    1320
              *

5857          KK     C42   BASIN
5858          KM     URS 2009
5859          KM   Customized XKSAT Values
5860          BA   0.109
5861          LG    0.35    0.35    3.35    0.70       0
5862          UI       0     148     239      31       0       0       0       0       0       0
5863          UI       0       0       0       0       0       0       0       0       0       0
5864          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5865          UI       0       0       0       0       0       0       0       0       0       0
5866          UI       0       0       0       0       0       0       0       0       0       0
              *
5867          KM    URS 2009

5868          KK   CPC42
5869          KM        Combine C40, C41 with C42
5870          HC       3   0.309
              *

5871          KK   DC42A
5872          KM      Divert flow from C42 into C45
5873          KM        Natural divergence of flow due to a braided channel network.
5874          DT  DVC42A
5875          DI       0      38     139     312     569     662    1453    3247    5517    8688
5876          DQ       0      14      53     125     235     289     597    1335    2232    3504
              *

5877          KK   DC42B
5878          KM      Divert flow from C42 into C47
5879          KM        Natural divergence of flow due to a braided channel network.
5880          DT  DVC42B
5881          DI       0      24      86     187     334     372     856    1912    3285    7066
5882          DQ       0      12      43      94     167     187     423     934    1615    3461
              *

5883          KK  RCPC42
5884          KM        Route remainder flow from CP C42 to CP C46
5885          KM    This is in the 10-foot contour area, used the EEC route.
5886          RS       4    FLOW      -1
5887          RC   0.050   0.045   0.050    6390  0.0087
5888          RX       0     100     175     195     205     225     300     400
5889          RY    1285    1284    1282    1280    1280    1282    1284    1285
              *

5890          KK   DRC41
5891          KM        Return diverted flow from CP C41
5892          DR   DVC41
              *

5893          KK   RDC41
5894          KM        Route flow from CP C41 to CP C46
5895          KM    This is in the 10-foot contour area, used the EEC route.
5896          RS      10    FLOW      -1
5897          RC   0.050   0.045   0.050    9810  0.0097
5898          RX       0     100     200     230     240     250     350     450
5899          RY    1295    1294    1292    1290    1290    1292    1294    1295
              *

5900          KK     C46   BASIN
5901          KM     URS 2009
5902          BA   0.245
5903          LG    0.35    0.35    4.10    0.44       0
5904          UI       0      62     185     329     218      98      38       9       9       0
5905          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5906          UI       0       0       0       0       0       0       0       0       0       0
5907          UI       0       0       0       0       0       0       0       0       0       0
5908          UI       0       0       0       0       0       0       0       0       0       0
              *
5909          KM    URS 2009

5910          KK   CPC46
5911          KM        Combine C42, DRC41 with C46
5912          HC       3  0.365
              *

5913          KK    DC46
5914          KM      Divert flow into C47
5915          KM        Natural divergence of flow due to a braided channel network.
5916          DT   DVC46
5917          DI       0      86     480    1337    2824    4976    7584   10606   14012
5918          DQ       0      46     238     644    1309    2212    3290    4530    5920
              *

5919          KK  RCPC46
5920          KM        Route remainder flow from CP C46 to CP C37
5921          KM     URS 2009
5922          RS       6    FLOW      -1
5923          RC   0.050   0.045   0.050    5199  0.0069
5924          RX       0    1157    1187    1191    1205    1265    1274    2312
5925          RY  1229.0  1228.0  1226.3  1226.4  1227.5  1227.8  1228.0  1229.0
              *

5926          KK     C37   BASIN
5927          KM     URS 2009
```

```
5928          KM    Customized XKSAT Values
5929          BA   1.801
5930          LG    0.35    0.35    3.67    0.56       0
5931          UI       0     122     415     668     903    1421    1170     856     614     328
5932          UI     202     122      47      37      37       0       0       0       0       0
5933          UI       0       0       0       0       0       0       0       0       0       0
5934          UI       0       0       0       0       0       0       0       0       0       0
              *
5935          KM    URS 2009

5936          KK   CPC37
5937          KM        Combine C46 with C37
5938          HC       2   2.111
              *

5939          KK  RCPC37
5940          KM        Route flow from CP C37 to CP C48
5941          KM     URS 2009
5942          RS       2    FLOW      -1
5943          RC   0.050   0.045   0.050    3408  0.0073
5944          RX       0     102     143     154     293     425     505     611
5945          RY  1188.9  1188.5  1188.3  1188.0  1188.0  1188.0  1189.7  1189.9
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5946          KK     C48   BASIN
5947          KM     URS 2009
5948          BA   0.255
5949          LG    0.35    0.35    4.40    0.37       0
5950          UI       0     129     405     322      99      23       0       0       0       0
5951          UI       0       0       0       0       0       0       0       0       0       0
5952          UI       0       0       0       0       0       0       0       0       0       0
5953          UI       0       0       0       0       0       0       0       0       0       0
5954          UI       0       0       0       0       0       0       0       0       0       0
              *
5955          KM    URS 2009

5956          KK  CPC48A
5957          KM        Combine C37 with C48
5958          HC       2   2.366
              *

5959          KK   CPC48
5960          KM    URS 2009
5961          KM        Combine C49 with C48
5962          HC       2  59.142
              *

5963          KK  RCPC48
5964          KM        Route flow from CP C48 to CP C47
5965          KM     URS 2009
5966          RS       1    FLOW      -1
5967          RC   0.050   0.045   0.050    1454  0.0034
5968          RX       0    1101    1129    1140    1213    1227    1249    3270
5969          RY    1178    1176    1172    1172  1175.7  1175.7    1174    1178
              *

5970          KK     C39   BASIN
5971          KM     URS 2009
5972          KM    Customized XKSAT Values
5973          BA   0.129
5974          LG    0.35    0.35    2.86    1.00       0
5975          UI       0      91     258     121      23       0       0       0       0       0
5976          UI       0       0       0       0       0       0       0       0       0       0
5977          UI       0       0       0       0       0       0       0       0       0       0
5978          UI       0       0       0       0       0       0       0       0       0       0
5979          UI       0       0       0       0       0       0       0       0       0       0
              *

5980          KK    DC39
5981          KM      Divert flow into C38
5982          KM        Natural divergence of flow due to a braided channel network.
5983          DT   DVC39
5984          DI       0      39     162     364    1092    3015    5246    7971   11144
5985          DQ       0      16      67     153     471    1308    2286    3482    4874
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5986          KK  RCPC39
5987          KM        Route remainder flow from CP C39 to CP C43
5988          KM    This is in the 10-foot contour area, used the EEC route.
5989          RS       4    FLOW      -1
5990          RC   0.050   0.045   0.050    5730  0.0124
5991          RX       0      50      95     120     130     155     225     300
5992          RY    1356    1355    1354    1353    1353    1354    1355    1356
              *

5993          KK   DRC40
5994          KM        Return diverted flow from CP C40
5995          DR   DVC40
              *

5996          KK   RDC40
5997          KM    This is in the 10-foot contour area, used the EEC route.
5998          KM        Route flow from CP C40 to CP C43
5999          RS       2    FLOW      -1
6000          RC   0.050   0.045   0.050    2750  0.0111
6001          RX       0     100     175     195     205     225     300     400
6002          RY    1328    1327    1326    1324    1324    1326    1326    1327
              *
```

```
6003          KK     C43   BASIN
6004          KM     URS 2009
6005          KM   Customized XKSAT Values
6006          BA   0.209
6007          LG    0.35    0.35    2.97    0.92       0
6008          UI       0     151     422     190      36       0       0       0       0       0
6009          UI       0       0       0       0       0       0       0       0       0       0
6010          UI       0       0       0       0       0       0       0       0       0       0
6011          UI       0       0       0       0       0       0       0       0       0       0
6012          UI       0       0       0       0       0       0       0       0       0       0
              *
6013          KM    URS 2009

6014          KK   CPC43
6015          KM        Combine C39, DRC40 with C43
6016          HC       3   0.307
              *

6017          KK    DC43
6018          KM      Divert flow into C38
6019          KM        Natural divergence of flow due to a braided channel network.
6020          DT   DVC43
6021          DI       0      21      83     197     626     961    1739    3835    6345    9647
6022          DQ       0       7      30      73     236     364     727    1693    2894    4640
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6023          KK  RCPC43
6024          KM        Route remainder flow from CP C43 to CP C44
6025          KM    This is in the 10-foot contour area, used the EEC route.
6026          RS       3    FLOW      -1
6027          RC   0.050   0.045   0.050    5190  0.0100
6028          RX       0     100     155     190     210     245     300     400
6029          RY    1268    1267    1266    1264    1264    1266    1267    1268
              *

6030          KK  DRC42A
6031          KM        Return diverted flow from CP C42
6032          DR  DVC42A
              *

6033          KK  RDC42A
6034          KM        Route flow from CP C42 to CP C45
6035          KM    This is in the 10-foot contour area, used the EEC route.
6036          RS       2    FLOW      -1
6037          RC   0.050   0.045   0.050    3540  0.0087
6038          RX       0     100     200     230     245     275     350     450
6039          RY    1275    1274    1273    1270    1270    1273    1274    1275
              *

6040          KK     C45   BASIN
6041          KM     URS 2009
6042          BA   0.125
6043          LG    0.35    0.35    4.35    0.39       0
6044          UI       0     101     265      99      16       0       0       0       0       0
6045          UI       0       0       0       0       0       0       0       0       0       0
6046          UI       0       0       0       0       0       0       0       0       0       0
6047          UI       0       0       0       0       0       0       0       0       0       0
6048          UI       0       0       0       0       0       0       0       0       0       0
              *
6049          KM    URS 2009

6050          KK   CPC45
6051          KM        Combine DRC42A with C45
6052          HC       2   0.246
              *

6053          KK    DC45
6054          KM      Divert flow into C47
6055          KM        Natural divergence of flow due to a braided channel network.
6056          DT   DVC45
6057          DI       0      23      89     207     386     979    2098    3473    5427    7320
6058          DQ       0      12      47     110     208     548    1140    1879    2926    3943
              *

6059          KK  RCPC45
6060          KM        Route remainder flow from CP C45 to CP C44
6061          KM    This is in the 10-foot contour area, used the EEC route.
6062          RS       1    FLOW      -1
6063          RC   0.050   0.045   0.050    1060  0.0097
6064          RX       0      80     160     170     180     190     270     350
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6065          RY    1253    1252    1251    1250    1250    1251    1252    1253
              *

6066          KK     C44   BASIN
6067          KM     URS 2009
6068          BA   0.170
6069          LG    0.35    0.35    4.90    0.28       0
6070          UI       0      98     301     197      49      10       0       0       0       0
6071          UI       0       0       0       0       0       0       0       0       0       0
6072          UI       0       0       0       0       0       0       0       0       0       0
6073          UI       0       0       0       0       0       0       0       0       0       0
6074          UI       0       0       0       0       0       0       0       0       0       0
              *
6075          KM    URS 2009

6076          KK   CPC44
6077          KM        Combine C43, C45 with C44
```

```
6078          HC       3   0.479
              *

6079          KK  RCPC44
6080          KM        Route flow from CP C44 to CP C47
6081          KM     URS 2009
6082          RS      10    FLOW      -1
6083          RC   0.050   0.045   0.050   11418  0.0070
6084          RX       0    1039    1085    1096    1109    1124    1127    2149
6085          RY  1240.5  1239.4  1238.5  1238.5  1238.0  1238.0  1238.4  1240.6
              *

6086          KK   DRC39
6087          KM        Return diverted flow from CP C39
6088          DR   DVC39
              *

6089          KK   RDC39
6090          KM        Route flow from CP C39 to CP C38
6091          KM    This is in the 10-foot contour area, used the EEC route.
6092          RS       8    FLOW      -1
6093          RC   0.050   0.045   0.050    9860  0.0107
6094          RX       0      50     105     125     135     155     210     260
6095          RY    1350    1349    1348    1346    1346    1348    1349    1350
              *

6096          KK   DRC43
6097          KM        Return diverted flow from CP C43
6098          DR   DVC43
              *

6099          KK   RDC43
6100          KM        Route flow from CP C43 to CP C38
6101          KM    This is in the 10-foot contour area, used the EEC route.
6102          RS       3    FLOW      -1
6103          RC   0.050   0.045   0.050    3900  0.0092
6104          RX       0     100     190     230     240     280     330     380
6105          RY    1280    1279    1278    1276    1276    1278    1279    1280
              *
```



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

6106          KK     C38   BASIN
6107          KM     URS 2009
6108          KM    Customized XKSAT Values
6109          BA   0.640
6110          LG    0.35    0.35    3.43    0.67       0
6111          UI       0      84     283     444     684     458     286     119      68      20
6112          UI      18       0       0       0       0       0       0       0       0       0
6113          UI       0       0       0       0       0       0       0       0       0       0
6114          UI       0       0       0       0       0       0       0       0       0       0
6115          UI       0       0       0       0       0       0       0       0       0       0
              *
6116          KM    URS 2009

6117          KK   CPC38
6118          KM        Combine DRC39, DRC43 with C38
6119          HC       3    .807
              *

6120          KK  RCPC38
6121          KM        Route flow from CP C38 to CP C47
6122          KM    This is in the 10-foot contour area, used the EEC route.
6123          RS      20    FLOW      -1
6124          RC   0.050   0.045   0.050   12808  0.0072
6125          RX       0     654     662     664     669     673     763    1265
6126          RY  1239.0  1238.0  1236.0  1236.4  1238.0  1238.0  1238.0  1239.0
              *

6127          KK  DRC42B
6128          KM        Return diverted flow from CP C42
6129          DR  DVC42B
              *

6130          KK  RDC42B
6131          KM        Route flow from CP C42 to CP C47;Typical XS- Small wash
6132          KM     URS 2009
6133          RS      14    FLOW      -1
6134          RC   0.050   0.045   0.050   15509  0.0079
6135          RX       0     600     700     706     711     717     817    1417
6136          RY       6       4       3       0       0       3       4       6
              *

6137          KK   DRC45
6138          KM        Return diverted flow from CP C45
6139          DR   DVC45
              *

6140          KK   RDC45
6141          KM        Route flow from CP C45 to CP C47
6142          KM     URS 2009
6143          RS       7    FLOW      -1
6144          RC   0.050   0.045   0.050   15852  0.0058
6145          RX      23     108     122     127     132     143     168     698
6146          RY  1237.4  1237.7  1237.1  1236.0  1236.0  1236.8  1237.0  1237.5
              *
```



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

6147          KK   DRC46
6148          KM        Return diverted flow from CP C46
6149          DR   DVC46
```

```
                 *

6150             KK   RDC46
6151             KM        Route flow from CP C46 to CP C47
6152             KM     URS 2009
6153             RS      10    FLOW      -1
6154             RC   0.050   0.045   0.050    9680  0.0068
6155             RX       0      18     119     127     129     227     281     311
6156             RY  1228.0  1228.0  1226.0  1226.0  1226.1  1227.5  1228.0  1228.0
                 *

6157             KK     C47   BASIN
6158             KM     URS 2009
6159             BA   1.000
6160             LG    0.35    0.35    4.60    0.33       0
6161             UI       0     107     384     583     970     769     511     276     134      68
6162             UI      27      27       0       0       0       0       0       0       0       0
6163             UI       0       0       0       0       0       0       0       0       0       0
6164             UI       0       0       0       0       0       0       0       0       0       0
6165             UI       0       0       0       0       0       0       0       0       0       0
                 *
6166             KM    URS 2009

6167             KK  CPC47A
6168             KM        Combine C44, C38, DRC42B, DRC45, DRC46 with C47
6169             HC       6   2.565
                 *
6170             KM    URS 2009

6171             KK   CPC47
6172             KM        Combine C48 with C47
6173             HC       2  61.043
                 *

6174             KK  RCPC47
6175             KM        Route flow from CP C47A to CP B09
6176             KM     URS 2009
6177             RS       3    FLOW      -1
6178             RC   0.050   0.045   0.050    7953  0.0038
6179             RX       0     192     201     211     268     318     345     487
6180             RY  1158.0  1158.0  1155.8  1154.0  1154.0  1151.8  1151.8  1164.0
                 *

6181             KK     B09   BASIN
6182             KM     URS 2009
6183             KM        Customized XKSAT Values
6184             BA   0.263
6185             LG    0.38    0.33    3.71    0.60       0
6186             UI       0      39     127     207     286     180     101      41      20       8
6187             UI       8       0       0       0       0       0       0       0       0       0
6188             UI       0       0       0       0       0       0       0       0       0       0
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6189             UI       0       0       0       0       0       0       0       0       0       0
6190             UI       0       0       0       0       0       0       0       0       0       0
                 *

6191             KK   CPB09
6192             KM    URS 2009
6193             KM        Combine C47 with B09
6194             HC       2  61.725
                 *

6195             KK  RCPB09
6196             KM          URS 2009
6197             KM        Route flow from CP B09 to CP B12
6198             RS       1    FLOW      -1
6199             RC   0.050   0.045   0.050    1062  0.0047
6200             RX       0    1035    1059    1175    1283    1310    1353    2288
6201             RY  1141.5  1140.0  1136.0  1136.0  1137.8  1137.8  1140.0  1142.0
                 *

6202             KK     B01   BASIN
6203             KM     URS 2009
6204             KM        Customized XKSAT Values
6205             BA   5.160
6206             LG    0.35    0.35    2.91    0.97       0
6207             UI       0     408    1645    2464    3806    4409    2977    2035     993     577
6208             UI     307     123     123       0       0       0       0       0       0       0
                 *

6209             KK  RCPB01
6210             KM        Route flow from CP B01 to CP B03
6211             KM     THIS ROUTE IS FROM THE EEC STUDY
6212             RS      14    FLOW      -1
6213             RC   0.050   0.045   0.050   23370  0.0091
6214             RX    2490    2500    2750    2900    3100    3250    3500    3510
6215             RY    1400    1399    1398    1397    1397    1398    1399    1400
                 *

6216             KK     B02   BASIN
6217             KM     URS 2009
6218             KM        Customized XKSAT Values
6219             BA   3.584
6220             LG    0.35    0.35    3.27    0.75       0
6221             UI       0     393    1395    2120    3523    2737    1813     951     470     233
6222             UI      96      96       0       0       0       0       0       0       0       0
                 *

6223             KK  RCPB02
6224             KM        Route flow from CP B02 to CP B03
6225             KM     THIS ROUTE IS FROM THE EEC STUDY
6226             RS       2    FLOW      -1
6227             RC   0.050   0.045   0.050    4490  0.0063
```

```
6228          RX       0     250     500     775     825    1100    1350    1600
6229          RY    1280    1279    1278    1275    1275    1278    1279    1280
              *
1                                        HEC-1 INPUT                                                    PAGE156

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

6230          KK     B03   BASIN
6231          KM     URS 2009
6232          BA  13.202
6233          KM        Customized XKSAT Values
6234          LG    0.35    0.35    3.21    0.78       0
6235          UI       0     777    2114    3854    4973    6806    9450    7061    5419    4069
6236          UI    2603    1343    1014     664     238     238     238     238       0       0
              *

6237          KK   CPB03
6238          KM        Combine B01, B02 with B03
6239          HC       3  21.957
              *

6240          KK   DB03N
6241          KM    CP B03N represents the flow that are used for diversions into B16 & B18
6242          KM      FLOW_2D 2009
6243          KM        Natural divergence of flow due to a braided channel network.
6244          DT  DVB03N
6245          DI       0      32      91     221     784    1565    2633    3977    6959   11588
6246          DQ       0      12      39      87     264     563     871    1553    2595    3984
              *

6247          KK  RCPB03
6248          KM        Route remainder flow from CP B03 to CP B13
6249          KM        URS 2009
6250          RS       2    FLOW      -1
6251          RC   0.050   0.045   0.050    2991   0.006
6252          RX       0     637     678     750     775     868     930    1455
6253          RY  1240.1  1238.9  1238.0  1238.0  1238.0  1238.0  1240.0  1241.0
              *

6254          KK  DRB03N
6255          KM        Return diverted flow from North of B03
6256          DR  DVB03N
              *
6257          KM    FLOW-2D 2009

6258          KK  DB16
6259          KM      Divert flow from B03 North into B16
6260          KM        Remainder of flows go into B18 split
6261          KM        Natural divergence of flow due to a braided channel network.
6262          DT  DVB16
6263          DI       0      56     129     421     847    1153    1576    2335    3029
6264          DQ       0      47     111     344     647     820    1062    1450    1793
              *
6265          KM    FLOW-2D 2009

6266          KK  DB18
6267          KM      Divert flow from B18 split to B18 & B13
6268          KM        remainder of flows go back into B13
6269          KM        Natural divergence of flow due to a braided channel network.
6270          DT  DVB18
6271          DI       0      21      90     232     475     763    1146    1656    1945
1                                        HEC-1 INPUT                                                    PAGE157

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

6272          DQ       0      15      69     175     291     441     642     913    1071
              *

6273          KK     B13   BASIN
6274          KM     URS 2009
6275          BA   0.155
6276          LG    0.35    0.35    4.25    0.41       0
6277          UI       0     185     349      57       0       0       0       0       0       0
6278          UI       0       0       0       0       0       0       0       0       0       0
6279          UI       0       0       0       0       0       0       0       0       0       0
6280          UI       0       0       0       0       0       0       0       0       0       0
6281          UI       0       0       0       0       0       0       0       0       0       0
              *
6282          KM    FLOW-2D

6283          KK   CPB13
6284          KM        Combine DB18, DB03N with B13
6285          HC       3  15.131
              *

6286          KK    DB13
6287          KM      Divert flow from CP B13 into basin B14
6288          KM        Natural divergence of flow due to a braided channel network.
6289          KM     FLOW-2D 2009
6290          DT   DVB13
6291          DI       0     156     308     530     973    1488    2190    3945    5178    6923
6292          DQ       0      84     174     328     673    1074    1648    3070    4051    5435
              *

6293          KK  RCPB13
6294          KM         URS 2009
6295          KM        Route remainder flow from CP B13 to CP B05
6296          RS       4    FLOW      -1
6297          RC   0.050   0.045   0.050    4066  0.0057
6298          RX       0     606     675     728     852    1085    1255    1700
6299          RY  1221.6  1220.0  1220.0  1220.0  1220.0  1220.0  1220.6  1221.6
              *

6300          KK     B04   BASIN
6301          KM     URS 2009
```

```
6302          BA   0.906
6303          LG    0.35     0.35     4.10     0.44        0
6304          UI       0      110      378      583      940      668      433      196      106       42
6305          UI      25       25        0        0        0        0        0        0        0        0
              *

6306          KK  RCPB04
6307          KM        Route flow from CP B04 to CP B05
6308          KM      URS 2009
6309          RS       1    FLOW       -1
6310          RC   0.050    0.045    0.050      150   0.0054
6311          RX       0      606      675      728      852     1085     1255     1700
6312          RY  1221.6   1220.0   1220.0   1220.0   1220.0   1220.0   1220.6   1221.6
              *
```



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

6313          KK      B05
6314          KM      URS 2009
6315          BA   0.532
6316          LG    0.35     0.35     4.50     0.35        0
6317          UI       0      102      317      582      534      311      122       54       18       18
              *

6318          KK    CPB05
6319          KM     URS 2009
6320          KM        Combine B13, B04 with B05
6321          HC       3   4.767
              *

6322          KK  RCPB05
6323          KM        Route flow from CP B05 to CP B10
6324          KM      URS 2009
6325          RS       9    FLOW       -1
6326          RC   0.050    0.045    0.050     8286   0.0060
6327          RX       0      600      650      675      700      725      746     1347
6328          RY  1171.5   1170.0   1170.0   1170.0   1170.0   1170.0   1170.0   1171.5
              *

6329          KK      B06
6330          KM      URS 2009
6331          BA   0.566
6332          LG    0.35     0.35     4.60     0.33        0
6333          UI       0      153      452      786      487      200       74       22        0        0
6334          UI       0        0        0        0        0        0        0        0        0        0
6335          UI       0        0        0        0        0        0        0        0        0        0
6336          UI       0        0        0        0        0        0        0        0        0        0
6337          UI       0        0        0        0        0        0        0        0        0        0
              *

6338          KK  RCPB06
6339          KM        Route flow from CP B06 to CP B10
6340          KM      URS 2009
6341          RS       9    FLOW       -1
6342          RC   0.050    0.045    0.050     7040   0.0050
6343          RX       0      100      129      248      309      350      375      527
6344          RY  1166.4   1166.0   1166.0   1165.3   1165.4   1165.9   1166.0   1167.1
              *

6345          KK      B10   BASIN
6346          KM      URS 2009
6347          BA   0.552
6348          LG    0.35     0.35     4.70     0.30        0
6349          UI       0      151      444      769      473      192       70       22        0        0
6350          UI       0        0        0        0        0        0        0        0        0        0
6351          UI       0        0        0        0        0        0        0        0        0        0
6352          UI       0        0        0        0        0        0        0        0        0        0
6353          UI       0        0        0        0        0        0        0        0        0        0
              *
```



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

6354          KK    CPB10
6355          KM     URS 2009
6356          KM        Combine B05, B06 with B10
6357          HC       3   5.901
              *

6358          KK      B11
6359          KM      URS 2009
6360          BA   0.239
6361          LG    0.35     0.35     4.70     0.30        0
6362          UI       0       77      227      350      183       58       18       10        0        0
6363          UI       0        0        0        0        0        0        0        0        0        0
6364          UI       0        0        0        0        0        0        0        0        0        0
6365          UI       0        0        0        0        0        0        0        0        0        0
              *

6366          KK    CPB11
6367          KM     URS 2009
6368          KM        Combine B10 with B11
6369          HC       2   6.140
              *

6370          KK  RCPB11
6371          KM        Route flow from CP B11 to CP B12
6372          KM      URS 2009
6373          RS       3    FLOW       -1
6374          RC   0.050    0.045    0.050     4880   0.0195
6375          RX       0      119      250      388      432      486      625      671
6376          RY  1151.0     1150     1150     1150   1149.5     1150     1150   1150.3
              *
```

```
6377          KK     B12
6378          KM     URS 2009
6379          BA   0.332
6380          LG    0.35    0.35    4.55    0.34       0
6381          UI       0      56     178     310     353     212      99      45      15      11
6382          UI       0       0       0       0       0       0       0       0       0       0
6383          UI       0       0       0       0       0       0       0       0       0       0
6384          UI       0       0       0       0       0       0       0       0       0       0
              *
6385          KM    URS 2009

6386          KK  CPB12A
6387          KM        Combine B11 with B12
6388          HC       2   6.472
              *

6389          KK   CPB12
6390          KM    URS 2009
6391          KM        Combine B09 with B12
6392          HC       2  67.778
              *
```



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

6393          KK     H02   BASIN
6394          KM     URS 2009
6395          BA   1.584
6396          KM    Customized XKSAT Values
6397          LG    0.35    0.35    3.95    0.47      55
6398          UI       0    1513    2735    1124     453     193      71       0       0       0
6399          UI       0       0       0       0       0       0       0       0       0       0
6400          UI       0       0       0       0       0       0       0       0       0       0
6401          UI       0       0       0       0       0       0       0       0       0       0
6402          UI       0       0       0       0       0       0       0       0       0       0
              *

6403          KK  RCPH02
6404          KM        Route flow from CP H02 to CP H01 ;Typical Section - Small wash
6405          KM     URS 2009
6406          RS       4    FLOW      -1
6407          RC   0.050   0.045   0.050    8340  0.0211
6408          RX       0     600     700     706     711     717     817    1417
6409          RY     6.1       4       3       0       0       3       4     6.1
              *

6410          KK     H01   BASIN
6411          KM     URS 2009
6412          KM    Customized XKSAT Values
6413          BA   1.613
6414          LG    0.35    0.35    3.95    0.47       7
6415          UI       0     728    2298    2161     778     194      82       0       0       0
6416          UI       0       0       0       0       0       0       0       0       0       0
6417          UI       0       0       0       0       0       0       0       0       0       0
6418          UI       0       0       0       0       0       0       0       0       0       0
6419          UI       0       0       0       0       0       0       0       0       0       0
              *

6420          KK   CPH01
6421          KM        Combine H02 with H01
6422          HC       2   3.197
              *

6423          KK    DH01
6424          KM      Divert flow into H25
6425          KM        Natural divergence of flow due to a braided channel network.
6426          DT   DVH01
6427          DI       0       3     137     813    2118    4162    6875   10163   13936   18160
6428          DQ       0       3     103     448    1083    2118    3457    5041    6851    8870
              *

6429          KK  RCPH01
6430          KM        Route remainder flow from CP H01 to CP H24
6431          KM     URS 2009
6432          RS       4    FLOW      -1
6433          RC   0.050   0.045   0.050    5721  0.0124
6434          RX       0      12     129     281     405     497     544     615
6435          RY  1362.5  1362.5    1362  1361.2  1361.3  1362.0  1362.6  1362.6
              *
```



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

6436          KK     H24   BASIN
6437          KM    Customized XKSAT Values
6438          KM     URS 2009
6439          BA   0.416
6440          LG    0.35    0.35    3.95    0.47       0
6441          UI       0     305     845     372      70       0       0       0       0       0
6442          UI       0       0       0       0       0       0       0       0       0       0
6443          UI       0       0       0       0       0       0       0       0       0       0
6444          UI       0       0       0       0       0       0       0       0       0       0
6445          UI       0       0       0       0       0       0       0       0       0       0
              *
6446          KM    URS 2009

6447          KK   CPH24
6448          KM        Combine H01 with H24
6449          HC       2   1.981
              *

6450          KK  RCPH24
6451          KM        Route flow from CP H24 to CP H55
```

```
6452          KM     URS 2009
6453          RS       5     FLOW      -1
6454          RC   0.050    0.045    0.050    6117  0.0090
6455          RX      93      718      757     813     863     962    1027    1146
6456          RY  1304.6   1303.5   1303.4   1303.1  1302.9  1302.8  1302.9  1304.5
              *

6457          KK     H55   BASIN
6458          KM    Customized XKSAT Values
6459          KM     URS 2009
6460          BA   0.339
6461          LG    0.35     0.35     3.95     0.47       0
6462          UI       0      183      572      411     112      25       0       0       0       0
6463          UI       0        0        0        0       0       0       0       0       0       0
6464          UI       0        0        0        0       0       0       0       0       0       0
6465          UI       0        0        0        0       0       0       0       0       0       0
6466          UI       0        0        0        0       0       0       0       0       0       0
              *
6467          KM    URS 2009

6468          KK   CPH55
6469          KM        Combine H24 with H55
6470          HC       2   2.320
              *

6471          KK  RCPH55
6472          KM        Route flow from CP H55 to CP H56
6473          KM     URS 2009
6474          RS       6     FLOW      -1
6475          RC   0.050    0.045    0.050    7222  0.0075
6476          RX       0      160      182     226     254     427     473     649
6477          RY  1256.4   1255.2   1255.0   1254.9  1255.0  1255.5  1255.5  1256.0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6478          KK     H56   BASIN
6479          KM     URS 2009
6480          BA   0.395
6481          LG    0.35     0.35     4.00     0.46       0
6482          UI       0      178      552      534     195      49      19       0       0       0
6483          UI       0        0        0        0       0       0       0       0       0       0
6484          UI       0        0        0        0       0       0       0       0       0       0
6485          UI       0        0        0        0       0       0       0       0       0       0
6486          UI       0        0        0        0       0       0       0       0       0       0
              *
6487          KM    URS 2009

6488          KK   CPH56
6489          KM        Combine H55 with H56
6490          HC       2   2.715
              *

6491          KK  RCPH56
6492          KM        Route flow from CP H56 to CP H57;Typical Section - Small Wash
6493          KM     URS 2009
6494          RS       6     FLOW      -1
6495          RC   0.050    0.045    0.050    7018  0.0073
6496          RX       0      600      700     706     711     717     817    1417
6497          RY       6        4        3       0       0       3       4       6
              *

6498          KK     H57   BASIN
6499          KM     URS 2009
6500          BA   0.421
6501          LG    0.35     0.35     4.00     0.46       0
6502          UI       0      194      613      558     197      47      22       0       0       0
6503          UI       0        0        0        0       0       0       0       0       0       0
6504          UI       0        0        0        0       0       0       0       0       0       0
6505          UI       0        0        0        0       0       0       0       0       0       0
              *
6506          KM    URS 2009

6507          KK   CPH57
6508          KM        Combine H56 with H57
6509          HC       2   3.1368
              *

6510          KK  RCPH57
6511          KM        Route flow from CP H57 to CP H68; Typical Section - Small Wash
6512          KM     URS 2009
6513          RS       6     FLOW      -1
6514          RC   0.050    0.045    0.050    6008  0.0058
6515          RX       0      600      700     706     711     717     817    1417
6516          RY       6        4        3       0       0       3       4       6
              *
1                                          HEC-1 INPUT                                                    PAGE163

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

6517          KK     H68   BASIN
6518          KM    Customized XKSAT Values
6519          KM     URS 2009
6520          BA   0.339
6521          LG    0.35     0.35     3.95     0.47       0
6522          UI       0      191      591      400     102      21       0       0       0       0
6523          UI       0        0        0        0       0       0       0       0       0       0
6524          UI       0        0        0        0       0       0       0       0       0       0
6525          UI       0        0        0        0       0       0       0       0       0       0
6526          UI       0        0        0        0       0       0       0       0       0       0
              *
6527          KM    URS 2009
```

```
6528          KK   CPH68
6529          KM        Combine H57 with H68
6530          HC       2   3.475
              *

6531          KK  B12RIV
6532          KM        Combine B08RIV, H68 with B12
6533          HC       3 262.589
              *

6534          KK  RCPB12
6535          KM        Route flow from CP B12RIV to CP H69RIV (WATERMAN WASH)
6536          KM      URS 2009
6537          RS       1    FLOW      -1
6538          RC   0.050   0.035   0.050    1512  0.0026
6539          RX       0    1070    1082    1150    1197    1219    1240    2258
6540          RY  1136.0  1134.0  1132.0  1130.0  1130.0  1132.0  1138.0  1140.0
              *

6541          KK   DRH01
6542          KM        Return diverted flow from CP H01
6543          DR   DVH01
              *

6544          KK   RDH01
6545          KM    URS 2009
6546          KM        Route flow from CP H01 to CP H25
6547          RS       4    FLOW      -1
6548          RC   0.050   0.045   0.050    5623  0.0124
6549          KM       Typical Sheet Flow Small Wash
6550          RX       0     600     700     706     711     717     817    1417
6551          RY       6       4       3       0       0       3       4       6
              *
6552          KM        URS 2009

6553          KK     H25
6554          KM    Customized XKSAT Values
6555          KM        Runoff from H25
6556          BA   0.317
6557          LG    0.35    0.35    3.95    0.47       0
6558          UI       0     238     651     275      50       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE164

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

6559          UI       0       0       0       0       0       0       0       0       0       0
              *
6560          KM    URS 2009

6561          KK   CPH25
6562          KM        Combine DRH01 with H25
6563          HC       2   1.945
              *

6564          KK  RCPH25
6565          KM    URS 2009
6566          KM        Route flow from CP H25 to CP H58
6567          RS       3    FLOW      -1
6568          RC   0.050   0.045   0.050    6161  0.0088
6569          KM       Typical Sheet Flow Route
6570          RX       0     500     700     750     800     900    1100    1600
6571          RY       6       4       2       0       0       2       4       6
              *

6572          KK     H58
6573          KM        URS 2009
6574          KM    Customized XKSAT Values
6575          KM        Runoff from H58
6576          BA   0.305
6577          LG    0.35    0.35    3.95    0.47       0
6578          UI       0     165     515     369     100      22       0       0       0       0
6579          UI       0       0       0       0       0       0       0       0       0       0
              *
6580          KM    URS 2009

6581          KK   CPH58
6582          KM        Combine H25 with H58
6583          HC       2    2.25
              *
6584          KM    URS 2009

6585          KK  RCPH58
6586          KM        Route flow from CP H58 to CP H59
6587          RS       5    FLOW      -1
6588          RC   0.050   0.045   0.050    5199  0.0075
6589          RX     399     899     988    1000    1037    1065    1104    1604
6590          RY  1257.2  1256.2  1256.0  1256.0  1256.0  1256.1  1256.2  1257.2
              *

6591          KK     H26
6592          KM    URS 2009
6593          KM    Customized XKSAT Values
6594          KM        Runoff from H26
6595          BA   0.754
6596          LG    0.35    0.35    3.95    0.47       0
6597          UI       0     162     494     913     720     394     139      55      27       0
6598          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE165

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

6599          KK  RCPH26
6600          KM    URS 2009
6601          KM        Route flow from CP H26 to CP H59
```

```
6602          KM       Typical Sheet Flow Route
6603          RS       2    FLOW      -1
6604          RC   0.050   0.045   0.050    3917  0.0074
6605          RX       0     500     700     750     800     900    1100    1600
6606          RY       6       4       2       0       0       2       4       6
              *

6607          KK     H59
6608          KM    Customized XKSAT Values
6609          KM    URS 2009
6610          KM        Runoff from H59
6611          BA   0.386
6612          LG    0.35    0.35    3.95    0.47       0
6613          UI       0     273     771     361      70       0       0       0       0       0
6614          UI       0       0       0       0       0       0       0       0       0       0
              *
6615          KM    URS 2009

6616          KK   CPH59
6617          KM        Combine H58, H26 with H59
6618          HC       3   3.390
              *
6619          KM    URS 2009

6620          KK    DH59
6621          KM      Divert flow into H61
6622          KM        Natural divergence of flow due to a braided channel network.
6623          DT   DVH59
6624          DI       0      60     604    1705    3352    5414    7849
6625          DQ       0      41     402    1068    1966    3068    4353
              *

6626          KK  RCPH59
6627          KM    URS 2009
6628          KM        Route remainder flow from CP H59 to CP H60
6629          RS      11    FLOW      -1
6630          RC   0.050   0.045   0.050    9192  0.0073
6631          KM       Typical Sheet Flow Route
6632          RX       0     500     700     750     800     900    1100    1600
6633          RY       6       4       2       0       0       2       4       6
              *

6634          KK     H60
6635          KM    Customized XKSAT Values
6636          KM    URS 2009
6637          KM        Runoff from H60
6638          BA   0.551
6639          LG    0.35    0.35    3.95    0.47       0
6640          UI       0     162     475     789     454     166      54      23       0       0
6641          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

6642          KM    URS 2009

6643          KK   CPH60
6644          KM        Combine H59 with H60
6645          HC       2   1.737
              *

6646          KK  RCPH60
6647          KM    URS 2009
6648          KM        Route flow from CP H60 to CP H69
6649          RS       9    FLOW      -1
6650          RC   0.050   0.045   0.050    6105  0.0062
6651          RX     144     778     842     868     898     948    1035    1536
6652          RY  1162.1  1161.1  1160.9  1160.8  1160.8  1160.8  1161.1  1162.1
              *

6653          KK   DRH59
6654          KM        Return diverted flow from CP H59
6655          DR   DVH59
              *

6656          KK   RDH59
6657          KM    URS 2009
6658          KM        Route flow from CP H59 to CP H61
6659          RS      11    FLOW      -1
6660          RC   0.050   0.045   0.050    9092  0.0073
6661          RX       0     596     666     793     806     900     959    1526
6662          RY  1211.0  1210.0  1209.8  1209.8  1209.8  1210.0  1210.0  1211.2
              *

6663          KK     H61
6664          KM    URS 2009
6665          KM        Runoff from H61
6666          BA   0.473
6667          LG    0.35    0.35    4.00    0.46       0
6668          UI       0     144     422     684     380     132      42      20       0       0
6669          UI       0       0       0       0       0       0       0       0       0       0
              *
6670          KM    URS 2009

6671          KK   CPH61
6672          KM        Combine DRH59 with H61
6673          HC       2   2.677
              *

6674          KK  RCPH61
6675          KM    URS 2009
6676          KM        Route flow from CP H61 to CP H69
6677          RS       6    FLOW      -1
6678          RC   0.050   0.045   0.050    6465  0.0060
6679          KM       Typical Sheet Flow Small Wash
```

```
6680          RX       0     600     700     706     711     717     817    1417
6681          RY       6       4       3       0       0       3       4       6
              *
1                                          HEC-1 INPUT                                                          PAGE167

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

6682          KK     H69
6683          KM    Customized XKSAT Values
6684          KM    URS 2009
6685          KM        Runoff from H69
6686          BA   0.530
6687          LG    0.35    0.35    3.95    0.47       0
6688          UI       0     239     755     710     256      64      27       0       0       0
6689          UI       0       0       0       0       0       0       0       0       0       0
              *
6690          KM    URS 2009

6691          KK   CPH69
6692          KM        Combine H60, H61 with H69
6693          HC       3   4.944
              *

6694          KK  H69RIV
6695          KM        Combine B12RIV with H69
6696          HC       2 265.904
              *

6697          KK  RCPH69
6698          KM        Route flow from CP H69RIV to CP B15RIV (WATERMAN WASH)
6699          KM      URS 2009
6700          RS       1    FLOW      -1
6701          RC   0.050   0.035   0.050    1211  0.0033
6702          RX       0     570     582     650     697     719     740    1258
6703          RY  1135.0  1134.0  1132.0  1130.0  1130.0  1132.0  1138.0  1139.0
              *

6704          KK     H65
6705          KM    Customized XKSAT Values
6706          KM    URS 2009
6707          KM        Runoff from H65
6708          BA   0.416
6709          LG    0.35    0.35    3.95    0.47       0
6710          UI       0     132     387     608     324     105      33      18       0       0
6711          UI       0       0       0       0       0       0       0       0       0       0
              *

6712          KK  RCPH65
6713          KM    URS 2009
6714          KM        Route flow from CP H65 to CP H67
6715          RS       4    FLOW      -1
6716          RC   0.050   0.045   0.050    5763  0.0073
6717          KM      Typical Sheet Flow Route
6718          RX       0     500     700     750     800     900    1100    1600
6719          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6720          KK     H67
6721          KM    URS 2009
6722          KM        Runoff from H67
6723          BA   0.186
6724          LG    0.35    0.35    4.00    0.46       0
6725          UI       0      92     290     237      75      17       0       0       0       0
6726          UI       0       0       0       0       0       0       0       0       0       0
              *

6727          KK   CPH67
6728          KM        Combine H65 with H67
6729          HC       2   0.602
              *

6730          KK  RCPH67
6731          KM    URS 2009
6732          KM        Route flow from CP H67 to CP H70
6733          RS       4    FLOW      -1
6734          RC   0.050   0.045   0.050    5443  0.0062
6735          KM      Typical Sheet Flow Route
6736          RX       0     500     700     750     800     900    1100    1600
6737          RY       6       4       2       0       0       2       4      60
              *

6738          KK     H70
6739          KM    Customized XKSAT Values
6740          KM    URS 2009
6741          KM        Runoff from H70
6742          BA   0.493
6743          LG    0.35    0.34    3.95    0.47       0
6744          UI       0     118     358     645     448     213      81      24      19       0
6745          UI       0       0       0       0       0       0       0       0       0       0
              *

6746          KK   CPH70
6747          KM        Combine H67 with H70
6748          HC       2   1.095
              *

6749          KK     B15
6750          KM    URS 2009
6751          KM        Runoff from B15
6752          BA   0.644
6753          LG    0.35    0.35    4.40    0.37       0
```

```
6754          UI       0     157     473     851     581     271     104      29      24       0
              *

6755          KK  B15RIV
6756          KM        Combine H69RIV, H70 with B15
6757          KM        Bullard Avenue crossing at B15RIV
6758          HC       3 267.644
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6759          KK  RCPB15
6760          KM        Route flow from CP B15RIV to CP B45RIV (WATERMAN WASH)
6761          KM      URS 2009
6762          RS       2    FLOW      -1
6763          RC   0.050   0.035   0.050    4500  0.0049
6764          RX       0    1160    1232    1334    1348    1474    1493    2522
6765          RY  1128.0  1126.0  1124.0  1122.2  1120.0  1120.0  1124.0  1127.3
              *

6766          KK   DRB13
6767          KM        Return diverted flow from CP B13
6768          DR   DVB13
              *

6769          KK   RDB13
6770          KM    URS 2009
6771          KM        Route diverted flow from CP B13 to CP B14
6772          RS       4    FLOW      -1
6773          RC   0.050   0.045   0.050    8437  0.0062
6774          RX   122.0   640.0   646.0   655.0   660.0   674.0   708.0  1318.0
6775          RY  1211.1  1207.9  1207.9  1210.1  1210.1  1207.9  1209.8  1211.1
              *

6776          KK     B14
6777          KM    URS 2009
6778          KM        Runoff from B14
6779          BA   0.393
6780          LG    0.35    0.35    4.45    0.36       0
6781          UI       0      89     272     497     366     186      68      24      14       0
              *

6782          KK  DRB18
6783          KM        Return diverted flow from B03 to B18
6784          DR  DVB18
              *
6785          KM    FLOW-2D 2009

6786          KK    DB14
6787          KM      Divert flow from B18 split
6788          KM        remainder of flows go into B14
6789          KM        Natural divergence of flow due to a braided channel network.
6790          DT   DVB14
6791          DI       0      16      77     177     408     579     799     909     951
6792          DQ       0      16      73     161     314     420     555     635     709
              *
6793          KM    FLOW-2D 2009

6794          KK    DB19
6795          KM    Divert flow from B19
6796          KM        remainder of flows go into B14
6797          KM        Natural divergence of flow due to a braided channel network.
6798          DT   DVB19
6799          DI       0      19      39      69     129     175     307     402     490     539
6800          DQ       0      19      33      57      94     117     170     209     239     253
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6801          KK   CPB14
6802          KM        Combine DRB13, DB19 with B14
6803          HC       3  12.331
              *

6804          KK     B21
6805          KM    URS 2009
6806          KM        Runoff from B21
6807          BA   0.313
6808          LG    0.35    0.35    4.15    0.43       0
6809          UI       0     105     308     461     231      72      22      14       0       0
              *

6810          KK   CPB21
6811          KM        Combine B14 with B21
6812          HC       2  12.644
              *

6813          KK  RCPB21
6814          KM    URS 2009
6815          KM        Route flow from CP B21 to CP B45
6816          RS       9    FLOW      -1
6817          RC   0.050   0.045   0.050   10609  0.0062
6818          RX       0     611     692     845     890     902     945    1590
6819          RY  1160.2  1159.3  1158.0  1158.0  1158.5  1158.8  1159.2  1160.2
              *

6820          KK     B20
6821          KM    URS 2009
6822          KM        Runoff from B20
6823          BA   0.177
6824          LG    0.35    0.35    4.00    0.46       0
6825          UI       0     100     308     209      53      11       0       0       0       0
```

```
                 *

6826             KK  RCPB20
6827             KM    URS 2009
6828             KM        Route flow from CP B20 to CP B44
6829             RS       9    FLOW      -1
6830             RC   0.050   0.045   0.050   10978  0.0065
6831             RX       0     100     200     250     280     330     430     530
6832             RY    1130  1129.5    1129    1127    1127    1129  1129.5    1130
                 *

6833             KK     B44
6834             KM    URS 2009
6835             KM        Runoff from B44
6836             BA   0.375
6837             LG    0.35    0.35    4.30    0.40       0
6838             UI       0      84     256     469     351     182      66      24      14       0
6839             UI       0       0       0       0       0       0       0       0       0       0
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6840             KK   CPB44
6841             KM        Combine B20 with B44
6842             HC       2   0.552
                 *

6843             KK  RCPB44
6844             KM    URS 2009
6845             KM        Route flow from CP B44 to CP B45
6846             RS       1    FLOW      -1
6847             RC   0.050   0.045   0.050    1511  0.0073
6848             RX       0     250     337     351     352     362     620     770
6849             RY  1120.0  1120.0  1120.0  1114.0  1114.6  1120.0  1120.0  1120.9
                 *

6850             KK     B45
6851             KM    URS 2009
6852             KM        Runoff from B45
6853             BA   0.967
6854             LG    0.35    0.35    4.30    0.40       0
6855             UI       0     136     453     725    1049     673     397     163      79      29
6856             UI      29       0       0       0       0       0       0       0       0       0
6857             UI       0       0       0       0       0       0       0       0       0       0
                 *

6858             KK   CPB45
6859             KM        Combine B21, AND B44 with B45
6860             HC       3  14.163
                 *

6861             KK  B45RIV
6862             KM        Combine B15RIV with B45
6863             HC       2 282.165
                 *

6864             KK  RCPB45
6865             KM        Route flow from CP B45RIV to CP H72RIV (WATERMAN WASH)
6866             KM    URS 2009
6867             RS       1    FLOW      -1
6868             RC   0.050   0.035   0.050     210  0.0038
6869             RX       0    1160    1232    1434    1448    1448    1473    3002
6870             RY  1128.0  1126.0  1124.0  1122.2  1120.0  1120.0  1124.0  1128.5
                 *

6871             KK     H22
6872             KM    URS 2009
6873             KM    Customized XKSAT Values
6874             KM        Runoff from H22
6875             BA   1.461
6876             LG    0.35    0.35    4.15    0.43       7
6877             UI       0     707    2237    1884     620     144       0       0       0       0
6878             UI       0       0       0       0       0       0       0       0       0       0
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6879             KK  RCPH22
6880             KM    URS 2009
6881             KM        Route flow from CP H22 to CP H23
6882             RS       4    FLOW      -1
6883             RC   0.050   0.045   0.050    5139   0.009
6884             KM       Typical Sheet Flow Small Wash
6885             RX       0     600     700     706     711     717     817    1417
6886             RY       6       4       3       0       0       3       4       6
                 *

6887             KK     H03
6888             KM    URS 2009
6889             KM        Runoff from H03
6890             KM    Customized XKSAT Values
6891             BA   2.186
6892             LG    0.35    0.35    3.88    0.49      61
6893             UI       0     748    2683    2122    1252     719     407     232     141      62
6894             UI      62       0       0       0       0       0       0       0       0       0
                 *

6895             KK  RCPH03
6896             KM    URS 2009
6897             KM        Route flow from CP H03 to CP H23
6898             RS       3    FLOW      -1
6899             RC   0.050   0.045   0.050    9452  0.0142
```

```
KM       Typical Sheet Flow Route
RX       0     500     700     750     800     900    1100    1600
RY       6       4       2       0       0       2       4       6
*

KK     H23
KM    URS 2009
KM    Customized XKSAT Values
KM        Runoff from H23
BA   0.707
LG    0.35    0.35    3.95    0.47       0
UI       0     239     703    1041     517     159      48       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK   CPH23
KM        Combine H22, H03 with H23
HC       3   4.354
*

KK  RCPH23
KM    URS 2009
KM        Route flow from CP H23 to CP H62
RS       4    FLOW      -1
RC   0.050   0.045   0.050    6286  0.0089
RX       0     798     824     937    1088    1100    1183    1775
RY  1303.7  1301.8  1301.7  1301.3  1301.9  1301.9  1302.0  1303.2
*
```



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

KK     H27
KM    Customized XKSAT Values
KM    URS 2009
KM        Runoff from H27
BA   0.383
LG    0.35    0.35    3.95    0.47       0
UI       0     193     609     483     148      34       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK  RCPH27
KM    URS 2009
KM        Route flow from CP H27 to CP H62
RS       4    FLOW      -1
RC   0.050   0.045   0.050    6105  0.0100
KM       Typical Sheet Flow Route
RX       0     500     700     750     800     900    1100    1600
RY       6       4       2       0       0       2       4       6
*

KK     H62
KM    Customized XKSAT Values
KM    URS 2009
KM        Runoff from H62
BA   0.494
LG    0.35    0.35    3.95    0.47       0
UI       0     291     887     562     136      29       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK   CPH62
KM        Combine H23, H27 with H62
HC       3   5.231
*

KK  RCPH62
KM    URS 2009
KM        Route flow from CP H62 to CP H63
RS       3    FLOW      -1
RC   0.050   0.045   0.050    3920  0.0082
RX       0     511     527     612     694     797     850    1872
RY  1251.0  1250.0  1249.9  1249.6  1249.6  1249.6  1249.8  1250.9
*

KK     H20
KM    URS 2009
KM    Customized XKSAT Values
KM        Runoff from H20
BA   0.496
LG    0.35    0.35    3.95    0.47       1
UI       0     250     788     626     192      44       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*
```



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

KK  RCPH20
KM    URS 2009
KM        Route flow from CP H20 to CP H28
RS       4    FLOW      -1
RC   0.050   0.045   0.050    7401  0.0123
KM       Typical Sheet Flow Route
RX       0     500     700     750     800     900    1100    1600
RY       6       4       2       0       0       2       4       6
*

KK     H28
KM    Customized XKSAT Values
KM    URS 2009
KM        Runoff from H28
BA   0.719
```

```
6976          LG    0.35    0.35    3.95    0.47       0
6977          UI       0     337    1068     943     325      75       0       0       0       0
6978          UI       0       0       0       0       0       0       0       0       0       0
              *

6979          KK   CPH28
6980          KM        Combine H20 with H28
6981          HC       2   1.237
              *

6982          KK  RCPH28
6983          KM    URS 2009
6984          KM        Route flow from CP H28 to CP H63
6985          RS       4    FLOW      -1
6986          RC   0.050   0.045   0.050    3965  0.0083
6987          RX       0     535     572     615     643     696     743    1255
6988          RY  1248.4  1247.4  1247.1  1246.8  1246.9  1247.0  1247.3  1248.4
              *

6989          KK     H63
6990          KM    URS 2009
6991          KM        Runoff from H63
6992          BA   0.167
6993          LG    0.35    0.35    4.00    0.46       0
6994          UI       0     148     363     114      17       0       0       0       0       0
6995          UI       0       0       0       0       0       0       0       0       0       0
              *

6996          KK   CPH63
6997          KM        Combine H62, H28 with H63
6998          HC       3   6.635
              *
6999          KM    URS 2009
```

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

7000          KK    DH63
7001          KM      Divert flow into H53
7002          KM        Natural divergence of flow due to a braided channel network.
7003          DT   DVH63
7004          DI       0     481    1660    3307    5954    9187   12953   17212   21935   32676
7005          DQ       0     232     796    1471    2817    4488    6452    8687   11176   16863
              *

7006          KK  RCPH63
7007          KM    URS 2009
7008          KM        Route remainder flow from CP H63 to CP H66
7009          RS       6    FLOW      -1
7010          RC   0.050   0.045   0.050    7290  0.0073
7011          KM       Typical Sheet Flow Small Wash
7012          RX       0     600     700     706     711     717     817    1417
7013          RY       6       4       3       0       0       3       4       6
              *

7014          KK     H66
7015          KM    URS 2009
7016          KM        Runoff from H66
7017          BA   0.722
7018          LG    0.35    0.35    4.00    0.46       0
7019          UI       0      46     146     245     325     500     497     361     264     177
7020          UI      85      61      37      14      14      14       0       0       0       0
7021          UI       0       0       0       0       0       0       0       0       0       0
              *
7022          KM    URS 2009

7023          KK   CPH66
7024          KM        Combine H63 with H66
7025          HC       2   3.6414
              *

7026          KK  RCPH66
7027          KM    URS 2009
7028          KM        Route flow from CP H66 to CP H71
7029          RS       5    FLOW      -1
7030          RC   0.050   0.045   0.050    6460  0.0067
7031          KM       Typical Sheet Flow Small Wash
7032          RX       0     600     700     706     711     717     817    1417
7033          RY       6       4       3       0       0       3       4       6
              *

7034          KK     H71
7035          KM    URS 2009
7036          KM        Runoff from H71
7037          BA   0.648
7038          LG    0.35    0.35    4.00    0.46       0
7039          UI       0     463    1302     597     115       0       0       0       0       0
7040          UI       0       0       0       0       0       0       0       0       0       0
              *
7041          KM    URS 2009
```

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

7042          KK   CPH71
7043          KM        Combine H66 with H71
7044          HC       2   4.289
              *

7045          KK  RCPH71
7046          KM    URS 2009
7047          KM        Route flow from CP H71 to CP H72
7048          RS       3    FLOW      -1
7049          RC   0.050   0.045   0.050    3336  0.0060
```

```
7050          KM       Typical Sheet Flow Small Wash
7051          RX       0     600     700     706     711     717     817    1417
7052          RY       6       4       3       0       0       3       4       6
              *

7053          KK     H72
7054          KM    URS 2009
7055          KM        Runoff from H72
7056          BA   0.422
7057          LG    0.35    0.35    4.15    0.43       0
7058          UI       0     385     925     276      42       0       0       0       0       0
7059          UI       0       0       0       0       0       0       0       0       0       0
              *
7060          KM    URS 2009

7061          KK   CPH72
7062          KM        Combine H71 with H72
7063          HC       2   4.711
              *

7064          KK  H72RIV
7065          KM        Combine H70RIV with H72
7066          HC       2 277.739
              *

7067          KK  RCPH72
7068          KM      URS 2009
7069          KM        Route flow from CP H72RIV to CP B46RIV (WATERMAN WASH)
7070          RS       4    FLOW      -1
7071          RC   0.050   0.035   0.050    6013  0.0025
7072          RX     0.0  1514.0  1756.0  1764.0  1787.0  1871.0  1875.0  3572.0
7073          RY  1129.0  1126.0  1124.0  1122.2  1120.0  1120.0  1124.0  1128.3
              *

7074          KK     B42
7075          KM    URS 2009
7076          KM        Runoff from B42
7077          BA   0.197
7078          LG    0.35    0.35    4.00    0.46       0
7079          UI       0      93     296     257      87      20       0       0       0       0
7080          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE177

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

7081          KK  RCPB42
7082          KM    URS 2009
7083          KM        Route flow from CP B42 to CP B43
7084          RS       8    FLOW      -1
7085          RC   0.050   0.045   0.050    5606  0.062
7086          RX       0     141     150     160     175     201     331     335
7087          RY  1161.0  1160.4  1160.4  1160.4  1160.4  1160.4  1161.3  1161.3
              *

7088          KK     B43
7089          KM    URS 2009
7090          KM        Runoff from B43
7091          BA   0.174
7092          LG    0.35    0.35    4.70    0.30       0
7093          UI       0      71     220     246      98      28       8       0       0       0
7094          UI       0       0       0       0       0       0       0       0       0       0
              *

7095          KK   CPB43
7096          KM        Combine B42 with B43
7097          HC       2   0.371
              *

7098          KK     B41
7099          KM    URS 2009
7100          KM        Runoff from B41
7101          BA   0.445
7102          LG    0.35    0.35    4.20    0.42       0
7103          UI       0      68     223     372     481     298     157      67      29      14
7104          UI      14       0       0       0       0       0       0       0       0       0
7105          UI       0       0       0       0       0       0       0       0       0       0
              *

7106          KK   CPB41
7107          KM        Combine B43 with B41
7108          HC       2   0.816
              *

7109          KK  RCPB41
7110          KM    URS 2009
7111          KM        Route flow from CP B41 to CP B46
7112          RS       8    FLOW      -1
7113          RC   0.050   0.045   0.050    5931  0.0056
7114          RX       0     584     650     700     725     739     759    1260
7115          RY  1117.9  1116.0  1116.0  1116.0  1116.0  1116.0  1116.5  1117.5
              *

7116          KK     B46
7117          KM    URS 2009
7118          KM        Runoff from B46
7119          BA   1.059
7120          LG    0.35    0.35    4.40    0.37       0
7121          UI       0     101     377     569     940     846     573     355     155      96
7122          UI      32      27      27       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE178

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

7123          UI       0       0       0       0       0       0       0       0       0       0
```

```
                 *

7124             KK   CPB46
7125             KM        Combine B41 with B46
7126             HC       2   2.432
                 *

7127             KK  B46RIV
7128             KM        Combine H72RIV with B46
7129             HC       2 280.171
                 *

7130             KK  RCPB46
7131             KM        Route flow from CP B46RIV to CP H74RIV (WATERMAN WASH)
7132             KM    URS 2009
7133             RS       1    FLOW      -1
7134             RC   0.050   0.035   0.050     446  0.0050
7135             RX     221     232     255     273     275     293     348    1495
7136             RY  1104.0  1104.0  1096.0  1093.0  1092.0  1092.0  1096.0  1102.0
                 *

7137             KK   DRH63
7138             KM        Return diverted flow from CP H63
7139             DR   DVH63
                 *

7140             KK   RDH63
7141             KM    URS 2009
7142             KM        Route flow from CP H63 to CP H53
7143             RS       3    FLOW      -1
7144             RC   0.050   0.045   0.050    6011  0.0073
7145             KM       Typical Sheet Flow Route
7146             RX       0     500     700     750     800     900    1100    1600
7147             RY       6       4       2       0       0       2       4       6
                 *

7148             KK     H53
7149             KM    URS 2009
7150             KM        Runoff from H53
7151             BA   0.386
7152             LG    0.35    0.35    4.00    0.46       0
7153             UI       0      86     263     483     361     188      68      25      14       0
7154             UI       0       0       0       0       0       0       0       0       0       0
                 *
7155             KM    URS 2009

7156             KK   CPH53
7157             KM        Combine DRH63 with H53
7158             HC       2   4.102
                 *
```



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

7159             KK     H18
7160             KM    URS 2009
7161             KM    Customized XKSAT Values
7162             KM        Runoff from H18
7163             BA   0.438
7164             LG    0.35    0.35    3.95    0.47       0
7165             UI       0     261     792     494     117      26       0       0       0       0
7166             UI       0       0       0       0       0       0       0       0       0       0
                 *

7167             KK  RCPH18
7168             KM    URS 2009
7169             KM        Route flow from CP H18 to CP H29
7170             RS      13    FLOW      -1
7171             RC   0.050   0.045   0.050   15850  0.0077
7172             KM       Typical Sheet Flow Route
7173             RX       0     500     700     750     800     900    1100    1600
7174             RY       6       4       2       0       0       2       4       6
                 *

7175             KK     H29
7176             KM    URS 2009
7177             KM        Runoff from H29
7178             BA   1.041
7179             LG    0.35    0.35    4.00    0.46       0
7180             UI       0     129     441     682    1089     762     490     216     119      44
7181             UI      29       0       0       0       0       0       0       0       0       0
7182             UI       0       0       0       0       0       0       0       0       0       0
                 *

7183             KK   CPH29
7184             KM        Combine H18 with H29
7185             HC       2   1.479
                 *

7186             KK     H04
7187             KM    URS 2009
7188             KM        Runoff from H04
7189             KM    Customized XKSAT Values
7190             BA   1.207
7191             LG    0.35    0.35    3.45    0.65      11
7192             UI       0     400    1437    1195     701     404     229     135      82      34
7193             UI      34       0       0       0       0       0       0       0       0       0
                 *

7194             KK  RCPH04
7195             KM    URS 2009
7196             KM        Route flow from CP H04 to CP H17
7197             RS       2    FLOW      -1
7198             RC   0.050   0.045   0.050    3834  0.0164
7199             RX       0     143     215     220     233     298     352     469
```

```
7200          RY  1400.7  1400.7  1400.0  1399.9  1400.0  1400.5  1401.0  1401.5
              *
1                                        HEC-1 INPUT                                                    PAGE180

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

7201          KK     H17
7202          KM        Runoff from H17
7203          KM    Customized XKSAT Values
7204          BA   0.453
7205          LG    0.35    0.35    3.95    0.47       2
7206          UI       0     245     765     549     149      33       0       0       0       0
7207          UI       0       0       0       0       0       0       0       0       0       0
              *
7208          KM    URS 2009

7209          KK   CPH17
7210          KM        Combine H04 with H17
7211          HC       2   1.639
              *

7212          KK    DH17
7213          KM      Divert flow into H32
7214          KM        FLOW-2D 2009
7215          KM        Natural divergence of flow due to a braided channel network.
7216          KM    Route remaining flow to CP H30
7217          DT   DVH17
7218          DI       0      41      98     297     648     782     940    1115    1298    1455
7219          DQ       0      31      81     242     326     379     440     508     577     644
              *

7220          KK  DH30A
7221          KM      Divert flow from H30 back into H32 in the middle
7222          KM        FLOW-2D 2009
7223          KM        Natural divergence of flow due to a braided channel network.
7224          KM    Route remaining flow to CP H30
7225          DT  DVH30A
7226          DI       0      29      88     132     176     207     329     457     526     608
7227          DQ       0       7      30      50      72      90     160     241     280     313
              *

7228          KK  RCPH17
7229          KM    URS 2009
7230          KM        Route remainder flow from CP H17 to CP H30
7231          RS       5    FLOW      -1
7232          RC   0.050   0.045   0.050    7897  0.0142
7233          KM       Typical Sheet Flow Route
7234          RX       0     500     700     750     800     900    1100    1600
7235          RY       6       4       2       0       0       2       4       6
              *

7236          KK     H30
7237          KM    Customized XKSAT Values
7238          KM    URS 2009
7239          KM        Runoff from H30
7240          BA   0.477
7241          LG    0.35    0.35    3.95    0.47       0
7242          UI       0     236     744     609     193      45       0       0       0       0
              *
7243          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE181

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

7244          KK   CPH30
7245          KM        Combine H17 with H30
7246          HC       2   0.917
              *

7247          KK  RCPH30
7248          KM        Route flow from CP H30 to CP H51
7249          KM       URS 2009
7250          KM       Typical Sheet Flow Route
7251          RS       3    FLOW      -1
7252          RC   0.050   0.045   0.050    5110  0.0100
7253          RX       0     500     700     750     800     900    1100    1600
7254          RY       6       4       2       0       0       2       4       6
              *

7255          KK     H51
7256          KM    URS 2009
7257          KM        Runoff from H51
7258          BA   0.303
7259          LG    0.35    0.35    4.00    0.46       0
7260          UI       0     236     633     250      43       0       0       0       0       0
7261          UI       0       0       0       0       0       0       0       0       0       0
              *
7262          KM    URS 2009

7263          KK   CPH51
7264          KM        Combine H30 with H51
7265          HC       2   1.220
              *

7266          KK  RCPH51
7267          KM    URS 2009
7268          KM        Route flow from CP H51 to CP H52
7269          RS       4    FLOW      -1
7270          RC   0.050   0.045   0.050    5700  0.0077
7271          KM       Typical Sheet Flow Route
7272          RX       0     500     700     750     800     900    1100    1600
7273          RY       6       4       2       0       0       2       4       6
              *
```

```
7274          KK     H52
7275          KM    URS 2009
7276          KM        Runoff from H52
7277          BA   0.225
7278          LG    0.35    0.35    4.00    0.46       0
7279          UI       0     124     386     269      71      15       0       0       0       0
7280          UI       0       0       0       0       0       0       0       0       0       0
              *
7281          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE182

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

7282          KK  CPH52A
7283          KM        Combine H51 with H52
7284          HC       2   1.445
              *
7285          KM    URS 2009

7286          KK  CPH52B
7287          KM        Combine CP H53 and CP H29 with CP H52A
7288          HC       3   7.026
              *

7289          KK  RCPH52
7290          KM    URS 2009
7291          KM        Route flow from CP H52B to CP H54
7292          RS       4    FLOW      -1
7293          RC   0.050   0.045   0.050    4222  0.0066
7294          RX       0     796     892     972    1013    1076    1224    1776
7295          RY  1169.5  1168.0  1167.6  1167.3  1167.4  1167.3  1168.0  1169.5
              *

7296          KK     H54
7297          KM    URS 2009
7298          KM        Runoff from H54
7299          BA   0.213
7300          LG    0.35    0.35    4.00    0.46       0
7301          UI       0     152     428     196      38       0       0       0       0       0
7302          UI       0       0       0       0       0       0       0       0       0       0
              *
7303          KM    URS 2009

7304          KK   CPH54
7305          KM        Combine CPH52B with H54
7306          HC       2   7.239
              *

7307          KK  RCPH54
7308          KM    URS 2009
7309          KM        Route flow from CP H54 to CP H73
7310          RS       1    FLOW      -1
7311          RC   0.050   0.045   0.050    2625  0.0061
7312          KM       Typical Sheet Flow Route
7313          RX       0     500     700     750     800     900    1100    1600
7314          RY       6       4       2       0       0       2       4       6
              *

7315          KK     H05
7316          KM    Customized XKSAT Values
7317          KM    URS 2009
7318          KM        Runoff from H05
7319          BA   1.506
7320          LG    0.35    0.35    3.45    0.65      26
7321          UI       0     562    1692    2192     971     299      70       0       0       0
              *
              *
1                                          HEC-1 INPUT                                                PAGE183

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

7322          KK  RCPH05
7323          KM    URS 2009
7324          KM        Route flow from CP H05 to CP H31
7325          KM       Typical Sheet Flow Route
7326          RS       2    FLOW      -1
7327          RC   0.050   0.045   0.050    6372  0.0155
7328          RX       0     500     700     750     800     900    1100    1600
7329          RY       6       4       2       0       0       2       4       6
              *

7330          KK    DH05
7331          KM      Divert flow from H05 to CPH15 through H31
7332          KM        FLOW-2D 2009
7333          KM        Natural divergence of flow due to a braided channel network.
7334          KM      Route remaining flow to CPH31
7335          DT   DVH05
7336          DI       0      15      72     102     257     407     539     710     925    1436
7337          DQ       0       0      15      25      76     122     167     226     300     479
              *
              *

7338          KK   DRH17
7339          KM        Return diverted flow from CP H17
7340          DR   DVH17
              *
7341          KM    URS 2009

7342          KK  DH31A
7343          KM      Divert flow from  H17 to H32
7344          KM      remainder flow goes into H31
7345          KM      FLOW-2D 2009
7346          KM        Natural divergence of flow due to a braided channel network.
7347          DT  DVH31A
```

```
7348          DI       0      38      72     107     150     223     371     422     492     590
7349          DQ       0      36      60      84     115     167     267     303     348     409
              *

7350          KK     H31
7351          KM    URS 2009
7352          KM    Customized XKSAT Values
7353          KM        Runoff from H31
7354          BA   0.373
7355          LG    0.35    0.35    3.95    0.47       0
7356          UI       0     232     694     404      88      22       0       0       0       0
7357          UI       0       0       0       0       0       0       0       0       0       0
              *
7358          KM    URS 2009

7359          KK   CPH31
7360          KM        Combine H05 with H31
7361          HC       3   1.589
              *
7362          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE184

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

7363          KK    H15B
7364          KM        Runoff from H15B
7365          BA   0.297
7366          LG    0.35    0.35    4.15    0.43      38
7367          UI       0     679     444       0       0       0       0       0       0       0
7368          UI       0       0       0       0       0       0       0       0       0       0
              *
7369          KM    URS 2009

7370          KK  RCH15B
7371          KM        Route flow from CP H15B to CP H15A
7372          RS       1    FLOW      -1
7373          RC   0.050   0.045   0.050    1940  0.0553
7374          RX       0     163     172     217     239     253     312     486
7375          RY  1343.8  1343.3  1343.3  1342.0  1342.0  1342.0  1342.6  1344.2
              *
7376          KM    URS 2009

7377          KK    H15A
7378          KM    Customized XKSAT Values
7379          KM        Runoff from H15A
7380          BA   0.478
7381          LG    0.35    0.35    3.88    0.49      28
7382          UI       0     413    1033     341      53       0       0       0       0       0
7383          UI       0       0       0       0       0       0       0       0       0       0
              *
7384          KM    URS 2009

7385          KK  CPH15A
7386          KM        Combine H15A with H15B
7387          HC       2   0.775
              *

7388          KK   DRH05
7389          KM        Return diverted flow from CP H05 through H31
7390          DR   DVH05
              *
7391          KM    URS 2009

7392          KK  CPH15
7393          KM        Combine CPH15A with Diversion from CP H05 through H31
7394          HC       2   1.287
              *

7395          KK  DH15A
7396          KM     Split-flow from CPH15 in Basin H33. Diverts flows to H33.
7397          KM     remainder flows to CPH31.
7398          KM     FLOW-2D 2009
7399          KM        Natural divergence of flow due to a braided channel network.
7400          DT  DVH15A
7401          DI       0      46     132     285     439     629     766    1161    1414    1636
7402          DQ       0      19      39      71      98     124     141     212     302     398
              *
7403          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE185

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

7404          KK  CPH31A
7405          KM        Combine divert flows from Diversion from CP H15 and CP H31
7406          HC       2   2.567
              *
7407          KM    URS 2009

7408          KK    DH31
7409          KM      Divert flow into H32
7410          KM      remainder flow goes into H33
7411          KM      FLOW-2D 2009
7412          KM        Natural divergence of flow due to a braided channel network.
7413          DT   DVH31
7414          DI       0      15      48     148     307     516     688     799    1067    1224
7415          DQ       0       0      46      29      60     101     140     166     123     115
              *
7416          KM    URS 2009

7417          KK  DH33A
7418          KM      Divert flow from  DH31 to H33
7419          KM      remainder flow goes into H32
7420          KM      FLOW-2D 2009
7421          KM        Natural divergence of flow due to a braided channel network.
```

```
7422          DT  DVH33A
7423          DI       0      38     108     228     368     559     643     751    1100    1381
7424          DQ       0      32      83     177     288     440     504     588     871    1098
              *

7425          KK   DRH31
7426          KM         Return diverted flow from CP H31 to H32
7427          DR   DVH31
              *
7428          KM    URS 2009

7429          KK  CPH32B
7430          KM        Combine divert flows from Diversion DH31 and DH33A to H32
7431          HC       2   0.668
              *

7432          KK  RCPH31
7433          KM    URS 2009
7434          KM        Route remainder flow from CP H31 to CP H32
7435          RS       7    FLOW      -1
7436          RC   0.050   0.045   0.050    6984  0.0092
7437          RX       0     547     584     593     667     698     750    1359
7438          RY  1313.1  1311.5  1311.1  1311.1  1311.4  1311.5  1312.0  1313.0
              *

7439          KK  DRH31A
7440          KM        Return diverted flow from CP H30
7441          DR  DVH31A
              *
```



