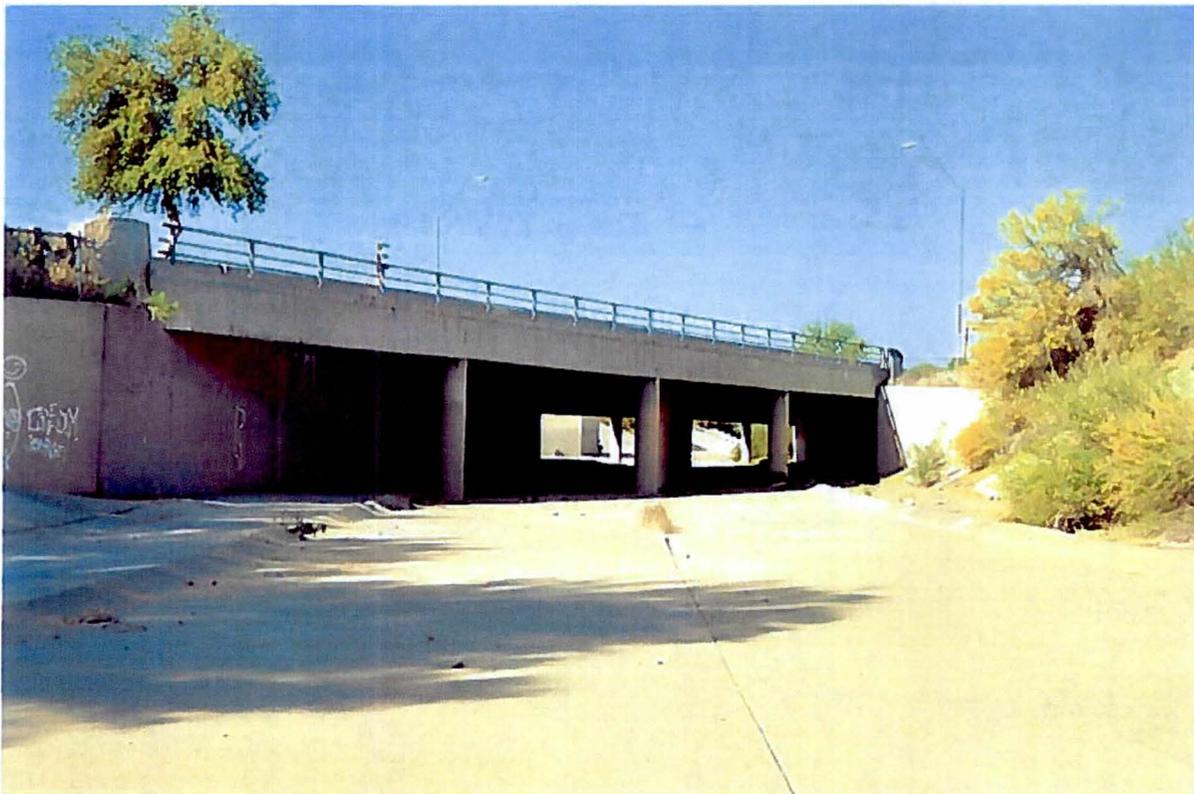


The City of Phoenix

**CONDITIONAL LETTER OF
MAP REVISION (CLOMR)
FOR
GREENWAY PARKWAY BRIDGE
OVER CAVE CREEK**

**TECHNICAL DATA NOTEBOOK (TDN)
Volume 1 of 1**



Prepared by:
Gannett Fleming, Inc.
4722 North 24th Street, Suite 250
Phoenix, AZ 85016
Date of Preparation: October 21, 2013

On behalf of:
The City of Phoenix
Rick Evans
1034 East Madison Street
Phoenix, AZ 85034
(602) 262-4051





City of Phoenix

Floodplain Management, 200 W. Washington St., Phoenix, AZ 85003
Phone: (602) 262-4960 Fax: (602) 262-7322

November 4, 2013

LOMC Clearinghouse
847 South Pickett Street
Alexandria, VA 22304-4605

Attn: LOMR MANAGER

RE: CONDITIONAL LETTER OF MAP REVISION (CLOMR)
Greenway Parkway Bridge over Cave Creek
PANEL 04013C1215 K & 04013C1655 K, SEPTEMBER 30, 2005

Please find the enclosed Conditional Letter of Map Revision (CLOMR) application for Greenway Parkway Bridge over Cave Creek, Phoenix, AZ. The following items are included with this application:

ITEMS

1. Overview & Concurrence Form (MT-2 Form 1)
2. Riverine Hydrology & Hydraulics Forms (MT-2 Form 2)
3. Annotated FIRM Map (Exhibit Map A)
4. Design Plans (Appendix E.6)
5. HEC-RAS Model (Appendix E)
6. Compliance of Endangered Species Act Compliance (Section 2.0)

If you have any technical questions regarding this project, please contact Mr. Nasir Raza, P.E., Gannett Fleming, Inc.; phone number 602-553-8817. If you have any other questions, please contact this office at 602-262-4960.

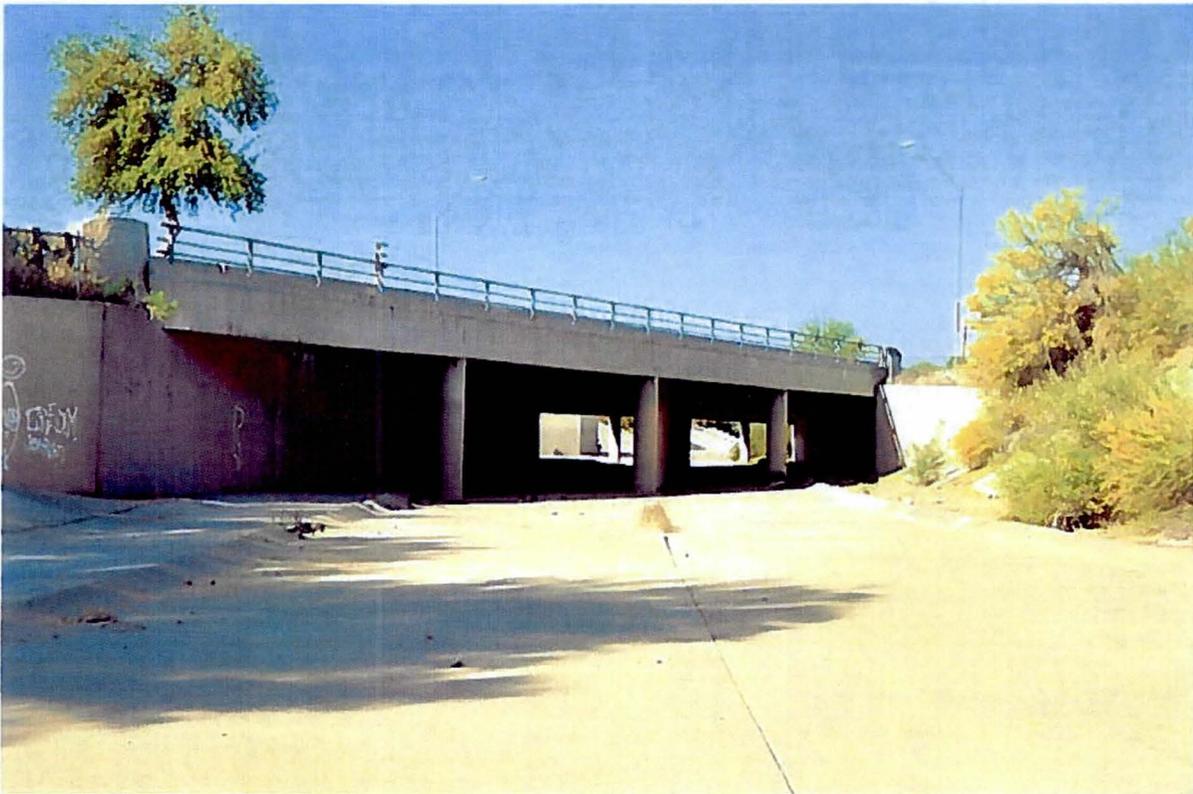
Sincerely,

Myesha Harris, CFM
Civil Engineer II

cc: Mr. Nasir Raza, P.E., CFM Gannett Fleming, Inc.
Mr. Brian Cosson, CFM, Arizona Department of Water Resources
Mr. Tim Murphy, PE, CFM, Flood Control District of Maricopa County

The City of Phoenix
CONDITIONAL LETTER OF
MAP REVISION (CLOMR)
FOR
GREENWAY PARKWAY BRIDGE
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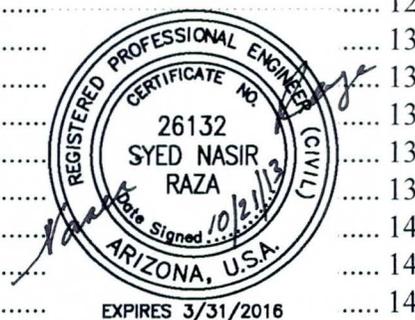
On behalf of:
The City of Phoenix
Rick Evans
1034 East Madison Street
Phoenix, AZ 85034
(602) 262-4051



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FIGURES

- 1. Location Map
- 2. Vicinity Map

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- A. Annotated FIRM
- B. Hydraulics Work Study Map I
- C. Hydraulics Work Study Map II



APPENDICES

- A. References
 - A.1: Data Collection Summary
 - A.2: Referenced Documents
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 - B.1: General Project Documentation and Correspondence
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- E. Hydraulic Analysis Supporting Documentation
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 - E.3: Expansion and Contraction Coefficients
 - E.4: Analysis of Structures
 - E.5: Hydraulic Calculations
 - E.6: Design Plans



1.0 INTRODUCTION

1.1 Purpose of Study

The existing Greenway Parkway Bridge over Cave Creek was completed in 1988. Studies have been concluded that recommend replacement of the existing multi-span concrete bridge with a cast-in-place 3-cell box culvert.

This study evaluates the impact of the new cast-in-place 3-cell box culvert on the 100-year floodplain of Cave Creek. The information presented in this study will be used to update the limits of the Zone "AE" designation from the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM) along Cave Creek and obtain a CLOMR for this area.

Please note that:

- Zone "AE" is defined as "areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply."

1.2 Authority of Study

Gannett Fleming, Inc. (GF) performed this study under contract with the City of Phoenix. The Project Manager for the City of Phoenix is Rick Evans. The City's Floodplain Manager is Hasan Mushtaq, PhD, PE, CFM. The City of Phoenix's offices are located at 200 W Washington Street, Phoenix, AZ 85003. GF's Task Manager for this hydraulic study is Nasir Raza, PE, CFM. The project scope of work approved by the City of Phoenix is provided in Appendix B.

1.3 Location of Study Reach

The location of this study for Cave Creek begins approximately 340 feet north of Tierra Buena Lane and continues downstream to approximately 630 feet east of 19th Avenue (see Figures 1 and 2). The central location of the study reach is located on the southern edge of Section 6 and the northern edge of Section 7, Township 3 North, Range 3 East in the City of Phoenix within Maricopa County.

1.4 Methodology

1.4.1 Hydrology

No hydrologic analysis was conducted under this study. The 100-year discharges within the current FEMA Flood Insurance Study (FIS) HEC-2 model were used without any changes.

1.4.2 Hydraulics

The U.S. Army Corp of Engineers computer program, HEC-RAS (version 4.1), was used to hydraulically analyze the Cave Creek floodplain. Floodplain and floodway limits were drafted in CADD. Cross section locations are shown on the work study map in Exhibit B.

1.5 Acknowledgments

The following individuals are recognized as providing invaluable assistance – both in terms of technical guidance as well as providing the information, mapping and data – during the course of this study:

Rick Evans – City of Phoenix

Hasan Mushtaq – City of Phoenix

Tim Murphy – Flood Control District of Maricopa County (FCDMC)

Amir Motamedi – Flood Control District of Maricopa County (FCDMC)

Richard Harris – Flood Control District of Maricopa County (FCDMC)

Eric Feldman - Flood Control District of Maricopa County (FCDMC)

1.6 Study Results

The Post-Project HEC-RAS model estimates that, with the proposed 3-cell box culvert, the 100-year water surface elevation of Cave Creek is 1332.51 feet at the upstream face of the culvert. This is a 1.27 foot decrease in water surface elevation from the Corrected Effective Model. See Table 1 in Section 5.9, for a summary of the hydraulic analysis results.



2.0 FEMA FORMS

MT-2 Form 1 – Overview and Concurrence Form

FEDERAL EMERGENCY MANAGEMENT AGENCY
PAYMENT INFORMATION FORM

Community Name: City of Phoenix, Arizona
Project Identifier: Project Number: ST85110069

THIS FORM MUST BE MAILED, ALONG WITH THE APPROPRIATE FEE, TO THE ADDRESS BELOW OR FAXED TO THE FAX NUMBER BELOW.

Please make check or money order payable to the National Flood Insurance Program.

Type of Request:

- MT-1 application }
 MT-2 application }

LOMC Clearinghouse
847 South Pickett Street
Alexandria, VA 22304-4605
Attn.: LOMC Manager

- EDR application }

FEMA Project Library
847 South Pickett Street
Alexandria, VA 22304-4605
FAX (703) 212-4090

Request No. (if known): _____ Check No.: _____ Amount: 4,400

INITIAL FEE* FINAL FEE FEE BALANCE** MASTER CARD VISA CHECK MONEY ORDER

*Note: Check only for EDR and/or Alluvial Fan requests (as appropriate).

**Note: Check only if submitting a corrected fee for an ongoing request.

COMPLETE THIS SECTION ONLY IF PAYING BY CREDIT CARD

CARD NUMBER

EXP. DATE

5	4	6	6	—	3	2	7	0	—	1	7	9	4	—	3	0	4	7				
1	2	3	4		5	6	7	8		9	10	11	12		13	14	15	16			1	2
																			Month	Year		

10/25/2013

Karen Johnston

Digitally signed by Karen Johnston
DN: cn=Karen Johnston, o=Gannett Fleming, Inc., ou=Regional Admin Div,
email=kjohnston@gfnet.com, c=US
Date: 2013.10.24 12:58:34 -04'00'

Date

Signature

NAME (AS IT APPEARS ON CARD): K J Johnston
(please print or type)

ADDRESS: 1279 Summit View Court
(for your credit card receipt—please print or type)
New Cumberland, PA 17070

DAYTIME PHONE: 717-763-7211

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 480287	City of Katy Harris County	TX TX	48473C 48201C	0005D 0220G	02/08/83 09/28/90
040051	City of Phoenix	AZ	04013C	1215K	9/30/05
				1655k	9/30/05

2. a. Flooding Source: Cave Creek

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

3. Project Name/Identifier: Greenway Parkway Bridge Over Cave Creek

4. FEMA zone designations affected: 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: \$4400
 No, Attach Explanation

Please see the DHS-FEMA Web site at http://www.fema.gov/plan/prevent/fhm/frm_fees.shtml 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: Syed Mahmud Nasir Raza, PE, CFM

Company: Gannett Fleming, Inc.

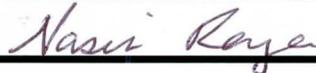
Mailing Address:
4722 North 24th Street, Suite 250
Phoenix, AZ 85016-4852

Daytime Telephone No.: 602 553-8817

Fax No.: 602 553-8816

E-Mail Address: sraza@gfnet.com

Signature of Requester (required):



Date:

10-21-13

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: Hasan Mushtaq, PhD, PE, CFM

Community Name: City of Phoenix

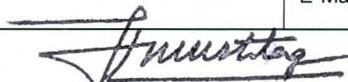
Mailing Address:
200 W Washington Street, 5th Floor
Phoenix, AZ 85003-1611

Daytime Telephone No.: 602 262-4026

Fax No.: 602 262-7322

E-Mail Address: hasan.mushtaq@phoenix.gov

Community Official's Signature (required):



Date:

11-4-13

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: Syed Mahmud Nasir Raza, PE, CFM

License No.: 26132

Expiration Date: 3/31/2016

Company Name: Gannett Fleming, Inc.

Telephone No.: (602) 553-8817

Fax No.: (602) 553-8816

Signature:

Date:

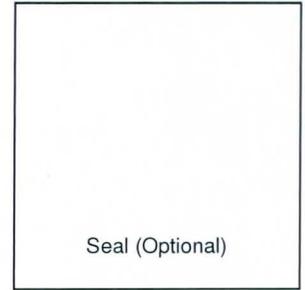
E-Mail Address: sraza@gfnet.com

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

Form Name and (Number)

Required if ...

- | | |
|---|---|
| <input checked="" type="checkbox"/> Riverine Hydrology and Hydraulics Form (Form 2) | New or revised discharges or water-surface elevations |
| <input checked="" type="checkbox"/> Riverine Structures Form (Form 3) | Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam |
| <input type="checkbox"/> Coastal Analysis Form (Form 4) | New or revised coastal elevations |
| <input type="checkbox"/> Coastal Structures Form (Form 5) | Addition/revision of coastal structure |
| <input type="checkbox"/> Alluvial Fan Flooding Form (Form 6) | Flood control measures on alluvial fans |



MT-2 Form 2 – Riverine Hydrology & Hydraulics Form

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.**

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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: Cave Creek

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*	<u>Upstream of 19th Ave Bridge</u>	<u>19.505</u>	<u>1326.80</u>	<u>1326.80</u>
Upstream Limit*	<u>Upstream of Tierra Buena Bridge</u>	<u>20.049</u>	<u>1338.40</u>	<u>1338.39</u>

*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

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. <u>Models Submitted</u>	<u>Natural Run</u>		<u>Floodway Run</u>		<u>Datum</u>
	File Name:	Plan Name:	File Name:	Plan Name:	
Duplicate Effective Model*	SEE PAGE BOTTOM	Duplicate Effective	SEE PAGE BOTTOM	Duplicate Effective	NGVD 1929
Corrected Effective Model*	SEE PAGE BOTTOM	Corrected Effective	SEE PAGE BOTTOM	Corrected Effective	NGVD 1929
Existing or Pre-Project Conditions Model	SEE PAGE BOTTOM	Corrected Effective	SEE PAGE BOTTOM	Corrected Effective	NGVD 1929
Revised or Post-Project Conditions Model	SEE PAGE BOTTOM	Post-Project	SEE PAGE BOTTOM	Post-Project	NGVD 1929
Other - (attach description)	N/A	N/A	N/A	N/A	N/A

* 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: Ground Survey and Aerial Photogrammetric

Source: Survey Control and Aerial Photogrammetrics

Date: January 14, 2010

Accuracy: _____

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)

DUPLICATE EFFECTIVE MODEL FILE NAME: Cave Creek at Greenway Pkwy CLOMR

CORRECTED EFFECTIVE MODEL FILE NAME: Cave Creek at Greenway Pkwy CLOMR

EXISTING OR PRE-PROJECT CONDITIONS MODEL FILE NAME: Cave Creek at Greenway Pkwy CLOMR

REVISED OR POST-PROJECT CONDITIONS MODEL FILE NAME: Cave Creek at Greenway Pkwy CLOMR

NOTE: The conversion from NGVD'29 to NAVD'88 follows: NGVD'29 + 1.946' = NAVD'88

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.

ESA COMPLIANCE DOCUMENTATION



Peterson, Mark <mwpeterson@gfnet.com>

Greenway Parkway Bridge CLOMR

4 messages

Martinez, Mike <mike_martinez@fws.gov>
To: "Peterson, Mark" <mwpeterson@gfnet.com>

Thu, Feb 14, 2013 at 11:34 AM

Dear Mr. Peterson:

Thank you for your email correspondence of February 6, 2013, requesting review by the U.S. Fish and Wildlife Service of application for a CLOMR for Greenway Parkway Bridge, Maricopa County, Arizona (02EAAZ00-2013-TA-0088). Based on the information provided, it appears that no endangered or threatened species, or critical habitat would be affected by the project; nor is the project likely to jeopardize the continued existence of proposed species or destroy or adversely modify proposed critical habitat, because no such species or habitats exist in the project area. As such, a "no effect" determination by FEMA, in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et. seq.) (ESA), for issuance of the CLOMR seems appropriate. Should the project site change or if additional information on the distribution of listed or proposed species becomes available, FEMA's determination may need to be reconsidered.

Some projects may potentially impact species that are protected under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. sec. 703-712) and/or bald and golden eagles protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d). Prohibitions under the MBTA include the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except as specifically authorized by the FWS. If you believe migratory birds will be affected by the project, we recommend you contact our Migratory Bird Permit Office, P.O. Box 709, Albuquerque, NM 87103, (505) 248-7882 or by emailFW2_birdpermits@fws.gov.

You're encouraged to coordinate review of this project with the Arizona Game and Fish Department. Additionally, since the project appears to occur in waterways and may require a permit under section 404 of the Clean Water Act, it is recommended that you coordinate with the U.S. Army Corps of Engineers. Should you require further assistance or have any questions, please contact me.

On Fri, Feb 8, 2013 at 4:38 PM, Peterson, Mark <mwpeterson@gfnet.com> wrote:

> Mike,

>

>

>

> We haven't submitted the CLOMR to FEMA yet. As part of that submittal we
> need documentation of compliance with the ESA. However, the following is
> the introduction taken from the Greenway Parkway Bridge over Cave Creek

> Drainage Report. It gives a good description of the project. It is
> basically a bridge replacement. I have also included some photos of the
> site. Please let me know if you any additional information to begin your
> review. Thank you for your help, and have a nice weekend.

>

>

>

> Regards,

>

>

>

> Mark

>

>

>

>

>

> 1.0 INTRODUCTION

>

> 1.1 Authorization

>

> Gannett Fleming, Inc. (GF) was authorized by City of Phoenix Street
> Transportation Department to prepare the Drainage Report for Greenway
> Parkway Bridge over Cave Creek.

>

>

>

> 1.2 Purpose and Scope

>

> The purpose of the Drainage Report is to document the drainage analyses for
> the proposed Greenway Parkway bridge replacement structure and associated
> channel improvements as well as the roadway drainage facilities. The
> Greenway Parkway bridge replacement structure hydrology and hydraulics
> analyses is presented in a manner that is compatible with the documentation
> required for the Conditional Letter of Map Revision (CLOMR) and Letter of
> Map Revision (LOMR). However, there will be different documentation prepared
> for the CLOMR submittal to FEMA after approval by the City of Phoenix. The
> Drainage Report includes discussion about the hydrology and hydraulic design
> of storm water drainage facilities such as storm drains, street conveyance,
> catch basins, connector pipes, and ultimate outfalls. The drainage criteria
> used for this Drainage Report conform to the City of Phoenix's Storm Water
> Policies and Standards Manual (Ref. 1) and Maricopa County's Hydrology and
> Hydraulics Drainage Design Manuals (Ref. 2 and 3).

>

> 1.3 Project Location and Description

>

> The Greenway Parkway Bridge over Cave Creek is located about one half mile
> east of the 19th Avenue and Greenway Parkway intersection (see Figure 1).
> Greenway Parkway is a six lane major arterial, with a 24' wide median and
> 5'-5" wide pedestrian sidewalks on both sides. Cave Creek crosses the
> roadway/bridge at a heavy skew of 71° 20' 32". The existing bridge is a
> two-span, continuous, cast-in-place reinforced concrete slab. The open area
> height for the bridge varies from 10 to 12 feet depending on the location
> under the bridge. The bridge is symmetrical with both spans measuring 30'-9"
> from abutment to abutment perpendicular to the substructure, but because of
> the skew this distance is 96'-1½" when measured parallel to the roadway. The
> bridge is 110'-0" wide perpendicular to roadway centerline and 340'-6" along

> the skew. The skew plays a large role in the current, deteriorated condition
> of the existing bridge and the choice of alternatives considered. Please
> refer to Appendix F: As-built Greenway Parkway Plans for the current roadway
> and bridge. A trapezoidal concrete channel was constructed upstream and
> downstream of the bridge. A bottom concrete slab (apron) was provided under
> the bridge to prevent scour at piers and abutments. The apron exhibits some
> damage consisting of heaving, settling and cracking, particularly at the
> upstream end. The Greenway Parkway Bridge over Cave Creek was completed in
> September of 1988 and almost immediately exhibited deficiencies. Structural
> problems were documented in the first inspection report dated December 28,
> 1988 and in subsequent studies. Those problems include the occurrence of
> numerous wide cracks in the deck; settlement and spalling of the approach
> slabs; displacement and rotation of the concrete dados and barrier
> transition sections on the approaches; and numerous cracks and other
> defects.

>

>

>

> On Wed, Feb 6, 2013 at 1:35 PM, Martinez, Mike <mike_martinez@fws.gov>
> wrote:

>>

>> Photos of the site and project description. Probably whatever you
>> provided for the CLOMR application.

>>

>> On Wed, Feb 6, 2013 at 1:24 PM, Peterson, Mark <mwpeterson@gfnet.com>
>> wrote:

>> > Thank you Mike.

>> >

>> > I have submitted the project at the AZ Game and Fish website. The
>> > receipt I

>> > received from their website is attached.

>> >

>> > Is the map included in the receipt sufficient for your review? Please
>> > let

>> > me know if I need to include any other map of the area.

>> >

>> > This project is for the replacement of the existing Greenway Parkway
>> > bridge

>> > over Cave Creek. The channel in this area is already concrete lined, so
>> > we

>> > are unaware of any biological resources in the area.

>> >

>> > Regards,

>> >

>> > Mark

>> >

>> >

>> > On Wed, Feb 6, 2013 at 12:22 PM, Martinez, Mike <mike_martinez@fws.gov>
>> > wrote:

>> >>

>> >> <http://www.azgfd.gov/hgis/>

>> >>

>> >> On Wed, Feb 6, 2013 at 12:20 PM, Peterson, Mark <mwpeterson@gfnet.com>
>> >> wrote:

>> >> > Mike,

>> >> >

>> >> > Thank you for your call. My contact info is below for your use.

>> >> 2321 W. Royal Palm Rd, Ste. 103

>> >> Phoenix, AZ 85021

>> >> (602) 242-0210

>> >

>> >

>> >

>> >

>> > --

>> >

>> >

>> > Mark W Peterson, P.E.

>> >

>> > Gannett Fleming, Inc. | 4722 N. 24th Street, Suite 250, Phoenix, AZ

>> > 85016

>> >

>> > t 602.553.8817 x8217 | c 602.319.8656 | mwpeterson@gfnet.com

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>> >

>> > Mike Martinez

>> > Fish and Wildlife Biologist

>> > U.S. Fish and Wildlife Service

>> > 2321 W. Royal Palm Rd, Ste. 103

>> > Phoenix, AZ 85021

>> > (602) 242-0210

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-
Mike Martinez
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
2321 W. Royal Palm Rd, Ste. 103
Phoenix, AZ 85021
(602) 242-0210

Peterson, Mark <mwpeterson@gfnet.com>
To: "Martinez, Mike" <mike_martinez@fws.gov>
Cc: Byron Dixon <bdixon@gfnet.com>, Syed Raza <sraza@gfnet.com>

Thu, Feb 14, 2013 at 1:28 PM

Mike,

Thank you for your prompt review of our project. We need a letter from the U.S. Fish and Wildlife Service that addresses compliance with the Endangered Species Act (ESA). This letter will accompany our CLOMR submittal to FEMA. Will you provide us with a "no effect" letter? I have attached the page from FEMA's MT-2 form that addresses ESA compliance documentation.

Regards,

Mark

[Quoted text hidden]



ESA Compliance.pdf

88K

Martinez, Mike <mike_martinez@fws.gov>
To: "Peterson, Mark" <mwpeterson@gfnet.com>

Thu, Feb 14, 2013 at 1:30 PM

Mark, we have previously coordinated with FEMA regarding this. They will accept the email to meet their requirements. If a FEMA contact tells you differently, please provide me with their contact info.

Thanks.

[Quoted text hidden]

Peterson, Mark <mwpeterson@gfnet.com>
To: "Martinez, Mike" <mike_martinez@fws.gov>
Cc: Syed Raza <sraza@gfnet.com>, Byron Dixon <bdixon@gfnet.com>

Thu, Feb 14, 2013 at 1:33 PM

Thank you, Mike.

[Quoted text hidden]

MT-2 Form 3 – Riverine Structures Form

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 7 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 20598-3005, 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; 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: Cave Creek

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: Greenway Parkway Bridge at Cave Creek

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

Location of Structure: Greenway Parkway over Cave Creek, between 19th Ave and Tierra Buena Lane

Downstream Limit/Cross Section: 19.625

Upstream Limit/Cross Section: 19.691

2. Name of Structure: Tierra Buena Bridge at Cave Creek

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

Location of Structure: Tierra Buena Lane over Cave Creek, between 15th Ave and Greenway Parkway

Downstream Limit/Cross Section: 19.974

Upstream Limit/Cross Section: 19.986

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
- Super critical 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
- Super elevated sections
- Transitions in cross sectional geometry
- Debris basin/design basin [Attach Section D (Dam/Basin)]
- Energy dissipater

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). If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: Cave Creek

Name of Structure: Greenway Parkway Bridge at Cave Creek

1. This revision reflects (check one):

- Bridge/culvert not modeled in the FIS
- Modified bridge/culvert previously modeled in the FIS
- New 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
If different 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
- Distance 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 Elevation - 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 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 _____ Permit Agency or Organization: _____

- Local Government Dam Private Dam

Provide related drawings, specifications 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 documents with your completed Form 2.
 No, provide 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.

FREQUENCY (% annual chance)	Stillwater Elevation Behind the Dam/Basin	
	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 the 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. Opening 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.)

E. LEVEE/FLOODWALL (continued)

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:

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)

E. LEVEE/FLOODWALL (continued)

5. Embankment and Foundation Stability (continued)

- 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 analysis 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. 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 specific construction elevations to maintain the established freeboard margin? Yes No
- b. The computed range of settlement is _____ ft. to _____ ft.

E. LEVEE/FLOODWALL (continued)

7. Settlement (continued)

- 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.
- f. 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.
- 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

E. LEVEE/FLOODWALL (continued)

8. Interior Drainage (continued)

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 flood side 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 to the above, please attach supporting documentation.

11. Maintenance Plan

a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP regulations?

Yes No If No please attach supporting documentation.

12. Operations and Maintenance Plan

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

CERTIFICATION OF THE LEVEE DOCUMENTATION

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, 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 statements 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 base 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.



3.0 SURVEY AND MAPPING INFORMATION

3.1 Field Survey Information

Field survey data used in this study was produced by Premier Engineering Corporation, (Premier) as sub-consultant to Gannett Fleming, Inc.

Premier project number: 2009032

Premier Responsible Registrant: Jesse Boyd, R.L.S. (Az.) # 42937

Dates of Survey: August 2009 through January 2010

Surveying tasks performed by Premier:

1. Research of existing control including National Geodetic Survey, Maricopa County Geodetic Densification and Cadastral Survey and City of Phoenix.
2. Research of existing utilities
3. Research of right-of-way and ownership data
4. Performance of initial horizontal and vertical control survey
5. Performance of ground topographic and right-of-way surveys
6. Setting and controlling 24 aerial flight panels
7. Cadd map production of topographic map of immediate bridge area at Greenway Parkway
8. Cadd map production of right of way strip map along Greenway Parkway

Survey datum(s) used for all survey tasks:

Horizontal Datum: NAD 83, Arizona State Plane, Central Zone modified to ground coordinates.

All coordinates presented in Appendix "C" are ground coordinates. An average combined grid factor of 0.999840025 may be used to convert them to plane coordinates.

Vertical Datum: N.G.V.D. 1929

FEMA Elevation Reference Marks

Two elevation reference marks published by FEMA were incorporated into the survey data, thereby tying the surveying and mapping to the FEMA elevation reference marks.

The recorded and measured vertical values of the elevation reference marks are as follows:

ERM 4: This station is located at what would be the intersection of 15th Avenue and Greenway Road. It is approximately the North quarter corner of section 7, T3N, R3E. The mark is a brass cap in concrete 0.3 feet below ground. Brass cap is stamped L.S. 17146.

Published Elevation = 1336.40 Measured Elevation = 1336.41

ERM 5: This station is located at the centerline P.C. of Tierra Buena Lane just east of bridge over Cave Creek. At this station there is a City of Phoenix brass cap.

Published Elevation = 1339.53 Measured Elevation = 1339.64

Initial control was established by global positioning. Control monuments were located on the perimeter of and within a rectangular area surrounding the project and extending approximately 4 miles north, 2.6 miles east, 2.3 miles south and 3.4 miles west of the immediate bridge area.

Upon resolution of the existing control, additional control points were set to control future construction as well as to aid with topographic ground surveys.

A ground topographic survey was made of the Greenway Parkway Bridge area extending roughly 1300 feet east and west of the bridge along Greenway Parkway and 1700 feet northeasterly and 1900 feet southwesterly along Cave Creek.

Additional ground surveys were made to locate or control the Greenway Parkway right-of-way and to establish parcel lines to determine right-of-way takes.

Twenty four aerial panels were controlled by global positioning and the control coordinates were transmitted to Cooper Aerial Surveys Company (sub-consultant to Premier Engineering Corp.) to prepare aerial photography and mapping of the project.

Quality Control

Premier Engineering Corp. is contractually bound by Gannett Fleming, Inc. to have in place quality assurance procedures. For each deliverable to Gannett Fleming, Premier provided a "Sub-Consultant Quality Verification Form" signed by Premier's QA/QC officer.

Copies of these forms are included in Appendix "C".

Organization of Appendix "C"

EXHIBIT A - Field Notes & Listing of all surveyed points except aerial panel points.

EXHIBIT B - Topographic Survey by Premier Engineering Corporation of Greenway Parkway Bridge Area

EXHIBIT C - Right of Way Survey by Premier Engineering Corporation

EXHIBIT D - "Sub-Consultant Quality Verification Form" pertaining to Exhibits A, B & C

EXHIBIT E - Listing of Aerial Panel Point data

EXHIBIT F - Overall Aerial Mapping by Cooper Aerial Surveys Company

EXHIBIT G - "Sub-Consultant Quality Verification Form" pertaining to Exhibits E & F

3.2 Mapping

Mapping for this study was obtained by both ground topographic survey and aerial photogrammetric methods. As indicated in Section 3.2, all ground surveying and aerial mapping control surveys were provided by Premier Engineering Corporation, (Premier) as a sub-consultant to Gannett Fleming, Inc. Premier controlled 24 aerial targets, the spatial values of which were transmitted to Cooper Aerial Surveys Company, (Cooper) acting as sub-consultant to Premier. The horizontal datum originated from NAD83, Arizona State Plane Coordinate System, Central Zone. It was then modified to ground coordinates by an average combined grid factor of 1.00016 (Grid to Ground). All mapping was produced using the modified ground coordinates. The vertical datum used is N.G.V.D. 1929. The mapping scale is 1"=40' and the contour interval is one foot.

Cooper received the control data from Premier on January 7, 2010, and subsequently flew and photographed the project area on January 14, 2010. The mapping scale is 1"=40'. The contour interval is 1 foot. The last overall vertical control survey upon which the benchmarks are based took place in the two weeks preceding the flight. This project does not lie within an area of known land subsidence.

The project was flown with 5 flight lines progressing from south to north. The time of day was approximately noon. Five exposures were made along flight line one from an elevation of 3100 feet above mean sea level (MSL). Four exposures were made along flight line two from an elevation of 3110 feet. Three exposures were made along flight line three from an elevation of 3110 feet. Five exposures were made along flight line four from an elevation of 3140 feet. Four exposures were made along flight line five from an elevation of 3150 feet.

The number of stereo models used to develop the mapping is 16. The Photo Scale is 1:3600. The mapping was used for hydraulics only.

The responsible professional in charge of the aerial mapping field control is Jesse Boyd, Arizona RLS # 42937 acting on behalf of Premier Engineering Corporation under project number 2009032. The responsible professional in charge of map production is Ben Saunders acting on behalf of Cooper Aerial Surveys Company under project number 0912020P.



4.0 HYDROLOGY

Design flows are based on the existing watershed condition hydrology that was prepared in the 1991 Cave Creek study by Burgess & Niple. These flows were used to prepare the current/effective Flood Insurance Rate Maps (FIRMs) by FEMA. The hydrologic models and study were provided by the Flood Control District of Maricopa County (FCDMC). The 100-year, 50-year and 10-year frequency peak discharges are used in the hydraulic models.

It should be noted that there are inconsistencies within the Flood Insurance Study (FIS). Table 3 of the FIS lists the 100-year peak discharges as follows:

Flooding Source & Location	Drainage Area (square miles)	Peak 100-year Flow (cubic feet per second)
Cave Creek below confluence with East Fork	22.5	11,000
Cave Creek below Deer Valley Rd East Fork	5.0	5,400
	-	-

However, the following flows from the Middle Cave Creek Floodplain Delineation Study and HEC-2 models provided by the FCDMC produce results which are consistent with the hydraulic data within Table 5 of the FIS (see Appendix A) and are used in the current hydraulic analyses for Greenway Bridge as suggested by the FCDMC:

Flooding Source & Location	Drainage Area (square miles)	Peak 100-year Flow (cubic feet per second)
Cave Creek below confluence with East Fork	23.5	14,600
Cave Creek below Deer Valley Rd (above confluence with East Fork)	8.6	5,700
East Fork (above confluence with Cave Creek)	14.6	9,500



5.0 HYDRAULICS

5.1 Method Description

The U.S. Army Corp of Engineers' HEC-RAS (version 4.1) was used to perform the hydraulic analysis and estimate the Cave Creek floodplain limits for this study. The hydraulic models have been checked using the Department of Homeland Security – Federal Emergency Management Agency HEC-RAS review program, cHECK-RAS. The results of this review will be discussed in Appendix E.

The base HEC-2 models for Cave Creek were obtained from FEMA and run within the HEC-RAS software after the necessary conversion (see Appendix E.5). The HEC-RAS model provided similar elevations as shown on the Middle Cave Creek Floodplain Delineation Study, Floodway Boundary and Work Maps dated March 26, 1991 (see Appendix A) prepared by FCDMC's consultant Burgess and Niple, Inc. for FEMA and the FEMA Flood Insurance Rate Maps (FIRM) (see Appendix A). A comparison of the water surface elevations upstream and downstream of the Greenway Bridge for the original HEC-2 model, the FEMA FIS and the duplicate HEC-RAS model is provided below.

River	Work Map XS [FEMA FIS XS] (WSEL)	Duplicate XS (WSEL)
Cave Creek	BN [U] (1332.0 feet)	19.742 (1331.83 feet)
Cave Creek	BM [T] (1328.2 feet)	19.560 (1327.90 feet)

The following HEC-RAS models are included as part of this study:

1. Duplicate Effective Model
(File Name: cavecreekgreenwayCLOMR.prj, Plan Name: Duplicate Effective)
2. Corrected Effective Model (same as Pre-Project Conditions Model)
(File Name: cavecreekgreenwayCLOMR.prj, Plan Name: Corrected Effective)
3. Post-Project Conditions Model
(File Name: cavecreekgreenwayCLOMR.prj, Plan Name: Post-Project)

Note: The Existing (or Pre-Project) Conditions Model is the same as the Corrected Effective Model.

The Duplicate Effective Model was developed from the base HEC-2 model for Middle Cave Creek that was obtained from FCDMC. The Corrected Effective Model is based on the Duplicate Effective Model and includes updated topography and Manning's roughness "n" at section 19.560. Additionally, new section 19.597 was added to model constriction in Cave Creek downstream of the bridge. The Post-Project Conditions Model is based on the Corrected Effective Model and includes the geometry of the proposed 3-cell box culvert. See Table 1, in Section 5.9, for a summary of the HEC-RAS results for all models. Detailed HEC-RAS output for each hydraulic model is presented in Appendix E.

5.2 Work Study Maps

Work Study Maps displaying topography and effective 100-Year Floodplain limits have been prepared and are presented in the Exhibit Maps section of this report. A legend provided on these maps explains the nomenclature and symbols used. The original cross sections from the FIS/FIRM are depicted on this map. Updated topography between sections 19.505 and 20.049 has been superimposed over the original work map prepared by Flood Control District of Maricopa County dated March 26, 1991. Also the channelization of Cave Creek between 19th Avenue and Greenway Parkway based on the 2001 LOMR 01-09-526P is superimposed on the original map.

5.3 Parameter Estimation

5.3.1 Roughness Coefficients

The Manning's roughness values used in the HEC-RAS models were derived from observations during site visits (see Appendix E.1). Photographs of channel reaches and summary tables of the selected coefficients are provided in Appendix E.

5.3.2 Expansion and Contraction Coefficients

In areas where cross sections change minimally from one to the next, coefficients of contraction and expansion of 0.1 and 0.3, respectively, are used. When changes to cross sections are more abrupt, such as at bridges, contraction and expansion coefficients of 0.3 and 0.5, respectively, are used. Contraction and expansion coefficients of 0.2 and 0.4, respectively, are assigned to the cross sections immediately adjacent to the junction point between Cave Creek and East Fork.

5.4 Cross Section Description

The base cross sections for the HEC-2 model developed for the FIRM were prepared by Burgess & Niple, Inc., as part of the Cave Creek FIS (see Appendix A.1). These same cross sections were used on the current FIRM with alphabetical designations (see Appendices A.2.3 and A.2.4). For example, cross section "BM" from the Burgess & Niple, Inc. map corresponds to cross section "T" on the FIRM. Additionally cross-sections from the 2001 LOMR 01-09-526P for Cave Creek channelization between 19th Avenue and Greenway Parkway are part of the updated HEC-2 model. These cross sections are also shown on Exhibit Maps A, B and C.

The duplicate effective HEC-RAS model (File Name: cavecreekgreenwayCLOMR.prj, Plan Name: Duplicate Effective) uses the cross sections from the FIS HEC-2 model.

The corrected effective HEC-RAS model (same as the Pre-Project Model) (File Name: cavecreekgreenwayCLOMR.prj, Plan Name: Corrected Effective) uses the same cross sections as the duplicate effective model, but includes a new section at 19.597. Sections 19.560 through 19.742 along Cave Creek and Section 0.029 of East Fork were updated based on recent topography.

The post project conditions HEC-RAS model (File Name: cavecreekgreenwayCLOMR.prj, Plan Post-Project) uses the same cross sections as the corrected effective HEC-RAS model. However, the geometry of cross sections 19.691 and 19.625 at the upstream and downstream faces of the 3-cell box culvert has been modified to accurately depict the proposed multi-cell culvert.