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

7442          KK  RDH31A
7443          KM    URS 2009
7444          KM        Route flow from CP H17 to CP H32
7445          RS       7    FLOW      -1
7446          RC   0.050   0.045   0.050   11566  0.0123
7447          KM       Typical Sheet Flow Route
7448          RX       0     500     700     750     800     900    1100    1600
7449          RY       6       4       2       0       0       2       4       6
              *

7450          KK  DRH30A
7451          KM        Return diverted flow from CP H30
7452          DR  DVH30A
              *
7453          KM    FLOW-2D 2009

7454          KK  CPH32A
7455          KM        Combine DRH17 with DRH30A
7456          KM        URS 2009
7457          HC       2   0.653
              *

7458          KK     H32
7459          KM    URS 2009
7460          KM    Customized XKSAT Values
7461          KM        Runoff from H32
7462          BA   0.714
7463          LG    0.35    0.35    3.95    0.47       0
7464          UI       0     201     592    1008     602     234      82      29       0       0
7465          UI       0       0       0       0       0       0       0       0       0       0
              *
7466          KM    URS 2009; FLOW-2D

7467          KK   CPH32
7468          KM        Combine CPH32B, DRH17 with H32
7469          HC       3   2.035
              *

7470          KK    DH32
7471          KM      Divert flow into H48
7472          KM        Natural divergence of flow due to a braided channel network.
7473          DT   DVH32
7474          DI       0      56     449    1403    2907    4831    7123    9753   12696   15933
7475          DQ       0       0      68     364     914    1653    2553    3600    4782    6090
              *
7476          KM    URS 2009

7477          KK  RCPH32
7478          KM        Route remainder flow from CP H32 to CP H50
7479          RS      13    FLOW      -1
7480          RC   0.050   0.045   0.050   11424  0.0081
7481          RX       0     583     698     781     864     972    1488    1638
7482          RY  1227.0  1226.0  1225.8  1225.7  1225.7  1225.9  1226.0  1227.0
              *
```



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

7483          KK   DRH32
7484          KM        Return diverted flow from CP H32
7485          DR   DVH32
              *

7486          KK   RDH32
7487          KM    URS 2009
7488          KM        Route flow from CP H32 to CP H48
7489          RS       4    FLOW      -1
7490          RC   0.050   0.045   0.050    5576  0.0086
7491          KM       Typical Sheet Flow Route
7492          RX       0     500     700     750     800     900    1100    1600
7493          RY       6       4       2       0       0       2       4       6
```

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                 *

7494             KK     H48
7495             KM    URS 2009
7496             KM        Runoff from H48
7497             BA   0.334
7498             LG    0.35    0.35    4.00    0.46       0
7499             UI       0     149     471     450     164      42      17       0       0       0
7500             UI       0       0       0       0       0       0       0       0       0       0
                 *
7501             KM    URS 2009

7502             KK   CPH48
7503             KM        Combine DRH32 with H48
7504             HC       2   0.914
                 *

7505             KK    DH48
7506             KM      Divert flow into H49
7507             KM        Natural divergence of flow due to a braided channel network.
7508             DT   DVH48
7509             DI       0      87     633    2063    4382    7595   11473   15959
7510             DQ       0      54     363    1107    2343    3919    5801    7962
                 *

7511             KK  RCPH48
7512             KM           URS 2009
7513             KM        Route remainder flow from CP H48 to CP H50
7514             RS       6    FLOW      -1
7515             RC   0.050   0.045   0.050    6013  0.0073
7516             KM       Typical Sheet Flow Route
7517             RX       0     500     700     750     800     900    1100    1600
7518             RY       6       4       2       0       0       2       4       6
                 *

7519             KK     H50
7520             KM    URS 2009
7521             KM        Runoff from H50
7522             BA   0.625
7523             LG    0.35    0.35    4.00    0.46       0
7524             UI       0      95     312     519     675     419     224      95      41      19
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7525             UI      19       0       0       0       0       0       0       0       0       0
7526             UI       0       0       0       0       0       0       0       0       0       0
                 *
7527             KM    URS 2009

7528             KK   CPH50
7529             KM        Combine H32, H48 with H50
7530             HC       3   2.539
                 *

7531             KK  RCPH50
7532             KM    URS 2009
7533             KM        Route flow from CP H50 to CP H73
7534             RS       2    FLOW      -1
7535             RC   0.050   0.045   0.050    2986  0.0067
7536             KM       Typical Sheet Flow Route
7537             RX       0     500     700     750     800     900    1100    1600
7538             RY       6       4       2       0       0       2       4       6
                 *

7539             KK   DRH48
7540             KM        Return diverted flow from CP H48
7541             DR   DVH48
                 *

7542             KK   RDH48
7543             KM    URS 2009
7544             KM        Route flow from CP H48 to CP H49
7545             RS       6    FLOW      -1
7546             RC   0.050   0.045   0.050    6013  0.0073
7547             KM       Typical Sheet Flow Route
7548             RX       0     500     700     750     800     900    1100    1600
7549             RY       6       4       2       0       0       2       4       6
                 *

7550             KK     H49
7551             KM    URS 2009
7552             KM        Runoff from H49
7553             BA   0.478
7554             LG    0.35    0.35    4.00    0.46       0
7555             UI       0     130     384     666     410     166      61      19       0       0
7556             UI       0       0       0       0       0       0       0       0       0       0
                 *
7557             KM    URS 2009

7558             KK   CPH49
7559             KM        Combine DRH48 with H49
7560             HC       2   1.008
                 *
7561             KM    URS 2009
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7562             KK  RCPH49
7563             KM        Route flow from CP H49 to CP H73
7564             RS       4    FLOW      -1
7565             RC   0.050   0.045   0.050    3549  0.0062
7566             RX       0     570     582     650     697     719     740    1258
7567             RY  1135.0  1134.0  1132.0  1130.0  1130.0  1132.0  1138.0  1139.0
```

```
                 *

7568             KK     H73
7569             KM    Customized XKSAT Values
7570             KM    URS 2009
7571             KM        Runoff from H73
7572             BA   0.290
7573             LG    0.35    0.35    3.95    0.47       0
7574             UI       0     341     654     111       0       0       0       0       0       0
7575             UI       0       0       0       0       0       0       0       0       0       0
                 *
7576             KM    URS 2009

7577             KK   CPH73
7578             KM        Combine H54, H50, H49 with H73
7579             HC       4  11.076
                 *

7580             KK  RCPH73
7581             KM         URS 2009
7582             KM        Route flow from CP H73 to CP H74
7583             RS       5    FLOW      -1
7584             RC   0.050   0.045   0.050    8907  0.0052
7585             KM       Typical Sheet Flow Farmfield
7586             RX       0     500     600     620     720     740     840    1340
7587             RY       5       3       1       0       0       1       3       5
                 *

7588             KK     H74
7589             KM    URS 2009
7590             KM        Runoff from H74
7591             BA   0.802
7592             LG    0.35    0.35    4.00    0.46       0
7593             UI       0     297     892    1168     524     162      38       0       0       0
7594             UI       0       0       0       0       0       0       0       0       0       0
                 *
7595             KM    URS 2009

7596             KK   CPH74
7597             KM        Combine H73 with H74
7598             HC       2  11.878
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7599             KK  H74RIV
7600             KM        Combine B46RIV with H74
7601             HC       2 290.015
                 *

7602             KK  RCPH74
7603             KM        Route flow from CP H74RIV to CP H77RIV (WATERMAN WASH)
7604             KM      URS 2009
7605             RS       2    FLOW      -1
7606             RC   0.050   0.035   0.050    4038   .0027
7607             RX      19     549     590     654     696     725     742    1769
7608             RY  1105.0  1104.0  1096.0  1093.0  1092.0  1092.0  1096.0  1102.0
                 *

7609             KK  DRH15A
7610             KM        Return Split flow from CP H15A
7611             DR  DVH15A
                 *
7612             KM    URS 2009

7613             KK  RCH15A
7614             KM        Route flow from CP H15A to CP H33
7615             RS       1    FLOW      -1
7616             RC   0.050   0.045   0.050    1940  0.0553
7617             RX       0      25     121     203     283     305     311     370
7618             RY  1320.0  1320.0  1317.5  1315.2  1316.0  1316.6  1316.8  1316.8
                 *
                 *

7619             KK  DRH33A
7620             KM        Return diverted flow Diversion H31 into H33
7621             DR  DVH33A
                 *
7622             KM    URS 2009

7623             KK   RDH33
7624             KM        Route flow from CP H31 to CP H33
7625             RS       5    FLOW      -1
7626             RC   0.050   0.045   0.050   10756  0.0093
7627             KM       Typical Sheet Flow Route
7628             RX       0     500     700     750     800     900    1100    1600
7629             RY       6       4       2       0       0       2       4       6
                 *
7630             KM    URS 2009

7631             KK  CPH33B
7632             KM        Combines diversions at CPH15A, CPH31A
7633             HC       2   2.059
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7634             KK     H33
7635             KM    URS 2009
7636             KM    Customized XKSAT Values
7637             KM        Runoff from H33
7638             BA   1.083
```

```
7639          LG    0.35    0.35    3.95    0.47       0
7640          UI       0     194     609    1089    1125     668     285     138      37      36
7641          UI       0       0       0       0       0       0       0       0       0       0
7642          UI       0       0       0       0       0       0       0       0       0       0
              *
7643          KM    URS 2009

7644          KK   CPH33
7645          KM        Combine H33B with H33
7646          HC       2   2.833
              *
7647          KM    URS 2009

7648          KK    DH33
7649          KM      Divert flow into H46
7650          KM        Natural divergence of flow due to a braided channel network.
7651          DT   DVH33
7652          DI       0     349    1458    3403    6225   10616   16253
7653          DQ       0     175     729    1702    3113    5308    8126
              *

7654          KK  RCPH33
7655          KM    URS 2009
7656          KM        Route remainder flow from CP H33 to CP H47
7657          RS       3    FLOW      -1
7658          RC   0.050   0.045   0.050    5480  0.0080
7659          KM       Typical Sheet Flow Route
7660          RX       0     500     700     750     800     900    1100    1600
7661          RY       6       4       2       0       0       2       4       6
              *

7662          KK     H47
7663          KM    URS 2009
7664          KM        Runoff from H47
7665          BA   0.383
7666          LG    0.35    0.35    4.00    0.46       0
7667          UI       0     274     769     353      68       0       0       0       0       0
7668          UI       0       0       0       0       0       0       0       0       0       0
              *
7669          KM    URS 2009

7670          KK   CPH47
7671          KM        Combine H33 with H47
7672          HC       2   1.799
              *
```

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

7673          KK  RCPH47
7674          KM    URS 2009
7675          KM        Route flow from CP H47 to CP H75
7676          RS       4    FLOW      -1
7677          RC   0.050   0.045   0.050    5619  0.0056
7678          KM       Typical Sheet Flow Route
7679          RX       0     500     700     750     800     900    1100    1600
7680          RY       6       4       2       0       0       2       4       6
              *

7681          KK     H75
7682          KM    Customized XKSAT Values
7683          KM    URS 2009
7684          KM        Runoff from H75
7685          BA   0.747
7686          LG    0.10    0.25    4.00    0.39       5
7687          UI       0    1077    1377     338      63      29       0       0       0       0
7688          UI       0       0       0       0       0       0       0       0       0       0
7689          UI       0       0       0       0       0       0       0       0       0       0
              *
7690          KM    URS 2009

7691          KK   CPH75
7692          KM        Combine H47 with H75
7693          HC       2   2.273
              *

7694          KK  RCPH75
7695          KM    URS 2009
7696          KM        Route flow from CP H75 to CP H76
7697          RS       3    FLOW      -1
7698          RC   0.050   0.045   0.050    5356  0.0056
7699          KM       Typical Sheet Flow Farmfield
7700          RX       0     500     600     620     720     740     840    1340
7701          RY       5       3       1       0       0       1       3       5
              *

7702          KK     H76
7703          KM    URS 2009
7704          KM        Runoff from H76
7705          BA   0.752
7706          LG    0.35    0.35    4.00    0.46       0
7707          UI       0     387    1216     939     278      64       0       0       0       0
7708          UI       0       0       0       0       0       0       0       0       0       0
              *
7709          KM    URS 2009

7710          KK   CPH76
7711          KM        Combine H75 with H76
7712          HC       2   3.025
              *
```

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

```
7713          KK  RCPH76
7714          KM       Route flow from CP H76 to CP H77
7715          KM       Typical Sheet Flow Small Wash
7716          KM     URS 2009
7717          RS       3    FLOW      -1
7718          RC   0.050   0.045   0.050    3551  0.0054
7719          RX       0     600     700     706     711     717     817    1417
7720          RY       6       4       3       0       0       3       4       6
              *
              *

7721          KK     H77
7722          KM    URS 2009
7723          KM        Runoff from H77
7724          BA   0.273
7725          LG    0.33    0.34    4.25    0.40       0
7726          UI       0     287     613     137       0       0       0       0       0       0
7727          UI       0       0       0       0       0       0       0       0       0       0
              *
7728          KM    URS 2009

7729          KK   CPH77
7730          KM        Combine H76 with H77
7731          HC       2   3.298
              *

7732          KK  H77RIV
7733          KM        Combine H74RIV with H77
7734          KM        Riggs Road crossing at H77RIV
7735          HC       2 294.029
              *

7736          KK  RCPH77
7737          KM        Route flow from CP H77RIV to CP B61RIV (WATERMAN WASH)
7738          KM    URS 2009
7739          RS       1    FLOW      -1
7740          RC   0.050   0.035   0.050    3676  0.0028
7741          RX     411     447     459     495     523     576     579     964
7742          RY  1092.0  1085.6  1082.7  1080.0  1080.0  1082.0  1086.0  1086.0
              *

7743          KK     B40
7744          KM    URS 2009
7745          KM        Runoff from B40
7746          KM        Customized XKSAT Values
7747          BA   0.182
7748          LG    0.35    0.35    3.19    0.79       0
7749          UI       0      64     190     268     127      38      10       0       0       0
7750          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

7751          KK  RCPB40
7752          KM    URS 2009
7753          KM        Route flow from CP B40 to CP B50
7754          RS      11    FLOW      -1
7755          RC   0.050   0.045   0.050    7346  0.0063
7756          RX       0      25      60      90     100     150     212     309
7757          RY  1147.6  1147.1  1146.0  1146.0  1146.0  1146.0  1146.0  1148.0
              *

7758          KK     B49
7759          KM    URS 2009
7760          KM        Runoff from B49
7761          BA   0.269
7762          LG    0.35    0.36    5.00    0.27       0
7763          UI       0      88     258     394     204      65      20      12       0       0
7764          UI       0       0       0       0       0       0       0       0       0       0
              *
7765          KM    URS 2009

7766          KK  RCPB49
7767          KM        Route flow from CP B49 to CP B50
7768          RS       2    FLOW      -1
7769          RC   0.050   0.045   0.050    1842  0.0043
7770          RX       0    1132    1140    1144    1151    1169    1199    2235
7771          RY  1119.2  1118.0  1116.0  1116.0  1116.5  1116.5  1117.4  1119.2
              *
              *

7772          KK     B50
7773          KM    URS 2009
7774          KM        Runoff from B50
7775          BA   0.273
7776          LG    0.35    0.35    4.45    0.36       0
7777          UI       0      67     201     361     246     115      44      12      10       0
7778          UI       0       0       0       0       0       0       0       0       0       0
              *

7779          KK   CPB50
7780          KM        Combine B40, B49 with B50
7781          HC       3
              *

7782          KK  RCPB50
7783          KM    URS 2009
7784          KM        ROUTE FLOW FROM CP B50 TO CP B48
7785          RS       5    FLOW      -1
7786          RC   0.050   0.045   0.050    2973  0.0027
7787          RX     0.0   530.0   540.0   545.0   550.0   560.0   562.0  1093.0
7788          RY  1113.0  1110.0  1110.0  1110.0  1110.0  1110.0  1110.0  1112.0
              *
7789          KM    URS 2009
```

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

7790          KK     B19
7791          KM        Runoff from B19
7792          BA   0.538
7793          LG    0.35    0.35    4.15    0.43       0
7794          UI       0      68     231     359     567     391     250     107      60      21
7795          UI      15       0       0       0       0       0       0       0       0       0
              *

7796          KK   DRB19
7797          KM        Return diverted flow from B14
7798          DR   DVB19
              *

7799          KK   CPB19
7800          KM        Combine B19 and DRB19
7801          HC       2   0.875
              *

7802          KK  RCPB19
7803          KM    URS 2009
7804          KM        Route flow from CP B19 to CP B48
7805          RS       9    FLOW      -1
7806          RC   0.050   0.045   0.050    6721  0.0054
7807          RX       0     183     200     250     300     400     495     610
7808          RY  1128.1  1126.0  1126.0  1126.0  1126.0  1126.0  1126.0  1126.8
              *

7809          KK     B48
7810          KM    URS 2009
7811          KM        Runoff from B48
7812          BA   0.574
7813          LG    0.35    0.35    4.55    0.34       0
7814          UI       0     165     483     815     479     182      62      23       0       0
              *

7815          KK   CPB48
7816          KM        Combine CPB19, AND BCP50 with B48
7817          HC       3   2.173
              *

7818          KK  RCPB48
7819          KM    URS 2009
7820          KM        Route flow from CP B48 to CP B47
7821          RS       2    FLOW      -1
7822          RC   0.050   0.045   0.050    1837  0.0044
7823          KM       Typical Sheet Flow Small Wash
7824          RX       0     600     700     706     711     717     817    1417
7825          RY       6       4       3       0       0       3       4       6
              *
```



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

7826          KK     B47
7827          KM    URS 2009
7828          KM        Runoff from B47
7829          BA   0.316
7830          LG    0.35    0.35    4.50    0.35       0
7831          UI       0     125     379     454     188      55      15       0       0       0
7832          UI       0       0       0       0       0       0       0       0       0       0
              *
7833          KM    URS 2009

7834          KK   CPB47
7835          KM        Combine B48 WITH B47
7836          HC       2   2.489
              *

7837          KK  RCPB47
7838          KM    URS 2009
7839          KM        Route flow from CP B47 to CP B61
7840          RS       7    FLOW      -1
7841          RC   0.050   0.045   0.050    8683  0.0028
7842          RX    68.0    73.0    77.0    94.0   132.0   184.0   213.0   228.0
7843          RY  1092.0  1090.0  1088.0  1084.0  1082.0  1082.0  1086.0  1088.0
              *

7844          KK     B61
7845          KM    URS 2009
7846          KM        Runoff from B61
7847          BA   0.746
7848          LG    0.13    0.26    4.60    0.28       5
7849          UI       0     335     989     874     400     160      74      16      16      16
              *
7850          KM    URS 2009

7851          KK   CPB61
7852          KM        Combine B47 with B61
7853          HC       2   3.235
              *

7854          KK  B61RIV
7855          KM        Combine H77RIV with B61
7856          HC       2 296.927
              *

7857          KK  RCPB61
7858          KM      Route flow from CP B61RIV to CP H80RIV (WATERMAN WASH)
7859          KM    URS 2009
7860          RS       1    FLOW      -1
```

```
7861          RC   0.050   0.035   0.050     138  0.0050
7862          RX     411     447     459     495     523     576     579     964
7863          RY  1092.0  1085.6  1082.7  1080.0  1080.0  1082.0  1086.0  1086.0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


7864          KK     B22
7865          KM    URS 2009
7866          KM        Runoff from B22
7867          KM        Customized XKSAT Values
7868          BA   0.548
7869          LG    0.35    0.35    3.53    0.62       0
7870          UI       0     406    1120     482      89       0       0       0       0       0
7871          UI       0       0       0       0       0       0       0       0       0       0
              *

7872          KK  RCPB22
7873          KM    URS 2009
7874          KM        Route flow from CP B22 to CP B37
7875          RS       8    FLOW      -1
7876          RC   0.050   0.045   0.050    5163  0.0062
7877          RX     0.0   632.0   650.0   675.0   690.0   700.0   704.0  1503.0
7878          RY  1155.2  1154.0  1154.0  1154.0  1154.0  1154.0  1154.0  1155.3
              *

7879          KK     B23
7880          KM    URS 2009
7881          KM        Runoff from B23
7882          KM        Customized XKSAT Values
7883          BA   0.299
7884          LG    0.35    0.35    2.89    0.98       0
7885          UI       0     494     595      63       0       0       0       0       0       0
7886          UI       0       0       0       0       0       0       0       0       0       0
              *
7887          KM    URS 2009

7888          KK    DB23
7889          KM      Divert flow into B24
7890          KM        Natural divergence of flow due to a braided channel network.
7891          DT   DVB23
7892          DI       0      81     357     966    1865    2998    4338    5865    7565    9427
7893          DQ       0       0      19     240     641    1183    1846    2618    3491    4457
              *

7894          KK  RCPB23
7895          KM    URS 2009
7896          KM        Route remainder flow from CP B23 to CP B36
7897          RS       4    FLOW      -1
7898          RC   0.050   0.045   0.050    3439  0.0070
7899          RX       0      93     132     150     175     200     211     260
7900          RY  1161.0  1160.4  1160.0  1160.0  1160.0  1160.0  1160.0  1160.9
              *

7901          KK     B36
7902          KM    URS 2009
7903          KM        Runoff from B36
7904          BA   0.184
7905          LG    0.35    0.35    4.55    0.34       0
7906          UI       0      89     282     237      78      18       0       0       0       0
7907          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7908          KM    URS 2009

7909          KK   CPB36
7910          KM        Combine B23 with B36
7911          HC       2   0.468
              *

7912          KK   DRB23
7913          KM        Return divert from CP B23 in basin B24
7914          DR   DVB23
              *

7915          KK   RDB23
7916          KM    URS 2009
7917          KM        Route diverted flow from CP B23 to CP B24
7918          RS      11    FLOW      -1
7919          RC   0.050   0.045   0.050    3382  0.0071
7920          RX       0      60      73      78      80      94     150     252
7921          RY  1160.9  1161.0  1160.7  1160.7  1160.7  1160.7  1160.8  1161.0
              *

7922          KK     B24
7923          KM    URS 2009
7924          KM        Runoff from B24
7925          KM        Customized XKSAT Values
7926          BA   0.238
7927          LG    0.35    0.35    3.19    0.79       0
7928          UI       0     233     529     139      20       0       0       0       0       0
7929          UI       0       0       0       0       0       0       0       0       0       0
              *
7930          KM    URS 2009

7931          KK  CPB24A
7932          KM        Combine DRB23 with B24
7933          HC       2   0.253
              *
7934          KM    URS 2009
```

```
7935          KK   CPB24
7936          KM        Combine B36 with B24
7937          HC       2   0.721
              *

7938          KK  RCPB24
7939          KM    URS 2009
7940          KM        Route flow from CP B24 to CP B37
7941          RS       2    FLOW     -1
7942          RC   0.050   0.045   0.050    2005  0.0045
7943          RX       0     534     571     600     617     650     668    1249
7944          RY  1144.3  1142.4  1142.0  1142.0  1142.0  1142.0  1142.0  1144.7
              *
1                                          HEC-1 INPUT                                                    PAGE199

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

7945          KK     B37
7946          KM    URS 2009
7947          KM        Runoff from B37
7948          BA   0.086
7949          LG    0.35    0.35    4.55    0.34       0
7950          UI       0      59     170      83      17       0       0       0       0       0
7951          UI       0       0       0       0       0       0       0       0       0       0
              *
7952          KM    URS 2009

7953          KK   CPB37
7954          KM        Combine B22, B24 with B37
7955          HC       3   1.355
              *

7956          KK     B25
7957          KM    URS 2009
7958          KM        Runoff from B25
7959          KM        Customized XKSAT Values
7960          BA   0.298
7961          LG    0.35    0.35    3.07    0.86       0
7962          UI       0     172     527     345      86      17       0       0       0       0
7963          UI       0       0       0       0       0       0       0       0       0       0
              *
7964          KM    URS 2009

7965          KK   CPB25
7966          KM        COMBINE B37 WITH B25
7967          HC       2   1.653
              *

7968          KK  RCPB25
7969          KM    URS 2009
7970          KM        Route flow from CP B25 to CP B26
7971          RS       4    FLOW     -1
7972          RC   0.050   0.045   0.050    3354  0.0048
7973          RX      95     602     650     675     690     705     783    1305
7974          RY  1128.0  1126.0  1126.0  1126.0  1126.0  1126.0  1126.6  1127.7
              *

7975          KK     B26
7976          KM    URS 2009
7977          KM        Runoff from B26
7978          KM        Customized XKSAT Values
7979          BA   0.353
7980          LG    0.35    0.35    3.19    0.79       0
7981          UI       0     129     388     515     234      72      17       0       0       0
7982          UI       0       0       0       0       0       0       0       0       0       0
              *
7983          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE200

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

7984          KK   CPB26
7985          KM        Combine B25 with B26
7986          HC       2   2.006
              *
7987          KM    URS 2009

7988          KK    DB26
7989          KM      Divert flow into B33
7990          KM        Natural divergence of flow due to a braided channel network.
7991          DT   DVB26
7992          DI       0       3      14     206     604    1152    1830    2621    3518
7993          DQ       0       0       0     114     353     686    1099    1585    2136
              *

7994          KK  RCPB26
7995          KM    URS 2009
7996          KM        Route remainder flow from CP B26 to CP B65
7997          RS       4    FLOW     -1
7998          RC   0.050   0.045   0.050    3114  0.0032
7999          RX       0      69     148     189     209     292     317     320
8000          RY  1111.2  1111.1  1110.0  1110.0  1110.3  1111.3  1111.5  1111.5
              *

8001          KK   DRB14
8002          KM        Return diverted flow from B18 split after diversion to B14
8003          DR   DVB14
              *
8004          KM    FLOW-2D 2009

8005          KK   DB18B
8006          KM      Divert flow from B18 split to B16 further downstream
8007          KM        remainder of flows go into B18
8008          KM        Natural divergence of flow due to a braided channel network.
```

```
8009          DT  DVB18B
8010          DI       0      12      78     155     245     377     431     559     614
8011          DQ       0       3      24      44      70     117     139     194     219
              *
              *
8012          KM    URS 2009

8013          KK  RDB18
8014          KM        Route diverted flow from CP B03 to CP B18
8015          RS      17    FLOW      -1
8016          RC   0.050   0.045   0.050   15261  0.0073
8017          RX       0     105     125     150     164     222     328     339
8018          RY  1212.8  1212.0  1212.0  1212.0  1212.0  1212.8  1213.7  1213.7
              *
              *
1                                          HEC-1 INPUT                                                    PAGE201

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


8019          KK     B17
8020          KM    URS 2009
8021          KM        Runoff from B17
8022          KM        Customized XKSAT Values
8023          BA   0.048
8024          LG    0.35    0.35    3.60    0.58       0
8025          UI       0      81      94      10       0       0       0       0       0       0
              *
8026          KM    URS 2009

8027          KK    DB17
8028          KM      Divert flow into B16
8029          KM        Natural divergence of flow due to a braided channel network.
8030          DT   DVB17
8031          DI       0       8     114     476    1123    1968    2986    4161    5479
8032          DQ       0       4      62     245     558     964    1452    2011    2638
              *

8033          KK  RCPB17
8034          KM    URS 2009
8035          KM        Route remainder flow from CP B17 to CP B18
8036          RS      13    FLOW      -1
8037          RC   0.050   0.045   0.050   10604  0.0072
8038          RX       0      25      50      65      85      86     116     212
8039          RY  1186.0  1186.0  1186.0  1186.0  1183.8  1183.8  1185.7  1186.0
              *

8040          KK     B18
8041          KM    URS 2009
8042          KM        Runoff from B18
8043          KM        Customized XKSAT Values
8044          BA   0.623
8045          LG    0.35    0.35    3.58    0.60       0
8046          UI       0      83     280     441     669     443     272     113      63      18
8047          UI      18       0       0       0       0       0       0       0       0       0
              *
8048          KM    URS 2009

8049          KK   CPB18
8050          KM        Combine DB18B, B17 with B18
8051          HC       3   1.641
              *
              *

8052          KK  DRB16
8053          KM        Return diverted flow from B18 (split between B18 and B16)
8054          DR  DVB16
              *
1                                          HEC-1 INPUT                                                    PAGE202

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


8055          KK  RDB16
8056          KM        Route diverted flow from CP B03 to CP B16
8057          RS       7    FLOW      -1
8058          RC   0.050   0.045   0.050    9151  0.0076
8059          KM       Typical Sheet Flow Small Wash
8060          RX       0     600     700     706     711     717     817    1417
8061          RY       6       4       3       0       0       3       4       6
              *

8062          KK   DRB17
8063          KM        Return diverted flow from B17
8064          DR   DVB17
              *

8065          KK   RDB17
8066          KM    URS 2009
8067          KM        Route flow from CP B17 to CP B16
8068          RS      12    FLOW      -1
8069          RC   0.050   0.045   0.050    4676  0.0073
8070          RX      23     102     125     150     165     175     250     279
8071          RY  1190.5  1189.9  1189.9  1189.9  1189.9  1189.9  1190.5  1190.9
              *

8072          KK  DRB18B
8073          KM        Return diverted flow from B18 split after diversion to B14
8074          DR  DVB18B
              *

8075          KK     B16
8076          KM    URS 2009
8077          KM        Runoff from B16
8078          KM        Customized XKSAT Values
8079          BA   0.821
```

```
8080          LG    0.35    0.35    3.58    0.60       0
8081          UI       0     259     757    1198     644     211      68      35       0       0
              *
8082          KM    URS 2009

8083          KK   CPB16
8084          KM        Combine DVB16, DVB17, DVB18B with B16
8085          HC       4   6.322
              *

8086          KK  RCPB16
8087          KM    URS 2009
8088          KM        Route flow from CP B16 to CP B39
8089          RS       6    FLOW      -1
8090          RC   0.050   0.045   0.050    6434  0.0065
8091          RX       0     565     666     680     745     829     844    1440
8092          RY  1162.0  1161.2  1160.3  1160.0  1160.0  1160.0  1160.4  1161.7
              *
1                                          HEC-1 INPUT                                                    PAGE203

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

8093          KK     B39
8094          KM    URS 2009
8095          KM        Runoff from B39
8096          KM        Customized XKSAT Values
8097          BA   0.390
8098          LG    0.35    0.35    3.74    0.54       0
8099          UI       0     113     331     556     324     121      41      16       0       0
8100          UI       0       0       0       0       0       0       0       0       0       0
              *
8101          KM    URS 2009

8102          KK  CPB39A
8103          KM        Combine B16 with B39
8104          HC       2   6.712
              *
8105          KM    URS 2009

8106          KK   CPB39
8107          KM        Combine B18 with B39
8108          HC       2   8.353
              *

8109          KK  RCPB39
8110          KM    URS 2009
8111          KM        Route flow from CP B39 to CP B54
8112          RS       4    FLOW      -1
8113          RC   0.050   0.045   0.050    3359  0.0051
8114          RX     0.0   580.0   599.0   615.0   616.0   626.0   737.0  1237.0
8115          RY  1127.0  1125.3  1125.0  1124.0  1124.0  1125.9  1125.9  1127.0
              *

8116          KK     B54
8117          KM    URS 2009
8118          KM        Runoff from B54
8119          BA   0.289
8120          LG    0.35    0.35    4.50    0.35       0
8121          UI       0      80     236     405     246      98      35      12       0       0
8122          UI       0       0       0       0       0       0       0       0       0       0
              *
8123          KM    URS 2009

8124          KK   CPB54
8125          KM        Combine B39 with B54
8126          HC       2   8.642
              *

8127          KK  RCPB54
8128          KM    URS 2009
8129          KM        Route flow from CP B54 to CP B38
8130          RS       2    FLOW      -1
8131          RC   0.050   0.045   0.050    1907  0.0047
8132          RX       0     575     633     806     834     845     947    1450
8133          RY  1116.2  1115.0  1115.0  1114.0  1114.0  1114.1  1115.0  1116.0
              *
1                                          HEC-1 INPUT                                                    PAGE204

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

8134          KK     B38
8135          KM    URS 2009
8136          KM        Runoff from B38
8137          BA   0.439
8138          LG    0.35    0.35    4.65    0.32       0
8139          UI       0      74     236     409     467     280     131      60      20      14
8140          UI       0       0       0       0       0       0       0       0       0       0
8141          UI       0       0       0       0       0       0       0       0       0       0
              *
8142          KM    URS 2009

8143          KK   CPB38
8144          KM        Combine B54 with B38
8145          HC       2  9.081
              *

8146          KK  RCPB38
8147          KM    URS 2009
8148          KM        Route flow from CP B38 to CP B65
8149          RS       1    FLOW      -1
8150          RC   0.050   0.045   0.050    1009  0.0020
8151          KM        Typical Sheet Flow Small Wash
8152          RX       0     600     700     706     711     717     817    1417
8153          RY       6       4       3       0       0       3       4       6
```

```
                 *

8154             KK     B27
8155             KM    URS 2009
8156             KM        Runoff from B27
8157             KM        Customized XKSAT Values
8158             BA   0.856
8159             LG    0.35    0.35    3.03    0.89       0
8160             UI       0     551    1625     893     190      52       0       0       0       0
8161             UI       0       0       0       0       0       0       0       0       0       0
                 *

8162             KK  RCPB27
8163             KM    URS 2009
8164             KM        Route flow from CP B27 to CP B35
8165             RS       3    FLOW     -1
8166             RC   0.050   0.045   0.050    3127  0.0064
8167             RX       0     575     648     656     735     835     891    1400
8168             RY  1132.2  1130.7  1130.1  1130.0  1130.0  1131.1  1131.1  1132.1
                 *

8169             KK     B35
8170             KM    URS 2009
8171             KM        Runoff from B35
8172             KM        Customized XKSAT Values
8173             BA   0.249
8174             LG    0.35    0.35    3.19    0.79       0
8175             UI       0      80     234     364     192      62      20      11       0       0
8176             UI       0       0       0       0       0       0       0       0       0       0
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8177             KM    URS 2009

8178             KK  CPB35A
8179             KM        Combine B27 with B35
8180             HC       2   1.105
                 *

8181             KK   DRB26
8182             KM        Return diverted flow from B26
8183             DR   DVB26
                 *
8184             KM    URS 2009

8185             KK   CPB35
8186             KM        COMBINE DRB26 WITH B35
8187             HC       2   2.288
                 *

8188             KK  RCPB35
8189             KM    URS 2009
8190             KM        Route flow from CP B35 to CP B33
8191             RS       3    FLOW     -1
8192             RC   0.050   0.045   0.050    2169  0.0037
8193             RX       0     600     613     650     655     662     668    1173
8194             RY  1114.3  1112.8  1112.0  1112.0  1112.0  1112.0  1112.8  1115.0
                 *

8195             KK     B28
8196             KM    URS 2009
8197             KM        Runoff from B28
8198             KM        Customized XKSAT Values
8199             BA   0.386
8200             LG    0.35    0.35    3.03    0.89       0
8201             UI       0     203     635     477     136      31       0       0       0       0
8202             UI       0       0       0       0       0       0       0       0       0       0
                 *

8203             KK     B34
8204             KM    URS 2009
8205             KM        Runoff from B34
8206             KM        Customized XKSAT Values
8207             BA   0.125
8208             LG    0.35    0.35    3.15    0.82       0
8209             UI       0      52     162     175      68      19       6       0       0       0
8210             UI       0       0       0       0       0       0       0       0       0       0
                 *
8211             KM    URS 2009

8212             KK   CPB34
8213             KM        Combine B28 with B34
8214             HC       2   0.511
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8215             KK  RCPB34
8216             KM    URS 2009
8217             KM        Route flow from CP B34 to CP B33
8218             RS       7    FLOW     -1
8219             RC   0.050   0.045   0.050    4130  0.0058
8220             RX       0     646     687     709     714     722     723    1406
8221             RY  1129.0  1128.0  1127.2  1127.1  1127.1  1127.8  1128.0  1129.0
                 *

8222             KK     B33
8223             KM    URS 2009
8224             KM        Runoff from B33
8225             KM        Customized XKSAT Values
8226             BA   0.283
8227             LG    0.35    0.35    3.31    0.72       0
```

```
8228          UI       0      85     248     408     230      82      26      12       0       0
8229          UI       0       0       0       0       0       0       0       0       0       0
              *
8230          KM    URS 2009

8231          KK  CPB33A
8232          KM        Combine B34 with B33
8233          HC       2   0.794
              *
8234          KM    URS 2009

8235          KK   CPB33
8236          KM        Combine B35 with B33
8237          HC       2   3.082
              *

8238          KK  RCPB33
8239          KM    URS 2009
8240          KM        Route flow from CP B33 to CP B65
8241          RS       2    FLOW      -1
8242          RC   0.050   0.045   0.050    1361  0.0015
8243          RX       0     506     516     520     531     552     564    1575
8244          RY  1111.0  1110.0  1106.0  1106.0  1106.0  1107.6  1108.0  1110.0
              *
              *

8245          KK     B65
8246          KM    URS 2009
8247          KM        RUNOFF FROM B65
8248          BA   0.199
8249          LG    0.34    0.33    4.55    0.35       1
8250          UI       0     139     395     189      37       0       0       0       0       0
8251          UI       0       0       0       0       0       0       0       0       0       0
              *
```

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

8252          KK   CPB65
8253          KM    URS 2009
8254          KM        COMBINE B26, B38, B33, WITH B65
8255          HC       4  13.184
              *

8256          KK  RCPB65
8257          KM    URS 2009
8258          KM        ROUTE FLOW FROM B65 TO B59
8259          RS       2    FLOW      -1
8260          RC   0.050   0.045   0.050    5570  0.0054
8261          KM       Typical Sheet Flow Farmfield
8262          RX       0    4500    4600    4620    4720    4740    4840    8340
8263          RY       5       3       1       0       0       1       3       5
              *

8264          KK     B55
8265          KM    URS 2009
8266          KM        Runoff from B55
8267          KM        Customized XKSAT Values
8268          BA   0.079
8269          LG    0.35    0.35    3.38    0.69       0
8270          UI       0      88     178      34       0       0       0       0       0       0
8271          UI       0       0       0       0       0       0       0       0       0       0
              *

8272          KK  RCPB55
8273          KM    URS 2009
8274          KM        Route flow from CP B55 to CP B59
8275          RS      12    FLOW      -1
8276          RC   0.050   0.045   0.050    6814  0.0044
8277          KM       Typical Sheet Flow Farmfield
8278          RX       0     500     600     620     720     740     840    1340
8279          RY       5       3       1       0       0       1       3       5
              *

8280          KK     B31
8281          KM    URS 2009
8282          KM        Runoff from B31
8283          KM        Customized XKSAT Values
8284          BA   0.160
8285          LG    0.35    0.35    3.01    0.90       0
8286          UI       0     166     359      83       0       0       0       0       0       0
8287          UI       0       0       0       0       0       0       0       0       0       0
              *

8288          KK  RCPB31
8289          KM    URS 2009
8290          KM        Route flow from CP B31 to CP B29
8291          RS       9    FLOW      -1
8292          RC   0.050   0.045   0.050    9995  0.0048
8293          RX       0     100     110     133     134     149     366     398
8294          RY  1139.3  1137.8  1137.2  1136.0  1136.0  1137.8  1138.7  1139.0
              *
```

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

8295          KK     B32
8296          KM    URS 2009
8297          KM        Runoff from B32
8298          KM        Customized XKSAT Values
8299          BA   0.043
8300          LG    0.35    0.35    2.97    0.92       0
8301          UI       0      55      96      14       0       0       0       0       0       0
8302          UI       0       0       0       0       0       0       0       0       0       0
```

```
                 *

8303             KK  RCPB32
8304             KM    URS 2009
8305             KM        Route flow from CP B32 to CP B29
8306             RS       8    FLOW      -1
8307             RC   0.050   0.045   0.050    9175  0.0078
8308             RX       0     111     127     136     137     147     235     276
8309             RY  1155.8  1155.8  1155.8  1154.0  1154.0  1155.8  1155.8  1156.4
                 *

8310             KK     B30
8311             KM    URS 2009
8312             KM        Runoff from B30
8313             KM        Customized XKSAT Values
8314             BA   0.533
8315             LG    0.35    0.35    2.88    0.99       0
8316             UI       0     202     611     774     335     102      25       0       0       0
8317             UI       0       0       0       0       0       0       0       0       0       0
                 *

8318             KK    DB30
8319             KM      Divert flow into B57
8320             KM        Natural divergence of flow due to a braided channel network.
8321             DT   DVB30
8322             DI       0       2      44     167     603    1427    2512    3826    5344
8323             DQ       0       2      44     165     450     961    1612    2386    3274
                 *

8324             KK  RCPB30
8325             KM          URS 2009
8326             KM        Route remainder flow from CP B30 to CP B29
8327             RS       6    FLOW      -1
8328             RC   0.050   0.045   0.050    6496  0.0114
8329             RX       0     135     176     232     245     267     354     400
8330             RY  1140.6  1140.0  1139.3  1137.8  1137.8  1139.0  1140.3  1140.3
                 *

8331             KK     B29
8332             KM    URS 2009
8333             KM        Runoff from B29
8334             KM        Customized XKSAT Values
8335             BA   0.915
8336             LG    0.35    0.35    3.17    0.81       0
8337             UI       0     208     633    1158     851     434     158      55      34       0
8338             UI       0       0       0       0       0       0       0       0       0       0
                 *
```



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

8339             KM    URS 2009

8340             KK   CPB29
8341             KM        Combine B31, B32, B30 with B29
8342             HC       4   1.225
                 *

8343             KK  RCPB29
8344             KM    URS 2009
8345             KM        Route flow from CP B29 to CP B59
8346             RS       6    FLOW      -1
8347             RC   0.050   0.045   0.050    6898  0.0038
8348             KM        Typical Sheet Flow Farmfield
8349             RX       0     500     600     620     720     740     840    1340
8350             RY       5       3       1       0       0       1       3       5
                 *

8351             KK   DRB30
8352             KM        Return diverted flow from B30
8353             DR   DVB30
                 *

8354             KK   RDB30
8355             KM    URS 2009
8356             KM        Route diverted flow from CP B30 to CP B57
8357             RS       4    FLOW      -1
8358             RC   0.050   0.045   0.050    4417  0.0082
8359             RX       0     101     218     230     245     249     254     328
8360             RY  1137.5  1136.0  1136.0  1136.4  1136.4  1136.4  1136.5  1137.1
                 *

8361             KK     B57
8362             KM    URS 2009
8363             KM        Runoff from B57
8364             BA   0.099
8365             LG    0.36    0.34    4.30    0.41       0
8366             UI       0      52     164     122      34       8       0       0       0       0
8367             UI       0       0       0       0       0       0       0       0       0       0
                 *
8368             KM    URS 2009

8369             KK   CPB57
8370             KM        Combine DRB30 with B57
8371             HC       2   0.525
                 *

8372             KK  RCPB57
8373             KM    URS 2009
8374             KM        Route flow from CP B57 to CP B56
8375             RS       2    FLOW      -1
8376             RC   0.050   0.045   0.050    1398  0.0072
8377             RX       0      11      25      50     100     150     182     225
8378             RY  1110.3  1110.3  1110.0  1110.0  1110.0  1110.0  1110.0  1110.7
                 *
```

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

8379          KK     B56
8380          KM    URS 2009
8381          KM        Runoff from B56
8382          BA   0.222
8383          LG    0.36    0.34    4.40    0.39       0
8384          UI       0      49     149     275     209     111      39      15       8       0
8385          UI       0       0       0       0       0       0       0       0       0       0
              *
8386          KM    URS 2009

8387          KK   CPB56
8388          KM        Combine B57 with B56
8389          HC       2   0.747
              *

8390          KK  RCPB56
8391          KM    URS 2009
8392          KM        Route flow from CP B56 to CP B58
8393          RS       1    FLOW      -1
8394          RC   0.050   0.045   0.050    1037  0.0193
8395          RX       0     100     191     197     199     207     255     348
8396          RY  1102.9  1102.0  1102.0  1100.6  1100.3  1102.0  1102.0  1103.1
              *

8397          KK     B58
8398          KM    URS 2009
8399          KM        Runoff from B58
8400          KM        Customized XKSAT Values
8401          BA   0.243
8402          LG    0.34    0.34    3.92    0.49       1
8403          UI       0      85     251     358     171      51      14       0       0       0
8404          UI       0       0       0       0       0       0       0       0       0       0
              *
8405          KM    URS 2009

8406          KK   CPB58
8407          KM        Combine B56 with B58
8408          HC       2    0.99
              *

8409          KK  RCPB58
8410          KM    URS 2009
8411          KM        Route flow from CP B58 to CP B59
8412          RS       6    FLOW      -1
8413          RC   0.050   0.045   0.050    4948  0.0016
8414          KM       Typical Sheet Flow Farmfield
8415          RX       0     500     600     620     720     740     840    1340
8416          RY       5       3       1       0       0       1       3       5
              *
```



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

8417          KK     B59
8418          KM    URS 2009
8419          KM        Runoff from B59
8420          BA   0.505
8421          LG    0.10    0.25    4.30    0.34       5
8422          UI       0     276     859     607     163      36       0       0       0       0
8423          UI       0       0       0       0       0       0       0       0       0       0
8424          UI       0       0       0       0       0       0       0       0       0       0
8425          UI       0       0       0       0       0       0       0       0       0       0
              *
8426          KM    URS 2009

8427          KK   CPB59
8428          KM        Combine B65, B55, B29, B58 with B59
8429          HC       5  15.983
              *

8430          KK  RCPB59
8431          KM    URS 2009
8432          KM        Route flow from CP B59 to CP B60
8433          RS       4    FLOW      -1
8434          RC   0.050   0.045   0.050    5208  0.0002
8435          KM       Typical Sheet Flow Farmfield
8436          RX       0    1000    1600    1620    1720    1740    1840    2840
8437          RY       6       3       1       0       0       1       3       6
              *

8438          KK     B52
8439          KM    URS 2009
8440          KM        Runoff from B52
8441          KM        Customized XKSAT Values
8442          BA   0.576
8443          LG    0.35    0.35    3.74    0.54       0
8444          UI       0     151     447     787     504     217      82      23       0       0
8445          UI       0       0       0       0       0       0       0       0       0       0
              *

8446          KK  RCPB52
8447          KM    URS 2009
8448          KM        Route flow from CP B52 to CP B60
8449          RS       1    FLOW      -1
8450          RC   0.050   0.045   0.050    6857  0.0041
8451          KM       Typical Sheet Flow Farmfield
8452          RX       0     500     600     620     720     740     840    1340
8453          RY       5       3       1       0       0       1       3      50
              *

8454          KK     B53
```

```
8455          KM    URS 2009
8456          KM        Runoff from B53
8457          BA   0.537
8458          LG    0.34    0.34    4.00    0.46       1
8459          UI       0     165     483     778     429     147      47      23       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8460          KK  RCPB53
8461          KM    URS 2009
8462          KM        Route flow from CP B53 to CP B60
8463          RS       1    FLOW      -1
8464          RC   0.050   0.045   0.050    9775  0.0029
8465          KM        Typical Sheet Flow Farmfield
8466          RX       0     500     600     620     720     740     840    1340
8467          RY       5       3       1       0       0       1       3       5
              *

8468          KK     B60
8469          KM    URS 2009
8470          KM        Runoff from B60
8471          BA   0.994
8472          LG    0.50    0.25    4.55    0.53       0
8473          UI       0      26      26      26      54      75     123     154     137     196
8474          UI     191     216     216     216     216     189     180     193     171     135
8475          UI     150     118      98      87      75      77      65      49      42      41
8476          UI      32      32      26      24      24      20      15      15      15      15
8477          UI      13       3       3       3       3       3       3       3       3       3
8478          UI       3       3       3       3       3       3       3       3       3       3
8479          UI       3       3       3       3       0       0       0       0       0       0
              *
8480          KM    URS 2009

8481          KK   CPB60
8482          KM        Combine B52, B53, B59 with B60
8483          HC       4   18.09
              *

8484          KK  RCPB60
8485          KM    URS 2009
8486          KM        Route flow from CP B60 to CP H80RIV
8487          RS       1    FLOW      -1
8488          RC   0.050   0.045   0.050    1556  0.0141
8489          KM        Typical Sheet Flow Farmfield
8490          RX       0     500     600     620     720     740     840    1340
8491          RY       5       3       1       0       0       1       3       5
              *

8492          KK   DRH33
8493          KM        Return diverted flow from CP H33
8494          DR   DVH33
              *

8495          KK   RDH33
8496          KM    URS 2009
8497          KM        Route flow from CP H33 to CP H46
8498          RS       3    FLOW      -1
8499          RC   0.050   0.045   0.050    4899  0.0082
8500          KM        Typical Sheet Flow Route
8501          RX       0     500     700     750     800     900    1100    1600
8502          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8503          KK     H46
8504          KM    URS 2009
8505          KM        Runoff from H46
8506          BA   0.315
8507          LG    0.35    0.35    4.00    0.46       0
8508          UI       0     205     602     324      69      19       0       0       0       0
8509          UI       0       0       0       0       0       0       0       0       0       0
              *
8510          KM    URS 2009

8511          KK   CPH46
8512          KM        Combine DRH33 with H46
8513          HC       2   1.731
              *

8514          KK  RCPH46
8515          KM    URS 2009
8516          KM        Route flow from CP H46 to CP H78
8517          RS       3    FLOW      -1
8518          RC   0.050   0.045   0.050    5302  0.0072
8519          KM        Typical Sheet Flow Route
8520          RX       0     500     700     750     800     900    1100    1600
8521          RY       6       4       2       0       0       2       4       6
              *

8522          KK     H06
8523          KM    URS 2009
8524          KM        Runoff from H06
8525          KM    Customized XKSAT Values
8526          BA   1.227
8527          LG    0.35    0.35    2.83    1.03       0
8528          UI       0     671    2088    1476     395      87       0       0       0       0
8529          UI       0       0       0       0       0       0       0       0       0       0
              *

8530          KK    DH06
```

```
8531          KM      Divert flow into H13
8532          KM        Natural divergence of flow due to a braided channel network.
8533          DT   DVH06
8534          DI       0      53     189     414     739     830    1733    3436    6123   11407
8535          DQ       0      30     108     236     422     479     956    1842    3226    5710
              *

8536          KK  RCPH06
8537          KM    URS 2009
8538          KM        Route remainder flow from CP H06 to CP H14
8539          RS       3    FLOW      -1
8540          RC   0.050   0.045   0.050    5963  0.0159
8541          KM       Typical Sheet Flow Route
8542          RX       0    1000    1200    1250    1300    1400    1600    2100
8543          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8544          KK     H16
8545          KM    URS 2009
8546          KM    Customized XKSAT Values
8547          KM        Runoff from H16
8548          BA   0.310
8549          LG    0.35    0.35    3.03    0.89      54
8550          UI       0     344     534     202      76      28      15       0       0       0
8551          UI       0       0       0       0       0       0       0       0       0       0
              *

8552          KK  RCPH16
8553          KM    URS 2009
8554          KM        Route flow from CP H16 to CP H14
8555          RS       2    FLOW      -1
8556          RC   0.050   0.045   0.050    3989  0.0180
8557          KM       Typical Sheet Flow Route
8558          RX       0     500     700     750     800     900    1100    1600
8559          RY       6       4       2       0       0       2       4       6
              *

8560          KK     H14
8561          KM    URS 2009
8562          KM    Customized XKSAT Values
8563          KM        Runoff from H14
8564          BA   0.828
8565          LG    0.35    0.35    3.71    0.55       6
8566          UI       0     125     411     683     895     557     301     126      56      25
8567          UI      25       0       0       0       0       0       0       0       0       0
8568          UI       0       0       0       0       0       0       0       0       0       0
              *
8569          KM    URS 2009

8570          KK    CPH14
8571          KM        Combine H06, H16, with H14
8572          HC       3   1.653
              *

8573          KK  RCPH14
8574          KM    URS 2009
8575          KM        Route flow from CP H14 to CP H13
8576          RS       2    FLOW      -1
8577          RC   0.050   0.045   0.050    2816  0.0096
8578          RX       0     571     579     634     724     773     803    1304
8579          RY  1288.2  1286.8  1286.6  1286.7  1287.4  1287.9  1288.0  1289.0
              *

8580          KK    DRH06
8581          KM        Return diverted flow from CP H06
8582          DR   DVH06
              *
8583          KM    URS 2009
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8584          KK    RDH06
8585          KM        Route flow from CP H06 to CP H13
8586          RS       8    FLOW      -1
8587          RC   0.050   0.045   0.050    8012  0.0152
8588          RX     121     225     810    1345    1350    1355    1360    1367
8589          RY  1320.0  1320.0  1319.4  1320.0  1320.0  1320.0  1320.0  1320.0
              *

8590          KK     H13
8591          KM    URS 2009
8592          KM    Customized XKSAT Values
8593          KM        Runoff from H13
8594          BA   0.519
8595          LG    0.35    0.35    3.95    0.47       0
8596          UI       0     225     706     711     266      71      26       0       0       0
8597          UI       0       0       0       0       0       0       0       0       0       0
              *
8598          KM    URS 2009

8599          KK    CPH13
8600          KM        Combine H14, DRH06 with H13
8601          HC       3   2.884
              *

8602          KK  RCPH13
8603          KM    URS 2009
8604          KM        Route flow from CP H13 to CP H34
8605          RS       2    FLOW      -1
8606          RC   0.050   0.045   0.050    4033  0.0089
```

```
8607          KM       Typical Sheet Flow Route
8608          RX       0     500     700     750     800     900    1100    1600
8609          RY       6       4       2       0       0       2       4       6
              *

8610          KK     H12
8611          KM    URS 2009
8612          KM        Runoff from H12
8613          KM    Customized XKSAT Values
8614          BA   0.484
8615          LG    0.35    0.35    2.86    1.00       9
8616          UI       0     418    1046     345      53       0       0       0       0       0
8617          UI       0       0       0       0       0       0       0       0       0       0
              *

8618          KK  RCPH12
8619          KM    URS 2009
8620          KM        Route flow from CP H12 to CP H07
8621          RS       8    FLOW      -1
8622          RC   0.050   0.045   0.050    8425  0.0142
8623          RX       0      87     102     150     289     358     403     542
8624          RY  1302.2  1302.0  1301.9  1301.7  1301.5  1301.8  1302.0  1302.6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8625          KK     H07
8626          KM    URS 2009
8627          KM        Runoff from H07
8628          KM    Customized XKSAT Values
8629          BA   0.705
8630          LG    0.35    0.35    3.95    0.47       0
8631          UI       0     236     694    1037     520     161      49      31       0       0
              *
8632          KM    URS 2009

8633          KK     H35
8634          KM    Customized XKSAT Values
8635          KM        Runoff from H35
8636          BA   1.305
8637          LG    0.35    0.35    3.35    0.70       0
8638          UI       0    1315    2915     723     101       0       0       0       0       0
8639          UI       0       0       0       0       0       0       0       0       0       0
              *
8640          KM    URS 2009

8641          KK    DH35
8642          KM    Divert flow into H35
8643          KM        Natural divergence of flow due to a braided channel network.
8644          DT   DVH35
8645          DI       0      78     322     960    2455    4702    8003
8646          DQ       0       0       0      36     466    1381    2647
              *
8647          KM    URS 2009

8648          KK  RCH35A
8649          KM        Route remainder flow from H35 to CP H07
8650          RS       2    FLOW      -1
8651          RC   0.050   0.045   0.050    3783  0.0106
8652          KM       Typical Sheet Flow Route
8653          RX     0.0  1067.0  1087.0  1149.0  1312.0  1358.0  1403.0  2541.0
8654          RY  1303.1  1302.1  1302.0  1301.7  1301.6  1301.8  1302.0  1303.6
              *
8655          KM    URS 2009

8656          KK   CPH07
8657          KM        Combine H12, H07, H35
8658          HC       3   2.350
              *
8659          KM    URS 2009

8660          KK    DH07
8661          KM      Divert flow into H36
8662          KM        Natural divergence of flow due to a braided channel network.
8663          DT   DVH07
8664          DI       0     117     652    1846    3902    6543    9695
8665          DQ       0      70     353     922    1869    3082    4521
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8666          KK  RCPH07
8667          KM    URS 2009
8668          KM        Route remainder flow from CP H07 to CP H34
8669          RS       2    FLOW      -1
8670          RC   0.050   0.045   0.050    4138  0.0097
8671          KM       Typical Sheet Flow Route
8672          RX       0     500     700     750     800     900    1100    1600
8673          RY       6       4       2       0       0       2       4       6
              *

8674          KK     H34
8675          KM    URS 2009
8676          KM        Runoff from H34
8677          BA   0.407
8678          LG    0.35    0.35    4.00    0.46       0
8679          UI       0     382     898     254      38       0       0       0       0       0
8680          UI       0       0       0       0       0       0       0       0       0       0
              *
8681          KM    URS 2009

8682          KK   CPH34
```

```
8683          KM        Combine H13, H07 with H34
8684          HC       3   4.443
              *

8685          KK  RCPH34
8686          KM    URS 2009
8687          KM        Route flow from CP H34 to CP H45
8688          RS       3    FLOW      -1
8689          RC   0.050   0.045   0.050    5946  0.0084
8690          KM       Typical Sheet Flow Route
8691          RX       0     500     700     750     800     900    1100    1600
8692          RY       6       4       2       0       0       2       4       6
              *

8693          KK     H45
8694          KM    URS 2009
8695          KM        Runoff from H45
8696          BA   0.278
8697          LG    0.35    0.35    4.00    0.46       0
8698          UI       0     143     450     347     103      24       0       0       0       0
8699          UI       0       0       0       0       0       0       0       0       0       0
              *
8700          KM    URS 2009

8701          KK   CPH45
8702          KM        Combine H34 with H45
8703          HC       2   4.721
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8704          KK  RCPH45
8705          KM    URS 2009
8706          KM        Route flow from CP H45 to CP H78
8707          RS       3    FLOW      -1
8708          RC   0.050   0.045   0.050    5302  0.0072
8709          KM       Typical Sheet Flow Farmfield
8710          RX       0     500     600     620     720     740     840    1340
8711          RY       5       3       1       0       0       1       3       5
              *

8712          KK   DRH07
8713          KM        Return diverted flow from CP H07
8714          DR   DVH07
              *

8715          KK   RDH07
8716          KM    URS 2009
8717          KM        Route flow from CP H07 to CP H36
8718          RS       3    FLOW      -1
8719          RC   0.050   0.045   0.050    5258  0.0097
8720          KM       Typical Sheet Flow Route
8721          RX       0     500     700     750     800     900    1100    1600
8722          RY       6       4       2       0       0       2       4       6
              *

8723          KK     H36
8724          KM    URS 2009
8725          KM        Runoff from H36
8726          BA   0.437
8727          LG    0.35    0.35    4.00    0.46       0
8728          UI       0     258     785     497     120      25       0       0       0       0
8729          UI       0       0       0       0       0       0       0       0       0       0
              *
8730          KM    URS 2009

8731          KK   CPH36
8732          KM        Combine DRH07 with H36
8733          HC       2   1.635
              *

8734          KK  RCPH36
8735          KM    URS 2009
8736          KM        Route flow from CP H36 to CP H44
8737          RS       3    FLOW      -1
8738          RC   0.050   0.045   0.050    6557  0.0088
8739          KM       Typical Sheet Flow Route
8740          RX       0     500     700     750     800     900    1100    1600
8741          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8742          KK     H44
8743          KM    URS 2009
8744          KM        Runoff from H44
8745          BA   0.554
8746          LG    0.35    0.35    4.00    0.46       0
8747          UI       0     257     815     730     255      60       0       0       0       0
8748          UI       0       0       0       0       0       0       0       0       0       0
              *
8749          KM    URS 2009

8750          KK   CPH44
8751          KM        Combine H36 with H44
8752          HC       2   2.189
              *

8753          KK  RCPH44
8754          KM    URS 2009
8755          KM        Route flow from CP H44 to CP H78
8756          RS       2    FLOW      -1
```

```
8757          RC   0.050   0.045   0.050    3092  0.0078
8758          KM       Typical Sheet Flow Farmfield
8759          RX       0     500     600     620     720     740     840    1340
8760          RY       5       3       1       0       0       1       3       5
              *

8761          KK     H78
8762          KM    URS 2009
8763          KM       Runoff from H78
8764          BA   0.489
8765          LG    0.35    0.35    4.00    0.46       0
8766          UI       0     330     953     484      99       0       0       0       0       0
8767          UI       0       0       0       0       0       0       0       0       0       0
8768          UI       0       0       0       0       0       0       0       0       0       0
              *
8769          KM    URS 2009

8770          KK   CPH78
8771          KM       Combine H44, H45, H46 with H78
8772          HC       4   9.119
              *

8773          KK  RCPH78
8774          KM    URS 2009
8775          KM       Route flow from CP H78 to CP H79
8776          RS       3    FLOW      -1
8777          RC   0.050   0.045   0.050    5395  0.0067
8778          KM       Typical Sheet Flow Farmfield
8779          RX       0     500     600     620     720     740     840    1340
8780          RY       5       3       1       0       0       1       3       5
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8781          KK     H79
8782          KM    URS 2009
8783          KM       Runoff from H79
8784          BA   0.503
8785          LG    0.11    0.25    4.00    0.39       5
8786          UI       0     684    1102     141       0       0       0       0       0       0
8787          UI       0       0       0       0       0       0       0       0       0       0
              *
8788          KM    URS 2009

8789          KK   CPH79
8790          KM       Combine H78 with H79
8791          HC       2   9.622
              *

8792          KK  RCPH79
8793          KM    URS 2009
8794          KM       Route flow from CP H79 to CP H80
8795          RS       3    FLOW      -1
8796          RC   0.050   0.045   0.050    5277  0.0057
8797          KM       Typical Sheet Flow Farmfield
8798          RX       0     500     600     620     720     740     840    1340
8799          RY       5       3       1       0       0       1       3       5
              *

8800          KK     H80
8801          KM    URS 2009
8802          KM       Runoff from H80
8803          BA   0.458
8804          LG    0.44    0.29    4.10    0.60       0
8805          UI       0      54     198     331     360     298     208     126      71      46
8806          UI      29      19       6       6       6       6       6       6       0       0
8807          UI       0       0       0       0       0       0       0       0       0       0
              *
8808          KM    URS 2009

8809          KK   CPH80
8810          KM       Combine H79 with H80
8811          HC       2   10.08
              *

8812          KK  H80RIV
8813          KM       Combine B61RIV, B60 with H80
8814          HC       3 316.491
              *

8815          KK  RCPH80
8816          KM       Route flow from CP H80RIV to CP B62RIV (WATERMAN WASH)
8817          KM    URS 2009
8818          RS       1    FLOW      -1
8819          RC   0.050   0.035   0.050    1580  0.0025
8820          RX     411     447     459     495     523     576     579    3464
8821          RY  1092.0  1085.6  1082.7  1080.0  1080.0  1082.0  1086.0  1091.0
              *
1                                          HEC-1 INPUT                                                    PAGE221

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

8822          KK     H43
8823          KM    URS 2009
8824          KM       Runoff from H43
8825          BA   0.220
8826          LG    0.35    0.35    4.00    0.46       0
8827          UI       0     173     461     179      30       0       0       0       0       0
8828          UI       0       0       0       0       0       0       0       0       0       0
              *

8829          KK  RCPH43
8830          KM    URS 2009
```

```
8831          KM        Route flow from CP H43 to CP H81
8832          RS       2    FLOW      -1
8833          RC   0.050   0.045   0.050    2844  0.0084
8834          KM       Typical Sheet Flow Farmfield
8835          RX       0     500     600     620     720     740     840    1340
8836          RY       5       3       1       0       0       1       3       5
              *

8837          KK     H81
8838          KM    URS 2009
8839          KM        Runoff from H81
8840          BA   0.243
8841          LG    0.10    0.25    4.00    0.39       5
8842          UI       0     797       0       0       0       0       0       0       0       0
8843          UI       0       0       0       0       0       0       0       0       0       0
              *

8844          KK  CPH81
8845          KM        Combine H43 with H81
8846          HC       2   0.463
              *

8847          KK  RCPH81
8848          KM    URS 2009
8849          KM        Route flow from CP H81 to CP H82
8850          RS       4    FLOW      -1
8851          RC   0.050   0.045   0.050    5449  0.0073
8852          KM       Typical Sheet Flow Farmfield
8853          RX       0     500     600     620     720     740     840    1340
8854          RY       5       3       1       0       0       1       3       5
              *

8855          KK     H08
8856          KM    URS 2009
8857          KM        Runoff from H08
8858          KM    Customized XKSAT Values
8859          BA   0.859
8860          LG    0.35    0.35    3.64    0.57      17
8861          UI       0     695    1818     677     108       0       0       0       0       0
8862          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

8863          KK  RCPH08
8864          KM    URS 2009
8865          KM        Route flow from CP H08 to CP H35
8866          RS       6    FLOW      -1
8867          RC   0.050   0.045   0.050    7389  0.0139
8868          RX      21     536     716     733     762     821     854    1391
8869          RY  1336.9  1335.8  1335.1  1335.2  1335.2  1335.7  1336.0  1337.0
              *
8870          KM    URS 2009

8871          KK     H11
8872          KM    Customized XKSAT Values
8873          KM        Runoff from H11
8874          BA   0.273
8875          LG    0.35    0.35    3.95    0.47       0
8876          UI       0     180     525     277      58       0       0       0       0       0
8877          UI       0       0       0       0       0       0       0       0       0       0
              *
8878          KM    URS 2009

8879          KK    DH11
8880          KM      Divert flow into H38
8881          KM        Natural divergence of flow due to a braided channel network.
8882          DT   DVH11
8883          DI       0       7     107     368     870    1856    3799
8884          DQ       0       0       0       0      75     413    1077
              *

8885          KK  RCPH11
8886          KM    URS 2009
8887          KM        Route remainder flow from CP H11 to CP H35
8888          RS       3    FLOW      -1
8889          RC   0.050   0.045   0.050    3400  0.0135
8890          RX       0     514     570     624     644     664     792     825
8891          RY  1297.3  1296.3  1296.0  1296.0  1296.0  1296.0  1296.0  1297.3
              *

8892          KK   DRH35
8893          KM        Return diverted flow from H35
8894          DR   DVH35
              *
8895          KM    URS 2009

8896          KK   CPH35
8897          KM        Combine H08, H11, with H35
8898          HC       3   1.276
              *