5.5 Modeling Considerations

5.5.1 Hydraulic Jump and Drop Analysis

In the study reach Cave Creek does not have any hydraulic jumps or drops. Consequently, such types of hydraulic analyses were not conducted as part of this study.

5.5.2 Bridges and Culverts

The existing two-span, continuous, cast-in-place reinforced concrete slab bridge over Cave Creek was surveyed to obtain the bridge opening geometry. This bridge is 110'-0" wide perpendicular to the roadway centerline and 340'-6" along the skew. The survey data is discussed in Section 3.0 of this report, and detailed survey information is found in Appendix C. This bridge data was input into the HEC-RAS model in order to complete the corrected effective model.

The proposed concrete 3-cell box culvert geometry was input into the proposed condition HEC-RAS model.

5.5.3 Levees and Dikes

There are no levees or dikes within the project area.

5.5.4 Non-Levee Embankments

There are no non-levee embankments within the project area.

5.5.5 Islands and Flow Split

There are no islands or flow splits within the project area.

5.5.6 Ineffective Flow Areas

A depression that will not convey flow is modeled as an ineffective flow area from cross section 20.049 to 19.986 on the eastern side of Cave Creek. The only other ineffective flow area is from cross section 19.974 to 19.960 in Cave Creek just south of the Tierra Buena Road Bridge.

5.5.7 Supercritical Flow

There is no supercritical flow within the HEC-RAS models used within this study.

5.6 Floodway Modeling

There is a floodway defined on the effective FIRM maps and in the effective FIS. As discussed previously, current topographic mapping and additional cross sections were utilized to analyze the Cave Creek hydraulics. These analyses resulted in updated floodway elevations for the corrected effective and post-project models of Cave Creek. All hydraulic model floodway elevations are found in Table 1 at the end of Section 5. The updated floodway is shown graphically on the Hydraulic Work Maps found in the "Exhibit Maps" section at the end of the report.

5.7 Issues Encountered During the Study

5.7.1 Special Issues and Solutions

No special issues were encountered during the execution of this study.

5.7.2 Modeling Warning and Error Messages

There were no error messages encountered during the HEC-RAS runs. There are a number of warning messages due to cross section spacing, the energy equation not balancing, energy loss, divided flow, changes in velocity head, exceeding the conveyance ratio range of 0.7-1.4. At cross-sections 19.597, 20.049 and 0.288 the program defaulted to critical depth.

The messages above were analyzed and considered acceptable.

5.7.3 Results of cHECK-RAS Analysis

cHECK-RAS (version 2.0.1 Beta) was used to verify the reasonableness of parameters and data of all HEC-RAS models used within this study. The cHECK-RAS results and comment responses are included in Appendix E.5.4.

5.8 Calibration

No model calibration was performed during this study.

5.9 Final Results

5.9.1 Hydraulic Analysis Results

The 100-year floodplain adjacent to the Greenway Parkway Bridge over Cave Creek is delineated based on the results of the HEC-RAS models. The 100-year water surface elevations in the Corrected and Post-Project HEC-RAS models have increased just upstream and downstream of the bridge compared to the FIS HEC-2 and Duplicate Effective HEC-RAS models due to the constriction in Cave Creek just downstream of the bridge. The modeling of this constricted area is based on updated topography. See Table 1 at the end of this section for a summary of the hydraulic analysis results. The Zone "AE" area along Cave Creek is recommended to be updated as shown on Exhibit Map B.

The HEC-RAS hydraulic output for each model is provided in Appendix E.5.

cHECK-RAS output for the hydraulic models is provided in Appendix E.5.4.

5.9.2 Verification of Results

The input and results of this analysis were compared to the FEMA HEC-2 model and found to be similar and reasonable. A physical verification of the results is not practical.

TABLE 1
Greenway Parkway at Cave Creek
Comparison of Floodplain and Floodway Water Surface Elevations for CLOMR

Cross Section ID					100-year Water Surface Elevation								Comments		
FEMA FIRM XS ID	FEMA Work Map XS ID	LOMR (01-09-526P) XS ID	Gannett Fleming XS ID	River Station in Miles XS ID	HEC-2 FEMA Effective (from FIS Table)		HEC-RAS FEMA Duplicate Effective		HEC-RAS Corrected Effective added Section 19.597		HEC-RAS Post-Project Box Culvert w/ added Sections 19.597			Difference between Post-Project Box Culvert and HEC-2 FEMA Effective (from FIS Table)	
					Floodplain	Floodway	Floodplain	Floodway	Floodplain	Floodway	Floodplain	Floodway		Floodplain	Floodway
Cave Creek															
		19.505	19.505	19.505	1326.8	1326.8	1326.80	1326.80	1326.80	1326.80	1326.80	1326.80			Known WS from Cave Creek Wash Channelization LOMR (01-09-526P) Technical Data Notebook
T	BM		19.560	19.560	1328.2	1328.2	1327.90	1327.90	1326.80	1326.80	1326.80	1326.80	-1.40	-1.40	Lower WSEL due to adjusting Manning's roughness for concrete channel
			19.597						1327.36	1327.36	1327.36	1327.36			New constricted section
			19.625	19.625			1329.73	1329.87	1331.57	1331.57	1331.64	1331.64			Greenway Culvert Downstream - Higher WSEL due to constricted section 19.597
			19.658												Bridge
			19.691	19.691			1331.35	1331.51	1333.78	1333.92	1332.35	1332.35			Greenway Culvert Upstream - Higher WSEL due to constricted section 19.597
U	BN		19.742	19.742	1332.0	1332	1331.83	1331.95	1334.10	1334.12	1332.68	1332.65	0.68	0.65	Higher WSEL due to constricted section 19.597
V	BO		19.847	19.847	1332.1	1332.1	1331.98	1332.07	1334.19	1334.25	1332.80	1332.73	0.70	0.63	Higher WSEL due to constricted section 19.597
W	BP		19.960	19.960	1332.4	1332.4	1332.25	1332.37	1334.27	1334.38	1332.96	1332.96	0.56	0.56	Higher WSEL due to constricted section 19.597
			19.974	19.974			1333.41	1333.80	1334.30	1334.58	1333.28	1333.69			Tierra Buena Downstream
			19.980												Bridge
			19.986	19.986			1337.14	1336.86	1336.21	1336.50	1336.85	1336.84			Tierra Buena Upstream
X	BQ		20.049	20.049	1338.4	1338.4	1338.39	1338.28	1338.39	1338.29	1338.39	1338.29	-0.01	-0.11	Match Existing WSEL
East Fork															
A	A		0.029	0.029	1329.4	1329.4	1329.45	1329.49	1331.30	1331.22	1331.30	1331.22	1.90	1.82	Higher WSEL due to constricted section 19.597. WSEL remains below the top of bank.
B	B		0.112	0.112	1332.9	1332.9	1332.92	1332.87	1331.98	1331.98	1331.98	1331.98	-0.92	-0.92	
C	C		0.198	0.198	1333.3	1333.3	1333.29	1333.25	1332.56	1332.53	1332.56	1332.53	-0.74	-0.77	
D	D		0.288	0.288	1333.3	1333.3	1333.34	1333.33	1333.34	1333.33	1333.34	1333.33	0.04	0.03	Match Existing WSEL



6.0 EROSION, SEDIMENT TRANSPORT AND GEOMORPHIC ANALYSIS

No erosion, sediment transport or geomorphic analyses were conducted as part of this study.



7.0 DRAFT FIS DATA

7.1 Summary of Discharges

No hydrologic analysis was conducted under this study. See Section 4.0 Hydrology for the discharges used in the models.

7.2 Floodway Data

The floodway data developed as part of this study is discussed in Section 5.6 of this report.

7.3 Annotated Flood Insurance Rate Maps

See Exhibit Map A of this TDN.

7.4 Flood Profiles

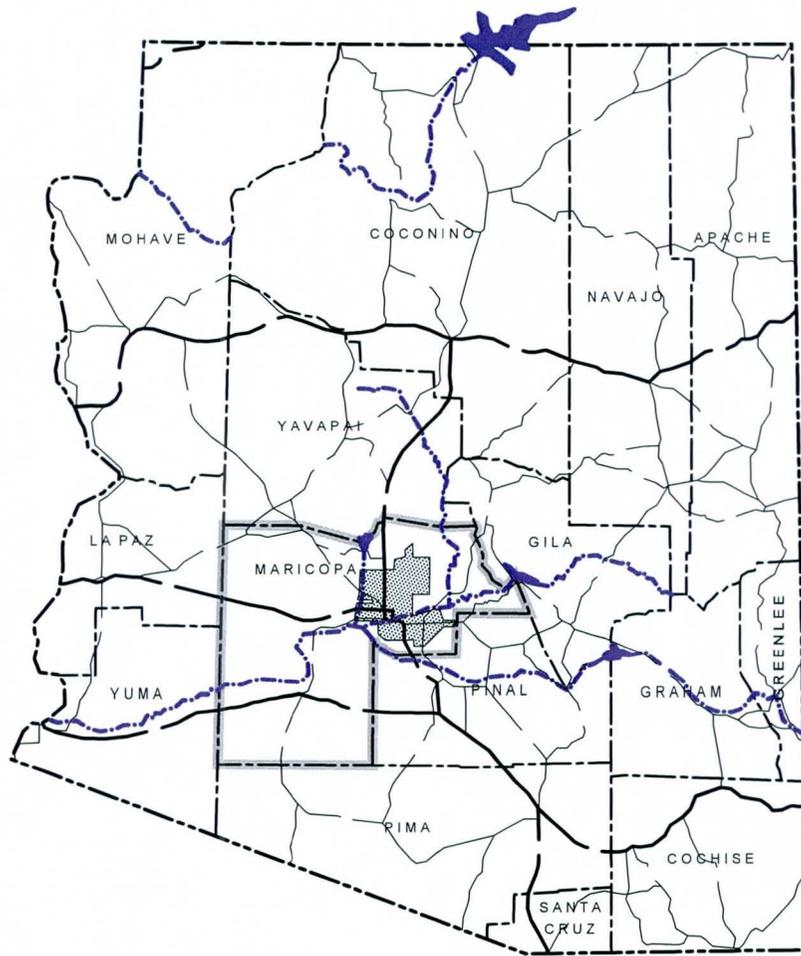
No flood profiles were developed as a part of this study.



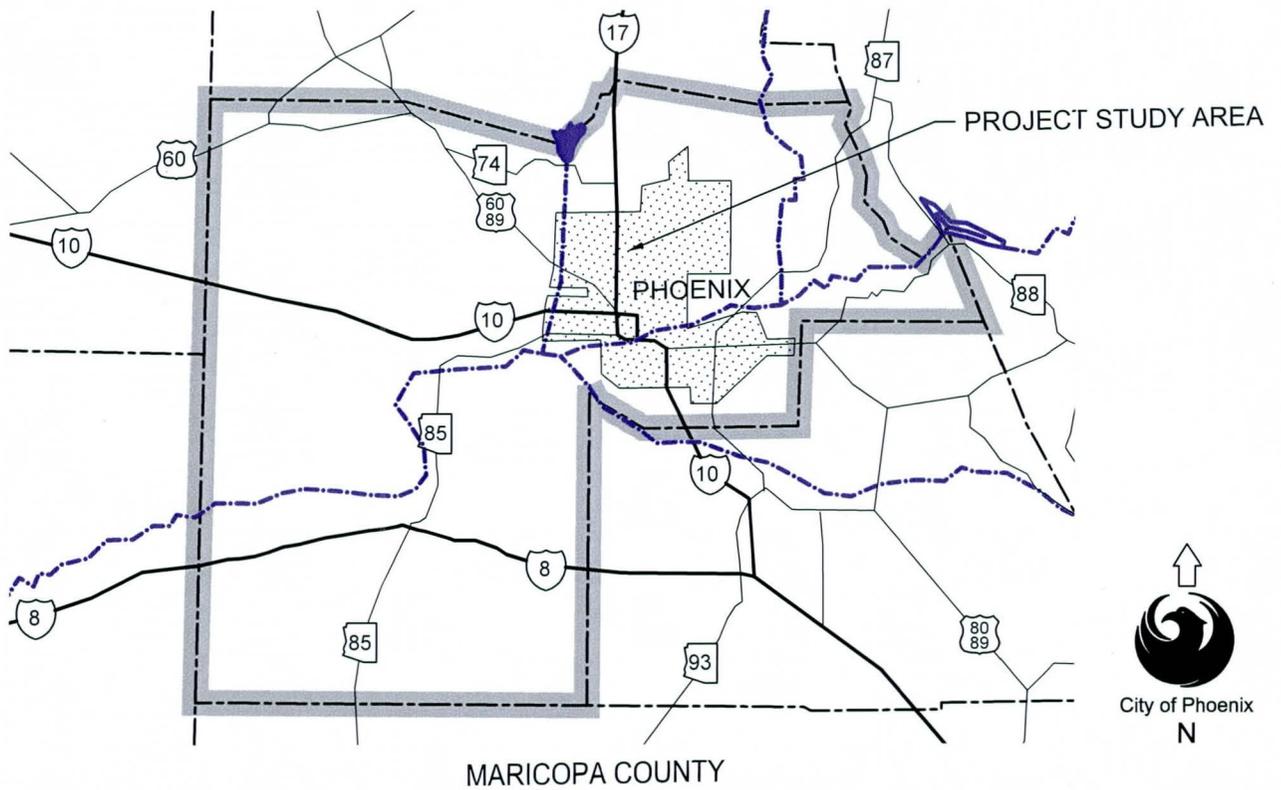
FIGURES

Figure 1 Location Map

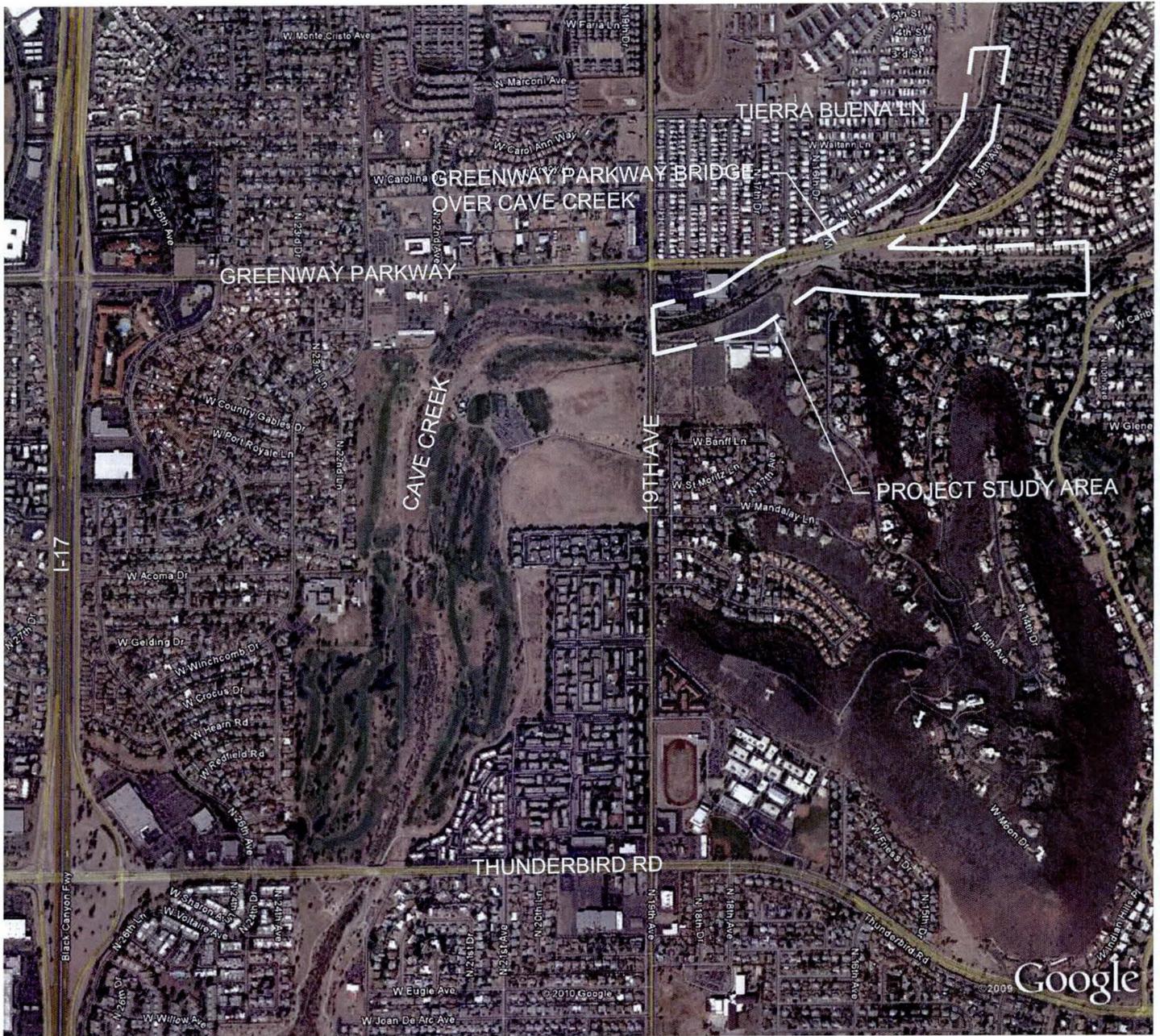
Figure 2 Vicinity Map



ARIZONA



MARICOPA COUNTY



City of Phoenix
N



EXHIBIT MAP A: Annotated Flood Insurance Rate Map

EXHIBIT MAPS

Exhibit Map A	Annotated Flood Insurance Rate Map
Exhibit Map B	Hydraulics Work Study Map I
Exhibit Map C	Hydraulics Work Study Map II

LEGEND

 SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

 FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

 OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

 OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

 COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

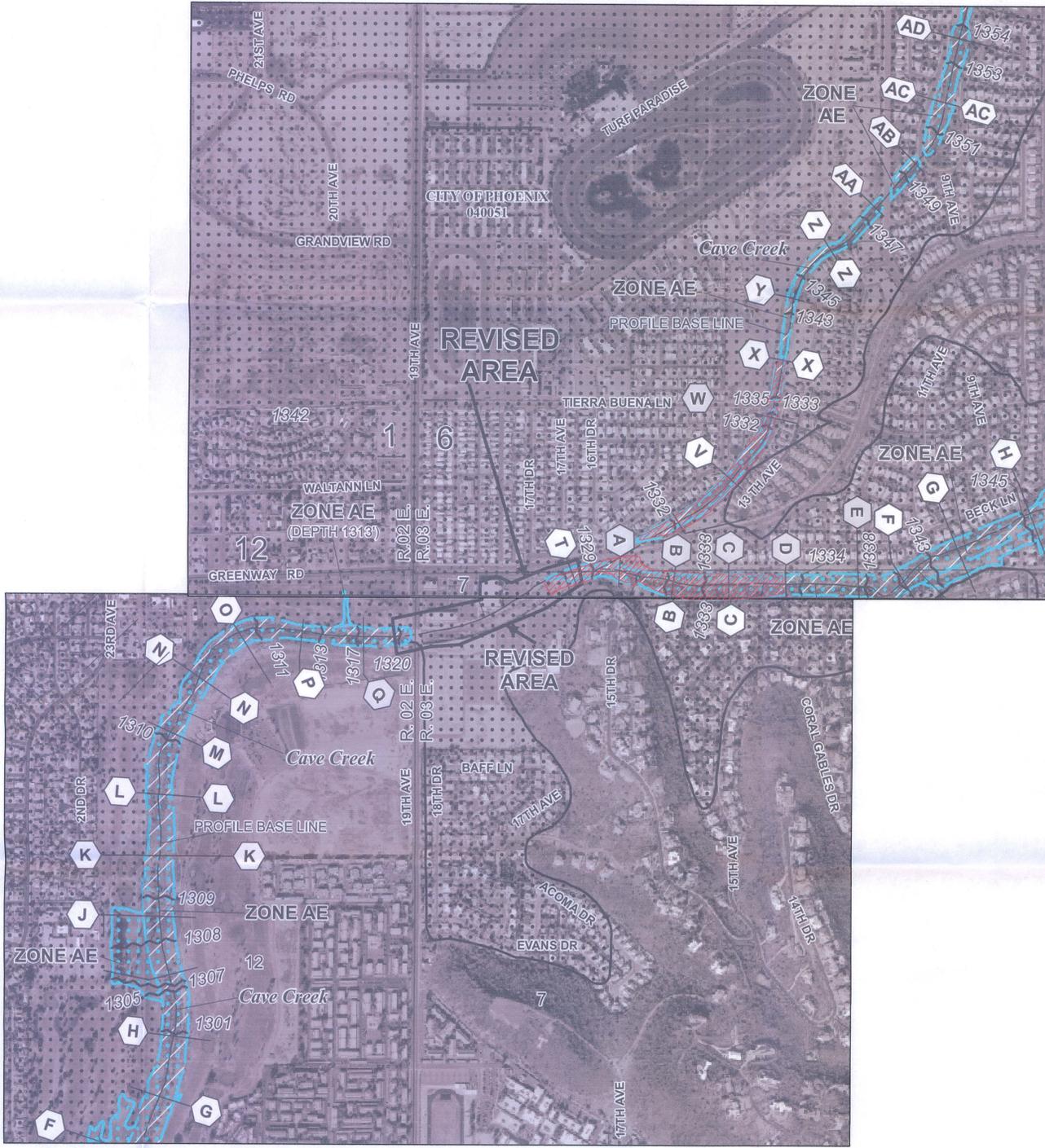
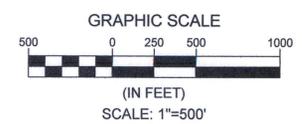
 OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

 1% annual chance floodplain boundary

 PROPOSED ZONE AE

NOTE:
BASE MAPPING IS FROM FIRM PANELS 1215 AND 1655 (EFFECTIVE DATE JANUARY 29, 2010) WHICH ADDRESS CHANGES DUE TO LOMR 10-09-0687 P



K:\15125 Greenway Parkway\Project Working Files\CADD\CAD\Cave Creek\LOMR Map Update.dwg, Oct 21, 2013 ethnyck

REV	DATE	BY	REVISIONS DESCRIPTION

GREENWAY PARKWAY BRIDGE OVER CAVE CREEK



DESIGNED: EH
DRAWN: EH
CHECKED: NR

EXHIBIT MAP A
ANNOTATED FIRM

JOB NO: 051929
DATE: Oct, 2013

EXHIBIT MAP B: Hydraulics Work Study Map I

SUMMARY OF DISCHARGES
(SEE NOTE 1)

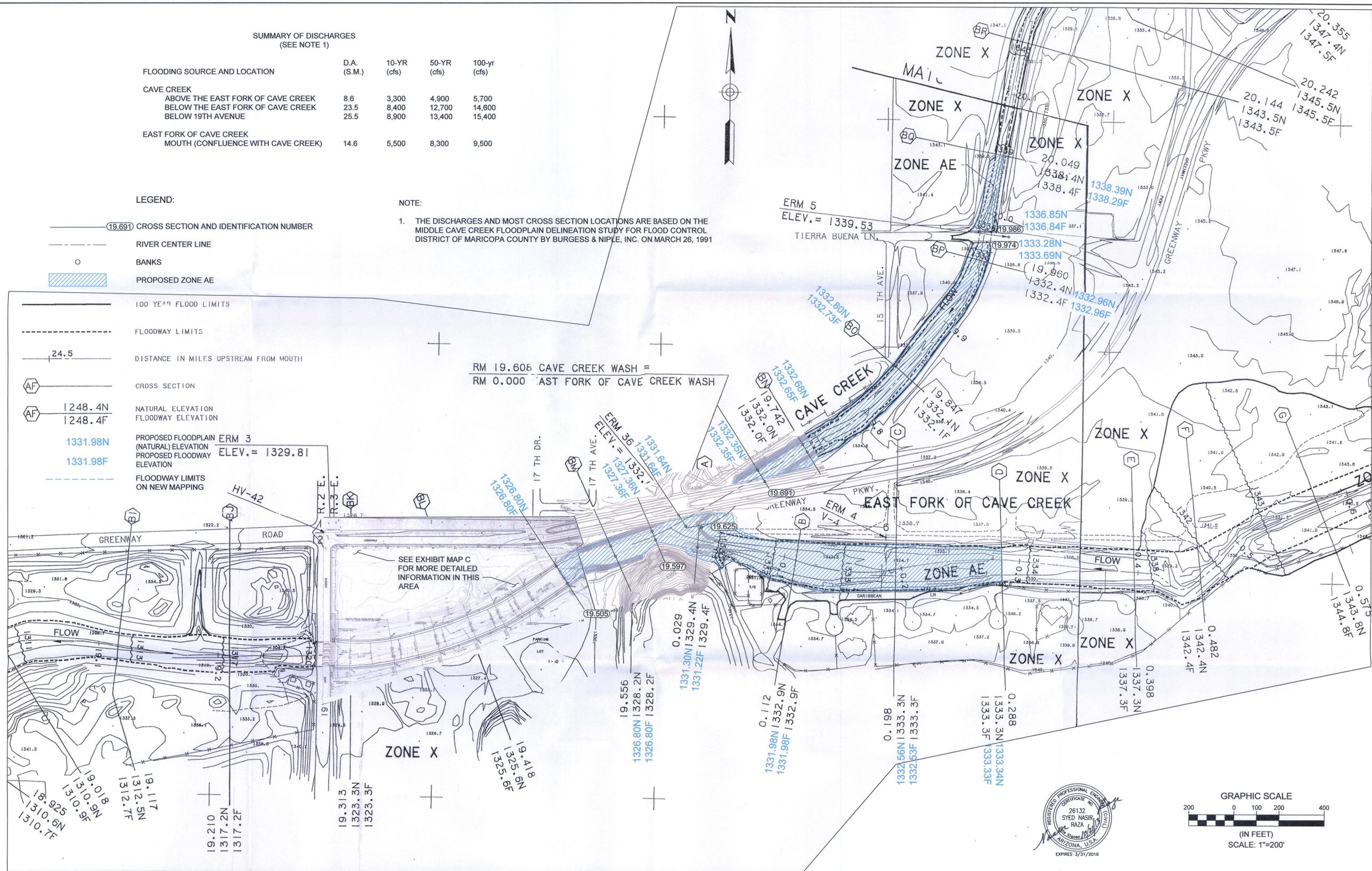
FLOODING SOURCE AND LOCATION	D.A. (S.M.)	10-YR (cfs)	50-YR (cfs)	100-yr (cfs)
CAVE CREEK				
ABOVE THE EAST FORK OF CAVE CREEK	8.6	3,300	4,900	5,700
BELOW THE EAST FORK OF CAVE CREEK	23.5	8,400	12,700	14,600
BELOW 19TH AVENUE	25.5	8,900	13,400	15,400
EAST FORK OF CAVE CREEK				
MOUTH (CONFLUENCE WITH CAVE CREEK)	14.6	5,500	8,300	9,500

LEGEND:

- (19.691) CROSS SECTION AND IDENTIFICATION NUMBER
- RIVER CENTER LINE
- BANKS
- PROPOSED ZONE AE
- 100 YEAR FLOOD LIMITS
- FLOODWAY LIMITS
- 24.5 DISTANCE IN MILES UPSTREAM FROM MOUTH
- CROSS SECTION
- NATURAL ELEVATION FLOODWAY ELEVATION
- PROPOSED FLOODPLAIN (NATURAL) ELEVATION
- PROPOSED FLOODWAY ELEVATION
- FLOODWAY LIMITS ON NEW MAPPING

NOTE:

1. THE DISCHARGES AND MOST CROSS SECTION LOCATIONS ARE BASED ON THE MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY BY BURGESS & NIPLE, INC. ON MARCH 26, 1991



K:\191929 Greenway Parkway\Project\Working Files\CAD\IRCAD\Cave Creek CL\DMR Map Update.dwg Oct 21, 2013 e.hymick

REV	DATE	BY	REVISIONS DESCRIPTION

GREENWAY PARKWAY BRIDGE OVER CAVE CREEK

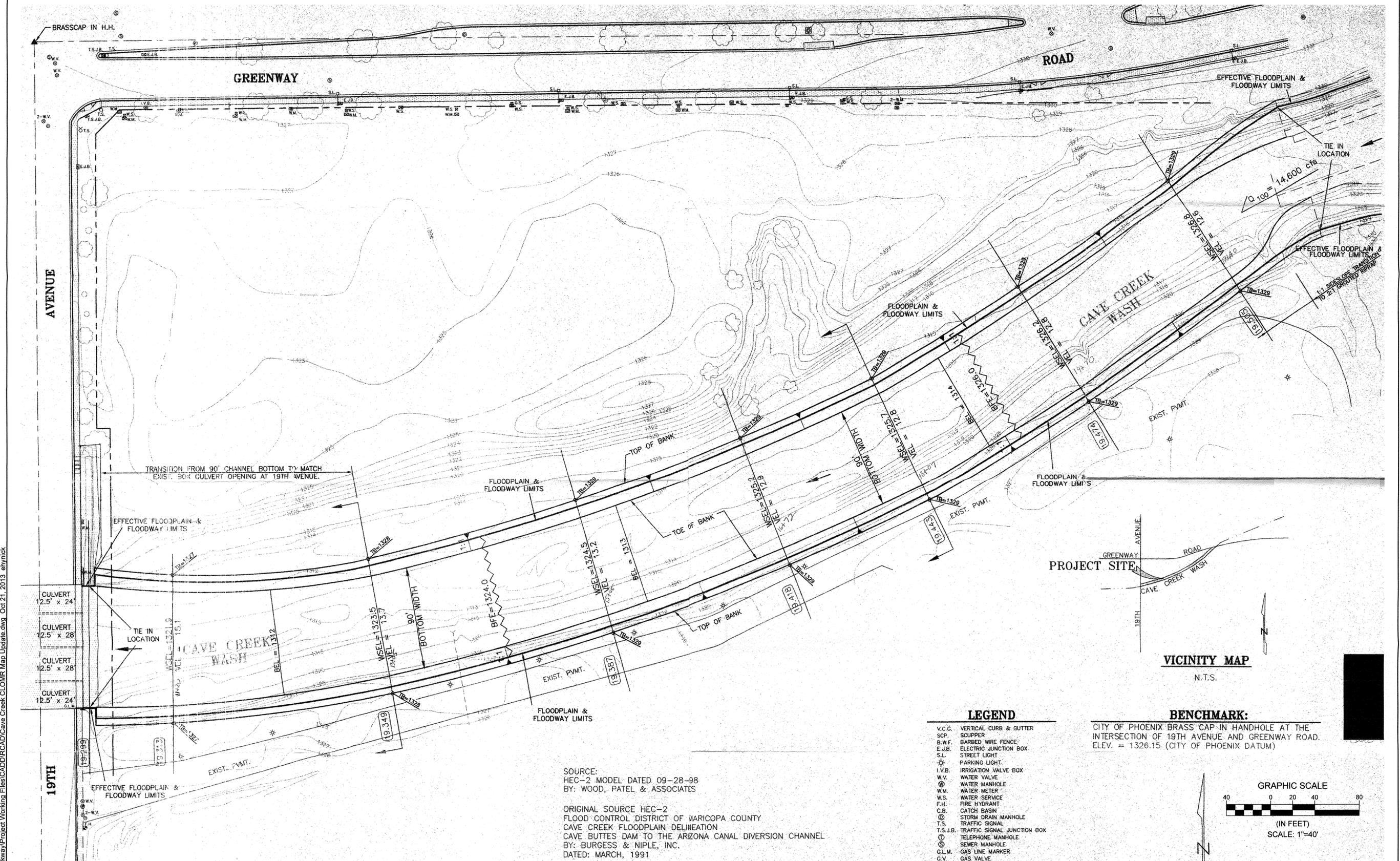


DESIGNED: EH
DRAWN: EH
CHECKED: NR

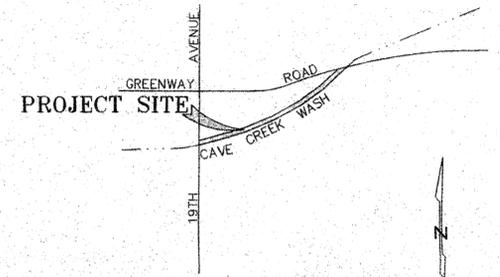
EXHIBIT MAP B
HYDRAULICS WORK STUDY MAP I

JOB NO: 051929
DATE: Oct, 2013

EXHIBIT MAP C: Hydraulics Work Study Map II



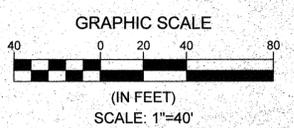
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VICINITY MAP
N.T.S.

- LEGEND**
- V.C.G. VERTICAL CURB & GUTTER
 - SCP. SLOPPER
 - B.W.F. BARBED WIRE FENCE
 - E.J.B. ELECTRIC JUNCTION BOX
 - S.L. STREET LIGHT
 - ★ PARKING LIGHT
 - I.V.B. IRRIGATION VALVE BOX
 - W.V. WATER VALVE
 - ⊙ WATER MANHOLE
 - ⊙ WATER METER
 - W.S. WATER SERVICE
 - F.H. FIRE HYDRANT
 - C.B. CATCH BASIN
 - ⊙ STORM DRAIN MANHOLE
 - T.S. TRAFFIC SIGNAL
 - T.S.J.B. TRAFFIC SIGNAL JUNCTION BOX
 - ⊙ TELEPHONE MANHOLE
 - ⊙ SEWER MANHOLE
 - G.L.M. GAS LINE MARKER
 - G.V. GAS VALVE

BENCHMARK:
CITY OF PHOENIX BRASS CAP IN HANDHOLE AT THE INTERSECTION OF 19TH AVENUE AND GREENWAY ROAD.
ELEV. = 1326.15 (CITY OF PHOENIX DATUM)



SOURCE:
HEC-2 MODEL DATED 09-28-98
BY: WOOD, PATEL & ASSOCIATES

ORIGINAL SOURCE HEC-2
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CAVE CREEK FLOODPLAIN DELINEATION
CAVE BUTTES DAM TO THE ARIZONA CANAL DIVERSION CHANNEL
BY: BURGESS & NIPLÉ, INC.
DATED: MARCH, 1991

REV	DATE	BY	REVISIONS	DESCRIPTION

GREENWAY PARKWAY BRIDGE OVER CAVE CREEK



DESIGNED: EH
DRAWN: EH
CHECKED: NR

EXHIBIT MAP C
HYDRAULICS WORK STUDY MAP II

JOB NO: 051929
DATE: Oct, 2013



APPENDIX A: REFERENCES

A.1 Data Collection Summary

A.2 Referenced Documents

A.2.1 Flood Insurance Study (FIS) for Maricopa County revised September 30, 2005 - Floodway Data - Table 5

A.2.2 Flood Insurance Study (FIS) for Maricopa County revised September 30, 2005 – Summary of Discharges - Table 3

A.2.3 FEMA Flood Insurance Rate Map 04013C1215K

A.2.4 FEMA Flood Insurance Rate Map 04013C1655K

A.2.5 Documents received from FEMA on October 8, 2013

A.2.5.a. Cave Creek Floodway Data Table

A.2.5.b. Cave Creek Study Input File - cavefema.dat

A.2.5.c. Cave Creek Study Output File – cavefema.out

A.2.5.d. Letter of Map Revision Determination Document (10-09-0687P)

A.2.5.e. FEMA LOMR (01-09-526P) Letter

A.2.5.f. Technical Backup Excerpts from the LOMR (01-09-562P) Submittal

A.1: DATA COLLECTION SUMMARY

Previous Studies

- Maricopa County FIS
- Middle Cave Creek Floodplain Delineation Study
- Cave Creek HEC-2 Model obtained from FCDMC
- GIS Topo Map and Contours obtained from FCDMC

Research Contacts

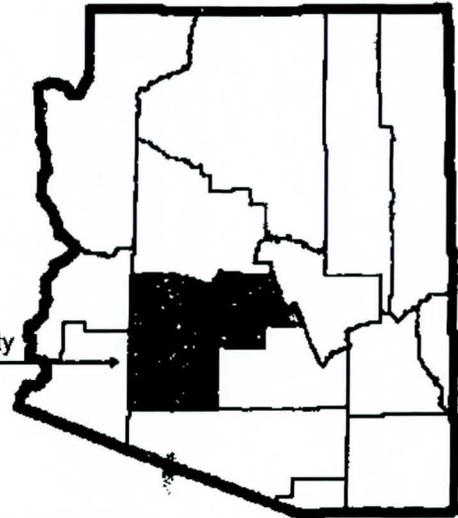
- Rick Evans – City of Phoenix
- Hasan Mushtaq – City of Phoenix
- Tim Murphy - Flood Control District of Maricopa County
- Amir Motamedi - Flood Control District of Maricopa County
- Richard Harris - Flood Control District of Maricopa County
- Eric Feldman - Flood Control District of Maricopa County

RECEIVED
JUL 10 2009

FLOOD INSURANCE STUDY



MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS VOLUME 1 OF 17



COMMUNITY NAME	COMMUNITY NUMBER
ANDALE, CITY OF	040038
KEYE, TOWN OF	040039
CAREFREE, TOWN OF	040126
CAVE CREEK, TOWN OF	040129
CHANDLER, CITY OF	040040
EL MIRAGE, CITY OF	040041
FOUNTAIN HILLS, TOWN OF	040135
GILA BEND, TOWN OF	040043
GILBERT, TOWN OF	040044
GLENDALE, CITY OF	040045
GOODYEAR, CITY OF	040046
GUADALUPE, TOWN OF	040111
LITCHFIELD PARK, CITY OF	040128
MARICOPA COUNTY (UNINCORPORATED AREAS)	040037
MESA, CITY OF	040048
PARADISE VALLEY, TOWN OF	040049
PEORIA, CITY OF	040050
PHOENIX, CITY OF	040051
QUEEN CREEK, TOWN OF	040132
SCOTTSDALE, CITY OF	045012
SURPRISE, CITY OF	040053
TEMPE, CITY OF	040054
TOLLESON, CITY OF	040055
WICKENBURG, TOWN OF	040056
YOUNGTOWN, TOWN OF	040057

REVISED
September 30, 2005



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
04013CV001A

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Volume 2

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FLOOD INSURANCE STUDY MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study revises and updates information on the existence and severity of flood hazards in the geographic area of Maricopa County, Arizona, including the Cities of Apache Junction, Avondale, Chandler, El Mirage, Glendale, Goodyear, Litchfield Park, Mesa, Peoria, Phoenix, Scottsdale, Surprise, Tempe, and Tolleson; the Towns of Buckeye, Carefree, Cave Creek, Fountain Hills, Gila Bend, Gilbert, Guadalupe, Paradise Valley, Queen Creek, Wickenburg, and Youngtown; and the unincorporated areas of Maricopa County (hereinafter referred to collectively as Maricopa County). This information will be used to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP). The information will also be used by local and regional planners to further promote sound land use and floodplain development.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This Flood Insurance Study is based on previous Flood Insurance Studies for the various incorporated communities and unincorporated areas within Maricopa County. Detailed information on the contractors who studied each area is provided below.

The original hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers (COE), Los Angeles District, for the Federal Emergency Management Agency (FEMA), under Interagency Agreement Nos. IAA-H-15-72 and IAA-H-15-73. This study was completed in 1973.

Additional hydrologic and hydraulic analyses for many streams within the county were performed by Harris-Toups Associates under Contract No. H-4008. This work was completed in February 1978 and January 1979.

Hydrologic and hydraulic analyses for Cave Creek (below Cave Creek Dam) and for East Fork Cave Creek were revised by Cella, Barr, Evans, and Associates, under Contract No. H-4607. This work was completed in October 1980.

Additional hydrologic and hydraulic analyses for portions of the Agua Fria and New Rivers, and Skunk Creek were performed by the COE under contract to the Flood Control District of Maricopa County (FCDMC) Hydrologic and hydraulic analyses for portions of the Salt and Gila Rivers were performed by Harris-Toups Associates in October 1977. The 100-year flood for portions of the above streams, as well as the 500-year flood for the Agua Fria River, was computed by Dames & Moore using data provided by the COE, Los Angeles District. Approximate floodplain boundaries and boundaries for areas subject to sheet flow were delineated by Dames & Moore.

Hydraulic analyses for portions of the following streams were taken from the effective Flood Insurance Studies for the incorporated communities (References 1-20): Agua Fria River, Gila River, Hassayampa River, New River, Salt River, Skunk Creek, Scatter Wash, Aguila Farm Channel, Andora Hills Wash, Atchison, Topeka & Santa Fe Railway Channel, Casandro Wash, South Branch, Casandro Wash, Cave Creek, East Fork Cave Creek, Dreamy Draw Wash East, Echo Canyon Wash, Flynn Lane Wash, Flying E Wash, Galloway Wash, Granite Reef Wash, Grapevine Wash, Grass Wash, Hospital Wash, Indian Bend Wash, Indian Bend Wash-Low Flow Channel, Little San Domingo Wash, Lower El Mirage Wash, Martinez Wash, Mockingbird Wash, Moon Valley Wash, Myrtle Avenue Wash, Ocotillo Wash, Powder House Wash, Rowe Wash, Tenth Street Wash, Wash B, Willow Springs Wash, Wittmann Drainage, and Weekes Wash.

The hydrologic and hydraulic analyses for portions of the Agua Fria, New, Gila, and Salt Rivers, Skunk Creek, and Scatter Wash included in the restudy were performed by the COE, Los Angeles District, for FEMA, under Interagency Agreement No. EMW-E-0941, Project Order No. 10. This work was completed in March 1986.

Revised hydrologic and hydraulic analyses for Sols Wash, which passes through the Town of Wickenburg and extends to the county boundary between Maricopa and Yavapai Counties, were performed by Cella Barr Associates (CBA), for FEMA, under Contract No. EMW-85-C-1909. This restudy was completed in December 1986.

Revised hydraulic analyses for a portion of Consolidated Canal were performed by Greiner Engineering Sciences, Inc. for the City of Mesa in 1984 (Reference 21).

Revised hydraulic analyses for a portion of the Agua Fria River in El Mirage were performed by Engineering and Surveying of Arizona, Inc., in November 1984 (Reference 22).

Revised hydraulic analyses for flooding along a portion of the Atchison, Topeka & Santa Fe Railway in the City of Chandler were performed in July 1980 (Reference 23).

Revised hydraulic analyses for a portion of East Fork Cave Creek in the City of Phoenix were performed by Erie and Associates, Inc., for the Coral Gables Estates Unit Six Subdivision in November 1985 (Reference 24).

1.3 Coordination

The FCDMC assisted in the selection of the areas that were studied by detailed methods and the selection of preliminary floodway limits.

The Arizona Department of Transportation provided highway maps used for the

preparation of base maps covering undeveloped areas studied only by approximate methods.

This study was also coordinated with the Special Studies Section of the Water Resources Division of the U.S. Geological Survey (USGS), Tucson, Arizona (Reference 25).

On May 31, 1977, results of the study were reviewed at the final consultation and coordination meeting, which was attended by residents of the county and representatives of the FCDMC and FEMA.

This study was revised in 1986 to incorporate either new or revised hydrologic and hydraulic analyses for several flooding sources throughout the county. At this time, FEMA decided to include flooding information through the incorporated communities to provide the county with a more usable Flood Insurance Rate Map.

2.0 **AREA STUDIED**

2.1 **Scope of Study**

This Flood Insurance Study covers the geographic area of Maricopa County, Arizona. The area of study is shown on the Vicinity Map (Figure 1).

The flooding sources studied by detailed methods are shown in Table 1.

The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction.

Portions of some flooding sources were studied by approximate methods and are shown in Table 2.

downstream at the confluence with Skunk Creek from 58,000 cfs to 12,000 cfs.

Levees in the study area provide the community with some degree of protection from flooding. However, it has been ascertained that some of these levees may not provide 100-year flood protection. The criteria used to evaluate 100-year protection are: (1) adequate design, including freeboard; (2) structural stability; and (3) proper operation and maintenance. Levees that do not provide 100-year flood protection are not considered in the hydraulic analyses of the 100-year floodplain.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the county, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood, which equals or exceeds the 100-year flood (1 percent chance of annual expectance) in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the county at the time of completion of this study. Maps and flood elevations will be amended periodically to future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the county.

Peak discharges for the Hassayampa River were developed from discharge-frequency relationships of historic floods and gage records (Reference 32).

In the absence of observed runoff data, present-condition, discharge-frequency values for Scatter Wash and the New River were used. Present-condition, discharge-frequency values for Scatter Wash and Skunk Creek below Adobe Dam were based on future condition values modified to reflect present conditions (Reference 33). Discharge-frequency values for the Agua Fria River were determined by routing balanced hydrographs, which were developed from Waddell Dam inflow-volume-frequency relationships, through the dam and downstream, and adding local flows as appropriate. Discharge-frequency relationships for the Salt River and Gila Rivers concentration points were determined by routing period-of-record flows through existing reservoirs using the HEC-5 computer model (Reference 34).

Peak discharge-frequency relationships for Cave Creek (below Cave Creek Dam), East Fork Cave Creek, and Echo Canyon Wash were taken from the Flood Insurance Study for the City of Phoenix (Reference 14).

Peak discharge-frequency relationships for Cave Creek (above Cave Creek Dam), Andora Hills Wash, Galloway Wash, Apache Creek, Rowe Wash, Grapevine Wash, Ocotillo Wash, Willow Springs Wash, Skunk Creek (above Carefree Highway), Mockingbird Wash, Little San Domingo Wash, Whitman Drainage, Aguila Farm Channel, Grass Wash, Sand Tank Wash, Bender Wash, Rodeo Wash and its tributary, Airport Wash, Scott Avenue Wash, and Martinez Wash were developed using the U.S. Soil Conservation Service (SCS) TR-20 program (Reference 35). In addition, the SCS TR-55 computer program (Reference 36) was used to determine flood peaks for Buckeye Canal; Atchison, Topeka & Santa Fe Railway Channel; Southern Pacific Railroad Spur at Chandler; Southern Pacific Railroad at Buckeye, Chandler, Gilbert, Goodyear, Tempe, and Tolleson; and Lower El Mirage Wash and its tributary.

The Town of Wickenburg requested a restudy for Sols Wash based upon studies performed by the SCS and PRC Toups Engineering (PRC) (Reference 31). These studies yielded peak discharges significantly less than what had been assumed in the previous analysis for the effective Flood Insurance Study (Reference 19).

The SCS computer model, TR-20, was selected to be used to estimate the 10-, 50-, 100- and 500-year peak discharges for various concentration points along Sols Wash. The TR-20 model utilizes the method of analysis described in detail in the SCS National Engineering Handbook Section 4, Hydrology, 1972. This method allows for the prediction of surface water runoff, for an individual watershed, using rainfall-duration and intensity data. The TR-20 model provides a convenient means of predicting the results of storm runoff from multiple watersheds. The storm runoff for individual watersheds is computed and an outflow hydrograph simulated. Individual hydrographs may then be routed and combined to obtain the cumulative downstream effects (References 35, 38, 39, 40, 41, 42, 43, and 44).

The precipitation frequencies for the area were obtained from is pluvial maps prepared by the U.S. Weather Bureau. The SCS Type II rainfall distribution was used to model the rainfall, which was adjusted using an aerial reduction based upon the total drainage area. Such reduction is necessary to convert from the point aerial rainfall amount. Using soils maps of the area, prepared by the SCS, and from site investigation, runoff curve numbers were selected, based upon recent information developed by the SCS. Time of concentrations for steep and incised washes were computed using the Kirpich equation. For gently sloping alluvial plains, many of which occur on the upper northwest portion of the drainage basin, travel velocities were estimated assuming broad sheet flow and utilizing Manning's equation.

Because there is no gauging station on Sols Wash, and thus no accurate record of historic flooding, there is no means to provide calibration of the rainfall-runoff model, and therefore, only comparison with earlier studies can be made.

The discharge estimates obtained from the TR-20 analysis for this study correspond with the results from both the SCS and PRC analyses. The discharge-frequency curve developed by the COE for the 1977 Flood Insurance Study has a steeper slope and results in a much larger 100-year peak discharge than the other studies. The SCS, PRC, and CBA studies each employed the TR-20 model which might explain, in part, the consistency of the results, although the TR-20 is quite sensitive to changes in time of concentration, and each model employed different input parameters.

The calibration of the TR-20 model, by PRC, using streamflow data from the Hassayampa River, lends further credence to each of the study results. Therefore, results from the TR-20 model utilized in this restudy of Sols Wash have been employed in the hydraulic analysis.

Peak discharge-frequency relationships for Casandro, South Branch Cassandro, Flying E, Hospital, and Powder House Washes were taken from the Flood Insurance Study Wickenburg (Reference 19).

Peak discharge-drainage area relationships for flooding sources studied by detailed methods are shown in Table 3.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

For areas of riverine flooding studied by detailed methods, water-surface elevations for floods of the selected recurrence intervals were computed using the COE HEC-2 computer program (Reference 45).

The cross section data for the Agua Fria River were taken from several sources of mapping. A 1981 COE topographic map for the New River (Reference 46) was used for the river section from the confluence with the Gila River to the confluence with the New River. From the New River to Northern Avenue, 1982 City of Glendale mapping was used (Reference 47). From Northern Avenue to Grand Avenue and from Beardsley Road to Jomax Road, 1983 Maricopa County maps were used (Reference 48). The topographic maps for the reach between Grand Avenue and Bell Road (Reference 49) were furnished by American Engineering Company for the reach between Bell and Beardsley Roads, maps were provided by Cella, Barr, Evans and Associates (Reference 50).

Cross sections for the Gila River were digitized from 1983 topographic maps or taken from as-built data for the Bullard Avenue Bridge.

Table 3. Summary of Discharges (Continued)

<u>Flooding Source and Location</u>	<u>Drainage Area (Square Miles)</u>	<u>Peak Discharges (cfs)</u>			
		<u>10-Year</u>	<u>50-Year</u>	<u>100-Year</u>	<u>500-Year</u>
Unnamed Tributary to Galloway Wash					
At confluence with Galloway Wash	7.1	-- ¹	-- ¹	5,722	-- ¹
Ocotillo Wash					
Above confluence with Cave Creek	3.8	3,200	4,820	5,420	7,200
Near intersection of Rockaway Hills Drive and Fleming Springs Road	2.8	2,800	4,140	4,630	6,200
Cave Creek					
At confluence with Salt River	25.0	-- ¹	-- ¹	2,257	-- ¹
At 35th Avenue	22.6	-- ¹	-- ¹	2,226	-- ¹
At Interstate 10 Freeway downstream of Durango Exit	21.0	-- ¹	-- ¹	2,217	-- ¹
At Interstate 10 Freeway upstream of Durango Exit	21.0	-- ¹	-- ¹	2,523	-- ¹
At Jackson Street	16.1	-- ¹	-- ¹	1,890	-- ¹
At Van Buren Street	15.3	-- ¹	-- ¹	1,865	-- ¹
At McDowell Road	12.9	-- ¹	-- ¹	1,691	-- ¹
At Encanto Street	9.3	-- ¹	-- ¹	1,375	-- ¹
At Thomas Road	7.9	-- ¹	-- ¹	1,210	-- ¹
At Indian School Road	7.2	-- ¹	-- ¹	1,237	-- ¹
At confluence with Arizona Canal Diversion Channel (contributing drainage area below Cave Buttes Dam only, and discharges are regulated)	34.7	10,300	16,100	18,500	-- ¹
Below confluence with Moon Valley Wash (contributing drainage area below Cave Buttes Dam only, and discharges are regulated)	33.1	10,100	15,300	17,500	-- ¹

--¹ Not Computed

Table 3. Summary of Discharges (Continued)

<u>Flooding Source and Location</u>	<u>Drainage Area (Square Miles)</u>	<u>Peak Discharges (cfs)</u>			
		<u>10-Year</u>	<u>50-Year</u>	<u>100-Year</u>	<u>500-Year</u>
Cave Creek (Continued)					
Below confluence with East Fork of Cave Creek (contributing drainage area below Cave Buttes Dam only and discharges are regulated)	22.5	3,100	8,700	11,000	25,000
Below Deer Valley Road (contributing drainage area below Cave Buttes Dam only and discharges are regulated)	5.0	1,400	3,800	5,400	11,000
Above Deer Valley Road (contributing drainage area below Cave Buttes Dam only and discharges are regulated)	4.5	1,300	3,500	5,000	10,000
Above Cave Buttes Dam Ponding Area	142.5	-- ¹	-- ¹	38,200	-- ¹
Above confluence with Minor Tributary	137.9	-- ¹	-- ¹	36,800	-- ¹
At Carefree Highway	124.4	-- ¹	-- ¹	33,800	-- ¹
Below New River Road	118.1	-- ¹	-- ¹	31,400	-- ¹
Near Andora Hills Wash Drive	115.0	-- ¹	-- ¹	31,200	-- ¹
Below confluence with Andora Hills Wash	112.2	-- ¹	-- ¹	30,900	-- ¹
Below confluence with Galloway Wash	91.4	-- ¹	-- ¹	24,700	-- ¹
Below confluence with Willow Springs Wash	86.0	-- ¹	-- ¹	24,700	-- ¹
Above confluence with Willow Springs Wash	80.1	-- ¹	-- ¹	23,400	-- ¹
Below Cahava Ranch Road	77.5	-- ¹	-- ¹	23,200	-- ¹
At northeast corner of Section 4 above Cottonwood	61.64	-- ¹	-- ¹	20,680	-- ¹

--¹ Not Computed

including Sand Tank and Bender Washes, Rodeo Wash and its tributary, Lower El Mirage Wash Tributary, and Airport and Scott Avenue Washes.

For flooding sources studied by approximate methods, 100-year flood elevations were computed using Manning's equation, COE Floodplain Information reports (References 27, 29, 58, and 61), USGS Flood-Prone Area Maps (Reference 62), USGS slope maps (Reference 63), high-resolution Skylab photographs (References 64 and 65), and USGS topographic maps (Reference 66).

The study was limited to the uses of fixed-bed modeling for the hydraulic analyses. However, with the occurrence of a large flood, substantial changes in the riverbed are expected to occur, particularly where the bottom slope is very non-uniform and/or where other structures, such as bridges, cause local increases in the velocity. Resultant changes in the water-surface elevations can be expected.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation Reference Marks (ERMs) and their descriptions are shown on the maps. ERMs shown on the FIRM represent those used during the preparation of this and previous Flood Insurance Studies. The elevations associated with each ERM were obtained and/or developed during FIS production to establish vertical control for determination of flood elevations and floodplain boundaries shown on the FIRM. Users should be aware that these ERM elevations may have changed since the publication of this FIS. To obtain up-to-date elevation information on National Geodetic Survey (NGS) ERMs shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at [http:// www.ngs.noaa.gov](http://www.ngs.noaa.gov). Map users should seek verification of non-NGS ERM monument elevations when using these elevations for construction or floodplain management purposes.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS provides 100-year floodplain data, which may include a combination of the following: 10-, 50-, 100-, and 500-year flood elevations; delineations of the 100-year and 500-year floodplains; and 100-year floodway. This information is presented on the FIRM and in many components of the FIS, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Flood Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to

indicate additional areas of flood risk in the community. For each stream studied by detailed methods, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at scales of 1:1,200, 1:2,400, 1:4,800, and 1:6,000, with contour intervals of 2 and 4 feet (References 53, 54, 59, and 60)

The 100- and 500-year floodplain boundaries are shown on the Flood Boundary and Floodway Map (Exhibit 2). In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

Approximate flood boundaries were delineated using USGS topographic maps and Flood-Prone Areas Maps (References 62 and 66), and high-resolution Skylab photographs (References 64 and 65).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed on the basis of equal-conveyance reduction from each side of the floodplain. The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 5).

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Cave Creek								
A	17.588	338	3,195	4.8	1,283.7	1,283.7	1,284.7	1.0
B	17.662	250	1,988	7.7	1,283.9	1,283.9	1,284.9	1.0
C	17.783	143	1,271	12.1	1,285.6	1,285.6	1,286.4	0.8
D	17.932	110	1,047	14.7	1,291.0	1,291.0	1,291.4	0.4
E	18.081	185	2,411	6.4	1,299.5	1,299.5	1,299.6	0.1
F	18.174	268	3,010	5.1	1,300.2	1,300.2	1,300.2	0.0
G	18.269	228	2,349	6.6	1,300.2	1,300.2	1,300.3	0.1
H	18.362	212	2,086	7.4	1,300.5	1,300.5	1,300.6	0.1
I	18.456	223	1,315	11.7	1,307.3	1,307.3	1,307.3	0.0
J	18.545	288	3,071	5.0	1,308.3	1,308.3	1,308.4	0.1
K	18.640	255	2,581	6.0	1,309.4	1,309.4	1,309.5	0.1
L	18.734	228	2,232	6.9	1,309.7	1,309.7	1,309.7	0.0
M	18.832	215	2,198	7.0	1,310.2	1,310.2	1,310.2	0.0
N	18.925	200	2,086	7.4	1,310.6	1,310.6	1,310.7	0.1
O	19.018	172	1,483	10.4	1,310.9	1,310.9	1,310.9	0.0
P	19.117	120	1,023	15.1	1,312.5	1,312.5	1,312.7	0.2
Q	19.210	157	1,462	10.5	1,317.2	1,317.2	1,317.2	0.0
R	19.313	160	1,330	11.0	1,323.3	1,323.3	1,323.3	0.0
S	19.418	163	1,343	10.9	1,325.6	1,325.6	1,325.6	0.0
T	19.560	130	1,308	11.2	1,328.2	1,328.2	1,328.2	0.0
U	19.742	85	969	5.9	1,332.0	1,332.0	1,332.0	0.0
V	19.847	86	868	6.6	1,332.1	1,332.1	1,332.1	0.0
W	19.960	73	441	12.9	1,332.4	1,332.4	1,332.4	0.0
X	20.049	50	366	15.6	1,338.4	1,338.4	1,338.4	0.0
Y	20.144	57	536	10.6	1,343.5	1,343.5	1,343.5	0.0
Z	20.242	71	561	10.2	1,345.5	1,345.5	1,345.5	0.0

¹Miles Above Confluence With Salt River

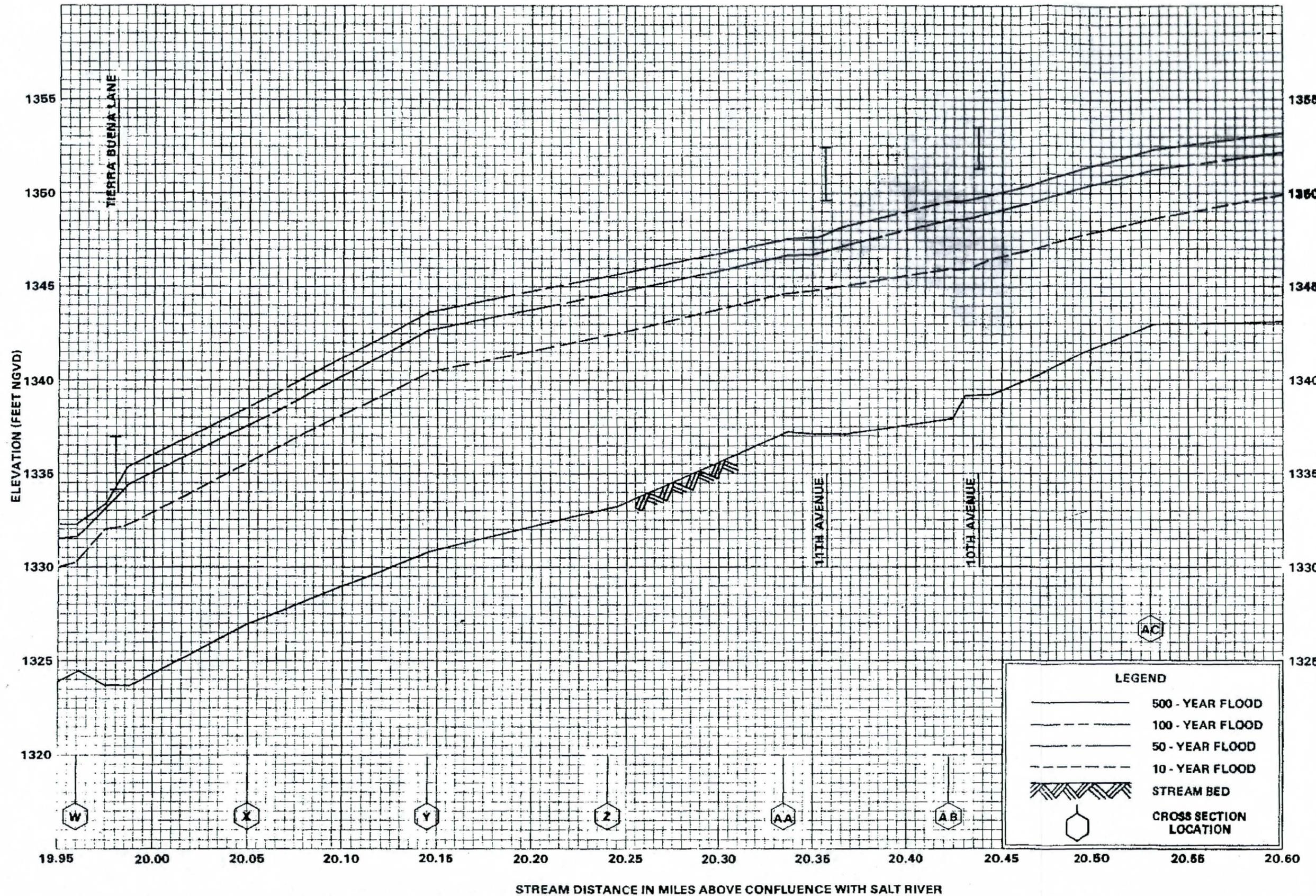
T
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FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

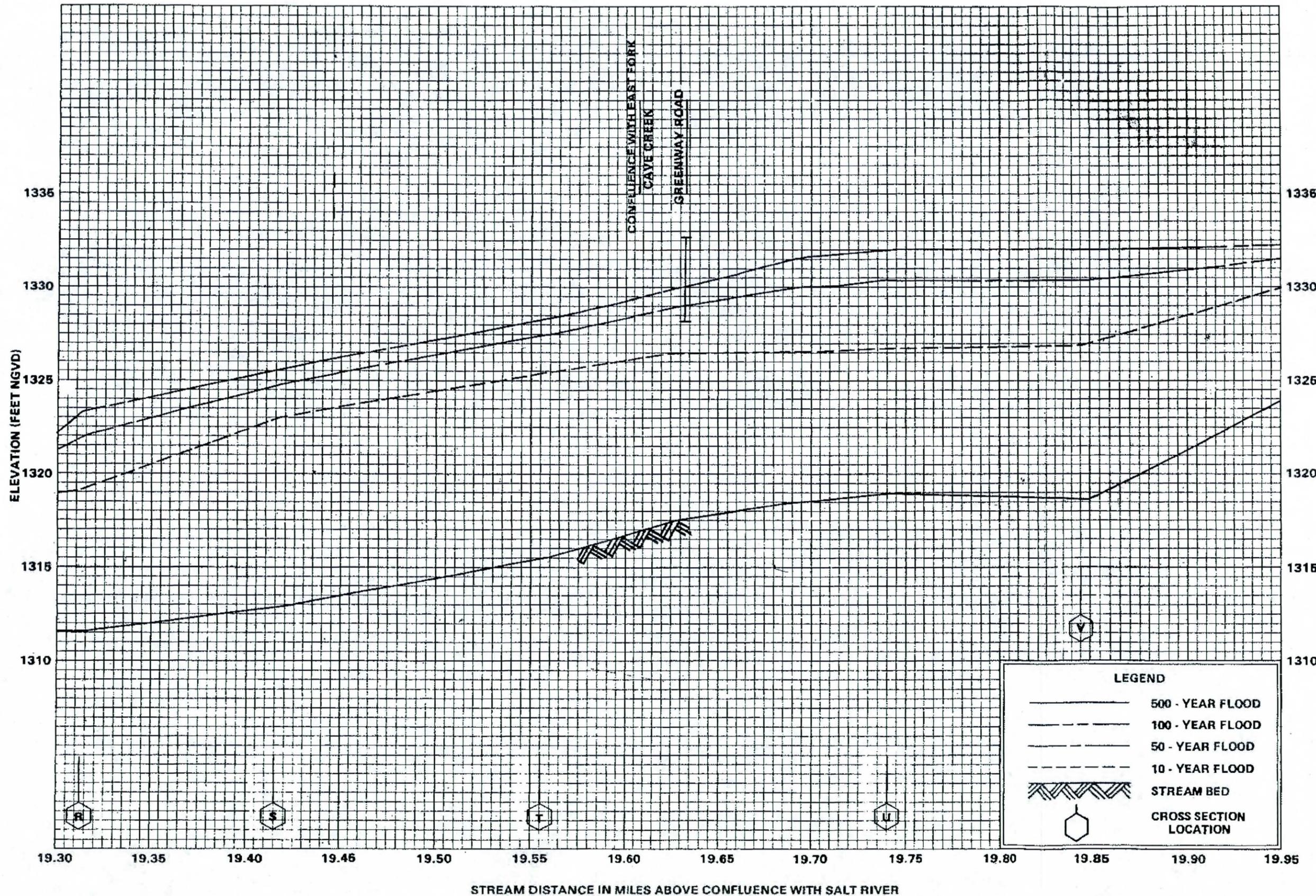
FLOODWAY DATA

CAVE CREEK



FLOOD PROFILES
CAVE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



FLOOD PROFILES
CAVE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

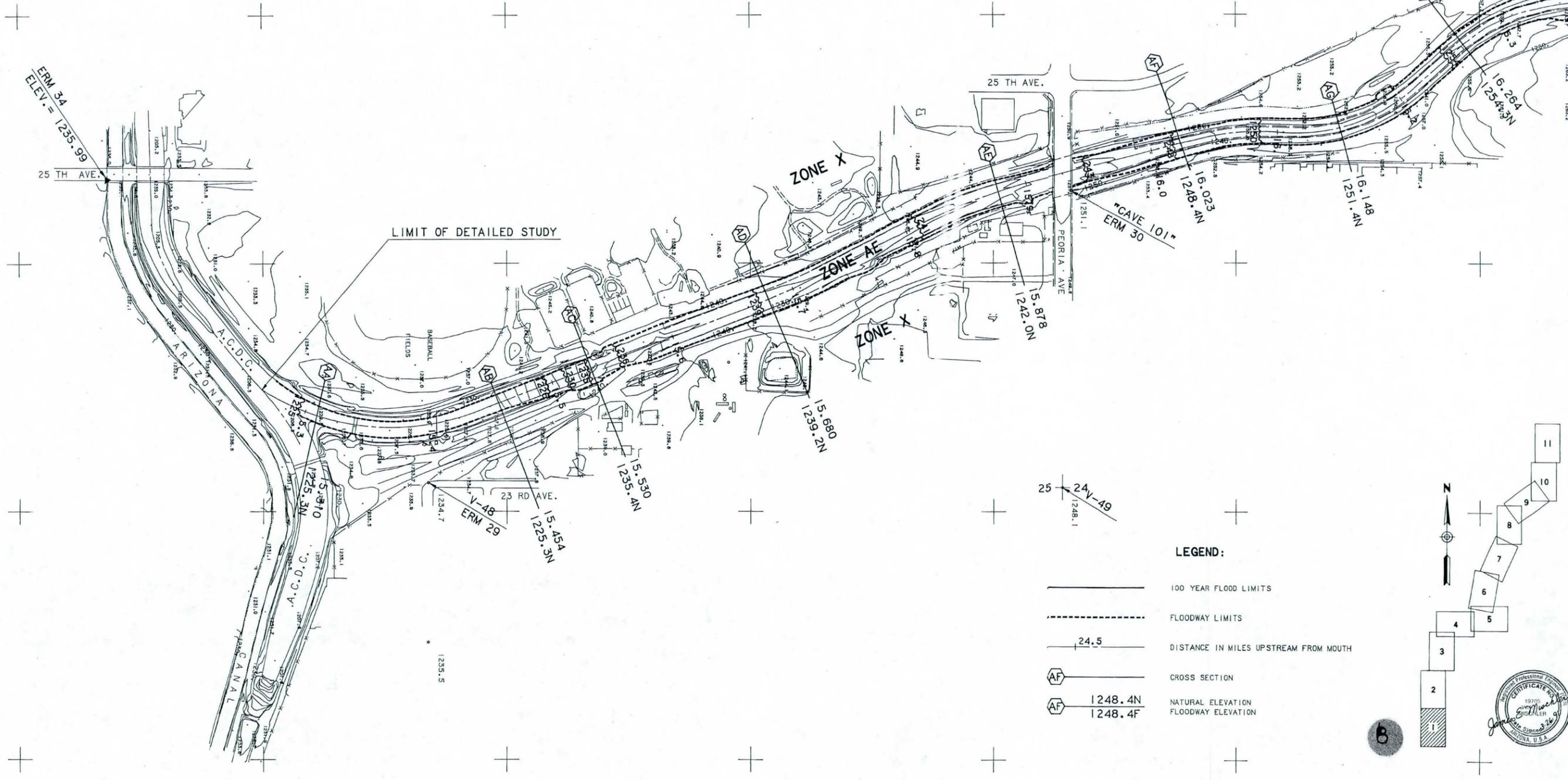
Summary of Discharges

Flooding Source and Location	D.A. (S.M.)	10-YR (cfs)	50-YR (cfs)	100-YR (cfs)
Cave Creek Wash				
Above the Central Arizona Project Canal	2.5	1,700	2,500	2,900
Below the Central Arizona Project Canal	4.0	2,700	4,000	4,600
Below Deer Valley Drive	5.0	3,000	4,500	5,200
Above the East Fork Cave Creek	8.6	3,300	4,900	5,700
East Fork of Cave Creek				
Near Paradise Lane & Central Avenue	13.4	5,300	7,900	9,100
Near Canal Gables & 7th Avenue	14.1	5,500	8,200	9,400
Mouth (Confluence with Cave Creek)	14.6	5,500	8,300	9,500
Cave Creek Wash				
Below the East Fork Cave Creek	23.5	8,400	12,700	14,600
Below 19th Avenue	25.5	8,900	13,400	15,400
Above Moon Valley Wash	26.5	8,900	13,400	15,400
Below Moon Valley Wash	33.1	10,100	15,300	17,500
At the Confluence with the Arizona Canal	34.7	10,300	16,100	18,500

- 29. ERM EL. = 1234.08
This station is located at the intersection of 23rd Avenue and Mountain View. The mark is a brass cap stamped "SECTION 25 CENTER", 0.6 feet below pavement.
- 30. ERM EL. = 1251.13
This station is located on the north side at the east end of the bridge over Cave Creek on Peoria Avenue. The mark is a U.S. Army Corps of Engineers brass cap on top of the curb.
- 34. ERM EL. = 1235.99
This station is located at the south end of the bridge on the east side of 25th Avenue over the Arizona Canal. The mark is a chiseled "*" on top of the curb.



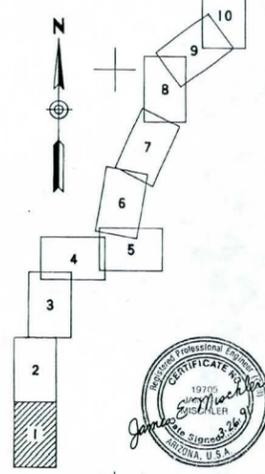
MATCH SHEET 2



25 24V-49
1248.1

LEGEND:

- 100 YEAR FLOOD LIMITS
- FLOODWAY LIMITS
- DISTANCE IN MILES UPSTREAM FROM MOUTH
- CROSS SECTION
- NATURAL ELEVATION FLOODWAY ELEVATION



NO.	REVISIONS	DATE	BY	CHK.

Burgess & Niple, Inc.
Engineers and Architects

Akron, OH - Cincinnati, OH - Columbus, OH - Greatview Hills, KY
Painesville, OH - Parkersburg, WV - Payson, AZ - Phoenix, AZ

MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY
FCD 88-56
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

JOB NO.	7833
DESIGNED BY:	JEM
DRAWN BY:	CEU / AK
CHECKED BY:	JEM
APPROVED BY:	
DATE:	MARCH-01

FLOOD BOUNDARY AND FLOODWAY MAP

CONTOUR INTERVAL = 2 FEET

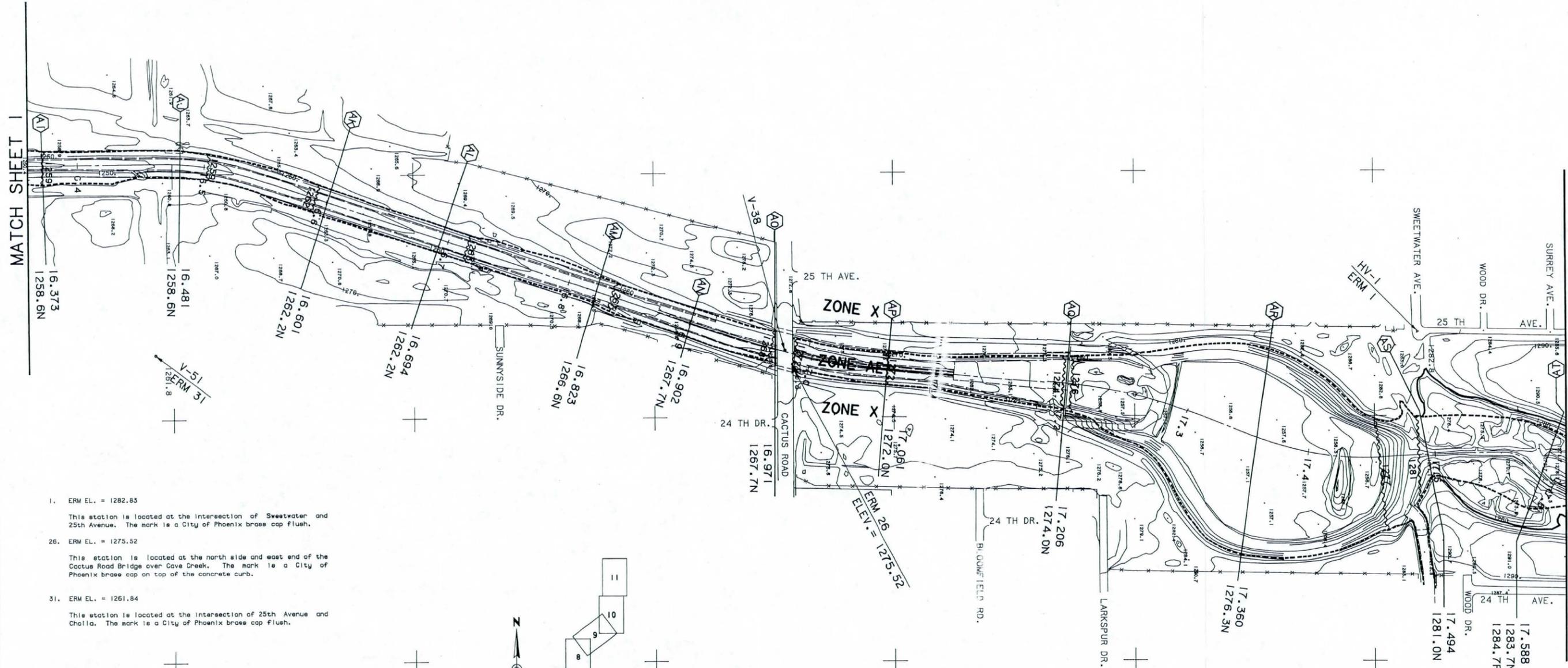
SCALE: 0 100 200
SCALE IN FEET

SHEET NO. 11 OF 11



MATCH SHEET 1

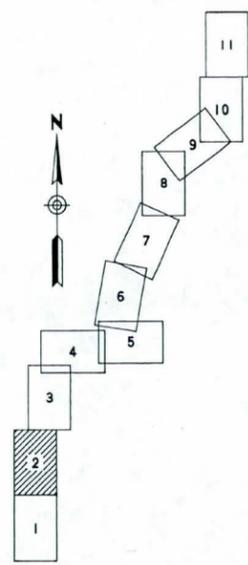
MATCH SHEET 3



- 1. ERM EL. = 1282.83
This station is located at the intersection of Sweetwater and 25th Avenue. The mark is a City of Phoenix brass cap flush.
- 26. ERM EL. = 1275.52
This station is located at the north side and east end of the Cactus Road Bridge over Cave Creek. The mark is a City of Phoenix brass cap on top of the concrete curb.
- 31. ERM EL. = 1261.84
This station is located at the intersection of 25th Avenue and Cholla. The mark is a City of Phoenix brass cap flush.

Summary of Discharges

Flooding Source and Location	D.A. (S.M.)	10-YR (cFe)	50-YR (cFe)	100-YR (cFe)
Cave Creek Wash				
Above the Central Arizona Project Canal	2.5	1,700	2,500	2,900
Below the Central Arizona Project Canal	4.0	2,700	4,000	4,600
Below Dean Valley Drive	5.0	3,000	4,500	5,200
Above the East Fork Cave Creek	8.6	3,300	4,900	5,700
East Fork of Cave Creek				
Near Paradise Lane & Central Avenue	13.4	5,300	7,900	9,100
Near Coral Gables & 7th Avenue	14.1	5,500	8,200	9,400
Mouth (Confluence with Cave Creek)	14.8	5,500	8,300	9,500
Cave Creek Wash				
Below the East Fork Cave Creek	23.5	8,400	12,700	14,600
Below 19th Avenue	25.5	8,900	13,400	15,400
Above Moon Valley Wash	26.5	8,900	13,400	15,400
Below Moon Valley Wash	33.1	10,100	15,300	17,500
At the Confluence with the Arizona Canal Diversion Channel	34.7	10,300	16,100	18,500



LEGEND:

- 100 YEAR FLOOD LIMITS
- FLOODWAY LIMITS
- DISTANCE IN MILES UPSTREAM FROM MOUTH
- CROSS SECTION
- NATURAL ELEVATION
- FLOODWAY ELEVATION



CONTOUR INTERVAL = 2 FEET

NO.	REVISIONS	DATE	BY	CHK.

Burgess & Niple, Inc.
Engineers and Architects



MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY
FCD 88-56
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

JOB NO.	7833
DESIGNED BY:	JEM
DRAWN BY:	CEU / AK
CHECKED BY:	JEM
APPROVED BY:	
DATE:	MARCH-91

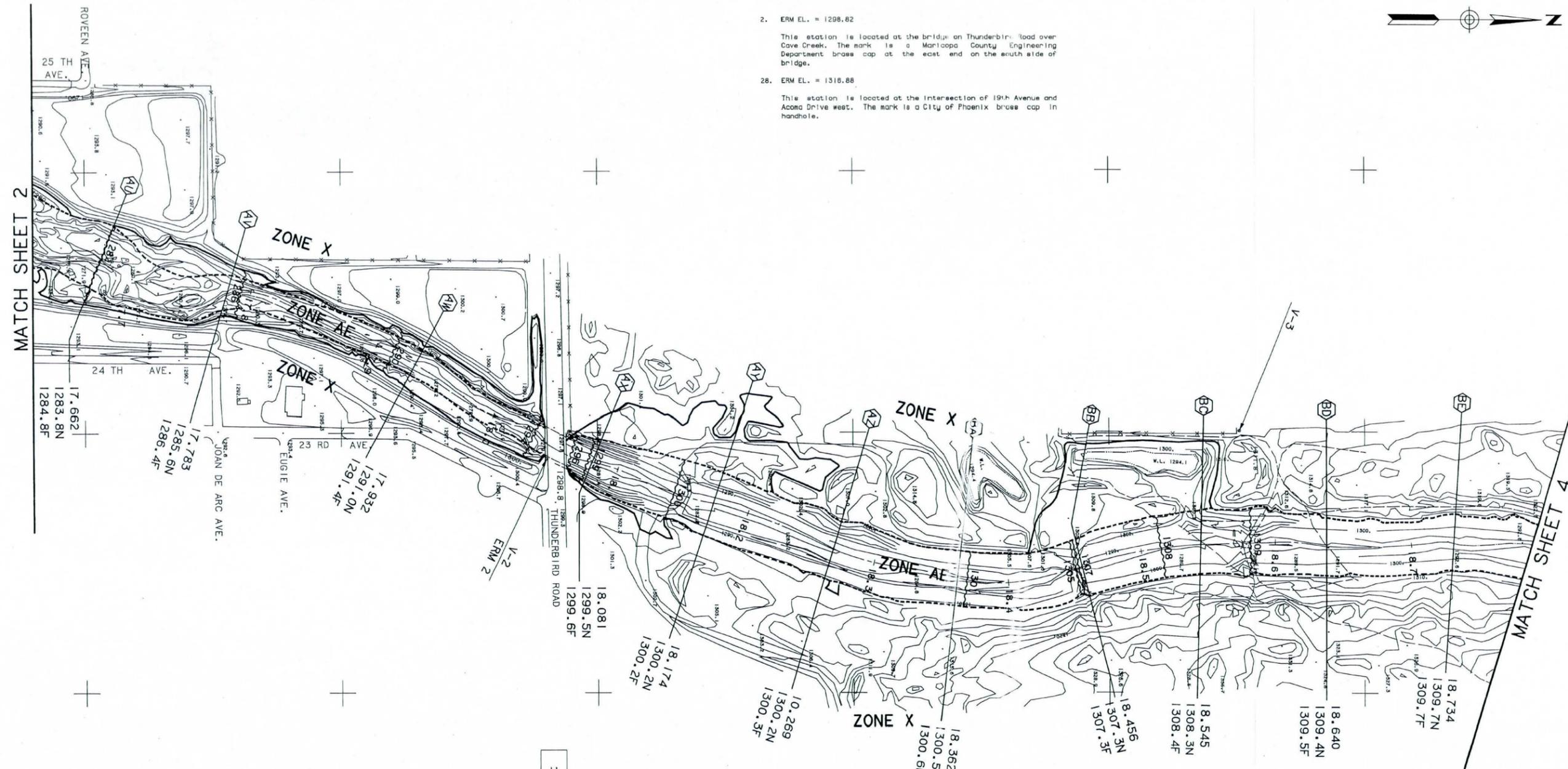
FLOOD BOUNDARY
AND
FLOODWAY MAP

SCALE:	0 100 200
	SCALE IN FEET
SHEET NO.	OF
2	11



2. ERM EL. = 1298.82
 This station is located at the bridge on Thunderbird Road over Cave Creek. The mark is a Maricopa County Engineering Department brass cap at the east end on the south side of bridge.

28. ERM EL. = 1316.88
 This station is located at the intersection of 19th Avenue and Acoma Drive west. The mark is a City of Phoenix brass cap in handhole.

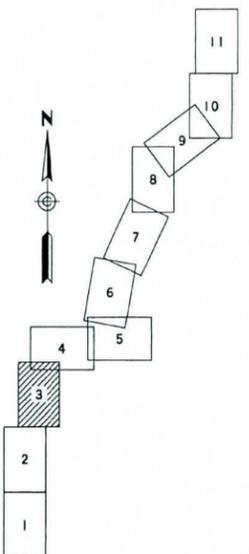


MATCH SHEET 2

MATCH SHEET 4

Summary of Discharges

Flooding Source and Location	D.A. (S.M.)	10-YR (cFt)	50-YR (cFt)	100-YR (cFt)
Cave Creek Wash				
Above the Central Arizona Project Canal	2.5	1,700	2,500	2,900
Below the Central Arizona Project Canal	4.0	2,700	4,000	4,600
Below Deer Valley Drive	5.0	3,000	4,500	5,200
Above the East Fork Cave Creek	8.6	3,300	4,900	5,700
East Fork of Cave Creek				
Near Paradise Lane & Central Avenue	13.4	5,300	7,900	9,100
Near Canal Gables & 7th Avenue	14.1	5,500	8,200	9,400
Mouth (Confluence with Cave Creek)	14.6	5,500	8,300	9,500
Cave Creek Wash				
Below the East Fork Cave Creek	23.5	8,400	12,700	14,600
Below 19th Avenue	25.5	8,900	13,400	15,400
Above Moon Valley Wash	26.5	8,900	13,400	15,400
Below Moon Valley Wash	33.1	10,100	15,300	17,500
At the Confluence with the Arizona Canal Diversion Channel	34.7	10,300	16,100	18,500



- LEGEND:**
- 100 YEAR FLOOD LIMITS
 - FLOODWAY LIMITS
 - DISTANCE IN MILES UPSTREAM FROM MOUTH
 - CROSS SECTION
 - NATURAL ELEVATION
FLOODWAY ELEVATION



NO.	REVISIONS	DATE	BY	CHK.