8899          KK  RCPH35
8900          KM    URS 2009
8901          KM        Route flow from CP H35 to CP H37
8902          RS       4    FLOW      -1
8903          RC   0.050   0.045   0.050    5238  0.0111
8904          RX     0.0   215.0   236.0   276.0   361.0   403.0   664.0   665.0
```



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

8905          RY  1258.1  1258.1  1257.6  1256.7  1258.0  1258.3  1259.2  1259.3
              *
```

```
8906          KK     H37
8907          KM    URS 2009
8908          KM    Customized XKSAT Values
8909          KM        Runoff from H37
8910          BA   0.563
8911          LG    0.35    0.35    3.95    0.47       0
8912          UI       0     393    1118     534     105       0       0       0       0       0
8913          UI       0       0       0       0       0       0       0       0       0       0
              *

8914          KK   CPH37
8915          KM        Combine H35 with H37
8916          HC       2   3.004
              *

8917          KK  RCPH37
8918          KM    URS 2009
8919          KM        Route flow from CP H37 to CP H42
8920          RS       9    FLOW      -1
8921          RC   0.050   0.045   0.050    7693  0.0086
8922          RX       0     711     767     879     880     948    1007    1504
8923          RY  1172.9  1171.5  1171.6  1172.0  1172.0  1172.0  1172.0  1173.0
              *

8924          KK     H42
8925          KM    URS 2009
8926          KM        Runoff from H42
8927          BA   0.442
8928          LG    0.35    0.35    4.00    0.46       0
8929          UI       0     165     497     643     285      88      20       0       0       0
8930          UI       0       0       0       0       0       0       0       0       0       0
              *

8931          KK   CPH42
8932          KM        Combine H37 with H42
8933          HC       2   3.446
              *

8934          KK  RCPH42
8935          KM    URS 2009
8936          KM        Route flow from CP H42 to CP H82
8937          RS       4    FLOW      -1
8938          RC   0.050   0.045   0.050    5960  0.0081
8939          KM       Typical Sheet Flow Farmfield
8940          RX       0     500     600     620     720     740     840    1340
8941          RY       5       3       1       0       0       1       3       5
              *
1                                          HEC-1 INPUT                                                PAGE224

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

8942          KK     H82
8943          KM    URS 2009
8944          KM        Runoff from H82
8945          BA   0.502
8946          LG    0.10    0.25    4.00    0.39       5
8947          UI       0     645    1117     158       0       0       0       0       0       0
8948          UI       0       0       0       0       0       0       0       0       0       0
8949          UI       0       0       0       0       0       0       0       0       0       0
              *

8950          KK   CPH82
8951          KM        Combine H81, H42 with H82
8952          HC       3   4.411
              *

8953          KK  RCPH82
8954          KM    URS 2009
8955          KM        Route flow from CP H82 to CP B62
8956          RS       4    FLOW      -1
8957          RC   0.050   0.045   0.050    8494  0.0052
8958          KM       Typical Sheet Flow Farmfield
8959          RX       0     500     600     620     720     740     840    1340
8960          RY       5       3       1       0       0       1       3       5
              *

8961          KK     H83
8962          KM    URS 2009
8963          KM        Runoff from H83
8964          BA   0.660
8965          LG    0.50    0.25    4.10    0.69       0
8966          UI       0      38      98     182     235     313     459     362     279     212
8967          UI     148      76      58      38      16      12      12      12       0       0
8968          UI       0       0       0       0       0       0       0       0       0       0
              *
8969          KM    URS 2009

8970          KK     B62
8971          KM        Runoff from B62
8972          BA   0.334
8973          LG    0.48    0.27    4.60    0.48       0
8974          UI       0      18      28      72     103     136     149     148     125     118
8975          UI      97      69      52      44      30      23      18      15      10      10
8976          UI       6       2       2       2       2       2       2       2       2       2
8977          UI       2       2       0       0       0       0       0       0       0       0
              *

8978          KK  B62RIV
8979          KM        Combine H80RIV, H83, RCPH82, with B62
8980          HC       4 321.897
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
8981          KK  RCPB62
8982          KM        Route flow from CP B62RIV to CP B63RIV (WATERMAN WASH)
8983          KM    URS 2009
8984          RS       1    FLOW      -1
8985          RC   0.050   0.035   0.050    1310  0.0036
8986          RX     252    3260    3269    3279    3323    3349    3365    4375
8987          RY  1066.5  1062.0  1058.3  1057.0  1054.0  1054.0  1064.0  1067.0
              *

8988          KK     B63
8989          KM    URS 2009
8990          KM        Runoff from B63
8991          BA   0.226
8992          LG    0.49    0.26    4.50    0.53       0
8993          UI       0      14      29      74      95     119     117     102      84      67
8994          UI      45      36      24      17      13      10       8       5       2       2
8995          UI       2       2       2       2       2       2       2       0       0       0
              *

8996          KK  B63RIV
8997          KM        Combine B62RIV,with B63
8998          KM        Buenos Aires Road crossing at B63RIV
8999          HC       2 322.123
              *

9000          KK  RCPB63
9001          KM      Route flow from CP B63RIV to CP B64RIV (WATERMAN WASH)
9002          KM    URS 2009
9003          RS       1    FLOW      -1
9004          RC   0.050   0.035   0.050    2195  0.0027
9005          RX     252    2760    2769    2779    2823    2849    2865    4375
9006          RY  1068.0  1062.0  1058.3  1057.0  1054.0  1054.0  1064.0  1068.0
              *

9007          KK     B64
9008          KM    URS 2009
9009          KM        Runoff from B64
9010          BA   0.288
9011          LG    0.49    0.26    4.70    0.47       0
9012          UI       0      13      22      53      69      84     105     151     150     116
9013          UI      95      76      60      37      23      20      13       8       4       4
9014          UI       4       4       0       0       0       0       0       0       0       0
              *

9015          KK  B64RIV
9016          KM        Combine B63RIV with B64
9017          HC       2 321.980
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10

9018          KK  RCPB64
9019          KM      URS 2009
9020          KM        Route flow from CP B64RIV to CP H86RIV (WATERMAN WASH)
9021          RS       1    FLOW      -1
9022          RC   0.050   0.035   0.050    1227  0.0033
9023          RX      32    1557    1593    1618    1699    1722    1765    3284
9024          RY  1059.0  1056.0  1048.7  1046.0  1046.0  1050.0  1056.0  1059.0
              *

9025          KK     H09
9026          KM    URS 2009
9027          KM    Customized XKSAT Values
9028          KM        Runoff from H09
9029          BA   1.106
9030          LG    0.35    0.35    3.81    0.52      53
9031          UI       0    1071    1912     780     310     131      50       0       0       0
9032          UI       0       0       0       0       0       0       0       0       0       0
              *

9033          KK  RCPH09
9034          KM    URS 2009
9035          KM        Route flow from CP H09 to CP H10
9036          RS       2    FLOW      -1
9037          RC   0.050   0.045   0.050    6052  0.0205
9038          KM       Typical Sheet Flow Route
9039          RX       0     500     700     750     800     900    1100    1600
9040          RY       6       4       2       0       0       2       4       6
              *

9041          KK     H10
9042          KM    URS 2009
9043          KM    Customized XKSAT Values
9044          KM        Runoff from H10
9045          BA   0.528
9046          LG    0.35    0.35    3.95    0.47       0
9047          UI       0     401    1091     450      80       0       0       0       0       0
              *

9048          KK   CPH10
9049          KM        Combine H09 with H10
9050          HC       2   1.630
              *

9051          KK  RCPH10
9052          KM         URS 2009
9053          KM        Route flow from CP H10 to CP H38
9054          KM       Typical Sheet Flow Route
9055          RS       2    FLOW      -1
9056          RC   0.050   0.045   0.050    5203  0.0138
9057          RX       0     500     700     750     800     900    1100    1600
9058          RY       6       4       2       0       0       2       4       6
```

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

9059          KK   DRH11
9060          KM        Return diverted flow from CP H11
9061          DR   DVH11
              *

9062          KK   RDH11
9063          KM    URS 2009
9064          KM        Route flow from CP H11 to CP H38
9065          RS       4    FLOW      -1
9066          RC   0.050   0.045   0.050    5461  0.0128
9067          RX       5     108     146     205     234     297     520     579
9068          RY  1300.2  1299.9  1299.7  1298.9  1299.4  1299.4  1299.9  1299.9
              *

9069          KK     H38
9070          KM    URS 2009
9071          KM        Runoff from H38
9072          KM    Customized XKSAT Values
9073          BA   0.481
9074          LG    0.35    0.35    3.95    0.47       0
9075          UI       0     389    1018     379      60       0       0       0       0       0
9076          UI       0       0       0       0       0       0       0       0       0       0
              *
9077          KM    URS 2009

9078          KK   CPH38
9079          KM        Combine H10, DRH11 with H38
9080          HC       3   1.009
              *

9081          KK  RCPH38
9082          KM    URS 2009
9083          KM        Route flow from CP H38 to CP H39
9084          RS       3    FLOW      -1
9085          RC   0.050   0.045   0.050    5099  0.0108
9086          KM       Typical Sheet Flow Small Wash
9087          RX       0     600     700     706     711     717     817    1417
9088          RY       6       4       3       0       0       3       4       6
              *

9089          KK     H39
9090          KM    URS 2009
9091          KM        Runoff from H39
9092          BA   0.379
9093          LG    0.35    0.35    4.00    0.46       0
9094          UI       0     303     798     304      50       0       0       0       0       0
9095          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                   HEC-1 INPUT                                                    PAGE228

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

9096          KK   CPH39
9097          KM        Combine H38 with H39
9098          HC       2
              *
9099          KM    URS 2009

9100          KK    DH39
9101          KM      Divert flow into H40
9102          KM        Natural divergence of flow due to a braided channel network.
9103          DT   DVH39
9104          DI       0       7      43     128     282     581    1321
9105          DQ       0       7      43     128     275     443     901
              *

9106          KK  RCPH39
9107          KM    URS 2009
9108          KM        Route remainder flow from CP H39 to CP H41
9109          RS       3    FLOW      -1
9110          RC   0.050   0.045   0.050    4989  0.0126
9111          KM       Typical Sheet Flow Route
9112          RX       0     500     700     750     800     900    1100    1600
9113          RY       6       4       2       0       0       2       4       6
              *

9114          KK     H41
9115          KM    URS 2009
9116          KM        Runoff from H41
9117          BA   0.300
9118          LG    0.35    0.35    4.00    0.46       0
9119          UI       0     249     641     228      36       0       0       0       0       0
              *
9120          KM    URS 2009

9121          KK   CPH41
9122          KM        Combine H39 with H41
9123          HC       2   0.716
              *

9124          KK  RCPH41
9125          KM    URS 2009
9126          KM        Route flow from CP H41 to CP H84
9127          RS       5    FLOW      -1
9128          RC   0.050   0.045   0.050    5387  0.0041
9129          KM       Typical Sheet Flow Farmfield
9130          RX       0     500     600     620     720     740     840    1340
9131          RY       5       3       1       0       0       1       3       5
              *
```

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9132          KK   DRH39
9133          KM        Return diverted flow from CP H39
9134          DR   DVH39
              *
1                                        HEC-1 INPUT                                                    PAGE229

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

9135          KK   RDH39
9136          KM    URS 2009
9137          KM        Route flow from CP H39 to CP H40
9138          RS       4    FLOW      -1
9139          RC   0.050   0.045   0.050    7052  0.0061
9140          KM       Typical Sheet Flow Farmfield
9141          RX       0     500     600     620     720     740     840    1340
9142          RY       5       3       1       0       0       1       3       5
              *

9143          KK     H40
9144          KM    URS 2009
9145          KM        Runoff from H40
9146          BA   0.470
9147          LG    0.35    0.35    4.00    0.46       0
9148          UI       0     242     760     587     174      40       0       0       0       0
9149          UI       0       0       0       0       0       0       0       0       0       0
              *
9150          KM    URS 2009

9151          KK   CPH40
9152          KM       Combine DRH39 with H40
9153          HC       2   1.442
              *

9154          KK  RCPH40
9155          KM    URS 2009
9156          KM        Route flow from CP H40 to CP H84
9157          RS       1    FLOW      -1
9158          RC   0.050   0.045   0.050    2777  0.0151
9159          KM       Typical Sheet Flow Farmfield
9160          RX       0     500     600     620     720     740     840    1340
9161          RY       5       3       1       0       0       1       3       5
              *

9162          KK     H84
9163          KM    URS 2009
9164          KM        Runoff from H84
9165          BA   0.756
9166          LG    0.10    0.25    4.00    0.39       5
9167          UI       0    1166    1564     177       0       0       0       0       0       0
9168          UI       0       0       0       0       0       0       0       0       0       0
9169          UI       0       0       0       0       0       0       0       0       0       0
              *
9170          KM    URS 2009

9171          KK   CPH84
9172          KM        Combine H41, H40 with H84
9173          HC       3   2.914
              *
1                                        HEC-1 INPUT                                                    PAGE230

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

9174          KK  RCPH84
9175          KM    URS 2009
9176          KM        Route flow from CP H84 to CP H85
9177          RS       3    FLOW      -1
9178          RC   0.050   0.045   0.050    5273  0.0071
9179          KM       Typical Sheet Flow Farmfield
9180          RX       0     500     600     620     720     740     840    1340
9181          RY       5       3       1       0       0       1       3       5
              *

9182          KK     H85
9183          KM    URS 2009
9184          KM        Runoff from H85
9185          BA   0.976
9186          LG    0.10    0.25    4.00    0.39       5
9187          UI       0    1428    1791     431      79      38       0       0       0       0
9188          UI       0       0       0       0       0       0       0       0       0       0
9189          UI       0       0       0       0       0       0       0       0       0       0
9190          UI       0       0       0       0       0       0       0       0       0       0
              *
9191          KM    URS 2009

9192          KK   CPH85
9193          KM        Combine H84 with H85
9194          HC       2   3.890
              *

9195          KK  RCPH85
9196          KM    URS 2009
9197          KM        Route flow from CP H85 to CP H86
9198          RS       4    FLOW      -1
9199          RC   0.050   0.045   0.050    6464  0.0045
9200          KM       Typical Sheet Flow Farmfield
9201          RX       0     500     600     620     720     740     840    1340
9202          RY       5       3       1       0       0       1       3       5
              *

9203          KK     H86
9204          KM    URS 2009
9205          KM        Runoff from H86
9206          BA   1.077
```

```
9207          LG    0.11    0.25    4.25    0.35       5
9208          UI       0    1184    2052     679     178      36      36       0       0       0
9209          UI       0       0       0       0       0       0       0       0       0       0
9210          UI       0       0       0       0       0       0       0       0       0       0
9211          UI       0       0       0       0       0       0       0       0       0       0
              *
9212          KM    URS 2009
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


9213          KK   CPH86
9214          KM        Combine H85 with H86
9215          HC       2   4.967
              *

9216          KK  H86RIV
9217          KM        Combine B64RIV with H86
9218          HC       2 328.049
              *

9219          KK  RCPH86
9220          KM    URS 2009
9221          KM        Route flow from CP H86RIV to CP A41RIV (WATERMAN WASH)
9222          RS       2    FLOW      -1
9223          RC   0.050   0.035   0.050    4687  0.0033
9224          RX       0     535     856     935     999    1040    1050    2560
9225          RY  1059.0  1056.0  1048.7  1046.0  1046.0  1050.0  1056.0  1059.0
              *
              *

9226          KK     I03
9227          KM    URS 2009
9228          KM    Customized XKSAT Values
9229          KM        Runoff subbasin I03
9230          BA   0.957
9231          LG    0.35    0.35    3.95    0.47       0
9232          UI       0     754    2007     779     130       0       0       0       0       0
              *
9233          KM    URS 2009

9234          KK    DI03
9235          KM      Divert flow from CP I03 into I05
9236          KM        Natural divergence of flow due to a braided channel network.
9237          DT   DVI03
9238          DI       0       5     158     675    1632    3393    5638    8306   11362   14778
9239          DQ       0       5     140     450     924    1780    2851    4109    5539    7128
              *

9240          KK  RCPI03
9241          KM    URS 2009
9242          KM        Route remainder flow from CP I03 to CP I04
9243          RS       4    FLOW      -1
9244          RC   0.050   0.045   0.050    5669  0.0141
9245          RX       0     152     193     220     231     322     419     420
9246          RY  1362.7  1360.8  1360.9  1360.6  1360.5  1360.7  1361.7  1361.7
              *

9247          KK     I04
9248          KM    Customized XKSAT Values
9249          KM    URS 2009
9250          KM        Runoff subbasin I04
9251          BA   0.394
9252          LG    0.35    0.35    3.95    0.47       0
9253          UI       0     303     818     331      58       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                    PAGE232

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

9254          KM    URS 2009

9255          KK   CPI04
9256          KM        Combine I03 with I04
9257          HC       2   0.778
              *

9258          KK  RCPI04
9259          KM    URS 2009
9260          KM        Route flow from CP I04 to CP I06
9261          RS       4    FLOW      -1
9262          RC   0.050   0.045   0.050    4365  0.0128
9263          RX       0      70     130     190     240     320     440     550
9264          RY  1362.7  1360.8  1360.9  1360.6  1360.5  1360.7  1361.7  1361.7
              *

9265          KK     I06
9266          KM    URS 2009
9267          KM        Runoff subbasin I06
9268          BA   0.499
9269          LG    0.35    0.35    4.00    0.46       0
9270          UI       0     482    1107     297      43       0       0       0       0       0
9271          UI       0       0       0       0       0       0       0       0       0       0
              *
9272          KM    URS 2009

9273          KK   CPI06
9274          KM        Combine I04 with I06
9275          HC       2   1.277
              *

9276          KK  RCPI06
9277          KM    URS 2009
9278          KM        Route flow from CP I06 to CP I08
9279          RS       5    FLOW      -1
```

```
9280          RC   0.050   0.045   0.050    6104  0.0095
9281          RX     294     885     945     985    1104    1184    1343    1850
9282          RY  1177.6  1177.2  1177.1  1177.0  1177.1  1177.3  1177.6  1177.7
              *

9283          KK     I08
9284          KM    URS 2009
9285          KM        Runoff subbasin I08
9286          BA   0.791
9287          LG    0.35    0.35    4.00    0.46       0
9288          UI       0     452    1389     924     233      48       0       0       0       0
              *
9289          KM    URS 2009

9290          KK   CPI08
9291          KM        Combine I06 with I08
9292          HC       2   2.068
              *
1                                          HEC-1 INPUT                                          PAGE233

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

9293          KK  RCPI08
9294          KM    URS 2009
9295          KM        Route flow from CP I08 to CP I10
9296          RS       3    FLOW      -1
9297          RC   0.050   0.045   0.050    5225  0.0084
9298          KM       Typical Sheet Flow Route
9299          RX       0     500     700     750     800     900    1100    1600
9300          RY       6       4       2       0       0       2       4       6
              *

9301          KK     I10
9302          KM    URS 2009
9303          KM        Runoff subbasin I10
9304          BA   0.497
9305          LG    0.35    0.35    4.00    0.46       0
9306          UI       0     313     931     532     115      30       0       0       0       0
9307          UI       0       0       0       0       0       0       0       0       0       0
              *
9308          KM    URS 2009

9309          KK   CPI10
9310          KM        Combine I08 with I10
9311          HC       2   2.565
              *

9312          KK  RCPI10
9313          KM    URS 2009
9314          KM        Route flow from CP I10 to CP I12
9315          RS       3    FLOW      -1
9316          RC   0.050   0.045   0.050    5264  0.0072
9317          KM       Typical Sheet Flow Farmfield
9318          RX       0     500     600     620     720     740     840    1340
9319          RY       5       3       1       0       0       1       3       5
              *

9320          KK   DRI03
9321          KM      Return Diverted flow from CP I03 in basin I05
9322          DR   DVI03
              *

9323          KK   RDI03
9324          KM    URS 2009
9325          KM        Route diverted flow from CP I03 CP I05
9326          RS       2    FLOW      -1
9327          RC   0.050   0.045   0.050    4448  0.0180
9328          KM       Typical Sheet Flow Route
9329          RX       0     500     700     750     800     900    1100    1600
9330          RY       6       4       2       0       0       2       4       6
              *
1                                          HEC-1 INPUT                                          PAGE234

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

9331          KK     I05
9332          KM    URS 2009
9333          KM    Customized XKSAT Values
9334          KM        Runoff subbasin I05
9335          BA   0.217
9336          LG    0.35    0.35    3.95    0.47       0
9337          UI       0     295     476      61       0       0       0       0       0       0
9338          UI       0       0       0       0       0       0       0       0       0       0
              *
9339          KM    URS 2009

9340          KK   CPI05
9341          KM        Combine I03 with I05
9342          HC       2   0.793
              *
9343          KM    URS 2009

9344          KK  RCPI05
9345          KM        Route flow from CP I05 to CP I07
9346          RS       3    FLOW      -1
9347          RC   0.050   0.045   0.050    3990  0.0135
9348          RX     167     750     810     895     941     999    1064    1585
9349          RY  1256.9  1255.1  1255.2  1255.1  1255.1  1255.5  1255.7  1256.8
              *

9350          KK     I07
9351          KM    URS 2009
9352          KM        Runoff subbasin I07
9353          BA   0.194
```

```
9354          LG    0.35    0.35    4.00    0.46       0
9355          UI       0     245     434      63       0       0       0       0       0       0
              *
9356          KM    URS 2009

9357          KK   CPI07
9358          KM        Combine I05 with I07
9359          HC       2   0.987
              *

9360          KK  RCPI07
9361          KM    URS 2009
9362          KM        Route flow from CP I07 to CP I09
9363          RS       3    FLOW      -1
9364          RC   0.050   0.045   0.050    5385  0.0108
9365          KM       Typical Sheet Flow Route
9366          RX       0     500     700     750     800     900    1100    1600
9367          RY       6       4       2       0       0       2       4       6
              *
1                                                HEC-1 INPUT                                                PAGE235

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

9368          KK     I09
9369          KM    URS 2009
9370          KM        Runoff subbasin I09
9371          BA   0.315
9372          LG    0.35    0.35    4.00    0.46       0
9373          UI       0     248     661     256      43       0       0       0       0       0
              *
9374          KM    URS 2009

9375          KK   CPI09
9376          KM        Combine I07 with I09
9377          HC       2   1.302
              *

9378          KK  RCPI09
9379          KM    URS 2009
9380          KM        Route flow from CP I09 to CP I11
9381          RS       3    FLOW      -1
9382          RC   0.050   0.045   0.050    4468  0.0087
9383          KM       Typical Sheet Flow Route
9384          RX       0     500     700     750     800     900    1100    1600
9385          RY       6       4       2       0       0       2       4       6
              *

9386          KK     I11
9387          KM    Customized XKSAT Values
9388          KM    URS 2009
9389          KM        Runoff subbasin I11
9390          BA   0.289
9391          LG    0.35    0.35    3.95    0.47       0
9392          UI       0     257     629     198      30       0       0       0       0       0
              *
9393          KM    URS 2009

9394          KK   CPI11
9395          KM        Combine I09 with I11
9396          HC       2   1.591
              *

9397          KK  RCPI11
9398          KM    URS 2009
9399          KM        Route flow from CP I11 to CP I12
9400          RS       4    FLOW      -1
9401          RC   0.050   0.045   0.050    5395  0.0082
9402          KM       Typical Sheet Flow Farmfield
9403          RX       0     500     600     620     720     740     840    1340
9404          RY       5       3       1       0       0       1       3       5
              *
1                                                HEC-1 INPUT                                                PAGE236

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

9405          KK     I12
9406          KM    Customized XKSAT Values
9407          KM    URS 2009
9408          KM        Runoff subbasin I12
9409          BA   0.509
9410          LG    0.10    0.25    4.00    0.39       5
9411          UI       0     754    1074     126       0       0       0       0       0       0
9412          UI       0       0       0       0       0       0       0       0       0       0
              *
9413          KM    URS 2009

9414          KK   CPI12
9415          KM        Combine I10, I11 with I12
9416          HC       3   4.665
              *

9417          KK  RCPI12
9418          KM    URS 2009
9419          KM        Route flow from CP I12 to CP I13
9420          RS       3    FLOW      -1
9421          RC   0.050   0.045   0.050    5221  0.0054
9422          KM       Typical Sheet Flow Farmfield
9423          RX       0     500     600     620     720     740     840    1340
9424          RY       5       3       1       0       0       1       3       5
              *

9425          KK     I13
9426          KM    URS 2009
9427          KM    Customized XKSAT Values
```

```
9428          KM        Runoff subbasin I13
9429          BA   0.519
9430          LG    0.10    0.25    4.25    0.35       5
9431          UI       0     705    1138     145       0       0       0       0       0       0
9432          UI       0       0       0       0       0       0       0       0       0       0
              *
9433          KM    URS 2009

9434          KK   CPI13
9435          KM        Combine I12 with I13
9436          HC       2   5.184
              *

9437          KK  RCPI13
9438          KM    URS 2009
9439          KM        Route flow from CP I13 to CP I14
9440          RS       1    FLOW      -1
9441          RC   0.050   0.045   0.050    2548  0.0078
9442          KM       Typical Sheet Flow Farmfield
9443          RX       0     500     600     620     720     740     840    1340
9444          RY       5       3       1       0       0       1       3       5
              *
1                                          HEC-1 INPUT                                          PAGE237

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

9445          KK     I14
9446          KM    Customized XKSAT Values
9447          KM    URS 2009
9448          KM        Runoff subbasin I14
9449          BA   0.240
9450          LG    0.16    0.28    5.20    0.21       4
9451          UI       0     769     160       0       0       0       0       0       0       0
9452          UI       0       0       0       0       0       0       0       0       0       0
              *
9453          KM    URS 2009

9454          KK   CPI14
9455          KM        Combine I13 with I14
9456          HC       2   5.424
              *
9457          KM    URS 2009

9458          KK     A12
9459          KM        Runoff from A12
9460          BA   1.064
9461          LG    0.35    0.34    4.50    0.35       0
9462          UI       0     185     585    1030    1119     667     298     140      43      35
9463          UI       0       0       0       0       0       0       0       0       0       0
9464          UI       0       0       0       0       0       0       0       0       0       0
              *
9465          KM    URS 2009

9466          KK  RCPA12
9467          KM        Route flow from CP A12 to CP A41
9468          RS      17    FLOW      -1
9469          RC   0.050   0.045   0.050   13965  0.0040
9470          KM       Typical Sheet Flow Small Wash
9471          RX       0     600     700     706     711     717     817    1417
9472          RY       6       4       3       0       0       3       4       6
              *
9473          KM    URS 2009

9474          KK     A41
9475          KM        Runoff from A41
9476          BA   0.915
9477          LG    0.35    0.35    4.55    0.34       9
9478          UI       0      93     337     560     685     600     459     281     192     113
9479          UI      77      48      32      10      10      10      10      10      10       0
              *

9480          KK   CPA41
9481          KM        Combine A12 with A41
9482          HC       2   1.971
              *
1                                          HEC-1 INPUT                                          PAGE238

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

9483          KK  A41RIV
9484          KM        Combine H86RIV, I14 with A41
9485          KM        Rainbow Boulevard crossing at A41RIV
9486          HC       3 335.511
              *

9487          KK  RCPA41
9488          KM      Route flow in Waterman Wash from CP A41RIV to CP A42RIV (WATERMAN WASH)
9489          KM    URS 2009
9490          RS       3    FLOW      -1
9491          RC   0.050   0.035   0.050    2547  0.0032
9492          RX     219    5259    5316    5412    5430    5450    5475    8000
9493          RY  1031.5  1028.0  1026.9  1028.5  1028.5  1028.5  1028.5  1031.5
              *
9494          KM    URS 2009

9495          KK    I15B
9496          KM    Customized XKSAT Values
9497          KM        Runoff subbasin I15B
9498          BA   0.328
9499          LG    0.35    0.35    3.95    0.47      20
9500          UI       0     367     740     142       0       0       0       0       0       0
9501          UI       0       0       0       0       0       0       0       0       0       0
              *
9502          KM    URS 2009
```

```
9503          KK  RCI15B
9504          KM        Route flow from CP I15B to CP I15A
9505          RS       2    FLOW      -1
9506          RC   0.050   0.045   0.050    4867  0.0168
9507          KM       Typical Sheet Flow Route
9508          RX       0    1000    1200    1250    1300    1400    1600    2600
9509          RY       6       4       2       0       0       2       4       6
              *
9510          KM    URS 2009

9511          KK    I15A
9512          KM        Runoff subbasin I15A
9513          BA   0.402
9514          LG    0.35    0.35    4.15    0.43       0
9515          UI       0     367     881     263      40       0       0       0       0       0
9516          UI       0       0       0       0       0       0       0       0       0       0
              *
9517          KM    URS 2009

9518          KK  CPI15A
9519          KM        Combine I15A AND I15B
9520          HC       2
              *
9521          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE239

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


9522          KK  RCI15A
9523          KM        Route flow from CP I15A to CP I18
9524          RS       2    FLOW      -1
9525          RC   0.050   0.045   0.050    5330  0.0114
9526          RX      82    2724    2838    2839    2849    3021    3122    4623
9527          RY  1227.0  1225.8  1225.2  1225.2  1225.3  1225.8  1226.0  1227.0
              *
9528          KM    URS 2009

9529          KK     I16
9530          KM    Customized XKSAT Values
9531          KM        Runoff subbasin I16
9532          BA   0.490
9533          LG    0.35    0.35    3.95    0.47       7
9534          UI       0     586    1103     181       0       0       0       0       0       0
9535          UI       0       0       0       0       0       0       0       0       0       0
              *
9536          KM    URS 2009

9537          KK  RCPI16
9538          KM        Route flow from CP I16 to CP I18
9539          RS       3    FLOW      -1
9540          RC   0.050   0.045   0.050    5420  0.0113
9541          KM       Typical Sheet Flow Route
9542          RX       0     500     700     750     800     900    1100    1600
9543          RY       6       4       2       0       0       2       4       6
              *
9544          KM    URS 2009

9545          KK     I18
9546          KM    Customized XKSAT Values
9547          KM        Runoff subbasin I18
9548          BA   0.664
9549          LG    0.35    0.35    3.95    0.47       0
9550          UI       0     523    1392     540      90       0       0       0       0       0
9551          UI       0       0       0       0       0       0       0       0       0       0
              *
9552          KM    URS 2009

9553          KK    I17C
9554          KM        Runoff subbasin I17
9555          BA   0.163
9556          LG    0.35    0.35    4.10    0.44      53
9557          UI       0     309     295      27       0       0       0       0       0       0
9558          UI       0       0       0       0       0       0       0       0       0       0
              *
9559          KM    URS 2009

9560          KK  RCI17C
9561          KM        Route flow from CP I17C to CP I17A
9562          RS       2    FLOW      -1
9563          RC   0.050   0.045   0.050    2602  0.0181
9564          KM       Typical Sheet Flow Route
9565          RX       0     500     700     750     800     900    1100    1600
1                                        HEC-1 INPUT                                                    PAGE240

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

9566          RY       6       4       2       0       0       2       4       6
              *
9567          KM    URS 2009

9568          KK    I17B
9569          KM        Runoff subbasin I17
9570          BA   0.088
9571          LG    0.35    0.35    4.70    0.30       4
9572          UI       0     233     103       0       0       0       0       0       0       0
              *
9573          KM    URS 2009

9574          KK  RCI17B
9575          KM        Route flow from CP I17B to CP I17A
9576          RS       2    FLOW      -1
9577          RC   0.050   0.045   0.050     470  0.0085
9578          KM       Typical Sheet Flow Route
9579          RX       0     500     700     750     800     900    1100    1600
```

```
9580          RY       6       4       2       0       0       2       4       6
              *
9581          KM    URS 2009

9582          KK    I17A
9583          KM        Runoff subbasin I17A
9584          BA   0.108
9585          LG    0.35    0.35    4.50    0.35       0
9586          UI       0     290     123       0       0       0       0       0       0       0
9587          UI       0       0       0       0       0       0       0       0       0       0
              *

9588          KK  CPI17A
9589          KM       Combine I17A, I17B, I17C
9590          HC       3
              *
9591          KM    URS 2009

9592          KK  RCI17A
9593          KM       Route flow from CP I17 to CP I18
9594          RS       2    FLOW      -1
9595          RC   0.050   0.045   0.050    5186  0.0118
9596          KM       Typical Sheet Flow Route
9597          RX       0     500     700     750     800     900    1100    1600
9598          RY       6       4       2       0       0       2       4       6
              *
9599          KM    URS 2009

9600          KK   CPI18
9601          KM       Combine I15A, I16, I17A with I18
9602          HC       4
              *
9603          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE241

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

9604          KK  RCPI18
9605          KM       Route flow from CP I18 to CP I19
9606          RS       2    FLOW      -1
9607          RC   0.050   0.045   0.050    4997  0.0094
9608          KM       Typical Sheet Flow Route
9609          RX       0     500     700     750     800     900    1100    1600
9610          RY       6       4       2       0       0       2       4       6
              *
9611          KM    URS 2009

9612          KK     I19
9613          KM       Runoff subbasin I19
9614          BA   0.354
9615          LG    0.35    0.35    4.00    0.46       0
9616          UI       0     262     724     311      57       0       0       0       0       0
9617          UI       0       0       0       0       0       0       0       0       0       0
              *

9618          KK   CPI19
9619          KM       Combine I18 with I19
9620          HC       2   2.530
              *
9621          KM    URS 2009

9622          KK  RCPI19
9623          KM       Route flow from CP I19 to CP I20
9624          RS       5    FLOW      -1
9625          RC   0.050   0.045   0.050    6802  0.0084
9626          RX       0     111     112     178     348     395     426     625
9627          RY  1131.2  1130.8  1130.9  1130.6  1130.0  1130.0  1130.0  1131.4
              *
9628          KM    URS 2009

9629          KK     I20
9630          KM       Runoff subbasin I20
9631          BA   0.619
9632          LG    0.35    0.35    4.00    0.46       0
9633          UI       0     318    1001     773     229      53       0       0       0       0
9634          UI       0       0       0       0       0       0       0       0       0       0
              *

9635          KK   CPI20
9636          KM       Combine I19 with I20
9637          HC       2   3.150
              *
9638          KM    URS 2009

9639          KK  RCPI20
9640          KM       Route flow from CP I20 to CP I21
9641          RS       3    FLOW      -1
9642          RC   0.050   0.045   0.050    5254  0.0080
9643          KM       Typical Sheet Flow Farmfield
9644          RX       0     500     600     620     720     740     840    1340
9645          RY       5       3       1       0       0       1       3       5
              *
1                                        HEC-1 INPUT                                                    PAGE242

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

9646          KM    URS 2009

9647          KK     I21
9648          KM    Customized XKSAT Values
9649          KM       Runoff subbasin I21
9650          BA   0.469
9651          LG    0.16    0.28    4.00    0.39       4
9652          UI       0     551    1057     180       0       0       0       0       0       0
9653          UI       0       0       0       0       0       0       0       0       0       0
```

```
9654          UI       0       0       0       0       0       0       0       0       0       0
              *

9655          KK   CPI21
9656          KM        Combine I20 with I21
9657          HC       2   3.619
              *
9658          KM    URS 2009

9659          KK  RCPI21
9660          KM        Route flow from CP I21 to CP I22
9661          RS       4    FLOW      -1
9662          RC   0.050   0.045   0.050    3859  0.0057
9663          RX      70    1700    1750    1800    1950    2000    2061    3809
9664          RY  1035.5  1034.0  1034.0  1034.0  1034.0  1034.0  1034.0  1035.6
              *
9665          KM    URS 2009

9666          KK     I22
9667          KM    Customized XKSAT Values
9668          KM        Runoff subbasin I22
9669          BA   0.385
9670          LG    0.10    0.25    4.40    0.32       5
9671          UI       0     910     508      56       0       0       0       0       0       0
9672          UI       0       0       0       0       0       0       0       0       0       0
9673          UI       0       0       0       0       0       0       0       0       0       0
              *

9674          KK   CPI22
9675          KM        Combine I21 with I22
9676          HC       2   4.004
              *
9677          KM    URS 2009

9678          KK     A40
9679          KM        Runoff from A40
9680          BA   0.498
9681          LG    0.10    0.25    4.90    0.24       5
9682          UI       0     424    1072     363      56       0       0       0       0       0
              *
9683          KM    URS 2009
1                                   HEC-1 INPUT                                                PAGE243

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

9684          KK  RCPA40
9685          KM        Route flow from CP A40 to CP A42
9686          RS       9    FLOW      -1
9687          RC   0.050   0.045   0.050    9074  0.0048
9688          KM       Typical Sheet Flow Farmfield
9689          RX       0     500     600     620     720     740     840    1340
9690          RY       5       3       1       0       0       1       3       5
              *
9691          KM    URS 2009

9692          KK     A42
9693          KM        Runoff from A42
9694          BA   0.852
9695          LG    0.27    0.28    4.70    0.31       2
9696          UI       0     111     412     693     685     554     336     204     115      72
9697          UI      50      13      11      11      11      11      11       0       0       0
              *

9698          KK   CPA42
9699          KM        Combine A40 with A42
9700          HC       2   1.350
              *

9701          KK  A42RIV
9702          KM        Combine A41RIV, I22 with A42
9703          HC       3 340.865
              *

9704          KK  RCPA42
9705          KM        Route flow in Waterman Wash from CP A42RIV to CP A44RIV (WATERMAN WASH)
9706          KM    URS 2009
9707          RS       2    FLOW      -1
9708          RC   0.050   0.035   0.050    2252  0.0024
9709          RX       0    5259    5316    6412    6430    6450    6475    8000
9710          RY  1030.5  1028.0  1026.9  1028.5  1028.5  1028.5  1028.5  1031.5
              *
9711          KM    URS 2009

9712          KK     A13
9713          KM        Runoff from A13
9714          BA   0.580
9715          LG    0.35    0.38    5.80    0.19       2
9716          UI       0     144     432     773     519     238      92      24      22       0
9717          UI       0       0       0       0       0       0       0       0       0       0
9718          UI       0       0       0       0       0       0       0       0       0       0
              *
9719          KM    URS 2009

9720          KK  RCPA13
9721          KM        Route flow from CP A13 to CP A39
9722          RS       6    FLOW      -1
9723          RC   0.050   0.045   0.050    6016  0.0053
9724          KM       Typical Sheet Flow Farmfield
9725          RX       0     500     600     620     720     740     840    1340
1                                   HEC-1 INPUT                                                PAGE244

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

9726          RY       5       3       1       0       0       1       3       5
              *
```

```
9727          KM    URS 2009

9728          KK     A39
9729          KM        Runoff from A39
9730          BA   0.495
9731          LG    0.10    0.25    4.80    0.25       5
9732          UI       0     490     932     354     101      18      16       0       0       0
9733          UI       0       0       0       0       0       0       0       0       0       0
9734          UI       0       0       0       0       0       0       0       0       0       0
9735          UI       0       0       0       0       0       0       0       0       0       0
              *

9736          KK   CPA39
9737          KM       Combine A13 with A39
9738          HC       2   1.075
              *
9739          KM    URS 2009

9740          KK  RCPA39
9741          KM       Route flow from CP A39 to CP A43
9742          RS       4    FLOW     -1
9743          RC   0.050   0.045   0.050    5272  0.0061
9744          KM       Typical Sheet Flow Farmfield
9745          RX       0     500     600     620     720     740     840    1340
9746          RY       5       3       1       0       0       1       3       5
              *
9747          KM    URS 2009

9748          KK     A43
9749          KM       Runoff from A43
9750          BA   0.505
9751          LG    0.10    0.25    4.80    0.25       5
9752          UI       0     507     954     353     101      17      16       0       0       0
              *

9753          KK   CPA43
9754          KM       Combine A39 with A43
9755          HC       2   1.580
              *
9756          KM    URS 2009

9757          KK  RCPA43
9758          KM       Route flow from CP A43 to CP A44
9759          RS       4    FLOW     -1
9760          RC   0.050   0.045   0.050    5232  0.0061
9761          KM       Typical Sheet Flow Farmfield
9762          RX       0     500     600     620     720     740     840    1340
9763          RY       5       3       1       0       0       1       3       5
              *
9764          KM    URS 2009
```



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

9765          KK     A44
9766          KM       Runoff from A44
9767          BA   0.366
9768          LG    0.11    0.26    4.70    0.26       5
9769          UI       0     512     680     173      33      14       0       0       0       0
              *

9770          KK   CPA44
9771          KM       Combine A43 with A44
9772          HC       2   1.945
              *

9773          KK  A44RIV
9774          KM       Combine A42RIV with A44
9775          KM       Queen Creek Road crossing A44RIV
9776          HC       2 342.810
              *

9777          KK  RCPA44
9778          KM       Route flow in Waterman Wash from CP A44RIV to CP I36RIV (WATERMAN WASH)
9779          KM     URS 2009
9780          RS       2    FLOW     -1
9781          RC   0.050   0.035   0.050    3511  0.0033
9782          RX       0    1277    1383    1391    1412    1433    1452    2209
9783          RY  1017.0  1009.4  1007.5  1008.0  1010.0  1011.1  1012.0  1016.5
              *
9784          KM    URS 2009

9785          KK     I24
9786          KM       Runoff subbasin I24
9787          BA   0.177
9788          LG    0.35    0.35    4.65    0.32      26
9789          UI       0     198     399      77       0       0       0       0       0       0
9790          UI       0       0       0       0       0       0       0       0       0       0
              *
9791          KM    URS 2009

9792          KK  RCPI24
9793          KM       Route flow from CP I24 to CP I26A
9794          RS       4    FLOW     -1
9795          RC   0.050   0.045   0.050    5594  0.0179
9796          KM       Typical Sheet Flow Route
9797          RX       0     500     700     750     800     900    1100    1600
9798          RY       6       4       2       0       0       2       4       6
              *
              *
9799          KM    URS 2009

9800          KK    I26B
9801          KM    Runoff subbasin I6B
9802          BA   0.061
```

```
9803          LG    0.35    0.35    4.70    0.30       5
9804          UI       0     142      89       0       0       0       0       0       0       0
9805          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                PAGE246

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

9806          KM    URS 2009

9807          KK  RCI26B
9808          KM        Route flow from CP I26B to CP I26A
9809          RS       6    FLOW      -1
9810          RC   0.050   0.045   0.050    7173  0.0100
9811          KM       Typical Sheet Flow Route
9812          RX       0     500     700     750     800     900    1100    1600
9813          RY       6       4       2       0       0       2       4       6
              *
9814          KM    URS 2009

9815          KK    I26A   BASIN
9816          BA   0.576
9817          LG    0.35    0.35    4.20    0.42       1
9818          UI       0     332    1019     667     167      33       0       0       0       0
9819          UI       0       0       0       0       0       0       0       0       0       0
              *
9820          KM    URS 2009

9821          KK  CPI26A
9822          KM        Combine I24, I26B, with I26A
9823          HC       3
              *
9824          KM    URS 2009

9825          KK  RCI26A
9826          KM        Route flow from CP I26A to CP I28
9827          RS       5    FLOW      -1
9828          RC   0.050   0.045   0.050    5176  0.0093
9829          KM       Typical Sheet Flow Route
9830          RX       0     500     700     750     800     900    1100    1600
9831          RY       6       4       2       0       0       2       4       6
              *
9832          KM    URS 2009

9833          KK     I28
9834          KM        Runoff subbasin I28
9835          BA   0.442
9836          LG    0.35    0.35    4.00    0.46       0
9837          UI       0     503     997     184       0       0       0       0       0       0
9838          UI       0       0       0       0       0       0       0       0       0       0
              *

9839          KK   CPI28
9840          KM        Combine I26 with I28
9841          HC       2   1.256
              *
9842          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE247

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

9843          KK  RCPI28
9844          KM        Route flow from CP I28 to CP I30
9845          RS       3    FLOW      -1
9846          RC   0.050   0.045   0.050    4592  0.0091
9847          KM       Typical Sheet Flow Route
9848          RX       0     500     700     750     800     900    1100    1600
9849          RY       6       4       2       0       0       2       4       6
              *
9850          KM    URS 2009

9851          KK     I30
9852          KM        Runoff subbasin I30
9853          BA   0.423
9854          LG    0.35    0.35    4.00    0.46       0
9855          UI       0     375     921     289      44       0       0       0       0       0
9856          UI       0       0       0       0       0       0       0       0       0       0
              *

9857          KK   CPI30
9858          KM        Combine I28 with I30
9859          HC       2   1.678
              *
9860          KM    URS 2009

9861          KK  RCPI30
9862          KM        Route flow from CP I30 to CP I32
9863          RS       3    FLOW      -1
9864          RC   0.050   0.045   0.050    5275  0.0076
9865          KM       Typical Sheet Flow Farmfield
9866          RX       0     500     600     620     720     740     840    1340
9867          RY       5       3       1       0       0       1       3       5
              *
9868          KM    URS 2009

9869          KK     I32
9870          KM    Customized XKSAT Values
9871          KM        Runoff subbasin I32
9872          BA   0.506
9873          LG    0.10    0.25    4.00    0.39       5
9874          UI       0     780    1047     118       0       0       0       0       0       0
9875          UI       0       0       0       0       0       0       0       0       0       0
9876          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
9877          KK   CPI32
9878          KM        Combine I30 with I32
9879          HC       2   2.184
              *
9880          KM    URS 2009
1                                          HEC-1 INPUT                                                          PAGE248

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


9881          KK  RCPI32
9882          KM        Route flow from CP I32 to CP I34
9883          RS       4    FLOW      -1
9884          RC   0.050   0.045   0.050    5292  0.0055
9885          KM       Typical Sheet Flow Farmfield
9886          RX       0     500     600     620     720     740     840    1340
9887          RY       5       3       1       0       0       1       3       5
              *
9888          KM    URS 2009

9889          KK     I34
9890          KM        Runoff subbasin I34
9891          BA   0.510
9892          LG    0.30    0.25    4.40    0.44       3
9893          UI       0      70     233     369     550     360     218      90      48      15
9894          UI      15       0       0       0       0       0       0       0       0       0
9895          UI       0       0       0       0       0       0       0       0       0       0
              *

9896          KK   CPI34
9897          KM        Combine I32 with I34
9898          HC       2   2.694
              *
9899          KM    URS 2009

9900          KK  RCPI34
9901          KM        Route flow from CP I34 to CP I36
9902          RS       2    FLOW      -1
9903          RC   0.050   0.045   0.050    3118  0.0064
9904          KM       Typical Sheet Flow Farmfield
9905          RX       0     500     600     620     720     740     840    1340
9906          RY       5       3       1       0       0       1       3       5
              *
9907          KM    URS 2009

9908          KK     I36
9909          KM        Runoff subbasin I36
9910          BA   0.194
9911          LG    0.23    0.30    4.45    0.33       2
9912          UI       0     421     308       0       0       0       0       0       0       0
9913          UI       0       0       0       0       0       0       0       0       0       0
              *

9914          KK   CPI36
9915          KM        Combine I34 with I36
9916          HC       2   2.888
              *

9917          KK  I36RIV
9918          KM        Combine A44RIV with flow from I36
9919          HC       2 345.689
              *
1                                          HEC-1 INPUT                                                          PAGE249

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


9920          KK  RCPI36
9921          KM        Route flow from CP I36RIV to CP I37RIV (WATERMAN WASH)
9922          KM    URS 2009
9923          RS       1    FLOW      -1
9924          RC   0.050   0.035   0.050    2267  0.0030
9925          RX       0    1277    1383    1391    1412    1433    1452    2209
9926          RY  1017.0  1009.4  1007.5  1008.0  1010.0  1011.1  1012.0  1016.5
              *
9927          KM    URS 2009

9928          KK     A01
9929          KM        Runoff from A01
9930          KM    Customized XKSAT Values
9931          BA   9.619
9932          LG    0.35    0.35    3.23    0.77       0
9933          UI       0     699    2628    4035    5772    8270    5898    4187    2700    1235
9934          UI     829     386     215     215       0       0       0       0       0       0
              *

9935          KK   DA01A
9936          KM      Divert flow from A01 into A03
9937          KM        Natural divergence of flow due to a braided channel network.
9938          DT  DVA01A
9939          DI       0      47     155     315     528     935    1662    2704    4570    6736
9940          DQ       0      24      77     158     264     466     844    1353    2247    3303
              *

9941          KK   DA01B
9942          KM      Divert flow from A01 into A10
9943          KM        Natural divergence of flow due to a braided channel network.
9944          DT  DVA01B
9945          DI       0      24      83     161     521    1492    2650    4072    5732    7611
9946          DQ       0      12      42      78     241     684    1204    1842    2586    3426
              *
9947          KM    URS 2009

9948          KK  RCPA01
9949          KM        Route remainder flow from CP A01 to CP A11
9950          RS      10    FLOW      -1
```

```
 9951          RC   0.050   0.045   0.050   15319  0.0077
 9952          RX    38.0    51.0   180.0   208.0   363.0   367.0   431.0   473.0
 9953          RY  1219.9  1219.6  1217.5  1218.0  1218.0  1218.2  1220.0  1221.0
               *
 9954          KM    URS 2009

 9955          KK     A11
 9956          KM        Runoff from A11
 9957          KM        Customized XKSAT Values
 9958          BA   1.804
 9959          LG    0.35    0.35    3.25    0.76       0
 9960          UI       0     207     725    1109    1822    1356     892     435     224     102
 9961          UI      49      49       0       0       0       0       0       0       0       0
 9962          UI       0       0       0       0       0       0       0       0       0       0
               *
1                                          HEC-1 INPUT                                          PAGE250

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

 9963          KM    URS 2009

 9964          KK   CPA11
 9965          KM        Combine A01 with A11
 9966          HC       2  4.497
               *

 9967          KK    DA11
 9968          KM      Divert flow from A11 into A15
 9969          KM        Natural divergence of flow due to a braided channel network.
 9970          DT   DVA11
 9971          DI       0      14      62     159     545    1557    2782    4286    6039
 9972          DQ       0       7      31      79     272     779    1391    2143    3020
               *
 9973          KM    URS 2009

 9974          KK  RCPA11
 9975          KM        Route remainder flow from CP A11 to CP A14
 9976          RS       5    FLOW      -1
 9977          RC   0.050   0.045   0.050    6553  0.0082
 9978          RX     0.0   103.0   340.0   351.0   423.0   475.0   557.0   618.0
 9979          RY  1075.2  1074.0  1074.0  1074.1  1074.0  1074.0  1074.8  1075.5
               *
 9980          KM    URS 2009

 9981          KK     A14
 9982          KM        Runoff from A14
 9983          BA   0.856
 9984          LG    0.34    0.34    4.70    0.31       2
 9985          UI       0     166     513     944     856     498     193      85      29      29
 9986          UI       0       0       0       0       0       0       0       0       0       0
 9987          UI       0       0       0       0       0       0       0       0       0       0
               *
 9988          KM    URS 2009

 9989          KK   CPA14
 9990          KM        Combine A11 with A14
 9991          HC       2   3.104
               *
 9992          KM    URS 2009

 9993          KK  RCPA14
 9994          KM        Route flow from CP A14 to CP A37
 9995          RS       8    FLOW      -1
 9996          RC   0.050   0.045   0.050    6553  0.0082
 9997          RX       0     103     340     351     423     475     557     618
 9998          RY  1075.2  1074.0  1074.0  1074.1  1074.0  1074.0  1074.8  1075.5
               *
 9999          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE251

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

10000          KK     A38
10001          KM        Runoff from A38
10002          BA   0.482
10003          LG    0.10    0.25    4.55    0.29       5
10004          UI       0     507     918     317      88      16      16       0       0       0
10005          UI       0       0       0       0       0       0       0       0       0       0
10006          UI       0       0       0       0       0       0       0       0       0       0
               *
10007          KM    URS 2009

10008          KK  RCPA38
10009          KM        Route flow from CP A38 to CP A37
10010          RS       6    FLOW      -1
10011          RC   0.050   0.045   0.050    9320  0.0069
10012          RX      80     100     104     193     200     220     222     222
10013          RY  1071.1  1068.8  1068.8  1069.2  1069.2  1070.6  1070.6  1070.6
               *
10014          KM    URS 2009

10015          KK     A37
10016          KM        Runoff from A37
10017          BA   1.346
10018          LG    0.34    0.34    4.90    0.28       1
10019          UI       0     201     661    1089    1457     912     501     208      95      41
10020          UI      41       0       0       0       0       0       0       0       0       0
               *
10021          KM    URS 2009

10022          KK   CPA37
10023          KM        Combine A14, A38 with A37
10024          HC       3   4.932
               *
10025          KM    URS 2009
```

```
10026          KK  RCPA37
10027          KM       Route flow from CP A37 to CP A45
10028          RS       5    FLOW      -1
10029          RC   0.050   0.045   0.050    7098  0.0048
10030          KM      Typical Sheet Flow Farmfield
10031          RX       0     500     600     620     720     740     840    1340
10032          RY       5       3       1       0       0       1       3       5
               *
10033          KM    URS 2009

10034          KK     A45
10035          KM       Runoff from A45
10036          BA   0.533
10037          LG    0.20    0.29    4.50    0.31       3
10038          UI       0     274     862     666     197      45       0       0       0       0
               *
10039          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE252

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

10040          KK   CPA45
10041          KM       Combine A37 with A45
10042          HC       2   5.465
               *
10043          KM    URS 2009

10044          KK     I23
10045          KM       Runoff subbasin I23
10046          BA   0.423
10047          LG    0.34    0.34    4.20    0.44      56
10048          UI       0     485     726     268     100      36      21       0       0       0
               *
10049          KM    URS 2009

10050          KK  RCPI23
10051          KM       Route flow from CP I23 to CP I25
10052          RS       2    FLOW      -1
10053          RC   0.050   0.045   0.050    3837  0.0182
10054          RX      56      87     286     357     380     421     545     550
10055          RY  1278.0  1278.0  1276.5  1276.3  1277.2  1277.7  1278.0  1278.0
               *
10056          KM    URS 2009

10057          KK     I25
10058          KM       Runoff subbasin I25
10059          BA   0.309
10060          LG    0.35    0.35    4.55    0.34       0
10061          UI       0     448     659      79       0       0       0       0       0       0
10062          UI       0       0       0       0       0       0       0       0       0       0
               *

10063          KK   CPI25
10064          KM       Combine I23 with I25
10065          HC       2   0.732
               *
10066          KM    URS 2009

10067          KK  RCPI25
10068          KM       Route flow from CP I25 to CP I27
10069          RS       3    FLOW      -1
10070          RC   0.050   0.045   0.050    5163  0.0120
10071          KM      Typical Sheet Flow Route
10072          RX       0     500     700     750     800     900    1100    1600
10073          RY       6       4       2       0       0       2       4       6
               *
10074          KM    URS 2009

10075          KK     I27
10076          KM       Runoff subbasin I27
10077          BA   0.403
10078          LG    0.35    0.35    4.25    0.41       0
10079          UI       0     334     860     306      48       0       0       0       0       0
10080          UI       0       0       0       0       0       0       0       0       0       0
               *
1                                          HEC-1 INPUT                                                    PAGE253

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

10081          KK   CPI27
10082          KM       Combine I25 with I27
10083          HC       2   1.135
               *
10084          KM    URS 2009

10085          KK  RCPI27
10086          KM       Route flow from CP I27 to CP I29
10087          RS       2    FLOW      -1
10088          RC   0.050   0.045   0.050    3888  0.0103
10089          KM      Typical Sheet Flow Route
10090          RX       0     500     700     750     800     900    1100    1600
10091          RY       6       4       2       0       0       2       4       6
               *
10092          KM    URS 2009

10093          KK     I29
10094          KM       Runoff subbasin I29
10095          BA   0.373
10096          LG    0.35    0.35    4.00    0.46       0
10097          UI       0     418     841     162       0       0       0       0       0       0
10098          UI       0       0       0       0       0       0       0       0       0       0
               *
```

```
10099          KK   CPI29
10100          KM        Combine I27 with I29
10101          HC       2   1.508
               *
10102          KM    URS 2009

10103          KK  RCPI29
10104          KM        Route flow from CP I29 to CP I31
10105          RS       2    FLOW      -1
10106          RC   0.050   0.045   0.050    3777  0.0095
10107          KM       Typical Sheet Flow Route
10108          RX       0     500     700     750     800     900    1100    1600
10109          RY       6       4       2       0       0       2       4       6
               *
10110          KM    URS 2009

10111          KK     I31
10112          KM    Customized XKSAT Values
10113          KM        Runoff subbasin I31
10114          BA   0.361
10115          LG    0.35    0.35    3.95    0.47       0
10116          UI       0     432     812     133       0       0       0       0       0       0
10117          UI       0       0       0       0       0       0       0       0       0       0
               *
1                                                HEC-1 INPUT                                                    PAGE254

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


10118          KK   CPI31
10119          KM        Combine I29 with I31
10120          HC       2   1.869
               *
10121          KM    URS 2009

10122          KK  RCPI31
10123          KM        Route flow from CP I31 to CP I33
10124          RS       3    FLOW      -1
10125          RC   0.050   0.045   0.050    5318  0.0083
10126          KM       Typical Sheet Flow Farmfield
10127          RX       0     500     600     620     720     740     840    1340
10128          RY       5       3       1       0       0       1       3       5
               *
10129          KM    URS 2009

10130          KK     I33
10131          KM        Runoff subbasin I33
10132          BA   0.504
10133          LG    0.10    0.25    4.00    0.39       5
10134          UI       0     762    1053     122       0       0       0       0       0       0
10135          UI       0       0       0       0       0       0       0       0       0       0
               *

10136          KK   CPI33
10137          KM        Combine I31 with I33
10138          HC       2   2.373
               *
10139          KM    URS 2009

10140          KK  RCPI33
10141          KM        Route flow from CP I33 to CP I35
10142          RS       5    FLOW      -1
10143          RC   0.050   0.045   0.050    5311  0.0066
10144          RX       0     385     536     557     641     666     711     817
10145          RY  1032.0  1032.0  1031.2  1031.2  1031.3  1031.4  1031.6  1033.0
               *
10146          KM    URS 2009

10147          KK     I35
10148          KM        Runoff subbasin I35
10149          BA   0.507
10150          LG    0.18    0.25    4.70    0.29       4
10151          UI       0     227     714     683     248      63      26       0       0       0
10152          UI       0       0       0       0       0       0       0       0       0       0
               *

10153          KK   CPI35
10154          KM        Combine I33 with I35
10155          HC       2   2.880
               *
10156          KM    URS 2009
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


10157          KK  RCPI35
10158          KM        Route flow from CP I35 to CP I37
10159          RS       3    FLOW      -1
10160          RC   0.050   0.045   0.050    4061  0.0054
10161          KM       Typical Sheet Flow Farmfield
10162          RX       0     500     600     620     720     740     840    1340
10163          RY       5       3       1       0       0       1       3       5
               *
10164          KM    URS 2009

10165          KK     I37
10166          KM        Runoff subbasin I37
10167          BA   0.409
10168          LG    0.14    0.27    5.20    0.21       4
10169          UI       0     726     776      78       0       0       0       0       0       0
10170          UI       0       0       0       0       0       0       0       0       0       0
               *

10171          KK   CPI37
10172          KM        Combine I35 with I37
```

```
10173          HC       2   3.289
               *

10174          KK  I37RIV
10175          KM        Combine I36RIV, A45 with I37
10176          HC       3 363.368
               *

10177          KK  RCPI37
10178          KM        Route flow from CP I37RIV to CP A46RIV (WATERMAN WASH)
10179          KM    URS 2009
10180          RS       1    FLOW      -1
10181          RC   0.050   0.035   0.050    1909  0.0021
10182          RX       0    1277    1383    1391    1412    1433    1452    2409
10183          RY  1017.5  1009.4  1007.5  1008.0  1010.0  1011.1  1012.0  1017.5
               *
10184          KM    URS 2009

10185          KK     A36
10186          KM        Runoff from A36
10187          BA   0.435
10188          LG    0.35    0.35    4.90    0.28       1
10189          UI       0     135     394     632     346     117      37      18       0       0
               *
10190          KM    URS 2009

10191          KK  RCPA36
10192          KM        Route flow from CP A36 to CP A46
10193          RS       6    FLOW      -1
10194          RC   0.050   0.045   0.050    5192  0.0062
10195          RX       0     100     150     200     225     316     552     555
10196          RY  1005.8  1005.2  1004.9  1004.6  1004.7  1005.2  1006.4  1006.5
               *
10197          KM    URS 2009
```



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

10198          KK     A46
10199          KM        Runoff from A46
10200          BA   0.198
10201          LG    0.20    0.29    4.65    0.28       3
10202          UI       0     148     351     181      56      17       6       6       0       0
               *
10203          KM    URS 2009

10204          KK   CPA46
10205          KM        Combine A36 with A46
10206          HC       2   0.633
               *

10207          KK  A46RIV
10208          KM        Combine A45RIV with A46
10209          HC       2 364.001
               *

10210          KK  RCPA46
10211          KM        Route flow in Waterman Wash from CP A46RIV to CP I50RIV (WATERMAN WASH)
10212          KM    URS 2009
10213          RS       1    FLOW      -1
10214          RC   0.050   0.035   0.050    2254  0.0029
10215          RX       0    2337    2410    2545    2583    2590    2594    4597
10216          RY   992.0   985.9   982.0   984.7   986.1   988.0   988.0   992.0
               *
10217          KM    URS 2009

10218          KK     I38
10219          KM        Runoff subbasin I38
10220          BA   0.115
10221          LG    0.26    0.31    4.80    0.36      41
10222          UI       0     299     139       0       0       0       0       0       0       0
10223          UI       0       0       0       0       0       0       0       0       0       0
               *
10224          KM    URS 2009

10225          KK  RCPI38
10226          KM        Route flow from CP I38 to CP I39
10227          RS       3    FLOW      -1
10228          RC   0.050   0.045   0.050    4528  0.0159
10229          KM        Typical Sheet Flow Route
10230          RX       0     500     700     750     800     900    1100    1600
10231          RY       6       4       2       0       0       2       4       6
               *
10232          KM    URS 2009

10233          KK     I39
10234          KM        Runoff subbasin I39
10235          BA   0.217
10236          LG    0.35    0.35    4.25    0.41       0
10237          UI       0     284     481      66       0       0       0       0       0       0
10238          UI       0       0       0       0       0       0       0       0       0       0
               *
```



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

10239          KK   CPI39
10240          KM        Combine I38 with I39
10241          HC       2   0.465
               *
10242          KM    URS 2009

10243          KK  RCPI39
10244          KM        Route flow from CP I39 to CP I40
```

```
10245          RS       3    FLOW      -1
10246          RC   0.050   0.045   0.050    5144  0.0115
10247          KM       Typical Sheet Flow Route
10248          RX       0     500     700     750     800     900    1100    1600
10249          RY       6       4       2       0       0       2       4       6
               *
10250          KM    URS 2009

10251          KK     I40
10252          KM        Runoff subbasin I40
10253          BA   0.408
10254          LG    0.35    0.35    4.20    0.42       0
10255          UI       0     347     878     297      46       0       0       0       0       0
10256          UI       0       0       0       0       0       0       0       0       0       0
               *

10257          KK   CPI40
10258          KM       Combine I39 with I40
10259          HC       2   0.873
               *
10260          KM    URS 2009

10261          KK  RCPI40
10262          KM       Route flow from CP I40 to CP I41
10263          RS       3    FLOW      -1
10264          RC   0.050   0.045   0.050    5156  0.0103
10265          KM       Typical Sheet Flow Route
10266          RX       0     500     700     750     800     900    1100    1600
10267          RY       6       4       2       0       0       2       4       6
               *
10268          KM    URS 2009

10269          KK     I41
10270          KM        Runoff subbasin I41
10271          BA   0.476
10272          LG    0.35    0.35    4.00    0.46       0
10273          UI       0     366     988     400      70       0       0       0       0       0
10274          UI       0       0       0       0       0       0       0       0       0       0
               *

10275          KK   CPI41
10276          KM       Combine I40 with I41
10277          HC       2  1.350
               *
10278          KM    URS 2009
```



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

10279          KK  RCPI41
10280          KM       Route flow from CP I41 to CP I42
10281          RS       3    FLOW      -1
10282          RC   0.050   0.045   0.050    5249  0.0086
10283          KM       Typical Sheet Flow Route
10284          RX       0     500     700     750     800     900    1100    1600
10285          RY       6       4       2       0       0       2       4       6
               *
10286          KM    URS 2009

10287          KK     I42
10288          KM    Customized XKSAT Values
10289          KM        Runoff subbasin I42
10290          BA   0.422
10291          LG    0.35    0.35    3.95    0.47       5
10292          UI       0     302     848     389      75       0       0       0       0       0
10293          UI       0       0       0       0       0       0       0       0       0       0
               *

10294          KK   CPI42
10295          KM       Combine I41 with I42
10296          HC       2   1.771
               *
10297          KM    URS 2009

10298          KK  RCPI42
10299          KM       Route flow from CP I42 to CP I43
10300          RS       4    FLOW      -1
10301          RC   0.050   0.045   0.050    5329  0.0071
10302          KM       Typical Sheet Flow Route
10303          RX       0    1500    1700    1750    1800    1900    2100    3600
10304          RY       6       4       2       0       0       2       4       6
               *
10305          KM    URS 2009

10306          KK     I43
10307          KM        Runoff subbasin I43
10308          BA   0.432
10309          LG    0.35    0.35    4.50    0.35       0
10310          UI       0     263     793     478     108      26       0       0       0       0
10311          UI       0       0       0       0       0       0       0       0       0       0
               *

10312          KK   CPI43
10313          KM       Combine I42 with I43
10314          HC       2   2.203
               *
10315          KM    URS 2009
```



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

10316          KK  RCPI43
10317          KM       Route flow from CP I43 to CP I49
10318          RS       2    FLOW      -1
```

```
10319          RC   0.050   0.045   0.050    2760  0.0047
10320          KM       Typical Sheet Flow Farmfield
10321          RX       0     500     600     620     720     740     840    1340
10322          RY       5       3       1       0       0       1       3       5
               *

10323          KK    I44B
10324          KM        Runoff subbasin I44B
10325          BA   0.186
10326          LG    0.10    0.25    4.00    0.73      66
10327          UI       0     617       0       0       0       0       0       0       0       0
10328          UI       0       0       0       0       0       0       0       0       0       0
               *
10329          KM    URS 2009

10330          KK  RCI44B
10331          KM        Route flow from CP I44B to CP I44A
10332          RS       2    FLOW      -1
10333          RC   0.050   0.045   0.050    3966  0.0232
10334          RX       0      45     241     249     252     285     357     537
10335          RY  1282.9  1282.7  1282.1  1282.1  1282.1  1282.1  1282.6  1283.8
               *
10336          KM    URS 2009

10337          KK    I44A
10338          KM        Runoff subbasin I44A
10339          BA   0.653
10340          LG    0.22    0.30    4.15    0.57       6
10341          UI       0     668    1461     350       0       0       0       0       0       0
10342          UI       0       0       0       0       0       0       0       0       0       0
               *

10343          KK  CPI44A
10344          KM        Combine I44B and I44A
10345          HC       2
               *
10346          KM    URS 2009