Burgess & Niple, Inc.
 Engineers and Architects

bn

Akron, OH • Cincinnati, OH • Columbus, OH • Crestview Hills, KY
 Mentor, OH • Parkersburg, WV • Payson, AZ • Phoenix, AZ

MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY
 FCD 88-56
 FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

JOB NO. 7833
 DESIGNED BY: JEM
 DRAWN BY: CEU / AK
 CHECKED BY: JEM
 APPROVED BY:
 DATE: MARCH-91

FLOOD BOUNDARY AND FLOODWAY MAP

CONTOUR INTERVAL = 2 FEET

SCALE: 0 100 200
 SCALE IN FEET

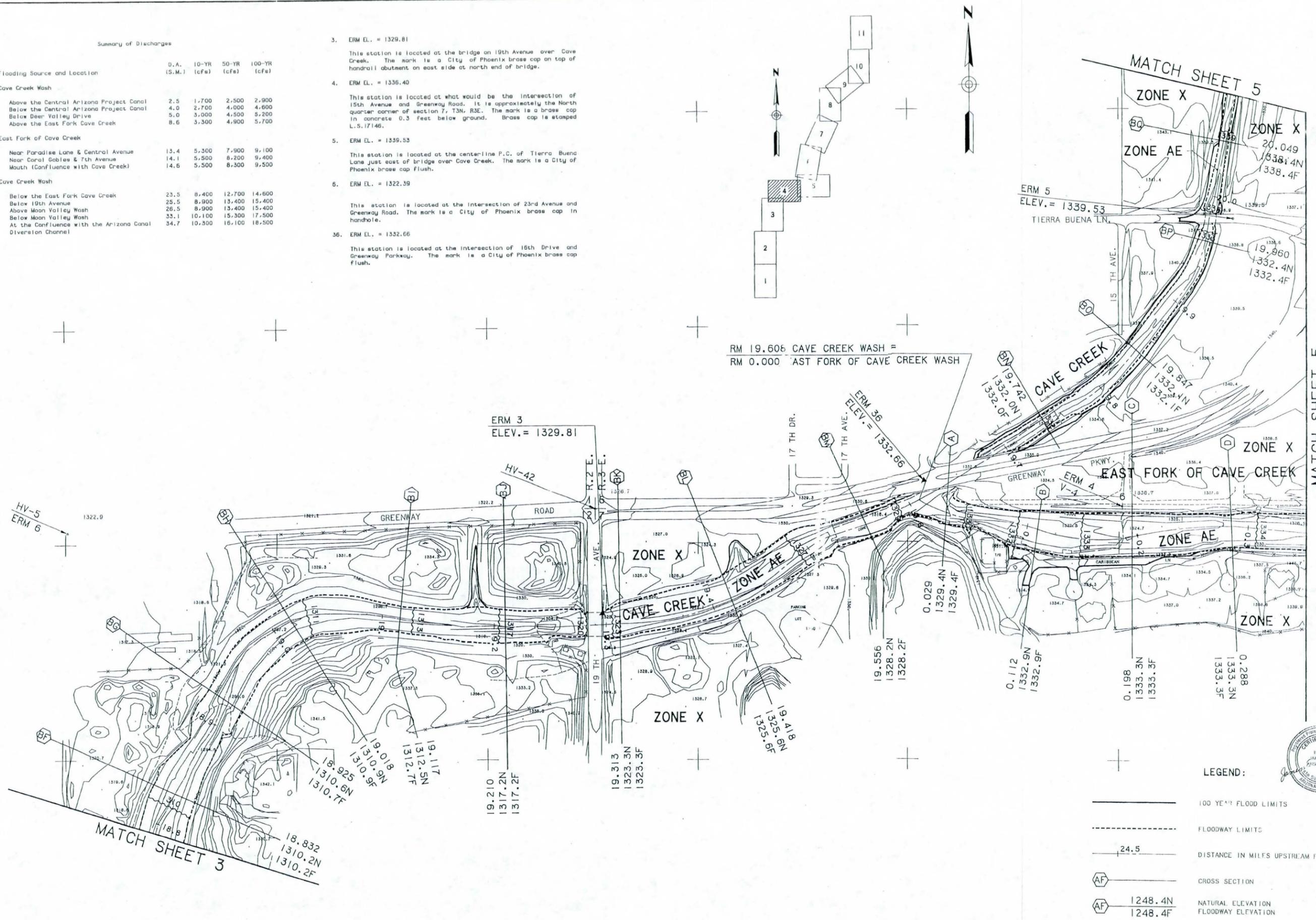
SHEET NO. 3	OF 11
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Summary of Discharges

Flooding Source and Location	D.A. (S.M.)	10-YR (cfs)	50-YR (cfs)	100-YR (cfs)
Cave Creek Wash				
Above the Central Arizona Project Canal	2.5	1,700	2,500	2,900
Below the Central Arizona Project Canal	4.0	2,700	4,000	4,600
Below Deer Valley Drive	5.0	3,000	4,500	5,200
Above the East Fork Cave Creek	8.6	3,300	4,900	5,700
East Fork of Cave Creek				
Near Paradise Lane & Central Avenue	13.4	5,300	7,900	9,100
Near Coral Gables & 7th Avenue	14.1	5,500	8,200	9,400
Mouth (Confluence with Cave Creek)	14.6	5,500	8,300	9,500
Cave Creek Wash				
Below the East Fork Cave Creek	23.5	8,400	12,700	14,600
Below 19th Avenue	25.5	8,900	13,400	15,400
Above Moon Valley Wash	26.5	8,900	13,400	15,400
Below Moon Valley Wash	33.1	10,100	15,300	17,500
At the Confluence with the Arizona Canal Diversion Channel	34.7	10,300	16,100	18,500

- ERM EL. = 1329.81
This station is located at the bridge on 19th Avenue over Cave Creek. The mark is a City of Phoenix brass cap on top of handrail abutment on east side at north end of bridge.
- ERM EL. = 1336.40
This station is located at what would be the intersection of 15th Avenue and Greenway Road. It is approximately the North quarter corner of section 7, T3N, R3E. The mark is a brass cap in concrete 0.3 feet below ground. Brass cap is stamped L.S.17146.
- ERM EL. = 1339.53
This station is located at the centerline P.C. of Tierra Buena Lane just east of bridge over Cave Creek. The mark is a City of Phoenix brass cap flush.
- ERM EL. = 1322.39
This station is located at the intersection of 23rd Avenue and Greenway Road. The mark is a City of Phoenix brass cap in handhole.
- ERM EL. = 1322.66
This station is located at the intersection of 16th Drive and Greenway Parkway. The mark is a City of Phoenix brass cap flush.

RM 19.606 CAVE CREEK WASH =
RM 0.000 EAST FORK OF CAVE CREEK WASH



- LEGEND:
- 100 YEAR FLOOD LIMITS
 - - - FLOODWAY LIMITS
 - 24.5 — DISTANCE IN MILES UPSTREAM FROM MOUTH
 - AF — CROSS SECTION
 - AF 1248.4N — NATURAL ELEVATION
 - AF 1248.4F — FLOODWAY ELEVATION



NO.	REVISIONS	DATE	BY	CHK.

Burgess & Niple, Inc.
Engineers and Architects
Akron, OH • Cleveland, OH • Columbus, OH • Crestview Hills, KY

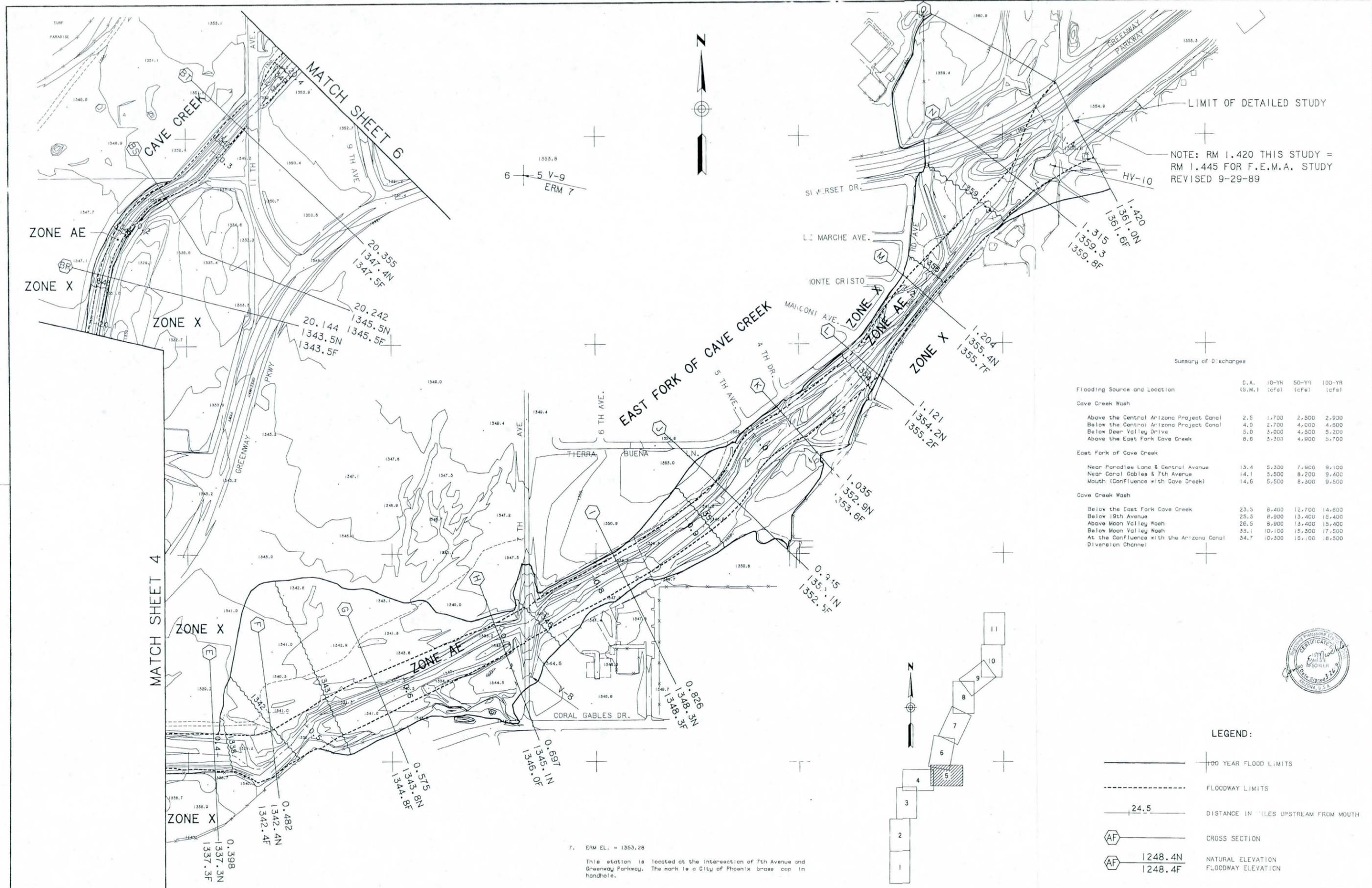


MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY
FCD 88-56
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

JOB NO. 7833
DESIGNED BY: JEM
DRAWN BY: CEU / AK
CHECKED BY: JEM
APPROVED BY:
DATE: MARCH 01

FLOOD BOUNDARY
AND
FLOODWAY MAP

SCALE:	0 100 200
	0' 1" IN FEET
SHEET NO.	4
OF	11



NOTE: RM 1.420 THIS STUDY =
RM 1.445 FOR F.E.M.A. STUDY
REVISED 9-29-89

Summary of Discharges

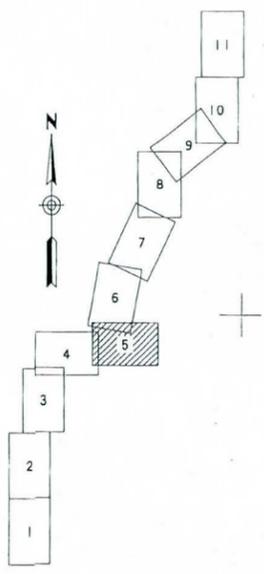
Flooding Source and Location	D.A. (S.M.)	10-YR (cfs)	50-YR (cfs)	100-YR (cfs)
Cave Creek Wash				
Above the Central Arizona Project Canal	2.5	1,700	2,500	2,900
Below the Central Arizona Project Canal	4.0	2,700	4,000	4,600
Below Deer Valley Drive	5.0	3,000	4,500	5,200
Above the East Fork Cave Creek	8.6	3,300	4,900	5,700
East Fork of Cave Creek				
Near Paradise Lane & Central Avenue	13.4	5,300	7,900	9,100
Near Coral Gables & 7th Avenue	14.1	5,500	8,200	9,400
Mouth (Confluence with Cave Creek)	14.6	5,500	8,300	9,500
Cave Creek Wash				
Below the East Fork Cave Creek	23.5	8,400	12,700	14,600
Below 19th Avenue	25.5	8,900	13,400	15,400
Above Moon Valley Wash	26.5	8,900	13,400	15,400
Below Moon Valley Wash	33.1	10,100	15,300	17,500
At the Confluence with the Arizona Canal Diversion Channel	34.7	10,300	15,100	16,500



LEGEND:

- 100 YEAR FLOOD LIMITS
- FLOODWAY LIMITS
- DISTANCE IN MILES UPSTREAM FROM MOUTH
- CROSS SECTION
- NATURAL ELEVATION
- FLOODWAY ELEVATION

7. ERM EL. = 1353.28
This station is located at the intersection of 7th Avenue and Greenway Parkway. The mark is a City of Phoenix brass cap in handhole.



NO.	REVISIONS	DATE	BY	CHK.

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Engineers and Architects
Akron, OH • Cincinnati, OH • Columbus, OH • Crestview Hills, KY
Mentor, OH • Parkersburg, WV • Payson, AZ • Phoenix, AZ



MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY
FCD 88-56
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

JOB NO. 7833
DESIGNED BY: JEM
DRAWN BY: CEU / AK
CHECKED BY: JEM
APPROVED BY:
DATE: MARCH-91

FLOOD BOUNDARY
AND
FLOODWAY MAP

CONTOUR INTERVAL = 2 FEET

SCALE: 1" = 100 FEET

SHEET NO.	OF
5	11

A.2: REFERENCED DOCUMENTS

**A.2.1: Flood Insurance Study (FIS) for Maricopa County revised
September 30, 2005 - Floodway Data - Table 5**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Cave Creek								
A	17.588	338	3,195	4.8	1,283.7	1,283.7	1,284.7	1.0
B	17.682	250	1,988	7.7	1,283.9	1,283.9	1,284.9	1.0
C	17.783	143	1,271	12.1	1,285.6	1,285.6	1,286.4	0.8
D	17.932	110	1,047	14.7	1,291.0	1,291.0	1,291.4	0.4
E	18.081	185	2,411	6.4	1,299.5	1,299.5	1,299.6	0.1
F	18.174	268	3,010	5.1	1,300.2	1,300.2	1,300.2	0.0
G	18.269	228	2,349	6.6	1,300.2	1,300.2	1,300.3	0.1
H	18.362	212	2,086	7.4	1,300.5	1,300.5	1,300.6	0.1
I	18.456	223	1,315	11.7	1,307.3	1,307.3	1,307.3	0.0
J	18.545	288	3,071	5.0	1,308.3	1,308.3	1,308.4	0.1
K	18.640	255	2,581	6.0	1,309.4	1,309.4	1,309.5	0.1
L	18.734	228	2,232	6.9	1,309.7	1,309.7	1,309.7	0.0
M	18.832	215	2,198	7.0	1,310.2	1,310.2	1,310.2	0.0
N	18.925	200	2,086	7.4	1,310.6	1,310.6	1,310.7	0.1
O	19.018	172	1,483	10.4	1,310.9	1,310.9	1,310.9	0.0
P	19.117	120	1,023	15.1	1,312.5	1,312.5	1,312.7	0.2
Q	19.210	157	1,462	10.5	1,317.2	1,317.2	1,317.2	0.0
R	19.313	160	1,330	11.0	1,323.3	1,323.3	1,323.3	0.0
S	19.418	163	1,343	10.9	1,325.6	1,325.6	1,325.6	0.0
T	19.560	130	1,308	11.2	1,328.2	1,328.2	1,328.2	0.0
U	19.742	85	969	5.9	1,332.0	1,332.0	1,332.0	0.0
V	19.847	86	868	6.6	1,332.1	1,332.1	1,332.1	0.0
W	19.960	73	441	12.9	1,332.4	1,332.4	1,332.4	0.0
X	20.049	50	366	15.6	1,338.4	1,338.4	1,338.4	0.0
Y	20.144	57	536	10.6	1,343.5	1,343.5	1,343.5	0.0
Z	20.242	71	561	10.2	1,345.5	1,345.5	1,345.5	0.0

¹Miles Above Confluence With Salt River

T
A
B
L
E
S

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOODWAY DATA

CAVE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION				
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY		WITH FLOODWAY	INCREASE
						(FEET NGVD)			
East Fork of Cave Creek									
A	0.029	131	683	13.9	1,329.4	1,329.4	1,329.4	0.0	
B	0.112	187	1,603	5.9	1,332.9	1,332.9	1,332.9	0.0	
C	0.198	200	1,459	6.5	1,333.3	1,333.3	1,333.3	0.0	
D	0.288	151	745	12.8	1,333.3	1,333.3	1,333.3	0.0	
E	0.398	182	1,139	8.3	1,337.3	1,337.3	1,337.3	0.0	
F	0.482	191	829	11.5	1,342.4	1,342.4	1,342.4	0.0	
G	0.575	210	1,294	7.3	1,343.8	1,343.8	1,344.8	1.0	
H	0.697	160	1,221	7.7	1,345.1	1,345.1	1,346.0	0.9	
I	0.826	160	776	12.1	1,348.3	1,348.3	1,348.3	0.0	
J	0.945	160	1,224	7.7	1,352.1	1,352.1	1,352.5	0.4	
K	1.035	160	1,119	8.4	1,352.9	1,352.9	1,353.6	0.7	
L	1.121	160	1,387	6.8	1,354.2	1,354.2	1,355.2	1.0	
M	1.204	160	867	10.8	1,355.4	1,355.4	1,355.7	0.3	
N	1.343	155	1,341	6.8	1,359.3	1,359.3	1,359.8	0.5	
O	1.420	400	1,102	7.6	1,361.0	1,361.0	1,361.6	0.6	

¹Miles above confluence with Cave Creek

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FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOODWAY DATA

EAST FORK OF CAVE CREEK

**A.2.2: Flood Insurance Study (FIS) for Maricopa County revised
September 30, 2005 – Summary of Discharges - Table 3**

Table 3. Summary of Discharges (Continued)

<u>Flooding Source and Location</u>	<u>Drainage Area (Square Miles)</u>	<u>Peak Discharges (cfs)</u>			
		<u>10-Year</u>	<u>50-Year</u>	<u>100-Year</u>	<u>500-Year</u>
Unnamed Tributary to Galloway Wash					
At confluence with Galloway Wash	7.1	-- ¹	-- ¹	5,722	-- ¹
Ocotillo Wash					
Above confluence with Cave Creek	3.8	3,200	4,820	5,420	7,200
Near intersection of Rockaway Hills Drive and Fleming Springs Road	2.8	2,800	4,140	4,630	6,200
Cave Creek					
At confluence with Salt River	25.0	-- ¹	-- ¹	2,257	-- ¹
At 35th Avenue	22.6	-- ¹	-- ¹	2,226	-- ¹
At Interstate 10 Freeway downstream of Durango Exit	21.0	-- ¹	-- ¹	2,217	-- ¹
At Interstate 10 Freeway upstream of Durango Exit	21.0	-- ¹	-- ¹	2,523	-- ¹
At Jackson Street	16.1	-- ¹	-- ¹	1,890	-- ¹
At Van Buren Street	15.3	-- ¹	-- ¹	1,865	-- ¹
At McDowell Road	12.9	-- ¹	-- ¹	1,691	-- ¹
At Encanto Street	9.3	-- ¹	-- ¹	1,375	-- ¹
At Thomas Road	7.9	-- ¹	-- ¹	1,210	-- ¹
At Indian School Road	7.2	-- ¹	-- ¹	1,237	-- ¹
At confluence with Arizona Canal Diversion Channel (contributing drainage area below Cave Buttes Dam only, and discharges are regulated)	34.7	10,300	16,100	18,500	-- ¹
Below confluence with Moon Valley Wash (contributing drainage area below Cave Buttes Dam only, and discharges are regulated)	33.1	10,100	15,300	17,500	-- ¹

--¹ Not Computed

Table 3. Summary of Discharges (Continued)

<u>Flooding Source and Location</u>	<u>Drainage Area (Square Miles)</u>	<u>Peak Discharges (cfs)</u>			
		<u>10-Year</u>	<u>50-Year</u>	<u>100-Year</u>	<u>500-Year</u>
Cave Creek (Continued)					
Below confluence with East Fork of Cave Creek (contributing drainage area below Cave Buttes Dam only and discharges are regulated)	22.5	3,100	8,700	11,000	25,000
Below Deer Valley Road (contributing drainage area below Cave Buttes Dam only and discharges are regulated)	5.0	1,400	3,800	5,400	11,000
Above Deer Valley Road (contributing drainage area below Cave Buttes Dam only and discharges are regulated)	4.5	1,300	3,500	5,000	10,000
Above Cave Buttes Dam Ponding Area	142.5	-- ¹	-- ¹	38,200	-- ¹
Above confluence with Minor Tributary	137.9	-- ¹	-- ¹	36,800	-- ¹
At Carefree Highway	124.4	-- ¹	-- ¹	33,800	-- ¹
Below New River Road	118.1	-- ¹	-- ¹	31,400	-- ¹
Near Andora Hills Wash Drive	115.0	-- ¹	-- ¹	31,200	-- ¹
Below confluence with Andora Hills Wash	112.2	-- ¹	-- ¹	30,900	-- ¹
Below confluence with Galloway Wash	91.4	-- ¹	-- ¹	24,700	-- ¹
Below confluence with Willow Springs Wash	86.0	-- ¹	-- ¹	24,700	-- ¹
Above confluence with Willow Springs Wash	80.1	-- ¹	-- ¹	23,400	-- ¹
Below Cahava Ranch Road	77.5	-- ¹	-- ¹	23,200	-- ¹
At northeast corner of Section 4 above Cottonwood	61.64	-- ¹	-- ¹	20,680	-- ¹

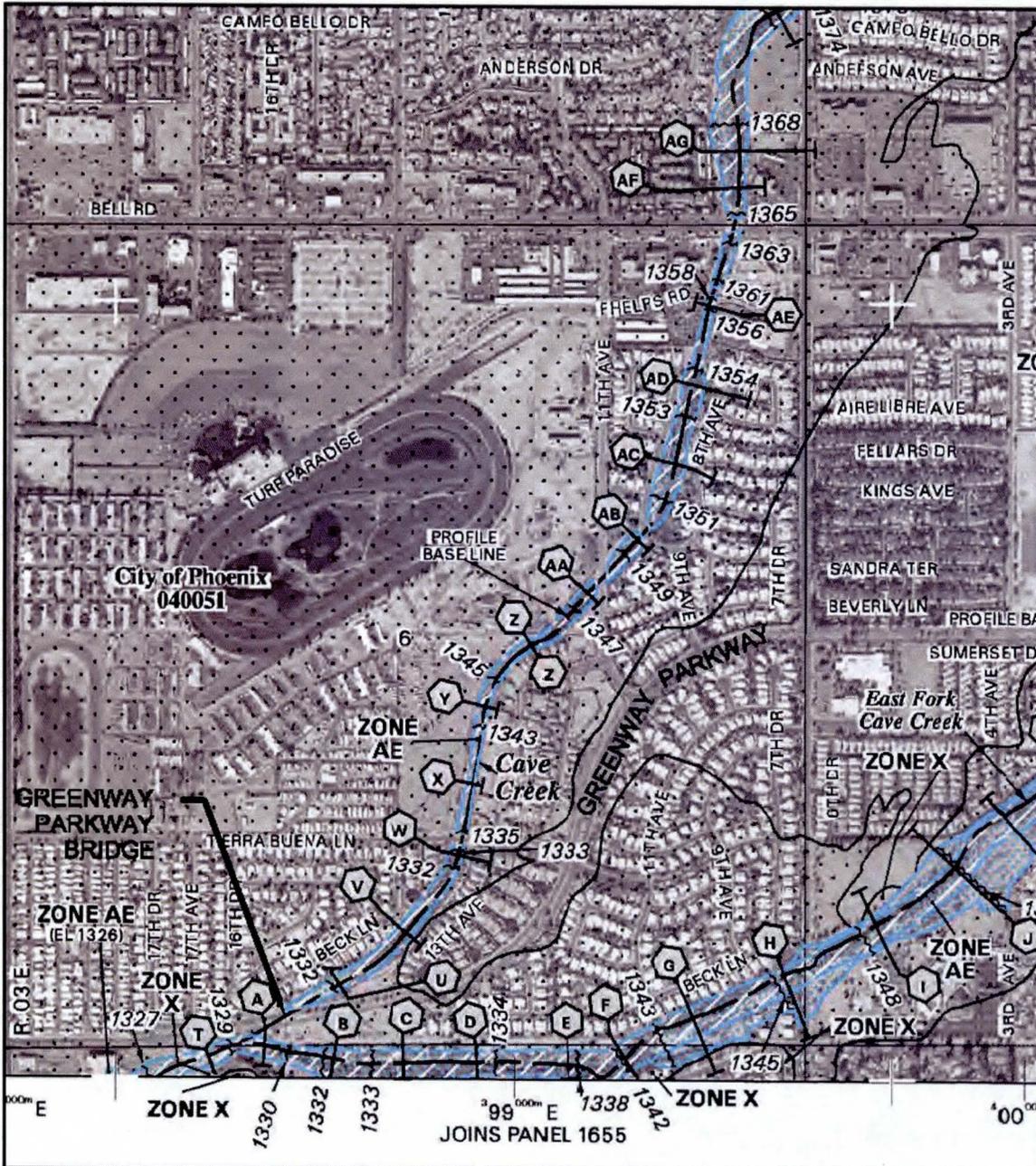
--¹ Not Computed

A.2.3: FEMA Flood Insurance Rate Map 04013C1215K

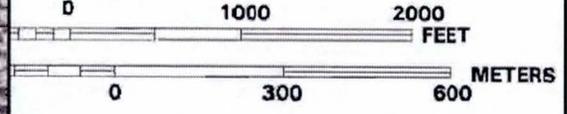


Garrett Fleming

**GREENWAY PARKWAY BRIDGE OVER CAVE CREEK
PRELIMINARY DRAINAGE REPORT
FEMA FLOOD INSURANCE RATE MAP**



MAP SCALE 1" = 1000'



NFIP

PANEL 1215K

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

PANEL 1215 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHOENIX, CITY OF	040051	1215	K

Notice to User: The map number shown below should be used when placing new orders; the Community Number shown above should be used as insurance application for the subject community.



MAP NUMBER

04013C1215K

MAP REVISED

SEPTEMBER 30, 2005

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

LEGEND

 **SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

 **FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

 **OTHER FLOOD AREAS**

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.

 **OTHER AREAS**

ZONE X Areas determined to be outside the 0.2% annual chance floodplain

ZONE D Areas in which flood hazards are undetermined, but possible

 **COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

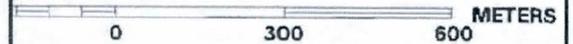
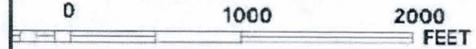
 **OTHERWISE PROTECTED AREAS (OPAs)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas

 1% annual chance floodplain boundary



MAP SCALE 1" = 1000'



NFIP

PANEL 1655K

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

PANEL 1655 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHOENIX, CITY OF	04051	1655	K

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



MAP NUMBER

04013C1655K

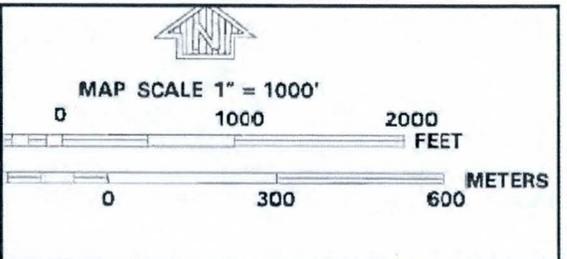
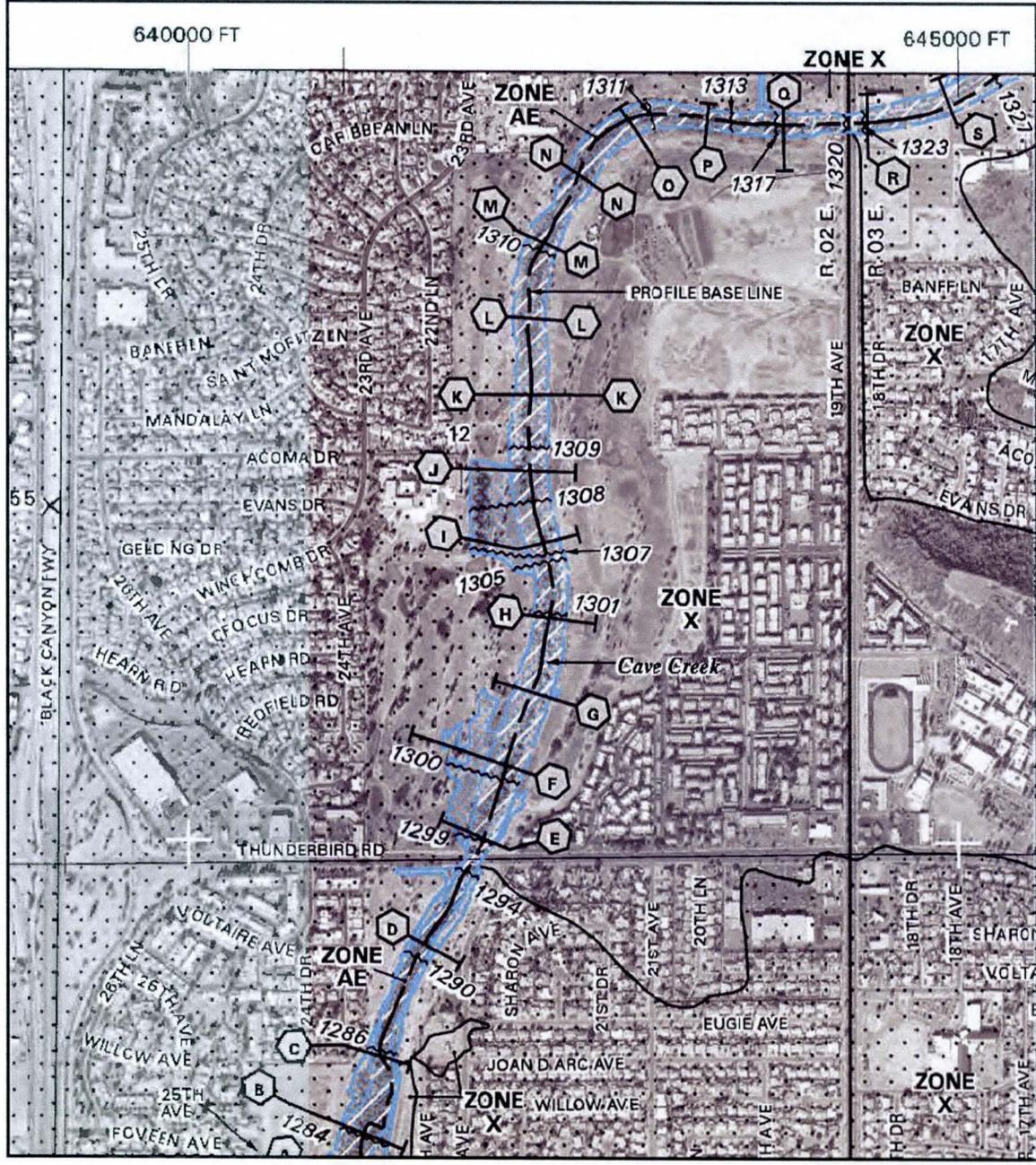
MAP REVISED

SEPTEMBER 30, 2005

Federal Emergency Management Agency

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A.2.4: FEMA Flood Insurance Rate Map 04013C1655K



NFIP

PANEL 1655K

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

PANEL 1655 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHOENIX, CITY OF	040051	1655	K

Notes to User: The map numbers shown below should be used when placing new orders. The Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER
04013C1655K
MAP REVISED
SEPTEMBER 30, 2005**

Federal Emergency Management Agency

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LEGEND



SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

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- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction, no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS



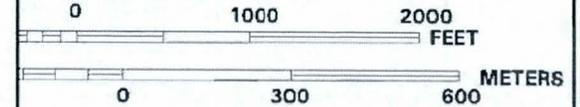
OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary



MAP SCALE 1" = 1000'



NFIP

PANEL 1655K

NATIONAL FLOOD INSURANCE PROGRAM

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

PANEL 1655 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHOENIX, CITY OF	040051	1655	K

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



**MAP NUMBER
04013C1655K
MAP REVISED**

SEPTEMBER 30, 2005

Federal Emergency Management Agency

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A.2.5: Documents received from FEMA on October 8, 2013

A.2.5.a: Cave Creek Floodway Data Table

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NAVD)			
Cave Creek								
A	92,865	295	2,548	6.0	1,286.4	1,286.4	1,286.6	0.2
B	93,255	249	2,195	7.0	1,286.7	1,286.7	1,287.0	0.3
C	93,894	143	1,234	12.5	1,287.5	1,287.5	1,288.0	0.5
D	94,681	110	1,047	14.7	1,292.8	1,292.8	1,293.2	0.4
E	95,468	185	2,411	6.4	1,301.3	1,301.3	1,301.4	0.1
F	95,959	268	3,010	5.1	1,302.0	1,302.0	1,302.0	0.0
G	96,460	228	2,349	6.6	1,302.0	1,302.0	1,302.1	0.1
H	96,951	212	2,086	7.4	1,302.3	1,302.3	1,302.4	0.1
I	97,448	223	1,315	11.7	1,309.1	1,309.1	1,309.1	0.0
J	97,918	288	3,071	5.0	1,310.1	1,310.1	1,310.2	0.1
K	98,419	255	2,581	6.0	1,311.2	1,311.2	1,311.3	0.1
L	98,916	228	2,232	6.9	1,311.5	1,311.5	1,311.5	0.0
M	99,433	215	2,198	7.0	1,312.0	1,312.0	1,312.0	0.0
N	99,924	200	2,086	7.4	1,312.4	1,312.4	1,312.5	0.1
O	100,415	172	1,483	10.4	1,312.7	1,312.7	1,312.7	0.0
P	100,938	120	1,023	15.1	1,314.3	1,314.3	1,314.5	0.2
Q	101,429	157	1,462	10.5	1,319.0	1,319.0	1,319.0	0.0
R ²	101,973	460	1,330	11.0	1,325.1	1,325.1	1,325.1	0.0
S ²	102,527	463	1,343	10.9	1,327.4	1,327.4	1,327.4	0.0
T	103,257	130	1,316	11.1	1,330.1	1,330.1	1,330.1	0.0
U	104,238	85	969	5.9	1,333.8	1,333.8	1,333.8	0.0
V	104,792	86	868	6.6	1,333.9	1,333.9	1,333.9	0.0
W	105,389	73	441	12.9	1,334.2	1,334.2	1,334.2	0.0
X	105,859	50	366	15.6	1,340.2	1,340.2	1,340.2	0.0
Y	106,360	57	536	10.6	1,345.3	1,345.3	1,345.3	0.0
Z	106,878	71	561	10.2	1,347.3	1,347.3	1,347.3	0.0

¹Stream Distance in Feet Above Confluence With Salt River

²Data Removed by LOMR 10-09-0687P

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FEDERAL EMERGENCY MANAGEMENT AGENCY

**MARICOPA COUNTY, AZ
AND INCORPORATED AREAS**

FLOODWAY DATA

CAVE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NAVD)			
Cave Creek (Cont'd)								
AA	107,369	73	640	8.9	1,349.2	1,349.2	1,349.3	0.1
AB	107,833	114	796	7.2	1,351.4	1,351.4	1,349.7	0.1
AC	108,393	139	841	6.8	1,354.1	1,354.1	1,354.1	0.0
AD	108,916	130	1,059	5.4	1,355.1	1,355.1	1,355.1	0.0
AE	109,428	64	398	14.3	1,357.8	1,357.8	1,357.8	0.0
AF	110,141	162	1,041	5.5	1,368.8	1,368.8	1,369.3	0.5
AG	110,579	220	1,271	4.5	1,369.7	1,369.7	1,370.0	0.3
AH	111,498	151	1,041	5.5	1,371.0	1,371.0	1,371.2	0.2
AI	112,395	229	1,190	4.8	1,377.3	1,377.3	1,377.4	0.1
AJ	113,193	231	1,199	4.8	1,378.3	1,378.3	1,378.3	0.0
AK	113,895	211	919	6.2	1,380.2	1,380.2	1,380.2	0.0
AL	114,254	198	593	9.6	1,385.1	1,385.1	1,385.1	0.0
AM	114,634	198	550	10.0	1,388.8	1,388.8	1,388.8	0.0
AN	114,951	235	1,311	4.2	1,390.5	1,390.5	1,390.5	0.0
AO	115,548	222	1,321	4.2	1,393.6	1,393.6	1,393.6	0.0
AP	115,796	198	1,226	4.5	1,393.9	1,393.9	1,393.9	0.0
AQ	116,102	85	540	10.2	1,394.3	1,394.3	1,394.3	0.0
AR	116,704	406	717	7.7	1,403.6	1,403.6	1,403.9	0.3
AS	117,031	303	663	8.3	1,407.0	1,407.0	1,407.0	0.0
AT	117,601	241	880	6.2	1,410.2	1,410.2	1,410.2	0.0
AU	118,325	180	560	9.8	1,416.1	1,416.1	1,416.1	0.0
AV	118,710	160	1,293	4.3	1,418.4	1,418.4	1,418.7	0.3
AW	119,212	96	772	7.1	1,418.4	1,418.4	1,419.1	0.7
AX	119,724	198	1,406	3.9	1,419.9	1,419.9	1,420.6	0.7
AY	120,352	183	1,174	4.7	1,420.5	1,420.5	1,420.5	1.0
AZ	120,806	169	774	7.1	1,422.0	1,422.0	1,422.4	0.4

¹Stream Distance in Feet Above Confluence With Salt River

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FEDERAL EMERGENCY MANAGEMENT AGENCY

**MARICOPA COUNTY, AZ
AND INCORPORATED AREAS**

FLOODWAY DATA

CAVE CREEK

A.2.5.b: Cave Creek Study Input File - cavefema.dat

GR1279.9 10022. 1280.2 10032. 1285.5 10054. 1290.2 10066. 1290.6 10083.
 GR1298.5 10131. 1299.7 10159. 1299.7 10193.

*
 * THUNDERBIRD ROAD BRIDGE - ALTHOUGH THE ROAD IS LOWEST IN THE RIGHT
 * OVERBANK, HIGH BANKS UPSTREAM PREVENT THIS AREA FROM BECOMING EFFECTIVE,
 * THEREFORE, ONLY THE BRIDGE OPENING IS CONSIDERED ON THE GR CARDS AND
 * ONLY THE BRIDGE LENGTH IS CONSIDERED FOR THE BT CARDS. ENDS OF THE
 * SECTIONS ARE ARTIFICIALLY EXTENDED. BT'S ARE RAISED 0.5' FROM CENTER-
 * LINE OF ROAD ELEVATIONS AT THE BRIDGE. TO ACCOUNT FOR THE RAILING.
 *

*
 * 4.1 9951. 10049.
 NC 0.035 0.035 0.025 0.3 0.5
 X118.042 8. 9951. 10049. 620. 550. 581. 2.4
 GR 1305. 9951. 1283.4 9952. 1282.9 9979. 1279.9 9980. 1279.9 10020.
 GR1281.9 10021. 1284.2 10048. 1305. 10049.
 SB 1.05 1.56 3. 75. 4. 1059. 0.81 1280.2 1279.9
 NC 0.03 0.03 0.025
 * 4.11 9951. 10049.
 X118.061 101. 101. 101. 0.8
 *

* ELTRD IS 1298.4+3.2HV = 1301.6
 *

X2 1. 1293.2 1301.6
 BT 4. 9951. 1305. 0. 9952. 1298.4 0. 10048. 1298.4 0.
 BT10049. 1305. 0.
 NC 0.035 0.035 0.035
 ET 4.1 9900. 10085.
 X118.081 11. 9942. 10045. 80. 130. 106.
 GR1300.5 9819. 1300.2 9866. 1298.2 9899. 1286.6 9942. 1282.7 9960.
 GR1281.4 10000. 1281.1 10008. 1282.7 10030. 1284.9 10045. 1297.3 10088.
 GR1300.2 10112.
 NC 0.1 0.3
 ET 4.1 9857. 10125.
 X118.174 29. 9919. 10073. 500. 490. 491.
 GR1303.6 9673. 1304.6 9713. 1307.3 9757. 1302.5 9801. 1302. 9850.
 GR 1288. 9904. 1287.3 9915. 1288.7 9919. 1284. 9927. 1283.5 9956.
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 GR 1298. 10340. 1299.8 10364. 1298. 10396. 1301.1 10478.
 ET 4.1 9882.2 10110.
 X118.269 12. 9942. 10060. 500. 500. 502.
 GR1303.8 9868. 1288.1 9928. 1288.4 9942. 1285.3 9952. 1283.8 9979.
 GR1283.8 10000. 1283.8 10010. 1285.6 10023. 1292.4 10060. 1294. 10071.
 GR1303.2 10130. 1303.7 10144.
 ET 4.1 9895.6 10107.8
 X118.362 20. 9942. 10060. 490. 510. 491.
 GR1315.5 9728. 1315.4 9758. 1315.8 9780. 1310.6 9807. 1307.1 9862.
 GR1298.6 9905. 1290. 9942. 1287.8 9952. 1288. 9967. 1286.1 9971.
 GR1285.3 10000. 1286.8 10022. 1286.8 10036. 1290.6 10060. 1303.8 10124.
 GR1307.7 10151. 1307.5 10169. 1306.8 10183. 1308.1 10240. 1308.8 10283.