10347          KK  RCI44A
10348          KM        Route flow from CP I44A to CP I45
10349          RS       2    FLOW      -1
10350          RC   0.050   0.045   0.050    5183  0.0118
10351          KM       Typical Sheet Flow Route
10352          RX       0     500     700     750     800     900    1100    1600
10353          RY       6       4       2       0       0       2       4       6
               *
               *
10354          KM    URS 2009
```



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

10355          KK     I45
10356          KM        Runoff subbasin I45
10357          BA   0.351
10358          LG    0.32    0.34    4.45    0.39       0
10359          UI       0     307     761     245      38       0       0       0       0       0
10360          UI       0       0       0       0       0       0       0       0       0       0
               *

10361          KK   CPI45
10362          KM        Combine I44A and I44B with I45
10363          HC       2   1.060
               *
10364          KM    URS 2009

10365          KK  RCPI45
10366          KM        Route flow from CP I45 to CP I46
10367          RS       3    FLOW      -1
10368          RC   0.050   0.045   0.050    5386  0.0106
10369          KM       Typical Sheet Flow Route
10370          RX       0     500     700     750     800     900    1100    1600
10371          RY       6       4       2       0       0       2       4       6
               *
10372          KM    URS 2009

10373          KK     I46
10374          KM        Runoff subbasin I46
10375          BA   0.460
10376          LG    0.35    0.35    4.10    0.44       0
10377          UI       0     333     929     417      79       0       0       0       0       0
10378          UI       0       0       0       0       0       0       0       0       0       0
               *

10379          KK   CPI46
10380          KM        Combine I45 with I46
10381          HC       2   1.520
               *
10382          KM    URS 2009

10383          KK  RCPI46
10384          KM        Route flow from CP I46 to CP I47
10385          RS       3    FLOW      -1
10386          RC   0.050   0.045   0.050    5225  0.0088
10387          KM       Typical Sheet Flow Route
10388          RX       0     500     700     750     800     900    1100    1600
10389          RY       6       4       2       0       0       2       4       6
               *
10390          KM    URS 2009

10391          KK     I47
10392          KM        Runoff subbasin I47
10393          BA   0.349
10394          LG    0.35    0.35    4.00    0.46       6
10395          UI       0     233     676     350      73       0       0       0       0       0
```

```
10396          UI       0       0       0       0       0       0       0       0       0       0
               *
1                                          HEC-1 INPUT                                                PAGE261

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

10397          KK   CPI47
10398          KM        Combine I46 with I47
10399          HC       2   1.868
               *
10400          KM    URS 2009

10401          KK  RCPI47
10402          KM        Route flow from CP I47 to CP I48
10403          RS       3    FLOW      -1
10404          RC   0.050   0.045   0.050    5359  0.0071
10405          KM       Typical Sheet Flow Route
10406          RX       0     500     700     750     800     900    1100    1600
10407          RY       6       4       2       0       0       2       4       6
               *
10408          KM    URS 2009

10409          KK     I48
10410          KM        Runoff subbasin I48
10411          BA   0.337
10412          LG    0.35    0.35    4.30    0.40       0
10413          UI       0     225     652     338      70       0       0       0       0       0
10414          UI       0       0       0       0       0       0       0       0       0       0
               *

10415          KK   CPI48
10416          KM        Combine I47 with I48
10417          HC       2   2.206
               *
10418          KM    URS 2009

10419          KK  RCPI48
10420          KM        Route flow from CP I48 to CP I49
10421          RS       2    FLOW      -1
10422          RC   0.050   0.045   0.050    2919  0.0055
10423          KM       Typical Sheet Flow Farmfield
10424          RX       0     500     600     620     720     740     840    1340
10425          RY       5       3       1       0       0       1       3       5
               *
10426          KM    URS 2009

10427          KK     I49
10428          KM        Runoff subbasin I49
10429          BA   0.383
10430          LG    0.17    0.28    4.60    0.28       4
10431          UI       0    1012     449       0       0       0       0       0       0       0
10432          UI       0       0       0       0       0       0       0       0       0       0
               *

10433          KK   CPI49
10434          KM        Combine I43, I48 with I49
10435          HC       3   4.792
               *
10436          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE262

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

10437          KK  RCPI49
10438          KM        Route flow from CP I49 to CP I50
10439          RS       2    FLOW      -1
10440          RC   0.050   0.045   0.050    4250  0.0052
10441          KM       Typical Sheet Flow Farmfield
10442          RX       0     500     600     620     720     740     840    1340
10443          RY       5       3       1       0       0       1       3       5
               *
10444          KM    URS 2009

10445          KK     I61
10446          KM        Runoff subbasin I61
10447          BA   0.250
10448          LG    0.35    0.35    4.65    0.32       9
10449          UI       0     731     228       0       0       0       0       0       0       0
               *
10450          KM    URS 2009

10451          KK  RCPI61
10452          KM        Route flow from CP I61 to CP I50
10453          RS       3    FLOW      -1
10454          RC   0.050   0.045   0.050    4071  0.0056
10455          KM       Typical Sheet Flow Farmfield
10456          RX       0     500     600     620     720     740     840    1340
10457          RY       5       3       1       0       0       1       3       5
               *
10458          KM    URS 2009

10459          KK     I50
10460          KM        Runoff subbasin I50
10461          BA   0.600
10462          LG    0.10    0.25    4.50    0.30       5
10463          UI       0    1232    1009       0       0       0       0       0       0       0
               *

10464          KK   CPI50
10465          KM        Combine I49, I61 with I50
10466          HC       3   5.642
               *

10467          KK  I50RIV
```

```
10468          KM        Combine A46RIV with I50
10469          HC       2 369.644
               *

10470          KK  RCPI50
10471          KM        Route flow from CP I50RIV to CP I62RIV (WATERMAN WASH)
10472          KM    URS 2009
10473          RS       1    FLOW      -1
10474          RC   0.050   0.035   0.050    2920  0.0047
10475          RX       0    1337    1410    1545    1583    1590    1594    2597
10476          RY   991.0   985.9   982.0   984.7   986.1   988.0   988.0   991.0
               *
10477          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE263

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

10478          KK     I62
10479          KM        Runoff subbasin I62
10480          BA   0.422
10481          LG    0.35    0.35    4.60    0.33      20
10482          UI       0     402     934     257      38       0       0       0       0       0
               *

10483          KK  I62RIV
10484          KM        Combine I50RIV with I62
10485          HC       2 370.066
               *

10486          KK  RCPI62
10487          KM        Route flow from CP I62RIV to CP A49RIV (WATERMAN WASH)
10488          KM    URS 2009
10489          RS       3    FLOW      -1
10490          RC   0.050   0.035   0.050    5103  0.0032
10491          RX       0    1337    1410    1545    1583    1590    1594    2597
10492          RY   991.0   985.9   982.0   984.7   986.1   988.0   988.0   991.0
               *

10493          KK   DRA11
10494          KM      Return diverted flow from CP A11 in basin A15
10495          DR   DVA11
               *
10496          KM    URS 2009

10497          KK   RDA11
10498          KM        Route diverted flow from CP A11 to CP A15
10499          RS      10    FLOW      -1
10500          RC   0.050   0.045   0.050   11551  0.0080
10501          RX       0      66     100     125     159     234     325     530
10502          RY  1120.3  1120.0  1120.0  1120.0  1120.0  1120.0  1119.5  1121.3
               *
10503          KM    URS 2009

10504          KK     A15
10505          KM        Runoff from A15
10506          BA   0.941
10507          LG    0.35    0.36    5.30    0.24       0
10508          UI       0      80     313     469     749     785     531     354     159      98
10509          UI      46      23      23       0       0       0       0       0       0       0
               *
10510          KM    URS 2009

10511          KK   CPA15
10512          KM        Combine DRA11 with A15
10513          HC       2   3.189
               *
10514          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE264

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

10515          KK     A16
10516          KM        Runoff from A16
10517          BA   0.333
10518          LG    0.35    0.40    6.00    0.18       0
10519          UI       0      79     238     432     305     148      55      17      12       0
10520          UI       0       0       0       0       0       0       0       0       0       0
               *
10521          KM    URS 2009

10522          KK   CPA16
10523          KM        Combine A15 with A16
10524          HC       2   3.522
               *
10525          KM    URS 2009

10526          KK  RCPA16
10527          KM        Route flow from CP A16 to CP A35
10528          RS       4    FLOW      -1
10529          RC   0.050   0.045   0.050    5197  0.0054
10530          RX       0     162     200     250     300     425     470     590
10531          RY  1049.3  1048.0  1048.0  1048.0  1048.0  1048.0  1048.9  1049.1
               *

10532          KK  DRA01A
10533          KM      Return diverted flow from CP A01A in basin A03
10534          DR  DVA01A
               *
10535          KM    URS 2009

10536          KK  RDA01A
10537          KM        Route diverted flow from CP A01 to CP A03
10538          RS       5    FLOW      -1
10539          RC   0.050   0.045   0.050    3101  0.0081
```

```
10540          KM       Typical Sheet Flow Small Wash
10541          RX       0     600     700     706     711     717     817    1417
10542          RY       6       4       3       0       0       3       4       6
               *
10543          KM    URS 2009

10544          KK     A03
10545          KM        Runoff from A03
10546          BA   1.064
10547          LG    0.35    0.35    2.88    0.99       0
10548          UI       0     211     650    1199    1053     606     233      97      37       0
               *
10549          KM    URS 2009

10550          KK   CPA03
10551          KM        Combine DRA01A with A03
10552          HC       2   5.777
               *
1                                          HEC-1 INPUT                                                    PAGE265

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


10553          KK  RCPA03
10554          KM        Route flow from CP A03 to CP A65
10555          KM    URS 2009
10556          RS       3    FLOW      -1
10557          RC   0.050   0.045   0.050    3897  0.0077
10558          RX       0     141     230     450     639     656     741    1242
10559          RY  1232.1  1230.7  1230.0  1230.0  1230.0  1230.2  1230.9  1231.9
               *
10560          KM    URS 2009

10561          KK     A65
10562          KM        Runoff from A65
10563          KM        Customized XKSAT Values
10564          BA   0.547
10565          LG    0.35    0.35    3.48    0.64       0
10566          UI       0     299     931     658     176      39       0       0       0       0
10567          UI       0       0       0       0       0       0       0       0       0       0
               *
10568          KM    URS 2009

10569          KK   CPA65
10570          KM        Combine A65 with A03
10571          HC       2   6.324
               *
10572          KM    URS 2009

10573          KK  RCPA65
10574          KM        Route flow from CP A65 to CP A64
10575          RS       3    FLOW      -1
10576          RC   0.050   0.045   0.050    5684  0.0083
10577          RX       0    7093    7645    7666    7809    7837    8351   15456
10578          RY  1201.1  1200.0  1198.4  1198.6  1199.1  1199.6  1200.0  1201.1
               *
10579          KM    URS 2009

10580          KK     A64
10581          KM        Runoff from A64
10582          BA   0.231
10583          LG    0.35    0.35    4.15    0.43       0
10584          UI       0     147     436     244      53      14       0       0       0       0
               *
10585          KM    URS 2009

10586          KK   CPA64
10587          KM        Combine flow from CP A65 with A64
10588          HC       2   6.555
               *
10589          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE266

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


10590          KK    DA64
10591          KM      Divert flow from CP A64 into basin A18
10592          KM        Natural divergence of flow due to a braided channel network.
10593          DT   DVA64
10594          DI       0      13     151     609    1664    3103    4876    6949    9300
10595          DQ       0      13     148     498    1261    2279    3520    4965    6597
               *
10596          KM    URS 2009

10597          KK  RCPA64
10598          KM        Route remainder flow from CP A64 to CP A10
10599          RS       7    FLOW      -1
10600          RC   0.050   0.045   0.050    6819  0.0082
10601          RX       0     573     583     617     700     777     815     832
10602          RY  1155.5  1154.4  1154.4  1154.0  1154.0  1154.7  1155.4  1155.7
               *

10603          KK  DRA01B
10604          KM      Return Diverted flow from CP A01 in basin A10
10605          DR  DVA01B
               *
10606          KM    URS 2009

10607          KK  RDA01B
10608          KM        Route diverted flow from CP A01 to CP A10
10609          RS       8    FLOW      -1
10610          RC   0.050   0.045   0.050   18995  0.0083
10611          RX       0     173     293     355     425     463     470     480
10612          RY  1219.8  1217.5  1218.0  1218.0  1219.8  1220.9  1220.9  1221.0
               *
```

```
10613          KM    URS 2009

10614          KK     A10
10615          KM        Runoff from A10
10616          BA   0.928
10617          LG    0.35    0.35    4.80    0.29       0
10618          UI       0      88     329     496     819     743     503     313     137      85
10619          UI      29      24      23       0       0       0       0       0       0       0
10620          UI       0       0       0       0       0       0       0       0       0       0
               *
10621          KM    URS 2009

10622          KK   CPA10
10623          KM        Combine A64, DR01B with A10
10624          HC       3   4.648
               *
10625          KM    URS 2009

10626          KK    DA10
10627          KM      Divert flow from CP A10 into A17
10628          KM        Natural divergence of flow due to a braided channel network.
10629          DT   DVA10
10630          DI       0      16      74     175     444    1025    1779    2684    3725
10631          DQ       0       9      42     100     243     542     927    1387    1915
               *
1                                                HEC-1 INPUT                                                    PAGE267

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

10632          KM    URS 2009

10633          KK  RCPA10
10634          KM        Route remainder flow from CP A10 to CP A34
10635          RS       8    FLOW      -1
10636          RC   0.050   0.045   0.050    8770  0.0071
10637          RX       0     135     272     279     342     430     460     615
10638          RY  1070.7    1070  1069.4  1069.4  1069.4  1068.4  1068.3  1069.6
               *
10639          KM    URS 2009

10640          KK     A34
10641          KM        Runoff from A34
10642          BA   0.385
10643          LG    0.35    0.39    5.70    0.20       0
10644          UI       0     140     418     563     258      79      20       0       0       0
               *
10645          KM    URS 2009

10646          KK   CPA34
10647          KM        Combine A10 with A34
10648          HC       2   2.570
               *
10649          KM    URS 2009

10650          KK  RCPA34
10651          KM        Route flow from CP A34 to CP A35
10652          RS       3    FLOW      -1
10653          RC   0.050   0.045   0.050    3134  0.0064
10654          RX       0     132     186     229     248     260     264     488
10655          RY  1031.4  1030.2  1030.2  1029.9  1029.9  1029.9  1029.9  1031.7
               *
10656          KM    URS 2009

10657          KK     A35
10658          KM        Runoff from A35
10659          BA   0.847
10660          LG    0.35    0.36    5.00    0.27       0
10661          UI       0     223     662    1162     738     314     119      33       0       0
               *
10662          KM    URS 2009

10663          KK   CPA35
10664          KM        Combine A16, A34 with A35
10665          HC       3   6.939
               *
10666          KM    URS 2009

10667          KK  RCPA35
10668          KM        Route flow from CP A35 to CP A47
10669          RS       4    FLOW      -1
10670          RC   0.050   0.045   0.050    5202  0.0067
10671          RX       0     200     400     450     500     550     600    1300
10672          RY  1005.3  1004.0  1003.7  1003.7  1003.7  1003.7  1003.7  1005.0
               *
1                                                HEC-1 INPUT                                                    PAGE268

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

10673          KM    URS 2009

10674          KK     A47
10675          KM        Runoff from A47
10676          BA   0.791
10677          LG    0.20    0.28    4.60    0.30       3
10678          UI       0     342    1029     924     444     176      86      17      17      17
10679          UI       0       0       0       0       0       0       0       0       0       0
               *
10680          KM    URS 2009

10681          KK   CPA47
10682          KM        Combine A35 with A47
10683          HC       2    7.73
               *
10684          KM    URS 2009

10685          KK  RCPA47
```

```
10686          KM        Route flow from CP A47 to CP A49
10687          RS       6    FLOW      -1
10688          RC   0.050   0.045   0.050    7547  0.0052
10689          RX      52     197     270     292     485     575     712    1147
10690          RY   972.5   972.0   972.0   972.0   971.0   971.3   971.3   972.0
               *
10691          KM    URS 2009

10692          KK     A48
10693          KM        Runoff from A48
10694          BA   1.059
10695          LG    0.12    0.26    4.65    0.27       7
10696          UI       0     385    1150    1548     710     216      54       0       0       0
               *
10697          KM    URS 2009

10698          KK  RCPA48
10699          KM        Route flow from CP A48 to CP A49
10700          RS       2    FLOW      -1
10701          RC   0.050   0.045   0.050    2255  0.0071
10702          RX       0    1193    1207    1500    1600    1700    1800    2807
10703          RY   968.2   965.8   965.7   966.3   966.5   966.7   967.0   968.0
               *
10704          KM    URS 2009

10705          KK     A49
10706          KM        Runoff from A49
10707          BA   0.751
10708          LG    0.23    0.30    4.45    0.33       3
10709          UI       0     176     534     969     689     338     126      40      28       0
               *
10710          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE269

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


10711          KK   CPA49
10712          KM        Combine A47, A48 with A49
10713          HC       3   9.540
               *

10714          KK  A49RIV
10715          KM        Combine CP I62RIV with CP A49
10716          KM        Tuthill Road crossing at A49RIV
10717          HC       2 377.944
               *

10718          KK  RCPA49
10719          KM        Route flow in Waterman Wash from CP A49RIV TO CP A51RIV (WATERMAN WASH)
10720          KM      URS 2009
10721          RS       1    FLOW      -1
10722          RC   0.050   0.035   0.050    3328  0.0030
10723          RX       0    1291    1387    1429    1559    1657    1796    1919
10724          RY   955.1   952.7   950.6   951.7   955.6   957.5   958.2   960.0
               *
10725          KM    URS 2009

10726          KK     A04
10727          KM        Runoff from A04
10728          KM        Customized XKSAT Values
10729          BA   0.743
10730          LG    0.35    0.35    2.80    1.05       0
10731          UI       0     443    1344     837     198      44       0       0       0       0
10732          UI       0       0       0       0       0       0       0       0       0       0
               *
10733          KM    URS 2009

10734          KK    DA04
10735          KM      Divert flow from CP A04 into basin A06
10736          KM        Natural divergence of flow due to a braided channel network.
10737          DT   DVA04
10738          DI       0      64     221     405    1007    2383    4403    6549    9034   11830
10739          DQ       0      38     129     222     543    1283    2351    3478    4782    6249
               *

10740          KK  RCPA04
10741          KM        Route remainder flow from CP A04 to CP A07
10742          KM    URS 2009
10743          RS       7    FLOW      -1
10744          RC   0.050   0.045   0.050    8731  0.0128
10745          KM       Typical Sheet Flow Small Wash
10746          RX       0     600     700     706     711     717     817    1417
10747          RY       6       4       3       0       0       3       4       6
               *
10748          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE270

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


10749          KK     A07
10750          KM        Runoff from A07
10751          KM        Customized XKSAT Values
10752          BA   0.523
10753          LG    0.35    0.35    2.86    1.00       0
10754          UI       0     200     606     758     324      98      25       0       0       0
10755          UI       0       0       0       0       0       0       0       0       0       0
               *
10756          KM    URS 2009

10757          KK   CPA07
10758          KM        Combine A04 with A07
10759          HC       2    .857
               *
10760          KM    URS 2009
```

```
10761          KK    DA07
10762          KM      Divert flow from CP A07 into basin A22
10763          KM        Natural divergence of flow due to a braided channel network.
10764          DT   DVA07
10765          DI       0     115     792    1951    3485    5346    7503    9932   12613
10766          DQ       0      87     487    1147    2009    3050    4252    5603    7093
               *
10767          KM    URS 2009

10768          KK  RCPA07
10769          KM        Route remainder flow from CP A07 to CP A21
10770          RS      15    FLOW      -1
10771          RC   0.050   0.045   0.050   11510  0.0097
10772          RX       0      87     116     234     271     300     325     530
10773          RY  1174.4  1174.3  1174.0  1174.0  1173.0  1173.0  1173.3  1173.9
               *
10774          KM    URS 2009

10775          KK     A09
10776          KM        Runoff from A09
10777          KM        Customized XKSAT Values
10778          BA   0.784
10779          LG    0.35    0.35    2.94    0.95       0
10780          UI       0     170     521     960     743     401     141      55      28       0
10781          UI       0       0       0       0       0       0       0       0       0       0
               *
10782          KM    URS 2009

10783          KK    DA09
10784          KM      Divert flow from CP A09 into basin A18
10785          KM        Natural divergence of flow due to a braided channel network.
10786          DT   DVA09
10787          DI       0      49     188     378     950    2131    3696    5581    7757
10788          DQ       0       7      30      69     176     405     701    1056    1464
               *
10789          KM    URS 2009
```



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

10790          KK  RCPA09
10791          KM        Route remainder flow from CP A09 to CP A08
10792          RS       2    FLOW      -1
10793          RC   0.050   0.045   0.050    4721  0.0068
10794          RX      48     106     151     166     175     209     321     514
10795          RY  1176.6  1174.7  1174.0  1174.9  1175.4  1175.5  1175.5  1175.4
               *
10796          KM    URS 2009

10797          KK     A08
10798          KM        Runoff from A08
10799          KM        Customized XKSAT Values
10800          BA   2.128
10801          LG    0.35    0.35    3.17    0.81       0
10802          UI       0     149     528     832    1149    1763    1346     979     678     323
10803          UI     214     125      46      46      45       0       0       0       0       0
10804          UI       0       0       0       0       0       0       0       0       0       0
               *
10805          KM    URS 2009

10806          KK   CPA08
10807          KM        Combine A09 with A08
10808          HC       2   2.771
               *
10809          KM    URS 2009

10810          KK    DA08
10811          KM      Divert flow from CP A08 into basin A19
10812          KM        Natural divergence of flow due to a braided channel network.
10813          DT   DVA08
10814          DI       0     273    1121    2433    4119    6137    8456   11057   13921
10815          DQ       0     196     705    1448    2386    3499    4772    6194    7756
               *
10816          KM    URS 2009

10817          KK  RCPA08
10818          KM        Route remainder flow from CP A08 to CP A21
10819          RS       9    FLOW      -1
10820          RC   0.050   0.045   0.050    3836  0.0089
10821          RX     0.0   604.0   613.0   633.0   680.0   684.0   685.0   786.0
10822          RY  1143.0  1140.9  1141.0  1141.0  1141.1  1141.1  1141.1  1143.0
               *
10823          KM    URS 2009

10824          KK     A21
10825          KM        Runoff from A21
10826          BA   1.044
10827          LG    0.35    0.35    4.60    0.33       0
10828          UI       0     149     494     794    1135     723     422     170      83      31
10829          UI      31       0       0       0       0       0       0       0       0       0
10830          UI       0       0       0       0       0       0       0       0       0       0
               *
10831          KM    URS 2009
```



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

10832          KK   CPA21
10833          KM        Combine A08, A07 with A21
10834          HC       3   2.515
               *
10835          KM    URS 2009
```

```
10836          KK    DA21
10837          KM      Divert flow from CP A21 into basin A32
10838          KM        Natural divergence of flow due to a braided channel network.
10839          DT   DVA21
10840          DI       0      50     203     450    1373    3396    6132    9472   13359
10841          DQ       0      22      89     198     610    1515    2741    4237    5978
               *
10842          KM    URS 2009

10843          KK  RCPA21
10844          KM        Route remainder flow from CP A21 to CP A20
10845          RS       6    FLOW      -1
10846          RC   0.050   0.045   0.050    5790  0.0083
10847          RX       0     510     533     598     609     693     770    1290
10848          RY  1110.4    1109  1108.9    1108    1108  1109.1  1109.3  1110.2
               *
10849          KM    URS 2009

10850          KK     A20
10851          KM        Runoff from A20
10852          BA   0.340
10853          LG    0.35    0.36    5.00    0.27       0
10854          UI       0     102     298     490     277      99      32      14       0       0
10855          UI       0       0       0       0       0       0       0       0       0       0
               *
10856          KM    URS 2009

10857          KK   CPA20
10858          KM        Combine A21 with A20
10859          HC       2   1.748
               *
10860          KM    URS 2009

10861          KK    DA20
10862          KM      Divert flow from CP A20 into basin A32
10863          KM        Natural divergence of flow due to a braided channel network.
10864          DT   DVA20
10865          DI       0      39     300     800    1523    2421    3473    4666    5986    7426
10866          DQ       0       2      27     142     358     643     988    1385    1830    2318
               *
10867          KM    URS 2009

10868          KK  RCPA20
10869          KM        Route remainder flow from CP A20 to CP A51
10870          RS      23    FLOW      -1
10871          RC   0.050   0.045   0.050   23127  0.0061
10872          RX     102     168     195     276     283     362     368     534
10873          RY  1064.6  1064.6  1064.6  1064.1  1064.0  1064.0  1064.1  1065.1
               *
```



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

10874          KM    URS 2009

10875          KK     A51
10876          KM        Runoff from A51
10877          BA   1.486
10878          LG    0.34    0.34    4.70    0.31       0
10879          UI       0      91     264     466     608     871    1070     773     581     423
10880          UI     223     153      92      45      28      28      28       0       0       0
               *
10881          KM    URS 2009

10882          KK  CPA51A
10883          KM        Combine A20 with A51
10884          HC       2   3.055
               *

10885          KK   DRA09
10886          KM      Return diverted flow A09
10887          DR   DVA09
               *
10888          KM    URS 2009

10889          KK   RDA09
10890          KM        Route diverted flow from CP A09 to CP A18
10891          RS      60    FLOW      -1
10892          RC   0.050   0.045   0.050   11446  0.0080
10893          RX       0     245     278     298     302     324     368     418
10894          RY  1170.0  1170.0  1168.7  1168.5  1168.5  1168.8  1170.0  1170.0
               *

10895          KK   DRA64
10896          KM      Return diverted flow A64
10897          DR   DVA64
               *
10898          KM    URS 2009

10899          KK   RDA64
10900          KM        Route diverted flow from CP A64 to CP A18
10901          RS       7    FLOW      -1
10902          RC   0.050   0.045   0.050    8406  0.0076
10903          RX       4     578     672     709     739     778     801    1573
10904          RY  1159.0  1158.0  1157.6  1157.2  1157.1  1157.0  1157.1  1158.6
               *
10905          KM    URS 2009

10906          KK     A18
10907          KM        Runoff from A18
10908          BA   0.694
10909          LG    0.35    0.39    5.80    0.19       0
10910          UI       0     114     365     624     745     449     218      97      36      22
10911          UI       0       0       0       0       0       0       0       0       0       0
10912          UI       0       0       0       0       0       0       0       0       0       0
               *
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10913          KM    URS 2009
1                                          HEC-1 INPUT                                                                PAGE274

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

10914          KK   CPA18
10915          KM        Combine DRA09, DRA64 with A18
10916          HC       3   5.882
               *
10917          KM    URS 2009

10918          KK    DA18
10919          KM      Divert flow from CP A18 into basin A33
10920          KM        Natural divergence of flow due to a braided channel network.
10921          DT   DVA18
10922          DI       0       6      35     106     249     531    1186    2248    3560    5095
10923          DQ       0       6      35     106     215     304     519     975    1537    2194
               *
10924          KM    URS 2009

10925          KK  RCPA18
10926          KM        Route remainder flow from CP A18 to CPA19
10927          RS       7    FLOW      -1
10928          RC   0.050   0.045   0.050    2176  0.0074
10929          RX      50      79     108     212     230     357     385     386
10930          RY  1094.6  1094.0  1094.0  1092.8  1092.8  1094.0  1094.0  1094.0
               *

10931          KK   DRA08
10932          KM      Return diverted flow from CP A08
10933          DR   DVA08
               *
10934          KM    URS 2009

10935          KK   RDA08
10936          KM        Route diverted flow from CP A08 to CP A19
10937          RS       5    FLOW      -1
10938          RC   0.050   0.045   0.050    9808  0.0080
10939          RX       0     622     666     711     761     798     826    1427
10940          RY  1147.0  1146.0  1145.5  1145.4  1145.6  1145.9  1146.0  1147.0
               *
10941          KM    URS 2009

10942          KK     A19
10943          KM        Runoff from A19
10944          BA   0.464
10945          LG    0.35    0.38    5.40    0.22       0
10946          UI       0     113     341     613     419     195      75      21      18       0
10947          UI       0       0       0       0       0       0       0       0       0       0
               *
10948          KM    URS 2009

10949          KK  CPA19A
10950          KM        Combine DRA08 with A19
10951          HC       2   2.210
               *
10952          KM    URS 2009
1                                          HEC-1 INPUT                                                                PAGE275

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

10953          KK   CPA19
10954          KM        Combine CPA19A with routed flow from A18
10955          HC       2   5.386
               *
10956          KM    URS 2009

10957          KK  RCPA19
10958          KM        ROUTE FLOW FROM A19 TO A63
10959          RS       4    FLOW      -1
10960          RC   0.050   0.045   0.050    6873  0.0081
10961          KM       Typical Sheet Flow Route
10962          RX       0     500     700     750     800     900    1100    1600
10963          RY       6       4       2       0       0       2       4       6
               *
10964          KM    URS 2009

10965          KK     A63
10966          KM        RUNOFF FROM A63
10967          BA   0.607
10968          LG    0.35    0.37    5.30    0.23       0
10969          UI       0     183     536     876     491     173      55      25       0       0
               *
10970          KM    URS 2009

10971          KK  CPA63A
10972          KM        COMBINE A19 WITH A63
10973          HC       2   5.993
               *

10974          KK   DRA10
10975          KM      Return diverted flow from CP A10
10976          DR   DVA10
               *
10977          KM    URS 2009

10978          KK   RDA10
10979          KM        Route diverted flow from CP A10 to CP A17
10980          RS       4    FLOW      -1
10981          RC   0.050   0.045   0.050    9190  0.0070
10982          RX       0      29     171     185     190     243     383     504
10983          RY  1077.7    1078  1074.9  1074.2  1074.2  1076.6    1078    1078
               *
10984          KM    URS 2009
```

```
10985          KK     A17
10986          KM        Runoff from A17
10987          BA   0.570
10988          LG    0.35    0.39    5.80    0.19       0
10989          UI       0      76     255     401     611     406     251     105      59      16
10990          UI      16       0       0       0       0       0       0       0       0       0
10991          UI       0       0       0       0       0       0       0       0       0       0
               *
10992          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE276

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

10993          KK   CPA17
10994          KM        Combine DRA10 with A17
10995          HC       2   3.033
               *

10996          KK   DRA18
10997          KM      Return diverted flow from CP A18
10998          DR   DVA18
               *
10999          KM    URS 2009

11000          KK   RDA18
11001          KM        Route diverted flow from CP A18 to CP A33
11002          RS       6    FLOW      -1
11003          RC   0.050   0.045   0.050    7361  0.0079
11004          RX       1      32      77     168     207     240     250     289
11005          RY  1093.4  1092.6  1092.0  1092.0  1092.9  1092.9  1092.9  1092.9
               *
11006          KM    URS 2009

11007          KK     A33
11008          KM        Runoff from A33
11009          BA   0.284
11010          LG    0.35    0.40    6.00    0.18       0
11011          UI       0     100     294     418     200      60      17       0       0       0
               *
11012          KM    URS 2009

11013          KK  CPA33A
11014          KM        Combine DRA18 with A33
11015          HC       2   2.990
               *
11016          KM    URS 2009

11017          KK   CPA33
11018          KM        COMBINE A17 WITH A33
11019          HC       2   6.023
               *
11020          KM    URS 2009

11021          KK  RCPA33
11022          KM        Route flow from CP A33 to CP A63
11023          RS       2    FLOW      -1
11024          RC   0.050   0.045   0.050    3039  0.0046
11025          KM       Typical Sheet Flow Route
11026          RX       0     500     700     750     800     900    1100    1600
11027          RY       6       4       2       0       0       2       4       6
               *
11028          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE277

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

11029          KK   CPA63
11030          KM        COMBINE A33 WITH CPA63A
11031          HC       2  12.016
               *
11032          KM    URS 2009

11033          KK  RCPA63
11034          KM        Route flow from CP A63 to CP A50
11035          RS       6    FLOW      -1
11036          RC   0.050   0.045   0.050   11113  0.0060
11037          KM       Typical Sheet Flow Farmfield
11038          RX       0     500     600     620     720     740     840    1340
11039          RY       5       3       1       0       0       1       3       5
               *
11040          KM    URS 2009

11041          KK     A50
11042          KM        Runoff from A50
11043          BA   1.034
11044          LG    0.49    0.25    4.65    0.49      14
11045          UI       0      36      36     100     151     185     212     250     296     398
11046          UI     448     356     302     261     219     185     152     102      63      59
11047          UI      48      36      30      11      11      11      11      11      11      11
11048          UI       0       0       0       0       0       0       0       0       0       0
               *
11049          KM    URS 2009

11050          KK   CPA50
11051          KM        Combine A63 with A50
11052          HC       2   13.01
               *
11053          KM    URS 2009

11054          KK  RCPA50
11055          KM        Route flow from CP A50 to CP A51
11056          RS      11    FLOW      -1
11057          RC   0.050   0.045   0.050    4259  0.0051
```

```
11058          RX       0     696     711     725     728     832     845    1352
11059          RY   956.1   954.2   954.1   954.0   954.0   954.2   955.4   957.0
               *
11060          KM    URS 2009

11061          KK   CPA51
11062          KM        Combine A50 with CPA51A
11063          HC       2  16.065
               *

11064          KK  A51RIV
11065          KM        Combine A49RIV with A51
11066          HC       2 388.643
               *
1                                        HEC-1 INPUT                                                          PAGE278

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

11067          KK  RCPA51
11068          KM        Route flow in Waterman Wash from CP A51RIV to CP A56RIV (WATERMAN WASH)
11069          KM    URS 2009
11070          RS       1    FLOW      -1
11071          RC   0.050   0.035   0.050     271  0.0057
11072          RX     0.0  1548.0  1591.0  1690.0  1818.0  1876.0  1930.0  2463.0
11073          RY   944.5   939.0   937.4   942.3   944.3   946.0   946.0   949.0
               *
11074          KM    URS 2009

11075          KK     A05
11076          KM        Runoff from A05
11077          KM        Customized XKSAT Values
11078          BA   2.141
11079          LG    0.35    0.35    3.01    0.90       0
11080          UI       0     446    1366    2530    2070    1154     423     170      75       0
11081          UI       0       0       0       0       0       0       0       0       0       0
               *
11082          KM    URS 2009

11083          KK  RCPA05
11084          KM        Route flow from CP A05 to CP A26
11085          RS      10    FLOW      -1
11086          RC   0.050   0.045   0.050    9404  0.0089
11087          RX       0     605     723     929     945     965    1011    1556
11088          RY  1155.3  1154.0  1154.0  1153.8  1153.8  1154.0  1154.0  1155.0
               *
11089          KM    URS 2009

11090          KK     A23
11091          KM        Runoff from A23
11092          KM        Customized XKSAT Values
11093          BA   0.233
11094          LG    0.35    0.35    3.11    0.84       0
11095          UI       0      54     166     301     214     105      39      12       9       0
11096          UI       0       0       0       0       0       0       0       0       0       0
               *
11097          KM    URS 2009

11098          KK  RCPA23
11099          KM        Route flow from CP A23 to CP A26
11100          RS      10    FLOW      -1
11101          RC   0.050   0.045   0.050    9082  0.0087
11102          RX       0      62     205     232     258     347     358     376
11103          RY  1158.7  1157.9  1156.7  1156.5  1156.4  1157.5  1157.7  1158.0
               *
11104          KM    URS 2009

11105          KK     A25
11106          KM        Runoff from A25
11107          KM        Customized XKSAT Values
11108          BA   0.215
11109          LG    0.35    0.35    3.19    0.79       0
11110          UI       0      75     222     317     152      45      13       0       0       0
1                                        HEC-1 INPUT                                                          PAGE279

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

11111          UI       0       0       0       0       0       0       0       0       0       0
               *
11112          KM    URS 2009

11113          KK  RCPA25
11114          KM        Route flow from CP A25 to CP A26
11115          RS       2    FLOW      -1
11116          RC   0.050   0.045   0.050    3353  0.0089
11117          RX      23     131     171     185     336     353     400     420
11118          RY  1103.3  1104.0  1102.2  1102.2  1103.6  1103.6  1103.6  1103.6
               *
11119          KM    URS 2009

11120          KK     A26
11121          KM        Runoff from A26
11122          KM        Customized XKSAT Values
11123          BA   0.499
11124          LG    0.35    0.35    3.74    0.54       0
11125          UI       0     127     379     674     442     196      76      19       0       0
11126          UI       0       0       0       0       0       0       0       0       0       0
               *

11127          KK   CPA26
11128          KM        Combine A05, A23, A25 with A26
11129          HC       4   3.088
               *
11130          KM    URS 2009

11131          KK  RCPA26
```

```
11132          KM        Route flow from CP A26 to CP A27
11133          RS       5    FLOW      -1
11134          RC   0.050   0.045   0.050    7992  0.0079
11135          RX       6     189     267     345     376     405     432     512
11136          RY  1050.0  1050.0  1048.9  1048.0  1048.0  1048.6  1048.9  1050.3
               *
11137          KM    URS 2009

11138          KK     A27
11139          KM        Runoff from A27
11140          KM        Customized XKSAT Values
11141          BA   1.105
11142          LG    0.35    0.35    3.60    0.58       0
11143          UI       0     154     512     817    1196     773     461     191      95      33
11144          UI      33       0       0       0       0       0       0       0       0       0
               *

11145          KK  CPA27A
11146          KM        Combine A26 with A27
11147          HC       2   4.194
               *
11148          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE280

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

11149          KK     A28
11150          KM        Runoff from A28
11151          KM        Customized XKSAT Values
11152          BA   0.551
11153          LG    0.35    0.35    3.45    0.65       0
11154          UI       0     244     767     746     274      71      28       0       0       0
11155          UI       0       0       0       0       0       0       0       0       0       0
               *
11156          KM    URS 2009

11157          KK  RCPA28
11158          KM        Route flow from CP A28 to CP A27
11159          RS       2    FLOW      -1
11160          RC   0.050   0.045   0.050    2223  0.0074
11161          RX      75     158     280     375     420     462     553     628
11162          RY  1035.0  1032.7  1031.2  1031.4  1031.5  1032.0  1034.0  1034.0
               *

11163          KK   CPA27
11164          KM        Combine A28 with A27
11165          HC       2   4.745
               *
11166          KM    URS 2009

11167          KK  RCPA27
11168          KM        Route flow from CP A27 to CP A29
11169          RS       2    FLOW      -1
11170          RC   0.050   0.045   0.050    4127  0.0041
11171          RX       0     142     288     345     421     538     633     774
11172          RY  1020.1  1016.2  1015.3  1014.4  1014.0  1016.5  1016.8  1018.8
               *
11173          KM    URS 2009

11174          KK     A29
11175          KM        Runoff from A29
11176          KM        Customized XKSAT Values
11177          BA   1.188
11178          LG    0.35    0.35    3.09    0.85       0
11179          UI       0     203     646    1129    1257     751     344     159      52      38
11180          UI       0       0       0       0       0       0       0       0       0       0
11181          UI       0       0       0       0       0       0       0       0       0       0
               *

11182          KK   CPA29
11183          KM        Combine A27 with A29
11184          HC       2   5.933
               *

11185          KK   DRA04
11186          KM      Return diverted flow from CP A04
11187          DR   DVA04
               *
11188          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE281

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

11189          KK   RDA04
11190          KM        Route diverted flow from CP A04 to CP A06
11191          RS      12    FLOW      -1
11192          RC   0.050   0.045   0.050   15251  0.0121
11193          RX       2     512     545     593     670     724     728    1241
11194          RY  1251.0  1250.0  1249.4  1249.4  1249.3  1249.7  1249.8  1250.8
               *
11195          KM    URS 2009

11196          KK     A06
11197          KM        Runoff from A06
11198          KM        Customized XKSAT Values
11199          BA   1.108
11200          LG    0.35    0.35    2.91    0.97       0
11201          UI       0     188     599    1043    1176     703     325     149      50      36
11202          UI       0       0       0       0       0       0       0       0       0       0
11203          UI       0       0       0       0       0       0       0       0       0       0
               *
11204          KM    URS 2009

11205          KK   CPA06
```

```
11206          KM        Combine DRA04 with A06
11207          HC       2   1.517
               *
11208          KM    URS 2009

11209          KK  RCPA06
11210          KM        Route flow from CP A06 to CP A24
11211          RS       6    FLOW      -1
11212          RC   0.050   0.045   0.050   10764  0.0089
11213          RX       0      75     150     225     300     375     450     525
11214          RY  1118.2  1118.0  1117.5  1115.9  1116.2  1117.5    1118  1118.3
               *

11215          KK   DRA07
11216          KM      Return diverted flow from CP A07
11217          DR   DVA07
               *
11218          KM    URS 2009

11219          KK   RDA07
11220          KM        Route diverted flow from CP A07 to CP A22
11221          RS      25    FLOW      -1
11222          RC   0.050   0.045   0.050   16606  0.0099
11223          RX       0      92     153     247     469     534     603     698
11224          RY  1188.8  1187.5  1187.3  1186.4  1186.5  1186.7  1186.8  1187.2
               *
11225          KM    URS 2009
1                                    HEC-1 INPUT                                          PAGE282

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

11226          KK     A22
11227          KM        Runoff from A22
11228          KM        Customized XKSAT Values
11229          BA   0.578
11230          LG    0.35    0.35    3.71    0.55       0
11231          UI       0      44     174     262     394     498     342     238     130      71
11232          UI      42      13      13      13       0       0       0       0       0       0
               *
11233          KM    URS 2009

11234          KK   CPA22
11235          KM        Combine DRA07 with A22
11236          HC       2   0.989
               *
11237          KM    URS 2009

11238          KK  RCPA22
11239          KM        Route flow from CP A22 to CP A24
11240          RS       1    FLOW      -1
11241          RC   0.050   0.045   0.050    1522  0.0079
11242          RX      99     147     193     208     347     374     383     450
11243          RY  1075.5  1075.3  1074.8  1072.5  1075.3  1076.0  1076.1  1076.7
               *
11244          KM    URS 2009

11245          KK     A24
11246          KM        Runoff from A24
11247          KM        Customized XKSAT Values
11248          BA   1.355
11249          LG    0.35    0.35    3.17    0.81       0
11250          UI       0     145     518     786    1308    1044     695     379     183      94
11251          UI      36      36       0       0       0       0       0       0       0       0
11252          UI       0       0       0       0       0       0       0       0       0       0
               *
11253          KM    URS 2009

11254          KK   CPA24
11255          KM        Combine A06, A22 with A24
11256          HC       3   3.861
               *
11257          KM    URS 2009

11258          KK  RCPA24
11259          KM        Route flow from CP A24 to CP A30
11260          RS       6    FLOW      -1
11261          RC   0.050   0.045   0.050    8429  0.0069
11262          RX       0      84     311     403     459     587     714     821
11263          RY  1045.8  1045.4  1044.9  1042.1  1044.0  1044.0  1045.6  1045.9
               *
11264          KM    URS 2009
1                                    HEC-1 INPUT                                          PAGE283

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

11265          KK     A30
11266          KM        Runoff from A30
11267          KM        Customized XKSAT Values
11268          BA   0.675
11269          LG    0.35    0.35    3.88    0.49       0
11270          UI       0      67     246     373     620     531     358     214      97      55
11271          UI      17      17       0       0       0       0       0       0       0       0
11272          UI       0       0       0       0       0       0       0       0       0       0
               *
11273          KM    URS 2009

11274          KK  CPA30A
11275          KM        Combine A24 with A30
11276          HC       2   4.536
               *
11277          KM    URS 2009

11278          KK   CPA30
11279          KM        Combine A29 with A30
```

```
11280          HC       2  10.468
               *
11281          KM    URS 2009

11282          KK  RCPA30
11283          KM        Route flow from CP A30 to CP A52
11284          RS       2    FLOW      -1
11285          RC   0.050   0.045   0.050    3039  0.0046
11286          RX       0     248     304     443     490     657     757     836
11287          RY  1006.0  1005.8  1004.6  1003.4  1001.4  1004.1  1005.1  1005.9
               *
11288          KM    URS 2009

11289          KK     A52
11290          KM        Runoff from A52
11291          BA   0.218
11292          LG    0.35    0.35    4.60    0.33       0
11293          UI       0     117     365     266      73      16       0       0       0       0
11294          UI       0       0       0       0       0       0       0       0       0       0
               *
11295          KM    URS 2009

11296          KK  CPA52A
11297          KM        Combine A30 with A52
11298          HC       2  10.686
               *
11299          KM    URS 2009

11300          KK     A31
11301          KM        Runoff from A31
11302          BA   0.538
11303          LG    0.34    0.37    5.60    0.21       0
11304          UI       0      60     211     322     533     409     270     139      69      34
11305          UI      14      14       0       0       0       0       0       0       0       0
11306          UI       0       0       0       0       0       0       0       0       0       0
               *
```



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

11307          KM    URS 2009

11308          KK  RCPA31
11309          KM        Route flow from CP A31 to CP A32
11310          RS       8    FLOW      -1
11311          RC   0.050   0.045   0.050    7801  0.0067
11312          RX     124     215     264     436     505     610     670     684
11313          RY  1014.8  1014.8  1014.0  1014.0  1014.8  1016.0  1016.0  1016.0
               *

11314          KK   DRA21
11315          KM      Return diverted flow from CP A21
11316          DR   DVA21
               *
11317          KM    URS 2009

11318          KK   RDA21
11319          KM        Route diverted flow from CP A21 to CP A32
11320          RS      14    FLOW      -1
11321          RC   0.050   0.045   0.050   17399  0.0074
11322          RX       0     602     671     746     781     798     838    1440
11323          RY  1078.7  1078.5  1078.0  1078.0  1078.4  1078.5  1078.4  1078.8
               *

11324          KK   DRA20
11325          KM      Return diverted flow from CP A20
11326          DR   DVA20
               *

11327          KK   RDA20
11328          KM        Route diverted flow from CP A20 to CP A32
11329          RS      17    FLOW      -1
11330          RC   0.050   0.045   0.050   11360   0.007
11331          RX     0.0    11.0    29.0   202.0   231.0   310.0   369.0   412.0
11332          RY  1072.0  1072.0  1071.7  1070.0  1070.9  1071.3  1072.0  1072.0
               *
11333          KM    URS 2009

11334          KK     A32
11335          KM        Runoff from A32
11336          BA   1.207
11337          LG    0.35    0.39    5.70    0.20       0
11338          UI       0     111     420     633    1038     977     663     419     186     114
11339          UI      43      30      30       0       0       0       0       0       0       0
11340          UI       0       0       0       0       0       0       0       0       0       0
               *
11341          KM    URS 2009

11342          KK  CPA32A
11343          KM        Combine DRA21, DRA20 with A32
11344          HC       3   2.533
               *
11345          KM    URS 2009
```



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

11346          KK   CPA32
11347          KM        Combine A31 with A32
11348          HC       2   3.071
               *
11349          KM    URS 2009

11350          KK  RCPA32
11351          KM        Route flow from CP A32 to CP A52
```

```
11352          RS       1    FLOW      -1
11353          RC   0.050   0.045   0.050    1533  0.0052
11354          RX       0    1216    1230    1367    1400    1440    1450    2460
11355          RY  1002.6  1000.0  1000.1  1002.0  1002.0  1002.0  1002.0  1003.0
               *

11356          KK   CPA52
11357          KM        Combine A32 with A52
11358          HC       2  13.757
               *
11359          KM    URS 2009

11360          KK  RCPA52
11361          KM        Route flow from CP A52 to CP A55
11362          RS       2    FLOW      -1
11363          RC   0.050   0.045   0.050    1963  0.0051
11364          RX       0     785     823     862     897     932    1002    2568
11365          RY   996.5   994.5   994.0   992.7   994.0   995.3   995.3   997.2
               *
11366          KM    URS 2009

11367          KK     A53
11368          KM        Runoff from A53
11369          KM        Customized XKSAT Values
11370          BA   1.746
11371          LG    0.35    0.35    3.07    0.86       0
11372          UI       0     294     939    1628    1859    1113     520     237      81      56
11373          UI       0       0       0       0       0       0       0       0       0       0
               *
11374          KM    URS 2009

11375          KK     A54
11376          KM        Runoff from A54
11377          KM        Customized XKSAT Values
11378          BA   0.507
11379          LG    0.35    0.35    3.33    0.71      19
11380          UI       0     184     551     741     340     104      26       0       0       0
               *
11381          KM    URS 2009

11382          KK   CPA54
11383          KM        COMBINE A53 WITH A54
11384          HC       2   2.253
               *
11385          KM    URS 2009
```



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

11386          KK  RCPA54
11387          KM        Route flow from CP A54 to CP A55
11388          RS       3    FLOW      -1
11389          RC   0.050   0.045   0.050    3855  0.0052
11390          RX       0     145     197     234     297     400     450     564
11391          RY  1004.0  1002.0   999.9  1000.6  1001.7  1001.7  1001.7  1001.8
               *
11392          KM    URS 2009

11393          KK     A55
11394          KM        Runoff from A55
11395          KM        Customized XKSAT Values
11396          BA   0.613
11397          LG    0.35    0.35    3.67    0.56       1
11398          UI       0     211     622     903     441     133      39       0       0       0
               *
11399          KM    URS 2009

11400          KK  CPA55A
11401          KM        Combine A54 with A55
11402          HC       2   2.866
               *
11403          KM    URS 2009

11404          KK   CPA55
11405          KM        Combine A52 with A55
11406          HC       2  16.623
               *
11407          KM    URS 2009

11408          KK  RCPA55
11409          KM        Route flow from CP A55 to CP A56
11410          RS       6    FLOW      -1
11411          RC   0.050   0.045   0.050    9154  0.0048
11412          RX       0      56     221     485     500     558     748     760
11413          RY   977.8   976.9   975.9   975.6   975.6   976.0   976.8   976.8
               *
11414          KM    URS 2009

11415          KK     A56
11416          KM        Runoff from A56
11417          BA   1.839
11418          LG    0.35    0.35    4.45    0.37      13
11419          UI       0     292     948    1596    1987    1208     611     266     107      58
11420          UI       0       0       0       0       0       0       0       0       0       0
               *
11421          KM    URS 2009

11422          KK   CPA56
11423          KM        Combine A55 with A56
11424          HC       2  18.462
               *
```



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

```
11425          KK  A56RIV
11426          KM        Combine A51RIV with A56
11427          HC       2 404.960
               *

11428          KK  RCPA56
11429          KM        Route flow in Waterman Wash from CP A56RIV TO CP I63RIV (WATERMAN WASH)
11430          KM    URS 2009
11431          RS       1    FLOW      -1
11432          RC   0.050   0.035   0.050    1891  0.0046
11433          RX      48    1592    1688    1815    1876    1929    1940    2448
11434          RY   945.0   939.0   937.4   942.3   944.3   946.0   946.0   948.0
               *
11435          KM    URS 2009

11436          KK     I51
11437          KM        Runoff subbasin I51
11438          BA   0.144
11439          LG    0.25    0.31    4.30    0.50       0
11440          UI       0     172     324      53       0       0       0       0       0       0
               *
11441          KM    URS 2009

11442          KK  RCPI51
11443          KM        Route flow from CP I51 to CP I53
11444          RS       3    FLOW      -1
11445          RC   0.050   0.045   0.050    4034  0.0134
11446          KM       Typical Sheet Flow Route
11447          RX       0     500     700     750     800     900    1100    1600
11448          RY       6       4       2       0       0       2       4       6
               *
11449          KM    URS 2009

11450          KK     I53
11451          KM        Runoff subbasin I53
11452          BA   0.515
11453          LG    0.15    0.27    4.25    0.61       0
11454          UI       0     433    1104     383      60       0       0       0       0       0
               *

11455          KK   CPI53
11456          KM        Combine I51 with I53
11457          HC       2   0.659
               *
11458          KM    URS 2009

11459          KK  RCPI53
11460          KM        Route flow from CP I53 to CP I55
11461          RS       3    FLOW      -1
11462          RC   0.050   0.045   0.050    5589  0.0107
11463          KM       Typical Sheet Flow Route
11464          RX       0     500     700     750     800     900    1100    1600
11465          RY       6       4       2       0       0       2       4       6
               *
```



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

11466          KM    URS 2009

11467          KK     I55
11468          KM        Runoff subbasin I55
11469          BA   0.249
11470          LG    0.30    0.33    4.10    0.50       0
11471          UI       0     207     532     189      30       0       0       0       0       0
               *

11472          KK   CPI55
11473          KM        Combine I53 with I55
11474          HC       2   0.908
               *
11475          KM    URS 2009

11476          KK  RCPI55
11477          KM        Route flow from CP I55 to CP I57
11478          RS       2    FLOW      -1
11479          RC   0.050   0.045   0.050    3210  0.0093
11480          KM       Typical Sheet Flow Route
11481          RX       0     500     700     750     800     900    1100    1600
11482          RY       6       4       2       0       0       2       4       6
               *
11483          KM    URS 2009

11484          KK     I57
11485          KM        Runoff subbasin I57
11486          BA   0.190
11487          LG    0.35    0.35    4.70    0.30      23
11488          UI       0     287     397      46       0       0       0       0       0       0
               *

11489          KK   CPI57
11490          KM        Combine I55 with I57
11491          HC       2   1.098
               *
11492          KM    URS 2009

11493          KK  RCPI57
11494          KM        Route flow from CP I57 to CP I72
11495          RS       2    FLOW      -1
11496          RC   0.050   0.045   0.050    2914  0.0086
11497          KM       Typical Sheet Flow Route
11498          RX       0     500     700     750     800     900    1100    1600
11499          RY       6       4       2       0       0       2       4       6
               *
11500          KM    URS 2009
```

```
11501          KK     I72
11502          KM        Runoff subbasin I72
11503          BA   0.206
11504          LG    0.35    0.35    4.50    0.35      12
11505          UI       0     332     416      45       0       0       0       0       0       0
               *
1                                          HEC-1 INPUT                                                PAGE289

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

11506          KK   CPI72
11507          KM        Combine I57 with I72
11508          HC       2   1.304
               *
11509          KM    URS 2009

11510          KK  RCPI72
11511          KM        Route flow from CP I72 to CP I60C
11512          RS       4    FLOW     -1
11513          RC   0.050   0.045   0.050    5793  0.0074
11514          KM       Typical Sheet Flow Route
11515          RX       0     500     700     750     800     900    1100    1600
11516          RY       6       4       2       0       0       2       4       6
               *
11517          KM    URS 2009

11518          KK    I60C
11519          KM        Runoff subbasin I60C
11520          BA   0.270
11521          LG    0.35    0.35    4.30    0.40       0
11522          UI       0     153     470     318      81      17       0       0       0       0
               *

11523          KK  CPI60C
11524          KM        Combine I60C with I72
11525          HC       2
               *
11526          KM    URS 2009

11527          KK    I59
11528          KM        Runoff subbasin I59
11529          BA   0.099
11530          LG    0.35    0.39    5.70    0.20      23
11531          UI       0     242     134       0       0       0       0       0       0       0
               *
11532          KM    URS 2009

11533          KK  RCPI59
11534          KM        Route flow from CP I59 to CP I60A
11535          RS      12    FLOW     -1
11536          RC   0.050   0.045   0.050    9289  0.0058
11537          KM       Typical Sheet Flow Route
11538          RX       0     500     700     750     800     900    1100    1600
11539          RY       6       4       2       0       0       2       4       6
               *
11540          KM    URS 2009

11541          KK    I60B
11542          KM        Runoff subbasin I60B
11543          BA   0.102
11544          LG    0.35    0.37    6.60    0.14      40
11545          UI       0     357       0       0       0       0       0       0       0       0
               *
11546          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE290

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

11547          KK  RCI60B
11548          KM        Route flow from CP I60B to CP I60A
11549          RS       4    FLOW     -1
11550          RC   0.050   0.045   0.050    9401  0.0074
11551          KM       Typical Sheet Flow Route
11552          RX       0     500     700     750     800     900    1100    1600
11553          RY       6       4       2       0       0       2       4       6
               *
11554          KM    URS 2009

11555          KK    I60A
11556          KM        Runoff subbasin I60A
11557          BA   0.976
11558          LG    0.31    0.32    5.00    0.29      27
11559          UI       0     355    1060    1427     655     199      50       0       0       0
               *

11560          KK  CPI60B
11561          KM        Combine I60A, I59, I60 with I60C
11562          HC       4
               *

11563          KK     I52
11564          KM     URS 2009
11565          KM     Runoff subbasin I52
11566          BA   0.318
11567          LG    0.13    0.26    4.10    0.68       3
11568          UI       0     678     515       0       0       0       0       0       0       0
               *
11569          KM    URS 2009

11570          KK  RCPI52
11571          KM        Route flow from CP I52 to CP I54
11572          RS       3    FLOW     -1
11573          RC   0.050   0.045   0.050    5121  0.0162
```

```
11574          KM       Typical Sheet Flow Route
11575          RX       0     500     700     750     800     900    1100    1600
11576          RY       6       4       2       0       0       2       4       6
               *
11577          KM    URS 2009

11578          KK     I54
11579          KM        Runoff subbasin I54
11580          BA   0.352
11581          LG    0.11    0.25    4.00    0.73       0
11582          UI       0     792     537       0       0       0       0       0       0       0
               *

11583          KK   CPI54
11584          KM        Combine I52 with I54
11585          HC       2   0.613
               *
11586          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE291

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

11587          KK  RCPI54
11588          KM        Route flow from CP I54 to CP I56
11589          RS       3    FLOW      -1
11590          RC   0.050   0.045   0.050    5373  0.0114
11591          KM       Typical Sheet Flow Route
11592          RX       0     500     700     750     800     900    1100    1600
11593          RY       6       4       2       0       0       2       4       6
               *
11594          KM    URS 2009

11595          KK     I56
11596          KM        Runoff subbasin I56
11597          BA   0.432
11598          LG    0.27    0.32    4.10    0.53       0
11599          UI       0     417     958     257      37       0       0       0       0       0
               *

11600          KK   CPI56
11601          KM        Combine I54 with I56
11602          HC       2   1.045
               *
11603          KM    URS 2009

11604          KK  RCPI56
11605          KM        Route flow from CP I56 to CP I58B
11606          RS      10    FLOW      -1
11607          RC   0.050   0.045   0.050   11740  0.0080
11608          RX       0     188     231     367     386     484     647     764
11609          RY  1079.6  1076.5  1076.0  1076.0  1076.1  1076.1  1077.1  1077.6
               *
11610          KM    URS 2009

11611          KK    I58B
11612          KM        Runoff subbasin I58B
11613          BA   0.585
11614          LG    0.35    0.35    4.35    0.39       9
11615          UI       0     211     628     857     397     120      31       0       0       0
               *

11616          KK  CPI58B
11617          KM        Combine I56 with I58B
11618          HC       2
               *
11619          KM    URS 2009

11620          KK  RCI58B
11621          KM        Route flow from CP I58B to CP I58A
11622          RS       9    FLOW      -1
11623          RC   0.050   0.045   0.050    3103  0.0071
11624          RX       0      75     125     187     200     210     218     386
11625          RY  1031.3  1031.2  1031.1  1030.0  1030.0  1030.0  1030.2  1033.4
               *
11626          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE292

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

11627          KK    I58A
11628          KM        Runoff subbasin I58A
11629          BA   0.129
11630          LG    0.35    0.39    6.20    0.16      27
11631          UI       0     191     272      32       0       0       0       0       0       0
               *

11632          KK  CPI58A
11633          KM        Combine I58B with I58A
11634          HC       2   1.790
               *
11635          KM    URS 2009

11636          KK  RCI58A
11637          KM        Route flow from CP I58A to CP I64
11638          RS       9    FLOW      -1
11639          RC   0.050   0.045   0.050    1040  0.0058
11640          KM       Typical Sheet Flow Small Wash
11641          RX       0     600     700     706     711     717     817    1417
11642          RY       6       4       3       0       0       3       4       6
               *
11643          KM    URS 2009

11644          KK     I64
11645          KM        Runoff subbasin I64
```

```
11646          BA   0.267
11647          LG    0.31    0.30    6.60    0.15      32
11648          UI       0     349     591      81       0       0       0       0       0       0
               *
11649          KM    URS 2009

11650          KK   CPI64
11651          KM        Combine I58, with I64
11652          HC       2
               *
11653          KM    URS 2009

11654          KK  RCPI64
11655          KM        Route flow from CP I64 to CP I65
11656          RS       3    FLOW      -1
11657          RC   0.050   0.045   0.050    3559  0.0062
11658          RX       0     140     253     353     391     441     499     536
11659          RY  1009.4  1009.4  1009.2  1008.5  1008.3  1009.0  1009.6  1010.0
               *
11660          KM    URS 2009

11661          KK     I65
11662          KM        Runoff subbasin I65
11663          BA   0.307
11664          LG    0.34    0.36    5.20    0.25       7
11665          UI       0     217     613     287      56       0       0       0       0       0
               *
1                                          HEC-1 INPUT                                          PAGE293

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

11666          KK   CPI65
11667          KM        Combine I64 with I65
11668          HC       2   2.792
               *

11669          KK  CPI60A
11670          KM        COMBINE I65 WITH I60
11671          HC       2   5.120
               *
11672          KM    URS 2009

11673          KK  RCI60A
11674          KM        Route flow from CP I60A to CP I66
11675          RS       1    FLOW      -1
11676          RC   0.050   0.045   0.050    2269  0.0031
11677          RX       0    1131    1168    1321    1374    1419    1584    2623
11678          RY   995.3   994.0   993.8   992.6   992.0   992.0   994.9   995.5
               *
11679          KM    URS 2009

11680          KK     I66
11681          KM        Runoff subbasin I66
11682          BA   0.907
11683          LG    0.34    0.38    5.70    0.20      25
11684          UI       0     386    1204    1255     480     131      45       0       0       0
               *

11685          KK   CPI66
11686          KM        Combine I60 with I66
11687          HC       2   6.027
               *
11688          KM    URS 2009

11689          KK  RCPI66
11690          KM        Route flow from CP I66 to CP I67
11691          RS       3    FLOW      -1
11692          RC   0.050   0.045   0.050    5800  0.0040
11693          RX       0    2068    2180    2201    2309    2356    2454    4485
11694          RY   980.0   978.0   976.8   976.7   978.0   978.4   978.9   980.1
               *
11695          KM    URS 2009

11696          KK     I67
11697          KM        Runoff subbasin I67
11698          BA   0.970
11699          LG    0.35    0.36    5.10    0.26      14
11700          UI       0     489    1542    1224     376      87       0       0       0       0
               *
11701          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE294

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

11702          KK     I68
11703          KM        Runoff subbasin I68
11704          BA   0.292
11705          LG    0.35    0.35    4.55    0.34      17
11706          UI       0     242     623     222      35       0       0       0       0       0
               *
11707          KM    URS 2009

11708          KK     I69
11709          KM        Runoff subbasin I69
11710          BA   0.173
11711          LG    0.35    0.35    4.40    0.37      17
11712          UI       0     261     362      42       0       0       0       0       0       0
               *

11713          KK   CPI67
11714          KM        COMBINE I69, I68, RCPI66 WITH I67
11715          HC       4   7.461
               *
11716          KM    URS 2009
```

```
11717          KK  RCPI67
11718          KM       Route flow from CP I67 to CP I70
11719          RS       3    FLOW     -1
11720          RC   0.050   0.045   0.050    5357  0.0052
11721          RX       0     155     233     255     337     509     518     692
11722          RY   954.4   952.5   952.8   952.9   953.0   955.7   955.9   956.9
               *
11723          KM    URS 2009

11724          KK     I70
11725          KM       Runoff subbasin I70
11726          BA   0.368
11727          LG    0.35    0.35    4.90    0.28      12
11728          UI       0     203     631     440     116      25       0       0       0       0
               *
11729          KM    URS 2009

11730          KK     I71
11731          KM       Runoff subbasin I71
11732          BA   0.421
11733          LG    0.35    0.35    4.50    0.35      16
11734          UI       0     389     926     269      40       0       0       0       0       0
               *

11735          KK   CPI70
11736          KM       Combine I70, CPI69 with I71
11737          HC       3   8.250
               *
11738          KM    URS 2009
```



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

11739          KK  RCPI71
11740          KM       Route flow from CP I71 to CP I63
11741          RS       1    FLOW     -1
11742          RC   0.050   0.045   0.050    1255  0.0032
11743          RX      99     288     394     465     542     563     590     653
11744          RY   930.8   932.0   926.5   927.0   930.4   932.4   935.1   936.0
               *
11745          KM    URS 2009

11746          KK     I63
11747          KM       Runoff subbasin I63
11748          BA   0.293
11749          LG    0.31    0.29    4.60    0.36       6
11750          UI       0     169     518     339      85      17       0       0       0       0
               *

11751          KK   CPI63
11752          KM       Combine I71 with I63
11753          HC       2   8.543
               *

11754          KK  I63RIV
11755          KM       Combine A56RIV with I63
11756          HC       2 413.504
               *

11757          KK  RCPI63
11758          KM       Route flow in Waterman Wash from CP I63RIV TO CP A57RIV (WATERMAN WASH)
11759          KM    URS 2009
11760          RS       1    FLOW     -1
11761          RC   0.050   0.035   0.050    4641  0.0046
11762          RX       0    1280    1384    1458    1536    1554    1582    2645
11763          RY   932.4   932.0   926.6   927.1   930.5   932.3   935.1   937.0
               *
11764          KM    URS 2009

11765          KK     A57
11766          KM       Runoff from A57
11767          BA   1.469
11768          LG    0.41    0.31    4.50    0.43      33
11769          UI       0     184     628     975    1545    1071     685     297     165      59
11770          UI      41       0       0       0       0       0       0       0       0       0
               *

11771          KK  A57RIV
11772          KM       Combine I63RIV with A57
11773          HC       2 414.972
               *
```



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

11774          KK  RCPA57
11775          KM       Route flow in Waterman Wash from CP A57RIV TO CP A60RIV (WATERMAN WASH)
11776          KM     URS 2009
11777          RS       3    FLOW     -1
11778          RC   0.050   0.035   0.050    7515  0.0019
11779          RX     0.0  1599.0  1617.0  1683.0  2256.0  2294.0  2334.0  3033.0
11780          RY   935.5   932.0   926.6   927.1   930.5   932.3   935.1   939.0
               *
11781          KM    URS 2009

11782          KK     A58
11783          KM       Runoff from A58
11784          BA   2.131
11785          LG    0.35    0.35    4.00    0.46      23
11786          UI       0     218     792    1201    1998    1664    1115     644     300     163
11787          UI      56      56       0       0       0       0       0       0       0       0
               *
11788          KM    URS 2009
```

```
11789          KK     A59
11790          KM        Runoff from A59
11791          BA   1.255
11792          LG    0.35    0.35    4.35    0.39      26
11793          UI       0     339    1002    1742    1080     444     164      50       0       0
               *

11794          KK   CPA59
11795          KM        COMBINE A58 WITH A59
11796          HC       2   3.387
               *
11797          KM    URS 2009

11798          KK  RCPA59
11799          KM        Route flow from CP A59 to CP A60
11800          RS       2    FLOW      -1
11801          RC   0.050   0.045   0.050    6336  0.0096
11802          RX      73      76      82     212     298     451     485     529
11803          RY   920.1   920.0   919.6   912.9   914.1   916.7   919.5   922.3
               *
11804          KM    URS 2009

11805          KK     A60
11806          KM        Runoff from A60
11807          BA   1.667
11808          LG    0.34    0.34    4.45    0.37      17
11809          UI       0     425    1267    2251    1476     654     254      64       0       0
               *

11810          KK   CPA60
11811          KM        Combine A59 with A60
11812          HC       2   5.054
               *
```



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

11813          KK  A60RIV
11814          KM        Combine A57RIV with A60
11815          KM        Approxmately 2500 feet upstream of Eagle Mt. Rd. and 125th Av. intersect
11816          HC       2 420.026
               *
11817          KM    URS 2009

11818          KK  RCPA60
11819          KM        Route flow in Waterman Wash from CP A60RIV to CP A62RIV (WATERMAN WASH)
11820          RS       1    FLOW      -1
11821          RC   0.050   0.035   0.050    4604  0.0054
11822          RX       0     126     196     250     321     402     576     577
11823          RY   895.3   891.2   887.0   881.0   880.0   881.6   885.7   885.7
               *
11824          KM    URS 2009

11825          KK     A61
11826          KM        Runoff from A61
11827          BA   1.964
11828          LG    0.33    0.32    4.45    0.37      10
11829          UI       0     264     888    1401    2112    1393     852     354     193      57
11830          UI      57       0       0       0       0       0       0       0       0       0
               *
11831          KM    URS 2009

11832          KK     A62
11833          KM        Runoff from A62
11834          BA   0.288
11835          LG    0.31    0.29    4.10    0.45       5
11836          UI       0     124     387     396     150      41      14       0       0       0
               *

11837          KK  A62RIV
11838          KM        Combine A61, A62 with A60RIV
11839          HC       3 422.194
               *
11840          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

   45        C04
              V
              V
   54     RCPC04
              .
              .
   61         .         C12
              .           .
              .           .
   71      CPC12............
              .
              .
   77         .------->   DVC12
   74       DC12
              V
              V
   80     RCPC12
              .
              .
   87         .         C13
              .           .
              .           .
   98      CPC13............
```

```
                .
                .
107             .-------->   DVC13
101          DC13
                V
                V
110        RCPC13
                .
                .
117             .         C11
                .           .
                .           .
130             .           .-------->   DVC11
127             .        DC11
                .           V
                .           V
133             .      RCPC11
                .           .
                .           .
142             .           .           .<-------   DVC12
140             .           .       DRC12
                .           .           V
                .           .           V
143             .           .       RDC12
                .           .           .
                .           .           .
150             .           .           .         C31
                .           .           .           .
                .           .           .           .
160          CPC31.................................
                .
                .
170             .-------->   DVC31
164          DC31
                V
                V
173        RCPC31
                .
                .
182             .           .<-------   DVC11
180             .       DRC11
                .           V
                .           V
183             .       RDC11
                .           .
                .           .
190             .           .         C14
                .           .           .
                .           .           .
200          CPC14......................
                .
                .
210             .-------->   DVC14
204          DC14
                V
                V
213        RCPC14
                .
                .
220             .         C05
                .           V
                .           V
229             .      RCPC05
                .           .
                .           .
236             .           .         C03
                .           .           .
                .           .           .
248             .           .           .-------->   DVC03
245             .           .       DC03
                .           .           V
                .           .           V
251             .           .      RCPC03
                .           .           .
                .           .           .
258             .           .           .         C09
                .           .           .           .
                .           .           .           .
268             .           .       CPC09............
                .           .           .
                .           .           .
274             .           .           .-------->   DVC09
271             .           .       DC09
                .           .           V
                .           .           V
277             .           .      RCPC09
                .           .           .
                .           .           .
284             .           .           .         C15
                .           .           .           .
                .           .           .           .
293             .           .       CPC15............
                .           .           .
                .           .           .
299             .           .           .-------->   DVC15
296             .           .       DC15
                .           .           V
                .           .           V
302             .           .      RCPC15
                .           .           .
                .           .           .
309             .           .           .         C10
                .           .           .           .
                .           .           .           .
319          CPC10.................................
                .
```

```
329          .------->   DVC10
323        DC10
             V
             V
332      RCPC10
             .
             .
341          .           .<-------   DVC03
339          .       DRC03
             .           V
             .           V
342          .       RDC03
             .           .
             .           .
349          .           .        C06
             .           .          .
             .           .          .
358          .       CPC06............
             .           .
             .           .
364          .           .------->   DVC06
361          .        DC06
             .           V
             .           V
367          .      RCPC06
             .           .
             .           .
376          .           .           .<-------   DVC09
374          .           .       DRC09
             .           .           V
             .           .           V
377          .           .       RDC09
             .           .           .
             .           .           .
384          .           .           .        C16
             .           .           .          .
             .           .           .          .
394          .       CPC16........................
             .           V
             .           V
397          .      RCPC16
             .           .
             .           .
406          .           .           .<-------   DVC06
404          .           .       DRC06
             .           .           V
             .           .           V
407          .           .       RDC06
             .           .           .
             .           .           .
414          .           .           .        C18
             .           .           .          .
             .           .           .          .
423          .           .       CPC18............
             .           .           .
             .           .           .
429          .           .           .------->   DVC18
426          .           .        DC18
             .           .           V
             .           .           V
432          .           .      RCPC18
             .           .           .
             .           .           .
439          .           .           .        C17
             .           .           .          .
             .           .           .          .
449          .           .       CPC17............
             .           .           .
             .           .           .
455          .           .           .------->   DVC17
452          .           .        DC17
             .           .           V
             .           .           V
458          .           .      RCPC17
             .           .           .
             .           .           .
467          .           .           .           .<-------   DVC15
465          .           .           .       DRC15
             .           .           .           V
             .           .           .           V
468          .           .           .       RDC15
             .           .           .           .
             .           .           .           .
475          .           .           .           .        C30
             .           .           .           .          .
             .           .           .           .          .
484        CPC30.............................................
             .
             .
494          .------->   DVC30
488        DC30
             V
             V
497      RCPC30
             .
             .
504          .        C02
             .          V
             .          V
513          .      RCPC02
             .           .
             .           .
520          .           .        C01
             .           .          V
             .           .          V
```

```
529          .           .      RCPC01
             .           .           .
             .           .           .
536          .           .           .         C08
             .           .           .           V
             .           .           .           V
545          .           .           .      RCPC08
             .           .           .           .
             .           .           .           .
552          .           .           .           .         C07
             .           .           .           .           .
             .           .           .           .           .
561          .       CPC07.................................
             .           .
             .           .
567          .           .------->   DVC07
564          .        DC07
             .           V
             .           V
570          .      RCPC07
             .           .
             .           .
579          .           .           .<-------   DVC18
577          .           .       DRC18
             .           .           V
             .           .           V
580          .           .       RDC18
             .           .           .
             .           .           .
587          .           .           .         C19
             .           .           .           .
             .           .           .           .
597          .       CPC19......................
             .           .
             .           .
603          .           .------->   DVC19
600          .        DC19
             .           V
             .           V
606          .      RCPC19
             .           .
             .           .
615          .           .           .<-------   DVC17
613          .           .       DRC17
             .           .           V
             .           .           V
616          .           .       RDC17
             .           .           .
             .           .           .
623          .           .           .         C29
             .           .           .           .
             .           .           .           .
633      CPC29.................................
             .
             .
643          .------->   DVC29
637       DC29
             V
             V
646      RCPC29
             .
             .
653          .         C28
             .           .
             .           .
662      CPC28............
             .
             .
672          .------->   DVC28
666       DC28
             V
             V
675      RCPC28
             .
             .
684          .           .<-------   DVC19
682          .       DRC19
             .           V
             .           V
685          .       RDC19
             .           .
             .           .
692          .           .         C27
             .           .           .
             .           .           .
702      CPC27......................
             .
             .
712          .------->   DVC27
706       DC27
             V
             V
715      RCPC27
             .
             .
724          .           .<-------   DVC07
722          .       DRC07
             .           V
             .           V
725          .       RDC07
             .           .
             .           .
732          .           .         C21
             .           .           .
             .           .           .
745          .           .           .------->   DVC21
```

```
742          .           .        DC21
             .           .          V
             .           .          V
748          .           .      RCPC21
             .           .          .
             .           .          .
755          .           .          .         C20
             .           .          .           .
             .           .          .           .
765       CPC20.................................
             .
             .
775          .------->   DVC20
769        DC20
             V
             V
778      RCPC20
             .
             .
785          .         C26
             .           .
             .           .
795       CPC26............
             .
             .
805          .------->   DVC26
799        DC26
             V
             V
808      RCPC26
             .
             .
817          .           .<-------   DVC21
815          .       DRC21
             .           V
             .           V
818          .       RDC21
             .           .
             .           .
825          .           .        C23
             .           .          V
             .           .          V
835          .           .      RCPC23
             .           .          .
             .           .          .
842          .           .          .         C22
             .           .          .           .
             .           .          .           .
852       CPC22.................................
             .
             .
856          .         C24
             .           .
             .           .
866       CPC24............
             V
             V
870      PNDC01
             .
             .
884          .------->   DVC24
878        DC24
             V
             V
887      RCPC24
             .
             .
895          .         C25
             .           .
             .           .
905       CPC25............
             V
             V
911      PNDC02
             .
             .
925          .------->   DVC25
919        DC25
             V
             V
928      RCPC25
             .
             .
934          .         D02
             .           .
             .           .
947          .           .------->   DVD02
944          .        DD02
             .           V
             .           V
950          .      RCPD02
             .           .
             .           .
957          .           .        D03
             .           .          .
             .           .          .
968          .      CPD03............
             .           .
             .           .
974          .           .------->   DVD03
971          .        DD03
             .           V
             .           V
977          .      RCPD03
             .           .
             .           .
```

```
 984          .           .         D04
              .           .           .
              .           .           .
 995          .       CPD04............
              .           .
              .           .
1001          .           .------->   DVD04
 998          .        DD04
              .           V
              .           V
1004          .      RCPD04
              .           .
              .           .
1013          .           .           .<-------   DVD02
1011          .           .       DRD02
              .           .           V
              .           .           V
1014          .           .       RDD02
              .           .           .
              .           .           .
1023          .           .           .           .<-------   DVD03
1021          .           .           .       DRD03
              .           .           .           V
              .           .           .           V
1024          .           .           .       RDD03
              .           .           .           .
              .           .           .           .
1031          .           .           .           .         D01
              .           .           .           .           .
              .           .           .           .           .
1042          .       CPD01...................................
              .           .
              .           .
1048          .           .------->   DVD01
1045          .        DD01
              .           V
              .           V
1051          .       RDD01
              .           .
              .           .
1057          .           .         D09
              .           .           .
              .           .           .
1067       CPD09........................
              .
              .
1077          .------->   DVD09
1071       DD09
              V
              V
1080      RCPD09
              .
              .
1087          .         D12
              .           .
              .           .
1096       CPD12............
              .
              .
1106          .------->   DVD12
1100       DD12
              V
              V
1109      RCPD12
              .
              .
1118          .           .<-------   DVD01
1116          .       DRD01
              .           V
              .           V
1119          .      RCPD01
              .           .
              .           .
1128          .           .           .<-------   DVD04
1126          .           .       DRD04
              .           .           V
              .           .           V
1129          .           .       RDD04
              .           .           .
              .           .           .
1136          .           .           .         D05
              .           .           .           .
              .           .           .           .
1147          .       CPD05........................
              .           .
              .           .
1154          .           .------->   DVD05
1150          .        DD05
              .           V
              .           V
1157          .       RDD05
              .           .
              .           .
1163          .           .         D13
              .           .           .
              .           .           .
1172       CPD13........................
              .
              .
1182          .------->   DVD13
1176       DD13
              V
              V
1185      RCPD13
              .
              .
```

```
1192          .         D46
              .          .
              .          .
1202       CPD46............
              .
              .
1211          .------->   DVD46
1205        DD46
              V
              V
1214      RCPD46
              .
              .
1221          .         D06
              .          .
              .          .
1234          .          .------->   DVD06
1231          .        DD06
              .          V
              .          V
1237          .      RCPD06
              .          .
              .          .
1246          .          .          .<-------   DVD06
1244          .          .       DRD06
              .          .          V
              .          .          V
1247          .          .       RDD06
              .          .          .
              .          .          .
1254          .          .          .         D08
              .          .          .          .
              .          .          .          .
1265          .          .       CPD08............
              .          .          V
              .          .          V
1268          .          .      RCPD08
              .          .          .
              .          .          .
1277          .          .          .          .<-------   DVD05
1275          .          .          .      DRD05
              .          .          .          V
              .          .          .          V
1278          .          .          .      RCPD05
              .          .          .          .
              .          .          .          .
1285          .          .          .          .         D11
              .          .          .          .          .
              .          .          .          .          .
1295          .          .          .      CPD11............
              .          .          .          V
              .          .          .          V
1298          .          .          .      RCPD11
              .          .          .          .
              .          .          .          .
1305          .          .          .          .         D10
              .          .          .          .          .
              .          .          .          .          .
1316       CPD10..............................................
              .
              .
1325          .------->   DVD10
1319        DD10
              V
              V
1328      RCPD10
              .
              .
1335          .         D47
              .          .
              .          .
1345       CPD47............
              .
              .
1355          .------->   DVD47
1349        DD47
              V
              V
1358      RCPD47
              .
              .
1365          .         D07
              .          .
              .          .
1378          .          .------->   DVD07
1375          .        DD07
              .          V
              .          V
1381          .       RDD07
              .          .
              .          .
1388          .          .         D15
              .          .          .
              .          .          .
1397       CPD15........................
              .
              .
1407          .------->   DVD15
1401        DD15
              V
              V
1410      RCPD15
              .
              .
1419          .          .<-------   DVD07
1417          .       DRD07
```

```
                 .           V
                 .           V
1420             .      RCPD07
                 .           .
                 .           .
1427             .           .         D17
                 .           .           .
                 .           .           .
1438        CPD17.......................
                 .
                 .
1447             .------->   DVD17
1441         DD17
                 V
                 V
1450       RCPD17
                 .
                 .
1457             .         D18
                 .           .
                 .           .
1467        CPD18............
                 .
                 .
1477             .------->   DVD18
1471         DD18
                 V
                 V
1480       RCPD18
                 .
                 .
1487             .         D19
                 .           .
                 .           .
1497        CPD19............
                 .
                 .
1507             .------->   DVD19
1501         DD19
                 V
                 V
1510       RCPD19
                 .
                 .
1517             .         D20
                 .           .
                 .           .
1527        CPD20............
                 .
                 .
1537             .------->   DVD20
1531         DD20
                 V
                 V
1540       RCPD20
                 .
                 .
1547             .         D21
                 .           .
                 .           .
1557        CPD21............
                 .
                 .
1567             .------->   DVD21
1561         DD21
                 V
                 V
1570       RCPD21
                 .
                 .
1577             .         E33
                 .           .
                 .           .
1588        CPE33............
                 .
                 .
1597             .------->   DVE33
1591         DE33
                 V
                 V
1600       RCPE33
                 .
                 .
1607             .         E17
                 .           V
                 .           V
1617             .      RCPE17
                 .           .
                 .           .
1624             .           .         E32
                 .           .           .
                 .           .           .
1635        CPE32.......................
                 .
                 .
1644             .------->   DVE32
1638         DE32
                 V
                 V
1647       RCPE32
                 .
                 .
1654             .         E53
                 .           .
                 .           .
1665        CPE53............
```

```
                 .
                 .
1674             .-------->   DVE53
1668          DE53
                 V
                 V
1677        RCPE53
                 .
                 .
1684             .         E18
                 .           V
                 .           V
1694             .      RCPE18
                 .           .
                 .           .
1701             .           .         E31
                 .           .           .
                 .           .           .
1711         CPE31.......................
                 .
                 .
1720             .-------->   DVE31
1714          DE31
                 V
                 V
1723        RCPE31
                 .
                 .
1730             .         E01
                 .           V
                 .           V
1739             .      RCPE01
                 .           .
                 .           .
1746             .           .         E02
                 .           .           .
                 .           .           .
1755             .       CPE02............
                 .           V
                 .           V
1758             .      RCPE02
                 .           .
                 .           .
1765             .           .         E03
                 .           .           .
                 .           .           .
1775             .       CPE03............
                 .           V
                 .           V
1778             .      RCPE03
                 .           .
                 .           .
1785             .           .         E16
                 .           .           .
                 .           .           .
1795             .       CPE16............
                 .           .
                 .           .
1801             .           .-------->   DVE16
1798             .        DE16
                 .           V
                 .           V
1804             .       RDE16
                 .           .
                 .           .
1811             .           .         E19
                 .           .           .
                 .           .           .
1822             .       CPE19............
                 .           .
                 .           .
1828             .           .-------->   DVE19
1825             .        DE19
                 .           V
                 .           V
1831             .       RDE19
                 .           .
                 .           .
1838             .           .         E30
                 .           .           .
                 .           .           .
1846         CPE30.......................
                 .
                 .
1856             .-------->   DVE30
1850          DE30
                 V
                 V
1859        RCPE30
                 .
                 .
1866             .         E28
                 .           .
                 .           .
1878             .           .-------->   DVE28
1875             .        DE28
                 .           V
                 .           V
1881             .      RCPE28
                 .           .
                 .           .
1888             .           .         E21
                 .           .           .
                 .           .           .
1901             .           .           .-------->   DVE21
1898             .           .       DE21
```

```
                 .          .          V
                 .          .          V
1904             .          .      RDE21
                 .          .          .
                 .          .          .
1913             .          .          .          .<-------   DVE16
1911             .          .          .      DRE16
                 .          .          .          V
                 .          .          .          V
1914             .          .          .     RCPE16
                 .          .          .          .
                 .          .          .          .
1921             .          .          .          .         E20
                 .          .          .          .           .
                 .          .          .          .           .
1931             .      CPE20..................................
                 .          .
                 .          .
1936             .          .          .<-------   DVE28
1934             .          .      DRE28
                 .          .          V
                 .          .          V
1937             .          .      RDE28
                 .          .          .
                 .          .          .
1946             .          .          .          .<-------   DVE19
1944             .          .          .      DRE19
                 .          .          .          V
                 .          .          .          V
1947             .          .          .     RCPE19
                 .          .          .          .
                 .          .          .          .
1954             .          .          .          .         E29
                 .          .          .          .           .
                 .          .          .          .           .
1963             .          .     CPE29A......................
                 .          .          .
                 .          .          .
1967             .      CPE29............
                 .          V
                 .          V
1970             .     RCPE29
                 .          .
                 .          .
1978             .          .        E07
                 .          .          V
                 .          .          V
1988             .          .     RCPE07
                 .          .          .
                 .          .          .
1995             .          .          .        E14
                 .          .          .          V
                 .          .          .          V
2004             .          .          .     RCPE14
                 .          .          .          .
                 .          .          .          .
2011             .          .          .          .         E15
                 .          .          .          .           .
                 .          .          .          .           .
2022             .          .      CPE15......................
                 .          .          V
                 .          .          V
2025             .          .     RCPE15
                 .          .          .
                 .          .          .
2032             .          .          .        E27
                 .          .          .          V
                 .          .          .          V
2041             .          .          .     RCPE27
                 .          .          .          .
                 .          .          .          .
2050             .          .          .          .          .<-------   DVE21
2048             .          .          .          .      DRE21
                 .          .          .          .          V
                 .          .          .          .          V
2051             .          .          .          .     RCPE21
                 .          .          .          .          .
                 .          .          .          .          .
2058             .          .          .          .          .         E22
                 .          .          .          .          .           .
                 .          .          .          .          .           .
2069             .          .      CPE22.................................
                 .          .          V
                 .          .          V
2072             .          .     RCPE22
                 .          .          .
                 .          .          .
2079             .          .          .        E37
                 .          .          .          .
                 .          .          .          .
2089             .          .      CPE37............
                 .          .          V
                 .          .          V
2092             .          .     RCPE37
                 .          .          .
                 .          .          .
2099             .          .          .        E04
                 .          .          .          V
                 .          .          .          V
2109             .          .          .     RCPE04
                 .          .          .          .
                 .          .          .          .
2116             .          .          .          .         E06
                 .          .          .          .           V
                 .          .          .          .           V
2126             .          .          .          .     RCPE06
```

```
                                                  .          .
                                                  .          .
2133                                              .        E11
                                                  .          .
                                                  .          .
2145                                              .          .-------> DVE11
2142                                              .       DE11
                                                  .          V
                                                  .          V
2148                                              .     RCPE11
                                                  .          .
                                                  .          .
2155                                              .          .        E09
                                                  .          .          .
                                                  .          .          .
2168                                              .          .          .-------> DVE09
2165                                              .          .       DE09
                                                  .          .          V
                                                  .          .          V
2171                                              .          .     RCPE09
                                                  .          .          .
                                                  .          .          .
2178                                              .          .          .        E10
                                                  .          .          .          .
                                                  .          .          .          .
2189                                              .          .      CPE10............
                                                  .          .          .
                                                  .          .          .
2195                                              .          .          .-------> DVE10
2192                                              .          .       DE10
                                                  .          .          V
                                                  .          .          V
2198                                              .          .     RCPE10
                                                  .          .          .
                                                  .          .          .
2205                                              .          .          .        E05
                                                  .          .          .          .
                                                  .          .          .          .
2214                                          CPE05..............................................
                                                  .
                                                  .
2221                                              .-------> DVE05
2217                                           DE05
                                                  V
                                                  V
2224                                           RDE05
                                                  .
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2233                                              .          .<-------  DVE09
2231                                              .      DRE09
                                                  .          V
                                                  .          V
2234                                              .      RDE09
                                                  .          .
                                                  .          .
2243                                              .          .          .<-------  DVE10
2241                                              .          .       DRE10
                                                  .          .          V
                                                  .          .          V
2244                                              .          .       RDE10
                                                  .          .          .
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2251                                              .          .          .        E13
                                                  .          .          .          .
                                                  .          .          .          .
2261                                              .      CPE13......................
                                                  .          .
                                                  .          .
2267                                              .          .-------> DVE13
2264                                              .       DE13
                                                  .          V
                                                  .          V
2270                                              .     RCPE13
                                                  .          .
                                                  .          .
2277                                              .          .        E24
                                                  .          .          .
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2286                                           CPE24......................
                                                  V
                                                  V
2289                                          RCPE24
                                                  .
                                                  .
2296                                              .        E08
                                                  .          V
                                                  .          V
2305                                              .     RCPE08
                                                  .          .
                                                  .          .
2314                                              .          .          .<-------  DVE13
2312                                              .          .       DRE13
                                                  .          .          V
                                                  .          .          V
2315                                              .          .       RDE13
                                                  .          .          .
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2322                                              .          .          .        E23
                                                  .          .          .          .
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2332                                           CPE23...................................
                                                  V
                                                  V
2335                                          RCPE23
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2342          .           .           .           .         E34
              .           .           .           .           .
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2352          .           .           .       CPE34............
              .           .           .           V
              .           .           .           V
2355          .           .           .      RCPE34
              .           .           .           .
              .           .           .           .
2362          .           .           .           .         E38
              .           .           .           .           .
              .           .           .           .           .
2371      CPE38..............................................
              .
              .
2380          .-------->   DVE38
2374       DE38
              V
              V
2383      RCPE38
              .
              .
2393          .           .<-------   DVE11
2391          .       DRE11
              .           V
              .           V
2394          .       RDE11
              .           .
              .           .
2400          .           .         E12
              .           .           .
              .           .           .
2410          .       CPE12............
              .           V
              .           V
2413          .      RCPE12
              .           .
              .           .
2422          .           .           .<-------   DVE05
2420          .           .       DRE05
              .           .           V
              .           .           V
2423          .           .      RCPE05
              .           .           .
              .           .           .
2430          .           .           .         E25
              .           .           .           .
              .           .           .           .
2440      CPE25...................................
              .
              .
2449          .-------->   DVE25
2443       DE25
              V
              V
2452      RCPE25
              .
              .
2459          .         E26
              .           V
              .           V
2467          .      RCPE26
              .           .
              .           .
2474          .           .         E35
              .           .           .
              .           .           .
2482          .       CPE35............
              .           .
              .           .
2488          .           .-------->   DVE35
2485          .        DE35
              .           V
              .           V
2491          .      RCPE35
              .           .
              .           .
2498          .           .         E36
              .           .           .
              .           .           .
2507      CPE36........................
              .
              .
2517          .-------->   DVE36
2511       DE36
              V
              V
2520      RCPE36
              .
              .
2529          .           .<-------   DVE35
2527          .       DRE35
              .           V
              .           V
2530          .       RDE35
              .           .
              .           .
2537          .           .         E54
              .           .           .
              .           .           .
2546      CPE54........................
              .
              .
2556          .-------->   DVE54
2550       DE54
              V
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                V
2559      RCPE54
                .
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2566            .         F26
                .          .
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2576       CPF26............
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                .
2585            .------->   DVF26
2579        DF26
                V
                V
2588      RCPF26
                .
                .
2595            .         F14
                .          V
                .          V
2605            .      RCPF14
                .          .
                .          .
2612            .          .         F13
                .          .          .
                .          .          .
2625            .          .          .------->   DVF13
2622            .          .        DF13
                .          .          V
                .          .          V
2628            .          .       RDF13
                .          .          .
                .          .          .
2636            .          .          .          .<-------   DVF13
2634            .          .          .       DRF13
                .          .          .          V
                .          .          .          V
2637            .          .          .      RCPF13
                .          .          .          .
                .          .          .          .
2644            .          .          .          .         F12
                .          .          .          .          .
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2655            .          .          .       CPF12............
                .          .          .          V
                .          .          .          V
2658            .          .          .      RCPF12
                .          .          .          .
                .          .          .          .
2665            .          .          .          .         F15
                .          .          .          .          .
                .          .          .          .          .
2675            .       CPF15...................................
                .          V
                .          V
2678            .      RCPF15
                .          .
                .          .
2684            .          .         F11
                .          .          .
                .          .          .
2697            .          .          .------->   DVF11
2694            .          .        DF11
                .          .          V
                .          .          V
2700            .          .      RCPF11
                .          .          .
                .          .          .
2707            .          .          .         F16
                .          .          .          .
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2716            .          .       CPF16............
                .          .          .
                .          .          .
2722            .          .          .------->   DVF16
2719            .          .        DF16
                .          .          V
                .          .          V
2725            .          .       RDF16
                .          .          .
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2732            .          .          .         F25
                .          .          .          .
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2742       CPF25...................................
                .
                .
2747            .          .<-------   DVF11
2745            .       DRF11
                .          V
                .          V
2748            .       RDF11
                .          .
                .          .
2755            .          .         F17
                .          .          .
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2766            .       CPF17............
                .          V
                .          V
2769            .      RCPF17
                .          .
                .          .
2778            .          .          .<-------   DVF16
2776            .          .       DRF16
                .          .          V
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                 .           .           V
2779             .           .      RCPF16
                 .           .           .
                 .           .           .
2786             .           .           .         F24
                 .           .           .           .
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2796             .       CPF24.......................
                 .           V
                 .           V
2799             .      RCPF24
                 .           .
                 .           .
2806             .           .         F23
                 .           .           V
                 .           .           V
2815             .           .      RCPF23
                 .           .           .
                 .           .           .
2822             .           .           .         F27
                 .           .           .           .
                 .           .           .           .
2831         CPF27...................................
                 V
                 V
2835        PNDF01
                 .
                 .
2850             .-------->   DVF27
2843          DF27
                 V
                 V
2853        RCPF27
                 .
                 .
2860             .         F10
                 .           V
                 .           V
2870             .      RCPF10
                 .           .
                 .           .
2877             .           .         F18
                 .           .           .
                 .           .           .
2886             .       CPF18............
                 .           .
                 .           .
2893             .           .-------->   DVF18
2890             .        DF18
                 .           V
                 .           V
2896             .      RCPF18
                 .           .
                 .           .
2903             .           .         F22
                 .           .           .
                 .           .           .
2913             .       CPF22............
                 .           .
                 .           .
2919             .           .-------->   DVF22
2916             .        DF22
                 .           V
                 .           V
2922             .       RDF22
                 .           .
                 .           .
2928             .           .         F28
                 .           .           .
                 .           .           .
2938         CPF28........................
                 V
                 V
2941        PNDF02
                 .
                 .
2955             .-------->  DVF28A
2949         DF28A
                 .
                 .
2964             .-------->  DVF28B
2958         DF28B
                 V
                 V
2967        RCPF28
                 .
                 .
2974             .         F36
                 .           .
                 .           .
2984         CPF36............
                 V
                 V
2987        PNDF03
                 V
                 V
2995        RCPF36
                 .
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3003             .        F02A
                 .           V
                 .           V
3013             .      RCF02A
                 .           .
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3021             .           .         F02
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3031             .     CPF02...........
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3037             .          .-------> DVF02
3034             .      DF02
                 .         V
                 .         V
3040             .    RCPF02
                 .          .
                 .          .
3046             .          .      F01A
                 .          .         V
                 .          .         V
3056             .          .    RCF01A
                 .          .          .
                 .          .          .
3064             .          .          .        F01
                 .          .          .          .
                 .          .          .          .
3074             .          .     CPF01...........
                 .          .         V
                 .          .         V
3077             .          .    RCPF01
                 .          .          .
                 .          .          .
3083             .          .          .        F04
                 .          .          .          .
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3094             .     CPF04.......................
                 .         V
                 .         V
3097             .    RCPF04
                 .          .
                 .          .
3104             .          .      F03
                 .          .         V
                 .          .         V
3114             .          .    RCPF03
                 .          .          .
                 .          .          .
3121             .          .          .        F06
                 .          .          .          .
                 .          .          .          .
3131             .          .     CPF06...........
                 .          .         V
                 .          .         V
3134             .          .    RCPF06
                 .          .          .
                 .          .          .
3143             .          .          .          .<-------   DVF02
3141             .          .          .     DRF02
                 .          .          .        V
                 .          .          .        V
3144             .          .          .     RDF02
                 .          .          .          .
                 .          .          .          .
3151             .          .          .          .         F05
                 .          .          .          .           .
                 .          .          .          .           .
3162             .     CPF05...................................
                 .         V
                 .         V
3165             .    RCPF05
                 .          .
                 .          .
3172             .          .      F07
                 .          .         V
                 .          .         V
3182             .          .    RCPF07
                 .          .          .
                 .          .          .
3189             .          .          .        F08
                 .          .          .          .
                 .          .          .          .
3200             .     CPF08.......................
                 .         V
                 .         V
3203             .    RCPF08
                 .          .
                 .          .
3210             .          .      F09
                 .          .          .
                 .          .          .
3221             .     CPF09...........
                 .         V
                 .         V
3224             .    RCPF09
                 .          .
                 .          .
3231             .          .      F19
                 .          .          .
                 .          .          .
3241             .     CPF19...........
                 .          .
                 .          .
3247             .          .-------> DVF19
3244             .      DF19
                 .         V
                 .         V
3250             .     RDF19
                 .          .
                 .          .
3259             .          .          .<-------   DVF18
3257             .          .     DRF18
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                 .          .          V
                 .          .          V
3260             .          .      RDF18
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3267             .          .          .         F21
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3277             .     CPF21.......................
                 .          V
                 .          V
3280             .     RCPF21
                 .          .
                 .          .
3289             .          .          .<-------   DVF22
3287             .          .      DRF22
                 .          .          V
                 .          .          V
3290             .          .     RCPF22
                 .          .          .
                 .          .          .
3297             .          .          .         F29
                 .          .          .           .
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3307             .     CPF29.......................
                 .          V
                 .          V
3310             .     PNDF04
                 .          .
                 .          .
3324             .          .-------->   DVF29
3318             .       DF29
                 .          V
                 .          V
3327             .     RCPF29
                 .          .
                 .          .
3337             .          .          .<-------   DVF19
3335             .          .      DRF19
                 .          .          V
                 .          .          V
3338             .          .     RCPF19
                 .          .          .
                 .          .          .
3345             .          .          .         F20
                 .          .          .           .
                 .          .          .           .
3354             .     CPF20.......................
                 .          V
                 .          V
3357             .     PNDF05
                 .          V
                 .          V
3367             .     RCPF20
                 .          .
                 .          .
3375             .          .        F31
                 .          .          .
                 .          .          .
3384             .          .          .         G21
                 .          .          .           .
                 .          .          .           .
3392             .          .          .           .         G20
                 .          .          .           .           .
                 .          .          .           .           .
3406             .          .          .           .           .-------->   DVG20
3401             .          .          .           .       DG20
                 .          .          .           .          V
                 .          .          .           .          V
3409             .          .          .           .     RCPG20
                 .          .          .           .           .
                 .          .          .           .           .
3418             .     CPF31 ...................................
                 .          V
                 .          V
3421             .     RCPF31
                 .          .
                 .          .
3430             .          .          .<-------   DVF29
3428             .          .      DRF29
                 .          .          V
                 .          .          V
3431             .          .     RDF29
                 .          .          .
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3439             .          .          .         F32
                 .          .          .           .
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3448             .     CPF32.......................
                 .          .
                 .          .
3453             .          .          .<-------   DVG20
3451             .          .      DRG20
                 .          .          V
                 .          .          V
3454             .          .      RDG20
                 .          .          .
                 .          .          .
3463             .          .          .         G19
                 .          .          .           V
                 .          .          .           V
3472             .          .          .     RCPG19
                 .          .          .           .
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3480             .          .          .           .         G22
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3490            .           .       CPG22.......................
                .           .           .
                .           .           .
3493      F32RIV.......................
              V
              V
3497      RCPF32
                .
                .
3507            .           .<-------  DVF28B
3504            .      DRF28B
                .           V
                .           V
3508            .      RDF28B
                .           .
                .           .
3516            .           .         F33
                .           .           .
                .           .           .
3525            .       CPF33............
                .           .
                .           .
3528      F33RIV............
              V
              V
3532      RCPF33
                .
                .
3542            .           .<-------  DVF28A
3539            .      DRF28A
                .           V
                .           V
3543            .      RDF28A
                .           .
                .           .
3554            .           .           .<-------   DVF27
3551            .           .       DRF27
                .           .           .
                .           .           .
3559            .           .           .------->   DVF25
3555            .           .        DF25
                .           .           V
                .           .           V
3562            .           .       RDF27
                .           .           .
                .           .           .
3572            .           .           .           .<-------   DVF25
3570            .           .           .       DRF25
                .           .           .           V
                .           .           .           V
3573            .           .           .       RDF25
                .           .           .           .
                .           .           .           .
3581            .           .           .           .         F34
                .           .           .           .           .
                .           .           .           .           .
3591            .       CPF34.................................
                .           .
                .           .
3594            .           .         G23
                .           .           .
                .           .           .
3604      F34RIV.......................
              V
              V
3607      RCPF34
                .
                .
3616            .           .<-------   DVF26
3614            .       DRF26
                .           V
                .           V
3617            .       RDF26
                .           .
                .           .
3625            .           .         F35
                .           .           .
                .           .           .
3635            .       CPF35............
                .           .
                .           .
3638            .           .         G24
                .           .           V
                .           .           V
3647            .           .      RCPG24
                .           .           .
                .           .           .
3654            .           .           .         G25
                .           .           .           .
                .           .           .           .
3663      F35RIV..................................
              V
              V
3666      RCPF35
                .
                .
3676            .           .<-------   DVE54
3674            .       DRE54
                .           V
                .           V
3677            .       RDE54
                .           .
                .           .
3685            .           .         E46
                .           .           .
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3692             .      CPE46...........
                 .          V
                 .          V
3695             .     RCPE46
                 .          .
                 .          .
3705             .          .          .<-------   DVE25
3702             .          .      DRE25
                 .          .          V
                 .          .          V
3706             .          .      RDE25
                 .          .          .
                 .          .          .
3717             .          .          .          .<-------   DVE36
3714             .          .          .      DRE36
                 .          .          .          V
                 .          .          .          V
3718             .          .          .      RDE36
                 .          .          .          .
                 .          .          .          .
3726             .          .          .          .         E45
                 .          .          .          .           .
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3732             .          .      CPE45......................
                 .          .          V
                 .          .          V
3735             .          .     RCPE45
                 .          .          .
                 .          .          .
3742             .          .          .        E47
                 .          .          .          .
                 .          .          .          .
3752             .      CPE47......................
                 .          V
                 .          V
3755             .     RCPE47
                 .          .
                 .          .
3762             .          .        E48
                 .          .          .
                 .          .          .
3771             .      CPE48...........
                 .          .
                 .          .
3774             .          .       G26A
                 .          .          .
                 .          .          .
3782             .          .          .       G26B
                 .          .          .          V
                 .          .          .          V
3791             .          .          .     RCG26B
                 .          .          .          .
                 .          .          .          .
3799         E48RIV..................................
                 V
                 V
3802         RCPE48
                 .
                 .
3812             .          .<-------   DVE38
3809             .      DRE38
                 .          V
                 .          V
3813             .      RDE38
                 .          .
                 .          .
3824             .          .          .<-------   DVE30
3821             .          .      DRE30
                 .          .          V
                 .          .          V
3825             .          .      RDE30
                 .          .          .
                 .          .          .
3833             .          .          .        E44
                 .          .          .          .
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3843             .      CPE44......................
                 .          V
                 .          V
3846             .     RCPE44
                 .          .
                 .          .
3856             .          .          .<-------   DVE31
3853             .          .      DRE31
                 .          .          V
                 .          .          V
3857             .          .      RDE31
                 .          .          .
                 .          .          .
3865             .          .          .        E43
                 .          .          .          .
                 .          .          .          .
3874             .          .      CPE43...........
                 .          .          V
                 .          .          V
3877             .          .     RCPE43
                 .          .          .
                 .          .          .
3884             .          .          .        E50
                 .          .          .          .
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3893             .      CPE50......................
                 .          V
                 .          V
3896             .     RCPE50
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3903            .           .        E52
                .           .         V
                .           .         V
3911            .           .     RCPE52
                .           .           .
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3919            .           .           .        E49
                .           .           .         .
                .           .           .         .
3929            .       CPE49.......................
                .           .
                .           .
3932       E49RIV............
                V
                V
3935       RCPE49
                .
                .
3942            .        G18
                .           .
                .           .
3954            .           .------->   DVG18
3951            .        DG18
                .           V
                .           V
3957            .      RCPG18
                .           .
                .           .
3965            .           .        G27
                .           .           .
                .           .           .
3973            .       CPG27............
                .           .
                .           .
3976       G27RIV............
                V
                V
3979       RCPG27
                .
                .
3986            .        G28
                .           .
                .           .
3995       G28RIV............
                V
                V
3998       RCPG28
                .
                .
4005            .        E51
                .           .
                .           .
4014       E51RIV............
                V
                V
4017       RCPE51
                .
                .
4026            .           .<-------   DVG18
4024            .       DRG18
                .           V
                .           V
4028            .       RDG18
                .           .
                .           .
4034            .           .        G17
                .           .           .
                .           .           .
4044       G17RIV.......................
                V
                V
4047       RCPG17
                .
                .
4055            .           .<-------   DVE53
4053            .       DRE53
                .           V
                .           V
4056            .       RDE53
                .           .
                .           .
4067            .           .           .<-------   DVE32
4064            .           .       DRE32
                .           .           V
                .           .           V
4068            .           .       RDE32
                .           .           .
                .           .           .
4079            .           .           .           .<-------   DVE33
4076            .           .           .       DRE33
                .           .           .           V
                .           .           .           V
4080            .           .           .       RDE33
                .           .           .           .
                .           .           .           .
4088            .           .           .           .         E42
                .           .           .           .           .
                .           .           .           .           .
4098            .       CPE42.................................
                .           V
                .           V
4101            .      RCPE42
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4108          .           .         E41
              .           .           .
              .           .           .
4114          .       CPE41............
              .           .
              .           .
4118          .           .         G16
              .           .           .
              .           .           .
4128          .           .           .         G29
              .           .           .           .
              .           .           .           .
4134      E41RIV..................................
              V
              V
4137      RCPE41
              .
              .
4148          .------->   DVE41
4144        DE41
              .
              .
4151          .         G44
              .           V
              .           V
4159          .      RCPG44
              .           .
              .           .
4166          .           .         G06
              .           .           .
              .           .           .
4176          .       CPG06............
              .           .
              .           .
4182          .           .------->   DVG06
4179          .        DG06
              .           V
              .           V
4185          .      RCPG06
              .           .
              .           .
4193          .           .         G07
              .           .           .
              .           .           .
4203          .       CPG07............
              .           .
              .           .
4210          .           .------->  DVG07E
4206          .       DG07E
              .           .
              .           .
4217          .           .------->  DVG07W
4213          .       DG07W
              .           V
              .           V
4220          .      RCPG07
              .           .
              .           .
4228          .           .         G08
              .           .           .
              .           .           .
4242          .           .           .------->   DVG08
4238          .           .        DG08
              .           .          V
              .           .          V
4245          .           .      RCPG08
              .           .           .
              .           .           .
4252          .           .           .         G05
              .           .           .           V
              .           .           .           V
4260          .           .           .      RCPG05
              .           .           .           .
              .           .           .           .
4267          .           .           .           .         G46
              .           .           .           .           .
              .           .           .           .           .
4276          .           .           .       CPG46............
              .           .           .           .
              .           .           .           .
4279          .           .           .           .         G04
              .           .           .           .           .
              .           .           .           .           .
4290          .           .           .       CPG04............
              .           .           .           V
              .           .           .           V
4293          .           .           .      RCPG04
              .           .           .           .
              .           .           .           .
4302          .           .           .           .           .<-------   DVG06
4300          .           .           .           .       DRG06
              .           .           .           .           V
              .           .           .           .           V
4303          .           .           .           .       RDG06
              .           .           .           .           .
              .           .           .           .           .
4310          .           .           .           .           .         G45
              .           .           .           .           .           .
              .           .           .           .           .           .
4317          .           .       CPG45.................................
              .           .           V
              .           .           V
4320          .           .      RCPG45
              .           .           .
              .           .           .
4327          .           .           .         G31
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4335                                       CPG31...........
                                                  .           .
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4342                                              .-------> DVG31E
4338                                       DG31E
                                                  .           .
                                                  .           .
4349                                              .-------> DVG31W
4345                                       DG31W
                                                  V
                                                  V
4352                                       RCPG31
                                                  .           .
                                                  .           .
4365                                              .-------> DVG47E
4360                                       DG47E
                                                  .           .
                                                  .           .
4370                                              .           .<------- DVG07W
4368                                              .      DRG07W
                                                  .           .
                                                  .           .
4371                                              .           .         G47
                                                  .           .           .
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4381                                       CPG47........................
                                                  .           .
                                                  .           .
4388                                              .-------> DVG47
4384                                       DG47
                                                  V
                                                  V
4391                                       RCPG47
                                                  .           .
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4400                                              .           .<------- DVG31E
4398                                              .      DRG31E
                                                  .           V
                                                  .           V
4401                                              .      RDG31E
                                                  .           .
                                                  .           .
4409                                              .           .         G43
                                                  .           .           .
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4416                                   CPG43...................................
                                                  .           .
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4421                                              .<------- DVG07E
4419                                       DRG07E
                                                  V
                                                  V
4422                                       RDG07E
                                                  .           .
                                                  .           .
4430                                              .         G30
                                                  .           .
                                                  .           .
4440                                              .           .           .<------- DVE41
4438                                              .           .       DRE41
                                                  .           .           .
                                                  .           .           .
4441                                       G30RIV........................
                                                  V
                                                  V
4444                                       RCPG30
                                                  .           .
                                                  .           .
4453                                              .           .<------- DVD17
4451                                              .       DRD17
                                                  .           V
                                                  .           V
4454                                              .       RDD17
                                                  .           .
                                                  .           .
4464                                              .           .           .<------- DVD18
4462                                              .           .       DRD18
                                                  .           .           V
                                                  .           .           V
4465                                              .           .       RDD18
                                                  .           .           .
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4473                                              .           .           .         D23
                                                  .           .           .           .
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4483                                              .       CPD23........................
                                                  .           .
                                                  .           .
4488                                              .           .           .<------- DVD19
4486                                              .           .       DRD19
                                                  .           .           V
                                                  .           .           V
4489                                              .           .       RDD19
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4497                                              .           .           .         D24
                                                  .           .           .           .
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4508                                              .           .      CPD24A............
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4512                                              .       CPD24............
                                                  .           V
                                                  .           V
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4515          .           .           .      RCPD24
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4524          .           .           .          .           .<-------   DVD20
4522          .           .           .          .       DRD20
              .           .           .          .          V
              .           .           .          .          V
4525          .           .           .          .      RDD20
              .           .           .          .           .
              .           .           .          .           .
4534          .           .           .          .           .           .<-------   DVD21
4532          .           .           .          .           .       DRD21
              .           .           .          .           .          V
              .           .           .          .           .          V
4535          .           .           .          .           .      RDD21
              .           .           .          .           .           .
              .           .           .          .           .           .
4543          .           .           .          .           .           .         D25
              .           .           .          .           .           .           .
              .           .           .          .           .           .           .
4554          .           .           .       CPD25.................................
              .           .           .          V
              .           .           .          V
4557          .           .           .      RCPD25
              .           .           .          .
              .           .           .          .
4564          .           .           .          .         D26
              .           .           .          .           .
              .           .           .          .           .
4574          .           .           .       CPD26............
              .           .           .          V
              .           .           .          V
4577          .           .           .      RCPD26
              .           .           .          .
              .           .           .          .
4584          .           .           .          .         D27
              .           .           .          .           .
              .           .           .          .           .
4594          .           .           .       CPD27............
              .           .           .          .
              .           .           .          .
4597      D27RIV.................................
              V
              V
4601      RCPD27
              .
              .
4608          .         D28
              .           .
              .           .
4617      D28RIV............
              V
              V
4620      RCPD28
              .
              .
4627          .         D29
              .           .
              .           .
4637      D29RIV............
              V
              V
4640      RCPD29
              .
              .
4647          .         D30
              .           .
              .           .
4659          .           .           .<-------  DVG47
4657          .           .      DRG47
              .           .           V
              .           .           V
4660          .           .      RDG47
              .           .           .
              .           .           .
4668          .           .           .         G32
              .           .           .           .
              .           .           .           .
4676          .           .       CPG32............
              .           .           .
              .           .           .
4679      D30RIV........................
              V
              V
4682      RCPD30
              .
              .
4689          .         D31
              .           .
              .           .
4699      D31RIV............
              V
              V
4702      RCPD31
              .
              .
4710          .         G33
              .           .
              .           .
4715      G33RIV............
              V
              V
4718      RCPG33
              .
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4724          .         D32
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4735             .           .<-------  DVG47E
4733             .           .      DRG47E
                 .           .           .
                 .           .           .
4741             .           .           .------->   DVG13
4736             .           .        DG13
                 .           .           V
                 .           .           V
4744             .           .      RDG47E
                 .           .           .
                 .           .           .
4752             .           .           .         G14
                 .           .           .           .
                 .           .           .           .
4761             .           .      CPG14............
                 .           .           V
                 .           .           V
4764             .           .      RCPG14
                 .           .           .
                 .           .           .
4771             .           .           .         G34
                 .           .           .           .
                 .           .           .           .
4780             .           .      CPG34A...........
                 .           .           .
                 .           .           .
4786             .           .           .           .<-------  DVG31W
4784             .           .           .      DRG31W
                 .           .           .           V
                 .           .           .           V
4787             .           .           .      RDG31W
                 .           .           .           .
                 .           .           .           .
4795             .           .           .           .         G13
                 .           .           .           .           .
                 .           .           .           .           .
4806             .           .           .           .           .         .<-------   DVG13
4804             .           .           .           .           .      DRG13
                 .           .           .           .           .           .
                 .           .           .           .           .           .
4807             .           .           .      CPG13........................
                 .           .           .           .
                 .           .           .           .
4811             .           .      CPG34............
                 .           .           V
                 .           .           V
4815             .           .      RCPG34
                 .           .           .
                 .           .           .
4822             .           .           .         G35
                 .           .           .           .
                 .           .           .           .
4830             .           .      CPG35............
                 .           .           .
                 .           .           .
4834        D32RIV........................
                 V
                 V
4837        RCPD32
                 .
                 .
4846             .       .<-------   DVD13
4844             .    DRD13
                 .       V
                 .       V
4847             .    RDD13
                 .       .
                 .       .
4857             .       .           .<-------   DVD46
4855             .       .      DRD46
                 .       .           V
                 .       .           V
4858             .       .      RDD46
                 .       .           .
                 .       .           .
4868             .       .           .           .<-------   DVD10
4866             .       .           .      DRD10
                 .       .           .           V
                 .       .           .           V
4869             .       .           .      RDD10
                 .       .           .           .
                 .       .           .           .
4879             .       .           .           .         .<-------   DVD47
4877             .       .           .           .      DRD47
                 .       .           .           .           V
                 .       .           .           .           V
4880             .       .           .           .      RDD47
                 .       .           .           .           .
                 .       .           .           .           .
4890             .       .           .           .           .         .<-------   DVD15
4888             .       .           .           .           .      DRD15
                 .       .           .           .           .           V
                 .       .           .           .           .           V
4891             .       .           .           .           .      RDD15
                 .       .           .           .           .           .
                 .       .           .           .           .           .
4899             .       .           .           .           .           .         D22
                 .       .           .           .           .           .           .
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4908             .    CPD22.............................................................
                 .       V
                 .       V
4911             .    RCPD22
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4918            .           .         D33
                .           .           .
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4928            .       CPD33............
                .           .
                .           .
4931      D33RIV............
              V
              V
4934      RCPD33
                .
                .
4941            .         D45
                .           .
                .           .
4947            .           .         G36
                .           .           .
                .           .           .
4955      G36RIV........................
              V
              V
4958      RCPG36
                .
                .
4965            .         D44
                .           .
                .           .
4974            .           .         G37
                .           .           .
                .           .           .
4982      G37RIV........................
              V
              V
4985      RCPG37
                .
                .
4992            .         D43
                .           .
                .           .
5001            .           .         G38
                .           .           .
                .           .           .
5008      G38RIV........................
              V
              V
5011      RCPG38
                .
                .
5018            .         G12
                .           V
                .           V
5027            .      RCPG12
                .           .
                .           .
5034            .           .         G39
                .           .           .
                .           .           .
5043            .       CPG39............
                .           .
                .           .
5046            .           .         D34
                .           .           V
                .           .           V
5055            .           .      RCPD34
                .           .           .
                .           .           .
5062            .           .           .         D42
                .           .           .           .
                .           .           .           .
5071            .           .       CPD42............
                .           .           .
                .           .           .
5074      D42RIV........................
              V
              V
5077      RCPD42
                .
                .
5084            .         D41
                .           .
                .           .
5093      D41RIV............
              V
              V
5096      RCPD41
                .
                .
5103            .         G02
                .           .
                .           .
5112            .           .         G03
                .           .           .
                .           .           .
5122            .       CPG03............
                .           V
                .           V
5125            .      RCPG03
                .           .
                .           .
5134            .           .           .<-------   DVG08
5132            .           .       DRG08
                .           .           V
                .           .           V
5135            .           .       RDG08
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5142          .           .           .         G09
              .           .           .           .
              .           .           .           .
5153          .       CPG09.......................
              .           V
              .           V
5156          .      RCPG09
              .           .
              .           .
5163          .           .        G48
              .           .          V
              .           .          V
5171          .           .     RCPG48
              .           .           .
              .           .           .
5178          .           .           .         G01
              .           .           .           .
              .           .           .           .
5188          .           .      CPG01............
              .           .           .
              .           .           .
5191          .           .           .         G10
              .           .           .           .
              .           .           .           .
5200          .           .      CPG10............
              .           .          V
              .           .          V
5203          .           .     RCPG10
              .           .           .
              .           .           .
5210          .           .           .         G11
              .           .           .           .
              .           .           .           .
5220          .       CPG11.......................
              .           .
              .           .
5227          .           .-------->   DVG11
5223          .        DG11
              .           V
              .           V
5230          .      RCPG11
              .           .
              .           .
5237          .           .        G40
              .           .           .
              .           .           .
5246          .       CPG40............
              .           .
              .           .
5249     G40RIV............
              V
              V
5252     RCPG40
              .
              .
5259          .         D40
              .           .
              .           .
5268          .           .        G41
              .           .           .
              .           .           .
5276     D40RIV......................
              V
              V
5279     RCPD40
              .
              .
5286          .         D36
              .           .
              .           .
5295          .           .        D35
              .           .           .
              .           .           .
5305          .       CPD35............
              .           V
              .           V
5308          .      RCPD35
              .           .
              .           .
5316          .           .        D37
              .           .           .
              .           .           .
5325          .       CPD37............
              .           .
              .           .
5328          .           .        D38
              .           .           .
              .           .           .
5337          .       CPD38............
              .           V
              .           V
5340          .      RCPD38
              .           .
              .           .
5347          .           .        D39
              .           .           .
              .           .           .
5356          .       CPD39............
              .           .
              .           .
5359     D39RIV............
              V
              V
5362     RCPD39
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                    .
5371                .           .<-------   DVG11
5369                .       DRG11
                    .           V
                    .           V
5372                .       RDG11
                    .           .
                    .           .
5379                .           .        G42
                    .           .          .
                    .           .          .
5388                .       CPG42...........
                    .           .
                    .           .
5391            G42RIV...........
                    V
                    V
5394            RCPG42
                    .
                    .
5401                .         C51
                    .           .
                    .           .
5409                .           .        C52
                    .           .          .
                    .           .          .
5417                .       CPC52...........
                    .           V
                    .           V
5420                .      RCPC52
                    .           .
                    .           .
5428                .           .        C53
                    .           .          V
                    .           .          V
5436                .           .     RCPC53
                    .           .          .
                    .           .          .
5444                .           .          .        B07
                    .           .          .          .
                    .           .          .          .
5452                .       CPB07........................
                    .           V
                    .           V
5455                .      RCPB07
                    .           .
                    .           .
5463                .           .        B08
                    .           .          .
                    .           .          .
5471                .       CPB08...........
                    .           .
                    .           .
5474            B08RIV...........
                    V
                    V
5477            RCPB08
                    .
                    .
5486                .           .<-------   DVC13
5484                .       DRC13
                    .           V
                    .           V
5487                .       RDC13
                    .           .
                    .           .
5497                .           .          .<-------   DVC31
5495                .           .      DRC31
                    .           .          V
                    .           .          V
5498                .           .      RDC31
                    .           .          .
                    .           .          .
5508                .           .          .          .<-------   DVC14
5506                .           .          .      DRC14
                    .           .          .          V
                    .           .          .          V
5509                .           .          .      RDC14
                    .           .          .          .
                    .           .          .          .
5519                .           .          .          .           .<-------   DVC10
5517                .           .          .          .       DRC10
                    .           .          .          .           V
                    .           .          .          .           V
5520                .           .          .          .       RDC10
                    .           .          .          .           .
                    .           .          .          .           .
5530                .           .          .          .           .           .<-------   DVC30
5528                .           .          .          .           .       DRC30
                    .           .          .          .           .           V
                    .           .          .          .           .           V
5531                .           .          .          .           .       RDC30
                    .           .          .          .           .           .
                    .           .          .          .           .           .
5539                .      CPC33A...............................................
                    .           V
                    .           V
5544                .       RC33A
                    .           .
                    .           .
5553                .           .          .<-------   DVC29
5551                .           .      DRC29
                    .           .          V
                    .           .          V
5554                .           .      RDC29
                    .           .          .
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5564                                  .<-------   DVC28
5562                             DRC28
                                     V
                                     V
5565                             RDC28
                                     .
                                     .
5575                                 .           .<-------   DVC27
5573                                 .       DRC27
                                     .           V
                                     .           V
5576                                 .       RDC27
                                     .           .
                                     .           .
5586                                 .           .           .<-------   DVC20
5584                                 .           .       DRC20
                                     .           .           V
                                     .           .           V
5587                                 .           .       RDC20
                                     .           .           .
                                     .           .           .
5595                         CPC33B...............................
                                 V
                                 V
5599                         RC33B
                                 .
                                 .
5608                                 .<-------   DVC24
5606                             DRC24
                                     V
                                     V
5609                             RDC24
                                     .
                                     .
5619                                 .           .<-------   DVC25
5617                                 .       DRC25
                                     .           V
                                     .           V
5620                                 .       RDC25
                                     .           .
                                     .           .
5630                                 .           .           .<-------   DVC26
5628                                 .           .       DRC26
                                     .           .           V
                                     .           .           V
5631                                 .           .       RDC26
                                     .           .           .
                                     .           .           .
5641                                 .           .           .           .<-------   DVD09
5639                                 .           .           .       DRD09
                                     .           .           .           V
                                     .           .           .           V
5642                                 .           .           .       RDD09
                                     .           .           .           .
                                     .           .           .           .
5650                             CPC33C...............................
                                     V
                                     V
5655                             RC33C
                                     .
                                     .
5662                         CPC33D...........
                                 V
                                 V
5667                          RC33D
                                 .
                                 .
5674                     CPC33E...........
                             V
                             V
5679                     RC33E
                             .
                             .
5688                             .<-------   DVD12
5686                          DRD12
                                 V
                                 V
5689                          RDD12
                                 .
                                 .
5697                     CPC33F...........
                             V
                             V
5702                     RC33F
                             .
                             .
5709                             C33
                                 .
                                 .
5717                      CPC33...........
                             V
                             V
5721                     RCPC33
                             .
                             .
5728                             C34
                                 .
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5739                     CPC34A...........
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                             .
5742                             C35
                                 V
                                 V
5752                          RCPC35
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                .          .          .
                .          .          .
5760            .     CPC34............
                .          V
                .          V
5763            .     RCPC34
                .          .
                .          .
5770            .          .       C36
                .          .          .
                .          .          .
5781            .     CPC36............
                .          V
                .          V
5784            .     RCPC36
                .          .
                .          .
5791            .          .       C49
                .          .          .
                .          .          .
5801            .     CPC49............
                .          V
                .          V
5804            .     RCPC49
                .          .
                .          .
5811            .          .       C40
                .          .          .
                .          .          .
5824            .          .          .-------> DVC40
5821            .          .     DC40
                .          .          V
                .          .          V
5827            .          .   RCPC40
                .          .          .
                .          .          .
5834            .          .          .       C41
                .          .          .          .
                .          .          .          .
5847            .          .          .          .-------> DVC41
5844            .          .          .      DC41
                .          .          .          V
                .          .          .          V
5850            .          .          .    RCPC41
                .          .          .          .
                .          .          .          .
5857            .          .          .          .       C42
                .          .          .          .         .
                .          .          .          .         .
5868            .          .     CPC42......................
                .          .          .
                .          .          .
5874            .          .          .-------> DVC42A
5871            .          .     DC42A
                .          .          .
                .          .          .
5880            .          .          .-------> DVC42B
5877            .          .     DC42B
                .          .          V
                .          .          V
5883            .          .   RCPC42
                .          .          .
                .          .          .
5892            .          .          .          .<-------  DVC41
5890            .          .          .     DRC41
                .          .          .          V
                .          .          .          V
5893            .          .          .     RDC41
                .          .          .          .
                .          .          .          .
5900            .          .          .          .       C46
                .          .          .          .         .
                .          .          .          .         .
5910            .          .     CPC46......................
                .          .          .
                .          .          .
5916            .          .          .-------> DVC46
5913            .          .      DC46
                .          .          V
                .          .          V
5919            .          .   RCPC46
                .          .          .
                .          .          .
5926            .          .          .       C37
                .          .          .          .
                .          .          .          .
5936            .          .     CPC37............
                .          .          V
                .          .          V
5939            .          .   RCPC37
                .          .          .
                .          .          .
5946            .          .          .       C48
                .          .          .          .
                .          .          .          .
5956            .          .   CPC48A............
                .          .          .
                .          .          .
5959            .     CPC48............
                .          V
                .          V
5963            .     RCPC48
                .          .
                .          .
5970            .          .       C39
                .          .          .
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5983                .-------> DVC39
5980            DC39
                   V
                   V
5986         RCPC39
                   .
                   .
5995               .<-------  DVC40
5993               .      DRC40
                   .         V
                   .         V
5996               .      RDC40
                   .         .
                   .         .
6003               .         .        C43
                   .         .          .
                   .         .          .
6014         CPC43.......................
                   .
                   .
6020                .-------> DVC43
6017            DC43
                   V
                   V
6023         RCPC43
                   .
                   .
6032               .<-------  DVC42A
6030               .     DRC42A
                   .         V
                   .         V
6033               .     RDC42A
                   .         .
                   .         .
6040               .         .        C45
                   .         .          .
                   .         .          .
6050               .      CPC45...........
                   .         .
                   .         .
6056               .         .-------> DVC45
6053               .       DC45
                   .         V
                   .         V
6059               .     RCPC45
                   .         .
                   .         .
6066               .         .        C44
                   .         .          .
                   .         .          .
6076         CPC44.......................
                   V
                   V
6079         RCPC44
                   .
                   .
6088               .<-------  DVC39
6086               .      DRC39
                   .         V
                   .         V
6089               .      RDC39
                   .         .
                   .         .
6098               .         .<-------  DVC43
6096               .         .     DRC43
                   .         .        V
                   .         .        V
6099               .         .     RDC43
                   .         .        .
                   .         .        .
6106               .         .        .        C38
                   .         .        .          .
                   .         .        .          .
6117               .      CPC38.......................
                   .         V
                   .         V
6120               .     RCPC38
                   .         .
                   .         .
6129               .         .<-------  DVC42B
6127               .         .    DRC42B
                   .         .        V
                   .         .        V
6130               .         .    RDC42B
                   .         .        .
                   .         .        .
6139               .         .        .          .<-------  DVC45
6137               .         .        .       DRC45
                   .         .        .          V
                   .         .        .          V
6140               .         .        .       RDC45
                   .         .        .          .
                   .         .        .          .
6149               .         .        .          .          .<-------  DVC46
6147               .         .        .          .       DRC46
                   .         .        .          .          V
                   .         .        .          .          V
6150               .         .        .          .       RDC46
                   .         .        .          .          .
                   .         .        .          .          .
6157               .         .        .          .          .        C47
                   .         .        .          .          .          .
                   .         .        .          .          .          .
6167         CPC47A.......................................................
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6171            .       CPC47............
                .           V
                .           V
6174            .      RCPC47
                .           .
                .           .
6181            .           .         B09
                .           .           .
                .           .           .
6191            .       CPB09............
                .           V
                .           V
6195            .      RCPB09
                .           .
                .           .
6202            .           .         B01
                .           .           V
                .           .           V
6209            .           .      RCPB01
                .           .           .
                .           .           .
6216            .           .           .         B02
                .           .           .           V
                .           .           .           V
6223            .           .           .      RCPB02
                .           .           .           .
                .           .           .           .
6230            .           .           .           .         B03
                .           .           .           .           .
                .           .           .           .           .
6237            .           .       CPB03........................
                .           .           .
                .           .           .
6244            .           .           .-------> DVB03N
6240            .           .       DB03N