*
 * DOWNSTREAM GOLF CART CROSSING ON A SINGLE 78" CMP WITH PROTRUDING
 * ENDS AND EMBANKMENT SLOPES (NO WINGWALLS).
 *

ET 4.1 9885. 10110.
 X118.445 13. 9992. 10005. 470. 460. 440.
 X3 10. 1297. 1297.
 GR1315.1 9796. 1306.2 9880. 1300. 9920. 1299.5 9978. 1290. 9992.
 GR1287.3 10000. 1290. 10005. 1300. 10040. 1302. 10060. 1303. 10097.
 GR 1305. 10200. 1305.6 10310. 1309.4 10330.
 SB 0.9 2.34 3.0 0. 6.11 1.0 33.2 0. 1287.7 1287.4
 ET 4.11 9885. 10110.

X118.456					60.	60.	60.		0.4
*									
*	ELTRD IS 1198.8+0.7HV = 1199.5								
*									
X2			1.	1294.2	1299.5				
X3	10.							1298.8	1298.8
BT	10.	9796.	1315.5	0.	9880.	1306.6	0.	9928.	1301.9
BT	9991.	1299.1	0.	10000.	1298.8	0.	10046.	1301.9	0.
BT	1303.4	0.	10200.	1305.4	0.	10310.	1306.	0.	10330.
BT	0.								1309.8
ET			4.1	9881.4	10169.8				
X118.545	21.	9951.	10058.	440.	480.	466.			
GR1324.2	9716.	1323.1	9748.	1324.4	9765.	1321.9	9790.	1318.3	9810.
GR	1317.	9839.	1306.7	9889.	1294.1	9951.	1291.5	9972.	1289.3
GR	1289.7	10000.	1289.7	10018.	1290.5	10040.	1293.8	10058.	1298.8
GR	1299.8	10094.	1303.4	10108.	1303.9	10121.	1303.	10135.	1310.1
GR	1310.2	10194.							10182.
*									
*	UPSTREAM GOLF CART CROSSING ON 2 - 72" RCP WITH FLUSH INLETS AND								
*	45 DEGREE WINGWALLS.								
*									
ET			4.1	9880.7	10170.8				
X118.575	21.	9972.	10000.	160.	160.	160.			
X3	10.							1297.	1297.
GR1324.2	9716.	1323.1	9748.	1324.4	9765.	1321.9	9790.	1318.3	9810.
GR	1317.	9839.	1306.7	9889.	1294.1	9951.	1291.5	9972.	1289.3
GR	1289.7	10000.	1289.7	10018.	1290.5	10040.	1293.8	10058.	1298.8
GR	1299.8	10094.	1303.4	10108.	1303.9	10121.	1303.	10135.	1310.1
GR	1310.2	10194.							10182.
SB	1.25	1.56	3.0	0.	10.4	1.0	56.5	0.	1289.4
ET			4.11	9876.1	10177.2				1289.3
X118.583				40.	40.	40.			0.1
*									
*	ELTRD IS 1298.4+0.6HV = 1299.0								
*									
X2			1.	1295.4	1299.				
X3	10.							1298.4	1298.4
BT	9.	9880.	1310.	0.	9965.	1300.	0.	10000.	1298.4
BT	10037.	1300.	0.	10065.	1302.	0.	10085.	1304.	0.
BT	1306.	0.	10160.	1308.	0.	10170.	1310.	0.	10122.
ET			4.1	9879.6	10134.7				
X118.640	17.	9955.	10033.	300.	310.	301.			
GR1322.5	9707.	1323.7	9729.	1320.1	9768.	1313.8	9827.	1312.3	9858.
GR	1308.4	9887.	1302.6	9920.	1294.6	9955.	1292.8	9966.	1290.2
GR	1291.5	10000.	1291.8	10009.	1293.4	10033.	1307.8	10111.	1309.
GR	1312.1	10153.	1313.2	10167.					10132.
ET			4.1	9883.2	10111.7				
X118.734	19.	9938.	10062.	490.	500.	496.			
GR1320.7	9713.	1316.3	9762.	1316.6	9809.	1319.2	9819.	1317.9	9841.
GR	1308.7	9888.	1298.6	9938.	1293.4	9971.	1294.2	9981.	1292.4
GR	1294.5	10000.	1294.4	10025.	1300.8	10062.	1309.	10094.	1307.6
GR	1312.9	10124.	1314.	10143.	1317.1	10178.	1319.9	10201.	10104.
ET			4.1	9891.8	10107.				
X118.832	21.	9929.	10046.	480.	540.	517.			
GR1326.2	9779.	1328.	9788.	1320.6	9826.	1316.	9853.	1312.5	9880.
GR	1302.8	9929.	1296.1	9960.	1293.5	9982.	1293.2	10000.	1293.2
GR	1294.8	10008.	1295.5	10027.	1297.1	10046.	1307.7	10095.	1314.1
GR	1314.1	10141.	1317.1	10187.	1320.3	10221.	1319.9	10247.	1318.6
GR	1319.2	10278.							10271.
ET			4.1	9887.7	10087.5				
X118.925	14.	9941.	10048.	480.	500.	491.			
GR1329.1	9741.	1315.9	9866.	1297.6	9941.	1297.3	9960.	1295.3	9989.
GR	1295.	10000.	1296.1	10006.	1295.4	10022.	1294.6	10025.	1296.3

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GR 1300.	10048.	1310.5	10087.	1320.1	10132.	1321.3	10161.		
ET		4.1	9866.3	10038.5					
X119.018	20.	9903.	10030.	460.	520.	491.			
GR 1331.	9681.	1321.2	9775.	1313.9	9847.	1305.1	9903.	1298.1	9930.
GR 1298.	9948.	1298.1	9957.	1297.6	9974.	1299.	10000.	1308.4	10030.
GR1325.3	10088.	1327.	10101.	1325.5	10109.	1330.2	10118.	1330.9	10124.
GR 1327.	10145.	1326.8	10211.	1328.8	10218.	1332.6	10260.	1331.8	10268.
ET		4.1	9942.1	10061.9					
X119.117	10.	9973.	10026.	490.	560.	523.			
GR1333.9	9803.	1331.8	9872.	1323.	9908.	1302.9	9973.	1299.2	9997.
GR1298.7	10000.	1298.6	10010.	1301.5	10026.	1328.9	10116.	1333.	10144.
ET		4.1	9923.1	10081.					
X119.210	16.	9945.	10060.	500.	490.	491.			
GR1333.2	9669.	1330.6	9853.	1328.7	9874.	1312.	9945.	1310.	9954.
GR1303.8	9978.	1301.4	9991.	1300.2	10000.	1301.3	10010.	1303.4	10026.
GR 1312.	10060.	1321.3	10098.	1327.	10127.	1332.5	10166.	1335.3	10191.
GR1335.6	10192.								

*

19TH AVENUE (SPECIAL BRIDGE)

*

NC			0.3	0.5					
QT 2.	14600.	14600.							
X119.283	12.	9948.	10057.	390.	390.	386.		11.2	
X3 10.							1324.	1324.	
GR1333.2	9669.	1330.6	9853.	1328.7	9874.	1312.	9945.	1300.5	9948.
GR1300.5	10057.	1312.	10060.	1321.3	10098.	1327.	10127.	1332.5	10166.
GR1335.3	10191.	1335.6	10192.						
SB 0.9	1.56	3.		109.	4.5	1304.	0.	1311.7	1311.7
X119.299				86.	86.	86.			

*

ELTRD IS 1324.5+2HV = 1326.5

*

X2		1.	1324.2	1326.5					
X3 10.							1325.	1325.	
BT 6.	9500.	1326.	0.	9650.	1324.5	0.	9855.	1325.3	0.
BT10000.	1325.7	0.	10275.	1324.9	0.	10460.	1326.	0.	
ET		10.41							
X119.313	20.	9932.	10112.	75.	75.	74.			
GR 1329.	9853.	1326.7	9859.	1327.6	9866.	1327.9	9932.	1314.5	9968.
GR1312.2	9980.	1311.7	9988.	1313.1	9996.	1313.1	10000.	1313.4	10017.
GR 1312.	10029.	1313.7	10044.	1311.7	10054.	1313.7	10069.	1325.5	10112.
GR1325.4	10137.	1324.3	10180.	1324.9	10219.	1325.2	10325.	1326.6	10464.
NC		0.1	0.3						
X119.418	19.	9948.	10120.	570.	530.	554.			
GR1330.8	9898.	1328.8	9902.	1330.6	9910.	1330.2	9938.	1328.	9948.
GR1313.1	9992.	1313.1	10000.	1313.	10004.	1316.1	10022.	1314.6	10058.
GR1315.5	10076.	1320.1	10094.	1326.1	10120.	1327.6	10138.	1327.5	10186.
GR1326.2	10276.	1327.	10322.	1328.3	10376.	1328.6	10401.		

*

SECTION 19.56 IS JUST DOWNSTREAM OF THE CONFLUENCE WITH THE EAST FORK. THIS SECTION IS USED TO BEGIN THE TRIBUTARY RUN FOR THE EAST FORK OF CAVE CREEK. THE CONFLUENCE OCCURS AT RM 19.608

*

X1 19.56	17.	9929.	10065.	730.	720.	729.			
GR1346.1	9801.	1329.7	9902.	1329.7	9929.	1316.5	9950.	1316.8	9978.
GR1315.6	10000.	1315.6	10008.	1316.6	10026.	1316.4	10035.	1317.5	10043.
GR1330.6	10065.	1330.8	10099.	1330.5	10146.	1330.2	10195.	1330.9	10208.
GR1331.2	10223.	1332.1	10301.						

*

GREENWAY BRIDGE (SPECIAL BRIDGE). LARGE SKEW ACCOUNTED FOR PRIOR TO DATA INPUT BY ADJUSTING BWC ETC. DUE TO COMPLEX CHANNEL GEOMETRY DOWNSTREAM AT THE CONFLUENCE WITH THE EAST FORK, IT WAS MOST APPROPRIATE TO USE THE UPSTREAM SECTION, REPEATED AT THE DOWNSTREAM FACE. GR CARDS

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FROM SECTION 19.742 ARE REPEATED FOR 19.625 WITH PSXECE = -1.7

```

*
*
QT      2.      5700.    5700.
NC 0.035  0.035    0.015    0.3    0.5
X119.625  11.     9965.    10025.   580.    70.    364.
X3      10.
GR1335.7  9834.    1335.1    9893.    1333.4   9922.    1331.8    1332.    1332.
GR1319.3  9965.    1319.3    10025.   1331.    10042.    1339.2    10055.    1337.7    9948.
GR1338.8  10100.
SB 1.05    1.56      3.        100.     60.     2.      564.     0.    1318.6  1317.6
X119.691          330.    430.    350.          1.0

```

ELTRD IS 1332.8+2HV = 1334.8

```

*
*
X2      1.    1328.3  1334.8
X3      10.
ET      4.1    9953.    10038.
X119.742  13.     9948.    10042.    80.     470.    269.
GR1335.7  9834.    1335.1    9893.    1333.4   9922.    1331.8    9937.    1331.6    9948.
GR1319.1  9967.    1319.2    10000.   1319.7   10017.    1319.7    10027.    1331.    10042.
GR1339.2  10055.    1337.7    10060.   1338.8   10100.
NC 0.035  0.035    0.035    0.1    0.3
ET      4.1    9957.    10043.
X119.847  22.     9929.    10062.    570.    520.    554.
GR1339.8  9621.    1338.7    9726.    1341.6   9738.    1338.8    9759.    1339.    9806.
GR1337.7  9915.    1336.1    9921.    1336.3   9929.    1320.2    9974.    1318.8    9989.
GR1320.8  10000.    1320.5    10017.   1321.3   10023.    1328.8    10040.    1335.8    10062.
GR1336.1  10070.    1336.6    10084.   1335.8   10150.    1336.    10160.    1338.3    10175.
GR1339.2  10195.    1339.2    10198.
ET      4.1    9958.    10031.
X119.960  24.     9958.    10031.    640.    560.    597.
GR1340.4  9544.    1339.1    9638.    1336.7   9736.    1337.2    9768.    1338.2    9807.
GR1338.9  9836.    1338.4    9908.    1340.1   9911.    1337.7    9917.    1339.1    9924.
GR1337.2  9935.    1330.     9958.    1327.8   9964.    1326.1    9977.    1324.6    9990.
GR1324.7  10000.    1326.1    10008.   1326.8   10023.    1330.    10031.    1340.6    10059.
GR1340.8  10072.    1340.7    10099.   1340.1   10194.    1339.9    10251.

```

TIERRA BUENA (SPECIAL BRIDGE)

DUE TO HIGHER DEPTHS THAN ANTICIPATED, XNCH HAS BEEN REDUCED FROM 0.04 (PER MANNINGS n VALUE REPORT) TO 0.035 BETWEEN GREENWAY ROAD AND UNION HILLS DRIVE

```

NC 0.04    0.04    0.035    0.3    0.5
ET      4.1    9969.    10020.
X119.974  10.     9969.    10020.    105.    65.    74.
X3      10.
GR1340.1  9911.    1337.7    9917.    1339.1   9924.    1337.2    1336.    1336.
GR1323.8  9969.    1323.8    10020.   1330.    10031.    1340.6    10059.    1340.8    9958.
SB 1.25    1.56      3.        51.     3.      480.     0.    1324.1  10072.
ET      4.11   9969.    10020.
X119.986          61.     61.     61.

```

ELTRD IS 1336.9+1HV = 1337.9

```

*
*
X2      1.    1334.1  1337.9
X3      10.
BT      3.    9560.    1340.     0.    10000.  1336.9    0.    1337.    1337.
ET      4.1    9975.    10025.
X120.049  37.     9954.    10027.    305.    345.    333.
X3      10.
GR1344.7  9266.    1345.2    9300.    1342.4   9304.    1340.8    1340.    1332.6    9344.

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GR1333.1	9400.	1333.3	9490.	1334.	9563.	1334.8	9606.	1333.2	9728.
GR 1335.	9767.	1331.4	9805.	1331.	9820.	1331.5	9854.	1331.5	9901.
GR1332.1	9920.	1341.1	9938.	1340.5	9950.	1343.4	9954.	1339.8	9969.
GR1327.4	9991.	1327.1	9997.	1327.1	10000.	1328.4	10008.	1339.4	10027.
GR 1340.	10047.	1342.3	10075.	1342.4	10097.	1340.2	10114.	1342.3	10131.
GR 1343.	10142.	1341.5	10162.	1342.7	10175.	1342.9	10210.	1343.3	10307.
GR1342.5	10378.	1343.	10477.						
NC			0.1		0.3				
ET		4.1	9972.	10029.					
X120.144	38.	9955.	10025.	490.	500.	502.			
X3	10.						1344.		
GR1346.6	9136.	1347.4	9206.	1348.2	9208.	1348.4	9215.	1347.1	9235.
GR1342.5	9239.	1341.7	9258.	1334.6	9278.	1332.	9297.	1332.6	9357.
GR1333.7	9417.	1333.1	9457.	1334.1	9479.	1334.9	9499.	1335.3	9554.
GR1334.4	9582.	1335.7	9631.	1335.6	9698.	1336.1	9745.	1334.6	9779.
GR1329.6	9788.	1330.5	9820.	1329.4	9847.	1328.5	9881.	1328.5	9912.
GR1341.6	9931.	1343.1	9951.	1344.6	9955.	1342.	9968.	1330.9	9986.
GR1330.9	10000.	1330.9	10010.	1340.8	10025.	1342.2	10040.	1345.9	10053.
GR1346.5	10073.	1347.	10128.	1347.	10198.				
ET		4.1	9964.	10035.					
X120.242	32.	9953.	10029.	470.	560.	517.			
X3	10.						1348.		
GR1346.6	9200.	1347.9	9269.	1348.7	9271.	1348.7	9277.	1346.6	9330.
GR1347.7	9377.	1342.3	9383.	1342.7	9400.	1332.4	9422.	1333.6	9470.
GR1333.7	9529.	1334.9	9573.	1334.2	9626.	1334.9	9648.	1335.1	9651.
GR 1336.	9785.	1336.	9842.	1338.6	9846.	1339.3	9895.	1339.2	9935.
GR1347.2	9953.	1343.7	9970.	1333.3	9988.	1333.7	10000.	1333.5	10012.
GR1342.8	10029.	1343.2	10041.	1348.3	10061.	1349.2	10076.	1349.9	10107.
GR1350.1	10201.	1350.3	10202.						
ET		4.1	9963.	10036.					
X120.335	27.	9958.	10032.	510.	470.	491.			
GR1349.5	9230.	1351.4	9312.	1349.1	9322.	1350.7	9340.	1351.	9476.
GR1351.2	9592.	1350.4	9726.	1350.1	9808.	1351.1	9820.	1351.4	9850.
GR1351.8	9928.	1347.7	9950.	1344.	9958.	1337.7	9971.	1337.3	9987.
GR1337.4	10000.	1338.3	10021.	1344.	10032.	1349.	10042.	1351.8	10056.
GR1351.1	10100.	1351.6	10141.	1350.	10144.	1350.	10166.	1350.	10240.
GR1350.8	10328.	1351.4	10406.						

*
* 11TH AVENUE (SPECIAL BRIDGE)
*

NC			0.3	0.5					
X120.347	25.	9970.	10021.	1.	150.	63.			
X3	10.						1351.5	1351.5	
GR1349.5	9230.	1351.4	9312.	1349.1	9322.	1350.7	9340.	1351.	9476.
GR1351.2	9592.	1350.4	9726.	1350.1	9808.	1351.1	9820.	1351.4	9850.
GR1351.8	9928.	1347.7	9950.	1344.	9958.	1337.2	9970.	1337.2	10021.
GR 1344.	10032.	1349.	10042.	1351.8	10056.	1351.1	10100.	1351.6	10141.
GR 1350.	10144.	1350.	10166.	1350.	10240.	1350.8	10328.	1351.4	10406.
SB 1.25	1.56	3.0	100.	51.	3.	576.	0.	1337.7	1337.2
X120.366				100.	100.	100.			

*
* ELTRD IS 1352.5+2HV = 1354.5
*

X2		1.	1349.7	1354.5					
X3	10.						1352.5	1352.5	
ET		4.1	9958.	10072.					
X120.423	21.	9975.	10045.	415.	205.	301.			
GR1354.3	9418.	1353.8	9613.	1355.3	9653.	1354.6	9696.	1353.3	9711.
GR1353.6	9724.	1353.5	9931.	1352.	9950.	1345.	9975.	1338.	10000.
GR1339.4	10027.	1339.7	10037.	1344.3	10045.	1345.	10055.	1353.3	10085.
GR1353.5	10100.	1354.7	10127.	1354.4	10214.	1354.3	10273.	1353.3	10300.
GR1353.5	10333.								

*

* 10TH AVENUE (SPECIAL BRIDGE)

X120.430	20.	9985.	10036.	1.	65.	37.			
X3 10.							1352.5	1352.5	
GR1354.3	9418.	1353.8	9613.	1355.3	9653.	1354.6	9696.	1353.3	9711.
GR1353.6	9724.	1353.5	9931.	1352.	9950.	1345.	9975.	1339.3	9985.
GR1339.3	10036.	1344.3	10045.	1345.	10055.	1353.3	10085.	1353.5	10100.
GR1354.7	10127.	1354.4	10214.	1354.3	10273.	1353.3	10300.	1353.5	10333.
SB 1.25	1.56	3.0	100.	51.	3.	576.	0.	1339.3	1339.3
X120.444				70.	70.	70.			

*
* ELTRD IS 1353.5+2HV = 1355.5

X2		1.	1351.3	1355.5					
X3 10.							1353.5	1353.5	
ET		4.1	9930.	10069.					
X120.529	19.	9947.	10055.	545.	375.	449.			
GR 1354.	9570.	1353.7	9764.	1354.8	9836.	1355.	9885.	1354.7	9898.
GR1350.7	9910.	1350.2	9947.	1343.4	9963.	1343.4	9990.	1343.3	10000.
GR 1343.	10025.	1348.6	10041.	1350.4	10055.	1350.8	10090.	1355.	10105.
GR1354.4	10159.	1355.	10192.	1355.	10302.	1355.2	10313.		
NC			0.1	0.3					
ET		4.1	9935.	10065.					
X120.628	16.	9909.	10076.	530.	520.	523.			
GR1357.3	9532.	1357.3	9624.	1356.8	9754.	1357.2	9808.	1357.1	9909.
GR1351.5	9922.	1350.2	9947.	1343.3	9959.	1343.6	9991.	1343.6	10000.
GR1343.7	10044.	1356.3	10076.	1357.	10082.	1357.1	10137.	1357.2	10282.
GR 1358.	10337.								
ET		4.1	9962.	10026.					
X120.725	20.	9951.	10036.	510.	520.	512.			
GR1360.3	9544.	1361.1	9631.	1361.3	9734.	1361.	9783.	1362.	9858.
GR1360.8	9940.	1360.4	9951.	1350.4	9970.	1350.4	9981.	1348.3	9984.
GR1347.4	9992.	1347.2	10000.	1347.4	10010.	1361.	10036.	1363.4	10046.
GR1363.8	10101.	1364.1	10156.	1364.7	10184.	1365.1	10212.	1364.7	10291.

* PHELPS ROAD (SPECIAL BRIDGE)

NC			0.3	0.5					
X120.737	16.	9968.	10019.	80.	80.	80.		3.4	
X3 10.							1363.	1363.	
GR1360.3	9544.	1361.1	9631.	1361.3	9734.	1361.	9783.	1362.	9858.
GR1360.8	9940.	1360.4	9951.	1347.5	9968.	1347.5	10019.	1361.	10036.
GR1363.4	10046.	1363.8	10101.	1364.1	10156.	1364.7	10184.	1365.1	10212.
GR1364.7	10291.								
SB 1.25	1.56	3.0	100.	51.	3.	576.	0.	1351.0	1350.9
X120.750				71.	71.	71.		0.1	

*
* ELTRD IS 1364+2HV = 1366.0

X2		1.	1363.	1366.					
X3 10.							1364.	1364.	

* BELL ROAD (SPECIAL BRIDGE) A SECTION TAKEN UPSTREAM OF BELL ROAD AT
* RM 20.845 IS USED TO MODEL THE BELL ROAD BRIDGE. GR CARDS ARE REPEATED
* AT THE DOWNSTREAM FACE WITH PSXECE = -0.9. TO MORE APPROPRIATELY MODEL
* CONTRACTION LOSSES, THE UPSTREAM SECTION IS PRESENTED AT RM 20.860
* INSTEAD OF RM 20.845 WHERE THE AERIAL SECTION WAS TAKEN.

X120.819	12.	9965.	10043.	375.	345.	365.		-0.9	
X3 10.							1366.9	1366.9	
GR1366.5	9554.	1365.4	9663.	1365.5	9777.	1365.5	9846.	1365.3	9942.
GR1357.4	9965.	1357.4	10043.	1367.6	10066.	1366.2	10107.	1366.2	10146.
GR 1367.	10166.	1367.2	10169.						

	SB	1.05	1.56	3.0	100.	cavefema.dat	77.3	3.3	655.	0.	1357.4	1356.5
X120.841							115.	115.	115.		0.9	
*												
*												
*												
ELTRD IS												
X2												
X3 10.												
ET												
X120.860												
X3 10.												
GR 1370.												
GR1356.3												
GR1366.2												
NC 0.04												
ET												
X120.942												
GR1372.5												
GR1367.6												
GR1359.8												
GR1360.3												
GR1365.7												
GR1368.3												
NC 0.04												
ET												
X121.036												
GR1376.1												
GR1371.6												
GR1366.3												
GR1371.2												
ET												
X121.127												
X3 10.												
GR1378.9												
GR1373.7												
GR1367.8												
ET												
X121.230												
GR1381.5												
GR1379.3												
GR1379.5												
GR1374.7												
GR1379.3												
GR1377.7												
ET												
X121.363												
GR1384.8												
GR1384.4												
GR1383.5												
GR1382.2												
GR1384.3												
GR1383.1												
GR1383.2												
GR 1375.												
GR1377.5												
GR1382.7												
GR1384.3												
ET												
X121.484												
GR1386.8												
GR1385.2												
GR1383.9												
GR1386.2												
GR1378.6												

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GR1385.5	10060.	1388.2	10068.	1385.8	10075.	1387.4	10079.	1387.4	10101.
GR1387.6	10116.	1387.5	10131.	1387.4	10134.				
ET		4.1	9940.	10165.					
X121.576	43.	9980.	10087.	320.	480.	486.			
GR1388.7	9388.	1388.6	9414.	1388.2	9461.	1388.5	9500.	1389.3	9532.
GR1388.7	9570.	1388.5	9607.	1387.9	9643.	1388.6	9664.	1388.8	9705.
GR1389.1	9743.	1388.9	9780.	1388.	9821.	1388.4	9852.	1388.7	9889.
GR1389.1	9922.	1389.7	9952.	1390.1	9968.	1390.	9980.	1382.5	9994.
GR1382.1	10000.	1382.2	10008.	1383.8	10015.	1385.1	10038.	1385.2	10056.
GR1384.1	10065.	1384.6	10073.	1388.3	10087.	1387.1	10114.	1387.1	10140.
GR1387.8	10162.	1387.7	10199.	1388.4	10243.	1388.7	10281.	1389.3	10300.
GR1390.3	10307.	1389.2	10313.	1390.7	10320.	1387.6	10329.	1388.9	10335.
GR1389.7	10348.	1390.2	10360.	1390.3	10386.				
QT	2.	5500.	5500.						
ET		4.1	9890.	10115.					
X121.669	35.	9962.	10031.	440.	470.	491.			
GR1393.2	9392.	1393.	9426.	1392.7	9446.	1392.3	9515.	1392.9	9562.
GR1392.2	9606.	1392.8	9663.	1392.7	9710.	1393.1	9742.	1393.5	9777.
GR1393.3	9819.	1392.7	9858.	1392.2	9893.	1391.6	9925.	1392.	9949.
GR1393.8	9962.	1392.7	9974.	1392.2	9982.	1385.	9989.	1384.	9997.
GR1384.5	10000.	1385.1	10011.	1388.7	10023.	1392.	10031.	1391.2	10045.
GR 1392.	10074.	1391.7	10124.	1391.9	10182.	1392.	10245.	1392.1	10303.
GR1391.9	10361.	1392.	10395.	1392.6	10401.	1391.6	10404.	1393.3	10414.
ET		4.1	9940.	10140.					
X121.742	25.	9975.	10091.	430.	390.	385.			
GR 1396.	9733.	1394.6	9753.	1395.1	9777.	1395.	9802.	1395.	9839.
GR1395.6	9885.	1395.1	9930.	1395.3	9940.	1394.7	9975.	1387.4	9991.
GR1386.4	10000.	1386.9	10015.	1392.2	10035.	1391.9	10052.	1389.9	10062.
GR1391.5	10080.	1394.2	10091.	1394.2	10126.	1394.9	10176.	1395.	10240.
GR1394.6	10281.	1394.8	10324.	1395.2	10355.	1395.3	10367.	1397.3	10376.
ET		4.1	9900.	10100.					
X121.840	22.	9946.	10054.	430.	430.	517.			
GR1401.5	9827.	1402.1	9842.	1397.3	9860.	1395.5	9882.	1395.	9913.
GR1395.3	9931.	1396.2	9946.	1395.7	9953.	1392.1	9967.	1392.6	9984.
GR1393.7	9997.	1393.3	10000.	1392.5	10020.	1391.1	10033.	1393.5	10045.
GR 1397.	10054.	1396.5	10097.	1397.3	10145.	1397.8	10186.	1397.5	10227.
GR1397.6	10273.	1398.3	10308.						
ET		4.1	9830.	10080.					
X121.895	31.	9975.	10031.	330.	220.	290.			
GR1402.6	9807.	1402.6	9825.	1398.4	9839.	1397.2	9857.	1396.7	9885.
GR1396.7	9919.	1397.7	9939.	1397.9	9960.	1398.	9975.	1397.1	9981.
GR 1393.	9990.	1391.9	10000.	1392.3	10010.	1394.	10021.	1397.7	10031.
GR1398.6	10046.	1399.	10078.	1398.4	10113.	1398.6	10149.	1398.7	10187.
GR1398.5	10225.	1398.1	10251.	1398.6	10292.	1398.6	10333.	1399.3	10364.
GR1398.8	10399.	1399.5	10428.	1400.5	10446.	1400.5	10458.	1399.7	10463.
GR1400.9	10470.								

*
 * UNION HILLS RD: PIPES BENEATH LOW CROSSING WERE MODELLED AS AN AREA
 * (BAREA) WITH AN ORIFICE COEFFICIENT. THE 100 YEAR FLOW THROUGH THE
 * PIPES WAS NEGLIGIBLE (18 CFS). UNION HILLS IS THEREFORE MORE
 * APPROPRIATELY MODELLED AS A NORMAL SECTION USING GR CARDS.
 *

ET		4.1	9650.	10070.					
X121.933	12.	9865.	10140.	210.	210.				
GR 1402.	9060.	1400.3	9440.	1400.	9590.	1398.	9680.	1397.4	9725.
GR 1398.	9780.	1399.4	9840.	1398.	9865.	1396.8	10000.	1398.	10140.
GR 1400.	10285.	1406.	10286.						
NC 0.045	0.045	0.045							
ET		4.1	9630.	10051.					
X121.953	39.	9969.	10029.	75.	74.				
GR 1402.	9320.	1400.5	9487.	1400.8	9527.	1401.4	9557.	1400.2	9580.
GR1401.7	9599.	1401.1	9621.	1400.2	9647.	1399.6	9678.	1398.8	9699.
GR1398.3	9714.	1397.6	9720.	1396.6	9725.	1398.8	9735.	1399.3	9745.

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GR1398.8	9759.	1397.3	9768.	1398.9	9782.	1398.9	9810.	1400.1	9832.
GR1402.1	9851.	1401.7	9870.	1403.3	9884.	1403.7	9893.	1403.4	9912.
GR1402.3	9939.	1401.	9956.	1399.7	9965.	1400.2	9969.	1395.6	9986.
GR1394.4	9997.	1394.1	10000.	1394.	10010.	1394.9	10018.	1398.3	10029.
GR1400.1	10044.	1401.6	10058.	1401.4	10064.	1407.	10065.		
ET		4.1	9620.	10030.					
X122.065	39.	9961.	10028.	430.	630.	591.			
GR1404.2	9230.	1404.	9250.	1402.	9270.	1402.	9500.	1403.1	9594.
GR1403.6	9604.	1400.4	9627.	1400.1	9645.	1400.6	9657.	1400.3	9680.
GR1400.5	9700.	1401.9	9717.	1403.3	9731.	1403.7	9746.	1403.9	9761.
GR1400.1	9776.	1400.	9785.	1401.1	9796.	1401.	9816.	1403.7	9829.
GR1403.7	9843.	1400.7	9861.	1399.7	9869.	1402.7	9890.	1403.5	9899.
GR1404.1	9915.	1404.8	9934.	1403.6	9950.	1404.1	9961.	1401.4	9977.
GR 1398.	9989.	1395.8	9995.	1395.8	10000.	1395.9	10006.	1399.4	10010.
GR 1402.	10028.	1402.6	10043.	1406.6	10061.	1407.1	10085.		
ET		4.1	9620.	10020.					
X122.165	63.	9983.	10018.	530.	530.	528.			
GR 1406.	9130.	1405.2	9138.	1405.	9151.	1404.4	9164.	1402.8	9176.
GR1402.7	9184.	1400.8	9204.	1399.8	9213.	1399.3	9222.	1401.2	9232.
GR 1403.	9256.	1403.8	9282.	1403.8	9308.	1404.3	9334.	1404.2	9364.
GR1404.1	9396.	1404.	9425.	1404.9	9463.	1405.2	9499.	1405.3	9526.
GR1404.9	9548.	1403.8	9565.	1402.8	9579.	1404.6	9595.	1404.8	9608.
GR1402.4	9624.	1400.	9637.	1399.7	9645.	1400.6	9657.	1402.	9669.
GR1403.1	9686.	1404.5	9701.	1405.8	9714.	1406.2	9728.	1406.1	9741.
GR 1404.	9753.	1403.8	9760.	1405.2	9772.	1405.6	9784.	1405.3	9793.
GR1402.9	9806.	1402.7	9820.	1402.6	9834.	1402.6	9843.	1401.8	9849.
GR1401.9	9862.	1402.8	9872.	1403.8	9876.	1405.	9894.	1406.1	9909.
GR1405.4	9919.	1403.1	9930.	1403.	9946.	1402.1	9967.	1400.9	9983.
GR1395.3	9994.	1395.	10000.	1396.1	10007.	1403.7	10018.	1404.8	10038.
GR1405.2	10053.	1405.2	10060.	1405.7	10065.				
ET		4.1	9650.	10027.					
X122.273	57.	9933.	10028.	470.	580.	570.			
GR1418.7	9227.	1418.7	9238.	1412.4	9262.	1411.6	9274.	1410.9	9284.
GR 1409.	9292.	1407.6	9300.	1407.3	9314.	1406.3	9325.	1403.5	9335.
GR1403.1	9344.	1403.	9350.	1404.3	9359.	1405.4	9369.	1405.8	9386.
GR1406.7	9408.	1407.1	9427.	1407.4	9444.	1407.2	9460.	1406.4	9473.
GR1406.5	9485.	1406.9	9502.	1407.7	9520.	1408.2	9532.	1407.1	9558.
GR1404.4	9574.	1404.3	9598.	1406.	9622.	1407.	9657.	1407.3	9686.
GR1406.2	9708.	1406.4	9727.	1406.4	9745.	1405.6	9754.	1402.6	9766.
GR1402.8	9774.	1406.7	9789.	1409.4	9801.	1408.5	9827.	1407.9	9851.
GR1408.8	9869.	1406.3	9887.	1407.	9902.	1404.	9915.	1404.1	9933.
GR1403.2	9948.	1401.8	9961.	1400.6	9977.	1400.1	9992.	1399.4	9999.
GR1399.8	10000.	1401.2	10011.	1404.	10021.	1406.9	10028.	1408.	10050.
GR1408.3	10080.	1408.7	10109.						
ET		4.1	9860.	10040.					
X122.410	25.	9973.	10027.	750.	630.	723.			
GR 1420.	9802.	1419.1	9817.	1418.8	9825.	1415.8	9838.	1414.8	9850.
GR1412.6	9867.	1413.9	9879.	1412.	9890.	1413.4	9903.	1414.5	9914.
GR1416.1	9922.	1414.	9931.	1412.4	9941.	1411.4	9954.	1411.2	9967.
GR1410.7	9973.	1405.7	9987.	1404.9	9997.	1404.	10000.	1404.7	10007.
GR1407.6	10017.	1411.3	10027.	1413.5	10042.	1413.8	10057.	1414.4	10071.
ET		4.1	9890.	10050.					
X122.483	19.	9941.	10105.	380.	390.	385.			
GR 1421.	9823.	1420.2	9843.	1416.7	9873.	1414.4	9891.	1413.1	9915.
GR1411.1	9941.	1407.8	9961.	1406.2	9984.	1405.5	10000.	1405.5	10027.
GR1406.4	10056.	1408.3	10084.	1411.2	10105.	1412.3	10120.	1412.6	10138.
GR1412.6	10156.	1411.9	10175.	1412.7	10191.	1419.8	10208.		
ET		4.1	9968.	10064.					
X122.578	13.	9968.	10072.	540.	490.	502.			
GR1417.2	9914.	1417.6	9942.	1416.4	9958.	1416.6	9968.	1406.7	9983.
GR1406.7	9993.	1407.5	10000.	1408.5	10024.	1408.5	10040.	1408.8	10050.
GR1415.6	10063.	1421.2	10072.	1421.4	10090.				
ET		4.1	9830.	10028.					

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X122.675	19.	9736.	10032.	570.	480.	512.			
GR1419.9	9671.	1419.9	9710.	1419.8	9736.	1410.6	9759.	1411.1	9783.
GR1410.6	9809.	1409.7	9828.	1410.8	9850.	1411.5	9873.	1413.4	9892.
GR1412.2	9922.	1411.	9950.	1411.	9976.	1410.7	10000.	1410.6	10015.
GR 1420.	10032.	1428.3	10047.	1426.6	10055.	1426.	10060.		
ET		4.1	9977.	10160.					
X122.794	20.	9983.	10169.	460.	500.	628.			
GR1420.6	9968.	1417.8	9983.	1413.6	9998.	1412.4	10000.	1412.3	10013.
GR1410.7	10041.	1411.6	10065.	1413.7	10080.	1413.8	10103.	1414.2	10119.
GR1411.7	10136.	1413.8	10151.	1416.1	10169.	1417.2	10189.	1420.3	10202.
GR1423.1	10219.	1427.	10244.	1429.9	10261.	1429.8	10278.	1429.8	10282.
ET		4.1	9951.	10120.					
X122.880	34.	9927.	10167.	440.	480.	454.			
GR1427.3	9791.	1427.	9807.	1426.5	9815.	1424.8	9827.	1424.6	9838.
GR1424.8	9863.	1424.8	9883.	1424.5	9903.	1424.7	9917.	1426.4	9927.
GR1423.9	9934.	1421.4	9947.	1418.5	9958.	1416.1	9968.	1415.	9984.
GR 1414.	9999.	1414.3	10000.	1414.5	10012.	1415.2	10024.	1416.1	10048.
GR1416.5	10067.	1416.4	10101.	1416.2	10125.	1415.5	10143.	1413.2	10152.
GR 1413.	10156.	1414.8	10160.	1424.2	10167.	1426.6	10188.	1428.4	10200.
GR1430.9	10214.	1433.5	10230.	1433.8	10241.	1433.5	10248.		
ET		4.1	9890.	10026.					
X122.990	35.	9739.	10034.	480.	530.	581.			
GR1427.7	9668.	1427.6	9697.	1425.6	9719.	1425.3	9730.	1425.4	9739.
GR1423.9	9751.	1422.5	9767.	1422.4	9785.	1421.5	9804.	1421.3	9817.
GR1421.3	9829.	1420.8	9843.	1419.5	9855.	1418.9	9864.	1417.9	9873.
GR1419.4	9886.	1420.	9903.	1420.6	9921.	1420.8	9935.	1420.3	9949.
GR 1420.	9963.	1419.1	9977.	1419.1	9995.	1419.1	10000.	1418.7	10014.
GR1420.3	10020.	1427.9	10034.	1427.3	10044.	1428.3	10060.	1430.5	10076.
GR1435.7	10094.	1437.4	10108.	1438.7	10119.	1436.3	10126.	1435.1	10133.
ET		4.1	9958.	10090.					
X123.097	48.	9951.	10121.	640.	490.	565.			
GR1433.9	9713.	1433.9	9740.	1433.8	9758.	1432.3	9772.	1432.1	9778.
GR1433.5	9794.	1433.5	9811.	1433.5	9835.	1433.4	9849.	1431.1	9864.
GR 1430.	9878.	1430.1	9885.	1431.	9892.	1429.6	9901.	1429.1	9916.
GR1429.6	9925.	1431.3	9935.	1432.2	9945.	1432.3	9951.	1427.9	9964.
GR1426.4	9977.	1425.6	9988.	1425.1	9999.	1425.1	10000.	1426.	10012.
GR1426.1	10021.	1426.5	10044.	1426.5	10063.	1426.5	10073.	1426.5	10082.
GR1425.5	10093.	1426.4	10101.	1428.5	10112.	1430.8	10121.	1430.1	10135.
GR 1430.	10150.	1431.6	10163.	1432.8	10176.	1433.	10198.	1432.7	10221.
GR1431.6	10247.	1430.9	10267.	1430.6	10286.	1431.5	10296.	1433.4	10310.
GR1438.3	10337.	1439.7	10353.	1440.5	10363.				

* THE BEARDSLEY ROAD LOW CROSSING IS MODELLED WITH GR CARDS AS A NORMAL
 * CROSS SECTION. THE BEARDSLEY ROAD CENTERLINE IS AT RM 23.168
 *

ET		4.1	9830.	10140.					
X123.168	22.	9777.	10116.	330.	300.	375.			
GR1435.4	9358.	1435.5	9412.	1435.6	9477.	1434.7	9533.	1433.2	9598.
GR1431.8	9657.	1430.8	9718.	1429.5	9777.	1428.9	9827.	1429.	9877.
GR1429.1	9942.	1429.	9999.	1429.1	10000.	1429.8	10053.	1430.3	10116.
GR1431.8	10176.	1433.6	10230.	1434.3	10274.	1434.9	10326.	1435.5	10363.
GR1435.6	10399.	1435.8	10409.						

* DUE TO BREAKOUTS (SPLIT FLOWS) BETWEEN RM 23.55 AND RM 23.8, THE
 * 50 AND 100 YEAR Q'S ARE REDUCED PER THE FOLLOWING TABLE.
 *

* NO ENCROACHMENTS ARE COMPUTED FOR THE FOLLOWING REACH BETWEEN RM 23.253
 * AND 7TH STREET. FOR PURPOSES OF A FLOODWAY, A 100 FT CORRIDOR IS MAIN-
 * TAINED OUTSIDE OF THE LEVEES (WHICH ARE LIKELY TO BE ERODABLE) TO PASS
 * THE SPLIT FLOWS WHICH HAVE BEEN REMOVED FROM THE MODEL, AS DISCUSSED
 * WITH CITY OF PHOENIX AND FLOOD CONTROL DISTRICT REPRESENTATIVES. IF THIS
 * CORRIDOR IS NOT MAINTAINED, THE REDUCTION IN Q FOR THIS MODEL IS NOT
 * VALID, RESULTING IN A FLOODWAY PROFILE ABOVE THE NATURAL PROFILE BY MORE

THAN THE STATUTORY 1.0 FT.

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FULL Q REDUCED Q

50 YEAR 4800. 3300

100 YEAR 5500. 3400

THE 10 YEAR Q (3200 CFS) IS UNAFFECTED

QT	2.	3400.	3400.							
NC	0.035	0.05	0.04							
ET			4.1	9978.5	10023.2					
X123.253		8.	9973.	10038.	470.	450.	459.			
GR1437.5	9973.	1425.5	9995.	1425.2	10000.	1427.4	10008.	1429.2	10015.	
GR1444.2	10038.	1444.9	10052.	1445.	10060.					
ET			4.1	9969.	10036.					
X123.334		10.	9962.	10055.	400.	420.	417.			
GR1443.8	9962.	1435.6	9979.	1433.2	9990.	1432.6	10000.	1433.2	10012.	
GR1435.4	10022.	1438.5	10032.	1444.2	10044.	1449.8	10055.	1449.6	10063.	
X123.416		10.	9974.	10053.	400.	430.	433.			
GR1447.7	9958.	1447.8	9974.	1439.2	9989.	1436.5	9999.	1436.6	10000.	
GR1437.2	10017.	1437.6	10030.	1444.4	10041.	1450.2	10053.	1450.4	10066.	
X123.514		8.	9973.	10039.	560.	470.	517.			
GR1451.5	9965.	1451.4	9973.	1439.8	9989.	1439.6	10000.	1440.1	10012.	
GR1441.5	10022.	1443.6	10029.	1451.1	10039.					

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SPECIAL BRIDGE IS USED TO MODEL EMBANKMENT PLACED IN THE CHANNEL TO ALLOW VEHICULAR ACCESS BETWEEN THE LANDFILL ON THE LEFT AND THE GRAVEL PIT ON THE RIGHT. THE EMBANKMENT MAY WASH OUT, BUT FOR THIS STUDY, IT IS ASSUMED TO REMAIN. LOW FLOWS PASS THROUGH 2-36" CMP'S.

X123.544				190.	150.	158.		1.8		
X3	10.						1445.	1445.		
SB	1.25	2.48	3.2	0.	5.7	1.	14.1	0.	1442.	1441.4
X123.555				60.	60.	60.		0.6		

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*

ELTRD IS 1448.4+0.6HV = 1449

X2			1.	1445.	1449.					
X3	10.						1480.	1480.		
BT	10.	9930.	1452.	0.	9939.	1451.2	0.	9951.	1451.1	0.
BT	9967.	1449.8	0.	9987.	1448.4	0.	10000.	1448.4	0.	10019.
BT1448.6	0.	10041.	1449.5	0.	10055.	1450.	0.	10070.	1452.	
BT	0.									
X123.591		17.	9968.	10045.	100.	210.	190.			

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ARTIFICIAL LEVEES ARE SET VERY HIGH ON THE LEFT AND RIGHT OVERBANKS USING THE X3 CARD TO CONSIDER ONLY THE CHANNEL AREA AS EFFECTIVE. SPLIT FLOW THAT BREAKS OUT UPSTREAM IS ACCOUNTED FOR BY THE REDUCED Q. FLOWS ARE RETURNED TO CAVE CREEK DOWNSTREAM AT BEARDSLEY ROAD.

X3	10.						1480.	1480.		
GR	1460.	9700.	1448.	9760.	1448.	9850.	1452.9	9959.	1452.9	9968.
GR1446.8	9982.	1444.6	9993.	1444.2	10000.	1444.2	10013.	1444.9	10023.	
GR1449.9	10036.	1453.8	10045.	1451.9	10048.	1448.	10070.	1448.	10430.	
GR	1450.	10770.	1452.	11200.						
X123.691		43.	9965.	10036.	510.	540.	528.			

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HIGH ARTIFICIAL LEVEE

X3	10.						1480.	1480.		
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GR1461.1	9722.	1449.4	9747.	1449.4	9767.	1449.5	9784.	1449.1	9800.
GR1448.3	9819.	1448.6	9832.	1448.3	9866.	1449.	9894.	1449.3	9913.
GR1450.2	9925.	1453.5	9936.	1456.1	9944.	1455.4	9951.	1457.3	9955.
GR1457.6	9965.	1450.8	9980.	1448.5	9985.	1447.2	9991.	1446.6	9999.
GR1446.4	10000.	1447.	10011.	1449.6	10017.	1451.3	10028.	1455.3	10036.
GR1453.2	10045.	1452.4	10054.	1451.3	10057.	1452.2	10062.	1452.4	10077.
GR1452.2	10094.	1451.7	10108.	1452.6	10117.	1451.4	10123.	1452.7	10128.
GR 1451.	10138.	1452.3	10143.	1451.7	10147.	1453.4	10155.	1452.1	10160.
GR 1452.	10320.	1454.	10560.	1456.	10730.				

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*

Q IS NOW CHANGED TO BE THE AVERAGE OF THE FULL Q UPSTREAM OF THE BREAKOUT AND OF THE REDUCED Q DOWNSTREAM OF THE BREAKOUT.

*

QT	2.	4350.	4350.						
X123.815		31.	9951.	10037.	650.	680.	655.		

*

*

HIGH ARTIFICIAL LEVEE

*

X3	10.						1480.	1480.	
GR 1470.	9650.	1459.3	9716.	1453.5	9738.	1453.1	9772.	1453.4	9812.
GR1454.5	9857.	1455.1	9890.	1455.	9914.	1455.4	9941.	1458.9	9951.
GR 1458.	9963.	1451.4	9979.	1449.7	9988.	1449.9	9996.	1449.7	10000.
GR1449.7	10017.	1454.6	10028.	1457.8	10037.	1456.8	10043.	1456.8	10060.
GR1456.9	10081.	1457.1	10110.	1458.2	10140.	1458.4	10157.	1459.5	10172.
GR1458.5	10182.	1456.	10195.	1457.2	10215.	1458.7	10226.	1457.1	10235.
GR1465.5	10249.								

*

*

Q IS NOW CHANGED TO BE THE FULL Q UPSTREAM OF THE BREAKOUT

*

QT	2.	5300.	5300.						
X123.912		12.	9967.	10043.	480.	510.	512.		

*

*

HIGH ARTIFICIAL LEVEE

*

X3	10.						1480.	1480.	
GR1463.9	9868.	1461.7	9878.	1460.6	9898.	1460.7	9925.	1461.4	9950.
GR1461.3	9967.	1451.3	9983.	1447.9	9994.	1448.	10000.	1447.9	10010.
GR1454.9	10026.	1460.9	10043.						
X123.989	9.	9937.	10049.	400.	410.	407.			
GR1465.6	9937.	1457.9	9957.	1452.6	9977.	1450.8	9989.	1449.7	10000.
GR1450.5	10014.	1452.5	10024.	1458.	10036.	1465.8	10049.		

*

*

7TH STREET (SPECIAL BRIDGE). THE GR CARDS FROM SECTION 24.106 TAKEN UPSTREAM OF 7TH STREET ARE REPEATED AT THE DOWNSTREAM FACE OF THE BRIDGE AS SECTION 24.086 WITH PSXECE = -1.3.

*

NC			0.3	0.5					
X124.086	12.	9972.	10044.	450.	560.	512.		-1.3	
X3	10.						1463.7	1463.7	
GR1470.1	9942.	1464.1	9955.	1454.9	9972.	1454.9	10044.	1456.	10052.
GR1458.5	10064.	1461.9	10091.	1463.7	10108.	1465.7	10123.	1466.1	10136.
GR1466.4	10155.	1467.4	10310.						
SB 0.9	1.56	3.	100.	71.6	3.	590.	0.	1453.6	1453.6
X124.096				56.	56.	56.			

*

*

ELTRD IS 1464.7+2HV = 1466.7

*

X2		1.	1462.2	1466.7					
X3	10.						1466.	1466.	
ET		4.1	9955.	10055.					
X124.106	13.	9955.	10064.	80.	20.	53.			
GR1470.1	9942.	1464.1	9955.	1455.2	9972.	1454.7	9997.	1454.2	10000.
GR1454.9	10028.	1456.	10052.	1458.5	10064.	1461.9	10091.	1463.7	10108.

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GR1465.7	10123.	1466.1	10136.	1466.4	10155.				
NC			0.1	0.3					
ET		4.1	9950.	10050.					
X124.195	13.	9933.	10142.	470.	460.	470.			
GR1498.7	9862.	1497.1	9889.	1470.4	9933.	1454.1	9961.	1453.6	9996.
GR1453.6	10000.	1453.9	10032.	1455.5	10052.	1456.3	10073.	1458.8	10093.
GR1462.3	10117.	1466.4	10142.	1468.9	10164.				
ET		4.1	9940.	10080.					
X124.322	11.	9871.	10064.	640.	630.	671.			
GR1473.7	9820.	1463.5	9871.	1453.2	9895.	1451.6	9972.	1452.1	10000.
GR1454.5	10042.	1456.8	10064.	1457.7	10134.	1459.6	10177.	1465.2	10220.
GR1470.9	10262.								
NC 0.045	0.045	0.045							
ET		4.1	9927.	10080.					
X124.444	16.	9928.	10122.	640.	600.	644.			
GR1478.8	9885.	1478.7	9906.	1465.	9928.	1457.6	9939.	1458.	9972.
GR1457.3	9995.	1457.7	10000.	1459.1	10027.	1460.4	10064.	1459.3	10097.
GR1461.7	10122.	1458.9	10142.	1460.7	10166.	1460.3	10180.	1468.5	10215.
GR1474.2	10230.								
ET		4.1	9950.	10160.					
X124.542	20.	9914.	10187.	470.	530.	517.			
GR1488.2	9844.	1464.	9914.	1463.2	9948.	1460.4	9968.	1459.8	9996.
GR1459.8	10000.	1461.4	10017.	1462.3	10033.	1470.7	10056.	1470.3	10083.
GR1472.2	10112.	1470.9	10127.	1464.4	10141.	1462.5	10166.	1463.	10171.
GR1464.7	10175.	1467.8	10187.	1473.8	10237.	1475.2	10268.	1478.9	10283.

*
 * THE DEER VALLEY ROAD LOW CROSSING IS MODELLED WITH GR CARDS AS A NORMAL
 * CROSS SECTION. THE DEER VALLEY ROAD CENTERLINE IS AT RM 24.635.
 *

ET		4.1	9940.	10060.					
X124.635	8.	9876.	10111.	650.	220.	491.			
GR1480.9	9752.	1474.5	9876.	1467.	9983.	1466.8	10000.	1467.9	10037.
GR1472.4	10111.	1478.6	10193.	1480.1	10247.				
QT	2.	5200.	5200.						

*
 * DIVIDED FLOW OCCURS FROM SECTION 24.738 TO 25.163. ALTHOUGH THE RIGHT
 * OVERBANK IS SOMETIMES LOWER THAN THE CHANNEL, EFFECTIVE FLOW IS
 * CONTROLLED DOWNSTREAM AT SECTION 24.738. OVERBANK LOW ELEVATIONS ARE
 * ARTIFICIALLY ADJUSTED AT SECTIONS 24.838 TO 25.163 TO YIELD QROB =
 * QROB AT SECTION 24.738 + OR - 10%. NATURAL CONDITIONS AT SECTION
 * 25.048 RESULT IN A QROB THAT IS LESS THAN SECTION 24.738.
 *

ET		4.1	9936.	10200.					
X124.738	21.	9897.	10038.	350.	630.	544.			
GR1490.4	9703.	1489.7	9717.	1479.2	9736.	1479.3	9805.	1477.7	9884.
GR1481.2	9897.	1477.6	9931.	1472.8	9965.	1472.3	9986.	1472.	10000.
GR1473.5	10023.	1480.9	10038.	1476.7	10045.	1480.8	10067.	1477.6	10079.
GR1473.6	10088.	1473.6	10127.	1472.5	10224.	1474.4	10291.	1473.6	10330.
GR1477.6	10343.								
ET		4.1	9968.	10350.					
X124.838	20.	9945.	10019.	470.	450.	528.			
* 1488.5	9909.	1483.8	9945.	1477.7	9986.	1474.8	9991.	1474.7	10000.
* 1475.	10004.	1483.5	10019.	1477.3	10032.	1479.5	10066.	1469.1	10111.
* 1467.6	10133.	1468.5	10162.	1472.5	10185.	1469.9	10199.	1469.7	10219.
* 1470.	10270.	1466.	10365.	1466.	10450.	1468.	10630.	1490.	10660.
GR1488.5	9909.	1483.8	9945.	1477.7	9986.	1474.8	9991.	1474.7	10000.
GR 1475.	10004.	1483.5	10019.	1479.	10032.	1479.5	10066.	1479.	10111.
GR 1479.	10133.	1479.	10162.	1479.	10185.	1479.	10199.	1479.	10219.
GR 1479.	10270.	1479.	10365.	1479.	10450.	1479.	10630.	1490.	10660.
ET		4.1	9860.	10300.					
X124.943	17.	9983.	10017.	530.	570.	554.			
* 1504.8	9651.	1494.9	9694.	1493.1	9736.	1481.7	9813.	1480.7	9926.
* 1482.4	9945.	1481.8	9983.	1478.	9990.	1477.9	10000.	1477.7	10004.

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* 1484.8	10017.	1483.6	10032.	1478.1	10044.	1470.	10080.	1470.	10540.
* 1480.	10610.	1503.3	10690.						
GR1504.8	9651.	1494.9	9694.	1493.1	9736.	1481.7	9813.	1480.7	9926.
GR1482.4	9945.	1481.8	9983.	1478.	9990.	1477.9	10000.	1477.7	10004.
GR1484.8	10017.	1483.6	10032.	1481.	10044.	1481.	10080.	1481.	10540.
GR 1481.	10610.	1503.3	10690.						
ET		4.1	9850.	10250.					
X125.048	23.	9966.	10017	580.	520.	554.			
GR1497.2	9659.	1493.6	9692.	1486.7	9707.	1486.	9817.	1486.	9941.
GR1486.6	9966.	1485.7	9981.	1484.	9986.	1484.	10000.	1493.6	10017.
GR1488.3	10026.	1486.	10062.	1485.4	10154.	1486.5	10223.	1483.7	10232.
GR1484.6	10247.	1488.	10258.	1487.5	10405.	1492.2	10420.	1489.	10431.
GR 1484.	10450.	1484.	10470.	1500.	10525.				
QT 2.	4900.	4900.							
ET		4.1	9940.	10175.					
X125.163	16.	9972.	10025.	640.	580.	607.			
* 1499.3	9878.	1492.6	9917.	1490.2	9947.	1489.9	9965.	1491.6	9972.
* 1486.2	9984.	1486.3	10000.	1486.	10005.	1493.1	10025.	1485.3	10044.
* 1486.3	10088.	1486.3	10147.	1486.4	10220.	1488.4	10291.	1498.8	10312.
* 1499.8	10417.								
GR1499.3	9878.	1492.6	9917.	1490.2	9947.	1489.9	9965.	1491.6	9972.
GR1486.2	9984.	1486.3	10000.	1486.	10005.	1493.1	10025.	1489.	10044.
GR 1489.	10088.	1489.	10147.	1489.	10220.	1489.	10291.	1498.8	10312.
GR1499.8	10417.								

* THE BREAKOUT IN THE RIGHT OVERBANK IS NOT EFFECTIVE DUE TO DOWNSTREAM
 * PONDING. HIGH ARTIFICIAL LEVEES HAVE BEEN SET ON THE RIGHT AT SECTIONS
 * 25.262, 25.374, AND 25.434.
 *

ET		4.1	9750.	10023.					
X125.262	28.	9948.	10030.	470.	570.	523.			
X3 10.							1491.6	1510.	
GR1503.2	9465.	1506.4	9470.	1489.6	9513.	1490.2	9547.	1492.2	9618.
GR1491.5	9646.	1492.7	9689.	1492.6	9707.	1490.5	9823.	1491.6	9948.
GR1489.1	9969.	1493.6	9987.	1490.2	10000.	1490.8	10016.	1496.8	10030.
GR1488.4	10044.	1487.4	10059.	1486.	10070.	1484.4	10260.	1486.	10380.
GR 1492.	10420.	1492.	10450.	1484.	10475.	1484.	10510.	1488.	10535.
GR 1486.	10575.	1488.	10585.	1494.	10610.				
ET		4.1	9925.	10023.					
X125.374	16.	9969.	10023.	680.	300.	591.			
X3 10.							1499.3		
GR 1510.	9628.	1498.2	9659.	1496.	9704.	1495.7	9838.	1496.2	9920.
GR 1496.	9933.	1497.8	9944.	1497.8	9950.	1495.6	9955.	1496.7	9963.
GR1499.3	9969.	1493.5	9986.	1493.3	10000.	1493.5	10011.	1498.8	10023.
GR 1510.	10023.1								
NC 0.05	0.035	0.035							
ET		4.1	9970.	10036.					
X125.434	14.	9968.	10036.	400.	190.	317.			
X3 10.							1504.9		
GR1511.5	9463.	1506.8	9561.	1504.8	9631.	1504.9	9716.	1502.	9788.
GR1501.3	9885.	1500.8	9942.	1500.6	9954.	1504.9	9968.	1496.8	9990.
GR1496.6	10000.	1495.8	10018.	1504.	10036.	1510.	10036.1		
ET		4.1	9970.	10050.					
X125.500	9.	9908.	10105.	250.	420.	349.			
GR1511.5	9908.	1506.9	9927.	1504.5	9943.	1499.9	9957.	1497.7	10000.
GR1498.5	10025.	1503.7	10061.	1507.7	10094.	1509.	10105.		

* CAP CANAL OVERSHOOT STRUCTURE

* 0.3 0.5

* SECTION IN DOWNSTREAM OUTLET OF OVERSHOOT IN STILLING POOL

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ET 4.1 9960. 10040.
 X125.523 9. 9963. 10037. 120. 120. 121.
 GR 1510. 9900. 1508. 9930. 1498. 9950. 1498. 9963. 1496. 9964.
 GR 1496. 10036. 1498. 10037. 1498. 10050. 1510. 10100.

SECTION AT DOWNSTREAM CREST OF OVERSHOOT WHERE FLOW PASSES THROUGH CRITICAL DEPTH. DO NOT ENCROACH.

NC 0.05 0.035 0.015
 X125.534 4. 9963. 10037. 58. 58. 58.
 GR 1515. 9963. 1505.54 9964. 1505.54 10036. 1515. 10037.

SECTION AT UPSTREAM END OF NARROW CHUTE. DO NOT ENCROACH.

X125.551 90. 90. 90.

SECTION AT UPSTREAM FLARED ENTRANCE TO OVERSHOOT. DO NOT ENCROACH.

X125.557 4. 9954. 10046. 32. 32. 32.
 GR 1515. 9954. 1505.54 9973. 1505.54 10027. 1515. 10046.

NATURAL SECTION UPSTREAM OF OVERSHOOT. SET ENCROACHMENTS TO NATURAL SSTA & ENDSTA.

NC 0.035 0.035 0.035
 QT 2. 2900. 2900.
 ET 4.1 9949. 10050.
 X125.561 5. 9948. 10069. 20. 20. 21.
 GR1514.9 9948. 1505.6 9971. 1505.7 10000. 1506.3 10048. 1515.2 10069.
 NC 0.1 0.3
 QT 2. 2700. 2700.
 ET 4.1 9950. 10050.
 X125.680 36. 9927. 10093. 580. 660. 628.
 GR1519.8 9136. 1518.8 9203. 1516.1 9267. 1515.7 9325. 1515.7 9359.
 GR1516.7 9372. 1514.9 9462. 1514.2 9504. 1515.2 9516. 1515.6 9559.
 GR1515.7 9593. 1515. 9622. 1516.9 9637. 1515.3 9653. 1512.1 9664.
 GR1512.4 9688. 1513.8 9704. 1518.5 9720. 1510.6 9747. 1514.3 9796.
 GR1513.9 9866. 1514.4 9927. 1508.7 9946. 1511.3 9961. 1511.2 9985.
 GR1506.5 9997. 1506.8 10000. 1506.8 10011. 1510.5 10022. 1511.1 10057.
 GR1509.6 10063. 1511.2 10093. 1512.4 10167. 1510. 10278. 1508.7 10295.
 GR1534.1 10338.
 QT 2. 2500. 2500.
 ET 4.1 9982. 10082.
 X125.786 32. 9978. 10056. 600. 470. 560.
 X3 10. 1518.9
 GR1522.7 9477. 1522.5 9507. 1515.5 9529. 1515.7 9575. 1514.1 9667.
 GR1514.3 9705. 1513.4 9736. 1517. 9753. 1516.8 9776. 1517.2 9794.
 GR1513.5 9822. 1516.2 9837. 1512.2 9848. 1516.5 9872. 1514.6 9883.
 GR 1517. 9913. 1517. 9922. 1515.2 9944. 1518.9 9964. 1518.9 9978.
 GR1511.2 9990. 1511.4 10000. 1510.7 10010. 1514.5 10020. 1512.2 10041.
 GR1515.8 10056. 1515.3 10189. 1517.3 10353. 1515.1 10418. 1514. 10435.
 GR1514.2 10440. 1532.8 10465.
 QT 2. 2300. 2300.
 ET 4.1 9959. 10059.
 X125.947 14. 9950. 10066. 870. 830. 850.
 GR 1524. 9816. 1522.7 9917. 1522.7 9950. 1518.8 9971. 1518.3 9986.
 GR1514.4 10000. 1514.5 10011. 1518.4 10028. 1519.7 10037. 1520.6 10066.
 GR1519.3 10107. 1518.2 10113. 1518.8 10119. 1529.5 10139.
 QT 2. 2200. 2200.
 ET 4.1 9950. 10023.
 X126.058 15. 9966. 10024. 540. 570. 586.
 GR1529.2 9598. 1526.6 9747. 1527.1 9765. 1526. 9790. 1523.3 9845.

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GR1522.1	9904.	1521.1	9927.	1521.	9951.	1522.	9966.	1520.8	9976.
GR1517.4	10000.	1516.2	10010.	1516.8	10014.	1524.	10024.	1541.9	10048.
QT 2.	2000.	2000.							
ET		4.1	9970.	10040.					
X126.152	13.	9956.	10069.	240.	550.	496.			
GR1530.2	9789.	1529.9	9847.	1527.3	9895.	1525.4	9956.	1522.3	9972.
GR 1520.	9982.	1520.1	10000.	1520.5	10018.	1522.2	10050.	1526.	10069.
GR1530.7	10102.	1531.9	10114.	1533.1	10139.				
QT 2.	1900.	1900.							
ET		4.1	9973.	10060.					
X126.265	10.	9955.	10029.	580.	610.	597.			
GR1533.9	9829.	1533.6	9913.	1534.3	9916.	1531.7	9955.	1523.8	9995.
GR 1522.	10000.	1522.5	10010.	1524.8	10015.	1526.5	10029.	1529.5	10115.
QT 2.	1700.	1700.							
ET		4.1	9967.	10064.					
X126.372	14.	9966.	10080.	600.	510.	565.			
GR1558.5	9909.	1544.2	9928.	1535.7	9945.	1531.6	9966.	1528.4	9981.
GR1525.9	9990.	1523.9	9995.	1523.8	10000.	1527.3	10016.	1526.6	10034.
GR1529.9	10055.	1533.8	10080.	1534.6	10100.	1535.5	10116.		
QT 2.	1600.	1600.							
ET		4.1	9955.	10045.					
X126.492	17.	9866.	10084.	640.	610.	634.			
GR1539.5	9819.	1538.5	9851.	1537.5	9866.	1533.3	9880.	1530.9	9891.
GR1530.2	9920.	1527.7	9953.	1525.8	9972.	1525.8	9994.	1525.7	10000.