                .           .           V
                .           .           V
6247            .           .      RCPB03
                .           .           .
                .           .           .
6256            .           .           .           .<-------  DVB03N
6254            .           .           .      DRB03N
                .           .           .           .
                .           .           .           .
6262            .           .           .           .-------> DVB16
6258            .           .           .      DB16
                .           .           .           .
                .           .           .           .
6270            .           .           .           .-------> DVB18
6266            .           .           .      DB18
                .           .           .           .
                .           .           .           .
6273            .           .           .           .         B13
                .           .           .           .           .
                .           .           .           .           .
6283            .           .       CPB13........................
                .           .           .
                .           .           .
6290            .           .           .-------> DVB13
6286            .           .        DB13
                .           .           V
                .           .           V
6293            .           .      RCPB13
                .           .           .
                .           .           .
6300            .           .           .         B04
                .           .           .           V
                .           .           .           V
6306            .           .           .      RCPB04
                .           .           .           .
                .           .           .           .
6313            .           .           .           .         B05
                .           .           .           .           .
                .           .           .           .           .
6318            .           .       CPB05........................
                .           .           V
                .           .           V
6322            .           .      RCPB05
                .           .           .
                .           .           .
6329            .           .           .         B06
                .           .           .           V
                .           .           .           V
6338            .           .           .      RCPB06
                .           .           .           .
                .           .           .           .
6345            .           .           .           .         B10
                .           .           .           .           .
                .           .           .           .           .
6354            .           .       CPB10........................
                .           .           .
                .           .           .
6358            .           .           .         B11
                .           .           .           .
                .           .           .           .
6366            .           .       CPB11............
                .           .           V
                .           .           V
6370            .           .      RCPB11
                .           .           .
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6377            .           .           .         B12
                .           .           .           .
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6386            .           .      CPB12A............
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6389             .       CPB12............
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                 .           .
6393             .           .        H02
                 .           .         V
                 .           .         V
6403             .           .     RCPH02
                 .           .           .
                 .           .           .
6410             .           .           .        H01
                 .           .           .          .
                 .           .           .          .
6420             .           .      CPH01............
                 .           .           .
                 .           .           .
6426             .           .           .-------->   DVH01
6423             .           .       DH01
                 .           .         V
                 .           .         V
6429             .           .     RCPH01
                 .           .           .
                 .           .           .
6436             .           .           .        H24
                 .           .           .          .
                 .           .           .          .
6447             .           .      CPH24............
                 .           .         V
                 .           .         V
6450             .           .     RCPH24
                 .           .           .
                 .           .           .
6457             .           .           .        H55
                 .           .           .          .
                 .           .           .          .
6468             .           .      CPH55............
                 .           .         V
                 .           .         V
6471             .           .     RCPH55
                 .           .           .
                 .           .           .
6478             .           .           .        H56
                 .           .           .          .
                 .           .           .          .
6488             .           .      CPH56............
                 .           .         V
                 .           .         V
6491             .           .     RCPH56
                 .           .           .
                 .           .           .
6498             .           .           .        H57
                 .           .           .          .
                 .           .           .          .
6507             .           .      CPH57............
                 .           .         V
                 .           .         V
6510             .           .     RCPH57
                 .           .           .
                 .           .           .
6517             .           .           .        H68
                 .           .           .          .
                 .           .           .          .
6528             .           .      CPH68............
                 .           .           .
                 .           .           .
6531         B12RIV........................
                 V
                 V
6534         RCPB12
                 .
                 .
6543             .           .<-------   DVH01
6541             .       DRH01
                 .           V
                 .           V
6544             .       RDH01
                 .           .
                 .           .
6553             .           .        H25
                 .           .           .
                 .           .           .
6561             .       CPH25............
                 .           V
                 .           V
6564             .      RCPH25
                 .           .
                 .           .
6572             .           .        H58
                 .           .           .
                 .           .           .
6581             .       CPH58............
                 .           V
                 .           V
6585             .      RCPH58
                 .           .
                 .           .
6591             .           .        H26
                 .           .         V
                 .           .         V
6599             .           .     RCPH26
                 .           .           .
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6607             .           .           .        H59
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6616          .       CPH59......................
              .           .
              .           .
6623          .           .-------->   DVH59
6620          .        DH59
              .           V
              .           V
6626          .      RCPH59
              .           .
              .           .
6634          .           .         H60
              .           .           .
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6643          .       CPH60............
              .           V
              .           V
6646          .      RCPH60
              .           .
              .           .
6655          .           .           .<-------   DVH59
6653          .           .       DRH59
              .           .           V
              .           .           V
6656          .           .       RDH59
              .           .           .
              .           .           .
6663          .           .           .         H61
              .           .           .           .
              .           .           .           .
6671          .           .       CPH61............
              .           .           V
              .           .           V
6674          .           .      RCPH61
              .           .           .
              .           .           .
6682          .           .           .         H69
              .           .           .           .
              .           .           .           .
6691          .       CPH69......................
              .           .
              .           .
6694     H69RIV............
             V
             V
6697     RCPH69
              .
              .
6704          .        H65
              .           V
              .           V
6712          .      RCPH65
              .           .
              .           .
6720          .           .         H67
              .           .           .
              .           .           .
6727          .       CPH67............
              .           V
              .           V
6730          .      RCPH67
              .           .
              .           .
6738          .           .         H70
              .           .           .
              .           .           .
6746          .       CPH70............
              .           .
              .           .
6749          .           .         B15
              .           .           .
              .           .           .
6755     B15RIV......................
             V
             V
6759     RCPB15
              .
              .
6768          .           .<-------   DVB13
6766          .       DRB13
              .           V
              .           V
6769          .       RDB13
              .           .
              .           .
6776          .           .         B14
              .           .           .
              .           .           .
6784          .           .           .           .<-------  DVB18
6782          .           .           .      DRB18
              .           .           .           .
              .           .           .           .
6790          .           .           .           .-------->   DVB14
6786          .           .           .        DB14
              .           .           .           .
              .           .           .           .
6798          .           .           .           .-------->   DVB19
6794          .           .           .        DB19
              .           .           .           .
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6801          .       CPB14......................
              .           .
              .           .
6804          .           .         B21
              .           .           .
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6810          .       CPB21............
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                 .          V
                 .          V
6813             .     RCPB21
                 .          .
                 .          .
6820             .          .        B20
                 .          .          V
                 .          .          V
6826             .          .     RCPB20
                 .          .          .
                 .          .          .
6833             .          .          .        B44
                 .          .          .          .
                 .          .          .          .
6840             .          .      CPB44............
                 .          .          V
                 .          .          V
6843             .          .     RCPB44
                 .          .          .
                 .          .          .
6850             .          .          .        B45
                 .          .          .          .
                 .          .          .          .
6858             .      CPB45........................
                 .          .
                 .          .
6861       B45RIV............
                 V
                 V
6864       RCPB45
                 .
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6871             .        H22
                 .          V
                 .          V
6879             .     RCPH22
                 .          .
                 .          .
6887             .          .        H03
                 .          .          V
                 .          .          V
6895             .          .     RCPH03
                 .          .          .
                 .          .          .
6903             .          .          .        H23
                 .          .          .          .
                 .          .          .          .
6911             .      CPH23........................
                 .          V
                 .          V
6914             .     RCPH23
                 .          .
                 .          .
6921             .          .        H27
                 .          .          V
                 .          .          V
6929             .          .     RCPH27
                 .          .          .
                 .          .          .
6937             .          .          .        H62
                 .          .          .          .
                 .          .          .          .
6945             .      CPH62........................
                 .          V
                 .          V
6948             .     RCPH62
                 .          .
                 .          .
6955             .          .        H20
                 .          .          V
                 .          .          V
6963             .          .     RCPH20
                 .          .          .
                 .          .          .
6971             .          .          .        H28
                 .          .          .          .
                 .          .          .          .
6979             .          .      CPH28............
                 .          .          V
                 .          .          V
6982             .          .     RCPH28
                 .          .          .
                 .          .          .
6989             .          .          .        H63
                 .          .          .          .
                 .          .          .          .
6996             .      CPH63........................
                 .          .
                 .          .
7003             .          .-------->   DVH63
7000             .       DH63
                 .          V
                 .          V
7006             .     RCPH63
                 .          .
                 .          .
7014             .          .        H66
                 .          .          .
                 .          .          .
7023             .      CPH66............
                 .          V
                 .          V
7026             .     RCPH66
                 .          .
                 .          .
7034             .          .        H71
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                .           .           .
                .           .           .
7042            .       CPH71............
                .           V           V
7045            .      RCPH71
                .           .
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7053            .           .         H72
                .           .           .
                .           .           .
7061            .       CPH72............
                .           .
                .           .
7064       H72RIV............
                V
                V
7067       RCPH72
                .
                .
7074            .         B42
                .           V
                .           V
7081            .      RCPB42
                .           .
                .           .
7088            .           .         B43
                .           .           .
                .           .           .
7095            .       CPB43............
                .           .
                .           .
7098            .           .         B41
                .           .           .
                .           .           .
7106            .       CPB41............
                .           V
                .           V
7109            .      RCPB41
                .           .
                .           .
7116            .           .         B46
                .           .           .
                .           .           .
7124            .       CPB46............
                .           .
                .           .
7127       B46RIV............
                V
                V
7130       RCPB46
                .
                .
7139            .           .<-------   DVH63
7137            .       DRH63
                .           V
                .           V
7140            .       RDH63
                .           .
                .           .
7148            .           .         H53
                .           .           .
                .           .           .
7156            .       CPH53............
                .           .
                .           .
7159            .           .         H18
                .           .           V
                .           .           V
7167            .           .      RCPH18
                .           .           .
                .           .           .
7175            .           .           .         H29
                .           .           .           .
                .           .           .           .
7183            .           .       CPH29............
                .           .           .
                .           .           .
7186            .           .           .         H04
                .           .           .           V
                .           .           .           V
7194            .           .           .      RCPH04
                .           .           .           .
                .           .           .           .
7201            .           .           .           .         H17
                .           .           .           .           .
                .           .           .           .           .
7209            .           .           .       CPH17............
                .           .           .           .
                .           .           .           .
7217            .           .           .           .-------->   DVH17
7212            .           .           .        DH17
                .           .           .           .
                .           .           .           .
7225            .           .           .           .-------->  DVH30A
7220            .           .           .      DH30A
                .           .           .           V
                .           .           .           V
7228            .           .           .      RCPH17
                .           .           .           .
                .           .           .           .
7236            .           .           .           .         H30
                .           .           .           .           .
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7244            .           .           .       CPH30............
                .           .           .           V
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                                                  V
7247                                        RCPH30
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                                                  .
7255                                              .         H51
                                                  .           .
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7263                                         CPH51............
                                                  V
                                                  V
7266                                        RCPH51
                                                  .
                                                  .
7274                                              .         H52
                                                  .           .
                                                  .           .
7282                                        CPH52A............
                                                  .
                                                  .
7286                   CPH52B......................
                            V
                            V
7289                   RCPH52
                            .
                            .
7296                        .        H54
                            .          .
                            .          .
7304                    CPH54............
                            V
                            V
7307                   RCPH54
                            .
                            .
7315                        .        H05
                            .          V
                            .          V
7322                        .      RCPH05
                            .          .
                            .          .-------->   DVH05
7335
7330                        .       DH05
                            .          .
                            .          .
7340                        .          .<-------   DVH17
7338                        .       DRH17
                            .          .
                            .          .
7347                        .          .-------->  DVH31A
7342                        .      DH31A
                            .          .
                            .          .
7350                        .          .         H31
                            .          .           .
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7359                        .      CPH31......................
                            .          .
                            .          .
7363                        .        H15B
                            .          V
                            .          V
7370                        .      RCH15B
                            .          .
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7377                        .          .        H15A
                            .          .           .
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7385                        .      CPH15A............
                            .          .
                            .          .
7390                        .          .          .<-------   DVH05
7388                        .          .       DRH05
                            .          .           .
                            .          .           .
7392                        .      CPH15 ............
                            .          .
                            .          .
7400                        .          .-------->  DVH15A
7395                        .      DH15A
                            .          .
                            .          .
7404                        .      CPH31A............
                            .          .
                            .          .
7413                        .          .-------->   DVH31
7408                        .       DH31
                            .          .
                            .          .
7422                        .          .-------->  DVH33A
7417                        .      DH33A
                            .          .
                            .          .
7427                        .          .<-------   DVH31
7425                        .       DRH31
                            .          .
                            .          .
7429                        .      CPH32B............
                            .          V
                            .          V
7432                        .      RCPH31
                            .          .
                            .          .
7441                        .          .<-------  DVH31A
7439                        .      DRH31A
                            .          V
                            .          V
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7442          .           .           .      RDH31A
              .           .           .           .
              .           .           .           .
7452          .           .           .           .           .<-------  DVH30A
7450          .           .           .           .      DRH30A
              .           .           .           .           .
              .           .           .           .           .
7454          .           .           .      CPH32A............
              .           .           .           .
              .           .           .           .
7458          .           .           .           .         H32
              .           .           .           .           .
              .           .           .           .           .
7467          .           .       CPH32........................
              .           .           .
              .           .           .
7473          .           .           .------->   DVH32
7470          .           .        DH32
              .           .           V
              .           .           V
7477          .           .      RCPH32
              .           .           .
              .           .           .
7485          .           .           .           .<-------   DVH32
7483          .           .           .       DRH32
              .           .           .           V
              .           .           .           V
7486          .           .           .       RDH32
              .           .           .           .
              .           .           .           .
7494          .           .           .           .         H48
              .           .           .           .           .
              .           .           .           .           .
7502          .           .           .       CPH48............
              .           .           .           .
              .           .           .           .
7508          .           .           .           .------->   DVH48
7505          .           .           .        DH48
              .           .           .           V
              .           .           .           V
7511          .           .           .      RCPH48
              .           .           .           .
              .           .           .           .
7519          .           .           .           .         H50
              .           .           .           .           .
              .           .           .           .           .
7528          .           .       CPH50........................
              .           .           V
              .           .           V
7531          .           .      RCPH50
              .           .           .
              .           .           .
7541          .           .           .           .<-------   DVH48
7539          .           .           .       DRH48
              .           .           .           V
              .           .           .           V
7542          .           .           .       RDH48
              .           .           .           .
              .           .           .           .
7550          .           .           .           .         H49
              .           .           .           .           .
              .           .           .           .           .
7558          .           .           .       CPH49............
              .           .           .           V
              .           .           .           V
7562          .           .           .      RCPH49
              .           .           .           .
              .           .           .           .
7568          .           .           .           .         H73
              .           .           .           .           .
              .           .           .           .           .
7577          .       CPH73....................................
              .           V
              .           V
7580          .      RCPH73
              .           .
              .           .
7588          .           .         H74
              .           .           .
              .           .           .
7596          .       CPH74............
              .           .
              .           .
7599      H74RIV............
              V
              V
7602      RCPH74
              .
              .
7611          .           .<-------  DVH15A
7609          .      DRH15A
              .           V
              .           V
7613          .      RCH15A
              .           .
              .           .
7621          .           .           .<-------  DVH33A
7619          .           .      DRH33A
              .           .           V
              .           .           V
7623          .           .       RDH33
              .           .           .
              .           .           .
7631          .      CPH33B............
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7634          .           .         H33
              .           .           .
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7644          .      CPH33............
              .           .
              .           .
7651          .           .-------->  DVH33
7648          .       DH33
              .           V
              .           V
7654          .     RCPH33
              .           .
              .           .
7662          .           .         H47
              .           .           .
              .           .           .
7670          .      CPH47............
              .           V
              .           V
7673          .     RCPH47
              .           .
              .           .
7681          .           .         H75
              .           .           .
              .           .           .
7691          .      CPH75............
              .           V
              .           V
7694          .     RCPH75
              .           .
              .           .
7702          .           .         H76
              .           .           .
              .           .           .
7710          .      CPH76............
              .           V
              .           V
7713          .     RCPH76
              .           .
              .           .
7721          .           .         H77
              .           .           .
              .           .           .
7729          .      CPH77............
              .           .
              .           .
7732     H77RIV............
              V
              V
7736     RCPH77
              .
              .
7743          .        B40
              .          V
              .          V
7751          .     RCPB40
              .           .
              .           .
7758          .           .         B49
              .           .           V
              .           .           V
7766          .           .     RCPB49
              .           .           .
              .           .           .
7772          .           .           .         B50
              .           .           .           .
              .           .           .           .
7779          .      CPB50........................
              .           V
              .           V
7782          .     RCPB50
              .           .
              .           .
7790          .           .         B19
              .           .           .
              .           .           .
7798          .           .           .         .<-------   DVB19
7796          .           .           .     DRB19
              .           .           .           .
              .           .           .           .
7799          .           .     CPB19............
              .           .           V
              .           .           V
7802          .           .     RCPB19
              .           .           .
              .           .           .
7809          .           .           .         B48
              .           .           .           .
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7815          .      CPB48........................
              .           V
              .           V
7818          .     RCPB48
              .           .
              .           .
7826          .           .         B47
              .           .           .
              .           .           .
7834          .      CPB47............
              .           V
              .           V
7837          .     RCPB47
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7844          .           .         B61
              .           .           .
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7851            .      CPB61...........
                .         .
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7854       B61RIV...........
                V
                V
7857       RCPB61
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                .
7864            .        B22
                .         V
                .         V
7872            .     RCPB22
                .         .
                .         .
7879            .         .        B23
                .         .         .
                .         .         .
7891            .         .         .-------->   DVB23
7888            .         .      DB23
                .         .         V
                .         .         V
7894            .         .    RCPB23
                .         .         .
                .         .         .
7901            .         .         .        B36
                .         .         .         .
                .         .         .         .
7909            .         .     CPB36...........
                .         .         .
                .         .         .
7914            .         .         .          .<-------   DVB23
7912            .         .         .      DRB23
                .         .         .         V
                .         .         .         V
7915            .         .         .      RDB23
                .         .         .         .
                .         .         .         .
7922            .         .         .         .        B24
                .         .         .         .         .
                .         .         .         .         .
7931            .         .         .    CPB24A...........
                .         .         .         .
                .         .         .         .
7935            .         .     CPB24...........
                .         .         V
                .         .         V
7938            .         .    RCPB24
                .         .         .
                .         .         .
7945            .         .         .        B37
                .         .         .         .
                .         .         .         .
7953            .      CPB37........................
                .         .
                .         .
7956            .         .        B25
                .         .         .
                .         .         .
7965            .      CPB25...........
                .         V
                .         V
7968            .     RCPB25
                .         .
                .         .
7975            .         .        B26
                .         .         .
                .         .         .
7984            .      CPB26...........
                .         .
                .         .
7991            .         .-------->   DVB26
7988            .       DB26
                .         V
                .         V
7994            .     RCPB26
                .         .
                .         .
8003            .         .         .<-------   DVB14
8001            .         .     DRB14
                .         .         .
                .         .         .
8009            .         .         .-------->  DVB18B
8005            .         .     DB18B
                .         .         V
                .         .         V
8013            .         .    RDB18
                .         .         .
                .         .         .
8019            .         .         .        B17
                .         .         .         .
                .         .         .         .
8030            .         .         .          .-------->   DVB17
8027            .         .         .       DB17
                .         .         .         V
                .         .         .         V
8033            .         .         .    RCPB17
                .         .         .         .
                .         .         .         .
8040            .         .         .         .        B18
                .         .         .         .         .
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8049            .         .     CPB18........................
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8054                                  .<-------  DVB16
8052                            DRB16
                                     V
                                     V
8055                            RDB16
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8064                                 .<-------   DVB17
8062                                 .       DRB17
                                     .           V
                                     .           V
8065                                 .       RDB17
                                     .           .
                                     .           .
8074                                 .           .<-------  DVB18B
8072                                 .      DRB18B
                                     .           .
                                     .           .
8075                                 .           .         B16
                                     .           .           .
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8083                            CPB16.................................
                                     V
                                     V
8086                            RCPB16
                                     .
                                     .
8093                                 .        B39
                                     .           .
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8102                            CPB39A............
                                     .
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8106                       CPB39............
                                V
                                V
8109                       RCPB39
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8116                            .        B54
                                .           .
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8124                       CPB54............
                                V
                                V
8127                       RCPB54
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8134                            .        B38
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8143                       CPB38............
                                V
                                V
8146                       RCPB38
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                                .
8154                            .        B27
                                .           V
                                .           V
8162                            .      RCPB27
                                .           .
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8169                            .           .        B35
                                .           .           .
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8178                            .      CPB35A............
                                .           .
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8183                            .           .<-------   DVB26
8181                            .       DRB26
                                .           .
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8185                            .      CPB35............
                                .           V
                                .           V
8188                            .      RCPB35
                                .           .
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8195                            .           .        B28
                                .           .           .
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8203                            .           .           .        B34
                                .           .           .           .
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8212                            .           .       CPB34............
                                .           .           V
                                .           .           V
8215                            .           .      RCPB34
                                .           .           .
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8222                            .           .           .        B33
                                .           .           .           .
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8231                            .           .      CPB33A............
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8235                            .      CPB33............
                                .           V
                                .           V
8238                            .      RCPB33
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8245                            .           .        B65
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8252          .      CPB65.................................
              .          V
              .          V
8256          .     RCPB65
              .          .
              .          .
8264          .          .        B55
              .          .          V
              .          .          V
8272          .          .     RCPB55
              .          .          .
              .          .          .
8280          .          .          .        B31
              .          .          .          V
              .          .          .          V
8288          .          .          .      RCPB31
              .          .          .          .
              .          .          .          .
8295          .          .          .          .        B32
              .          .          .          .          V
              .          .          .          .          V
8303          .          .          .          .      RCPB32
              .          .          .          .          .
              .          .          .          .          .
8310          .          .          .          .          .         B30
              .          .          .          .          .           .
              .          .          .          .          .           .
8321          .          .          .          .          .           .-------->   DVB30
8318          .          .          .          .          .        DB30
              .          .          .          .          .          V
              .          .          .          .          .          V
8324          .          .          .          .          .      RCPB30
              .          .          .          .          .           .
              .          .          .          .          .           .
8331          .          .          .          .          .           .         B29
              .          .          .          .          .           .           .
              .          .          .          .          .           .           .
8340          .          .          .      CPB29.................................
              .          .          .          V
              .          .          .          V
8343          .          .          .      RCPB29
              .          .          .          .
              .          .          .          .
8353          .          .          .          .          .<-------   DVB30
8351          .          .          .          .      DRB30
              .          .          .          .          V
              .          .          .          .          V
8354          .          .          .          .      RDB30
              .          .          .          .          .
              .          .          .          .          .
8361          .          .          .          .          .         B57
              .          .          .          .          .           .
              .          .          .          .          .           .
8369          .          .          .          .      CPB57............
              .          .          .          .          V
              .          .          .          .          V
8372          .          .          .          .      RCPB57
              .          .          .          .          .
              .          .          .          .          .
8379          .          .          .          .          .         B56
              .          .          .          .          .           .
              .          .          .          .          .           .
8387          .          .          .          .      CPB56............
              .          .          .          .          V
              .          .          .          .          V
8390          .          .          .          .      RCPB56
              .          .          .          .          .
              .          .          .          .          .
8397          .          .          .          .          .         B58
              .          .          .          .          .           .
              .          .          .          .          .           .
8406          .          .          .          .      CPB58............
              .          .          .          .          V
              .          .          .          .          V
8409          .          .          .          .      RCPB58
              .          .          .          .          .
              .          .          .          .          .
8417          .          .          .          .          .         B59
              .          .          .          .          .           .
              .          .          .          .          .           .
8427          .      CPB59.............................................
              .          V
              .          V
8430          .     RCPB59
              .          .
              .          .
8438          .          .        B52
              .          .          V
              .          .          V
8446          .          .     RCPB52
              .          .          .
              .          .          .
8454          .          .          .        B53
              .          .          .          V
              .          .          .          V
8460          .          .          .      RCPB53
              .          .          .          .
              .          .          .          .
8468          .          .          .          .        B60
              .          .          .          .          .
              .          .          .          .          .
8481          .      CPB60.................................
              .          V
              .          V
8484          .     RCPB60
              .          .
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8494                .<-------   DVH33
8492            DRH33
                    V
                    V
8495            RDH33
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                    .
8503                .        H46
                    .          .
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8511            CPH46...........
                    V
                    V
8514           RCPH46
                    .
                    .
8522                .        H06
                    .          .
                    .          .
8533                .          .------->   DVH06
8530                .       DH06
                    .          V
                    .          V
8536                .      RCPH06
                    .          .
                    .          .
8544                .          .        H16
                    .          .          V
                    .          .          V
8552                .          .      RCPH16
                    .          .          .
                    .          .          .
8560                .          .          .        H14
                    .          .          .          .
                    .          .          .          .
8570                .      CPH14......................
                    .          V
                    .          V
8573                .      RCPH14
                    .          .
                    .          .
8582                .          .             .<-------   DVH06
8580                .          .       DRH06
                    .          .          V
                    .          .          V
8584                .          .       RDH06
                    .          .          .
                    .          .          .
8590                .          .          .        H13
                    .          .          .          .
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8599                .      CPH13......................
                    .          V
                    .          V
8602                .      RCPH13
                    .          .
                    .          .
8610                .          .        H12
                    .          .          V
                    .          .          V
8618                .          .      RCPH12
                    .          .          .
                    .          .          .
8625                .          .          .        H07
                    .          .          .          .
                    .          .          .          .
8633                .          .          .          .        H35
                    .          .          .          .          .
                    .          .          .          .          .
8644                .          .          .          .          .------->   DVH35
8641                .          .          .          .       DH35
                    .          .          .          .          V
                    .          .          .          .          V
8648                .          .          .          .      RCH35A
                    .          .          .          .          .
                    .          .          .          .          .
8656                .          .       CPH07......................
                    .          .          .
                    .          .          .
8663                .          .          .------->   DVH07
8660                .          .       DH07
                    .          .          V
                    .          .          V
8666                .          .      RCPH07
                    .          .          .
                    .          .          .
8674                .          .          .        H34
                    .          .          .          .
                    .          .          .          .
8682                .      CPH34......................
                    .          V
                    .          V
8685                .      RCPH34
                    .          .
                    .          .
8693                .          .        H45
                    .          .          .
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8701                .      CPH45...........
                    .          V
                    .          V
8704                .      RCPH45
                    .          .
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8714                .          .             .<-------   DVH07
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8712          .           .           .           .       DRH07
              .           .           .           .          V
              .           .           .           .          V
8715          .           .           .           .       RDH07
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              .           .           .           .          .
8723          .           .           .           .          .         H36
              .           .           .           .          .           .
              .           .           .           .          .           .
8731          .           .           .           .       CPH36............
              .           .           .           .          V
              .           .           .           .          V
8734          .           .           .           .      RCPH36
              .           .           .           .          .
              .           .           .           .          .
8742          .           .           .           .          .         H44
              .           .           .           .          .           .
              .           .           .           .          .           .
8750          .           .           .           .       CPH44............
              .           .           .           .          V
              .           .           .           .          V
8753          .           .           .           .      RCPH44
              .           .           .           .          .
              .           .           .           .          .
8761          .           .           .           .          .         H78
              .           .           .           .          .           .
              .           .           .           .          .           .
8770          .           .       CPH78.......................................
              .           .           V
              .           .           V
8773          .           .      RCPH78
              .           .           .
              .           .           .
8781          .           .           .         H79
              .           .           .           .
              .           .           .           .
8789          .           .       CPH79............
              .           .           V
              .           .           V
8792          .           .      RCPH79
              .           .           .
              .           .           .
8800          .           .           .         H80
              .           .           .           .
              .           .           .           .
8809          .           .       CPH80............
              .           .           .
              .           .           .
8812     H80RIV........................
              V
              V
8815     RCPH80
              .
              .
8822          .        H43
              .          V
              .          V
8829          .     RCPH43
              .           .
              .           .
8837          .           .         H81
              .           .           .
              .           .           .
8844          .     CPH81 ............
              .          V
              .          V
8847          .     RCPH81
              .           .
              .           .
8855          .           .         H08
              .           .           V
              .           .           V
8863          .           .      RCPH08
              .           .           .
              .           .           .
8871          .           .           .         H11
              .           .           .           .
              .           .           .           .
8882          .           .           .           .-------->   DVH11
8879          .           .           .       DH11
              .           .           .          V
              .           .           .          V
8885          .           .           .     RCPH11
              .           .           .           .
              .           .           .           .
8894          .           .           .           .           .<-------   DVH35
8892          .           .           .           .       DRH35
              .           .           .           .          .
              .           .           .           .          .
8896          .           .       CPH35........................
              .           .           V
              .           .           V
8899          .           .      RCPH35
              .           .           .
              .           .           .
8906          .           .           .         H37
              .           .           .           .
              .           .           .           .
8914          .           .       CPH37............
              .           .           V
              .           .           V
8917          .           .      RCPH37
              .           .           .
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8924          .           .           .         H42
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8931            .           .       CPH42............
                .           .           V
                .           .           V
8934            .           .      RCPH42
                .           .           .
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8942            .           .           .         H82
                .           .           .           .
                .           .           .           .
8950            .       CPH82........................
                .           V
                .           V
8953            .      RCPH82
                .           .
                .           .
8961            .           .         H83
                .           .           .
                .           .           .
8970            .           .           .         B62
                .           .           .           .
                .           .           .           .
8978       B62RIV...................................
                V
                V
8981       RCPB62
                .
                .
8988            .         B63
                .           .
                .           .
8996       B63RIV............
                V
                V
9000       RCPB63
                .
                .
9007            .         B64
                .           .
                .           .
9015       B64RIV............
                V
                V
9018       RCPB64
                .
                .
9025            .         H09
                .           V
                .           V
9033            .      RCPH09
                .           .
                .           .
9041            .           .         H10
                .           .           .
                .           .           .
9048            .       CPH10............
                .           V
                .           V
9051            .      RCPH10
                .           .
                .           .
9061            .           .           .<-------   DVH11
9059            .           .       DRH11
                .           .           V
                .           .           V
9062            .           .       RDH11
                .           .           .
                .           .           .
9069            .           .           .         H38
                .           .           .           .
                .           .           .           .
9078            .       CPH38........................
                .           V
                .           V
9081            .      RCPH38
                .           .
                .           .
9089            .           .         H39
                .           .           .
                .           .           .
9096            .       CPH39............
                .           .
                .           .
9103            .           .-------->   DVH39
9100            .        DH39
                .           V
                .           V
9106            .      RCPH39
                .           .
                .           .
9114            .           .         H41
                .           .           .
                .           .           .
9121            .       CPH41............
                .           V
                .           V
9124            .      RCPH41
                .           .
                .           .
9134            .           .           .<-------   DVH39
9132            .           .       DRH39
                .           .           V
                .           .           V
9135            .           .       RDH39
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9143          .           .           .         H40
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9151          .           .       CPH40............
              .           .           V
              .           .           V
9154          .           .      RCPH40
              .           .           .
              .           .           .
9162          .           .           .         H84
              .           .           .           .
              .           .           .           .
9171          .       CPH84......................
              .           V
              .           V
9174          .      RCPH84
              .           .
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9182          .           .         H85
              .           .           .
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9192          .       CPH85............
              .           V
              .           V
9195          .      RCPH85
              .           .
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9203          .           .         H86
              .           .           .
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9213          .       CPH86............
              .           .
              .           .
9216     H86RIV............
              V
              V
9219     RCPH86
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9226          .         I03
              .           .
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9237          .           .-------->   DVI03
9234          .        DI03
              .           V
              .           V
9240          .      RCPI03
              .           .
              .           .
9247          .           .         I04
              .           .           .
              .           .           .
9255          .       CPI04............
              .           V
              .           V
9258          .      RCPI04
              .           .
              .           .
9265          .           .         I06
              .           .           .
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9273          .       CPI06............
              .           V
              .           V
9276          .      RCPI06
              .           .
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9283          .           .         I08
              .           .           .
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9290          .       CPI08............
              .           V
              .           V
9293          .      RCPI08
              .           .
              .           .
9301          .           .         I10
              .           .           .
              .           .           .
9309          .       CPI10............
              .           V
              .           V
9312          .      RCPI10
              .           .
              .           .
9322          .           .           .<-------   DVI03
9320          .       DRI03
              .           V
              .           V
9323          .       RDI03
              .           .
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9331          .           .           .         I05
              .           .           .           .
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9340          .       CPI05............
              .           V
              .           V
9344          .      RCPI05
              .           .
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9350          .           .           .         I07
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9357          .       CPI07............
              .           V
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                                                  V
9360                                        RCPI07
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9368                                                .        I09
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9375                                         CPI09...........
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                                                  V
9378                                        RCPI09
                                                  .
9386                                                .        I11
                                                  .          .
9394                                         CPI11...........
                                                  V
                                                  V
9397                                        RCPI11
                                                  .
9405                                                .        I12
                                                  .          .
9414                                     CPI12......................
                                                  V
                                                  V
9417                                       RCPI12
                                                  .
9425                                                .        I13
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9434                                     CPI13...........
                                                  V
                                                  V
9437                                       RCPI13
                                                  .
9445                                                .        I14
                                                  .          .
9454                                     CPI14...........
                                                  .
9458                                                .        A12
                                                  .          V
                                                  .          V
9466                                        RCPA12
                                                  .
9474                                                .        A41
                                                  .          .
9480                                         CPA41...........
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9483                                                .
A41RIV......................
     V
     V
9487 RCPA41
     .
9495 .                                     I15B
     .                                        V
     .                                        V
9503 .                                    RCI15B
     .                                        .
9511 .                                        .        I15A
     .                                        .          .
9518 .                                    CPI15A...........
     .                                        V
     .                                        V
9522 .                                    RCI15A
     .                                        .
9529 .                                        .        I16
     .                                        .          V
     .                                        .          V
9537 .                                        .      RCPI16
     .                                        .          .
9545 .                                        .          .        I18
     .                                        .          .          .
9553 .                                        .          .          .        I17C
     .                                        .          .          .          V
     .                                        .          .          .          V
9560 .                                        .          .          .      RCI17C
     .                                        .          .          .          .
9568 .                                        .          .          .          .        I17B
     .                                        .          .          .          .          V
     .                                        .          .          .          .          V
9574 .                                        .          .          .          .      RCI17B
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9582 .                                        .          .          .          .          .        I17A
     .                                        .          .          .          .          .          .
9588 .                                        .          .          .          .      CPI17A......................
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9592          .           .           .       RCI17A
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9600          .       CPI18.....................................
              .           V
              .           V
9604          .      RCPI18
              .           .
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9612          .           .         I19
              .           .           .
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9618          .       CPI19............
              .           V
              .           V
9622          .      RCPI19
              .           .
              .           .
9629          .           .         I20
              .           .           .
              .           .           .
9635          .       CPI20............
              .           V
              .           V
9639          .      RCPI20
              .           .
              .           .
9647          .           .         I21
              .           .           .
              .           .           .
9655          .       CPI21............
              .           V
              .           V
9659          .      RCPI21
              .           .
              .           .
9666          .           .         I22
              .           .           .
              .           .           .
9674          .       CPI22............
              .           .
              .           .
9678          .           .         A40
              .           .           V
              .           .           V
9684          .           .      RCPA40
              .           .           .
              .           .           .
9692          .           .           .         A42
              .           .           .           .
              .           .           .           .
9698          .           .       CPA42............
              .           .           .
              .           .           .
9701     A42RIV......................
             V
             V
9704     RCPA42
              .
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9712          .         A13
              .           V
              .           V
9720          .      RCPA13
              .           .
              .           .
9728          .           .         A39
              .           .           .
              .           .           .
9736          .       CPA39............
              .           V
              .           V
9740          .      RCPA39
              .           .
              .           .
9748          .           .         A43
              .           .           .
              .           .           .
9753          .       CPA43............
              .           V
              .           V
9757          .      RCPA43
              .           .
              .           .
9765          .           .         A44
              .           .           .
              .           .           .
9770          .       CPA44............
              .           .
              .           .
9773     A44RIV............
             V
             V
9777     RCPA44
              .
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9785          .         I24
              .           V
              .           V
9792          .      RCPI24
              .           .
              .           .
9800          .           .        I26B
              .           .           V
              .           .           V
9807          .           .      RCI26B
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9815            .          .          .        I26A
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9821            .      CPI26A.......................
                .          V
                .          V
9825            .      RCI26A
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9833            .          .         I28
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9839            .       CPI28............
                .          V
                .          V
9843            .      RCPI28
                .          .
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9851            .          .         I30
                .          .          .
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9857            .       CPI30............
                .          V
                .          V
9861            .      RCPI30
                .          .
                .          .
9869            .          .         I32
                .          .          .
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9877            .       CPI32............
                .          V
                .          V
9881            .      RCPI32
                .          .
                .          .
9889            .          .         I34
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9896            .       CPI34............
                .          V
                .          V
9900            .      RCPI34
                .          .
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9908            .          .         I36
                .          .          .
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9914            .       CPI36............
                .          .
                .          .
9917       I36RIV............
                V
                V
9920       RCPI36
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9928            .         A01
                .          .
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9938            .          .-------> DVA01A
9935            .       DA01A
                .          .
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9944            .          .-------> DVA01B
9941            .       DA01B
                .          V
                .          V
9948            .      RCPA01
                .          .
                .          .
9955            .          .         A11
                .          .          .
                .          .          .
9964            .       CPA11............
                .          .
                .          .
9970            .          .------->  DVA11
9967            .        DA11
                .          V
                .          V
9974            .      RCPA11
                .          .
                .          .
9981            .          .         A14
                .          .          .
                .          .          .
9989            .       CPA14............
                .          V
                .          V
9993            .      RCPA14
                .          .
                .          .
10000           .          .         A38
                .          .          V
                .          .          V
10008           .          .      RCPA38
                .          .          .
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10015           .          .          .         A37
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10022           .       CPA37.......................
                .          V
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10026            .      RCPA37
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                 .          .
10034            .          .        A45
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10040            .       CPA45...........
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                 .          .
10044            .          .        I23
                 .          .          V
                 .          .          V
10050            .          .      RCPI23
                 .          .          .
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10057            .          .          .        I25
                 .          .          .          .
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10063            .          .       CPI25...........
                 .          .          V
                 .          .          V
10067            .          .      RCPI25
                 .          .          .
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10075            .          .          .        I27
                 .          .          .          .
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10081            .          .       CPI27...........
                 .          .          V
                 .          .          V
10085            .          .      RCPI27
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10093            .          .          .        I29
                 .          .          .          .
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10099            .          .       CPI29...........
                 .          .          V
                 .          .          V
10103            .          .      RCPI29
                 .          .          .
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10111            .          .          .        I31
                 .          .          .          .
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10118            .          .       CPI31...........
                 .          .          V
                 .          .          V
10122            .          .      RCPI31
                 .          .          .
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10130            .          .          .        I33
                 .          .          .          .
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10136            .          .       CPI33...........
                 .          .          V
                 .          .          V
10140            .          .      RCPI33
                 .          .          .
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10147            .          .          .        I35
                 .          .          .          .
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10153            .          .       CPI35...........
                 .          .          V
                 .          .          V
10157            .          .      RCPI35
                 .          .          .
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10165            .          .          .        I37
                 .          .          .          .
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10171            .          .       CPI37...........
                 .          .          .
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10174       I37RIV........................
                 V
                 V
10177       RCPI37
                 .
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10185            .         A36
                 .          V
                 .          V
10191            .      RCPA36
                 .          .
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10198            .          .        A46
                 .          .          .
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10204            .       CPA46...........
                 .          .
                 .          .
10207       A46RIV............
                 V
                 V
10210       RCPA46
                 .
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10218            .         I38
                 .          V
                 .          V
10225            .      RCPI38
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10233          .           .         I39
               .           .           .
               .           .           .
10239          .      CPI39............
               .           V
               .           V
10243          .     RCPI39
               .           .
               .           .
10251          .           .         I40
               .           .           .
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10257          .      CPI40............
               .           V
               .           V
10261          .     RCPI40
               .           .
               .           .
10269          .           .         I41
               .           .           .
               .           .           .
10275          .      CPI41............
               .           V
               .           V
10279          .     RCPI41
               .           .
               .           .
10287          .           .         I42
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               .           .           .
10294          .      CPI42............
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               .           V
10298          .     RCPI42
               .           .
               .           .
10306          .           .         I43
               .           .           .
               .           .           .
10312          .      CPI43............
               .           V
               .           V
10316          .     RCPI43
               .           .
               .           .
10323          .           .       I44B
               .           .         V
               .           .         V
10330          .           .     RCI44B
               .           .           .
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10337          .           .           .        I44A
               .           .           .          .
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10343          .           .     CPI44A............
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               .           .           V
10347          .           .     RCI44A
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               .           .           .
10355          .           .           .         I45
               .           .           .          .
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10361          .           .      CPI45............
               .           .           V
               .           .           V
10365          .           .     RCPI45
               .           .           .
               .           .           .
10373          .           .           .         I46
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10379          .           .      CPI46............
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10383          .           .     RCPI46
               .           .           .
               .           .           .
10391          .           .           .         I47
               .           .           .          .
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10397          .           .      CPI47............
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               .           .           V
10401          .           .     RCPI47
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               .           .           .
10409          .           .           .         I48
               .           .           .          .
               .           .           .          .
10415          .           .      CPI48............
               .           .           V
               .           .           V
10419          .           .     RCPI48
               .           .           .
               .           .           .
10427          .           .           .         I49
               .           .           .          .
               .           .           .          .
10433          .      CPI49........................
               .           V
               .           V
10437          .     RCPI49
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               .           .
10445          .           .         I61
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                 .           .           V
                 .           .           V
10451            .           .      RCPI61
                 .           .           .
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10459            .           .           .         I50
                 .           .           .           .
                 .           .           .           .
10464            .       CPI50.......................
                 .           .
                 .           .
10467       I50RIV............
                 V
                 V
10470       RCPI50
                 .
                 .
10478            .         I62
                 .           .
                 .           .
10483       I62RIV............
                 V
                 V
10486       RCPI62
                 .
                 .
10495            .           .<-------   DVA11
10493            .       DRA11
                 .           V
                 .           V
10497            .       RDA11
                 .           .
                 .           .
10504            .           .         A15
                 .           .           .
                 .           .           .
10511            .       CPA15............
                 .           .
                 .           .
10515            .           .         A16
                 .           .           .
                 .           .           .
10522            .       CPA16............
                 .           V
                 .           V
10526            .      RCPA16
                 .           .
                 .           .
10534            .           .           .<-------  DVA01A
10532            .           .      DRA01A
                 .           .           V
                 .           .           V
10536            .           .      RDA01A
                 .           .           .
                 .           .           .
10544            .           .           .         A03
                 .           .           .           .
                 .           .           .           .
10550            .           .       CPA03............
                 .           .           V
                 .           .           V
10553            .           .      RCPA03
                 .           .           .
                 .           .           .
10561            .           .           .         A65
                 .           .           .           .
                 .           .           .           .
10569            .           .       CPA65............
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                 .           .           V
10573            .           .      RCPA65
                 .           .           .
                 .           .           .
10580            .           .           .         A64
                 .           .           .           .
                 .           .           .           .
10586            .           .       CPA64............
                 .           .           .
                 .           .           .
10593            .           .           .------->   DVA64
10590            .           .        DA64
                 .           .           V
                 .           .           V
10597            .           .      RCPA64
                 .           .           .
                 .           .           .
10605            .           .           .           .<-------  DVA01B
10603            .           .           .      DRA01B
                 .           .           .           V
                 .           .           .           V
10607            .           .           .      RDA01B
                 .           .           .           .
                 .           .           .           .
10614            .           .           .           .         A10
                 .           .           .           .           .
                 .           .           .           .           .
10622            .           .       CPA10.......................
                 .           .           .
                 .           .           .
10629            .           .           .------->   DVA10
10626            .           .        DA10
                 .           .           V
                 .           .           V
10633            .           .      RCPA10
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10640          .           .           .         A34
               .           .           .           .
               .           .           .           .
10646          .           .      CPA34............
               .           .          V
               .           .          V
10650          .           .     RCPA34
               .           .           .
               .           .           .
10657          .           .           .         A35
               .           .           .           .
               .           .           .           .
10663          .      CPA35........................
               .          V
               .          V
10667          .     RCPA35
               .           .
               .           .
10674          .           .        A47
               .           .           .
               .           .           .
10681          .      CPA47............
               .          V
               .          V
10685          .     RCPA47
               .           .
               .           .
10692          .           .        A48
               .           .          V
               .           .          V
10698          .           .     RCPA48
               .           .           .
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10705          .           .           .         A49
               .           .           .           .
               .           .           .           .
10711          .      CPA49........................
               .           .
               .           .
10714     A49RIV............
               V
               V
10718     RCPA49
               .
               .
10726          .        A04
               .           .
               .           .
10737          .           .-------->   DVA04
10734          .       DA04
               .          V
               .          V
10740          .     RCPA04
               .           .
               .           .
10749          .           .        A07
               .           .           .
               .           .           .
10757          .      CPA07............
               .           .
               .           .
10764          .           .-------->   DVA07
10761          .       DA07
               .          V
               .          V
10768          .     RCPA07
               .           .
               .           .
10775          .           .        A09
               .           .           .
               .           .           .
10786          .           .           .-------->   DVA09
10783          .           .       DA09
               .           .          V
               .           .          V
10790          .           .     RCPA09
               .           .           .
               .           .           .
10797          .           .           .         A08
               .           .           .           .
               .           .           .           .
10806          .           .      CPA08............
               .           .           .
               .           .           .
10813          .           .           .-------->   DVA08
10810          .           .       DA08
               .           .          V
               .           .          V
10817          .           .     RCPA08
               .           .           .
               .           .           .
10824          .           .           .         A21
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10832          .      CPA21........................
               .           .
               .           .
10839          .           .-------->   DVA21
10836          .       DA21
               .          V
               .          V
10843          .     RCPA21
               .           .
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10850          .           .        A20
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10857           .       CPA20............
                .           .
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10864           .           .-------->   DVA20
10861           .        DA20
                .           V
                .           V
10868           .      RCPA20
                .           .
                .           .
10875           .           .         A51
                .           .          .
                .           .          .
10882           .      CPA51A............
                .           .
                .           .
10887           .           .          .<-------   DVA09
10885           .           .      DRA09
                .           .          V
                .           .          V
10889           .           .      RDA09
                .           .          .
                .           .          .
10897           .           .          .          .<-------   DVA64
10895           .           .          .      DRA64
                .           .          .          V
                .           .          .          V
10899           .           .          .      RDA64
                .           .          .          .
                .           .          .          .
10906           .           .          .          .         A18
                .           .          .          .           .
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10914           .           .      CPA18........................
                .           .          .
                .           .          .
10921           .           .          .-------->   DVA18
10918           .           .       DA18
                .           .          V
                .           .          V
10925           .           .     RCPA18
                .           .          .
                .           .          .
10933           .           .          .          .<-------   DVA08
10931           .           .          .      DRA08
                .           .          .          V
                .           .          .          V
10935           .           .          .      RDA08
                .           .          .          .
                .           .          .          .
10942           .           .          .          .         A19
                .           .          .          .           .
                .           .          .          .           .
10949           .           .          .     CPA19A............
                .           .          .          .
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10953           .           .      CPA19............
                .           .          V
                .           .          V
10957           .           .     RCPA19
                .           .          .
                .           .          .
10965           .           .          .         A63
                .           .          .          .
                .           .          .          .
10971           .           .     CPA63A............
                .           .          .
                .           .          .
10976           .           .          .          .<-------   DVA10
10974           .           .          .      DRA10
                .           .          .          V
                .           .          .          V
10978           .           .          .      RDA10
                .           .          .          .
                .           .          .          .
10985           .           .          .          .         A17
                .           .          .          .           .
                .           .          .          .           .
10993           .           .          .      CPA17............
                .           .          .          .
                .           .          .          .
10998           .           .          .          .          .<-------   DVA18
10996           .           .          .          .      DRA18
                .           .          .          .          V
                .           .          .          .          V
11000           .           .          .          .      RDA18
                .           .          .          .          .
                .           .          .          .          .
11007           .           .          .          .          .         A33
                .           .          .          .          .           .
                .           .          .          .          .           .
11013           .           .          .          .     CPA33A............
                .           .          .          .          .
                .           .          .          .          .
11017           .           .          .      CPA33............
                .           .          .          V
                .           .          .          V
11021           .           .          .     RCPA33
                .           .          .          .
                .           .          .          .
11029           .           .      CPA63............
                .           .          V
                .           .          V
11033           .           .     RCPA63
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11041          .           .           .        A50
               .           .           .          .
               .           .           .          .
11050          .           .      CPA50...........
               .           .          V
               .           .          V
11054          .           .     RCPA50
               .           .           .
               .           .           .
11061          .      CPA51...........
               .           .
               .           .
11064     A51RIV...........
               V
               V
11067     RCPA51
               .
               .
11075          .        A05
               .          V
               .          V
11083          .     RCPA05
               .           .
               .           .
11090          .           .        A23
               .           .          V
               .           .          V
11098          .           .     RCPA23
               .           .           .
               .           .           .
11105          .           .           .        A25
               .           .           .          V
               .           .           .          V
11113          .           .           .     RCPA25
               .           .           .          .
               .           .           .          .
11120          .           .           .          .        A26
               .           .           .          .          .
               .           .           .          .          .
11127          .      CPA26.................................
               .        V
               .        V
11131          .     RCPA26
               .           .
               .           .
11138          .           .        A27
               .           .          .
               .           .          .
11145          .     CPA27A...........
               .           .
               .           .
11149          .           .        A28
               .           .          V
               .           .          V
11157          .           .     RCPA28
               .           .          .
               .           .          .
11163          .      CPA27...........
               .        V
               .        V
11167          .     RCPA27
               .           .
               .           .
11174          .           .        A29
               .           .          .
               .           .          .
11182          .      CPA29...........
               .           .
               .           .
11187          .           .          .<-------   DVA04
11185          .           .     DRA04
               .           .          V
               .           .          V
11189          .           .     RDA04
               .           .           .
               .           .           .
11196          .           .           .        A06
               .           .           .          .
               .           .           .          .
11205          .           .     CPA06...........
               .           .          V
               .           .          V
11209          .           .     RCPA06
               .           .           .
               .           .           .
11217          .           .           .          .<-------   DVA07
11215          .           .           .     DRA07
               .           .           .          V
               .           .           .          V
11219          .           .           .     RDA07
               .           .           .           .
               .           .           .           .
11226          .           .           .           .        A22
               .           .           .           .          .
               .           .           .           .          .
11234          .           .           .     CPA22............
               .           .           .          V
               .           .           .          V
11238          .           .           .     RCPA22
               .           .           .           .
               .           .           .           .
11245          .           .           .           .        A24
               .           .           .           .          .
               .           .           .           .          .
11254          .           .     CPA24.........................
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                 .          .          V
                 .          .          V
11258            .          .     RCPA24
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11265            .          .          .        A30
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                 .          .          .          .
11274            .          .     CPA30A...........
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                 .          .          .
11278            .      CPA30...........
                 .          V
                 .          V
11282            .     RCPA30
                 .          .
                 .          .
11289            .          .        A52
                 .          .          .
                 .          .          .
11296            .     CPA52A...........
                 .          .
                 .          .
11300            .          .        A31
                 .          .          V
                 .          .          V
11308            .          .     RCPA31
                 .          .          .
                 .          .          .
11316            .          .          .          .<-------   DVA21
11314            .          .          .      DRA21
                 .          .          .          V
                 .          .          .          V
11318            .          .          .      RDA21
                 .          .          .          .
                 .          .          .          .
11326            .          .          .          .          .<-------   DVA20
11324            .          .          .          .      DRA20
                 .          .          .          .          V
                 .          .          .          .          V
11327            .          .          .          .      RDA20
                 .          .          .          .          .
                 .          .          .          .          .
11334            .          .          .          .          .        A32
                 .          .          .          .          .          .
                 .          .          .          .          .          .
11342            .          .          .     CPA32A......................
                 .          .          .          .
                 .          .          .          .
11346            .          .      CPA32...........
                 .          .          V
                 .          .          V
11350            .          .     RCPA32
                 .          .          .
                 .          .          .
11356            .      CPA52...........
                 .          V
                 .          V
11360            .     RCPA52
                 .          .
                 .          .
11367            .          .        A53
                 .          .          .
                 .          .          .
11375            .          .          .        A54
                 .          .          .          .
                 .          .          .          .
11382            .          .      CPA54...........
                 .          .          V
                 .          .          V
11386            .          .     RCPA54
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11393            .          .          .        A55
                 .          .          .          .
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11400            .          .     CPA55A...........
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11404            .      CPA55...........
                 .          V
                 .          V
11408            .     RCPA55
                 .          .
                 .          .
11415            .          .        A56
                 .          .          .
                 .          .          .
11422            .      CPA56...........
                 .          .
                 .          .
11425       A56RIV...........
                 V
                 V
11428       RCPA56
                 .
                 .
11436            .        I51
                 .          V
                 .          V
11442            .     RCPI51
                 .          .
                 .          .
11450            .          .        I53
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11455          .      CPI53............
               .          V
               .          V
11459          .     RCPI53
               .          .
               .          .
11467          .          .        I55
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               .          .          .
11472          .      CPI55............
               .          V
               .          V
11476          .     RCPI55
               .          .
               .          .
11484          .          .        I57
               .          .          .
               .          .          .
11489          .      CPI57............
               .          V
               .          V
11493          .     RCPI57
               .          .
               .          .
11501          .          .        I72
               .          .          .
               .          .          .
11506          .      CPI72............
               .          V
               .          V
11510          .     RCPI72
               .          .
               .          .
11518          .          .       I60C
               .          .          .
               .          .          .
11523          .     CPI60C............
               .          .
               .          .
11527          .          .        I59
               .          .          V
               .          .          V
11533          .          .      RCPI59
               .          .          .
               .          .          .
11541          .          .          .       I60B
               .          .          .         V
               .          .          .         V
11547          .          .          .      RCI60B
               .          .          .          .
               .          .          .          .
11555          .          .          .          .        I60A
               .          .          .          .          .
               .          .          .          .          .
11560          .     CPI60B...................................
               .          .
               .          .
11563          .          .        I52
               .          .          V
               .          .          V
11570          .          .      RCPI52
               .          .          .
               .          .          .
11578          .          .          .        I54
               .          .          .          .
               .          .          .          .
11583          .          .       CPI54............
               .          .          V
               .          .          V
11587          .          .      RCPI54
               .          .          .
               .          .          .
11595          .          .          .        I56
               .          .          .          .
               .          .          .          .
11600          .          .       CPI56............
               .          .          V
               .          .          V
11604          .          .      RCPI56
               .          .          .
               .          .          .
11611          .          .          .       I58B
               .          .          .          .
               .          .          .          .
11616          .          .      CPI58B............
               .          .          V
               .          .          V
11620          .          .      RCI58B
               .          .          .
               .          .          .
11627          .          .          .      I58A
               .          .          .          .
               .          .          .          .
11632          .          .      CPI58A............
               .          .          V
               .          .          V
11636          .          .      RCI58A
               .          .          .
               .          .          .
11644          .          .          .        I64
               .          .          .          .
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11650          .          .       CPI64............
               .          .          V
               .          .          V
11654          .          .      RCPI64
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11661           .          .          .        I65
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11666           .          .      CPI65...........
                .          .          .
                .          .          .
11669           .     CPI60A...........
                .          V
                .          V
11673           .     RCI60A
                .          .
                .          .
11680           .          .        I66
                .          .          .
                .          .          .
11685           .      CPI66...........
                .          V
                .          V
11689           .     RCPI66
                .          .
                .          .
11696           .          .        I67
                .          .          .
                .          .          .
11702           .          .          .        I68
                .          .          .          .
                .          .          .          .
11708           .          .          .          .        I69
                .          .          .          .          .
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11713           .      CPI67..................................
                .          V
                .          V
11717           .     RCPI67
                .          .
                .          .
11724           .          .        I70
                .          .          .
                .          .          .
11730           .          .          .        I71
                .          .          .          .
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11735           .      CPI70......................
                .          V
                .          V
11739           .     RCPI71
                .          .
                .          .
11746           .          .        I63
                .          .          .
                .          .          .
11751           .      CPI63...........
                .          .
                .          .
11754      I63RIV...........
                V
                V
11757      RCPI63
                .
                .
11765           .        A57
                .          .
                .          .
11771      A57RIV...........
                V
                V
11774      RCPA57
                .
                .
11782           .        A58
                .          .
                .          .
11789           .          .        A59
                .          .          .
                .          .          .
11794           .      CPA59...........
                .          V
                .          V
11798           .     RCPA59
                .          .
                .          .
11805           .          .        A60
                .          .          .
                .          .          .
11810           .      CPA60...........
                .          .
                .          .
11813      A60RIV...........
                V
                V
11818      RCPA60
                .
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11825           .        A61
                .          .
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11832           .          .        A62
                .          .          .
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11837      A62RIV......................
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1****************************************                                    ****************************************
*                                      *                                    *                                      *
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*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   05OCT12  TIME  13:52:38   *
*                                       *
*****************************************

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

WATERMAN WASH - Contract # FCD 2006C029

Prepared by:
URS Corporation
7720 N. 16th Street, Suite 100
Phoenix, Arizona 85020

01/09/09 Filename: With Railroad.IH1
Last Revised: 04/25/11

1. The following model is modeled with the Union Pacific railroad embankment located adjacent to SR-238.
2. The storm used was 100-year,6-hour.
3. S-graph was the unit hydrograph.
4. Time step of 10 minutes.
5. A point rainfall of 2.668 inches from NOAA 14 with Maricopa County Areal reduction.
6. Green-Ampt loss methods were used. Normal depth Channel routing.
7. The sub-basin parameters were generated using FCDMC's DDMSW software.
8. The contributing area was calculated by estimating the amount of flow in each routing reach.

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

   IT          HYDROGRAPH TIME DATA
                      NMIN         10  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      3    0  ENDING DATE
                    NDTIME       0150  ENDING TIME
                     ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL    0.17 HOURS
                     TOTAL TIME BASE   49.83 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

25 JD          INDEX STORM NO. 1
                     STRM       2.67  PRECIPITATION DEPTH
                     TRDA       0.00  TRANSPOSITION DRAINAGE AREA

26 PI            PRECIPITATION PATTERN
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                   0.05      0.11      0.21      0.30      0.05      0.03      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01

29 JD          INDEX STORM NO. 2
                     STRM       2.65  PRECIPITATION DEPTH
                     TRDA       0.50  TRANSPOSITION DRAINAGE AREA

30 PI            PRECIPITATION PATTERN
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                   0.05      0.11      0.21      0.30      0.05      0.03      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01

33 JD          INDEX STORM NO. 3
                     STRM       2.60  PRECIPITATION DEPTH
                     TRDA       2.80  TRANSPOSITION DRAINAGE AREA

34 PI            PRECIPITATION PATTERN
                   0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.03      0.04
                   0.06      0.13      0.15      0.16      0.10      0.07      0.04      0.03      0.02      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01

37 JD          INDEX STORM NO. 4
                     STRM       2.46  PRECIPITATION DEPTH
                     TRDA      16.00  TRANSPOSITION DRAINAGE AREA

38 PI            PRECIPITATION PATTERN
                   0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.03      0.04
                   0.05      0.11      0.12      0.13      0.08      0.07      0.05      0.03      0.03      0.02
                   0.01      0.01      0.01      0.01      0.01      0.01

41 JD          INDEX STORM NO. 5
                     STRM       2.16  PRECIPITATION DEPTH
                     TRDA      90.00  TRANSPOSITION DRAINAGE AREA

42 PI            PRECIPITATION PATTERN
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
```