GR1526.2	10019.	1528.4	10039.	1530.4	10062.	1534.8	10078.	1536.	10084.
GR1536.4	10097.	1537.1	10100.						
NC 0.04	0.04	0.03							
QT 2.	1300.	1300.							
ET		4.1	9945.	10025.					
X126.582	37.	9869.	10028.	460.	480.	475.			
GR1538.6	9388.	1538.3	9411.	1535.	9445.	1532.2	9471.	1530.3	9493.
GR1526.4	9510.	1525.5	9519.	1525.3	9539.	1526.3	9568.	1526.5	9602.
GR1527.2	9622.	1526.7	9655.	1527.3	9691.	1526.9	9725.	1527.2	9752.
GR1527.4	9786.	1528.1	9817.	1527.9	9845.	1528.2	9869.	1526.9	9894.
GR1524.1	9911.	1524.9	9937.	1525.2	9958.	1525.6	9983.	1525.7	10000.
GR 1526.	10014.	1527.2	10028.	1526.4	10047.	1527.2	10086.	1526.5	10123.
GR1526.8	10140.	1528.8	10157.	1528.8	10176.	1533.8	10195.	1536.6	10211.
GR1536.7	10224.	1537.5	10226.						
ET		4.1	9970.	10030.					
X126.673	44.	9955.	10077.	510.	460.	480.			
X3 10.							1535.		
GR1549.8	9490.	1541.8	9544.	1534.8	9585.	1533.1	9600.	1531.8	9629.
GR1530.8	9656.	1530.5	9681.	1530.5	9715.	1530.5	9748.	1531.1	9773.
GR1532.3	9803.	1532.9	9829.	1532.6	9851.	1532.1	9868.	1532.7	9898.
GR1532.9	9922.	1532.6	9944.	1534.3	9955.	1532.6	9970.	1532.7	9988.
GR1532.8	10000.	1531.8	10013.	1532.6	10023.	1532.2	10047.	1531.9	10061.
GR1533.2	10077.	1533.2	10105.	1534.5	10130.	1536.4	10141.	1537.8	10149.
GR1537.4	10165.	1536.9	10192.	1533.6	10205.	1533.2	10237.	1533.2	10265.
GR1534.2	10285.	1534.8	10304.	1535.1	10331.	1535.6	10348.	1539.7	10359.
GR1539.2	10378.	1539.9	10387.	1552.	10411.	1550.3	10420.		
QT 2.	1100.	1100.							
ET		4.1	9981.	10031.					
X126.784	29.	9975.	10080.	590.	530.	586.			
GR1556.2	9628.	1553.4	9629.	1551.5	9652.	1550.5	9674.	1549.6	9695.
GR1548.7	9721.	1549.2	9749.	1548.9	9783.	1549.4	9822.	1549.5	9859.
GR1549.4	9898.	1549.7	9925.	1550.7	9951.	1551.2	9975.	1542.7	9985.
GR1543.2	10000.	1544.4	10019.	1545.4	10045.	1550.2	10069.	1551.5	10080.
GR1550.8	10091.	1551.	10110.	1551.	10132.	1550.9	10150.	1551.	10162.
GR1552.5	10191.	1552.7	10228.	1552.	10271.	1551.9	10279.		
QT 2.	1000.	1000.							
ET		4.1	9975.	10025.					
X126.883	21.	9773.	10122.	530.	500.	523.			
GR1555.5	9726.	1549.5	9759.	1544.7	9773.	1542.	9791.	1540.1	9803.

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GR1540.1	9895.	1540.1	10000.	1540.1	10062.	1540.6	10074.	1541.3	10093.
GR1542.8	10122.	1542.6	10148.	1542.5	10166.	1544.1	10179.	1546.3	10194.
GR 1549.	10209.	1553.7	10235.	1555.3	10255.	1557.4	10265.	1557.4	10279.
GR1556.2	10282.								
QT 2.	900.	900.							
ET		4.1	9975.	10025.					
X126.984	32.	9943.	10170.	480.	460.	533.			
GR1560.6	9811.	1559.7	9833.	1557.2	9861.	1554.5	9891.	1549.4	9920.
GR1545.5	9943.	1543.8	9953.	1542.3	9968.	1542.1	10000.	1545.1	10012.
GR1540.6	10023.	1540.6	10107.	1540.6	10124.	1541.7	10135.	1540.5	10147.
GR1540.5	10156.	1546.5	10170.	1547.3	10189.	1547.5	10203.	1547.7	10218.
GR1546.7	10231.	1543.5	10241.	1542.8	10256.	1542.3	10271.	1542.3	10282.
GR1544.6	10290.	1543.4	10300.	1543.3	10310.	1544.8	10323.	1545.3	10333.
GR1558.9	10356.	1551.6	10369.						
ET		4.1	9883.7	10013.1					
X127.060	33.	9980.	10019.	270.	470.	401.			
X3 10.							1565.		
GR1566.5	9583.	1559.9	9608.	1557.5	9614.	1557.6	9617.	1560.3	9624.
GR1560.6	9643.	1560.9	9670.	1559.8	9683.	1559.6	9706.	1560.	9720.
GR1559.4	9740.	1559.5	9772.	1560.4	9795.	1560.	9824.	1558.8	9852.
GR1558.7	9879.	1558.9	9895.	1558.5	9911.	1559.2	9940.	1560.	9954.
GR1559.7	9963.	1560.6	9967.	1560.8	9980.	1554.6	9997.	1554.1	10000.
GR1555.1	10005.	1562.6	10019.	1562.2	10040.	1562.1	10056.	1563.4	10068.
GR1565.2	10081.	1566.	10093.	1563.9	10103.				
QT 2.	600.	600.							
ET		4.1	9881.1	10020.					
X127.166	36.	9977.	10023.	560.	560.	560.			
X3 10.							1565.	1565.	
GR 1572.	9622.	1572.2	9639.	1571.5	9661.	1569.4	9686.	1568.5	9709.
GR1568.1	9719.	1568.4	9730.	1567.4	9742.	1567.1	9762.	1567.9	9772.
GR1568.8	9787.	1567.6	9811.	1566.7	9830.	1566.	9847.	1562.3	9858.
GR1558.7	9868.	1557.6	9870.	1558.4	9872.	1560.6	9875.	1560.9	9884.
GR1560.9	9911.	1560.8	9943.	1560.7	9955.	1564.2	9963.	1564.2	9977.
GR1555.2	9995.	1555.2	10000.	1555.2	10008.	1563.9	10023.	1563.9	10038.
GR1561.1	10043.	1561.1	10067.	1560.8	10098.	1560.9	10129.	1561.5	10142.
GR1562.8	10146.								

* SECTION 27.294 IS NEAR THE DOWNSTREAM OUTLET OF CAVE BUTTE DAM.

QT 2.	400.	400.							
ET		4.1	9972.	10022.2					
X127.294	26.	9967.	10027.	710.	630.	676.			
GR1591.6	9811.	1589.8	9827.	1587.9	9839.	1589.7	9851.	1588.2	9870.
GR1585.6	9883.	1584.2	9888.	1584.4	9900.	1583.9	9914.	1568.3	9948.
GR1565.9	9954.	1565.2	9967.	1558.3	9980.	1557.2	9984.	1556.2	9987.
GR 1556.	10000.	1556.	10007.	1564.6	10027.	1565.6	10037.	1573.	10054.
GR1572.8	10074.	1573.4	10093.	1574.	10112.	1575.	10135.	1575.4	10163.
GR1575.6	10171.								

* THE CENTERLINE OF CAVE BUTTE DAM IS AT RM 27.365.

* FOLLOWING IS THE TRIBUTARY RUN FOR THE EAST FORK OF CAVE CREEK.

* SECTION 19.56 IS JUST DOWNSTREAM OF THE CONFLUENCE WITH THE EAST FORK. THIS SECTION IS USED TO BEGIN THE TRIBUTARY RUN FOR THE EAST FORK OF CAVE CREEK. THE CONFLUENCE OCCURS AT RM 19.608

NC 0.035	0.035	0.035	0.1	0.3					
QT 2.	14600.	14600.							
ET		4.1	9921.37	10061.					
X1-19.56	17.	9929.	10065.	730.	720.	729.			

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GR1346.1	9801.	1329.7	9902.	1329.7	9929.	1316.5	9950.	1316.8	9978.
GR1315.6	10000.	1315.6	10008.	1316.6	10026.	1316.4	10035.	1317.5	10043.
GR1330.6	10065.	1330.8	10099.	1330.5	10146.	1330.2	10195.	1330.9	10208.
GR1331.2	10223.	1332.1	10301.						

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SECTION 0.029 IS JUST UPSTREAM OF THE CONFLUENCE WITH CAVE CREEK
 WASH. SECTION 19.556 DOWNSTREAM IN THE WASH IS USED TO START THE
 RUN ON THE EAST FORK.

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QT	2.	9500.	9500.							
NC	0.035	0.035	0.015							
ET			4.1	9942.56	10073.1					
X1	0.029	15.	9942.	10043.	380.	450.	430.			
GR1336.7	9849.	1332.4	9893.	1329.5	9942.	1326.3	9954.	1326.3	9963.	
GR1319.8	9982.	1319.6	9995.	1319.6	10000.	1319.6	10019.	1328.2	10043.	
GR	1330.	10090.	1330.3	10128.	1332.4	10166.	1333.1	10216.	1333.1	10217.
NC	0.035	0.035	0.03							
ET			4.1	9905.	10092.					
X1	0.112	22.	9887.	10101.	430.	450.	483.			
GR1357.6	9597.	1333.1	9743.	1332.6	9804.	1332.	9816.	1331.8	9863.	
GR1332.1	9887.	1329.4	9906.	1329.4	9915.	1323.4	9937.	1322.3	9949.	
GR1321.5	9985.	1321.6	9999.	1321.6	10000.	1322.	10037.	1323.2	10049.	
GR1329.3	10076.	1334.8	10101.	1334.8	10139.	1333.4	10214.	1334.8	10286.	
GR1334.5	10320.	1334.5	10321.							
ET			4.1	9910.	10110.					
X1	0.198	26.	9897.	10133.	460.	420.	454.			
GR1334.8	9569.	1336.5	9570.	1335.1	9591.	1335.7	9694.	1333.8	9754.	
GR1333.3	9863.	1332.4	9897.	1329.4	9916.	1325.5	9937.	1323.8	9965.	
GR1324.5	9981.	1324.8	9999.	1324.8	10000.	1324.1	10044.	1324.5	10058.	
GR1328.8	10085.	1328.8	10093.	1336.3	10122.	1337.8	10133.	1336.	10138.	
GR1337.3	10170.	1337.1	10262.	1337.	10356.	1345.1	10370.	1337.1	10382.	
GR1336.7	10417.									
ET			4.1	9903.	10054.					
X1	0.288	20.	9885.	10069.	470.	460.	475.			
GR1338.2	9550.	1337.6	9684.	1336.1	9733.	1336.9	9848.	1336.	9885.	
GR1328.9	9933.	1326.6	9954.	1325.9	9978.	1325.7	10000.	1328.5	10026.	
GR1335.9	10069.	1335.9	10078.	1336.7	10089.	1336.2	10101.	1338.	10213.	
GR1339.6	10443.	1347.3	10459.	1341.	10472.	1341.9	10485.	1339.9	10517.	
ET			4.1	9912.	10094.					
X1	0.398	19.	9904.	10119.	600.	540.	581.			
GR1340.2	9739.	1340.7	9804.	1339.3	9843.	1338.9	9904.	1330.2	9949.	
GR1329.4	9979.	1328.8	10000.	1329.7	10061.	1338.1	10098.	1338.1	10105.	
GR1340.6	10119.	1338.4	10126.	1338.6	10168.	1340.5	10175.	1339.9	10190.	
GR1339.7	10352.	1339.2	10456.	1339.5	10478.	1339.8	10533.			
ET			4.1	9904.	10175.					
X1	0.482	20.	9937.	10024.	440.	270.	444.			
GR	1347.	9903.	1341.4	9904.	1341.1	9937.	1337.1	9953.	1333.4	9962.
GR1331.2	9988.	1331.3	10000.	1331.3	10008.	1338.	10024.	1340.8	10093.	
GR1340.9	10125.	1341.6	10161.	1340.4	10236.	1341.6	10256.	1340.	10291.	
GR1341.1	10315.	1340.9	10402.	1341.5	10528.	1341.5	10640.	1343.	10910.	
ET			4.1	9870.	10080.					
X1	0.575	19.	9869.	10049.	460.	500.	491.			
GR	1348.	9777.	1342.8	9778.	1340.2	9869.	1337.1	9896.	1341.1	9944.
GR1337.8	9977.	1331.7	9990.	1331.5	9997.	1331.5	10000.	1332.	10011.	
GR1338.9	10023.	1343.1	10049.	1342.5	10105.	1343.5	10113.	1342.9	10186.	
GR1341.8	10239.	1342.	10274.	1343.2	10411.	1345.4	10755.			
QT	2.	9400.	9400.							
ET			4.1	9875.	10035.					
X1	0.697	16.	9847.	10023.	640.	640.	644.			
GR1346.4	9847.	1345.3	9855.	1338.8	9882.	1338.1	9888.	1339.	9900.	
GR1340.4	9912.	1343.4	9919.	1341.4	9921.	1339.9	9950.	1334.9	9967.	
GR1334.6	10000.	1334.	10007.	1341.4	10023.	1343.8	10061.	1345.4	10102.	
GR1346.4	10237.									

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NC	0.035	0.035	0.035							
ET			4.1	9880.	10040.					
X1	0.826	11.	9929.	10050.	680.	660.	681.			
GR	1349.5	9815.	1346.4	9893.	1345.5	9929.	1342.7	9969.	1338.8	9974.
GR	1338.8	9988.	1338.8	10000.	1339.2	10009.	1349.5	10050.	1350.1	10066.
GR	1351.	10219.								
ET			4.1	9870.	10030.					
X1	0.945	20.	9856.	10034.	680.	600.	628.			
GR	1352.7	9469.	1352.6	9548.	1351.8	9674.	1351.8	9704.	1349.	9769.
GR	1349.8	9819.	1349.5	9843.	1348.6	9856.	1345.5	9866.	1346.8	9929.
GR	1347.7	9956.	1340.4	9978.	1340.8	10000.	1340.8	10008.	1349.5	10034.
GR	1350.1	10046.	1350.1	10100.	1352.8	10215.	1353.4	10254.	1353.	10284.
ET			4.1	9870.	10030.					
X1	1.035	22.	9841.	10022.	440.	460.	475.			
GR	1354.	9670.	1350.5	9723.	1352.3	9776.	1352.	9795.	1348.6	9823.
GR	1348.4	9832.	1350.8	9841.	1348.1	9844.	1349.2	9871.	1349.4	9908.
GR	1345.9	9921.	1348.6	9941.	1348.1	9948.	1343.9	9966.	1343.3	9983.
GR	1342.3	9992.	1341.9	10000.	1348.8	10022.	1351.2	10046.	1352.5	10059.
GR	1352.4	10100.	1353.	10153.						
NC	0.04	0.04	0.04							
ET			4.1	9890.	10050.					
X1	1.121	19.	9868.	10069.	480.	440.	454.			
GR	1355.2	9850.	1355.	9868.	1348.4	9897.	1346.1	9910.	1345.9	9931.
GR	1346.4	9955.	1345.1	9966.	1343.6	9994.	1343.6	10000.	1348.1	10015.
GR	1348.8	10036.	1350.6	10048.	1351.1	10059.	1353.6	10069.	1354.1	10082.
GR	1354.2	10121.	1355.	10134.	1355.1	10173.	1355.	10175.		
ET			4.1	9950.	10110.					
X1	1.204	16.	9949.	10043.	430.	450.	438.			
GR	1355.4	9930.	1355.6	9949.	1348.3	9964.	1348.3	9978.	1344.3	9991.
GR	1344.3	9995.	1344.8	10000.	1348.3	10027.	1352.5	10043.	1353.8	10057.
GR	1353.7	10072.	1353.5	10098.	1354.2	10165.	1356.1	10178.	1355.8	10262.
GR	1356.3	10334.								
QT	2.	9100.	9100.							
ET			4.1	9905.	10060.					
X1	1.315	17.	9904.	10074.	720.	700.	734.			
GR	1359.7	9904.	1352.7	9916.	1350.3	9931.	1348.8	10000.	1351.1	10012.
GR	1351.6	10028.	1353.4	10043.	1353.4	10056.	1356.5	10064.	1359.	10074.
GR	1357.8	10085.	1358.	10091.	1358.	10130.	1352.	10150.	1352.	10170.
GR	1358.	10230.	1360.	10240.						
NC	0.035	0.035	0.025							
ET			4.1	9895.	10085.					
X1	1.420	9.	9895.	10085.	380.	420.	407.			
GR	1364.	9860.	1362.	9870.	1360.	9895.	1356.	9910.	1354.9	10000.
GR	1356.	10070.	1360.	10085.	1362.	10100.	1364.	10120.		
EJ										
T1										
T2										
T3										
J1			3.							
J2	15.		-1.						1284.69	
ER										

A.2.5.c: Cave Creek Study Output File – cavefema.out

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* HEC-2 WATER SURFACE PROFILES *
*
* Version 4.6.2; May 1991 *
*
* RUN DATE 13OCT97 TIME 15:45:18 *

* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET, SUITE D *
* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104 *

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PAGE 1

THIS RUN EXECUTED 13OCT97 15:45:18

HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991

- T1 MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY, ACDC TO DAM
- T2 FLOOD CONTROL DISTRICT OF MARICOPA CO. 1989 BY BURGESS & NIPLÉ
- T3 CAVE CREEK WASH NATURAL 100-YR J. MISCHLER

CAVE BUTTE DAM CONTROLS DISCHARGES UP TO THE 100 YEAR FLOOD.
ABOVE THE 100 YEAR FLOOD, THE EMERGENCY SPILLWAY WILL PASS FLOWS.
AS THE EFFORT TO COMPUTE 500 YEAR HYDROLOGY (WHICH WOULD REQUIRE
ANALYSIS OF THE ENTIRE WATERSHED ABOVE THE DAM) IS NOT JUSTIFIED
BY THE VALUE OF 500 YEAR FLOODPLAIN INFORMATION, THE FLOOD CONTROL
DISTRICT HAS BEEN GRANTED PERMISSION BY FEMA TO DELETE THE 500 YEAR
FLOOD FROM THE RESTUDY OF CAVE CREEK WASH. ONLY THE WATERSHED BELOW
THE DAM HAS BEEN CONSIDERED FOR HYDROLOGIC COMPUTATIONS OF THE 10, 50,
AND 100 YEAR FLOODS.

FLOODWAY RUN FROM SEDIMENT BASIN TO CAVE BUTTE DAM.

FOR SECTIONS 15.310 TO 16.971, REFER TO A SEPARATE SUPERCRITICAL

RUN FOR THE CORPS OF ENGINEERS' CONCRETE LINED CHANNEL. (NATURAL PROF)

FLOW IS WITHIN THE CORPS OF ENGINEER'S CHANNEL, SEDIMENT BASIN, OR
BROAD CRESTED WEIR INLET FROM RM15.015 TO 17.492, THEREFORE NO FLOODWAY
IS RUN FOR THIS REACH.

FILE LAST MODIFIED 1/26/90

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2.							1283.69	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1.		-1.							15.
J3	VARIABLE CODES FOR SUMMARY PRINTOUT									
	38.	42.	1.	53.	54.	4.	8.	43.	10.	51.
	46.	40.	41.		110.		200.			

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PAGE 2

QT	2.	15400.	15400.							
NC	0.04	0.04	0.04	0.1	0.3					

BEGIN ENCROACHMENTS UPSTREAM OF THE SEDIMENT BASIN

ET			10.41							
X1	17.588	25.	9982.	10193.	440.	560.	496.			
GR	1291.4	9666.	1290.3	9746.	1275.6	9817.	1275.2	9835.	1273.5	9854.
GR	1277.8	9873.	1279.7	9889.	1277.3	9896.	1278.2	9909.	1281.6	9922.
GR	1281.9	9939.	1282.2	9964.	1278.1	9982.	1269.6	9992.	1270.6	10000.
GR	1270.9	10009.	1272.6	10014.	1273.6	10039.	1273.6	10079.	1271.2	10144.
GR	1271.2	10170.	1276.4	10193.	1290.5	10264.	1291.3	10328.	1291.	10495.
ET			4.1	9900.	10150.					
X1	17.662	23.	9941.	10130.	380.	400.	391.			
GR	1293.1	9731.	1293.1	9781.	1291.6	9791.	1282.7	9835.	1278.1	9844.
GR	1279.2	9871.	1277.3	9911.	1276.4	9941.	1272.5	9986.	1271.6	10000.
GR	1274.6	10016.	1277.5	10033.	1278.8	10063.	1278.9	10086.	1276.8	10099.

GR	1275.7	10111.	1281.6	10130.	1285.2	10161.	1293.1	10208.	1294.	10221.
GR	1293.7	10281.	1294.	10400.	1294.5	10432.				
ET			10.41							
X1	17.783	18.	9921.	10064.	540.	500.	639.			
GR	1295.2	9812.	1294.	9837.	1291.3	9861.	1286.9	9895.	1280.5	9921.
GR	1276.8	9938.	1278.3	9954.	1277.6	9973.	1275.4	10000.	1276.3	10019.
GR	1277.4	10033.	1277.7	10045.	1281.1	10064.	1281.3	10074.	1284.6	10097.
GR	1289.8	10122.	1291.5	10143.	1291.9	10153.				
X1	17.932	23.	9956.	10066.	790.	780.	787.			
GR	1294.8	9675.	1294.7	9732.	1295.5	9750.	1293.6	9766.	1297.5	9792.
GR	1297.5	9837.	1298.3	9869.	1291.9	9896.	1289.7	9956.	1283.6	9966.
GR	1283.5	9971.	1277.9	9986.	1278.2	10000.	1278.2	10006.	1279.5	10008.
GR	1279.9	10022.	1280.2	10032.	1285.5	10054.	1290.2	10066.	1290.6	10083.
GR	1298.5	10131.	1299.7	10159.	1299.7	10193.				

THUNDERBIRD ROAD BRIDGE - ALTHOUGH THE ROAD IS LOWEST IN THE RIGHT
 OVERBANK, HIGH BANKS UPSTREAM PREVENT THIS AREA FROM BECOMING EFFECTIVE,
 THEREFORE, ONLY THE BRIDGE OPENING IS CONSIDERED ON THE GR CARDS AND
 ONLY THE BRIDGE LENGTH IS CONSIDERED FOR THE BT CARDS. ENDS OF THE
 SECTIONS ARE ARTIFICIALLY EXTENDED. BT'S ARE RAISED 0.5' FROM CENTER-
 LINE OF ROAD ELEVATIONS AT THE BRIDGE. TO ACCOUNT FOR THE RAILING.

4.1 9951. 10049.

NC	0.035	0.035	0.025	0.3	0.5					
X1	18.042	8.	9951.	10049.	620.	550.	581.		2.4	
GR	1305.	9951.	1283.4	9952.	1282.9	9979.	1279.9	9980.	1279.9	10020.
GR	1281.9	10021.	1284.2	10048.	1305.	10049.				

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PAGE 3

SB	1.05	1.56	3.		75.	4.	1059.	0.81	1280.2	1279.9
NC	0.03	0.03	0.025							

4.11 9951. 10049.

X1	18.061				101.	101.	101.			0.8
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ELTRD IS 1298.4+3.2HV = 1301.6

X2			1.	1293.2	1301.6					
BT	4.	9951.	1305.	0.	9952.	1298.4	0.	10048.	1298.4	0.
BT	10049.	1305.	0.							
NC	0.035	0.035	0.035							
ET			4.1	9900.	10085.					
X1	18.081	11.	9942.	10045.	80.	130.	106.			
GR	1300.5	9819.	1300.2	9866.	1298.2	9899.	1286.6	9942.	1282.7	9960.
GR	1281.4	10000.	1281.1	10008.	1282.7	10030.	1284.9	10045.	1297.3	10088.
GR	1300.2	10112.								
NC				0.1	0.3					
ET			4.1	9857.	10125.					
X1	18.174	29.	9919.	10073.	500.	490.	491.			
GR	1303.6	9673.	1304.6	9713.	1307.3	9757.	1302.5	9801.	1302.	9850.
GR	1288.	9904.	1287.3	9915.	1288.7	9919.	1284.	9927.	1283.5	9956.
GR	1282.6	9975.	1283.5	9985.	1281.8	9992.	1281.7	10000.	1282.	10006.
GR	1282.3	10011.	1282.7	10020.	1294.6	10073.	1297.	10093.	1296.2	10113.
GR	1293.7	10142.	1293.7	10182.	1296.8	10236.	1299.3	10270.	1298.9	10295.
GR	1298.	10340.	1299.8	10364.	1298.	10396.	1301.1	10478.		
ET			4.1	9882.2	10110.					
X1	18.269	12.	9942.	10060.	500.	500.	502.			
GR	1303.8	9868.	1288.1	9928.	1288.4	9942.	1285.3	9952.	1283.8	9979.
GR	1283.8	10000.	1283.8	10010.	1285.6	10023.	1292.4	10060.	1294.	10071.
GR	1303.2	10130.	1303.7	10144.						
ET			4.1	9895.6	10107.8					
X1	18.362	20.	9942.	10060.	490.	510.	491.			
GR	1315.5	9728.	1315.4	9758.	1315.8	9780.	1310.6	9807.	1307.1	9862.
GR	1298.6	9905.	1290.	9942.	1287.8	9952.	1288.	9967.	1286.1	9971.
GR	1285.3	10000.	1286.8	10022.	1286.8	10036.	1290.6	10060.	1303.8	10124.
GR	1307.7	10151.	1307.5	10169.	1306.8	10183.	1308.1	10240.	1308.8	10283.

DOWNSTREAM GOLF CART CROSSING ON A SINGLE 78" CMP WITH PROTRUDING
ENDS AND EMBANKMENT SLOPES (NO WINGWALLS).

ET			4.1	9885.	10110.					
X1	18.445	13.	9992.	10005.	470.	460.	440.			

X3	10.							1297.	1297.	
GR	1315.1	9796.	1306.2	9880.	1300.	9920.	1299.5	9978.	1290.	9992.
GR	1287.3	10000.	1290.	10005.	1300.	10040.	1302.	10060.	1303.	10097.
GR	1305.	10200.	1305.6	10310.	1309.4	10330.				

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PAGE 4

SB	0.9	2.34	3.0	0.	6.11	1.0	33.2	0.	1287.7	1287.4
ET			4.11	9885.	10110.					
X1	18.456				60.	60.	60.		0.4	

ELTRD IS 1198.8+0.7HV = 1199.5

X2			1.	1294.2	1299.5					
X3	10.							1298.8	1298.8	
BT	10.	9796.	1315.5	0.	9880.	1306.6	0.	9928.	1301.9	0.
BT	9991.	1299.1	0.	10000.	1298.8	0.	10046.	1301.9	0.	10097.
BT	1303.4	0.	10200.	1305.4	0.	10310.	1306.	0.	10330.	1309.8
BT	0.									
ET			4.1	9881.4	10169.8					
X1	18.545	21.	9951.	10058.	440.	480.	466.			
GR	1324.2	9716.	1323.1	9748.	1324.4	9765.	1321.9	9790.	1318.3	9810.
GR	1317.	9839.	1306.7	9889.	1294.1	9951.	1291.5	9972.	1289.3	9993.
GR	1289.7	10000.	1289.7	10018.	1290.5	10040.	1293.8	10058.	1298.8	10073.
GR	1299.8	10094.	1303.4	10108.	1303.9	10121.	1303.	10135.	1310.1	10182.
GR	1310.2	10194.								

UPSTREAM GOLF CART CROSSING ON 2 - 72" RCP WITH FLUSH INLETS AND
45 DEGREE WINGWALLS.

ET			4.1	9880.7	10170.8					
X1	18.575	21.	9972.	10000.	160.	160.	160.			
X3	10.							1297.	1297.	
GR	1324.2	9716.	1323.1	9748.	1324.4	9765.	1321.9	9790.	1318.3	9810.
GR	1317.	9839.	1306.7	9889.	1294.1	9951.	1291.5	9972.	1289.3	9993.
GR	1289.7	10000.	1289.7	10018.	1290.5	10040.	1293.8	10058.	1298.8	10073.
GR	1299.8	10094.	1303.4	10108.	1303.9	10121.	1303.	10135.	1310.1	10182.
GR	1310.2	10194.								

SB	1.25	1.56	3.0	0.	10.4	1.0	56.5	0.	1289.4	1289.3
ET			4.11	9876.1	10177.2					
X1	18.583				40.	40.	40.		0.1	

ELTRD IS 1298.4+0.6HV = 1299.0

X2			1.	1295.4	1299.					
X3	10.							1298.4	1298.4	
BT	9.	9880.	1310.	0.	9965.	1300.	0.	10000.	1298.4	0.
BT	10037.	1300.	0.	10065.	1302.	0.	10085.	1304.	0.	10122.
BT	1306.	0.	10160.	1308.	0.	10170.	1310.	0.		
ET			4.1	9879.6	10134.7					
X1	18.640	17.	9955.	10033.	300.	310.	301.			
GR	1322.5	9707.	1323.7	9729.	1320.1	9768.	1313.8	9827.	1312.3	9858.
GR	1308.4	9887.	1302.6	9920.	1294.6	9955.	1292.8	9966.	1290.2	9993.
GR	1291.5	10000.	1291.8	10009.	1293.4	10033.	1307.8	10111.	1309.	10132.
GR	1312.1	10153.	1313.2	10167.						

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PAGE 5

ET			4.1	9883.2	10111.7					
X1	18.734	19.	9938.	10062.	490.	500.	496.			
GR	1320.7	9713.	1316.3	9762.	1316.6	9809.	1319.2	9819.	1317.9	9841.
GR	1308.7	9888.	1298.6	9938.	1293.4	9971.	1294.2	9981.	1292.4	9992.
GR	1294.5	10000.	1294.4	10025.	1300.8	10062.	1309.	10094.	1307.6	10104.
GR	1312.9	10124.	1314.	10143.	1317.1	10178.	1319.9	10201.		
ET			4.1	9891.8	10107.					
X1	18.832	21.	9929.	10046.	480.	540.	517.			
GR	1326.2	9779.	1328.	9788.	1320.6	9826.	1316.	9853.	1312.5	9880.
GR	1302.8	9929.	1296.1	9960.	1293.5	9982.	1293.2	10000.	1293.2	10005.
GR	1294.8	10008.	1295.5	10027.	1297.1	10046.	1307.7	10095.	1314.1	10128.
GR	1314.1	10141.	1317.1	10187.	1320.3	10221.	1319.9	10247.	1318.6	10271.
GR	1319.2	10278.								
ET			4.1	9887.7	10087.5					
X1	18.925	14.	9941.	10048.	480.	500.	491.			
GR	1329.1	9741.	1315.9	9866.	1297.6	9941.	1297.3	9960.	1295.3	9989.
GR	1295.	10000.	1296.1	10006.	1295.4	10022.	1294.6	10025.	1296.3	10034.

GR	1300.	10048.	1310.5	10087.	1320.1	10132.	1321.3	10161.		
ET			4.1	9866.3	10038.5					
X1	19.018	20.	9903.	10030.	460.	520.	491.			
GR	1331.	9681.	1321.2	9775.	1313.9	9847.	1305.1	9903.	1298.1	9930.
GR	1298.	9948.	1298.1	9957.	1297.6	9974.	1299.	10000.	1308.4	10030.
GR	1325.3	10088.	1327.	10101.	1325.5	10109.	1330.2	10118.	1330.9	10124.
GR	1327.	10145.	1326.8	10211.	1328.8	10218.	1332.6	10260.	1331.8	10268.
ET			4.1	9942.1	10061.9					
X1	19.117	10.	9973.	10026.	490.	560.	523.			
GR	1333.9	9803.	1331.8	9872.	1323.	9908.	1302.9	9973.	1299.2	9997.
GR	1298.7	10000.	1298.6	10010.	1301.5	10026.	1328.9	10116.	1333.	10144.
ET			4.1	9923.1	10081.					
X1	19.210	16.	9945.	10060.	500.	490.	491.			
GR	1333.2	9669.	1330.6	9853.	1328.7	9874.	1312.	9945.	1310.	9954.
GR	1303.8	9978.	1301.4	9991.	1300.2	10000.	1301.3	10010.	1303.4	10026.
GR	1312.	10060.	1321.3	10098.	1327.	10127.	1332.5	10166.	1335.3	10191.
GR	1335.6	10192.								

19TH AVENUE (SPECIAL BRIDGE)

NC			0.3	0.5						
QT	2.	14600.	14600.							
X1	19.283	12.	9948.	10057.	390.	390.	386.		11.2	
X3	10.							1324.	1324.	
GR	1333.2	9669.	1330.6	9853.	1328.7	9874.	1312.	9945.	1300.5	9948.
GR	1300.5	10057.	1312.	10060.	1321.3	10098.	1327.	10127.	1332.5	10166.
GR	1335.3	10191.	1335.6	10192.						

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PAGE 6

SB	0.9	1.56	3.		109.	4.5	1304.	0.	1311.7	1311.7
X1	19.299				86.	86.	86.			

ELTRD IS 1324.5+2HV = 1326.5

X2			1.	1324.2	1326.5					
X3	10.						1325.	1325.		

BT	6.	9500.	1326.	0.	9650.	1324.5	0.	9855.	1325.3	0.
BT	10000.	1325.7	0.	10275.	1324.9	0.	10460.	1326.	0.	
ET			10.41							
X1	19.313	20.	9932.	10112.	75.	75.	74.			
GR	1329.	9853.	1326.7	9859.	1327.6	9866.	1327.9	9932.	1314.5	9968.
GR	1312.2	9980.	1311.7	9988.	1313.1	9996.	1313.1	10000.	1313.4	10017.
GR	1312.	10029.	1313.7	10044.	1311.7	10054.	1313.7	10069.	1325.5	10112.
GR	1325.4	10137.	1324.3	10180.	1324.9	10219.	1325.2	10325.	1326.6	10464.
NC			0.1	0.3						
X1	19.418	19.	9948.	10120.	570.	530.	554.			
GR	1330.8	9898.	1328.8	9902.	1330.6	9910.	1330.2	9938.	1328.	9948.
GR	1313.1	9992.	1313.1	10000.	1313.	10004.	1316.1	10022.	1314.6	10058.
GR	1315.5	10076.	1320.1	10094.	1326.1	10120.	1327.6	10138.	1327.5	10186.
GR	1326.2	10276.	1327.	10322.	1328.3	10376.	1328.6	10401.		

SECTION 19.56 IS JUST DOWNSTREAM OF THE CONFLUENCE WITH THE EAST
 FORK. THIS SECTION IS USED TO BEGIN THE TRIBUTARY RUN FOR THE
 EAST FORK OF CAVE CREEK. THE CONFLUENCE OCCURS AT RM 19.608

X1	19.56	17.	9929.	10065.	730.	720.	729.			
GR	1346.1	9801.	1329.7	9902.	1329.7	9929.	1316.5	9950.	1316.8	9978.
GR	1315.6	10000.	1315.6	10008.	1316.6	10026.	1316.4	10035.	1317.5	10043.
GR	1330.6	10065.	1330.8	10099.	1330.5	10146.	1330.2	10195.	1330.9	10208.
GR	1331.2	10223.	1332.1	10301.						

GREENWAY BRIDGE (SPECIAL BRIDGE). LARGE SKEW ACCOUNTED FOR PRIOR
 TO DATA INPUT BY ADJUSTING BWC ETC. DUE TO COMPLEX CHANNEL GEOMETRY
 DOWNSTREAM AT THE CONFLUENCE WITH THE EAST FORK, IT WAS MOST APPROPRIATE
 TO USE THE UPSTREAM SECTION, REPEATED AT THE DOWNSTREAM FACE. GR CARDS
 FROM SECTION 19.742 ARE REPEATED FOR 19.625 WITH PSXECE = -1.7

QT	2.	5700.	5700.							
NC	0.035	0.035	0.015	0.3	0.5					
X1	19.625	11.	9965.	10025.	580.	70.	364.			-1.7
X3	10.							1332.	1332.	
GR	1335.7	9834.	1335.1	9893.	1333.4	9922.	1331.8	9937.	1331.6	9948.
GR	1319.3	9965.	1319.3	10025.	1331.	10042.	1339.2	10055.	1337.7	10060.

GR 1338.8 10100.

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PAGE 7

SB	1.05	1.56	3.	100.	60.	2.	564.	0.	1318.6	1317.6
X1	19.691				330.	430.	350.		1.0	

ELTRD IS 1332.8+2HV = 1334.8

X2 1. 1328.3 1334.8

X3 10. 1333. 1333.

ET 4.1 9953. 10038.

X1 19.742 13. 9948. 10042. 80. 470. 269.

GR 1335.7 9834. 1335.1 9893. 1333.4 9922. 1331.8 9937. 1331.6 9948.

GR 1319.1 9967. 1319.2 10000. 1319.7 10017. 1319.7 10027. 1331. 10042.

GR 1339.2 10055. 1337.7 10060. 1338.8 10100.

NC 0.035 0.035 0.035 0.1 0.3

ET 4.1 9957. 10043.

X1 19.847 22. 9929. 10062. 570. 520. 554.

GR 1339.8 9621. 1338.7 9726. 1341.6 9738. 1338.8 9759. 1339. 9806.

GR 1337.7 9915. 1336.1 9921. 1336.3 9929. 1320.2 9974. 1318.8 9989.

GR 1320.8 10000. 1320.5 10017. 1321.3 10023. 1328.8 10040. 1335.8 10062.

GR 1336.1 10070. 1336.6 10084. 1335.8 10150. 1336. 10160. 1338.3 10175.

GR 1339.2 10195. 1339.2 10198.

ET 4.1 9958. 10031.

X1 19.960 24. 9958. 10031. 640. 560. 597.

GR 1340.4 9544. 1339.1 9638. 1336.7 9736. 1337.2 9768. 1338.2 9807.

GR 1338.9 9836. 1338.4 9908. 1340.1 9911. 1337.7 9917. 1339.1 9924.

GR 1337.2 9935. 1330. 9958. 1327.8 9964. 1326.1 9977. 1324.6 9990.

GR 1324.7 10000. 1326.1 10008. 1326.8 10023. 1330. 10031. 1340.6 10059.

GR 1340.8 10072. 1340.7 10099. 1340.1 10194. 1339.9 10251.

TIERRA BUENA (SPECIAL BRIDGE)

DUE TO HIGHER DEPTHS THAN ANTICIPATED, XNCH HAS BEEN REDUCED

FROM 0.04 (PER MANNINGS n VALUE REPORT) TO 0.035 BETWEEN GREENWAY ROAD

AND UNION HILLS DRIVE

NC	0.04	0.04	0.035	0.3	0.5					
ET			4.1	9969.	10020.					
X1	19.974	10.	9969.	10020.	105.	65.	74.			
X3	10.							1336.	1336.	
GR	1340.1	9911.	1337.7	9917.	1339.1	9924.	1337.2	9935.	1330.	9958.
GR	1323.8	9969.	1323.8	10020.	1330.	10031.	1340.6	10059.	1340.8	10072.
SB	1.25	1.56	3.		51.	3.	480.	0.	1324.1	1323.8
ET			4.11	9969.	10020.					
X1	19.986				61.	61.	61.			

ELTRD IS 1336.9+1HV = 1337.9

X2			1.	1334.1	1337.9					
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X3	10.							1337.	1337.	
BT	3.	9560.	1340.	0.	10000.	1336.9	0.	10230.	1340.	0.
ET			4.1	9975.	10025.					
X1	20.049	37.	9954.	10027.	305.	345.	333.			
X3	10.							1340.		
GR	1344.7	9266.	1345.2	9300.	1342.4	9304.	1340.8	9328.	1332.6	9344.
GR	1333.1	9400.	1333.3	9490.	1334.	9563.	1334.8	9606.	1333.2	9728.
GR	1335.	9767.	1331.4	9805.	1331.	9820.	1331.5	9854.	1331.5	9901.
GR	1332.1	9920.	1341.1	9938.	1340.5	9950.	1343.4	9954.	1339.8	9969.
GR	1327.4	9991.	1327.1	9997.	1327.1	10000.	1328.4	10008.	1339.4	10027.
GR	1340.	10047.	1342.3	10075.	1342.4	10097.	1340.2	10114.	1342.3	10131.
GR	1343.	10142.	1341.5	10162.	1342.7	10175.	1342.9	10210.	1343.3	10307.
GR	1342.5	10378.	1343.	10477.						
NC				0.1	0.3					
ET			4.1	9972.	10029.					
X1	20.144	38.	9955.	10025.	490.	500.	502.			
X3	10.							1344.		
GR	1346.6	9136.	1347.4	9206.	1348.2	9208.	1348.4	9215.	1347.1	9235.
GR	1342.5	9239.	1341.7	9258.	1334.6	9278.	1332.	9297.	1332.6	9357.

GR	1333.7	9417.	1333.1	9457.	1334.1	9479.	1334.9	9499.	1335.3	9554.
GR	1334.4	9582.	1335.7	9631.	1335.6	9698.	1336.1	9745.	1334.6	9779.
GR	1329.6	9788.	1330.5	9820.	1329.4	9847.	1328.5	9881.	1328.5	9912.
GR	1341.6	9931.	1343.1	9951.	1344.6	9955.	1342.	9968.	1330.9	9986.
GR	1330.9	10000.	1330.9	10010.	1340.8	10025.	1342.2	10040.	1345.9	10053.
GR	1346.5	10073.	1347.	10128.	1347.	10198.				

ET			4.1	9964.	10035.					
X1	20.242	32.	9953.	10029.	470.	560.	517.			
X3	10.							1348.		
GR	1346.6	9200.	1347.9	9269.	1348.7	9271.	1348.7	9277.	1346.6	9330.
GR	1347.7	9377.	1342.3	9383.	1342.7	9400.	1332.4	9422.	1333.6	9470.
GR	1333.7	9529.	1334.9	9573.	1334.2	9626.	1334.9	9648.	1335.1	9651.
GR	1336.	9785.	1336.	9842.	1338.6	9846.	1339.3	9895.	1339.2	9935.
GR	1347.2	9953.	1343.7	9970.	1333.3	9988.	1333.7	10000.	1333.5	10012.
GR	1342.8	10029.	1343.2	10041.	1348.3	10061.	1349.2	10076.	1349.9	10107.
GR	1350.1	10201.	1350.3	10202.						

ET			4.1	9963.	10036.					
X1	20.335	27.	9958.	10032.	510.	470.	491.			
GR	1349.5	9230.	1351.4	9312.	1349.1	9322.	1350.7	9340.	1351.	9476.
GR	1351.2	9592.	1350.4	9726.	1350.1	9808.	1351.1	9820.	1351.4	9850.
GR	1351.8	9928.	1347.7	9950.	1344.	9958.	1337.7	9971.	1337.3	9987.
GR	1337.4	10000.	1338.3	10021.	1344.	10032.	1349.	10042.	1351.8	10056.
GR	1351.1	10100.	1351.6	10141.	1350.	10144.	1350.	10166.	1350.	10240.
GR	1350.8	10328.	1351.4	10406.						

11TH AVENUE (SPECIAL BRIDGE)

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NC			0.3	0.5						
X1	20.347	25.	9970.	10021.	1.	150.	63.			
X3	10.							1351.5	1351.5	
GR	1349.5	9230.	1351.4	9312.	1349.1	9322.	1350.7	9340.	1351.	9476.
GR	1351.2	9592.	1350.4	9726.	1350.1	9808.	1351.1	9820.	1351.4	9850.
GR	1351.8	9928.	1347.7	9950.	1344.	9958.	1337.2	9970.	1337.2	10021.
GR	1344.	10032.	1349.	10042.	1351.8	10056.	1351.1	10100.	1351.6	10141.
GR	1350.	10144.	1350.	10166.	1350.	10240.	1350.8	10328.	1351.4	10406.

SB	1.25	1.56	3.0	100.	51.	3.	576.	0.	1337.7	1337.2
X1	20.366				100.	100.	100.			

ELTRD IS 1352.5+2HV = 1354.5

X2			1.	1349.7	1354.5					
X3	10.							1352.5	1352.5	
ET			4.1	9958.	10072.					
X1	20.423	21.	9975.	10045.	415.	205.	301.			
GR	1354.3	9418.	1353.8	9613.	1355.3	9653.	1354.6	9696.	1353.3	9711.
GR	1353.6	9724.	1353.5	9931.	1352.	9950.	1345.	9975.	1338.	10000.
GR	1339.4	10027.	1339.7	10037.	1344.3	10045.	1345.	10055.	1353.3	10085.
GR	1353.5	10100.	1354.7	10127.	1354.4	10214.	1354.3	10273.	1353.3	10300.
GR	1353.5	10333.								

10TH AVENUE (SPECIAL BRIDGE)

X1	20.430	20.	9985.	10036.	1.	65.	37.			
X3	10.							1352.5	1352.5	
GR	1354.3	9418.	1353.8	9613.	1355.3	9653.	1354.6	9696.	1353.3	9711.
GR	1353.6	9724.	1353.5	9931.	1352.	9950.	1345.	9975.	1339.3	9985.
GR	1339.3	10036.	1344.3	10045.	1345.	10055.	1353.3	10085.	1353.5	10100.
GR	1354.7	10127.	1354.4	10214.	1354.3	10273.	1353.3	10300.	1353.5	10333.
SB	1.25	1.56	3.0	100.	51.	3.	576.	0.	1339.3	1339.3
X1	20.444				70.	70.	70.			

ELTRD IS 1353.5+2HV = 1355.5

X2			1.	1351.3	1355.5					
X3	10.							1353.5	1353.5	
ET			4.1	9930.	10069.					
X1	20.529	19.	9947.	10055.	545.	375.	449.			
GR	1354.	9570.	1353.7	9764.	1354.8	9836.	1355.	9885.	1354.7	9898.
GR	1350.7	9910.	1350.2	9947.	1343.4	9963.	1343.4	9990.	1343.3	10000.
GR	1343.	10025.	1348.6	10041.	1350.4	10055.	1350.8	10090.	1355.	10105.

GR 1354.4 10159. 1355. 10192. 1355. 10302. 1355.2 10313.

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NC			0.1	0.3						
ET		4.1	9935.	10065.						
X1	20.628	16.	9909.	10076.	530.	520.	523.			
GR	1357.3	9532.	1357.3	9624.	1356.8	9754.	1357.2	9808.	1357.1	9909.
GR	1351.5	9922.	1350.2	9947.	1343.3	9959.	1343.6	9991.	1343.6	10000.
GR	1343.7	10044.	1356.3	10076.	1357.	10082.	1357.1	10137.	1357.2	10282.
GR	1358.	10337.								
ET		4.1	9962.	10026.						
X1	20.725	20.	9951.	10036.	510.	520.	512.			
GR	1360.3	9544.	1361.1	9631.	1361.3	9734.	1361.	9783.	1362.	9858.
GR	1360.8	9940.	1360.4	9951.	1350.4	9970.	1350.4	9981.	1348.3	9984.
GR	1347.4	9992.	1347.2	10000.	1347.4	10010.	1361.	10036.	1363.4	10046.
GR	1363.8	10101.	1364.1	10156.	1364.7	10184.	1365.1	10212.	1364.7	10291.

PHELPS ROAD (SPECIAL BRIDGE)

NC			0.3	0.5						
X1	20.737	16.	9968.	10019.	80.	80.	80.		3.4	
X3	10.							1363.	1363.	
GR	1360.3	9544.	1361.1	9631.	1361.3	9734.	1361.	9783.	1362.	9858.
GR	1360.8	9940.	1360.4	9951.	1347.5	9968.	1347.5	10019.	1361.	10036.
GR	1363.4	10046.	1363.8	10101.	1364.1	10156.	1364.7	10184.	1365.1	10212.
GR	1364.7	10291.								
SB	1.25	1.56	3.0	100.	51.	3.	576.	0.	1351.0	1350.9
X1	20.750				71.	71.	71.		0.1	

ELTRD IS 1364+2HV = 1366.0

X2			1.	1363.	1366.					
X3	10.							1364.	1364.	

BELL ROAD (SPECIAL BRIDGE) A SECTION TAKEN UPSTREAM OF BELL ROAD AT
 RM 20.845 IS USED TO MODEL THE BELL ROAD BRIDGE. GR CARDS ARE REPEATED
 AT THE DOWNSTREAM FACE WITH PSXECE = -0.9. TO MORE APPROPRIATELY MODEL

CONTRACTION LOSSES, THE UPSTREAM SECTION IS PRESENTED AT RM 20.860

INSTEAD OF RM 20.845 WHERE THE AERIAL SECTION WAS TAKEN.

X1	20.819	12.	9965.	10043.	375.	345.	365.		-0.9	
X3	10.							1366.9	1366.9	
GR	1366.5	9554.	1365.4	9663.	1365.5	9777.	1365.5	9846.	1365.3	9942.
GR	1357.4	9965.	1357.4	10043.	1367.6	10066.	1366.2	10107.	1366.2	10146.
GR	1367.	10166.	1367.2	10169.						
SB	1.05	1.56	3.0	100.	77.3	3.3	655.	0.	1357.4	1356.5
X1	20.841				115.	115.	115.		0.9	

ELTRD IS 1367.9+2HV = 1369.9

X2		1.	1365.4	1369.9						
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X3	10.							1367.9	1367.9	
ET			4.1	9904.	10060.					
X1	20.860	14.	9942.	10066.	90.	110.	100.			
X3	10.							1365.3	1367.6	
GR	1370.	9800.	1365.5	9801.	1365.5	9846.	1365.3	9942.	1357.8	9975.
GR	1356.3	9991.	1356.4	10000.	1357.2	10015.	1357.	10040.	1367.6	10066.
GR	1366.2	10107.	1366.2	10146.	1367.	10166.	1367.2	10169.		
NC	0.04	0.035	0.035	0.1	0.3					
ET			4.1	9860.	10110.					
X1	20.942	26.	9854.	10024.	530.	490.	433.			
GR	1372.5	9619.	1367.2	9630.	1368.7	9643.	1369.8	9663.	1369.4	9719.
GR	1367.6	9792.	1367.6	9836.	1368.6	9854.	1360.2	9867.	1359.8	9879.
GR	1359.8	9891.	1364.6	9904.	1365.2	9942.	1363.7	9970.	1366.	9977.
GR	1360.3	9998.	1359.6	10000.	1366.5	10024.	1364.7	10027.	1364.5	10053.
GR	1365.7	10070.	1364.5	10114.	1361.6	10153.	1368.3	10171.	1368.3	10194.
GR	1368.3	10204.								
NC	0.04	0.04	0.035							
ET			4.1	9810.	10060.					

X1	21.036	19.	9912.	10020.	490.	490.	496.			
GR	1376.1	9530.	1372.	9541.	1372.	9561.	1371.3	9665.	1371.9	9728.
GR	1371.6	9758.	1370.9	9867.	1370.7	9912.	1367.3	9917.	1367.5	9952.
GR	1366.3	9980.	1363.5	9994.	1363.6	10000.	1364.3	10009.	1370.4	10020.
GR	1371.2	10041.	1371.2	10075.	1371.8	10089.	1378.	10090.		

ET			4.1	9900.	10060.					
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X1	21.127	13.	9974.	10067.	400.	500.	480.			
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X3	10.							1374.		
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GR	1378.9	9623.	1373.6	9634.	1373.6	9666.	1373.4	9759.	1373.5	9860.
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GR	1373.7	9913.	1374.2	9974.	1366.9	9990.	1366.7	10000.	1367.5	10015.
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GR	1367.8	10039.	1375.	10067.	1375.	10077.				
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ET			4.1	9900.	10125.					