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0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.03      0.04
0.06      0.09      0.10      0.11      0.08      0.06      0.05      0.03      0.03      0.03
0.01      0.01      0.01      0.01      0.01      0.01
WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
1
```

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	C04	284.	4.17	16.	4.	2.	0.23		
+	ROUTED TO	RCPC04	165.	4.50	16.	4.	2.	0.23		
+	HYDROGRAPH AT	C12	240.	4.33	15.	4.	2.	0.20		
+	2 COMBINED AT	CPC12	326.	4.33	31.	8.	4.	0.44		
+	DIVERSION TO	DVC12	167.	4.33	16.	4.	2.	0.44		
+	HYDROGRAPH AT	DC12	159.	4.33	15.	4.	2.	0.44		
+	ROUTED TO	RCPC12	115.	4.67	15.	4.	2.	0.44		
+	HYDROGRAPH AT	C13	476.	4.50	40.	10.	5.	0.52		
+	2 COMBINED AT	CPC13	477.	4.50	47.	12.	6.	0.73		
+	DIVERSION TO	DVC13	346.	4.50	41.	10.	5.	0.73		
+	HYDROGRAPH AT	DC13	132.	4.50	7.	2.	1.	0.73		
+	ROUTED TO	RCPC13	100.	4.50	7.	2.	1.	0.73		
+	HYDROGRAPH AT	C11	254.	4.33	22.	5.	3.	0.29		
+	DIVERSION TO	DVC11	118.	4.33	10.	2.	1.	0.29		
+	HYDROGRAPH AT	DC11	136.	4.33	12.	3.	1.	0.29		
+	ROUTED TO	RCPC11	97.	4.83	12.	3.	1.	0.29		
+	HYDROGRAPH AT	DRC12	167.	4.33	16.	4.	2.	0.44		
+	ROUTED TO	RDC12	103.	5.00	16.	4.	2.	0.44		
+	HYDROGRAPH AT	C31	126.	4.33	8.	2.	1.	0.10		
+	4 COMBINED AT	CPC31	246.	4.67	38.	10.	5.	0.65		
+	DIVERSION TO	DVC31	80.	4.67	17.	4.	2.	0.65		
+	HYDROGRAPH AT	DC31	165.	4.67	21.	5.	3.	0.65		
+	ROUTED TO	RCPC31	167.	4.67	21.	5.	3.	0.65		
+	HYDROGRAPH AT	DRC11	118.	4.33	10.	2.	1.	0.29		
+	ROUTED TO	RDC11	65.	5.17	10.	2.	1.	0.29		
+	HYDROGRAPH AT	C14	232.	4.33	17.	4.	2.	0.22		
+	3 COMBINED AT	CPC14	264.	4.50	41.	10.	5.	0.77		
+	DIVERSION TO	DVC14	182.	4.50	33.	8.	4.	0.77		
+	HYDROGRAPH AT	DC14	81.	4.50	8.	2.	1.	0.77		
+	ROUTED TO	RCPC14	63.	4.67	8.	2.	1.	0.77		
+	HYDROGRAPH AT	C05	282.	4.17	16.	4.	2.	0.23		

+	ROUTED TO	RCPC05	107.	5.00	16.	4.	2.	0.23
+	HYDROGRAPH AT	C03	351.	4.33	21.	5.	2.	0.29
+	DIVERSION TO	DVC03	189.	4.33	11.	3.	1.	0.29
+	HYDROGRAPH AT	DC03	161.	4.33	9.	2.	1.	0.29
+	ROUTED TO	RCPC03	81.	4.50	9.	2.	1.	0.29
+	HYDROGRAPH AT	C09	158.	4.33	10.	3.	1.	0.14
+	2 COMBINED AT	CPC09	196.	4.33	20.	5.	2.	0.43
+	DIVERSION TO	DVC09	91.	4.33	9.	2.	1.	0.43
+	HYDROGRAPH AT	DC09	105.	4.33	10.	3.	1.	0.43
+	ROUTED TO	RCPC09	81.	4.67	10.	3.	1.	0.43
+	HYDROGRAPH AT	C15	148.	4.33	9.	2.	1.	0.09
+	2 COMBINED AT	CPC15	170.	4.33	20.	5.	2.	0.24
+	DIVERSION TO	DVC15	162.	4.33	20.	5.	2.	0.24
+	HYDROGRAPH AT	DC15	8.	4.33	0.	0.	0.	0.24
+	ROUTED TO	RCPC15	3.	4.83	0.	0.	0.	0.24
+	HYDROGRAPH AT	C10	439.	4.50	41.	10.	5.	0.55
+	4 COMBINED AT	CPC10	373.	4.50	49.	12.	6.	1.00
+	DIVERSION TO	DVC10	53.	4.50	14.	4.	2.	1.00
+	HYDROGRAPH AT	DC10	320.	4.50	34.	9.	4.	1.00
+	ROUTED TO	RCPC10	257.	4.83	34.	9.	4.	1.00
+	HYDROGRAPH AT	DRC03	189.	4.33	11.	3.	1.	0.29
+	ROUTED TO	RDC03	103.	4.67	11.	3.	1.	0.29
+	HYDROGRAPH AT	C06	365.	4.33	27.	7.	3.	0.35
+	2 COMBINED AT	CPC06	383.	4.33	38.	9.	5.	0.51
+	DIVERSION TO	DVC06	191.	4.33	19.	5.	2.	0.51
+	HYDROGRAPH AT	DC06	192.	4.33	19.	5.	2.	0.51
+	ROUTED TO	RCPC06	184.	4.50	19.	5.	2.	0.51
+	HYDROGRAPH AT	DRC09	91.	4.33	9.	2.	1.	0.43
+	ROUTED TO	RDC09	75.	4.50	9.	2.	1.	0.43
+	HYDROGRAPH AT	C16	154.	4.33	10.	3.	1.	0.13
+	3 COMBINED AT	CPC16	339.	4.50	38.	10.	5.	0.51
+	ROUTED TO	RCPC16	239.	5.00	38.	10.	5.	0.51
+	HYDROGRAPH AT	DRC06	191.	4.33	19.	5.	2.	0.51
+	ROUTED TO	RDC06	164.	4.50	19.	5.	2.	0.51
+	HYDROGRAPH AT	C18	140.	4.17	7.	2.	1.	0.08
	2 COMBINED AT							

+		CPC18	176.	4.33	26.	7.	3.	0.33
+	DIVERSION TO	DVC18	21.	4.33	2.	0.	0.	0.33
+	HYDROGRAPH AT	DC18	156.	4.33	24.	6.	3.	0.33
+	ROUTED TO	RCPC18	149.	4.50	24.	6.	3.	0.33
+	HYDROGRAPH AT	C17	165.	4.33	10.	3.	1.	0.12
+	2 COMBINED AT	CPC17	297.	4.33	35.	9.	4.	0.42
+	DIVERSION TO	DVC17	271.	4.33	33.	8.	4.	0.42
+	HYDROGRAPH AT	DC17	26.	4.33	1.	0.	0.	0.42
+	ROUTED TO	RCPC17	11.	4.67	1.	0.	0.	0.42
+	HYDROGRAPH AT	DRC15	162.	4.33	20.	5.	2.	0.24
+	ROUTED TO	RDC15	113.	4.67	19.	5.	2.	0.24
+	HYDROGRAPH AT	C30	363.	4.33	23.	6.	3.	0.23
+	5 COMBINED AT	CPC30	289.	4.67	60.	15.	7.	1.99
+	DIVERSION TO	DVC30	224.	4.67	51.	13.	6.	1.99
+	HYDROGRAPH AT	DC30	65.	4.67	9.	2.	1.	1.99
+	ROUTED TO	RCPC30	55.	5.00	9.	2.	1.	1.99
+	HYDROGRAPH AT	C02	179.	4.17	9.	2.	1.	0.13
+	ROUTED TO	RCPC02	60.	4.83	9.	2.	1.	0.13
+	HYDROGRAPH AT	C01	513.	4.17	30.	8.	4.	0.45
+	ROUTED TO	RCPC01	255.	4.67	30.	8.	4.	0.45
+	HYDROGRAPH AT	C08	599.	4.50	51.	13.	6.	0.87
+	ROUTED TO	RCPC08	462.	4.67	51.	13.	6.	0.87
+	HYDROGRAPH AT	C07	662.	4.50	56.	14.	7.	1.18
+	4 COMBINED AT	CPC07	547.	4.50	64.	16.	8.	2.41
+	DIVERSION TO	DVC07	163.	4.50	18.	4.	2.	2.41
+	HYDROGRAPH AT	DC07	384.	4.50	46.	12.	6.	2.41
+	ROUTED TO	RCPC07	306.	4.67	46.	12.	6.	2.41
+	HYDROGRAPH AT	DRC18	21.	4.33	2.	0.	0.	0.33
+	ROUTED TO	RDC18	13.	4.67	2.	0.	0.	0.33
+	HYDROGRAPH AT	C19	368.	4.33	23.	6.	3.	0.26
+	3 COMBINED AT	CPC19	382.	4.67	68.	17.	8.	2.08
+	DIVERSION TO	DVC19	227.	4.50	42.	11.	5.	2.08
+	HYDROGRAPH AT	DC19	156.	4.67	25.	6.	3.	2.08
+	ROUTED TO	RCPC19	132.	4.83	25.	6.	3.	2.08
+	HYDROGRAPH AT	DRC17	271.	4.33	33.	8.	4.	0.42
+	ROUTED TO	RDC17	189.	4.83	33.	8.	4.	0.42

+	HYDROGRAPH AT	C29	494.	4.33	32.	8.	4.	0.34
+	4 COMBINED AT	CPC29	234.	4.50	43.	11.	5.	3.95
+	DIVERSION TO	DVC29	88.	4.50	20.	5.	2.	3.95
+	HYDROGRAPH AT	DC29	146.	4.50	23.	6.	3.	3.95
+	ROUTED TO	RCPC29	151.	4.50	23.	6.	3.	3.95
+	HYDROGRAPH AT	C28	114.	4.17	5.	1.	1.	0.05
+	2 COMBINED AT	CPC28	186.	4.50	31.	8.	4.	2.78
+	DIVERSION TO	DVC28	117.	4.50	24.	6.	3.	2.78
+	HYDROGRAPH AT	DC28	69.	4.50	7.	2.	1.	2.78
+	ROUTED TO	RCPC28	49.	4.67	7.	2.	1.	2.78
+	HYDROGRAPH AT	DRC19	227.	4.50	42.	11.	5.	2.08
+	ROUTED TO	RDC19	198.	4.83	42.	11.	5.	2.08
+	HYDROGRAPH AT	C27	307.	4.33	19.	5.	2.	0.21
+	3 COMBINED AT	CPC27	202.	4.83	51.	13.	6.	2.82
+	DIVERSION TO	DVC27	128.	4.83	39.	10.	5.	2.82
+	HYDROGRAPH AT	DC27	58.	4.83	9.	2.	1.	2.82
+	ROUTED TO	RCPC27	50.	5.00	9.	2.	1.	2.82
+	HYDROGRAPH AT	DRC07	163.	4.50	18.	4.	2.	2.41
+	ROUTED TO	RDC07	66.	5.17	17.	4.	2.	2.41
+	HYDROGRAPH AT	C21	593.	4.17	36.	9.	4.	0.56
+	DIVERSION TO	DVC21	385.	4.17	25.	6.	3.	0.56
+	HYDROGRAPH AT	DC21	209.	4.17	11.	3.	1.	0.56
+	ROUTED TO	RCPC21	111.	4.50	11.	3.	1.	0.56
+	HYDROGRAPH AT	C20	431.	4.50	37.	9.	4.	0.46
+	4 COMBINED AT	CPC20	162.	4.50	33.	8.	4.	3.26
+	DIVERSION TO	DVC20	158.	4.50	33.	8.	4.	3.26
+	HYDROGRAPH AT	DC20	5.	4.50	0.	0.	0.	3.26
+	ROUTED TO	RCPC20	1.	4.67	0.	0.	0.	3.26
+	HYDROGRAPH AT	C26	129.	4.33	8.	2.	1.	0.10
+	2 COMBINED AT	CPC26	173.	5.00	37.	9.	4.	0.79
+	DIVERSION TO	DVC26	143.	5.00	34.	8.	4.	0.79
+	HYDROGRAPH AT	DC26	30.	5.00	3.	1.	0.	0.79
+	ROUTED TO	RCPC26	18.	5.50	3.	1.	0.	0.79
+	HYDROGRAPH AT	DRC21	385.	4.17	25.	6.	3.	0.56
+	ROUTED TO	RDC21	208.	4.67	25.	6.	3.	0.56

+	HYDROGRAPH AT	C23	590.	4.17	36.	9.	4.	0.50
+	ROUTED TO	RCPC23	493.	4.33	36.	9.	4.	0.50
+	HYDROGRAPH AT	C22	757.	4.33	49.	12.	6.	0.80
+	4 COMBINED AT	CPC22	695.	4.33	61.	15.	7.	1.69
+	HYDROGRAPH AT	C24	208.	4.33	13.	3.	2.	0.16
+	2 COMBINED AT	CPC24	734.	4.33	62.	16.	8.	1.85
+	ROUTED TO	PNDC01	561.	4.50	62.	16.	8.	1.85
+	DIVERSION TO	DVC24	561.	4.50	62.	16.	8.	1.85
+	HYDROGRAPH AT	DC24	0.	0.00	0.	0.	0.	1.85
+	ROUTED TO	RCPC24	0.	0.00	0.	0.	0.	1.85
+	HYDROGRAPH AT	C25	131.	4.17	6.	1.	1.	0.08
+	2 COMBINED AT	CPC25	131.	4.17	6.	1.	1.	0.08
+	ROUTED TO	PNDC02	73.	4.33	6.	1.	1.	0.08
+	DIVERSION TO	DVC25	73.	4.33	6.	1.	1.	0.08
+	HYDROGRAPH AT	DC25	0.	4.33	0.	0.	0.	0.08
+	ROUTED TO	RCPC25	0.	4.50	0.	0.	0.	0.08
+	HYDROGRAPH AT	D02	629.	4.33	38.	9.	5.	0.50
+	DIVERSION TO	DVD02	129.	4.33	6.	1.	1.	0.50
+	HYDROGRAPH AT	DD02	499.	4.33	32.	8.	4.	0.50
+	ROUTED TO	RCPD02	414.	4.33	32.	8.	4.	0.50
+	HYDROGRAPH AT	D03	353.	4.33	24.	6.	3.	0.34
+	2 COMBINED AT	CPD03	632.	4.33	47.	12.	6.	0.77
+	DIVERSION TO	DVD03	377.	4.33	27.	7.	3.	0.77
+	HYDROGRAPH AT	DD03	255.	4.33	19.	5.	2.	0.77
+	ROUTED TO	RCPD03	177.	4.50	19.	5.	2.	0.77
+	HYDROGRAPH AT	D04	192.	4.33	13.	3.	2.	0.20
+	2 COMBINED AT	CPD04	340.	4.50	36.	9.	4.	0.51
+	DIVERSION TO	DVD04	190.	4.50	20.	5.	2.	0.51
+	HYDROGRAPH AT	DD04	150.	4.50	15.	4.	2.	0.51
+	ROUTED TO	RCPD04	99.	5.00	15.	4.	2.	0.51
+	HYDROGRAPH AT	DRD02	129.	4.33	6.	1.	1.	0.50
+	ROUTED TO	RDD02	27.	5.50	6.	1.	1.	0.50
+	HYDROGRAPH AT	DRD03	377.	4.33	27.	7.	3.	0.77
+	ROUTED TO	RDD03	190.	5.00	27.	7.	3.	0.77
+	HYDROGRAPH AT	D01	582.	4.50	63.	16.	8.	2.43
	4 COMBINED AT							

+		CPD01	457.	4.50	63.	16.	8.	3.17
+	DIVERSION TO	DVD01	370.	4.50	55.	14.	7.	3.17
+	HYDROGRAPH AT	DD01	87.	4.50	7.	2.	1.	3.17
+	ROUTED TO	RDD01	19.	5.83	7.	2.	1.	3.17
+	HYDROGRAPH AT	D09	519.	4.50	44.	11.	5.	0.54
+	3 COMBINED AT	CPD09	292.	4.50	50.	13.	6.	1.75
+	DIVERSION TO	DVD09	291.	4.50	50.	13.	6.	1.75
+	HYDROGRAPH AT	DD09	1.	4.50	0.	0.	0.	1.75
+	ROUTED TO	RCPD09	0.	4.67	0.	0.	0.	1.75
+	HYDROGRAPH AT	D12	163.	4.33	10.	2.	1.	0.13
+	2 COMBINED AT	CPD12	163.	4.33	10.	2.	1.	0.14
+	DIVERSION TO	DVD12	158.	4.33	10.	2.	1.	0.14
+	HYDROGRAPH AT	DD12	5.	4.33	0.	0.	0.	0.14
+	ROUTED TO	RCPD12	2.	4.50	0.	0.	0.	0.14
+	HYDROGRAPH AT	DRD01	370.	4.50	55.	14.	7.	3.17
+	ROUTED TO	RCPD01	250.	5.33	55.	14.	7.	3.17
+	HYDROGRAPH AT	DRD04	190.	4.50	20.	5.	2.	0.51
+	ROUTED TO	RDD04	86.	6.33	20.	5.	2.	0.51
+	HYDROGRAPH AT	D05	493.	4.83	67.	17.	8.	1.93
+	3 COMBINED AT	CPD05	345.	4.83	89.	23.	11.	4.18
+	DIVERSION TO	DVD05	9.	4.83	2.	0.	0.	4.18
+	HYDROGRAPH AT	DD05	336.	4.83	87.	22.	11.	4.18
+	ROUTED TO	RDD05	299.	5.33	86.	22.	11.	4.18
+	HYDROGRAPH AT	D13	777.	4.33	56.	14.	7.	0.56
+	3 COMBINED AT	CPD13	357.	4.33	114.	29.	14.	4.58
+	DIVERSION TO	DVD13	357.	4.33	114.	29.	14.	4.58
+	HYDROGRAPH AT	DD13	0.	0.00	0.	0.	0.	4.58
+	ROUTED TO	RCPD13	0.	0.00	0.	0.	0.	4.58
+	HYDROGRAPH AT	D46	109.	4.17	6.	1.	1.	0.05
+	2 COMBINED AT	CPD46	109.	4.17	25.	6.	3.	0.15
+	DIVERSION TO	DVD46	109.	4.17	25.	6.	3.	0.15
+	HYDROGRAPH AT	DD46	0.	0.00	0.	0.	0.	0.15
+	ROUTED TO	RCPD46	0.	0.00	0.	0.	0.	0.15
+	HYDROGRAPH AT	D06	432.	4.67	46.	12.	6.	1.22
+	DIVERSION TO	DVD06	276.	4.67	30.	7.	4.	1.22
+	HYDROGRAPH AT	DD06	157.	4.67	16.	4.	2.	1.22

+	ROUTED TO	RCPD06	61.	5.67	16.	4.	2.	1.22
+	HYDROGRAPH AT	DRD06	276.	4.67	30.	7.	4.	1.22
+	ROUTED TO	RDD06	224.	4.83	30.	7.	4.	1.22
+	HYDROGRAPH AT	D08	285.	4.33	21.	5.	3.	0.28
+	2 COMBINED AT	CPD08	331.	4.83	60.	15.	7.	0.73
+	ROUTED TO	RCPD08	270.	5.50	59.	15.	7.	0.73
+	HYDROGRAPH AT	DRD05	9.	4.83	2.	0.	0.	4.18
+	ROUTED TO	RCPD05	7.	5.67	2.	0.	0.	4.18
+	HYDROGRAPH AT	D11	415.	4.50	36.	9.	4.	0.40
+	2 COMBINED AT	CPD11	399.	4.50	46.	11.	5.	0.56
+	ROUTED TO	RCPD11	261.	4.83	45.	11.	5.	0.56
+	HYDROGRAPH AT	D10	549.	4.67	68.	17.	8.	0.84
+	5 COMBINED AT	CPD10	402.	4.67	80.	20.	10.	2.95
+	DIVERSION TO	DVD10	402.	4.67	80.	20.	10.	2.95
+	HYDROGRAPH AT	DD10	0.	0.00	0.	0.	0.	2.95
+	ROUTED TO	RCPD10	0.	0.00	0.	0.	0.	2.95
+	HYDROGRAPH AT	D47	62.	4.17	3.	1.	0.	0.04
+	2 COMBINED AT	CPD47	65.	4.83	10.	2.	1.	0.16
+	DIVERSION TO	DVD47	65.	4.83	10.	2.	1.	0.16
+	HYDROGRAPH AT	DD47	0.	0.00	0.	0.	0.	0.16
+	ROUTED TO	RCPD47	0.	0.00	0.	0.	0.	0.16
+	HYDROGRAPH AT	D07	523.	4.67	60.	15.	7.	1.05
+	DIVERSION TO	DVD07	391.	4.67	49.	12.	6.	1.05
+	HYDROGRAPH AT	DD07	132.	4.67	11.	3.	1.	1.05
+	ROUTED TO	RDD07	59.	5.50	11.	3.	1.	1.05
+	HYDROGRAPH AT	D15	607.	4.50	64.	16.	8.	0.65
+	3 COMBINED AT	CPD15	544.	4.50	71.	18.	9.	0.95
+	DIVERSION TO	DVD15	544.	4.50	71.	18.	9.	0.95
+	HYDROGRAPH AT	DD15	0.	0.00	0.	0.	0.	0.95
+	ROUTED TO	RCPD15	0.	0.00	0.	0.	0.	0.95
+	HYDROGRAPH AT	DRD07	391.	4.67	49.	12.	6.	1.05
+	ROUTED TO	RCPD07	217.	5.50	49.	12.	6.	1.05
+	HYDROGRAPH AT	D17	515.	4.67	58.	14.	7.	0.78
+	3 COMBINED AT	CPD17	373.	4.67	82.	21.	10.	1.53
+	DIVERSION TO	DVD17	347.	4.67	81.	21.	10.	1.53

+	HYDROGRAPH AT	DD17	26.	4.67	1.	0.	0.	1.53
+	ROUTED TO	RCPD17	10.	4.83	1.	0.	0.	1.53
+	HYDROGRAPH AT	D18	377.	4.50	34.	8.	4.	0.43
+	2 COMBINED AT	CPD18	248.	4.50	24.	6.	3.	1.20
+	DIVERSION TO	DVD18	195.	4.50	21.	5.	3.	1.20
+	HYDROGRAPH AT	DD18	52.	4.50	2.	1.	0.	1.20
+	ROUTED TO	RCPD18	28.	4.67	2.	1.	0.	1.20
+	HYDROGRAPH AT	D19	272.	4.33	19.	5.	2.	0.25
+	2 COMBINED AT	CPD19	276.	4.33	24.	6.	3.	0.52
+	DIVERSION TO	DVD19	33.	4.33	1.	0.	0.	0.52
+	HYDROGRAPH AT	DD19	242.	4.33	23.	6.	3.	0.52
+	ROUTED TO	RCPD19	191.	4.67	23.	6.	3.	0.52
+	HYDROGRAPH AT	D20	143.	4.33	9.	2.	1.	0.11
+	2 COMBINED AT	CPD20	223.	4.33	29.	7.	4.	0.59
+	DIVERSION TO	DVD20	212.	4.33	29.	7.	3.	0.59
+	HYDROGRAPH AT	DD20	11.	4.33	1.	0.	0.	0.59
+	ROUTED TO	RCPD20	8.	4.67	1.	0.	0.	0.59
+	HYDROGRAPH AT	D21	100.	4.17	6.	2.	1.	0.08
+	2 COMBINED AT	CPD21	100.	4.17	7.	2.	1.	0.09
+	DIVERSION TO	DVD21	72.	4.17	5.	1.	1.	0.09
+	HYDROGRAPH AT	DD21	29.	4.17	1.	0.	0.	0.09
+	ROUTED TO	RCPD21	26.	4.67	2.	0.	0.	0.09
+	HYDROGRAPH AT	E33	70.	4.17	4.	1.	0.	0.05
+	2 COMBINED AT	CPE33	70.	4.17	5.	1.	1.	0.07
+	DIVERSION TO	DVE33	70.	4.17	5.	1.	1.	0.07
+	HYDROGRAPH AT	DE33	0.	0.00	0.	0.	0.	0.07
+	ROUTED TO	RCPE33	0.	0.00	0.	0.	0.	0.07
+	HYDROGRAPH AT	E17	488.	4.67	67.	17.	8.	1.48
+	ROUTED TO	RCPE17	357.	5.33	66.	17.	8.	1.48
+	HYDROGRAPH AT	E32	345.	4.33	25.	6.	3.	0.28
+	3 COMBINED AT	CPE32	357.	5.33	83.	21.	10.	1.76
+	DIVERSION TO	DVE32	259.	5.33	68.	17.	8.	1.76
+	HYDROGRAPH AT	DE32	53.	5.33	5.	1.	1.	1.76
+	ROUTED TO	RCPE32	45.	5.33	5.	1.	1.	1.76
+	HYDROGRAPH AT	E53	141.	4.33	9.	2.	1.	0.11
	2 COMBINED AT							

+		CPE53	134.	5.33	22.	6.	3.	0.71
+	DIVERSION TO	DVE53	109.	5.33	20.	5.	2.	0.71
+	HYDROGRAPH AT	DE53	26.	5.33	3.	1.	0.	0.71
+	ROUTED TO	RCPE53	16.	6.00	3.	1.	0.	0.71
+	HYDROGRAPH AT	E18	555.	4.50	52.	13.	6.	0.73
+	ROUTED TO	RCPE18	225.	6.00	52.	13.	6.	0.73
+	HYDROGRAPH AT	E31	381.	4.50	37.	9.	4.	0.38
+	3 COMBINED AT	CPE31	280.	4.50	70.	18.	9.	1.28
+	DIVERSION TO	DVE31	182.	4.50	57.	15.	7.	1.28
+	HYDROGRAPH AT	DE31	98.	4.50	13.	3.	2.	1.28
+	ROUTED TO	RCPE31	59.	4.83	13.	3.	2.	1.28
+	HYDROGRAPH AT	E01	807.	4.50	120.	30.	14.	4.54
+	ROUTED TO	RCPE01	545.	5.17	120.	30.	14.	4.54
+	HYDROGRAPH AT	E02	476.	4.67	51.	13.	6.	6.36
+	2 COMBINED AT	CPE02	509.	5.00	138.	35.	17.	10.91
+	ROUTED TO	RCPE02	282.	5.67	94.	24.	12.	10.91
+	HYDROGRAPH AT	E03	609.	4.50	53.	13.	6.	2.03
+	2 COMBINED AT	CPE03	252.	5.67	94.	24.	12.	12.93
+	ROUTED TO	RCPE03	178.	6.50	81.	22.	11.	12.93
+	HYDROGRAPH AT	E16	635.	4.50	54.	14.	7.	0.79
+	2 COMBINED AT	CPE16	166.	6.50	82.	23.	11.	13.72
+	DIVERSION TO	DVE16	13.	5.83	4.	1.	0.	13.72
+	HYDROGRAPH AT	DE16	156.	6.67	78.	22.	10.	13.72
+	ROUTED TO	RDE16	162.	7.00	77.	22.	10.	13.72
+	HYDROGRAPH AT	E19	420.	4.50	43.	11.	5.	0.47
+	2 COMBINED AT	CPE19	223.	6.83	116.	32.	15.	10.48
+	DIVERSION TO	DVE19	25.	6.33	8.	2.	1.	10.48
+	HYDROGRAPH AT	DE19	201.	6.83	109.	30.	15.	10.48
+	ROUTED TO	RDE19	124.	9.50	94.	30.	15.	10.48
+	HYDROGRAPH AT	E30	546.	4.67	63.	16.	8.	0.64
+	3 COMBINED AT	CPE30	252.	4.67	113.	44.	21.	8.42
+	DIVERSION TO	DVE30	252.	4.67	113.	44.	21.	8.42
+	HYDROGRAPH AT	DE30	0.	0.00	0.	0.	0.	8.42
+	ROUTED TO	RCPE30	0.	0.00	0.	0.	0.	8.42
+	HYDROGRAPH AT	E28	258.	4.33	22.	5.	3.	0.20
+	DIVERSION TO	DVE28	155.	4.33	13.	3.	2.	0.20

+	HYDROGRAPH AT	DE28	102.	4.33	9.	2.	1.	0.20
+	ROUTED TO	RCPE28	40.	6.00	9.	2.	1.	0.20
+	HYDROGRAPH AT	E21	328.	4.50	28.	7.	3.	0.35
+	DIVERSION TO	DVE21	68.	4.50	4.	1.	1.	0.35
+	HYDROGRAPH AT	DE21	260.	4.50	24.	6.	3.	0.35
+	ROUTED TO	RDE21	52.	7.83	21.	6.	3.	0.35
+	HYDROGRAPH AT	DRE16	13.	5.83	4.	1.	0.	13.72
+	ROUTED TO	RCPE16	6.	10.00	3.	1.	0.	13.72
+	HYDROGRAPH AT	E20	363.	4.67	50.	13.	6.	0.51
+	4 COMBINED AT	CPE20	176.	4.67	41.	16.	8.	4.58
+	HYDROGRAPH AT	DRE28	155.	4.33	13.	3.	2.	0.20
+	ROUTED TO	RDE28	147.	4.50	13.	3.	2.	0.20
+	HYDROGRAPH AT	DRE19	25.	6.33	8.	2.	1.	10.48
+	ROUTED TO	RCPE19	18.	7.83	7.	2.	1.	10.48
+	HYDROGRAPH AT	E29	509.	4.67	59.	15.	7.	0.56
+	3 COMBINED AT	CPE29A	371.	4.67	68.	18.	9.	3.83
+	2 COMBINED AT	CPE29	454.	4.67	79.	24.	12.	8.41
+	ROUTED TO	RCPE29	328.	5.17	77.	24.	12.	8.41
+	HYDROGRAPH AT	E07	459.	4.50	47.	12.	6.	1.07
+	ROUTED TO	RCPE07	276.	5.17	47.	12.	6.	1.07
+	HYDROGRAPH AT	E14	795.	4.17	46.	12.	6.	0.82
+	ROUTED TO	RCPE14	387.	4.67	46.	12.	6.	0.82
+	HYDROGRAPH AT	E15	692.	4.50	59.	15.	7.	0.92
+	3 COMBINED AT	CPE15	407.	4.50	59.	15.	7.	2.81
+	ROUTED TO	RCPE15	109.	8.33	53.	15.	7.	2.81
+	HYDROGRAPH AT	E27	167.	4.33	14.	3.	2.	0.13
+	ROUTED TO	RCPE27	104.	5.00	14.	3.	2.	0.13
+	HYDROGRAPH AT	DRE21	68.	4.50	4.	1.	1.	0.35
+	ROUTED TO	RCPE21	11.	8.50	4.	1.	1.	0.35
+	HYDROGRAPH AT	E22	637.	4.67	85.	21.	10.	1.10
+	4 COMBINED AT	CPE22	384.	4.67	90.	28.	13.	4.10
+	ROUTED TO	RCPE22	271.	5.67	84.	28.	13.	4.10
+	HYDROGRAPH AT	E37	297.	4.33	19.	5.	2.	0.18
+	2 COMBINED AT	CPE37	271.	5.67	87.	31.	15.	4.28
+	ROUTED TO	RCPE37	230.	6.17	83.	31.	15.	4.28

+	HYDROGRAPH AT	E04	646.	4.33	52.	13.	6.	1.77
+	ROUTED TO	RCPE04	132.	8.17	50.	13.	6.	1.77
+	HYDROGRAPH AT	E06	686.	4.33	47.	12.	6.	1.06
+	ROUTED TO	RCPE06	171.	6.83	47.	12.	6.	1.06
+	HYDROGRAPH AT	E11	550.	4.67	64.	16.	8.	2.27
+	DIVERSION TO	DVE11	200.	4.67	22.	6.	3.	2.27
+	HYDROGRAPH AT	DE11	349.	4.67	42.	10.	5.	2.27
+	ROUTED TO	RCPE11	154.	6.00	41.	10.	5.	2.27
+	HYDROGRAPH AT	E09	352.	4.33	21.	5.	3.	0.30
+	DIVERSION TO	DVE09	157.	4.33	9.	2.	1.	0.30
+	HYDROGRAPH AT	DE09	195.	4.33	12.	3.	1.	0.30
+	ROUTED TO	RCPE09	97.	4.67	12.	3.	1.	0.30
+	HYDROGRAPH AT	E10	132.	4.33	9.	2.	1.	0.10
+	2 COMBINED AT	CPE10	172.	4.33	20.	5.	2.	0.27
+	DIVERSION TO	DVE10	123.	4.33	15.	4.	2.	0.27
+	HYDROGRAPH AT	DE10	49.	4.33	6.	1.	1.	0.27
+	ROUTED TO	RCPE10	18.	6.50	6.	1.	1.	0.27
+	HYDROGRAPH AT	E05	471.	5.17	89.	22.	11.	4.18
+	5 COMBINED AT	CPE05	317.	5.17	88.	24.	11.	8.46
+	DIVERSION TO	DVE05	245.	5.17	77.	21.	10.	8.46
+	HYDROGRAPH AT	DE05	72.	5.17	11.	3.	1.	8.46
+	ROUTED TO	RDE05	36.	6.67	11.	3.	1.	8.46
+	HYDROGRAPH AT	DRE09	157.	4.33	9.	2.	1.	0.30
+	ROUTED TO	RDE09	33.	6.67	9.	2.	1.	0.30
+	HYDROGRAPH AT	DRE10	123.	4.33	15.	4.	2.	0.27
+	ROUTED TO	RDE10	50.	7.33	14.	4.	2.	0.27
+	HYDROGRAPH AT	E13	730.	4.83	106.	27.	13.	1.53
+	3 COMBINED AT	CPE13	662.	4.83	107.	27.	13.	1.93
+	DIVERSION TO	DVE13	125.	4.83	15.	4.	2.	1.93
+	HYDROGRAPH AT	DE13	537.	4.83	92.	23.	11.	1.93
+	ROUTED TO	RCPE13	465.	5.17	92.	23.	11.	1.93
+	HYDROGRAPH AT	E24	251.	4.50	27.	7.	3.	0.26
+	3 COMBINED AT	CPE24	465.	5.17	135.	35.	17.	4.70
+	ROUTED TO	RCPE24	340.	5.33	99.	26.	12.	4.70
+	HYDROGRAPH AT	E08	475.	4.67	58.	15.	7.	0.96
	ROUTED TO							

+		RCPE08	75.	9.00	45.	14.	7.	0.96
+	HYDROGRAPH AT	DRE13	125.	4.83	15.	4.	2.	1.93
+	ROUTED TO	RDE13	32.	6.17	14.	4.	2.	1.93
+	HYDROGRAPH AT	E23	307.	4.50	35.	9.	4.	0.32
+	4 COMBINED AT	CPE23	336.	5.33	118.	35.	17.	6.28
+	ROUTED TO	RCPE23	316.	5.50	113.	34.	17.	6.28
+	HYDROGRAPH AT	E34	309.	4.50	29.	7.	3.	0.27
+	2 COMBINED AT	CPE34	313.	5.50	127.	38.	18.	6.55
+	ROUTED TO	RCPE34	303.	5.67	125.	38.	18.	6.55
+	HYDROGRAPH AT	E38	602.	4.33	48.	12.	6.	0.48
+	5 COMBINED AT	CPE38	431.	5.33	174.	51.	25.	19.72
+	DIVERSION TO	DVE38	399.	5.33	170.	50.	24.	19.72
+	HYDROGRAPH AT	DE38	32.	5.33	5.	1.	1.	19.72
+	ROUTED TO	RCPE38	6.	8.00	4.	1.	1.	19.72
+	HYDROGRAPH AT	DRE11	200.	4.67	22.	6.	3.	2.27
+	ROUTED TO	RDE11	79.	6.33	22.	6.	3.	2.27
+	HYDROGRAPH AT	E12	676.	4.67	78.	19.	9.	1.05
+	2 COMBINED AT	CPE12	511.	4.67	86.	22.	11.	1.93
+	ROUTED TO	RCPE12	165.	7.33	74.	22.	11.	1.93
+	HYDROGRAPH AT	DRE05	245.	5.17	77.	21.	10.	8.46
+	ROUTED TO	RCPE05	78.	9.50	58.	21.	10.	8.46
+	HYDROGRAPH AT	E25	699.	4.83	117.	29.	14.	1.64
+	4 COMBINED AT	CPE25	321.	4.83	74.	33.	16.	21.77
+	DIVERSION TO	DVE25	251.	4.83	58.	26.	13.	21.77
+	HYDROGRAPH AT	DE25	14.	4.83	2.	0.	0.	21.77
+	ROUTED TO	RCPE25	9.	5.17	2.	0.	0.	21.77
+	HYDROGRAPH AT	E26	314.	4.33	27.	7.	3.	0.25
+	ROUTED TO	RCPE26	187.	5.00	27.	7.	3.	0.25
+	HYDROGRAPH AT	E35	529.	4.33	39.	10.	5.	0.37
+	2 COMBINED AT	CPE35	482.	4.33	62.	16.	8.	0.69
+	DIVERSION TO	DVE35	241.	4.33	31.	8.	4.	0.69
+	HYDROGRAPH AT	DE35	241.	4.33	31.	8.	4.	0.69
+	ROUTED TO	RCPE35	156.	5.00	31.	8.	4.	0.69
+	HYDROGRAPH AT	E36	236.	4.33	16.	4.	2.	0.16
+	3 COMBINED AT	CPE36	160.	5.00	48.	13.	6.	6.44
+	DIVERSION TO	DVE36	2.	5.00	0.	0.	0.	6.44

+	HYDROGRAPH AT	DE36	98.	5.17	32.	8.	4.	6.44
+	ROUTED TO	RCPE36	91.	5.33	31.	8.	4.	6.44
+	HYDROGRAPH AT	DRE35	241.	4.33	31.	8.	4.	0.69
+	ROUTED TO	RDE35	77.	4.67	30.	8.	4.	0.69
+	HYDROGRAPH AT	E54	174.	4.33	13.	3.	2.	0.12
+	3 COMBINED AT	CPE54	150.	4.50	57.	15.	7.	6.40
+	DIVERSION TO	DVE54	109.	4.50	47.	13.	6.	6.40
+	HYDROGRAPH AT	DE54	41.	4.50	9.	2.	1.	6.40
+	ROUTED TO	RCPE54	29.	5.67	9.	2.	1.	6.40
+	HYDROGRAPH AT	F26	521.	4.50	53.	13.	6.	0.50
+	2 COMBINED AT	CPF26	276.	4.50	45.	11.	5.	4.38
+	DIVERSION TO	DVF26	159.	4.50	34.	8.	4.	4.38
+	HYDROGRAPH AT	DF26	118.	4.50	12.	3.	1.	4.38
+	ROUTED TO	RCPF26	119.	4.83	12.	3.	1.	4.38
+	HYDROGRAPH AT	F14	450.	4.33	29.	7.	3.	0.39
+	ROUTED TO	RCPF14	175.	5.17	29.	7.	3.	0.39
+	HYDROGRAPH AT	F13	313.	4.33	18.	5.	2.	0.26
+	DIVERSION TO	DVF13	139.	4.33	9.	2.	1.	0.26
+	HYDROGRAPH AT	DF13	174.	4.33	9.	2.	1.	0.26
+	ROUTED TO	RDF13	27.	5.00	9.	2.	1.	0.26
+	HYDROGRAPH AT	DRF13	139.	4.33	9.	2.	1.	0.26
+	ROUTED TO	RCPF13	137.	4.50	9.	2.	1.	0.26
+	HYDROGRAPH AT	F12	365.	4.33	23.	6.	3.	0.31
+	2 COMBINED AT	CPF12	420.	4.33	32.	8.	4.	0.44
+	ROUTED TO	RCPF12	205.	5.17	32.	8.	4.	0.44
+	HYDROGRAPH AT	F15	671.	4.50	74.	18.	9.	0.78
+	4 COMBINED AT	CPF15	520.	4.50	93.	23.	11.	1.74
+	ROUTED TO	RCPF15	231.	7.33	87.	23.	11.	1.74
+	HYDROGRAPH AT	F11	514.	4.67	57.	14.	7.	1.49
+	DIVERSION TO	DVF11	194.	4.67	21.	5.	2.	1.49
+	HYDROGRAPH AT	DF11	321.	4.67	36.	9.	4.	1.49
+	ROUTED TO	RCPF11	247.	4.83	36.	9.	4.	1.49
+	HYDROGRAPH AT	F16	179.	4.33	12.	3.	1.	0.11
+	2 COMBINED AT	CPF16	337.	4.83	57.	14.	7.	1.02
+	DIVERSION TO	DVF16	131.	4.83	23.	6.	3.	1.02

+	HYDROGRAPH AT	DF16	206.	4.83	34.	9.	4.	1.02
+	ROUTED TO	RDF16	125.	6.00	34.	9.	4.	1.02
+	HYDROGRAPH AT	F25	1117.	4.83	206.	52.	25.	2.99
+	4 COMBINED AT	CPF25	992.	4.83	224.	59.	29.	7.11
+	HYDROGRAPH AT	DRF11	194.	4.67	21.	5.	2.	1.49
+	ROUTED TO	RDF11	71.	5.50	20.	5.	2.	1.49
+	HYDROGRAPH AT	F17	754.	4.50	72.	18.	9.	1.16
+	2 COMBINED AT	CPF17	597.	4.50	74.	19.	9.	1.73
+	ROUTED TO	RCPF17	324.	5.33	73.	19.	9.	1.73
+	HYDROGRAPH AT	DRF16	131.	4.83	23.	6.	3.	1.02
+	ROUTED TO	RCPF16	92.	6.00	23.	6.	3.	1.02
+	HYDROGRAPH AT	F24	726.	4.67	99.	25.	12.	0.80
+	3 COMBINED AT	CPF24	509.	4.67	134.	36.	17.	2.93
+	ROUTED TO	RCPF24	400.	5.17	132.	36.	17.	2.93
+	HYDROGRAPH AT	F23	665.	4.67	93.	23.	11.	0.67
+	ROUTED TO	RCPF23	480.	5.17	92.	23.	11.	0.67
+	HYDROGRAPH AT	F27	746.	4.50	74.	19.	9.	0.67
+	4 COMBINED AT	CPF27	1402.	5.00	401.	107.	51.	9.63
+	ROUTED TO	PNDF01	1159.	5.33	401.	107.	51.	9.63
+	DIVERSION TO	DVF27	1147.	5.33	400.	106.	51.	9.63
+	HYDROGRAPH AT	DF27	13.	5.33	1.	0.	0.	9.63
+	ROUTED TO	RCPF27	5.	6.50	1.	0.	0.	9.63
+	HYDROGRAPH AT	F10	721.	4.50	66.	16.	8.	2.25
+	ROUTED TO	RCPF10	315.	5.17	65.	16.	8.	2.25
+	HYDROGRAPH AT	F18	503.	4.33	42.	11.	5.	0.30
+	2 COMBINED AT	CPF18	284.	4.33	89.	23.	11.	2.55
+	DIVERSION TO	DVF18	87.	4.33	28.	7.	3.	2.55
+	HYDROGRAPH AT	DF18	196.	4.33	61.	16.	8.	2.55
+	ROUTED TO	RCPF18	167.	5.67	61.	16.	8.	2.55
+	HYDROGRAPH AT	F22	458.	4.50	44.	11.	5.	0.37
+	2 COMBINED AT	CPF22	307.	4.50	104.	27.	13.	2.07
+	DIVERSION TO	DVF22	186.	4.50	61.	16.	8.	2.07
+	HYDROGRAPH AT	DF22	121.	4.50	43.	11.	5.	2.07
+	ROUTED TO	RDF22	87.	6.50	41.	11.	5.	2.07
+	HYDROGRAPH AT	F28	617.	4.50	66.	16.	8.	0.47
	3 COMBINED AT							

+		CPF28	481.	4.50	141.	38.	18.	1.26
+	ROUTED TO	PNDF02	307.	4.67	141.	38.	18.	1.26
+	DIVERSION TO	DVF28A	199.	4.67	93.	25.	12.	1.26
+	HYDROGRAPH AT	DF28A	109.	4.67	48.	13.	6.	1.26
+	DIVERSION TO	DVF28B	109.	4.67	48.	13.	6.	1.26
+	HYDROGRAPH AT	DF28B	1.	6.50	0.	0.	0.	1.26
+	ROUTED TO	RCPF28	0.	8.50	0.	0.	0.	1.26
+	HYDROGRAPH AT	F36	283.	4.33	25.	6.	3.	0.17
+	2 COMBINED AT	CPF36	283.	4.33	25.	6.	3.	0.17
+	ROUTED TO	PNDF03	184.	4.50	25.	6.	3.	0.17
+	ROUTED TO	RCPF36	129.	5.33	24.	6.	3.	0.17
+	HYDROGRAPH AT	F02A	673.	4.33	39.	10.	5.	0.64
+	ROUTED TO	RCF02A	554.	4.67	40.	10.	5.	0.64
+	HYDROGRAPH AT	F02	414.	4.33	27.	7.	3.	0.39
+	2 COMBINED AT	CPF02	527.	4.67	57.	14.	7.	1.02
+	DIVERSION TO	DVF02	233.	4.67	27.	7.	3.	1.02
+	HYDROGRAPH AT	DF02	187.	4.67	21.	5.	3.	1.02
+	ROUTED TO	RCPF02	64.	7.83	21.	5.	3.	1.02
+	HYDROGRAPH AT	F01A	468.	4.33	28.	7.	3.	0.41
+	ROUTED TO	RCF01A	213.	5.83	28.	7.	3.	0.41
+	HYDROGRAPH AT	F01	481.	4.67	54.	13.	6.	1.78
+	2 COMBINED AT	CPF01	380.	4.67	51.	13.	6.	2.19
+	ROUTED TO	RCPF01	139.	5.83	49.	13.	6.	2.19
+	HYDROGRAPH AT	F04	375.	4.83	52.	13.	6.	2.20
+	3 COMBINED AT	CPF04	188.	4.83	52.	14.	7.	4.82
+	ROUTED TO	RCPF04	102.	5.83	49.	14.	7.	4.82
+	HYDROGRAPH AT	F03	493.	4.67	53.	13.	6.	1.63
+	ROUTED TO	RCPF03	340.	5.00	53.	13.	6.	1.63
+	HYDROGRAPH AT	F06	675.	4.33	47.	12.	6.	1.00
+	2 COMBINED AT	CPF06	340.	4.33	60.	15.	7.	2.63
+	ROUTED TO	RCPF06	118.	6.00	44.	12.	6.	2.63
+	HYDROGRAPH AT	DRF02	233.	4.67	27.	7.	3.	1.02
+	ROUTED TO	RDF02	87.	7.33	26.	7.	3.	1.02
+	HYDROGRAPH AT	F05	539.	4.83	76.	19.	9.	2.97
+	4 COMBINED AT	CPF05	251.	4.83	65.	19.	9.	11.01
+	ROUTED TO	RCPF05	100.	6.83	57.	19.	9.	11.01

+	HYDROGRAPH AT	F07	563.	4.67	70.	17.	8.	3.68
+	ROUTED TO	RCPF07	541.	4.83	70.	17.	8.	3.68
+	HYDROGRAPH AT	F08	618.	4.67	71.	18.	9.	0.88
+	3 COMBINED AT	CPF08	541.	4.67	152.	46.	22.	15.56
+	ROUTED TO	RCPF08	45.	5.50	41.	20.	10.	15.56
+	HYDROGRAPH AT	F09	669.	4.83	119.	30.	14.	2.69
+	2 COMBINED AT	CPF09	295.	5.00	80.	30.	15.	18.25
+	ROUTED TO	RCPF09	224.	6.00	76.	30.	15.	18.25
+	HYDROGRAPH AT	F19	757.	4.67	103.	26.	12.	0.85
+	2 COMBINED AT	CPF19	342.	4.67	122.	43.	22.	19.10
+	DIVERSION TO	DVF19	174.	4.67	63.	22.	11.	19.10
+	HYDROGRAPH AT	DF19	169.	4.67	59.	21.	11.	19.10
+	ROUTED TO	RDF19	137.	5.50	58.	21.	11.	19.10
+	HYDROGRAPH AT	DRF18	87.	4.33	28.	7.	3.	2.55
+	ROUTED TO	RDF18	38.	8.17	24.	7.	3.	2.55
+	HYDROGRAPH AT	F21	597.	4.50	63.	16.	8.	0.53
+	3 COMBINED AT	CPF21	264.	4.50	119.	44.	22.	11.12
+	ROUTED TO	RCPF21	183.	5.33	116.	43.	22.	11.12
+	HYDROGRAPH AT	DRF22	186.	4.50	61.	16.	8.	2.07
+	ROUTED TO	RCPF22	129.	6.33	59.	16.	8.	2.07
+	HYDROGRAPH AT	F29	668.	4.50	73.	18.	9.	0.59
+	3 COMBINED AT	CPF29	301.	4.50	167.	58.	29.	13.00
+	ROUTED TO	PNDF04	197.	6.50	163.	58.	29.	13.00
+	DIVERSION TO	DVF29	177.	6.50	153.	55.	28.	13.00
+	HYDROGRAPH AT	DF29	20.	6.50	11.	3.	1.	13.00
+	ROUTED TO	RCPF29	19.	8.17	10.	3.	1.	13.00
+	HYDROGRAPH AT	DRF19	174.	4.67	63.	22.	11.	19.10
+	ROUTED TO	RCPF19	99.	7.17	59.	22.	11.	19.10
+	HYDROGRAPH AT	F20	735.	4.67	102.	26.	12.	0.80
+	3 COMBINED AT	CPF20	353.	4.67	118.	40.	20.	16.52
+	ROUTED TO	PNDF05	151.	5.17	115.	40.	20.	16.52
+	ROUTED TO	RCPF20	149.	6.00	114.	40.	20.	16.52
+	HYDROGRAPH AT	F31	413.	4.33	31.	8.	4.	0.27
+	HYDROGRAPH AT	G21	778.	4.50	66.	16.	8.	1.96
+	HYDROGRAPH AT	G20	318.	4.33	20.	5.	2.	0.24

+	DIVERSION TO	DVG20	6.	4.33	0.	0.	0.	0.24
+	HYDROGRAPH AT	DG20	312.	4.33	19.	5.	2.	0.24
+	ROUTED TO	RCPG20	144.	5.17	19.	5.	2.	0.24
+	4 COMBINED AT	CPF31	874.	4.50	350.	133.	67.	18.99
+	ROUTED TO	RCPF31	160.	4.83	122.	45.	22.	18.99
+	HYDROGRAPH AT	DRF29	177.	6.50	153.	55.	28.	13.00
+	ROUTED TO	RDF29	177.	7.17	150.	55.	28.	13.00
+	HYDROGRAPH AT	F32	342.	4.33	31.	8.	4.	0.29
+	3 COMBINED AT	CPF32	434.	4.67	345.	155.	77.	7.08
+	HYDROGRAPH AT	DRG20	6.	4.33	0.	0.	0.	0.24
+	ROUTED TO	RDG20	1.	6.17	0.	0.	0.	0.24
+	HYDROGRAPH AT	G19	805.	4.33	60.	15.	7.	0.67
+	ROUTED TO	RCPG19	352.	5.17	60.	15.	7.	0.67
+	HYDROGRAPH AT	G22	604.	4.50	57.	14.	7.	1.12
+	3 COMBINED AT	CPG22	438.	4.50	82.	21.	10.	1.80
+	3 COMBINED AT	F32RIV	524.	5.83	434.	155.	78.	27.84
+	ROUTED TO	RCPF32	341.	6.33	262.	91.	46.	27.84
+	HYDROGRAPH AT	DRF28B	109.	4.67	48.	13.	6.	1.26
+	ROUTED TO	RDF28B	70.	7.50	45.	13.	6.	1.26
+	HYDROGRAPH AT	F33	606.	4.50	57.	14.	7.	0.49
+	2 COMBINED AT	CPF33	511.	4.50	99.	27.	13.	0.95
+	2 COMBINED AT	F33RIV	361.	6.33	284.	100.	50.	28.79
+	ROUTED TO	RCPF33	355.	6.50	281.	100.	50.	28.79
+	HYDROGRAPH AT	DRF28A	199.	4.67	93.	25.	12.	1.26
+	ROUTED TO	RDF28A	175.	5.17	91.	25.	12.	1.26
+	HYDROGRAPH AT	DRF27	1147.	5.33	400.	106.	51.	9.63
+	DIVERSION TO	DVF25	194.	5.33	55.	14.	7.	9.63
+	HYDROGRAPH AT	DF25	953.	5.33	345.	92.	44.	9.63
+	ROUTED TO	RDF27	699.	5.83	323.	92.	44.	9.63
+	HYDROGRAPH AT	DRF25	194.	5.33	55.	14.	7.	9.63
+	ROUTED TO	RDF25	156.	6.50	53.	14.	7.	9.63
+	HYDROGRAPH AT	F34	588.	4.50	64.	16.	8.	0.60
+	4 COMBINED AT	CPF34	699.	5.83	364.	105.	50.	18.09
+	HYDROGRAPH AT	G23	628.	4.50	53.	13.	6.	1.20
+	3 COMBINED AT	F34RIV	745.	6.00	499.	161.	79.	40.15
	ROUTED TO							

+		RCPF34	733.	6.17	496.	161.	79.	40.15
+	HYDROGRAPH AT	DRF26	159.	4.50	34.	8.	4.	4.38
+	ROUTED TO	RDF26	51.	6.17	29.	8.	4.	4.38
+	HYDROGRAPH AT	F35	605.	4.50	69.	17.	8.	0.67
+	2 COMBINED AT	CPF35	378.	4.50	79.	21.	10.	3.29
+	HYDROGRAPH AT	G24	292.	4.50	25.	6.	3.	0.35
+	ROUTED TO	RCPG24	301.	4.50	25.	6.	3.	0.35
+	HYDROGRAPH AT	G25	273.	4.50	25.	6.	3.	0.36
+	4 COMBINED AT	F35RIV	734.	6.17	511.	166.	81.	42.15
+	ROUTED TO	RCPF35	728.	6.33	507.	166.	81.	42.15
+	HYDROGRAPH AT	DRE54	109.	4.50	47.	13.	6.	6.40
+	ROUTED TO	RDE54	102.	5.00	47.	13.	6.	6.40
+	HYDROGRAPH AT	E46	405.	4.17	27.	7.	3.	0.24
+	2 COMBINED AT	CPE46	202.	4.17	73.	21.	10.	2.75
+	ROUTED TO	RCPE46	157.	4.67	72.	21.	10.	2.75
+	HYDROGRAPH AT	DRE25	251.	4.83	58.	26.	13.	21.77
+	ROUTED TO	RDE25	199.	5.17	56.	26.	13.	21.77
+	HYDROGRAPH AT	DRE36	2.	5.00	0.	0.	0.	6.44
+	ROUTED TO	RDE36	1.	5.67	0.	0.	0.	6.44
+	HYDROGRAPH AT	E45	531.	4.33	37.	9.	4.	0.32
+	3 COMBINED AT	CPE45	237.	5.17	80.	35.	17.	16.34
+	ROUTED TO	RCPE45	222.	5.50	78.	35.	17.	16.34
+	HYDROGRAPH AT	E47	807.	4.17	57.	14.	7.	0.49
+	3 COMBINED AT	CPE47	339.	4.33	138.	50.	25.	19.59
+	ROUTED TO	RCPE47	250.	5.83	130.	49.	25.	19.59
+	HYDROGRAPH AT	E48	887.	4.50	83.	21.	10.	0.86
+	2 COMBINED AT	CPE48	404.	4.50	161.	57.	28.	20.45
+	HYDROGRAPH AT	G26A	609.	4.50	52.	13.	6.	1.00
+	HYDROGRAPH AT	G26B	195.	4.33	12.	3.	1.	0.17
+	ROUTED TO	RCG26B	99.	5.67	12.	3.	1.	0.17
+	4 COMBINED AT	E48RIV	713.	6.33	509.	170.	83.	63.76
+	ROUTED TO	RCPE48	652.	6.67	472.	158.	77.	63.76
+	HYDROGRAPH AT	DRE38	399.	5.33	170.	50.	24.	19.72
+	ROUTED TO	RDE38	284.	6.83	155.	49.	24.	19.72
+	HYDROGRAPH AT	DRE30	252.	4.67	113.	44.	21.	8.42
+	ROUTED TO	RDE30	155.	5.67	111.	44.	21.	8.42

+	HYDROGRAPH AT	E44	627.	4.50	57.	14.	7.	0.63
+	3 COMBINED AT	CPE44	358.	6.50	216.	85.	41.	16.15
+	ROUTED TO	RCPE44	351.	6.83	215.	85.	41.	16.15
+	HYDROGRAPH AT	DRE31	182.	4.50	57.	15.	7.	1.28
+	ROUTED TO	RDE31	71.	7.33	45.	14.	7.	1.28
+	HYDROGRAPH AT	E43	741.	4.50	66.	17.	8.	0.71
+	2 COMBINED AT	CPE43	562.	4.50	91.	27.	13.	1.55
+	ROUTED TO	RCPE43	326.	5.17	83.	27.	13.	1.55
+	HYDROGRAPH AT	E50	1269.	4.33	139.	35.	17.	0.70
+	3 COMBINED AT	CPE50	571.	4.33	291.	115.	57.	18.78
+	ROUTED TO	RCPE50	461.	4.50	288.	115.	57.	18.78
+	HYDROGRAPH AT	E52	405.	4.17	29.	7.	4.	0.16
+	ROUTED TO	RCPE52	190.	4.67	29.	7.	4.	0.16
+	HYDROGRAPH AT	E49	231.	4.50	21.	5.	3.	0.22
+	3 COMBINED AT	CPE49	600.	4.50	304.	120.	59.	19.71
+	2 COMBINED AT	E49RIV	631.	6.67	520.	181.	88.	86.19
+	ROUTED TO	RCPE49	575.	6.83	482.	169.	82.	86.19
+	HYDROGRAPH AT	G18	526.	4.33	46.	11.	6.	0.32
+	DIVERSION TO	DVG18	341.	4.33	32.	8.	4.	0.32
+	HYDROGRAPH AT	DG18	185.	4.33	14.	3.	2.	0.32
+	ROUTED TO	RCPG18	139.	5.33	14.	3.	2.	0.32
+	HYDROGRAPH AT	G27	695.	4.50	61.	15.	7.	1.41
+	2 COMBINED AT	CPG27	660.	4.50	69.	17.	8.	1.51
+	2 COMBINED AT	G27RIV	579.	6.83	483.	169.	82.	87.92
+	ROUTED TO	RCPG27	569.	7.00	476.	167.	81.	87.92
+	HYDROGRAPH AT	G28	352.	4.33	25.	6.	3.	0.28
+	2 COMBINED AT	G28RIV	569.	7.00	476.	167.	81.	88.23
+	ROUTED TO	RCPG28	565.	7.17	472.	166.	81.	88.23
+	HYDROGRAPH AT	E51	931.	4.67	114.	29.	14.	1.25
+	2 COMBINED AT	E51RIV	565.	7.17	483.	172.	83.	89.48
+	ROUTED TO	RCPE51	556.	7.33	476.	169.	82.	89.48
+	HYDROGRAPH AT	DRG18	341.	4.33	32.	8.	4.	0.32
+	ROUTED TO	RDG18	80.	7.50	30.	8.	4.	0.32
+	HYDROGRAPH AT	G17	870.	4.33	106.	27.	13.	0.60
+	3 COMBINED AT	G17RIV	584.	5.33	510.	188.	91.	90.30

+	ROUTED TO	RCPG17	577.	5.50	509.	187.	91.	90.30
+	HYDROGRAPH AT	DRE53	109.	5.33	20.	5.	2.	0.71
+	ROUTED TO	RDE53	23.	7.50	14.	5.	2.	0.71
+	HYDROGRAPH AT	DRE32	259.	5.33	68.	17.	8.	1.76
+	ROUTED TO	RDE32	226.	5.50	68.	17.	8.	1.76
+	HYDROGRAPH AT	DRE33	70.	4.17	5.	1.	1.	0.07
+	ROUTED TO	RDE33	5.	5.00	3.	1.	1.	0.07
+	HYDROGRAPH AT	E42	725.	4.50	74.	18.	9.	0.93
+	4 COMBINED AT	CPE42	509.	4.50	100.	26.	12.	2.70
+	ROUTED TO	RCPE42	247.	6.00	94.	26.	12.	2.70
+	HYDROGRAPH AT	E41	577.	4.67	70.	18.	8.	0.67
+	2 COMBINED AT	CPE41	361.	4.67	132.	36.	18.	3.37
+	HYDROGRAPH AT	G16	1021.	4.50	116.	29.	14.	1.42
+	HYDROGRAPH AT	G29	1494.	4.50	163.	41.	20.	2.81
+	4 COMBINED AT	E41RIV	1005.	4.67	722.	263.	129.	111.17
+	ROUTED TO	RCPE41	595.	4.83	442.	163.	79.	111.17
+	DIVERSION TO	DVE41	595.	4.83	442.	163.	79.	111.17
+	HYDROGRAPH AT	DE41	0.	0.00	0.	0.	0.	111.17
+	HYDROGRAPH AT	G44	435.	4.17	30.	8.	4.	0.73
+	ROUTED TO	RCPG44	188.	5.00	30.	8.	4.	0.73
+	HYDROGRAPH AT	G06	1685.	4.33	137.	34.	17.	2.15
+	2 COMBINED AT	CPG06	1403.	4.33	124.	31.	15.	2.88
+	DIVERSION TO	DVG06	708.	4.33	63.	16.	8.	2.88
+	HYDROGRAPH AT	DG06	696.	4.33	61.	15.	7.	2.88
+	ROUTED TO	RCPG06	291.	5.33	61.	15.	7.	2.88
+	HYDROGRAPH AT	G07	1129.	4.50	125.	31.	15.	1.36
+	2 COMBINED AT	CPG07	826.	4.50	163.	42.	20.	2.79
+	DIVERSION TO	DVG07E	386.	4.50	92.	24.	12.	2.79
+	HYDROGRAPH AT	DG07E	439.	4.50	71.	18.	9.	2.79
+	DIVERSION TO	DVG07W	419.	4.50	68.	17.	8.	2.79
+	HYDROGRAPH AT	DG07W	21.	4.50	3.	1.	0.	2.79
+	ROUTED TO	RCPG07	9.	8.00	3.	1.	0.	2.79
+	HYDROGRAPH AT	G08	436.	4.50	38.	10.	5.	0.40
+	DIVERSION TO	DVG08	27.	4.50	2.	0.	0.	0.40
+	HYDROGRAPH AT	DG08	409.	4.50	37.	9.	4.	0.40
	ROUTED TO							

+		RCPG08	320.	4.67	37.	9.	4.	0.40
+	HYDROGRAPH AT	G05	473.	4.33	33.	8.	4.	1.59
+	ROUTED TO	RCPG05	165.	5.33	33.	8.	4.	1.59
+	HYDROGRAPH AT	G46	1099.	4.50	119.	30.	14.	1.41
+	2 COMBINED AT	CPG46	779.	4.50	100.	26.	12.	3.00
+	HYDROGRAPH AT	G04	1426.	4.50	156.	39.	19.	2.34
+	2 COMBINED AT	CPG04	1747.	4.50	209.	53.	25.	5.34
+	ROUTED TO	RCPG04	711.	5.17	207.	53.	25.	5.34
+	HYDROGRAPH AT	DRG06	708.	4.33	63.	16.	8.	2.88
+	ROUTED TO	RDG06	125.	8.33	60.	16.	8.	2.88
+	HYDROGRAPH AT	G45	983.	4.83	149.	37.	18.	2.00
+	4 COMBINED AT	CPG45	1226.	4.83	319.	84.	41.	9.17
+	ROUTED TO	RCPG45	1036.	5.17	314.	84.	41.	9.17
+	HYDROGRAPH AT	G31	275.	4.33	18.	4.	2.	0.18
+	2 COMBINED AT	CPG31	1034.	5.17	319.	86.	41.	9.35
+	DIVERSION TO	DVG31E	915.	5.17	287.	78.	37.	9.35
+	HYDROGRAPH AT	DG31E	112.	5.17	30.	8.	4.	9.35
+	DIVERSION TO	DVG31W	23.	5.17	6.	2.	1.	9.35
+	HYDROGRAPH AT	DG31W	89.	5.17	24.	6.	3.	9.35
+	ROUTED TO	RCPG31	79.	5.67	24.	6.	3.	9.35
+	DIVERSION TO	DVG47E	79.	5.67	24.	6.	3.	9.35
+	HYDROGRAPH AT	DG47E	1.	5.67	0.	0.	0.	9.35
+	HYDROGRAPH AT	DRG07W	419.	4.50	68.	17.	8.	2.79
+	HYDROGRAPH AT	G47	184.	4.33	12.	3.	1.	0.12
+	3 COMBINED AT	CPG47	616.	4.50	97.	25.	12.	1.50
+	DIVERSION TO	DVG47	239.	4.50	41.	10.	5.	1.50
+	HYDROGRAPH AT	DG47	377.	4.50	56.	14.	7.	1.50
+	ROUTED TO	RCPG47	165.	6.00	54.	14.	7.	1.50
+	HYDROGRAPH AT	DRG31E	915.	5.17	287.	78.	37.	9.35
+	ROUTED TO	RDG31E	686.	6.50	273.	78.	37.	9.35
+	HYDROGRAPH AT	G43	1010.	4.67	139.	35.	17.	2.17
+	4 COMBINED AT	CPG43	690.	6.50	335.	99.	48.	11.48
+	HYDROGRAPH AT	DRG07E	386.	4.50	92.	24.	12.	2.79
+	ROUTED TO	RDG07E	208.	6.50	87.	24.	12.	2.79
+	HYDROGRAPH AT	G30	1561.	4.67	199.	50.	24.	3.70
+	HYDROGRAPH AT	DRE41	595.	4.83	442.	163.	79.	111.17

+	3 COMBINED AT	G30RIV	1561.	4.67	1019.	366.	180.	103.15
+	ROUTED TO	RCPG30	624.	5.50	503.	187.	90.	103.15
+	HYDROGRAPH AT	DRD17	347.	4.67	81.	21.	10.	1.53
+	ROUTED TO	RDD17	216.	5.67	79.	21.	10.	1.53
+	HYDROGRAPH AT	DRD18	195.	4.50	21.	5.	3.	1.20
+	ROUTED TO	RDD18	53.	6.33	21.	5.	3.	1.20
+	HYDROGRAPH AT	D23	542.	4.67	62.	16.	7.	0.71
+	3 COMBINED AT	CPD23	299.	4.67	96.	26.	12.	3.10
+	HYDROGRAPH AT	DRD19	33.	4.33	1.	0.	0.	0.52
+	ROUTED TO	RDD19	3.	6.17	1.	0.	0.	0.52
+	HYDROGRAPH AT	D24	414.	4.50	39.	10.	5.	0.43
+	2 COMBINED AT	CPD24A	414.	4.50	40.	10.	5.	0.47
+	2 COMBINED AT	CPD24	447.	4.50	108.	29.	14.	3.57
+	ROUTED TO	RCPD24	242.	5.50	100.	29.	14.	3.57
+	HYDROGRAPH AT	DRD20	212.	4.33	29.	7.	3.	0.59
+	ROUTED TO	RDD20	182.	5.67	29.	7.	3.	0.59
+	HYDROGRAPH AT	DRD21	72.	4.17	5.	1.	1.	0.09
+	ROUTED TO	RDD21	10.	12.83	5.	1.	1.	0.09
+	HYDROGRAPH AT	D25	635.	4.67	71.	18.	9.	1.33
+	4 COMBINED AT	CPD25	274.	4.67	116.	34.	16.	5.54
+	ROUTED TO	RCPD25	128.	9.00	93.	34.	16.	5.54
+	HYDROGRAPH AT	D26	801.	4.83	120.	30.	14.	1.55
+	2 COMBINED AT	CPD26	493.	4.83	115.	49.	24.	7.09
+	ROUTED TO	RCPD26	409.	5.17	111.	49.	24.	7.09
+	HYDROGRAPH AT	D27	306.	4.50	29.	7.	3.	0.26
+	2 COMBINED AT	CPD27	420.	5.17	119.	52.	25.	7.35
+	4 COMBINED AT	D27RIV	709.	5.33	605.	222.	108.	123.22
+	ROUTED TO	RCPD27	533.	5.67	446.	164.	79.	123.22
+	HYDROGRAPH AT	D28	973.	4.83	148.	37.	18.	1.81
+	2 COMBINED AT	D28RIV	605.	5.50	502.	185.	90.	124.90
+	ROUTED TO	RCPD28	540.	5.67	444.	164.	79.	124.90
+	HYDROGRAPH AT	D29	736.	4.67	95.	24.	11.	3.39
+	2 COMBINED AT	D29RIV	622.	5.50	514.	189.	91.	128.41
+	ROUTED TO	RCPD29	517.	5.83	424.	155.	75.	128.41
+	HYDROGRAPH AT	D30	445.	4.50	40.	10.	5.	0.43

+	HYDROGRAPH AT	DRG47	239.	4.50	41.	10.	5.	1.50
+	ROUTED TO	RDG47	117.	6.00	40.	10.	5.	1.50
+	HYDROGRAPH AT	G32	909.	4.50	92.	23.	11.	1.14
+	2 COMBINED AT	CPG32	773.	4.50	119.	30.	15.	1.71
+	3 COMBINED AT	D30RIV	617.	5.67	511.	188.	91.	129.98
+	ROUTED TO	RCPD30	512.	5.83	417.	152.	73.	129.98
+	HYDROGRAPH AT	D31	490.	4.67	55.	14.	7.	0.67
+	2 COMBINED AT	D31RIV	612.	5.83	508.	187.	90.	130.65
+	ROUTED TO	RCPD31	505.	6.00	415.	150.	72.	130.65
+	HYDROGRAPH AT	G33	724.	4.50	65.	16.	8.	0.74
+	2 COMBINED AT	G33RIV	608.	5.83	505.	186.	90.	131.39
+	ROUTED TO	RCPG33	498.	6.00	410.	148.	71.	131.39
+	HYDROGRAPH AT	D32	567.	4.50	49.	12.	6.	0.50
+	HYDROGRAPH AT	DRG47E	79.	5.67	24.	6.	3.	9.35
+	DIVERSION TO	DVG13	65.	5.67	21.	5.	2.	9.35
+	HYDROGRAPH AT	DG13	13.	5.67	3.	1.	0.	9.35
+	ROUTED TO	RDG47E	9.	6.83	3.	1.	0.	9.35
+	HYDROGRAPH AT	G14	203.	4.33	13.	3.	2.	0.14
+	2 COMBINED AT	CPG14	203.	4.33	26.	7.	3.	0.35
+	ROUTED TO	RCPG14	72.	5.17	24.	7.	3.	0.35
+	HYDROGRAPH AT	G34	302.	4.33	20.	5.	2.	0.20
+	2 COMBINED AT	CPG34A	292.	4.33	42.	11.	5.	0.56
+	HYDROGRAPH AT	DRG31W	23.	5.17	6.	2.	1.	9.35
+	ROUTED TO	RDG31W	15.	7.83	6.	2.	1.	9.35
+	HYDROGRAPH AT	G13	488.	4.50	48.	12.	6.	0.50
+	HYDROGRAPH AT	DRG13	65.	5.67	21.	5.	2.	9.35
+	3 COMBINED AT	CPG13	488.	4.50	118.	31.	15.	1.30
+	2 COMBINED AT	CPG34	400.	4.33	105.	27.	13.	1.85
+	ROUTED TO	RCPG34	244.	5.17	100.	27.	13.	1.85
+	HYDROGRAPH AT	G35	560.	4.50	51.	13.	6.	0.53
+	2 COMBINED AT	CPG35	314.	4.50	118.	32.	15.	2.38
+	3 COMBINED AT	D32RIV	643.	5.83	542.	201.	97.	133.26
+	ROUTED TO	RCPD32	455.	6.17	396.	144.	69.	133.26
+	HYDROGRAPH AT	DRD13	357.	4.33	114.	29.	14.	4.58
+	ROUTED TO	RDD13	205.	7.67	98.	29.	14.	4.58
	HYDROGRAPH AT							

+		DRD46	109.	4.17	25.	6.	3.	0.15
+	ROUTED TO	RDD46	40.	10.17	21.	6.	3.	0.15
+	HYDROGRAPH AT	DRD10	402.	4.67	80.	20.	10.	2.95
+	ROUTED TO	RDD10	151.	7.50	66.	20.	10.	2.95
+	HYDROGRAPH AT	DRD47	65.	4.83	10.	2.	1.	0.16
+	ROUTED TO	RDD47	12.	12.50	8.	2.	1.	0.16
+	HYDROGRAPH AT	DRD15	544.	4.50	71.	18.	9.	0.95
+	ROUTED TO	RDD15	155.	7.17	62.	18.	9.	0.95
+	HYDROGRAPH AT	D22	1272.	5.33	286.	71.	34.	7.72
+	6 COMBINED AT	CPD22	905.	5.33	247.	77.	37.	16.27
+	ROUTED TO	RCPD22	675.	6.17	232.	77.	37.	16.27
+	HYDROGRAPH AT	D33	559.	4.50	61.	15.	7.	0.65
+	2 COMBINED AT	CPD33	674.	6.17	235.	83.	40.	16.92
+	2 COMBINED AT	D33RIV	583.	8.17	501.	189.	91.	151.28
+	ROUTED TO	RCPD33	340.	8.50	277.	101.	45.	151.28
+	HYDROGRAPH AT	D45	353.	4.33	26.	7.	3.	0.26
+	HYDROGRAPH AT	G36	692.	4.67	80.	20.	10.	1.00
+	3 COMBINED AT	G36RIV	525.	8.17	445.	167.	80.	152.54
+	ROUTED TO	RCPG36	328.	8.83	264.	98.	43.	152.54
+	HYDROGRAPH AT	D44	412.	4.33	33.	8.	4.	0.33
+	HYDROGRAPH AT	G37	469.	4.33	39.	10.	5.	0.41
+	3 COMBINED AT	G37RIV	548.	8.50	466.	177.	86.	153.28
+	ROUTED TO	RCPG37	322.	9.00	259.	97.	42.	153.28
+	HYDROGRAPH AT	D43	233.	4.33	15.	4.	2.	0.15
+	HYDROGRAPH AT	G38	375.	4.50	33.	8.	4.	0.34
+	3 COMBINED AT	G38RIV	488.	8.67	408.	156.	74.	154.80
+	ROUTED TO	RCPG38	302.	9.00	240.	92.	40.	154.80
+	HYDROGRAPH AT	G12	709.	4.67	82.	21.	10.	1.03
+	ROUTED TO	RCPG12	348.	5.83	82.	21.	10.	1.03
+	HYDROGRAPH AT	G39	469.	4.83	67.	17.	8.	0.76
+	2 COMBINED AT	CPG39	348.	4.83	118.	30.	14.	1.79
+	HYDROGRAPH AT	D34	1452.	4.33	149.	37.	18.	1.20
+	ROUTED TO	RCPD34	803.	4.67	148.	37.	18.	1.20
+	HYDROGRAPH AT	D42	314.	4.33	20.	5.	2.	0.21
+	2 COMBINED AT	CPD42	813.	4.50	160.	40.	19.	1.41
+	3 COMBINED AT	D42RIV	494.	8.67	413.	169.	82.	156.97

+	ROUTED TO	RCPD42	295.	9.33	236.	90.	42.	156.97
+	HYDROGRAPH AT	D41	426.	4.33	30.	8.	4.	0.29
+	2 COMBINED AT	D41RIV	461.	8.83	382.	156.	76.	157.27
+	ROUTED TO	RCPD41	293.	9.33	234.	89.	42.	157.27
+	HYDROGRAPH AT	G02	1298.	4.50	154.	39.	19.	2.06
+	HYDROGRAPH AT	G03	1510.	4.50	198.	50.	24.	2.46
+	2 COMBINED AT	CPG03	2241.	4.50	299.	75.	36.	4.52
+	ROUTED TO	RCPG03	544.	6.33	286.	75.	36.	4.52
+	HYDROGRAPH AT	DRG08	27.	4.50	2.	0.	0.	0.40
+	ROUTED TO	RDG08	5.	7.17	2.	0.	0.	0.40
+	HYDROGRAPH AT	G09	542.	4.67	62.	15.	7.	0.70
+	3 COMBINED AT	CPG09	535.	6.33	312.	83.	40.	5.24
+	ROUTED TO	RCPG09	363.	8.33	279.	81.	39.	5.24
+	HYDROGRAPH AT	G48	2151.	4.33	360.	91.	44.	1.91
+	ROUTED TO	RCPG48	1074.	6.17	354.	91.	44.	1.91
+	HYDROGRAPH AT	G01	809.	4.67	109.	27.	13.	1.58
+	2 COMBINED AT	CPG01	1080.	6.17	451.	115.	55.	3.49
+	HYDROGRAPH AT	G10	465.	4.50	42.	11.	5.	0.44
+	2 COMBINED AT	CPG10	1085.	6.17	479.	122.	59.	3.93
+	ROUTED TO	RCPG10	226.	15.33	200.	99.	51.	3.93
+	HYDROGRAPH AT	G11	634.	4.50	56.	14.	7.	0.61
+	3 COMBINED AT	CPG11	356.	8.33	281.	172.	91.	9.78
+	DIVERSION TO	DVG11	129.	8.67	107.	67.	35.	9.78
+	HYDROGRAPH AT	DG11	157.	8.67	132.	85.	46.	9.78
+	ROUTED TO	RCPG11	149.	10.83	129.	82.	45.	9.78
+	HYDROGRAPH AT	G40	878.	4.67	107.	27.	13.	1.52
+	2 COMBINED AT	CPG40	499.	4.67	143.	100.	56.	6.90
+	2 COMBINED AT	G40RIV	499.	9.50	409.	185.	96.	168.55
+	ROUTED TO	RCPG40	280.	10.00	211.	98.	45.	168.55
+	HYDROGRAPH AT	D40	354.	4.33	24.	6.	3.	0.23
+	HYDROGRAPH AT	G41	471.	4.50	41.	10.	5.	0.42
+	3 COMBINED AT	D40RIV	529.	9.50	441.	199.	103.	169.20
+	ROUTED TO	RCPD40	267.	10.17	200.	95.	44.	169.20
+	HYDROGRAPH AT	D36	325.	4.33	27.	7.	3.	0.25
+	HYDROGRAPH AT	D35	659.	4.67	92.	23.	11.	1.23

+	2 COMBINED AT	CPD35	722.	4.67	109.	27.	13.	1.43
+	ROUTED TO	RCPD35	595.	5.17	109.	27.	13.	1.43
+	HYDROGRAPH AT	D37	309.	4.50	29.	7.	3.	0.28
+	2 COMBINED AT	CPD37	590.	5.17	128.	32.	15.	1.71
+	HYDROGRAPH AT	D38	425.	4.50	38.	10.	5.	0.37
+	2 COMBINED AT	CPD38	590.	5.00	150.	38.	18.	2.07
+	ROUTED TO	RCPD38	502.	5.50	144.	36.	17.	2.07
+	HYDROGRAPH AT	D39	358.	4.50	32.	8.	4.	0.29
+	2 COMBINED AT	CPD39	513.	4.83	162.	41.	20.	2.36
+	2 COMBINED AT	D39RIV	462.	9.83	374.	172.	89.	171.57
+	ROUTED TO	RCPD39	248.	10.17	188.	92.	41.	171.57
+	HYDROGRAPH AT	DRG11	129.	8.67	107.	67.	35.	9.78
+	ROUTED TO	RDG11	125.	10.33	106.	66.	35.	9.78
+	HYDROGRAPH AT	G42	543.	4.67	62.	15.	7.	0.69
+	2 COMBINED AT	CPG42	258.	4.67	128.	83.	44.	5.09
+	2 COMBINED AT	G42RIV	465.	9.83	360.	179.	95.	172.26
+	ROUTED TO	RCPG42	285.	10.17	206.	114.	52.	172.26
+	HYDROGRAPH AT	C51	131.	5.17	37.	9.	4.	0.39
+	HYDROGRAPH AT	C52	120.	5.17	36.	9.	4.	0.38
+	2 COMBINED AT	CPC52	222.	5.17	65.	16.	8.	0.77
+	ROUTED TO	RCPC52	216.	5.50	65.	16.	8.	0.77
+	HYDROGRAPH AT	C53	122.	5.17	35.	9.	4.	0.37
+	ROUTED TO	RCPC53	104.	6.00	35.	9.	4.	0.37
+	HYDROGRAPH AT	B07	475.	4.33	44.	11.	5.	0.34
+	3 COMBINED AT	CPB07	347.	4.33	112.	29.	14.	1.57
+	ROUTED TO	RCPB07	228.	5.00	109.	29.	14.	1.57
+	HYDROGRAPH AT	B08	152.	5.00	39.	10.	5.	0.43
+	2 COMBINED AT	CPB08	299.	5.17	123.	32.	16.	2.00
+	2 COMBINED AT	B08RIV	494.	9.83	390.	193.	101.	174.26
+	ROUTED TO	RCPB08	273.	10.17	197.	111.	49.	174.26
+	HYDROGRAPH AT	DRC13	346.	4.50	41.	10.	5.	0.73
+	ROUTED TO	RDC13	212.	5.00	40.	10.	5.	0.73
+	HYDROGRAPH AT	DRC31	80.	4.67	17.	4.	2.	0.65
+	ROUTED TO	RDC31	64.	5.50	17.	4.	2.	0.65
+	HYDROGRAPH AT	DRC14	182.	4.50	33.	8.	4.	0.77
	ROUTED TO							

+		RDC14	143.	5.17	33.	8.	4.	0.77
+	HYDROGRAPH AT	DRC10	53.	4.50	14.	4.	2.	1.00
+	ROUTED TO	RDC10	41.	5.50	14.	4.	2.	1.00
+	HYDROGRAPH AT	DRC30	224.	4.67	51.	13.	6.	1.99
+	ROUTED TO	RDC30	216.	5.00	51.	13.	6.	1.99
+	5 COMBINED AT	CPC33A	275.	5.17	86.	22.	11.	2.69
+	ROUTED TO	RC33A	185.	6.67	79.	22.	11.	2.69
+	HYDROGRAPH AT	DRC29	88.	4.50	20.	5.	2.	3.95
+	ROUTED TO	RDC29	60.	6.00	19.	5.	2.	3.95
+	HYDROGRAPH AT	DRC28	117.	4.50	24.	6.	3.	2.78
+	ROUTED TO	RDC28	82.	6.00	23.	6.	3.	2.78
+	HYDROGRAPH AT	DRC27	128.	4.83	39.	10.	5.	2.82
+	ROUTED TO	RDC27	119.	5.33	37.	10.	5.	2.82
+	HYDROGRAPH AT	DRC20	158.	4.50	33.	8.	4.	3.26
+	ROUTED TO	RDC20	102.	5.17	32.	8.	4.	3.26
+	4 COMBINED AT	CPC33B	211.	5.83	78.	21.	10.	6.40
+	ROUTED TO	RC33B	196.	6.17	76.	21.	10.	6.40
+	HYDROGRAPH AT	DRC24	561.	4.50	62.	16.	8.	1.85
+	ROUTED TO	RDC24	401.	5.00	62.	16.	8.	1.85
+	HYDROGRAPH AT	DRC25	73.	4.33	6.	1.	1.	0.08
+	ROUTED TO	RDC25	36.	5.00	6.	1.	1.	0.08
+	HYDROGRAPH AT	DRC26	143.	5.00	34.	8.	4.	0.79
+	ROUTED TO	RDC26	121.	6.00	34.	8.	4.	0.79
+	HYDROGRAPH AT	DRD09	291.	4.50	50.	13.	6.	1.75
+	ROUTED TO	RDD09	182.	4.83	49.	13.	6.	1.75
+	4 COMBINED AT	CPC33C	403.	5.00	76.	19.	9.	4.43
+	ROUTED TO	RC33C	224.	5.17	53.	14.	7.	4.43
+	2 COMBINED AT	CPC33D	178.	6.17	81.	22.	11.	10.83
+	ROUTED TO	RC33D	157.	6.50	77.	21.	10.	10.83
+	2 COMBINED AT	CPC33E	170.	6.83	94.	27.	13.	13.51
+	ROUTED TO	RC33E	131.	7.67	84.	25.	12.	13.51
+	HYDROGRAPH AT	DRD12	158.	4.33	10.	2.	1.	0.14
+	ROUTED TO	RDD12	27.	6.83	10.	2.	1.	0.14
+	2 COMBINED AT	CPC33F	130.	7.67	84.	25.	12.	13.66
+	ROUTED TO	RC33F	122.	8.17	83.	25.	12.	13.66
+	HYDROGRAPH AT	C33	1250.	5.33	263.	66.	32.	32.52

+	2 COMBINED AT	CPC33	819.	5.33	191.	52.	25.	46.18
+	ROUTED TO	RCPC33	492.	7.17	184.	52.	25.	46.18
+	HYDROGRAPH AT	C34	442.	4.67	61.	15.	7.	0.86
+	2 COMBINED AT	CPC34A	490.	7.17	184.	53.	25.	47.04
+	HYDROGRAPH AT	C35	1371.	4.50	136.	34.	16.	5.80
+	ROUTED TO	RCPC35	1264.	4.50	136.	34.	16.	5.80
+	2 COMBINED AT	CPC34	487.	7.17	205.	58.	28.	52.84
+	ROUTED TO	RCPC34	375.	7.50	163.	47.	23.	52.84
+	HYDROGRAPH AT	C36	1008.	4.67	135.	34.	16.	3.08
+	2 COMBINED AT	CPC36	353.	7.50	173.	50.	24.	55.93
+	ROUTED TO	RCPC36	334.	7.50	164.	47.	23.	55.93
+	HYDROGRAPH AT	C49	297.	4.33	19.	5.	2.	0.19
+	2 COMBINED AT	CPC49	332.	7.50	165.	48.	23.	56.11
+	ROUTED TO	RCPC49	331.	7.67	164.	48.	23.	56.11
+	HYDROGRAPH AT	C40	185.	4.33	13.	3.	2.	0.17
+	DIVERSION TO	DVC40	28.	4.33	1.	0.	0.	0.17
+	HYDROGRAPH AT	DC40	157.	4.33	11.	3.	1.	0.17
+	ROUTED TO	RCPC40	114.	4.50	11.	3.	1.	0.17
+	HYDROGRAPH AT	C41	93.	4.33	6.	1.	1.	0.08
+	DIVERSION TO	DVC41	31.	4.33	2.	0.	0.	0.08
+	HYDROGRAPH AT	DC41	62.	4.33	4.	1.	0.	0.08
+	ROUTED TO	RCPC41	34.	4.67	4.	1.	0.	0.08
+	HYDROGRAPH AT	C42	138.	4.33	9.	2.	1.	0.11
+	3 COMBINED AT	CPC42	208.	4.33	24.	6.	3.	0.31
+	DIVERSION TO	DVC42A	82.	4.33	9.	2.	1.	0.31
+	HYDROGRAPH AT	DC42A	127.	4.33	15.	4.	2.	0.31
+	DIVERSION TO	DVC42B	63.	4.33	7.	2.	1.	0.31
+	HYDROGRAPH AT	DC42B	63.	4.33	7.	2.	1.	0.31
+	ROUTED TO	RCPC42	39.	5.00	7.	2.	1.	0.31
+	HYDROGRAPH AT	DRC41	31.	4.33	2.	0.	0.	0.08
+	ROUTED TO	RDC41	8.	5.67	2.	0.	0.	0.08
+	HYDROGRAPH AT	C46	267.	4.50	24.	6.	3.	0.25
+	3 COMBINED AT	CPC46	272.	4.50	33.	8.	4.	0.37
+	DIVERSION TO	DVC46	137.	4.50	17.	4.	2.	0.37
+	HYDROGRAPH AT	DC46	136.	4.50	16.	4.	2.	0.37

+	ROUTED TO	RCPC46	75.	5.33	16.	4.	2.	0.37
+	HYDROGRAPH AT	C37	673.	4.83	101.	25.	12.	1.80
+	2 COMBINED AT	CPC37	641.	4.83	102.	26.	12.	2.11
+	ROUTED TO	RCPC37	521.	5.17	102.	26.	12.	2.11
+	HYDROGRAPH AT	C48	361.	4.33	26.	7.	3.	0.25
+	2 COMBINED AT	CPC48A	521.	5.17	120.	30.	15.	2.37
+	2 COMBINED AT	CPC48	306.	7.67	165.	48.	23.	59.14
+	ROUTED TO	RCPC48	293.	7.83	161.	47.	23.	59.14
+	HYDROGRAPH AT	C39	143.	4.33	9.	2.	1.	0.13
+	DIVERSION TO	DVC39	59.	4.33	4.	1.	0.	0.13
+	HYDROGRAPH AT	DC39	84.	4.33	5.	1.	1.	0.13
+	ROUTED TO	RCPC39	33.	4.83	5.	1.	1.	0.13
+	HYDROGRAPH AT	DRC40	28.	4.33	1.	0.	0.	0.17
+	ROUTED TO	RDC40	11.	4.67	1.	0.	0.	0.17
+	HYDROGRAPH AT	C43	243.	4.33	15.	4.	2.	0.21
+	3 COMBINED AT	CPC43	246.	4.33	21.	5.	3.	0.31
+	DIVERSION TO	DVC43	92.	4.33	8.	2.	1.	0.31
+	HYDROGRAPH AT	DC43	155.	4.33	13.	3.	2.	0.31
+	ROUTED TO	RCPC43	74.	4.83	13.	3.	2.	0.31
+	HYDROGRAPH AT	DRC42A	82.	4.33	9.	2.	1.	0.31
+	ROUTED TO	RDC42A	58.	4.67	9.	2.	1.	0.31
+	HYDROGRAPH AT	C45	197.	4.33	13.	3.	2.	0.13
+	2 COMBINED AT	CPC45	216.	4.33	22.	5.	3.	0.25
+	DIVERSION TO	DVC45	115.	4.33	12.	3.	1.	0.25
+	HYDROGRAPH AT	DC45	101.	4.33	10.	3.	1.	0.25
+	ROUTED TO	RCPC45	83.	4.33	10.	3.	1.	0.25
+	HYDROGRAPH AT	C44	269.	4.33	19.	5.	2.	0.17
+	3 COMBINED AT	CPC44	361.	4.33	43.	11.	5.	0.48
+	ROUTED TO	RCPC44	115.	6.50	42.	11.	5.	0.48
+	HYDROGRAPH AT	DRC39	59.	4.33	4.	1.	0.	0.13
+	ROUTED TO	RDC39	19.	5.33	4.	1.	0.	0.13
+	HYDROGRAPH AT	DRC43	92.	4.33	8.	2.	1.	0.31
+	ROUTED TO	RDC43	47.	4.67	8.	2.	1.	0.31
+	HYDROGRAPH AT	C38	442.	4.67	49.	12.	6.	0.64
+	3 COMBINED AT	CPC38	438.	4.67	54.	13.	6.	0.81
	ROUTED TO							

+		RCPC38	153.	7.33	53.	13.	6.	0.81
+	HYDROGRAPH AT	DRC42B	63.	4.33	7.	2.	1.	0.31
+	ROUTED TO	RDC42B	38.	5.67	7.	2.	1.	0.31
+	HYDROGRAPH AT	DRC45	115.	4.33	12.	3.	1.	0.25
+	ROUTED TO	RDC45	26.	7.00	11.	3.	1.	0.25
+	HYDROGRAPH AT	DRC46	137.	4.50	17.	4.	2.	0.37
+	ROUTED TO	RDC46	57.	6.00	17.	4.	2.	0.37
+	HYDROGRAPH AT	C47	742.	4.67	93.	23.	11.	1.00
+	6 COMBINED AT	CPC47A	541.	4.67	140.	36.	17.	2.57
+	2 COMBINED AT	CPC47	284.	7.83	180.	52.	25.	61.04
+	ROUTED TO	RCPC47	283.	8.17	175.	52.	25.	61.04
+	HYDROGRAPH AT	B09	208.	4.67	23.	6.	3.	0.26
+	2 COMBINED AT	CPB09	282.	8.17	175.	52.	25.	61.72
+	ROUTED TO	RCPB09	277.	8.33	171.	51.	24.	61.72
+	HYDROGRAPH AT	B01	410.	4.83	54.	14.	7.	5.16
+	ROUTED TO	RCPB01	108.	8.00	48.	14.	7.	5.16
+	HYDROGRAPH AT	B02	746.	4.67	89.	22.	11.	3.58
+	ROUTED TO	RCPB02	484.	5.00	89.	22.	11.	3.58
+	HYDROGRAPH AT	B03	771.	5.00	120.	30.	14.	13.20
+	3 COMBINED AT	CPB03	596.	5.00	101.	27.	13.	21.96
+	DIVERSION TO	DVB03N	202.	5.00	37.	10.	5.	21.96
+	HYDROGRAPH AT	DB03N	394.	5.00	64.	17.	8.	21.96
+	ROUTED TO	RCPB03	316.	5.33	64.	17.	8.	21.96
+	HYDROGRAPH AT	DRB03N	202.	5.00	37.	10.	5.	21.96
+	DIVERSION TO	DVB16	168.	5.00	31.	8.	4.	21.96
+	HYDROGRAPH AT	DB16	34.	5.00	6.	2.	1.	21.96
+	DIVERSION TO	DVB18	26.	5.00	4.	1.	1.	21.96
+	HYDROGRAPH AT	DB18	9.	5.00	2.	0.	0.	21.96
+	HYDROGRAPH AT	B13	234.	4.33	15.	4.	2.	0.16
+	3 COMBINED AT	CPB13	427.	5.33	93.	25.	12.	15.13
+	DIVERSION TO	DVB13	259.	5.33	53.	14.	7.	15.13
+	HYDROGRAPH AT	DB13	168.	5.33	40.	11.	5.	15.13
+	ROUTED TO	RCPB13	113.	6.33	38.	11.	5.	15.13
+	HYDROGRAPH AT	B04	648.	4.67	77.	19.	9.	0.91
+	ROUTED TO	RCPB04	642.	4.67	77.	19.	9.	0.91
+	HYDROGRAPH AT	B05	542.	4.50	55.	14.	7.	0.53

+	3 COMBINED AT	CPB05	642.	4.67	178.	49.	24.	4.77
+	ROUTED TO	RCPB05	315.	6.17	149.	44.	21.	4.77
+	HYDROGRAPH AT	B06	650.	4.50	59.	15.	7.	0.57
+	ROUTED TO	RCPB06	347.	5.33	58.	15.	7.	0.57
+	HYDROGRAPH AT	B10	654.	4.50	59.	15.	7.	0.55
+	3 COMBINED AT	CPB10	394.	6.00	198.	58.	28.	5.90
+	HYDROGRAPH AT	B11	294.	4.50	26.	7.	3.	0.24
+	2 COMBINED AT	CPB11	463.	4.50	211.	61.	30.	6.14
+	ROUTED TO	RCPB11	351.	6.50	203.	61.	30.	6.14
+	HYDROGRAPH AT	B12	319.	4.50	35.	9.	4.	0.33
+	2 COMBINED AT	CPB12A	375.	4.83	216.	65.	31.	6.47
+	2 COMBINED AT	CPB12	257.	8.17	183.	55.	27.	67.78
+	HYDROGRAPH AT	H02	1946.	4.33	291.	73.	35.	1.58
+	ROUTED TO	RCPH02	1364.	4.83	290.	73.	35.	1.58
+	HYDROGRAPH AT	H01	1383.	4.33	134.	34.	16.	1.61
+	2 COMBINED AT	CPH01	1764.	4.50	386.	97.	47.	3.20
+	DIVERSION TO	DVH01	911.	4.50	217.	55.	26.	3.20
+	HYDROGRAPH AT	DH01	853.	4.50	169.	42.	20.	3.20
+	ROUTED TO	RCPH01	749.	5.00	168.	42.	20.	3.20
+	HYDROGRAPH AT	H24	620.	4.33	40.	10.	5.	0.42
+	2 COMBINED AT	CPH24	866.	4.83	207.	52.	25.	1.98
+	ROUTED TO	RCPH24	751.	5.50	205.	52.	25.	1.98
+	HYDROGRAPH AT	H55	467.	4.33	33.	8.	4.	0.34
+	2 COMBINED AT	CPH55	751.	5.50	226.	58.	28.	2.32
+	ROUTED TO	RCPH55	628.	6.33	213.	56.	27.	2.32
+	HYDROGRAPH AT	H56	494.	4.33	38.	10.	5.	0.40
+	2 COMBINED AT	CPH56	623.	6.33	230.	61.	29.	2.71
+	ROUTED TO	RCPH56	532.	7.33	222.	59.	29.	2.71
+	HYDROGRAPH AT	H57	538.	4.33	41.	10.	5.	0.42
+	2 COMBINED AT	CPH57	532.	7.33	242.	65.	31.	3.14
+	ROUTED TO	RCPH57	478.	8.17	233.	63.	31.	3.14
+	HYDROGRAPH AT	H68	475.	4.33	33.	8.	4.	0.34
+	2 COMBINED AT	CPH68	478.	8.17	247.	68.	33.	3.47
+	3 COMBINED AT	B12RIV	461.	10.17	350.	176.	92.	262.59
+	ROUTED TO	RCPB12	83.	22.17	70.	35.	0.	262.59

+	HYDROGRAPH AT	DRH01	911.	4.50	217.	55.	26.	3.20
+	ROUTED TO	RDH01	768.	5.00	217.	55.	26.	3.20
+	HYDROGRAPH AT	H25	475.	4.33	30.	8.	4.	0.32
+	2 COMBINED AT	CPH25	864.	5.00	249.	63.	30.	1.95
+	ROUTED TO	RCPH25	811.	5.33	247.	63.	30.	1.95
+	HYDROGRAPH AT	H58	420.	4.33	29.	7.	4.	0.31
+	2 COMBINED AT	CPH58	803.	5.33	264.	67.	32.	2.25
+	ROUTED TO	RCPH58	720.	6.17	258.	66.	32.	2.25
+	HYDROGRAPH AT	H26	671.	4.50	65.	16.	8.	0.75
+	ROUTED TO	RCPH26	478.	4.83	65.	16.	8.	0.75
+	HYDROGRAPH AT	H59	572.	4.33	37.	9.	4.	0.39
+	3 COMBINED AT	CPH59	720.	6.17	315.	81.	39.	3.39
+	DIVERSION TO	DVH59	452.	6.17	201.	51.	25.	3.39
+	HYDROGRAPH AT	DH59	235.	6.17	101.	26.	12.	3.39
+	ROUTED TO	RCPH59	225.	6.83	99.	26.	12.	3.39
+	HYDROGRAPH AT	H60	593.	4.50	52.	13.	6.	0.55
+	2 COMBINED AT	CPH60	382.	4.50	147.	39.	19.	1.74
+	ROUTED TO	RCPH60	241.	7.83	142.	39.	19.	1.74
+	HYDROGRAPH AT	DRH59	452.	6.17	201.	51.	25.	3.39
+	ROUTED TO	RDH59	414.	7.33	194.	51.	25.	3.39
+	HYDROGRAPH AT	H61	528.	4.50	46.	11.	6.	0.47
+	2 COMBINED AT	CPH61	432.	7.33	214.	60.	29.	2.68
+	ROUTED TO	RCPH61	409.	8.17	212.	60.	29.	2.68
+	HYDROGRAPH AT	H69	654.	4.33	50.	13.	6.	0.53
+	3 COMBINED AT	CPH69	557.	8.17	309.	91.	44.	4.94
+	2 COMBINED AT	H69RIV	356.	10.17	251.	127.	50.	265.90
+	ROUTED TO	RCPH69	84.	22.17	70.	35.	0.	265.90
+	HYDROGRAPH AT	H65	463.	4.50	40.	10.	5.	0.42
+	ROUTED TO	RCPH65	276.	5.00	40.	10.	5.	0.42
+	HYDROGRAPH AT	H67	247.	4.33	18.	4.	2.	0.19
+	2 COMBINED AT	CPH67	276.	4.83	58.	14.	7.	0.60
+	ROUTED TO	RCPH67	225.	5.33	55.	14.	7.	0.60
+	HYDROGRAPH AT	H70	526.	4.50	48.	12.	6.	0.49
+	2 COMBINED AT	CPH70	415.	4.50	85.	21.	10.	1.10
+	HYDROGRAPH AT	B15	678.	4.50	63.	16.	8.	0.64
	3 COMBINED AT							

+		B15RIV	536.	10.17	416.	194.	96.	267.64
+	ROUTED TO	RCPB15	86.	22.50	71.	37.	0.	267.64
+	HYDROGRAPH AT	DRB13	259.	5.33	53.	14.	7.	15.13
+	ROUTED TO	RDB13	137.	6.50	51.	14.	7.	15.13
+	HYDROGRAPH AT	B14	437.	4.50	41.	10.	5.	0.39
+	HYDROGRAPH AT	DRB18	26.	5.00	4.	1.	1.	21.96
+	DIVERSION TO	DVB14	25.	5.00	4.	1.	1.	21.96
+	HYDROGRAPH AT	DB14	1.	5.00	0.	0.	0.	21.96
+	DIVERSION TO	DVB19	1.	5.00	0.	0.	0.	21.96
+	HYDROGRAPH AT	DB19	0.	0.00	0.	0.	0.	21.96
+	3 COMBINED AT	CPB14	413.	6.17	143.	40.	19.	12.33
+	HYDROGRAPH AT	B21	354.	4.50	31.	8.	4.	0.31
+	2 COMBINED AT	CPB21	366.	6.17	144.	40.	19.	12.64
+	ROUTED TO	RCPB21	139.	7.00	86.	26.	13.	12.64
+	HYDROGRAPH AT	B20	249.	4.33	17.	4.	2.	0.18
+	ROUTED TO	RCPB20	81.	5.50	17.	4.	2.	0.18
+	HYDROGRAPH AT	B44	403.	4.50	38.	9.	5.	0.38
+	2 COMBINED AT	CPB44	391.	4.50	53.	13.	6.	0.55
+	ROUTED TO	RCPB44	363.	4.50	53.	13.	6.	0.55
+	HYDROGRAPH AT	B45	713.	4.67	83.	21.	10.	0.97
+	3 COMBINED AT	CPB45	408.	4.67	121.	37.	18.	14.16
+	2 COMBINED AT	B45RIV	350.	10.50	258.	133.	50.	282.17
+	ROUTED TO	RCPB45	80.	22.67	66.	34.	0.	282.17
+	HYDROGRAPH AT	H22	1393.	4.33	128.	32.	15.	1.46
+	ROUTED TO	RCPH22	849.	4.83	128.	32.	15.	1.46
+	HYDROGRAPH AT	H03	2240.	4.33	419.	106.	51.	2.19
+	ROUTED TO	RCPH03	1803.	4.67	414.	106.	51.	2.19
+	HYDROGRAPH AT	H23	700.	4.50	62.	15.	7.	0.71
+	3 COMBINED AT	CPH23	2318.	4.67	528.	134.	65.	4.35
+	ROUTED TO	RCPH23	1970.	5.33	524.	134.	65.	4.35
+	HYDROGRAPH AT	H27	511.	4.33	37.	9.	4.	0.38
+	ROUTED TO	RCPH27	288.	4.83	37.	9.	4.	0.38
+	HYDROGRAPH AT	H62	702.	4.33	48.	12.	6.	0.49
+	3 COMBINED AT	CPH62	1970.	5.33	553.	142.	68.	5.23
+	ROUTED TO	RCPH62	1760.	5.83	550.	142.	68.	5.23
+	HYDROGRAPH AT	H20	665.	4.33	48.	12.	6.	0.50

+	ROUTED TO	RCPH20	363.	4.83	48.	12.	6.	0.50
+	HYDROGRAPH AT	H28	819.	4.33	62.	16.	8.	0.72
+	2 COMBINED AT	CPH28	675.	4.33	91.	23.	11.	1.24
+	ROUTED TO	RCPH28	443.	5.00	90.	23.	11.	1.24
+	HYDROGRAPH AT	H63	254.	4.33	16.	4.	2.	0.17
+	3 COMBINED AT	CPH63	1780.	5.67	591.	152.	73.	6.64
+	DIVERSION TO	DVH63	838.	5.83	282.	73.	35.	6.64
+	HYDROGRAPH AT	DH63	944.	5.67	308.	79.	38.	6.64
+	ROUTED TO	RCPH63	813.	6.67	308.	79.	38.	6.64
+	HYDROGRAPH AT	H66	406.	4.83	64.	16.	8.	0.72
+	2 COMBINED AT	CPH66	929.	6.50	374.	96.	46.	3.64
+	ROUTED TO	RCPH66	837.	7.33	372.	96.	46.	3.64
+	HYDROGRAPH AT	H71	887.	4.33	58.	15.	7.	0.65
+	2 COMBINED AT	CPH71	833.	7.33	399.	104.	50.	4.29
+	ROUTED TO	RCPH71	778.	7.83	389.	101.	49.	4.29
+	HYDROGRAPH AT	H72	652.	4.33	42.	10.	5.	0.42
+	2 COMBINED AT	CPH72	773.	7.83	407.	107.	51.	4.71
+	2 COMBINED AT	H72RIV	306.	10.50	230.	123.	45.	277.74
+	ROUTED TO	RCPH72	83.	22.67	71.	37.	0.	277.74
+	HYDROGRAPH AT	B42	256.	4.33	19.	5.	2.	0.20
+	ROUTED TO	RCPB42	195.	4.83	19.	5.	2.	0.20
+	HYDROGRAPH AT	B43	232.	4.33	19.	5.	2.	0.17
+	2 COMBINED AT	CPB43	256.	4.50	38.	10.	5.	0.37
+	HYDROGRAPH AT	B41	389.	4.67	44.	11.	5.	0.44
+	2 COMBINED AT	CPB41	554.	4.67	74.	18.	9.	0.82
+	ROUTED TO	RCPB41	382.	5.50	73.	18.	9.	0.82
+	HYDROGRAPH AT	B46	708.	4.67	93.	23.	11.	1.06
+	2 COMBINED AT	CPB46	527.	4.67	128.	32.	16.	2.43
+	2 COMBINED AT	B46RIV	258.	12.33	190.	116.	45.	280.17
+	ROUTED TO	RCPB46	82.	22.67	70.	37.	0.	280.17
+	HYDROGRAPH AT	DRH63	838.	5.83	282.	73.	35.	6.64
+	ROUTED TO	RDH63	793.	6.17	280.	73.	35.	6.64
+	HYDROGRAPH AT	H53	401.	4.50	37.	9.	5.	0.39
+	2 COMBINED AT	CPH53	873.	6.17	316.	83.	40.	4.10
+	HYDROGRAPH AT	H18	624.	4.33	42.	11.	5.	0.44

+	ROUTED TO	RCPH18	198.	5.83	42.	11.	5.	0.44
+	HYDROGRAPH AT	H29	701.	4.67	82.	21.	10.	1.04
+	2 COMBINED AT	CPH29	611.	4.67	104.	26.	13.	1.48
+	HYDROGRAPH AT	H04	863.	4.33	102.	25.	12.	1.21
+	ROUTED TO	RCPH04	641.	4.67	101.	25.	12.	1.21
+	HYDROGRAPH AT	H17	632.	4.33	45.	11.	5.	0.45
+	2 COMBINED AT	CPH17	732.	4.50	124.	31.	15.	1.64
+	DIVERSION TO	DVH17	370.	4.50	79.	20.	10.	1.64
+	HYDROGRAPH AT	DH17	362.	4.50	45.	11.	5.	1.64
+	DIVERSION TO	DVH30A	175.	4.50	19.	5.	2.	1.64
+	HYDROGRAPH AT	DH30A	187.	4.50	26.	6.	3.	1.64
+	ROUTED TO	RCPH17	118.	5.17	26.	6.	3.	1.64
+	HYDROGRAPH AT	H30	629.	4.33	46.	11.	5.	0.48
+	2 COMBINED AT	CPH30	512.	4.33	71.	18.	9.	0.92
+	ROUTED TO	RCPH30	312.	4.67	71.	18.	9.	0.92
+	HYDROGRAPH AT	H51	458.	4.33	29.	7.	4.	0.30
+	2 COMBINED AT	CPH51	371.	4.33	87.	22.	11.	1.22
+	ROUTED TO	RCPH51	288.	5.00	86.	22.	11.	1.22
+	HYDROGRAPH AT	H52	315.	4.33	22.	5.	3.	0.22
+	2 COMBINED AT	CPH52A	286.	5.00	102.	26.	12.	1.45
+	3 COMBINED AT	CPH52B	897.	6.17	404.	105.	51.	7.03
+	ROUTED TO	RCPH52	842.	6.67	398.	105.	51.	7.03
+	HYDROGRAPH AT	H54	318.	4.33	20.	5.	2.	0.21
+	2 COMBINED AT	CPH54	835.	6.67	398.	107.	51.	7.24
+	ROUTED TO	RCPH54	814.	6.83	396.	107.	51.	7.24
+	HYDROGRAPH AT	H05	1289.	4.33	168.	42.	20.	1.51
+	ROUTED TO	RCPH05	1035.	4.67	167.	42.	20.	1.51
+	DIVERSION TO	DVH05	339.	4.67	48.	12.	6.	1.51
+	HYDROGRAPH AT	DH05	696.	4.67	118.	30.	15.	1.51
+	HYDROGRAPH AT	DRH17	370.	4.50	79.	20.	10.	1.64
+	DIVERSION TO	DVH31A	266.	4.50	60.	15.	7.	1.64
+	HYDROGRAPH AT	DH31A	105.	4.50	19.	5.	2.	1.64
+	HYDROGRAPH AT	H31	539.	4.33	36.	9.	4.	0.37
+	3 COMBINED AT	CPH31	881.	4.50	162.	41.	20.	1.59
+	HYDROGRAPH AT	H15B	644.	4.17	49.	12.	6.	0.30
	ROUTED TO							

+		RCH15B	493.	4.33	49.	12.	6.	0.30
+	HYDROGRAPH AT	H15A	822.	4.33	70.	18.	9.	0.48
+	2 COMBINED AT	CPH15A	1156.	4.33	114.	28.	14.	0.77
+	HYDROGRAPH AT	DRH05	339.	4.67	48.	12.	6.	1.51
+	2 COMBINED AT	CPH15	1156.	4.33	158.	40.	19.	1.29
+	DIVERSION TO	DVH15A	239.	4.33	37.	9.	4.	1.29
+	HYDROGRAPH AT	DH15A	895.	4.33	119.	30.	14.	1.29
+	2 COMBINED AT	CPH31A	1327.	4.33	249.	63.	31.	2.57
+	DIVERSION TO	DVH31	157.	4.83	48.	12.	6.	2.57
+	HYDROGRAPH AT	DH31	1217.	4.33	202.	51.	25.	2.57
+	DIVERSION TO	DVH33A	966.	4.33	159.	41.	20.	2.57
+	HYDROGRAPH AT	DH33A	252.	4.33	43.	11.	5.	2.57
+	HYDROGRAPH AT	DRH31	157.	4.83	48.	12.	6.	2.57
+	2 COMBINED AT	CPH32B	480.	4.33	101.	25.	12.	0.67
+	ROUTED TO	RCPH31	374.	5.33	100.	25.	12.	0.67
+	HYDROGRAPH AT	DRH31A	266.	4.50	60.	15.	7.	1.64
+	ROUTED TO	RDH31A	206.	5.50	59.	15.	7.	1.64
+	HYDROGRAPH AT	DRH30A	175.	4.50	19.	5.	2.	1.64
+	2 COMBINED AT	CPH32A	299.	4.50	102.	26.	12.	0.65
+	HYDROGRAPH AT	H32	702.	4.50	63.	16.	8.	0.71
+	3 COMBINED AT	CPH32	666.	4.50	208.	53.	26.	2.04
+	DIVERSION TO	DVH32	135.	4.50	30.	8.	4.	2.04
+	HYDROGRAPH AT	DH32	530.	4.50	178.	45.	22.	2.04
+	ROUTED TO	RCPH32	358.	7.17	169.	45.	22.	2.04
+	HYDROGRAPH AT	DRH32	135.	4.50	30.	8.	4.	2.04
+	ROUTED TO	RDH32	77.	5.83	30.	8.	4.	2.04
+	HYDROGRAPH AT	H48	420.	4.33	33.	8.	4.	0.33
+	2 COMBINED AT	CPH48	343.	4.33	69.	17.	8.	0.91
+	DIVERSION TO	DVH48	199.	4.33	42.	10.	5.	0.91
+	HYDROGRAPH AT	DH48	144.	4.33	28.	7.	3.	0.91
+	ROUTED TO	RCPH48	78.	5.17	27.	7.	3.	0.91
+	HYDROGRAPH AT	H50	500.	4.67	57.	14.	7.	0.63
+	3 COMBINED AT	CPH50	367.	7.17	195.	57.	28.	2.54
+	ROUTED TO	RCPH50	359.	7.50	193.	57.	28.	2.54
+	HYDROGRAPH AT	DRH48	199.	4.33	42.	10.	5.	0.91
+	ROUTED TO	RDH48	117.	5.17	41.	10.	5.	0.91

+	HYDROGRAPH AT	H49	526.	4.50	46.	12.	6.	0.48
+	2 COMBINED AT	CPH49	421.	4.50	78.	20.	9.	1.01
+	ROUTED TO	RCPH49	341.	4.83	77.	20.	9.	1.01
+	HYDROGRAPH AT	H73	428.	4.33	28.	7.	3.	0.29
+	4 COMBINED AT	CPH73	900.	7.17	528.	151.	73.	11.08
+	ROUTED TO	RCPH73	868.	7.83	519.	151.	73.	11.08
+	HYDROGRAPH AT	H74	764.	4.33	68.	17.	8.	0.80
+	2 COMBINED AT	CPH74	864.	7.83	516.	157.	76.	11.88
+	2 COMBINED AT	H74RIV	292.	12.33	229.	131.	40.	290.02
+	ROUTED TO	RCPH74	83.	24.00	73.	40.	0.	290.02
+	HYDROGRAPH AT	DRH15A	239.	4.33	37.	9.	4.	1.29
+	ROUTED TO	RCH15A	207.	4.33	37.	9.	4.	1.29
+	HYDROGRAPH AT	DRH33A	966.	4.33	159.	41.	20.	2.57
+	ROUTED TO	RDH33	698.	5.17	158.	41.	20.	2.57
+	2 COMBINED AT	CPH33B	823.	5.00	201.	52.	25.	2.06
+	HYDROGRAPH AT	H33	768.	4.50	84.	21.	10.	1.08
+	2 COMBINED AT	CPH33	856.	4.83	243.	62.	30.	2.83
+	DIVERSION TO	DVH33	428.	4.83	122.	31.	15.	2.83
+	HYDROGRAPH AT	DH33	428.	4.83	121.	31.	15.	2.83
+	ROUTED TO	RCPH33	404.	5.33	121.	31.	15.	2.83
+	HYDROGRAPH AT	H47	571.	4.33	37.	9.	4.	0.38
+	2 COMBINED AT	CPH47	491.	5.33	164.	42.	20.	1.80
+	ROUTED TO	RCPH47	456.	5.67	162.	42.	20.	1.80
+	HYDROGRAPH AT	H75	1177.	4.17	95.	24.	11.	0.75
+	2 COMBINED AT	CPH75	793.	4.17	227.	59.	28.	2.27
+	ROUTED TO	RCPH75	568.	4.67	223.	59.	28.	2.27
+	HYDROGRAPH AT	H76	887.	4.33	65.	16.	8.	0.75
+	2 COMBINED AT	CPH76	848.	4.50	247.	65.	31.	3.03
+	ROUTED TO	RCPH76	615.	5.00	246.	65.	31.	3.03
+	HYDROGRAPH AT	H77	428.	4.33	28.	7.	3.	0.27
+	2 COMBINED AT	CPH77	615.	5.00	262.	70.	34.	3.30
+	2 COMBINED AT	H77RIV	290.	12.67	232.	134.	41.	294.03
+	ROUTED TO	RCPH77	84.	23.33	73.	43.	0.	294.03
+	HYDROGRAPH AT	B40	167.	4.50	14.	4.	2.	0.18
+	ROUTED TO	RCPB40	67.	5.67	14.	4.	2.	0.18

+	HYDROGRAPH AT	B49	333.	4.50	30.	8.	4.	0.27
+	ROUTED TO	RCPB49	232.	4.67	30.	8.	4.	0.27
+	HYDROGRAPH AT	B50	311.	4.50	28.	7.	3.	0.27
+	3 COMBINED AT	CPB50	447.	4.50	67.	17.	8.	0.72
+	ROUTED TO	RCPB50	312.	5.17	65.	17.	8.	0.72
+	HYDROGRAPH AT	B19	458.	4.67	52.	13.	6.	0.54
+	HYDROGRAPH AT	DRB19	1.	5.00	0.	0.	0.	21.96
+	2 COMBINED AT	CPB19	458.	4.67	59.	15.	7.	0.88
+	ROUTED TO	RCPB19	265.	5.67	57.	14.	7.	0.88
+	HYDROGRAPH AT	B48	658.	4.50	59.	15.	7.	0.57
+	3 COMBINED AT	CPB48	423.	4.50	129.	33.	16.	2.17
+	ROUTED TO	RCPB48	339.	4.67	129.	33.	16.	2.17
+	HYDROGRAPH AT	B47	394.	4.33	33.	8.	4.	0.32
+	2 COMBINED AT	CPB47	473.	4.50	145.	37.	18.	2.49
+	ROUTED TO	RCPB47	359.	5.50	140.	37.	18.	2.49
+	HYDROGRAPH AT	B61	1021.	4.33	102.	26.	12.	0.75
+	2 COMBINED AT	CPB61	663.	4.33	208.	56.	27.	3.23
+	2 COMBINED AT	B61RIV	337.	8.67	235.	139.	45.	296.93
+	ROUTED TO	RCPB61	86.	4.33	72.	42.	1.	296.93
+	HYDROGRAPH AT	B22	729.	4.33	46.	12.	6.	0.55
+	ROUTED TO	RCPB22	262.	5.33	46.	12.	6.	0.55
+	HYDROGRAPH AT	B23	329.	4.17	20.	5.	2.	0.30
+	DIVERSION TO	DVB23	17.	4.17	1.	0.	0.	0.30
+	HYDROGRAPH AT	DB23	312.	4.17	19.	5.	2.	0.30
+	ROUTED TO	RCPB23	180.	4.67	19.	5.	2.	0.30
+	HYDROGRAPH AT	B36	261.	4.33	19.	5.	2.	0.18
+	2 COMBINED AT	CPB36	307.	4.50	39.	10.	5.	0.47
+	HYDROGRAPH AT	DRB23	17.	4.17	1.	0.	0.	0.30
+	ROUTED TO	RDB23	4.	5.67	1.	0.	0.	0.30
+	HYDROGRAPH AT	B24	307.	4.33	19.	5.	2.	0.24
+	2 COMBINED AT	CPB24A	307.	4.33	19.	5.	2.	0.25
+	2 COMBINED AT	CPB24	523.	4.33	51.	13.	6.	0.72
+	ROUTED TO	RCPB24	334.	4.67	51.	13.	6.	0.72
+	HYDROGRAPH AT	B37	137.	4.33	9.	2.	1.	0.09
+	3 COMBINED AT	CPB37	325.	4.67	93.	23.	11.	1.36
	HYDROGRAPH AT							

+		B25	332.	4.33	22.	6.	3.	0.30
+	2 COMBINED AT	CPB25	408.	4.33	93.	23.	11.	1.65
+	ROUTED TO	RCPB25	243.	5.17	80.	20.	10.	1.65
+	HYDROGRAPH AT	B26	318.	4.50	27.	7.	3.	0.35
+	2 COMBINED AT	CPB26	241.	5.17	93.	24.	11.	2.01
+	DIVERSION TO	DVB26	117.	5.17	42.	10.	5.	2.01
+	HYDROGRAPH AT	DB26	93.	5.17	41.	11.	5.	2.01
+	ROUTED TO	RCPB26	86.	5.83	40.	11.	5.	2.01
+	HYDROGRAPH AT	DRB14	25.	5.00	4.	1.	1.	21.96
+	DIVERSION TO	DVB18B	7.	5.00	1.	0.	0.	21.96
+	HYDROGRAPH AT	DB18B	18.	5.00	3.	1.	0.	21.96
+	ROUTED TO	RDB18	4.	10.33	2.	1.	0.	21.96
+	HYDROGRAPH AT	B17	72.	4.17	4.	1.	1.	0.05
+	DIVERSION TO	DVB17	39.	4.17	2.	1.	0.	0.05
+	HYDROGRAPH AT	DB17	33.	4.17	2.	0.	0.	0.05
+	ROUTED TO	RCPB17	8.	6.00	2.	0.	0.	0.05
+	HYDROGRAPH AT	B18	458.	4.67	51.	13.	6.	0.62
+	3 COMBINED AT	CPB18	297.	4.67	59.	17.	8.	1.64
+	HYDROGRAPH AT	DRB16	168.	5.00	31.	8.	4.	21.96
+	ROUTED TO	RDB16	133.	5.67	31.	8.	4.	21.96
+	HYDROGRAPH AT	DRB17	39.	4.17	2.	1.	0.	0.05
+	ROUTED TO	RDB17	12.	5.50	2.	1.	0.	0.05
+	HYDROGRAPH AT	DRB18B	7.	5.00	1.	0.	0.	21.96
+	HYDROGRAPH AT	B16	705.	4.50	61.	15.	7.	0.82
+	4 COMBINED AT	CPB16	314.	5.83	119.	32.	15.	6.32
+	ROUTED TO	RCPB16	287.	6.67	115.	32.	15.	6.32
+	HYDROGRAPH AT	B39	414.	4.50	36.	9.	4.	0.39
+	2 COMBINED AT	CPB39A	282.	6.67	122.	34.	17.	6.71
+	2 COMBINED AT	CPB39	279.	6.67	144.	41.	20.	8.35
+	ROUTED TO	RCPB39	228.	7.17	124.	36.	17.	8.35
+	HYDROGRAPH AT	B54	340.	4.50	30.	8.	4.	0.29
+	2 COMBINED AT	CPB54	223.	7.17	134.	39.	19.	8.64
+	ROUTED TO	RCPB54	217.	7.50	133.	39.	19.	8.64
+	HYDROGRAPH AT	B38	429.	4.50	47.	12.	6.	0.44
+	2 COMBINED AT	CPB38	305.	4.67	152.	44.	21.	9.08
+	ROUTED TO	RCPB38	263.	5.00	151.	44.	21.	9.08

+	HYDROGRAPH AT	B27	751.	4.33	48.	12.	6.	0.86
+	ROUTED TO	RCPB27	413.	4.67	48.	12.	6.	0.86
+	HYDROGRAPH AT	B35	230.	4.50	19.	5.	2.	0.25
+	2 COMBINED AT	CPB35A	427.	4.67	54.	14.	7.	1.11
+	HYDROGRAPH AT	DRB26	117.	5.17	42.	10.	5.	2.01
+	2 COMBINED AT	CPB35	427.	4.67	92.	23.	11.	2.29
+	ROUTED TO	RCPB35	238.	5.00	66.	17.	8.	2.29
+	HYDROGRAPH AT	B28	403.	4.33	28.	7.	3.	0.39
+	HYDROGRAPH AT	B34	118.	4.33	10.	2.	1.	0.13
+	2 COMBINED AT	CPB34	516.	4.33	37.	9.	4.	0.51
+	ROUTED TO	RCPB34	241.	5.17	37.	9.	4.	0.51
+	HYDROGRAPH AT	B33	272.	4.50	23.	6.	3.	0.28
+	2 COMBINED AT	CPB33A	260.	4.50	49.	12.	6.	0.79
+	2 COMBINED AT	CPB33	245.	5.00	68.	17.	8.	3.08
+	ROUTED TO	RCPB33	219.	5.33	68.	17.	8.	3.08
+	HYDROGRAPH AT	B65	319.	4.33	21.	5.	3.	0.20
+	4 COMBINED AT	CPB65	287.	5.00	166.	47.	23.	13.18
+	ROUTED TO	RCPB65	260.	5.50	160.	47.	23.	13.18
+	HYDROGRAPH AT	B55	106.	4.33	6.	2.	1.	0.08
+	ROUTED TO	RCPB55	28.	5.67	6.	2.	1.	0.08
+	HYDROGRAPH AT	B31	196.	4.33	11.	3.	1.	0.16
+	ROUTED TO	RCPB31	66.	5.33	11.	3.	1.	0.16
+	HYDROGRAPH AT	B32	51.	4.33	3.	1.	0.	0.04
+	ROUTED TO	RCPB32	19.	5.17	3.	1.	0.	0.04
+	HYDROGRAPH AT	B30	413.	4.50	35.	9.	4.	0.53
+	DIVERSION TO	DVB30	325.	4.50	30.	7.	4.	0.53
+	HYDROGRAPH AT	DB30	88.	4.50	5.	1.	1.	0.53
+	ROUTED TO	RCPB30	36.	5.17	5.	1.	1.	0.53
+	HYDROGRAPH AT	B29	580.	4.50	53.	13.	6.	0.92
+	4 COMBINED AT	CPB29	488.	4.50	56.	14.	7.	1.23
+	ROUTED TO	RCPB29	256.	5.17	55.	14.	7.	1.23
+	HYDROGRAPH AT	DRB30	325.	4.50	30.	7.	4.	0.53
+	ROUTED TO	RDB30	202.	5.00	30.	7.	4.	0.53
+	HYDROGRAPH AT	B57	140.	4.33	10.	2.	1.	0.10
+	2 COMBINED AT	CPB57	206.	4.83	40.	10.	5.	0.52

+	ROUTED TO	RCPB57	194.	5.00	39.	10.	5.	0.52
+	HYDROGRAPH AT	B56	239.	4.50	22.	6.	3.	0.22
+	2 COMBINED AT	CPB56	308.	4.50	54.	14.	7.	0.75
+	ROUTED TO	RCPB56	284.	4.67	54.	14.	7.	0.75
+	HYDROGRAPH AT	B58	268.	4.50	24.	6.	3.	0.24
+	2 COMBINED AT	CPB58	436.	4.50	68.	17.	8.	0.99
+	ROUTED TO	RCPB58	284.	5.33	67.	17.	8.	0.99
+	HYDROGRAPH AT	B59	863.	4.33	69.	17.	8.	0.50
+	5 COMBINED AT	CPB59	352.	4.33	194.	56.	27.	15.98
+	ROUTED TO	RCPB59	216.	8.00	170.	56.	27.	15.98
+	HYDROGRAPH AT	B52	571.	4.50	51.	13.	6.	0.58
+	ROUTED TO	RCPB52	198.	4.83	48.	13.	6.	0.58
+	HYDROGRAPH AT	B53	596.	4.50	53.	13.	6.	0.54
+	ROUTED TO	RCPB53	129.	4.83	45.	13.	6.	0.54
+	HYDROGRAPH AT	B60	146.	6.00	70.	18.	9.	0.99
+	4 COMBINED AT	CPB60	237.	7.50	190.	65.	31.	18.09
+	ROUTED TO	RCPB60	237.	7.67	190.	65.	31.	18.09
+	HYDROGRAPH AT	DRH33	428.	4.83	122.	31.	15.	2.83
+	ROUTED TO	RDH33	409.	5.33	121.	31.	15.	2.83
+	HYDROGRAPH AT	H46	462.	4.33	31.	8.	4.	0.31
+	2 COMBINED AT	CPH46	514.	5.17	162.	41.	20.	1.73
+	ROUTED TO	RCPH46	474.	5.67	160.	41.	20.	1.73
+	HYDROGRAPH AT	H06	699.	4.33	47.	12.	6.	1.23
+	DIVERSION TO	DVH06	394.	4.33	26.	7.	3.	1.23
+	HYDROGRAPH AT	DH06	305.	4.33	20.	5.	2.	1.23
+	ROUTED TO	RCPH06	146.	4.67	20.	5.	2.	1.23
+	HYDROGRAPH AT	H16	473.	4.33	58.	15.	7.	0.31
+	ROUTED TO	RCPH16	397.	4.50	57.	15.	7.	0.31
+	HYDROGRAPH AT	H14	602.	4.67	75.	19.	9.	0.83
+	3 COMBINED AT	CPH14	794.	4.67	127.	32.	15.	1.65
+	ROUTED TO	RCPH14	683.	4.83	126.	32.	15.	1.65
+	HYDROGRAPH AT	DRH06	394.	4.33	26.	7.	3.	1.23
+	ROUTED TO	RDH06	98.	5.67	26.	7.	3.	1.23
+	HYDROGRAPH AT	H13	629.	4.33	50.	12.	6.	0.52
+	3 COMBINED AT	CPH13	684.	4.67	165.	42.	20.	2.88
	ROUTED TO							

+		RCPH13	525.	5.00	137.	35.	17.	2.88
+	HYDROGRAPH AT	H12	606.	4.33	42.	10.	5.	0.48
+	ROUTED TO	RCPH12	256.	5.17	41.	10.	5.	0.48
+	HYDROGRAPH AT	H07	699.	4.50	62.	16.	7.	0.70
+	HYDROGRAPH AT	H35	1122.	4.33	71.	18.	9.	1.30
+	DIVERSION TO	DVH35	127.	4.33	6.	1.	1.	1.30
+	HYDROGRAPH AT	DH35	994.	4.33	66.	16.	8.	1.30
+	ROUTED TO	RCH35A	468.	4.67	65.	16.	8.	1.30
+	3 COMBINED AT	CPH07	707.	4.50	108.	27.	13.	2.35
+	DIVERSION TO	DVH07	378.	4.50	60.	15.	7.	2.35
+	HYDROGRAPH AT	DH07	329.	4.50	48.	12.	6.	2.35
+	ROUTED TO	RCPH07	234.	4.83	48.	12.	6.	2.35
+	HYDROGRAPH AT	H34	620.	4.33	40.	10.	5.	0.41
+	3 COMBINED AT	CPH34	624.	5.00	180.	46.	22.	4.44
+	ROUTED TO	RCPH34	576.	5.33	178.	46.	22.	4.44
+	HYDROGRAPH AT	H45	377.	4.33	27.	7.	3.	0.28
+	2 COMBINED AT	CPH45	574.	5.33	191.	49.	24.	4.72
+	ROUTED TO	RCPH45	532.	5.67	185.	49.	23.	4.72
+	HYDROGRAPH AT	DRH07	378.	4.50	60.	15.	7.	2.35
+	ROUTED TO	RDH07	270.	5.00	60.	15.	7.	2.35
+	HYDROGRAPH AT	H36	624.	4.33	42.	11.	5.	0.44
+	2 COMBINED AT	CPH36	407.	4.33	101.	26.	12.	1.63
+	ROUTED TO	RCPH36	315.	5.17	100.	26.	12.	1.63
+	HYDROGRAPH AT	H44	689.	4.33	52.	13.	6.	0.55
+	2 COMBINED AT	CPH44	401.	4.33	120.	31.	15.	2.19
+	ROUTED TO	RCPH44	342.	4.67	119.	31.	15.	2.19
+	HYDROGRAPH AT	H78	722.	4.33	47.	12.	6.	0.49
+	4 COMBINED AT	CPH78	790.	5.83	338.	90.	43.	9.12
+	ROUTED TO	RCPH78	764.	6.17	332.	90.	43.	9.12
+	HYDROGRAPH AT	H79	916.	4.17	66.	17.	8.	0.50
+	2 COMBINED AT	CPH79	751.	6.17	358.	99.	48.	9.62
+	ROUTED TO	RCPH79	723.	6.50	350.	99.	47.	9.62
+	HYDROGRAPH AT	H80	275.	4.67	40.	10.	5.	0.46
+	2 COMBINED AT	CPH80	710.	6.50	353.	100.	48.	10.08
+	3 COMBINED AT	H80RIV	561.	8.67	365.	182.	68.	316.49
+	ROUTED TO	RCPH80	76.	23.67	66.	36.	1.	316.49

+	HYDROGRAPH AT	H43	333.	4.33	21.	5.	3.	0.22
+	ROUTED TO	RCPH43	217.	4.50	21.	5.	3.	0.22
+	HYDROGRAPH AT	H81	539.	4.17	28.	7.	3.	0.24
+	2 COMBINED AT	CPH81	560.	4.17	49.	12.	6.	0.46
+	ROUTED TO	RCPH81	277.	4.67	49.	12.	6.	0.46
+	HYDROGRAPH AT	H08	1125.	4.33	94.	24.	11.	0.86
+	ROUTED TO	RCPH08	571.	5.00	93.	24.	11.	0.86
+	HYDROGRAPH AT	H11	399.	4.33	26.	7.	3.	0.27
+	DIVERSION TO	DVH11	5.	4.33	0.	0.	0.	0.27
+	HYDROGRAPH AT	DH11	394.	4.33	26.	6.	3.	0.27
+	ROUTED TO	RCPH11	222.	4.67	26.	6.	3.	0.27
+	HYDROGRAPH AT	DRH35	127.	4.33	6.	1.	1.	1.30
+	3 COMBINED AT	CPH35	594.	5.00	111.	28.	14.	1.28
+	ROUTED TO	RCPH35	477.	5.33	111.	28.	14.	1.28
+	HYDROGRAPH AT	H37	801.	4.33	52.	13.	6.	0.56
+	2 COMBINED AT	CPH37	477.	4.33	143.	36.	17.	3.00
+	ROUTED TO	RCPH37	275.	6.67	110.	29.	14.	3.00
+	HYDROGRAPH AT	H42	493.	4.33	43.	11.	5.	0.44
+	2 COMBINED AT	CPH42	275.	6.67	130.	35.	17.	3.45
+	ROUTED TO	RCPH42	254.	7.17	121.	34.	16.	3.45
+	HYDROGRAPH AT	H82	899.	4.17	66.	17.	8.	0.50
+	3 COMBINED AT	CPH82	465.	4.17	186.	51.	25.	4.41
+	ROUTED TO	RCPH82	301.	5.17	175.	51.	25.	4.41
+	HYDROGRAPH AT	H83	294.	5.00	48.	12.	6.	0.66
+	HYDROGRAPH AT	B62	129.	5.00	31.	8.	4.	0.33
+	4 COMBINED AT	B62RIV	542.	8.67	363.	184.	67.	321.90
+	ROUTED TO	RCPB62	76.	23.83	65.	37.	1.	321.90
+	HYDROGRAPH AT	B63	100.	4.83	20.	5.	2.	0.23
+	2 COMBINED AT	B63RIV	436.	8.67	279.	157.	48.	322.12
+	ROUTED TO	RCPB63	79.	15.17	66.	39.	0.	322.12
+	HYDROGRAPH AT	B64	132.	5.17	27.	7.	3.	0.29
+	2 COMBINED AT	B64RIV	484.	8.67	281.	159.	47.	321.98
+	ROUTED TO	RCPB64	84.	15.17	66.	40.	0.	321.98
+	HYDROGRAPH AT	H09	1474.	4.33	201.	51.	24.	1.11
+	ROUTED TO	RCPH09	1247.	4.50	199.	51.	24.	1.11

+	HYDROGRAPH AT	H10	778.	4.33	50.	12.	6.	0.53
+	2 COMBINED AT	CPH10	1435.	4.33	229.	58.	28.	1.63
+	ROUTED TO	RCPH10	1240.	4.67	227.	58.	28.	1.63
+	HYDROGRAPH AT	DRH11	5.	4.33	0.	0.	0.	0.27
+	ROUTED TO	RDH11	0.	6.17	0.	0.	0.	0.27
+	HYDROGRAPH AT	H38	727.	4.33	46.	12.	6.	0.48
+	3 COMBINED AT	CPH38	1482.	4.50	279.	71.	34.	1.01
+	ROUTED TO	RCPH38	1198.	5.00	279.	71.	34.	1.01
+	HYDROGRAPH AT	H39	574.	4.33	37.	9.	4.	0.38
+	2 COMBINED AT	CPH39	1186.	5.00	307.	78.	38.	1.39
+	DIVERSION TO	DVH39	764.	5.00	225.	57.	28.	1.39
+	HYDROGRAPH AT	DH39	335.	5.00	68.	17.	8.	1.39
+	ROUTED TO	RCPH39	304.	5.50	68.	17.	8.	1.39
+	HYDROGRAPH AT	H41	457.	4.33	29.	7.	3.	0.30
+	2 COMBINED AT	CPH41	415.	4.33	108.	27.	13.	0.72
+	ROUTED TO	RCPH41	343.	5.83	107.	27.	13.	0.72
+	HYDROGRAPH AT	DRH39	764.	5.00	225.	57.	28.	1.39
+	ROUTED TO	RDH39	708.	5.50	223.	57.	28.	1.39
+	HYDROGRAPH AT	H40	636.	4.33	45.	11.	5.	0.47
+	2 COMBINED AT	CPH40	705.	5.50	256.	66.	32.	1.44
+	ROUTED TO	RCPH40	690.	5.67	254.	66.	32.	1.44
+	HYDROGRAPH AT	H84	1271.	4.17	95.	24.	11.	0.76
+	3 COMBINED AT	CPH84	827.	4.33	370.	96.	46.	2.91
+	ROUTED TO	RCPH84	764.	6.17	365.	96.	46.	2.91
+	HYDROGRAPH AT	H85	1423.	4.17	119.	30.	14.	0.98
+	2 COMBINED AT	CPH85	1195.	4.33	440.	115.	56.	3.89
+	ROUTED TO	RCPH85	988.	4.83	431.	115.	56.	3.89
+	HYDROGRAPH AT	H86	1407.	4.17	134.	33.	16.	1.08
+	2 COMBINED AT	CPH86	1124.	4.67	511.	138.	66.	4.97
+	2 COMBINED AT	H86RIV	549.	8.67	297.	165.	59.	328.05
+	ROUTED TO	RCPH86	114.	15.33	66.	45.	1.	328.05
+	HYDROGRAPH AT	I03	1139.	4.33	77.	19.	9.	0.96
+	DIVERSION TO	DVI03	678.	4.33	50.	12.	6.	0.96
+	HYDROGRAPH AT	DI03	461.	4.33	27.	7.	3.	0.96
+	ROUTED TO	RCPI03	198.	4.83	27.	7.	3.	0.96
	HYDROGRAPH AT							

+		I04	592.	4.33	38.	9.	5.	0.39
+	2 COMBINED AT	CPI04	518.	4.33	63.	16.	8.	0.78
+	ROUTED TO	RCPI04	328.	4.83	62.	16.	8.	0.78
+	HYDROGRAPH AT	I06	759.	4.33	48.	12.	6.	0.50
+	2 COMBINED AT	CPI06	554.	4.33	89.	22.	11.	1.28
+	ROUTED TO	RCPI06	259.	5.50	87.	22.	11.	1.28
+	HYDROGRAPH AT	I08	955.	4.33	68.	17.	8.	0.79
+	2 COMBINED AT	CPI08	615.	4.33	120.	31.	15.	2.07
+	ROUTED TO	RCPI08	379.	4.67	118.	31.	15.	2.07
+	HYDROGRAPH AT	I10	723.	4.33	48.	12.	6.	0.50
+	2 COMBINED AT	CPI10	433.	4.50	134.	35.	17.	2.57
+	ROUTED TO	RCPI10	378.	5.00	130.	35.	17.	2.57
+	HYDROGRAPH AT	DRI03	678.	4.33	50.	12.	6.	0.96
+	ROUTED TO	RDI03	486.	4.50	50.	12.	6.	0.96
+	HYDROGRAPH AT	I05	319.	4.17	21.	5.	3.	0.22
+	2 COMBINED AT	CPI05	592.	4.33	70.	18.	8.	0.79
+	ROUTED TO	RCPI05	440.	4.83	70.	18.	8.	0.79
+	HYDROGRAPH AT	I07	282.	4.33	19.	5.	2.	0.19
+	2 COMBINED AT	CPI07	439.	4.83	87.	22.	10.	0.99
+	ROUTED TO	RCPI07	345.	5.17	82.	21.	10.	0.99
+	HYDROGRAPH AT	I09	477.	4.33	30.	8.	4.	0.31
+	2 COMBINED AT	CPI09	353.	4.33	99.	25.	12.	1.30
+	ROUTED TO	RCPI09	282.	5.50	98.	25.	12.	1.30
+	HYDROGRAPH AT	I11	438.	4.33	28.	7.	3.	0.29
+	2 COMBINED AT	CPI11	315.	4.33	112.	28.	14.	1.59
+	ROUTED TO	RCPI11	245.	6.00	110.	28.	14.	1.59
+	HYDROGRAPH AT	I12	949.	4.17	67.	17.	8.	0.51
+	3 COMBINED AT	CPI12	465.	4.17	226.	61.	29.	4.66
+	ROUTED TO	RCPI12	410.	5.33	220.	61.	29.	4.66
+	HYDROGRAPH AT	I13	955.	4.17	70.	18.	8.	0.52
+	2 COMBINED AT	CPI13	564.	4.33	257.	72.	35.	5.18
+	ROUTED TO	RCPI13	511.	4.50	254.	72.	35.	5.18
+	HYDROGRAPH AT	I14	613.	4.17	35.	9.	4.	0.24
+	2 COMBINED AT	CPI14	612.	4.33	275.	78.	38.	5.42
+	HYDROGRAPH AT	A12	848.	4.50	97.	24.	12.	1.06
+	ROUTED TO	RCPA12	380.	6.67	97.	24.	12.	1.06

+	HYDROGRAPH AT	A41	608.	4.67	101.	25.	12.	0.92
+	2 COMBINED AT	CPA41	500.	4.67	171.	43.	21.	1.97
+	3 COMBINED AT	A41RIV	771.	9.00	498.	234.	107.	335.51
+	ROUTED TO	RCPA41	112.	15.83	66.	47.	2.	335.51
+	HYDROGRAPH AT	I15B	536.	4.33	43.	11.	5.	0.33
+	ROUTED TO	RCI15B	364.	4.50	43.	11.	5.	0.33
+	HYDROGRAPH AT	I15A	621.	4.33	40.	10.	5.	0.40
+	2 COMBINED AT	CPI15A	775.	4.33	77.	19.	9.	0.73
+	ROUTED TO	RCI15A	274.	5.00	76.	19.	9.	0.73
+	HYDROGRAPH AT	I16	744.	4.33	53.	13.	6.	0.49
+	ROUTED TO	RCPI16	448.	4.67	53.	13.	6.	0.49
+	HYDROGRAPH AT	I18	908.	4.33	59.	15.	7.	0.66
+	HYDROGRAPH AT	I17C	353.	4.17	32.	8.	4.	0.16
+	ROUTED TO	RCI17C	284.	4.33	32.	8.	4.	0.16
+	HYDROGRAPH AT	I17B	190.	4.17	10.	3.	1.	0.09
+	ROUTED TO	RCI17B	165.	4.17	10.	3.	1.	0.09
+	HYDROGRAPH AT	I17A	226.	4.17	11.	3.	1.	0.11
+	3 COMBINED AT	CPI17A	571.	4.17	53.	13.	6.	0.36
+	ROUTED TO	RCI17A	340.	4.50	53.	13.	6.	0.36
+	4 COMBINED AT	CPI18	892.	4.33	185.	47.	23.	2.24
+	ROUTED TO	RCPI18	696.	4.83	177.	45.	22.	2.24
+	HYDROGRAPH AT	I19	532.	4.33	34.	9.	4.	0.35
+	2 COMBINED AT	CPI19	687.	4.83	194.	50.	24.	2.53
+	ROUTED TO	RCPI19	570.	5.50	188.	49.	24.	2.53
+	HYDROGRAPH AT	I20	781.	4.33	57.	14.	7.	0.62
+	2 COMBINED AT	CPI20	574.	5.50	222.	58.	28.	3.15
+	ROUTED TO	RCPI20	500.	6.00	204.	55.	26.	3.15
+	HYDROGRAPH AT	I21	788.	4.17	58.	15.	7.	0.47
+	2 COMBINED AT	CPI21	497.	6.00	241.	65.	31.	3.62
+	ROUTED TO	RCPI21	416.	6.83	225.	63.	31.	3.62
+	HYDROGRAPH AT	I22	847.	4.17	54.	13.	6.	0.38
+	2 COMBINED AT	CPI22	403.	6.83	250.	72.	35.	4.00
+	HYDROGRAPH AT	A40	947.	4.33	74.	19.	9.	0.50
+	ROUTED TO	RCPA40	556.	5.00	74.	19.	9.	0.50
+	HYDROGRAPH AT	A42	690.	4.50	98.	25.	12.	0.85

+	2 COMBINED AT	CPA42	739.	5.00	158.	40.	19.	1.35
+	3 COMBINED AT	A42RIV	733.	9.33	521.	245.	109.	340.86
+	ROUTED TO	RCPA42	111.	16.17	74.	49.	2.	340.86
+	HYDROGRAPH AT	A13	722.	4.50	71.	18.	9.	0.58
+	ROUTED TO	RCPA13	535.	5.00	71.	18.	9.	0.58
+	HYDROGRAPH AT	A39	850.	4.33	74.	18.	9.	0.50
+	2 COMBINED AT	CPA39	699.	4.33	133.	33.	16.	1.08
+	ROUTED TO	RCPA39	550.	4.67	133.	33.	16.	1.08
+	HYDROGRAPH AT	A43	864.	4.33	75.	19.	9.	0.50
+	2 COMBINED AT	CPA43	789.	4.33	193.	49.	23.	1.58
+	ROUTED TO	RCPA43	714.	4.83	191.	49.	23.	1.58
+	HYDROGRAPH AT	A44	678.	4.17	53.	13.	6.	0.37
+	2 COMBINED AT	CPA44	754.	4.67	231.	59.	28.	1.95
+	2 COMBINED AT	A44RIV	530.	9.83	419.	208.	85.	342.81
+	ROUTED TO	RCPA44	138.	16.33	94.	55.	2.	342.81
+	HYDROGRAPH AT	I24	312.	4.33	27.	7.	3.	0.18
+	ROUTED TO	RCPI24	215.	4.67	27.	7.	3.	0.18
+	HYDROGRAPH AT	I26B	126.	4.17	7.	2.	1.	0.06
+	ROUTED TO	RCI26B	34.	5.17	7.	2.	1.	0.06
+	HYDROGRAPH AT	I26A	802.	4.33	56.	14.	7.	0.58
+	3 COMBINED AT	CPI26A	788.	4.33	84.	21.	10.	0.81
+	ROUTED TO	RCI26A	587.	4.67	84.	21.	10.	0.81
+	HYDROGRAPH AT	I28	659.	4.33	42.	11.	5.	0.44
+	2 COMBINED AT	CPI28	571.	4.33	115.	29.	14.	1.26
+	ROUTED TO	RCPI28	466.	5.00	109.	27.	13.	1.26
+	HYDROGRAPH AT	I30	644.	4.33	41.	10.	5.	0.42
+	2 COMBINED AT	CPI30	500.	4.33	130.	33.	16.	1.68
+	ROUTED TO	RCPI30	411.	5.17	129.	33.	16.	1.68
+	HYDROGRAPH AT	I32	956.	4.17	67.	17.	8.	0.51
+	2 COMBINED AT	CPI32	578.	4.17	171.	44.	21.	2.18
+	ROUTED TO	RCPI32	456.	4.67	168.	44.	21.	2.18
+	HYDROGRAPH AT	I34	486.	4.67	57.	14.	7.	0.51
+	2 COMBINED AT	CPI34	709.	4.67	197.	52.	25.	2.69
+	ROUTED TO	RCPI34	633.	4.83	195.	52.	25.	2.69
+	HYDROGRAPH AT	I36	397.	4.17	23.	6.	3.	0.19
	2 COMBINED AT							

+		CPI36	633.	4.83	211.	56.	27.	2.89
+	2 COMBINED AT	I36RIV	552.	10.17	456.	223.	90.	345.69
+	ROUTED TO	RCPI36	151.	16.67	105.	58.	1.	345.69
+	HYDROGRAPH AT	A01	928.	4.83	124.	31.	15.	9.62
+	DIVERSION TO	DVA01A	467.	4.83	62.	16.	7.	9.62
+	HYDROGRAPH AT	DA01A	461.	4.83	62.	15.	7.	9.62
+	DIVERSION TO	DVA01B	214.	4.83	29.	7.	4.	9.62
+	HYDROGRAPH AT	DA01B	247.	4.83	32.	8.	4.	9.62
+	ROUTED TO	RCPA01	61.	6.67	30.	8.	4.	9.62
+	HYDROGRAPH AT	A11	627.	4.67	73.	18.	9.	1.80
+	2 COMBINED AT	CPA11	336.	4.67	86.	23.	11.	4.50
+	DIVERSION TO	DVA11	168.	4.67	43.	12.	6.	4.50
+	HYDROGRAPH AT	DA11	168.	4.67	43.	12.	6.	4.50
+	ROUTED TO	RCPA11	55.	6.00	37.	12.	6.	4.50
+	HYDROGRAPH AT	A14	818.	4.50	89.	22.	11.	0.86
+	2 COMBINED AT	CPA14	544.	4.50	109.	31.	15.	3.10
+	ROUTED TO	RCPA14	386.	5.33	100.	31.	15.	3.10
+	HYDROGRAPH AT	A38	804.	4.33	69.	17.	8.	0.48
+	ROUTED TO	RCPA38	480.	4.83	69.	17.	8.	0.48
+	HYDROGRAPH AT	A37	1035.	4.67	132.	33.	16.	1.35
+	3 COMBINED AT	CPA37	853.	4.67	235.	66.	32.	4.93
+	ROUTED TO	RCPA37	763.	5.33	227.	66.	32.	4.93
+	HYDROGRAPH AT	A45	854.	4.33	68.	17.	8.	0.53
+	2 COMBINED AT	CPA45	763.	5.33	268.	78.	38.	5.47
+	HYDROGRAPH AT	I23	723.	4.17	86.	21.	10.	0.42
+	ROUTED TO	RCPI23	574.	4.50	85.	21.	10.	0.42
+	HYDROGRAPH AT	I25	510.	4.17	33.	8.	4.	0.31
+	2 COMBINED AT	CPI25	852.	4.33	113.	29.	14.	0.73
+	ROUTED TO	RCPI25	677.	4.67	113.	29.	14.	0.73
+	HYDROGRAPH AT	I27	627.	4.33	40.	10.	5.	0.40
+	2 COMBINED AT	CPI27	764.	4.33	140.	36.	17.	1.13
+	ROUTED TO	RCPI27	676.	4.67	140.	36.	17.	1.13
+	HYDROGRAPH AT	I29	558.	4.33	36.	9.	4.	0.37
+	2 COMBINED AT	CPI29	649.	4.67	162.	41.	20.	1.51
+	ROUTED TO	RCPI29	607.	4.83	160.	41.	20.	1.51
+	HYDROGRAPH AT	I31	530.	4.33	34.	9.	4.	0.36

+	2 COMBINED AT	CPI31	581.	5.00	178.	45.	22.	1.87
+	ROUTED TO	RCPI31	554.	5.17	175.	45.	22.	1.87
+	HYDROGRAPH AT	I33	948.	4.17	67.	17.	8.	0.50
+	2 COMBINED AT	CPI33	556.	4.17	217.	56.	27.	2.37
+	ROUTED TO	RCPI33	477.	5.83	212.	56.	27.	2.37
+	HYDROGRAPH AT	I35	809.	4.33	70.	18.	8.	0.51
+	2 COMBINED AT	CPI35	518.	4.50	256.	68.	33.	2.88
+	ROUTED TO	RCPI35	486.	4.83	253.	68.	33.	2.88
+	HYDROGRAPH AT	I37	867.	4.17	61.	15.	7.	0.41
+	2 COMBINED AT	CPI37	559.	4.67	294.	79.	38.	3.29
+	3 COMBINED AT	I37RIV	770.	10.33	607.	275.	138.	363.37
+	ROUTED TO	RCPI37	140.	17.00	94.	52.	2.	363.37
+	HYDROGRAPH AT	A36	544.	4.50	49.	12.	6.	0.44
+	ROUTED TO	RCPA36	328.	5.00	49.	12.	6.	0.44
+	HYDROGRAPH AT	A46	323.	4.33	26.	7.	3.	0.20
+	2 COMBINED AT	CPA46	327.	5.00	74.	19.	9.	0.63
+	2 COMBINED AT	A46RIV	554.	10.50	485.	235.	103.	364.00
+	ROUTED TO	RCPA46	142.	17.17	93.	52.	1.	364.00
+	HYDROGRAPH AT	I38	273.	4.17	21.	5.	2.	0.12
+	ROUTED TO	RCPI38	158.	4.50	20.	5.	2.	0.12
+	HYDROGRAPH AT	I39	327.	4.17	22.	5.	3.	0.22
+	2 COMBINED AT	CPI39	441.	4.33	42.	11.	5.	0.47
+	ROUTED TO	RCPI39	281.	4.67	42.	11.	5.	0.47
+	HYDROGRAPH AT	I40	633.	4.33	40.	10.	5.	0.41
+	2 COMBINED AT	CPI40	590.	4.33	74.	18.	9.	0.87
+	ROUTED TO	RCPI40	392.	4.67	73.	18.	9.	0.87
+	HYDROGRAPH AT	I41	718.	4.33	46.	11.	6.	0.48
+	2 COMBINED AT	CPI41	567.	4.33	101.	25.	12.	1.35
+	ROUTED TO	RCPI41	411.	4.83	101.	25.	12.	1.35
+	HYDROGRAPH AT	I42	644.	4.33	44.	11.	5.	0.42
+	2 COMBINED AT	CPI42	444.	4.33	124.	32.	15.	1.77
+	ROUTED TO	RCPI42	380.	5.00	123.	32.	15.	1.77
+	HYDROGRAPH AT	I43	664.	4.33	45.	11.	5.	0.43
+	2 COMBINED AT	CPI43	399.	4.33	146.	38.	18.	2.20
+	ROUTED TO	RCPI43	348.	4.67	144.	38.	18.	2.20

+	HYDROGRAPH AT	I44B	451.	4.17	35.	9.	4.	0.19
+	ROUTED TO	RCI44B	218.	4.33	34.	9.	4.	0.19
+	HYDROGRAPH AT	I44A	913.	4.33	64.	16.	8.	0.65
+	2 COMBINED AT	CPI44A	1026.	4.33	93.	24.	11.	0.84
+	ROUTED TO	RCI44A	667.	4.50	93.	24.	11.	0.84
+	HYDROGRAPH AT	I45	557.	4.33	36.	9.	4.	0.35
+	2 COMBINED AT	CPI45	822.	4.33	119.	30.	15.	1.06
+	ROUTED TO	RCPI45	661.	4.83	119.	30.	15.	1.06
+	HYDROGRAPH AT	I46	694.	4.33	45.	11.	5.	0.46
+	2 COMBINED AT	CPI46	661.	4.67	150.	38.	18.	1.52
+	ROUTED TO	RCPI46	573.	5.00	142.	36.	17.	1.52
+	HYDROGRAPH AT	I47	531.	4.33	37.	9.	4.	0.35
+	2 COMBINED AT	CPI47	573.	5.00	168.	43.	21.	1.87
+	ROUTED TO	RCPI47	495.	5.33	159.	41.	20.	1.87
+	HYDROGRAPH AT	I48	512.	4.33	34.	8.	4.	0.34
+	2 COMBINED AT	CPI48	489.	5.33	180.	47.	22.	2.21
+	ROUTED TO	RCPI48	451.	5.67	171.	45.	22.	2.21
+	HYDROGRAPH AT	I49	882.	4.17	52.	13.	6.	0.38
+	3 COMBINED AT	CPI49	584.	5.67	292.	78.	38.	4.79
+	ROUTED TO	RCPI49	566.	5.83	287.	78.	38.	4.79
+	HYDROGRAPH AT	I61	564.	4.17	31.	8.	4.	0.25
+	ROUTED TO	RCPI61	273.	4.50	31.	8.	4.	0.25
+	HYDROGRAPH AT	I50	1215.	4.17	81.	20.	10.	0.60
+	3 COMBINED AT	CPI50	735.	4.33	352.	95.	46.	5.64
+	2 COMBINED AT	I50RIV	561.	10.83	484.	235.	106.	369.64
+	ROUTED TO	RCPI50	144.	17.33	94.	53.	1.	369.64
+	HYDROGRAPH AT	I62	741.	4.33	60.	15.	7.	0.42
+	2 COMBINED AT	I62RIV	550.	11.00	480.	236.	108.	370.07
+	ROUTED TO	RCPI62	168.	17.50	102.	57.	1.	370.07
+	HYDROGRAPH AT	DRA11	168.	4.67	43.	12.	6.	4.50
+	ROUTED TO	RDA11	49.	7.33	38.	12.	6.	4.50
+	HYDROGRAPH AT	A15	704.	4.67	98.	25.	12.	0.94
+	2 COMBINED AT	CPA15	512.	4.67	113.	34.	16.	3.19
+	HYDROGRAPH AT	A16	419.	4.50	40.	10.	5.	0.33
+	2 COMBINED AT	CPA16	701.	4.67	140.	40.	19.	3.52
	ROUTED TO							

+		RCPA16	547.	5.17	131.	40.	19.	3.52
+	HYDROGRAPH AT	DRA01A	467.	4.83	62.	16.	7.	9.62
+	ROUTED TO	RDA01A	389.	5.17	62.	16.	7.	9.62
+	HYDROGRAPH AT	A03	483.	4.50	47.	12.	6.	1.06
+	2 COMBINED AT	CPA03	557.	5.17	98.	25.	12.	5.78
+	ROUTED TO	RCPA03	481.	5.50	98.	25.	12.	5.78
+	HYDROGRAPH AT	A65	660.	4.33	46.	11.	5.	0.55
+	2 COMBINED AT	CPA65	477.	5.50	112.	28.	14.	6.32
+	ROUTED TO	RCPA65	329.	6.17	104.	27.	13.	6.32
+	HYDROGRAPH AT	A64	343.	4.33	23.	6.	3.	0.23
+	2 COMBINED AT	CPA64	319.	6.17	111.	29.	14.	6.55
+	DIVERSION TO	DVA64	269.	6.17	101.	26.	13.	6.55
+	HYDROGRAPH AT	DA64	50.	6.00	10.	3.	1.	6.55
+	ROUTED TO	RCPA64	36.	7.17	10.	3.	1.	6.55
+	HYDROGRAPH AT	DRA01B	214.	4.83	29.	7.	4.	9.62
+	ROUTED TO	RDA01B	40.	7.83	25.	7.	4.	9.62
+	HYDROGRAPH AT	A10	700.	4.67	93.	23.	11.	0.93
+	3 COMBINED AT	CPA10	453.	4.67	114.	32.	15.	4.65
+	DIVERSION TO	DVA10	247.	4.67	64.	18.	9.	4.65
+	HYDROGRAPH AT	DA10	206.	4.67	50.	14.	7.	4.65
+	ROUTED TO	RCPA10	115.	6.00	46.	14.	7.	4.65
+	HYDROGRAPH AT	A34	505.	4.33	45.	11.	5.	0.38
+	2 COMBINED AT	CPA34	310.	4.33	88.	27.	13.	2.57
+	ROUTED TO	RCPA34	235.	4.83	85.	27.	13.	2.57
+	HYDROGRAPH AT	A35	900.	4.50	86.	22.	10.	0.85
+	3 COMBINED AT	CPA35	649.	5.00	222.	67.	32.	6.94
+	ROUTED TO	RCPA35	569.	5.67	212.	66.	32.	6.94
+	HYDROGRAPH AT	A47	998.	4.33	98.	24.	12.	0.79
+	2 COMBINED AT	CPA47	560.	5.67	265.	81.	39.	7.73
+	ROUTED TO	RCPA47	471.	6.83	250.	81.	39.	7.73
+	HYDROGRAPH AT	A48	1336.	4.33	144.	36.	17.	1.06
+	ROUTED TO	RCPA48	1080.	4.67	143.	36.	17.	1.06
+	HYDROGRAPH AT	A49	849.	4.50	88.	22.	11.	0.75
+	3 COMBINED AT	CPA49	1080.	4.67	407.	126.	61.	9.54
+	2 COMBINED AT	A49RIV	565.	11.33	488.	241.	118.	377.94
+	ROUTED TO	RCPA49	166.	18.00	109.	54.	2.	377.94

+	HYDROGRAPH AT	A04	608.	4.33	39.	10.	5.	0.74
+	DIVERSION TO	DVA04	331.	4.33	22.	5.	3.	0.74
+	HYDROGRAPH AT	DA04	278.	4.33	18.	4.	2.	0.74
+	ROUTED TO	RCPA04	171.	4.83	18.	4.	2.	0.74
+	HYDROGRAPH AT	A07	405.	4.50	34.	9.	4.	0.52
+	2 COMBINED AT	CPA07	375.	4.50	42.	11.	5.	0.86
+	DIVERSION TO	DVA07	240.	4.50	28.	7.	3.	0.86
+	HYDROGRAPH AT	DA07	136.	4.50	14.	4.	2.	0.86
+	ROUTED TO	RCPA07	54.	6.33	14.	4.	2.	0.86
+	HYDROGRAPH AT	A09	472.	4.50	43.	11.	5.	0.78
+	DIVERSION TO	DVA09	86.	4.50	8.	2.	1.	0.78
+	HYDROGRAPH AT	DA09	386.	4.50	36.	9.	4.	0.78
+	ROUTED TO	RCPA09	169.	5.00	36.	9.	4.	0.78
+	HYDROGRAPH AT	A08	485.	4.83	68.	17.	8.	2.13
+	2 COMBINED AT	CPA08	404.	4.83	61.	15.	7.	2.77
+	DIVERSION TO	DVA08	275.	4.83	43.	11.	5.	2.77
+	HYDROGRAPH AT	DA08	129.	4.83	18.	4.	2.	2.77
+	ROUTED TO	RCPA08	100.	5.50	18.	4.	2.	2.77
+	HYDROGRAPH AT	A21	807.	4.67	97.	24.	12.	1.04
+	3 COMBINED AT	CPA21	602.	4.67	103.	26.	13.	2.52
+	DIVERSION TO	DVA21	266.	4.67	45.	11.	6.	2.52
+	HYDROGRAPH AT	DA21	336.	4.67	58.	15.	7.	2.52
+	ROUTED TO	RCPA21	259.	5.17	57.	15.	7.	2.52
+	HYDROGRAPH AT	A20	423.	4.50	38.	9.	5.	0.34
+	2 COMBINED AT	CPA20	303.	5.17	100.	25.	12.	1.75
+	DIVERSION TO	DVA20	32.	4.50	9.	2.	1.	1.75
+	HYDROGRAPH AT	DA20	272.	5.17	91.	23.	11.	1.75
+	ROUTED TO	RCPA20	167.	8.83	80.	23.	11.	1.75
+	HYDROGRAPH AT	A51	760.	5.00	134.	34.	16.	1.49
+	2 COMBINED AT	CPA51A	621.	5.00	152.	47.	23.	3.06
+	HYDROGRAPH AT	DRA09	86.	4.50	8.	2.	1.	0.78
+	ROUTED TO	RDA09	68.	6.00	7.	2.	1.	0.78
+	HYDROGRAPH AT	DRA64	269.	6.17	101.	26.	13.	6.55
+	ROUTED TO	RDA64	206.	7.33	96.	26.	13.	6.55
+	HYDROGRAPH AT	A18	682.	4.50	80.	20.	10.	0.69

+	3 COMBINED AT	CPA18	411.	4.50	150.	43.	21.	5.88
+	DIVERSION TO	DVA18	266.	4.50	123.	36.	17.	5.88
+	HYDROGRAPH AT	DA18	145.	4.50	27.	7.	3.	5.88
+	ROUTED TO	RCPA18	132.	4.83	27.	7.	3.	5.88
+	HYDROGRAPH AT	DRA08	275.	4.83	43.	11.	5.	2.77
+	ROUTED TO	RDA08	129.	6.17	41.	11.	5.	2.77
+	HYDROGRAPH AT	A19	576.	4.50	54.	14.	7.	0.46
+	2 COMBINED AT	CPA19A	375.	4.50	95.	25.	12.	2.21
+	2 COMBINED AT	CPA19	318.	4.67	93.	24.	12.	5.39
+	ROUTED TO	RCPA19	257.	5.17	90.	24.	12.	5.39
+	HYDROGRAPH AT	A63	741.	4.50	69.	17.	8.	0.61
+	2 COMBINED AT	CPA63A	411.	4.50	130.	34.	17.	5.99
+	HYDROGRAPH AT	DRA10	247.	4.67	64.	18.	9.	4.65
+	ROUTED TO	RDA10	151.	5.50	60.	18.	9.	4.65
+	HYDROGRAPH AT	A17	569.	4.67	67.	17.	8.	0.57
+	2 COMBINED AT	CPA17	385.	4.67	119.	34.	16.	3.03
+	HYDROGRAPH AT	DRA18	266.	4.50	123.	36.	17.	5.88
+	ROUTED TO	RDA18	213.	5.33	117.	36.	17.	5.88
+	HYDROGRAPH AT	A33	370.	4.33	34.	8.	4.	0.28
+	2 COMBINED AT	CPA33A	237.	8.00	163.	51.	25.	2.99
+	2 COMBINED AT	CPA33	502.	4.50	225.	69.	33.	6.02
+	ROUTED TO	RCPA33	446.	4.83	221.	69.	33.	6.02
+	2 COMBINED AT	CPA63	631.	4.83	256.	78.	38.	12.02
+	ROUTED TO	RCPA63	568.	5.83	241.	78.	38.	12.02
+	HYDROGRAPH AT	A50	361.	5.67	107.	27.	13.	1.03
+	2 COMBINED AT	CPA50	737.	5.67	281.	91.	44.	13.01
+	ROUTED TO	RCPA50	722.	6.17	280.	91.	44.	13.01
+	2 COMBINED AT	CPA51	702.	6.17	336.	113.	55.	16.07
+	2 COMBINED AT	A51RIV	556.	14.83	524.	251.	124.	388.64
+	ROUTED TO	RCPA51	143.	18.00	89.	46.	1.	388.64
+	HYDROGRAPH AT	A05	605.	4.50	57.	14.	7.	2.14
+	ROUTED TO	RCPA05	183.	6.00	56.	14.	7.	2.14
+	HYDROGRAPH AT	A23	195.	4.50	18.	4.	2.	0.23
+	ROUTED TO	RCPA23	83.	5.83	17.	4.	2.	0.23
+	HYDROGRAPH AT	A25	198.	4.50	17.	4.	2.	0.22
	ROUTED TO							

+		RCPA25	117.	4.83	17.	4.	2.	0.22
+	HYDROGRAPH AT	A26	515.	4.50	46.	11.	5.	0.50
+	4 COMBINED AT	CPA26	235.	4.50	67.	17.	8.	3.09
+	ROUTED TO	RCPA26	115.	7.33	64.	17.	8.	3.09
+	HYDROGRAPH AT	A27	660.	4.67	75.	19.	9.	1.11
+	2 COMBINED AT	CPA27A	343.	4.67	94.	25.	12.	4.19
+	HYDROGRAPH AT	A28	587.	4.33	46.	11.	6.	0.55
+	ROUTED TO	RCPA28	434.	4.50	46.	11.	6.	0.55
+	2 COMBINED AT	CPA27	459.	4.67	104.	28.	13.	4.74
+	ROUTED TO	RCPA27	290.	5.00	101.	28.	13.	4.74
+	HYDROGRAPH AT	A29	517.	4.50	57.	14.	7.	1.19
+	2 COMBINED AT	CPA29	297.	5.00	105.	29.	14.	5.93
+	HYDROGRAPH AT	DRA04	331.	4.33	22.	5.	3.	0.74
+	ROUTED TO	RDA04	67.	6.17	20.	5.	3.	0.74
+	HYDROGRAPH AT	A06	440.	4.50	49.	12.	6.	1.11
+	2 COMBINED AT	CPA06	343.	4.67	48.	13.	6.	1.52
+	ROUTED TO	RCPA06	151.	5.50	45.	13.	6.	1.52
+	HYDROGRAPH AT	DRA07	240.	4.50	28.	7.	3.	0.86
+	ROUTED TO	RDA07	81.	7.17	26.	7.	3.	0.86
+	HYDROGRAPH AT	A22	365.	4.83	51.	13.	6.	0.58
+	2 COMBINED AT	CPA22	301.	4.83	61.	17.	8.	0.99
+	ROUTED TO	RCPA22	284.	4.83	60.	17.	8.	0.99
+	HYDROGRAPH AT	A24	526.	4.67	62.	15.	7.	1.36
+	3 COMBINED AT	CPA24	346.	4.67	65.	19.	9.	3.86
+	ROUTED TO	RCPA24	220.	5.67	63.	19.	9.	3.86
+	HYDROGRAPH AT	A30	478.	4.67	59.	15.	7.	0.68
+	2 COMBINED AT	CPA30A	226.	4.67	87.	25.	12.	4.54
+	2 COMBINED AT	CPA30	337.	4.83	125.	35.	17.	10.47
+	ROUTED TO	RCPA30	304.	5.17	123.	35.	17.	10.47
+	HYDROGRAPH AT	A52	326.	4.33	23.	6.	3.	0.22
+	2 COMBINED AT	CPA52A	303.	5.17	132.	38.	18.	10.69
+	HYDROGRAPH AT	A31	522.	4.67	63.	16.	8.	0.54
+	ROUTED TO	RCPA31	331.	5.50	63.	16.	8.	0.54
+	HYDROGRAPH AT	DRA21	266.	4.67	45.	11.	6.	2.52
+	ROUTED TO	RDA21	87.	8.67	41.	11.	6.	2.52
+	HYDROGRAPH AT	DRA20	32.	4.50	9.	2.	1.	1.75

+	ROUTED TO	RDA20	23.	7.33	9.	2.	1.	1.75
+	HYDROGRAPH AT	A32	905.	4.67	126.	32.	15.	1.21
+	3 COMBINED AT	CPA32A	741.	4.67	151.	41.	20.	2.53
+	2 COMBINED AT	CPA32	707.	4.67	192.	51.	25.	3.07
+	ROUTED TO	RCPA32	605.	4.83	189.	51.	25.	3.07
+	2 COMBINED AT	CPA52	659.	5.00	240.	67.	32.	13.76
+	ROUTED TO	RCPA52	613.	5.33	239.	67.	32.	13.76
+	HYDROGRAPH AT	A53	554.	4.50	61.	15.	7.	1.75
+	HYDROGRAPH AT	A54	562.	4.33	61.	15.	7.	0.51
+	2 COMBINED AT	CPA54	730.	4.50	89.	22.	11.	2.25
+	ROUTED TO	RCPA54	481.	5.00	89.	22.	11.	2.25
+	HYDROGRAPH AT	A55	605.	4.50	53.	13.	6.	0.61
+	2 COMBINED AT	CPA55A	481.	4.50	104.	26.	13.	2.87
+	2 COMBINED AT	CPA55	692.	5.17	260.	73.	35.	16.62
+	ROUTED TO	RCPA55	550.	6.33	245.	73.	35.	16.62
+	HYDROGRAPH AT	A56	1287.	4.50	187.	47.	23.	1.84
+	2 COMBINED AT	CPA56	692.	4.67	323.	100.	48.	18.46
+	2 COMBINED AT	A56RIV	559.	14.83	524.	251.	127.	404.96
+	ROUTED TO	RCPA56	132.	18.17	83.	43.	3.	404.96
+	HYDROGRAPH AT	I51	213.	4.33	14.	4.	2.	0.14
+	ROUTED TO	RCPI51	126.	4.67	14.	4.	2.	0.14
+	HYDROGRAPH AT	I53	766.	4.33	49.	12.	6.	0.51
+	2 COMBINED AT	CPI53	749.	4.33	59.	15.	7.	0.66
+	ROUTED TO	RCPI53	452.	4.67	59.	15.	7.	0.66
+	HYDROGRAPH AT	I55	376.	4.33	24.	6.	3.	0.25
+	2 COMBINED AT	CPI55	452.	4.67	78.	20.	9.	0.91
+	ROUTED TO	RCPI55	391.	4.83	74.	18.	9.	0.91
+	HYDROGRAPH AT	I57	359.	4.17	28.	7.	3.	0.19
+	2 COMBINED AT	CPI57	389.	4.83	97.	25.	12.	1.10
+	ROUTED TO	RCPI57	362.	5.00	94.	24.	12.	1.10
+	HYDROGRAPH AT	I72	370.	4.17	26.	6.	3.	0.21
+	2 COMBINED AT	CPI72	422.	4.33	112.	28.	14.	1.30
+	ROUTED TO	RCPI72	348.	5.00	111.	28.	14.	1.30
+	HYDROGRAPH AT	I60C	393.	4.33	27.	7.	3.	0.27
+	2 COMBINED AT	CPI60C	346.	5.00	131.	34.	16.	1.57

+	HYDROGRAPH AT	I59	226.	4.17	15.	4.	2.	0.10
+	ROUTED TO	RCPI59	74.	5.50	15.	4.	2.	0.10
+	HYDROGRAPH AT	I60B	264.	4.17	18.	4.	2.	0.10
+	ROUTED TO	RCI60B	56.	5.17	17.	4.	2.	0.10
+	HYDROGRAPH AT	I60A	1219.	4.33	147.	37.	18.	0.98
+	4 COMBINED AT	CPI60B	1132.	4.33	261.	68.	33.	2.75
+	HYDROGRAPH AT	I52	555.	4.17	31.	8.	4.	0.32
+	ROUTED TO	RCPI52	308.	4.50	31.	8.	4.	0.32
+	HYDROGRAPH AT	I54	611.	4.17	32.	8.	4.	0.35
+	2 COMBINED AT	CPI54	605.	4.17	59.	15.	7.	0.61
+	ROUTED TO	RCPI54	384.	4.67	59.	15.	7.	0.61
+	HYDROGRAPH AT	I56	648.	4.33	41.	10.	5.	0.43
+	2 COMBINED AT	CPI56	613.	4.33	83.	21.	10.	1.04
+	ROUTED TO	RCPI56	248.	5.83	80.	21.	10.	1.04
+	HYDROGRAPH AT	I58B	680.	4.33	67.	17.	8.	0.58
+	2 COMBINED AT	CPI58B	489.	4.33	116.	31.	15.	1.63
+	ROUTED TO	RCI58B	450.	4.67	115.	31.	15.	1.63
+	HYDROGRAPH AT	I58A	260.	4.17	22.	5.	3.	0.13
+	2 COMBINED AT	CPI58A	466.	4.67	128.	35.	17.	1.79
+	ROUTED TO	RCI58A	444.	4.83	128.	35.	17.	1.79
+	HYDROGRAPH AT	I64	543.	4.17	49.	12.	6.	0.27
+	2 COMBINED AT	CPI64	534.	4.33	163.	45.	22.	2.06
+	ROUTED TO	RCPI64	451.	5.00	162.	45.	22.	2.06
+	HYDROGRAPH AT	I65	527.	4.33	38.	10.	5.	0.31
+	2 COMBINED AT	CPI65	517.	4.50	177.	49.	24.	2.79
+	2 COMBINED AT	CPI60A	1472.	4.33	390.	106.	51.	5.12
+	ROUTED TO	RCI60A	1249.	4.67	388.	106.	51.	5.12
+	HYDROGRAPH AT	I66	1258.	4.33	139.	35.	17.	0.91
+	2 COMBINED AT	CPI66	1829.	4.50	485.	132.	64.	6.03
+	ROUTED TO	RCPI66	1197.	5.50	481.	132.	64.	6.03
+	HYDROGRAPH AT	I67	1293.	4.33	122.	31.	15.	0.97
+	HYDROGRAPH AT	I68	506.	4.33	40.	10.	5.	0.29
+	HYDROGRAPH AT	I69	307.	4.17	23.	6.	3.	0.17
+	4 COMBINED AT	CPI67	1293.	4.33	610.	167.	81.	7.46
+	ROUTED TO	RCPI67	1135.	5.83	581.	161.	78.	7.46
	HYDROGRAPH AT							

+		I70	603.	4.33	48.	12.	6.	0.37
	HYDROGRAPH AT							
+		I71	723.	4.33	56.	14.	7.	0.42
	3 COMBINED AT							
+		CPI70	1135.	5.83	636.	178.	86.	8.25
	ROUTED TO							
+		RCPI71	1115.	6.00	629.	176.	85.	8.25
	HYDROGRAPH AT							
+		I63	470.	4.33	35.	9.	4.	0.29
	2 COMBINED AT							
+		CPI63	1113.	6.00	647.	181.	87.	8.54
	2 COMBINED AT							
+		I63RIV	702.	5.33	527.	261.	154.	413.50
	ROUTED TO							
+		RCPI63	143.	4.00	86.	44.	4.	413.50
	HYDROGRAPH AT							
+		A57	1232.	4.67	206.	52.	25.	1.47
	2 COMBINED AT							
+		A57RIV	758.	5.50	490.	275.	163.	414.97
	ROUTED TO							
+		RCPA57	168.	19.17	120.	57.	5.	414.97
	HYDROGRAPH AT							
+		A58	1368.	4.67	237.	60.	29.	2.13
	HYDROGRAPH AT							
+		A59	1295.	4.50	166.	42.	20.	1.25
	2 COMBINED AT							
+		CPA59	1999.	4.50	367.	92.	44.	3.39
	ROUTED TO							
+		RCPA59	1724.	4.83	363.	92.	44.	3.39
	HYDROGRAPH AT							
+		A60	1490.	4.50	188.	47.	23.	1.67
	2 COMBINED AT							
+		CPA60	2241.	4.67	501.	127.	61.	5.05
	2 COMBINED AT							
+		A60RIV	858.	6.00	591.	334.	195.	420.03
	ROUTED TO							
+		RCPA60	286.	4.17	124.	59.	13.	420.03
	HYDROGRAPH AT							
+		A61	1346.	4.67	195.	49.	24.	1.96
	HYDROGRAPH AT							
+		A62	387.	4.33	33.	8.	4.	0.29
	3 COMBINED AT							
+		A62RIV	1371.	13.00	1128.	702.	380.	422.19

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