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X1	21.230	28.	9967.	10048.	560.	500.	544.			
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GR	1381.5	9741.	1381.5	9764.	1381.5	9786.	1380.7	9813.	1379.3	9835.
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GR	1379.3	9852.	1379.9	9862.	1378.2	9870.	1379.8	9879.	1378.9	9891.
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GR	1379.5	9916.	1379.6	9930.	1378.9	9944.	1379.2	9955.	1379.3	9967.
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GR	1374.7	9982.	1372.4	9992.	1372.	10000.	1373.2	10014.	1375.6	10023.
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GR	1379.3	10037.	1380.6	10048.	1378.	10062.	1377.5	10083.	1377.4	10102.
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GR	1377.7	10117.	1377.8	10126.	1385.	10127.				
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ET			4.1	9930.	10130.					
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X1	21.363	55.	9928.	10088.	740.	700.	702.			
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GR	1384.8	9135.	1384.7	9160.	1383.9	9189.	1384.6	9215.	1383.9	9245.
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GR	1384.4	9279.	1383.8	9313.	1384.	9345.	1384.1	9374.	1383.8	9405.
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GR	1383.5	9428.	1384.5	9459.	1385.	9498.	1384.7	9527.	1385.	9549.
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GR	1382.2	9561.	1381.	9570.	1382.1	9583.	1383.9	9596.	1384.3	9628.
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GR	1384.3	9657.	1384.	9697.	1383.6	9739.	1384.1	9779.	1383.9	9811.
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GR	1383.1	9822.	1383.6	9848.	1383.3	9886.	1383.5	9907.	1384.1	9916.
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GR	1383.2	9922.	1384.4	9928.	1383.6	9939.	1379.2	9954.	1377.7	9977.
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GR	1375.	9996.	1374.8	10000.	1375.	10016.	1374.2	10037.	1374.1	10045.
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GR	1377.5	10066.	1382.1	10088.	1383.8	10108.	1384.	10125.	1384.5	10147.
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GR	1382.7	10174.	1383.2	10202.	1383.1	10224.	1383.1	10245.	1383.3	10265.
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GR	1384.3	10285.	1383.4	10301.	1383.	10319.	1383.	10334.	1383.	10337.
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ET			4.1	9852.	10077.					
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X1	21.484	33.	9932.	10026.	650.	520.	639.			
GR	1386.8	9487.	1385.8	9527.	1385.8	9572.	1385.4	9614.	1384.8	9647.
GR	1385.2	9678.	1385.6	9709.	1386.7	9746.	1385.9	9776.	1384.5	9805.
GR	1383.9	9837.	1384.4	9867.	1384.	9892.	1386.5	9919.	1386.9	9932.
GR	1386.2	9943.	1383.5	9964.	1380.2	9970.	1379.7	9988.	1378.5	9994.
GR	1378.6	10000.	1381.2	10014.	1386.5	10026.	1386.6	10053.	1387.8	10056.
GR	1385.5	10060.	1388.2	10068.	1385.8	10075.	1387.4	10079.	1387.4	10101.
GR	1387.6	10116.	1387.5	10131.	1387.4	10134.				
ET			4.1	9940.	10165.					
X1	21.576	43.	9980.	10087.	320.	480.	486.			
GR	1388.7	9388.	1388.6	9414.	1388.2	9461.	1388.5	9500.	1389.3	9532.
GR	1388.7	9570.	1388.5	9607.	1387.9	9643.	1388.6	9664.	1388.8	9705.
GR	1389.1	9743.	1388.9	9780.	1388.	9821.	1388.4	9852.	1388.7	9889.
GR	1389.1	9922.	1389.7	9952.	1390.1	9968.	1390.	9980.	1382.5	9994.
GR	1382.1	10000.	1382.2	10008.	1383.8	10015.	1385.1	10038.	1385.2	10056.
GR	1384.1	10065.	1384.6	10073.	1388.3	10087.	1387.1	10114.	1387.1	10140.
GR	1387.8	10162.	1387.7	10199.	1388.4	10243.	1388.7	10281.	1389.3	10300.
GR	1390.3	10307.	1389.2	10313.	1390.7	10320.	1387.6	10329.	1388.9	10335.
GR	1389.7	10348.	1390.2	10360.	1390.3	10386.				
QT	2.	5500.	5500.							
ET			4.1	9890.	10115.					
X1	21.669	35.	9962.	10031.	440.	470.	491.			
GR	1393.2	9392.	1393.	9426.	1392.7	9446.	1392.3	9515.	1392.9	9562.
GR	1392.2	9606.	1392.8	9663.	1392.7	9710.	1393.1	9742.	1393.5	9777.
GR	1393.3	9819.	1392.7	9858.	1392.2	9893.	1391.6	9925.	1392.	9949.
GR	1393.8	9962.	1392.7	9974.	1392.2	9982.	1385.	9989.	1384.	9997.
GR	1384.5	10000.	1385.1	10011.	1388.7	10023.	1392.	10031.	1391.2	10045.
GR	1392.	10074.	1391.7	10124.	1391.9	10182.	1392.	10245.	1392.1	10303.
GR	1391.9	10361.	1392.	10395.	1392.6	10401.	1391.6	10404.	1393.3	10414.
ET			4.1	9940.	10140.					
X1	21.742	25.	9975.	10091.	430.	390.	385.			
GR	1396.	9733.	1394.6	9753.	1395.1	9777.	1395.	9802.	1395.	9839.
GR	1395.6	9885.	1395.1	9930.	1395.3	9940.	1394.7	9975.	1387.4	9991.
GR	1386.4	10000.	1386.9	10015.	1392.2	10035.	1391.9	10052.	1389.9	10062.
GR	1391.5	10080.	1394.2	10091.	1394.2	10126.	1394.9	10176.	1395.	10240.
GR	1394.6	10281.	1394.8	10324.	1395.2	10355.	1395.3	10367.	1397.3	10376.

ET		4.1	9900.	10100.						
X1	21.840	22.	9946.	10054.	430.	430.	517.			
GR	1401.5	9827.	1402.1	9842.	1397.3	9860.	1395.5	9882.	1395.	9913.
GR	1395.3	9931.	1396.2	9946.	1395.7	9953.	1392.1	9967.	1392.6	9984.
GR	1393.7	9997.	1393.3	10000.	1392.5	10020.	1391.1	10033.	1393.5	10045.
GR	1397.	10054.	1396.5	10097.	1397.3	10145.	1397.8	10186.	1397.5	10227.
GR	1397.6	10273.	1398.3	10308.						

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ET		4.1	9830.	10080.						
X1	21.895	31.	9975.	10031.	330.	220.	290.			
GR	1402.6	9807.	1402.6	9825.	1398.4	9839.	1397.2	9857.	1396.7	9885.
GR	1396.7	9919.	1397.7	9939.	1397.9	9960.	1398.	9975.	1397.1	9981.
GR	1393.	9990.	1391.9	10000.	1392.3	10010.	1394.	10021.	1397.7	10031.
GR	1398.6	10046.	1399.	10078.	1398.4	10113.	1398.6	10149.	1398.7	10187.
GR	1398.5	10225.	1398.1	10251.	1398.6	10292.	1398.6	10333.	1399.3	10364.
GR	1398.8	10399.	1399.5	10428.	1400.5	10446.	1400.5	10458.	1399.7	10463.
GR	1400.9	10470.								

UNION HILLS RD: PIPES BENEATH LOW CROSSING WERE MODELLED AS AN AREA
 (BAREA) WITH AN ORIFICE COEFFICIENT. THE 100 YEAR FLOW THROUGH THE
 PIPES WAS NEGLIGIBLE (18 CFS). UNION HILLS IS THEREFORE MORE
 APPROPRIATELY MODELLED AS A NORMAL SECTION USING GR CARDS.

ET		4.1	9650.	10070.						
X1	21.933	12.	9865.	10140.	210.	210.	210.			
GR	1402.	9060.	1400.3	9440.	1400.	9590.	1398.	9680.	1397.4	9725.
GR	1398.	9780.	1399.4	9840.	1398.	9865.	1396.8	10000.	1398.	10140.
GR	1400.	10285.	1406.	10286.						
NC	0.045	0.045	0.045							
ET		4.1	9630.	10051.						
X1	21.953	39.	9969.	10029.	75.	75.	74.			
GR	1402.	9320.	1400.5	9487.	1400.8	9527.	1401.4	9557.	1400.2	9580.
GR	1401.7	9599.	1401.1	9621.	1400.2	9647.	1399.6	9678.	1398.8	9699.
GR	1398.3	9714.	1397.6	9720.	1396.6	9725.	1398.8	9735.	1399.3	9745.
GR	1398.8	9759.	1397.3	9768.	1398.9	9782.	1398.9	9810.	1400.1	9832.
GR	1402.1	9851.	1401.7	9870.	1403.3	9884.	1403.7	9893.	1403.4	9912.

GR	1402.3	9939.	1401.	9956.	1399.7	9965.	1400.2	9969.	1395.6	9986.
GR	1394.4	9997.	1394.1	10000.	1394.	10010.	1394.9	10018.	1398.3	10029.
GR	1400.1	10044.	1401.6	10058.	1401.4	10064.	1407.	10065.		
ET			4.1	9620.	10030.					
X1	22.065	39.	9961.	10028.	430.	630.	591.			
GR	1404.2	9230.	1404.	9250.	1402.	9270.	1402.	9500.	1403.1	9594.
GR	1403.6	9604.	1400.4	9627.	1400.1	9645.	1400.6	9657.	1400.3	9680.
GR	1400.5	9700.	1401.9	9717.	1403.3	9731.	1403.7	9746.	1403.9	9761.
GR	1400.1	9776.	1400.	9785.	1401.1	9796.	1401.	9816.	1403.7	9829.
GR	1403.7	9843.	1400.7	9861.	1399.7	9869.	1402.7	9890.	1403.5	9899.
GR	1404.1	9915.	1404.8	9934.	1403.6	9950.	1404.1	9961.	1401.4	9977.
GR	1398.	9989.	1395.8	9995.	1395.8	10000.	1395.9	10006.	1399.4	10010.
GR	1402.	10028.	1402.6	10043.	1406.6	10061.	1407.1	10085.		

ET			4.1	9620.	10020.					
X1	22.165	63.	9983.	10018.	530.	530.	528.			
GR	1406.	9130.	1405.2	9138.	1405.	9151.	1404.4	9164.	1402.8	9176.
GR	1402.7	9184.	1400.8	9204.	1399.8	9213.	1399.3	9222.	1401.2	9232.
GR	1403.	9256.	1403.8	9282.	1403.8	9308.	1404.3	9334.	1404.2	9364.
GR	1404.1	9396.	1404.	9425.	1404.9	9463.	1405.2	9499.	1405.3	9526.
GR	1404.9	9548.	1403.8	9565.	1402.8	9579.	1404.6	9595.	1404.8	9608.
GR	1402.4	9624.	1400.	9637.	1399.7	9645.	1400.6	9657.	1402.	9669.

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GR	1403.1	9686.	1404.5	9701.	1405.8	9714.	1406.2	9728.	1406.1	9741.
GR	1404.	9753.	1403.8	9760.	1405.2	9772.	1405.6	9784.	1405.3	9793.
GR	1402.9	9806.	1402.7	9820.	1402.6	9834.	1402.6	9843.	1401.8	9849.
GR	1401.9	9862.	1402.8	9872.	1403.8	9876.	1405.	9894.	1406.1	9909.
GR	1405.4	9919.	1403.1	9930.	1403.	9946.	1402.1	9967.	1400.9	9983.
GR	1395.3	9994.	1395.	10000.	1396.1	10007.	1403.7	10018.	1404.8	10038.
GR	1405.2	10053.	1405.2	10060.	1405.7	10065.				

ET			4.1	9650.	10027.					
X1	22.273	57.	9933.	10028.	470.	580.	570.			
GR	1418.7	9227.	1418.7	9238.	1412.4	9262.	1411.6	9274.	1410.9	9284.
GR	1409.	9292.	1407.6	9300.	1407.3	9314.	1406.3	9325.	1403.5	9335.
GR	1403.1	9344.	1403.	9350.	1404.3	9359.	1405.4	9369.	1405.8	9386.
GR	1406.7	9408.	1407.1	9427.	1407.4	9444.	1407.2	9460.	1406.4	9473.

GR	1406.5	9485.	1406.9	9502.	1407.7	9520.	1408.2	9532.	1407.1	9558.
GR	1404.4	9574.	1404.3	9598.	1406.	9622.	1407.	9657.	1407.3	9686.
GR	1406.2	9708.	1406.4	9727.	1406.4	9745.	1405.6	9754.	1402.6	9766.
GR	1402.8	9774.	1406.7	9789.	1409.4	9801.	1408.5	9827.	1407.9	9851.
GR	1408.8	9869.	1406.3	9887.	1407.	9902.	1404.	9915.	1404.1	9933.
GR	1403.2	9948.	1401.8	9961.	1400.6	9977.	1400.1	9992.	1399.4	9999.
GR	1399.8	10000.	1401.2	10011.	1404.	10021.	1406.9	10028.	1408.	10050.
GR	1408.3	10080.	1408.7	10109.						

ET			4.1	9860.	10040.					
X1	22.410	25.	9973.	10027.	750.	630.	723.			
GR	1420.	9802.	1419.1	9817.	1418.8	9825.	1415.8	9838.	1414.8	9850.
GR	1412.6	9867.	1413.9	9879.	1412.	9890.	1413.4	9903.	1414.5	9914.
GR	1416.1	9922.	1414.	9931.	1412.4	9941.	1411.4	9954.	1411.2	9967.
GR	1410.7	9973.	1405.7	9987.	1404.9	9997.	1404.	10000.	1404.7	10007.
GR	1407.6	10017.	1411.3	10027.	1413.5	10042.	1413.8	10057.	1414.4	10071.

ET			4.1	9890.	10050.					
X1	22.483	19.	9941.	10105.	380.	390.	385.			
GR	1421.	9823.	1420.2	9843.	1416.7	9873.	1414.4	9891.	1413.1	9915.
GR	1411.1	9941.	1407.8	9961.	1406.2	9984.	1405.5	10000.	1405.5	10027.
GR	1406.4	10056.	1408.3	10084.	1411.2	10105.	1412.3	10120.	1412.6	10138.
GR	1412.6	10156.	1411.9	10175.	1412.7	10191.	1419.8	10208.		

ET			4.1	9968.	10064.					
X1	22.578	13.	9968.	10072.	540.	490.	502.			
GR	1417.2	9914.	1417.6	9942.	1416.4	9958.	1416.6	9968.	1406.7	9983.
GR	1406.7	9993.	1407.5	10000.	1408.5	10024.	1408.5	10040.	1408.8	10050.
GR	1415.6	10063.	1421.2	10072.	1421.4	10090.				

ET			4.1	9830.	10028.					
X1	22.675	19.	9736.	10032.	570.	480.	512.			
GR	1419.9	9671.	1419.9	9710.	1419.8	9736.	1410.6	9759.	1411.1	9783.
GR	1410.6	9809.	1409.7	9828.	1410.8	9850.	1411.5	9873.	1413.4	9892.
GR	1412.2	9922.	1411.	9950.	1411.	9976.	1410.7	10000.	1410.6	10015.
GR	1420.	10032.	1428.3	10047.	1426.6	10055.	1426.	10060.		

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ET			4.1	9977.	10160.					
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XI	22.794	20.	9983.	10169.	460.	500.	628.			
GR	1420.6	9968.	1417.8	9983.	1413.6	9998.	1412.4	10000.	1412.3	10013.
GR	1410.7	10041.	1411.6	10065.	1413.7	10080.	1413.8	10103.	1414.2	10119.
GR	1411.7	10136.	1413.8	10151.	1416.1	10169.	1417.2	10189.	1420.3	10202.
GR	1423.1	10219.	1427.	10244.	1429.9	10261.	1429.8	10278.	1429.8	10282.
ET			4.1	9951.	10120.					
XI	22.880	34.	9927.	10167.	440.	480.	454.			
GR	1427.3	9791.	1427.	9807.	1426.5	9815.	1424.8	9827.	1424.6	9838.
GR	1424.8	9863.	1424.8	9883.	1424.5	9903.	1424.7	9917.	1426.4	9927.
GR	1423.9	9934.	1421.4	9947.	1418.5	9958.	1416.1	9968.	1415.	9984.
GR	1414.	9999.	1414.3	10000.	1414.5	10012.	1415.2	10024.	1416.1	10048.
GR	1416.5	10067.	1416.4	10101.	1416.2	10125.	1415.5	10143.	1413.2	10152.
GR	1413.	10156.	1414.8	10160.	1424.2	10167.	1426.6	10188.	1428.4	10200.
GR	1430.9	10214.	1433.5	10230.	1433.8	10241.	1433.5	10248.		
ET			4.1	9890.	10026.					
XI	22.990	35.	9739.	10034.	480.	530.	581.			
GR	1427.7	9668.	1427.6	9697.	1425.6	9719.	1425.3	9730.	1425.4	9739.
GR	1423.9	9751.	1422.5	9767.	1422.4	9785.	1421.5	9804.	1421.3	9817.
GR	1421.3	9829.	1420.8	9843.	1419.5	9855.	1418.9	9864.	1417.9	9873.
GR	1419.4	9886.	1420.	9903.	1420.6	9921.	1420.8	9935.	1420.3	9949.
GR	1420.	9963.	1419.1	9977.	1419.1	9995.	1419.1	10000.	1418.7	10014.
GR	1420.3	10020.	1427.9	10034.	1427.3	10044.	1428.3	10060.	1430.5	10076.
GR	1435.7	10094.	1437.4	10108.	1438.7	10119.	1436.3	10126.	1435.1	10133.
ET			4.1	9958.	10090.					
XI	23.097	48.	9951.	10121.	640.	490.	565.			
GR	1433.9	9713.	1433.9	9740.	1433.8	9758.	1432.3	9772.	1432.1	9778.
GR	1433.5	9794.	1433.5	9811.	1433.5	9835.	1433.4	9849.	1431.1	9864.
GR	1430.	9878.	1430.1	9885.	1431.	9892.	1429.6	9901.	1429.1	9916.
GR	1429.6	9925.	1431.3	9935.	1432.2	9945.	1432.3	9951.	1427.9	9964.
GR	1426.4	9977.	1425.6	9988.	1425.1	9999.	1425.1	10000.	1426.	10012.
GR	1426.1	10021.	1426.5	10044.	1426.5	10063.	1426.5	10073.	1426.5	10082.
GR	1425.5	10093.	1426.4	10101.	1428.5	10112.	1430.8	10121.	1430.1	10135.
GR	1430.	10150.	1431.6	10163.	1432.8	10176.	1433.	10198.	1432.7	10221.
GR	1431.6	10247.	1430.9	10267.	1430.6	10286.	1431.5	10296.	1433.4	10310.
GR	1438.3	10337.	1439.7	10353.	1440.5	10363.				

THE BEARDSLEY ROAD LOW CROSSING IS MODELLED WITH GR CARDS AS A NORMAL

CROSS SECTION. THE BEARDSLEY ROAD CENTERLINE IS AT RM 23.168

ET		4.1	9830.	10140.						
X1	23.168	22.	9777.	10116.	330.	300.	375.			
GR	1435.4	9358.	1435.5	9412.	1435.6	9477.	1434.7	9533.	1433.2	9598.
GR	1431.8	9657.	1430.8	9718.	1429.5	9777.	1428.9	9827.	1429.	9877.
GR	1429.1	9942.	1429.	9999.	1429.1	10000.	1429.8	10053.	1430.3	10116.
GR	1431.8	10176.	1433.6	10230.	1434.3	10274.	1434.9	10326.	1435.5	10363.
GR	1435.6	10399.	1435.8	10409.						

DUE TO BREAKOUTS (SPLIT FLOWS) BETWEEN RM 23.55 AND RM 23.8, THE

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50 AND 100 YEAR Q'S ARE REDUCED PER THE FOLLOWING TABLE.

NO ENCROACHMENTS ARE COMPUTED FOR THE FOLLOWING REACH BETWEEN RM 23.253 AND 7TH STREET. FOR PURPOSES OF A FLOODWAY, A 100 FT CORRIDOR IS MAINTAINED OUTSIDE OF THE LEVEES (WHICH ARE LIKELY TO BE ERODABLE) TO PASS THE SPLIT FLOWS WHICH HAVE BEEN REMOVED FROM THE MODEL, AS DISCUSSED WITH CITY OF PHOENIX AND FLOOD CONTROL DISTRICT REPRESENTATIVES. IF THIS CORRIDOR IS NOT MAINTAINED, THE REDUCTION IN Q FOR THIS MODEL IS NOT VALID, RESULTING IN A FLOODWAY PROFILE ABOVE THE NATURAL PROFILE BY MORE THAN THE STATUTORY 1.0 FT.

	FULL Q	REDUCED Q
50 YEAR	4800.	3300
100 YEAR	5500.	3400

THE 10 YEAR Q (3200 CFS) IS UNAFFECTED

QT	2.	3400.	3400.							
NC	0.035	0.05	0.04							
ET		4.1	9978.5	10023.2						
X1	23.253	8.	9973.	10038.	470.	450.	459.			
GR	1437.5	9973.	1425.5	9995.	1425.2	10000.	1427.4	10008.	1429.2	10015.

GR	1444.2	10038.	1444.9	10052.	1445.	10060.				
ET			4.1	9969.	10036.					
X1	23.334	10.	9962.	10055.	400.	420.	417.			
GR	1443.8	9962.	1435.6	9979.	1433.2	9990.	1432.6	10000.	1433.2	10012.
GR	1435.4	10022.	1438.5	10032.	1444.2	10044.	1449.8	10055.	1449.6	10063.
X1	23.416	10.	9974.	10053.	400.	430.	433.			
GR	1447.7	9958.	1447.8	9974.	1439.2	9989.	1436.5	9999.	1436.6	10000.
GR	1437.2	10017.	1437.6	10030.	1444.4	10041.	1450.2	10053.	1450.4	10066.
X1	23.514	8.	9973.	10039.	560.	470.	517.			
GR	1451.5	9965.	1451.4	9973.	1439.8	9989.	1439.6	10000.	1440.1	10012.
GR	1441.5	10022.	1443.6	10029.	1451.1	10039.				

SPECIAL BRIDGE IS USED TO MODEL EMBANKMENT PLACED IN THE CHANNEL TO
ALLOW VEHICULAR ACCESS BETWEEN THE LANDFILL ON THE LEFT AND THE GRAVEL
PIT ON THE RIGHT. THE EMBANKMENT MAY WASH OUT, BUT FOR THIS STUDY, IT
IS ASSUMED TO REMAIN. LOW FLOWS PASS THROUGH 2-36" CMP'S.

X1	23.544			190.	150.	158.		1.8		
X3	10.						1445.	1445.		

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SB	1.25	2.48	3.2	0.	5.7	1.	14.1	0.	1442.	1441.4
X1	23.555				60.	60.	60.		0.6	

ELTRD IS 1448.4+0.6HV = 1449

X2			1.	1445.	1449.					
X3	10.						1480.	1480.		
BT	10.	9930.	1452.	0.	9939.	1451.2	0.	9951.	1451.1	0.
BT	9967.	1449.8	0.	9987.	1448.4	0.	10000.	1448.4	0.	10019.
BT	1448.6	0.	10041.	1449.5	0.	10055.	1450.	0.	10070.	1452.
BT	0.									
X1	23.591	17.	9968.	10045.	100.	210.	190.			

ARTIFICIAL LEVEES ARE SET VERY HIGH ON THE LEFT AND RIGHT OVERBANKS

USING THE X3 CARD TO CONSIDER ONLY THE CHANNEL AREA AS EFFECTIVE. SPLIT
 FLOW THAT BREAKS OUT UPSTREAM IS ACCOUNTED FOR BY THE REDUCED Q. FLOWS
 ARE RETURNED TO CAVE CREEK DOWNSTREAM AT BEARDSLEY ROAD.

X3	10.							1480.	1480.	
GR	1460.	9700.	1448.	9760.	1448.	9850.	1452.9	9959.	1452.9	9968.
GR	1446.8	9982.	1444.6	9993.	1444.2	10000.	1444.2	10013.	1444.9	10023.
GR	1449.9	10036.	1453.8	10045.	1451.9	10048.	1448.	10070.	1448.	10430.
GR	1450.	10770.	1452.	11200.						
X1	23.691	43.	9965.	10036.	510.	540.	528.			

HIGH ARTIFICIAL LEVEE

X3	10.							1480.	1480.	
GR	1461.1	9722.	1449.4	9747.	1449.4	9767.	1449.5	9784.	1449.1	9800.
GR	1448.3	9819.	1448.6	9832.	1448.3	9866.	1449.	9894.	1449.3	9913.
GR	1450.2	9925.	1453.5	9936.	1456.1	9944.	1455.4	9951.	1457.3	9955.
GR	1457.6	9965.	1450.8	9980.	1448.5	9985.	1447.2	9991.	1446.6	9999.
GR	1446.4	10000.	1447.	10011.	1449.6	10017.	1451.3	10028.	1455.3	10036.
GR	1453.2	10045.	1452.4	10054.	1451.3	10057.	1452.2	10062.	1452.4	10077.
GR	1452.2	10094.	1451.7	10108.	1452.6	10117.	1451.4	10123.	1452.7	10128.
GR	1451.	10138.	1452.3	10143.	1451.7	10147.	1453.4	10155.	1452.1	10160.
GR	1452.	10320.	1454.	10560.	1456.	10730.				

Q IS NOW CHANGED TO BE THE AVERAGE OF THE FULL Q UPSTREAM OF THE
 BREAKOUT AND OF THE REDUCED Q DOWNSTREAM OF THE BREAKOUT.

QT	2.	4350.	4350.							
X1	23.815	31.	9951.	10037.	650.	680.	655.			

HIGH ARTIFICIAL LEVEE

X3	10.							1480.	1480.	
GR	1470.	9650.	1459.3	9716.	1453.5	9738.	1453.1	9772.	1453.4	9812.
GR	1454.5	9857.	1455.1	9890.	1455.	9914.	1455.4	9941.	1458.9	9951.
GR	1458.	9963.	1451.4	9979.	1449.7	9988.	1449.9	9996.	1449.7	10000.

GR	1449.7	10017.	1454.6	10028.	1457.8	10037.	1456.8	10043.	1456.8	10060.
GR	1456.9	10081.	1457.1	10110.	1458.2	10140.	1458.4	10157.	1459.5	10172.
GR	1458.5	10182.	1456.	10195.	1457.2	10215.	1458.7	10226.	1457.1	10235.
GR	1465.5	10249.								

Q IS NOW CHANGED TO BE THE FULL Q UPSTREAM OF THE BREAKOUT

QT	2.	5300.	5300.							
X1	23.912	12.	9967.	10043.	480.	510.	512.			

HIGH ARTIFICIAL LEVEE

X3	10.						1480.	1480.		
GR	1463.9	9868.	1461.7	9878.	1460.6	9898.	1460.7	9925.	1461.4	9950.
GR	1461.3	9967.	1451.3	9983.	1447.9	9994.	1448.	10000.	1447.9	10010.
GR	1454.9	10026.	1460.9	10043.						
X1	23.989	9.	9937.	10049.	400.	410.	407.			
GR	1465.6	9937.	1457.9	9957.	1452.6	9977.	1450.8	9989.	1449.7	10000.
GR	1450.5	10014.	1452.5	10024.	1458.	10036.	1465.8	10049.		

7TH STREET (SPECIAL BRIDGE). THE GR CARDS FROM SECTION 24.106 TAKEN

UPSTREAM OF 7TH STREET ARE REPEATED AT THE DOWNSTREAM FACE OF THE BRIDGE

AS SECTION 24.086 WITH PSXECE = -1.3.

NC			0.3	0.5						
X1	24.086	12.	9972.	10044.	450.	560.	512.		-1.3	
X3	10.						1463.7	1463.7		
GR	1470.1	9942.	1464.1	9955.	1454.9	9972.	1454.9	10044.	1456.	10052.
GR	1458.5	10064.	1461.9	10091.	1463.7	10108.	1465.7	10123.	1466.1	10136.
GR	1466.4	10155.	1467.4	10310.						
SB	0.9	1.56	3.	100.	71.6	3.	590.	0.	1453.6	1453.6
X1	24.096				56.	56.	56.			

ELTRD IS 1464.7+2HV = 1466.7

X2			1.	1462.2	1466.7					
X3	10.						1466.	1466.		

ET			4.1	9955.	10055.					
X1	24.106	13.	9955.	10064.	80.	20.	53.			
GR	1470.1	9942.	1464.1	9955.	1455.2	9972.	1454.7	9997.	1454.2	10000.
GR	1454.9	10028.	1456.	10052.	1458.5	10064.	1461.9	10091.	1463.7	10108.
GR	1465.7	10123.	1466.1	10136.	1466.4	10155.				
NC				0.1	0.3					
ET			4.1	9950.	10050.					

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X1	24.195	13.	9933.	10142.	470.	460.	470.			
GR	1498.7	9862.	1497.1	9889.	1470.4	9933.	1454.1	9961.	1453.6	9996.
GR	1453.6	10000.	1453.9	10032.	1455.5	10052.	1456.3	10073.	1458.8	10093.
GR	1462.3	10117.	1466.4	10142.	1468.9	10164.				
ET			4.1	9940.	10080.					
X1	24.322	11.	9871.	10064.	640.	630.	671.			
GR	1473.7	9820.	1463.5	9871.	1453.2	9895.	1451.6	9972.	1452.1	10000.
GR	1454.5	10042.	1456.8	10064.	1457.7	10134.	1459.6	10177.	1465.2	10220.
GR	1470.9	10262.								
NC	0.045	0.045	0.045							
ET			4.1	9927.	10080.					
X1	24.444	16.	9928.	10122.	640.	600.	644.			
GR	1478.8	9885.	1478.7	9906.	1465.	9928.	1457.6	9939.	1458.	9972.
GR	1457.3	9995.	1457.7	10000.	1459.1	10027.	1460.4	10064.	1459.3	10097.
GR	1461.7	10122.	1458.9	10142.	1460.7	10166.	1460.3	10180.	1468.5	10215.
GR	1474.2	10230.								
ET			4.1	9950.	10160.					
X1	24.542	20.	9914.	10187.	470.	530.	517.			
GR	1488.2	9844.	1464.	9914.	1463.2	9948.	1460.4	9968.	1459.8	9996.
GR	1459.8	10000.	1461.4	10017.	1462.3	10033.	1470.7	10056.	1470.3	10083.
GR	1472.2	10112.	1470.9	10127.	1464.4	10141.	1462.5	10166.	1463.	10171.
GR	1464.7	10175.	1467.8	10187.	1473.8	10237.	1475.2	10268.	1478.9	10283.

THE DEER VALLEY ROAD LOW CROSSING IS MODELLED WITH GR CARDS AS A NORMAL
CROSS SECTION. THE DEER VALLEY ROAD CENTERLINE IS AT RM 24.635.

ET		4.1	9940.	10060.						
X1	24.635	8.	9876.	10111.	650.	220.	491.			
GR	1480.9	9752.	1474.5	9876.	1467.	9983.	1466.8	10000.	1467.9	10037.
GR	1472.4	10111.	1478.6	10193.	1480.1	10247.				
QT	2.	5200.	5200.							

DIVIDED FLOW OCCURS FROM SECTION 24.738 TO 25.163. ALTHOUGH THE RIGHT
 OVERBANK IS SOMETIMES LOWER THAN THE CHANNEL, EFFECTIVE FLOW IS
 CONTROLLED DOWNSTREAM AT SECTION 24.738. OVERBANK LOW ELEVATIONS ARE
 ARTIFICIALLY ADJUSTED AT SECTIONS 24.838 TO 25.163 TO YIELD QROB =
 QROB AT SECTION 24.738 + OR - 10%. NATURAL CONDITIONS AT SECTION
 25.048 RESULT IN A QROB THAT IS LESS THAN SECTION 24.738.

ET		4.1	9936.	10200.						
X1	24.738	21.	9897.	10038.	350.	630.	544.			
GR	1490.4	9703.	1489.7	9717.	1479.2	9736.	1479.3	9805.	1477.7	9884.
GR	1481.2	9897.	1477.6	9931.	1472.8	9965.	1472.3	9986.	1472.	10000.
GR	1473.5	10023.	1480.9	10038.	1476.7	10045.	1480.8	10067.	1477.6	10079.
GR	1473.6	10088.	1473.6	10127.	1472.5	10224.	1474.4	10291.	1473.6	10330.
GR	1477.6	10343.								

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ET		4.1	9968.	10350.						
X1	24.838	20.	9945.	10019.	470.	450.	528.			
	1488.5	9909.	1483.8	9945.	1477.7	9986.	1474.8	9991.	1474.7	10000.
	1475.	10004.	1483.5	10019.	1477.3	10032.	1479.5	10066.	1469.1	10111.
	1467.6	10133.	1468.5	10162.	1472.5	10185.	1469.9	10199.	1469.7	10219.
	1470.	10270.	1466.	10365.	1466.	10450.	1468.	10630.	1490.	10660.
GR	1488.5	9909.	1483.8	9945.	1477.7	9986.	1474.8	9991.	1474.7	10000.
GR	1475.	10004.	1483.5	10019.	1479.	10032.	1479.5	10066.	1479.	10111.
GR	1479.	10133.	1479.	10162.	1479.	10185.	1479.	10199.	1479.	10219.
GR	1479.	10270.	1479.	10365.	1479.	10450.	1479.	10630.	1490.	10660.

ET		4.1	9860.	10300.						
X1	24.943	17.	9983.	10017.	530.	570.	554.			
	1504.8	9651.	1494.9	9694.	1493.1	9736.	1481.7	9813.	1480.7	9926.
	1482.4	9945.	1481.8	9983.	1478.	9990.	1477.9	10000.	1477.7	10004.

1484.8 10017. 1483.6 10032. 1478.1 10044. 1470. 10080. 1470. 10540.

1480. 10610. 1503.3 10690.

GR	1504.8	9651.	1494.9	9694.	1493.1	9736.	1481.7	9813.	1480.7	9926.
GR	1482.4	9945.	1481.8	9983.	1478.	9990.	1477.9	10000.	1477.7	10004.
GR	1484.8	10017.	1483.6	10032.	1481.	10044.	1481.	10080.	1481.	10540.
GR	1481.	10610.	1503.3	10690.						

ET 4.1 9850. 10250.

X1 25.048 23. 9966. 10017 580. 520. 554.

GR	1497.2	9659.	1493.6	9692.	1486.7	9707.	1486.	9817.	1486.	9941.
GR	1486.6	9966.	1485.7	9981.	1484.	9986.	1484.	10000.	1493.6	10017.
GR	1488.3	10026.	1486.	10062.	1485.4	10154.	1486.5	10223.	1483.7	10232.
GR	1484.6	10247.	1488.	10258.	1487.5	10405.	1492.2	10420.	1489.	10431.
GR	1484.	10450.	1484.	10470.	1500.	10525.				

QT 2. 4900. 4900.

ET 4.1 9940. 10175.

X1 25.163 16. 9972. 10025. 640. 580. 607.

1499.3 9878. 1492.6 9917. 1490.2 9947. 1489.9 9965. 1491.6 9972.

1486.2 9984. 1486.3 10000. 1486. 10005. 1493.1 10025. 1485.3 10044.

1486.3 10088. 1486.3 10147. 1486.4 10220. 1488.4 10291. 1498.8 10312.

1499.8 10417.

GR	1499.3	9878.	1492.6	9917.	1490.2	9947.	1489.9	9965.	1491.6	9972.
GR	1486.2	9984.	1486.3	10000.	1486.	10005.	1493.1	10025.	1489.	10044.
GR	1489.	10088.	1489.	10147.	1489.	10220.	1489.	10291.	1498.8	10312.
GR	1499.8	10417.								

THE BREAKOUT IN THE RIGHT OVERBANK IS NOT EFFECTIVE DUE TO DOWNSTREAM
 PONDING. HIGH ARTIFICIAL LEVEES HAVE BEEN SET ON THE RIGHT AT SECTIONS
 25.262, 25.374, AND 25.434.

ET 4.1 9750. 10023.

X1 25.262 28. 9948. 10030. 470. 570. 523.

X3 10. 1491.6 1510.

GR	1503.2	9465.	1506.4	9470.	1489.6	9513.	1490.2	9547.	1492.2	9618.
GR	1491.5	9646.	1492.7	9689.	1492.6	9707.	1490.5	9823.	1491.6	9948.
GR	1489.1	9969.	1493.6	9987.	1490.2	10000.	1490.8	10016.	1496.8	10030.

GR	1488.4	10044.	1487.4	10059.	1486.	10070.	1484.4	10260.	1486.	10380.
GR	1492.	10420.	1492.	10450.	1484.	10475.	1484.	10510.	1488.	10535.
GR	1486.	10575.	1488.	10585.	1494.	10610.				
ET			4.1	9925.	10023.					
X1	25.374	16.	9969.	10023.	680.	300.	591.			
X3	10.							1499.3		
GR	1510.	9628.	1498.2	9659.	1496.	9704.	1495.7	9838.	1496.2	9920.
GR	1496.	9933.	1497.8	9944.	1497.8	9950.	1495.6	9955.	1496.7	9963.
GR	1499.3	9969.	1493.5	9986.	1493.3	10000.	1493.5	10011.	1498.8	10023.
GR	1510.	10023.1								
NC	0.05	0.035	0.035							
ET			4.1	9970.	10036.					
X1	25.434	14.	9968.	10036.	400.	190.	317.			
X3	10.							1504.9		
GR	1511.5	9463.	1506.8	9561.	1504.8	9631.	1504.9	9716.	1502.	9788.
GR	1501.3	9885.	1500.8	9942.	1500.6	9954.	1504.9	9968.	1496.8	9990.
GR	1496.6	10000.	1495.8	10018.	1504.	10036.	1510.	10036.1		
ET			4.1	9970.	10050.					
X1	25.500	9.	9908.	10105.	250.	420.	349.			
GR	1511.5	9908.	1506.9	9927.	1504.5	9943.	1499.9	9957.	1497.7	10000.
GR	1498.5	10025.	1503.7	10061.	1507.7	10094.	1509.	10105.		

CAP CANAL OVERSHOOT STRUCTURE

NC			0.3	0.5						
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SECTION IN DOWNSTREAM OUTLET OF OVERSHOOT IN STILLING POOL

ET			4.1	9960.	10040.					
X1	25.523	9.	9963.	10037.	120.	120.	121.			
GR	1510.	9900.	1508.	9930.	1498.	9950.	1498.	9963.	1496.	9964.
GR	1496.	10036.	1498.	10037.	1498.	10050.	1510.	10100.		

SECTION AT DOWNSTREAM CREST OF OVERSHOOT WHERE FLOW PASSES

THROUGH CRITICAL DEPTH. DO NOT ENCROACH.

NC	0.05	0.035	0.015						
X1	25.534	4.	9963.	10037.	58.	58.	58.		
GR	1515.	9963.	1505.54	9964.	1505.54	10036.	1515.	10037.	

SECTION AT UPSTREAM END OF NARROW CHUTE. DO NOT ENCROACH.

X1	25.551				90.	90.	90.		
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SECTION AT UPSTREAM FLARED ENTRANCE TO OVERSHOOT. DO NOT ENCROACH.

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X1	25.557	4.	9954.	10046.	32.	32.	32.		
GR	1515.	9954.	1505.54	9973.	1505.54	10027.	1515.	10046.	

NATURAL SECTION UPSTREAM OF OVERSHOOT. SET ENCROACHMENTS TO NATURAL SSTA & ENDSTA.

NC	0.035	0.035	0.035						
QT	2.	2900.	2900.						
ET			4.1	9949.	10050.				
X1	25.561	5.	9948.	10069.	20.	20.	21.		
GR	1514.9	9948.	1505.6	9971.	1505.7	10000.	1506.3	10048.	1515.2 10069.
NC				0.1	0.3				
QT	2.	2700.	2700.						
ET			4.1	9950.	10050.				
X1	25.680	36.	9927.	10093.	580.	660.	628.		
GR	1519.8	9136.	1518.8	9203.	1516.1	9267.	1515.7	9325.	1515.7 9359.
GR	1516.7	9372.	1514.9	9462.	1514.2	9504.	1515.2	9516.	1515.6 9559.
GR	1515.7	9593.	1515.	9622.	1516.9	9637.	1515.3	9653.	1512.1 9664.
GR	1512.4	9688.	1513.8	9704.	1518.5	9720.	1510.6	9747.	1514.3 9796.
GR	1513.9	9866.	1514.4	9927.	1508.7	9946.	1511.3	9961.	1511.2 9985.
GR	1506.5	9997.	1506.8	10000.	1506.8	10011.	1510.5	10022.	1511.1 10057.
GR	1509.6	10063.	1511.2	10093.	1512.4	10167.	1510.	10278.	1508.7 10295.
GR	1534.1	10338.							

QT	2.	2500.	2500.							
ET			4.1	9982.	10082.					
X1	25.786	32.	9978.	10056.	600.	470.	560.			
X3	10.							1518.9		
GR	1522.7	9477.	1522.5	9507.	1515.5	9529.	1515.7	9575.	1514.1	9667.
GR	1514.3	9705.	1513.4	9736.	1517.	9753.	1516.8	9776.	1517.2	9794.
GR	1513.5	9822.	1516.2	9837.	1512.2	9848.	1516.5	9872.	1514.6	9883.
GR	1517.	9913.	1517.	9922.	1515.2	9944.	1518.9	9964.	1518.9	9978.
GR	1511.2	9990.	1511.4	10000.	1510.7	10010.	1514.5	10020.	1512.2	10041.
GR	1515.8	10056.	1515.3	10189.	1517.3	10353.	1515.1	10418.	1514.	10435.
GR	1514.2	10440.	1532.8	10465.						

QT	2.	2300.	2300.							
ET			4.1	9959.	10059.					
X1	25.947	14.	9950.	10066.	870.	830.	850.			
GR	1524.	9816.	1522.7	9917.	1522.7	9950.	1518.8	9971.	1518.3	9986.
GR	1514.4	10000.	1514.5	10011.	1518.4	10028.	1519.7	10037.	1520.6	10066.
GR	1519.3	10107.	1518.2	10113.	1518.8	10119.	1529.5	10139.		

QT	2.	2200.	2200.							
ET			4.1	9950.	10023.					
X1	26.058	15.	9966.	10024.	540.	570.	586.			
GR	1529.2	9598.	1526.6	9747.	1527.1	9765.	1526.	9790.	1523.3	9845.
GR	1522.1	9904.	1521.1	9927.	1521.	9951.	1522.	9966.	1520.8	9976.
GR	1517.4	10000.	1516.2	10010.	1516.8	10014.	1524.	10024.	1541.9	10048.

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QT	2.	2000.	2000.							
ET			4.1	9970.	10040.					
X1	26.152	13.	9956.	10069.	240.	550.	496.			
GR	1530.2	9789.	1529.9	9847.	1527.3	9895.	1525.4	9956.	1522.3	9972.
GR	1520.	9982.	1520.1	10000.	1520.5	10018.	1522.2	10050.	1526.	10069.
GR	1530.7	10102.	1531.9	10114.	1533.1	10139.				

QT	2.	1900.	1900.							
ET			4.1	9973.	10060.					
X1	26.265	10.	9955.	10029.	580.	610.	597.			
GR	1533.9	9829.	1533.6	9913.	1534.3	9916.	1531.7	9955.	1523.8	9995.
GR	1522.	10000.	1522.5	10010.	1524.8	10015.	1526.5	10029.	1529.5	10115.

QT	2.	1700.	1700.							
ET			4.1	9967.	10064.					
X1	26.372	14.	9966.	10080.	600.	510.	565.			
GR	1558.5	9909.	1544.2	9928.	1535.7	9945.	1531.6	9966.	1528.4	9981.
GR	1525.9	9990.	1523.9	9995.	1523.8	10000.	1527.3	10016.	1526.6	10034.
GR	1529.9	10055.	1533.8	10080.	1534.6	10100.	1535.5	10116.		
QT	2.	1600.	1600.							
ET			4.1	9955.	10045.					
X1	26.492	17.	9866.	10084.	640.	610.	634.			
GR	1539.5	9819.	1538.5	9851.	1537.5	9866.	1533.3	9880.	1530.9	9891.
GR	1530.2	9920.	1527.7	9953.	1525.8	9972.	1525.8	9994.	1525.7	10000.
GR	1526.2	10019.	1528.4	10039.	1530.4	10062.	1534.8	10078.	1536.	10084.
GR	1536.4	10097.	1537.1	10100.						
NC	0.04	0.04	0.03							
QT	2.	1300.	1300.							
ET			4.1	9945.	10025.					
X1	26.582	37.	9869.	10028.	460.	480.	475.			
GR	1538.6	9388.	1538.3	9411.	1535.	9445.	1532.2	9471.	1530.3	9493.
GR	1526.4	9510.	1525.5	9519.	1525.3	9539.	1526.3	9568.	1526.5	9602.
GR	1527.2	9622.	1526.7	9655.	1527.3	9691.	1526.9	9725.	1527.2	9752.
GR	1527.4	9786.	1528.1	9817.	1527.9	9845.	1528.2	9869.	1526.9	9894.
GR	1524.1	9911.	1524.9	9937.	1525.2	9958.	1525.6	9983.	1525.7	10000.
GR	1526.	10014.	1527.2	10028.	1526.4	10047.	1527.2	10086.	1526.5	10123.
GR	1526.8	10140.	1528.8	10157.	1528.8	10176.	1533.8	10195.	1536.6	10211.
GR	1536.7	10224.	1537.5	10226.						
ET			4.1	9970.	10030.					
X1	26.673	44.	9955.	10077.	510.	460.	480.			
X3	10.							1535.		
GR	1549.8	9490.	1541.8	9544.	1534.8	9585.	1533.1	9600.	1531.8	9629.
GR	1530.8	9656.	1530.5	9681.	1530.5	9715.	1530.5	9748.	1531.1	9773.
GR	1532.3	9803.	1532.9	9829.	1532.6	9851.	1532.1	9868.	1532.7	9898.
GR	1532.9	9922.	1532.6	9944.	1534.3	9955.	1532.6	9970.	1532.7	9988.
GR	1532.8	10000.	1531.8	10013.	1532.6	10023.	1532.2	10047.	1531.9	10061.
GR	1533.2	10077.	1533.2	10105.	1534.5	10130.	1536.4	10141.	1537.8	10149.
GR	1537.4	10165.	1536.9	10192.	1533.6	10205.	1533.2	10237.	1533.2	10265.

GR	1534.2	10285.	1534.8	10304.	1535.1	10331.	1535.6	10348.	1539.7	10359.
GR	1539.2	10378.	1539.9	10387.	1552.	10411.	1550.3	10420.		

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QT	2.	1100.	1100.							
ET			4.1	9981.	10031.					
X1	26.784	29.	9975.	10080.	590.	530.	586.			
GR	1556.2	9628.	1553.4	9629.	1551.5	9652.	1550.5	9674.	1549.6	9695.
GR	1548.7	9721.	1549.2	9749.	1548.9	9783.	1549.4	9822.	1549.5	9859.
GR	1549.4	9898.	1549.7	9925.	1550.7	9951.	1551.2	9975.	1542.7	9985.
GR	1543.2	10000.	1544.4	10019.	1545.4	10045.	1550.2	10069.	1551.5	10080.
GR	1550.8	10091.	1551.	10110.	1551.	10132.	1550.9	10150.	1551.	10162.
GR	1552.5	10191.	1552.7	10228.	1552.	10271.	1551.9	10279.		

QT	2.	1000.	1000.							
ET			4.1	9975.	10025.					
X1	26.883	21.	9773.	10122.	530.	500.	523.			
GR	1555.5	9726.	1549.5	9759.	1544.7	9773.	1542.	9791.	1540.1	9803.
GR	1540.1	9895.	1540.1	10000.	1540.1	10062.	1540.6	10074.	1541.3	10093.
GR	1542.8	10122.	1542.6	10148.	1542.5	10166.	1544.1	10179.	1546.3	10194.
GR	1549.	10209.	1553.7	10235.	1555.3	10255.	1557.4	10265.	1557.4	10279.
GR	1556.2	10282.								

QT	2.	900.	900.							
ET			4.1	9975.	10025.					
X1	26.984	32.	9943.	10170.	480.	460.	533.			
GR	1560.6	9811.	1559.7	9833.	1557.2	9861.	1554.5	9891.	1549.4	9920.
GR	1545.5	9943.	1543.8	9953.	1542.3	9968.	1542.1	10000.	1545.1	10012.
GR	1540.6	10023.	1540.6	10107.	1540.6	10124.	1541.7	10135.	1540.5	10147.
GR	1540.5	10156.	1546.5	10170.	1547.3	10189.	1547.5	10203.	1547.7	10218.
GR	1546.7	10231.	1543.5	10241.	1542.8	10256.	1542.3	10271.	1542.3	10282.
GR	1544.6	10290.	1543.4	10300.	1543.3	10310.	1544.8	10323.	1545.3	10333.
GR	1558.9	10356.	1551.6	10369.						

ET			4.1	9883.7	10013.1					
X1	27.060	33.	9980.	10019.	270.	470.	401.			
X3	10.							1565.		
GR	1566.5	9583.	1559.9	9608.	1557.5	9614.	1557.6	9617.	1560.3	9624.
GR	1560.6	9643.	1560.9	9670.	1559.8	9683.	1559.6	9706.	1560.	9720.

GR	1559.4	9740.	1559.5	9772.	1560.4	9795.	1560.	9824.	1558.8	9852.
GR	1558.7	9879.	1558.9	9895.	1558.5	9911.	1559.2	9940.	1560.	9954.
GR	1559.7	9963.	1560.6	9967.	1560.8	9980.	1554.6	9997.	1554.1	10000.
GR	1555.1	10005.	1562.6	10019.	1562.2	10040.	1562.1	10056.	1563.4	10068.
GR	1565.2	10081.	1566.	10093.	1563.9	10103.				
QT	2.	600.	600.							
ET			4.1	9881.1	10020.					
X1	27.166	36.	9977.	10023.	560.	560.	560.			
X3	10.							1565.	1565.	
GR	1572.	9622.	1572.2	9639.	1571.5	9661.	1569.4	9686.	1568.5	9709.
GR	1568.1	9719.	1568.4	9730.	1567.4	9742.	1567.1	9762.	1567.9	9772.
GR	1568.8	9787.	1567.6	9811.	1566.7	9830.	1566.	9847.	1562.3	9858.
GR	1558.7	9868.	1557.6	9870.	1558.4	9872.	1560.6	9875.	1560.9	9884.
GR	1560.9	9911.	1560.8	9943.	1560.7	9955.	1564.2	9963.	1564.2	9977.
GR	1555.2	9995.	1555.2	10000.	1555.2	10008.	1563.9	10023.	1563.9	10038.
GR	1561.1	10043.	1561.1	10067.	1560.8	10098.	1560.9	10129.	1561.5	10142.
GR	1562.8	10146.								

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SECTION 27.294 IS NEAR THE DOWNSTREAM OUTLET OF CAVE BUTTE DAM.

QT	2.	400.	400.							
ET			4.1	9972.	10022.2					
X1	27.294	26.	9967.	10027.	710.	630.	676.			
GR	1591.6	9811.	1589.8	9827.	1587.9	9839.	1589.7	9851.	1588.2	9870.
GR	1585.6	9883.	1584.2	9888.	1584.4	9900.	1583.9	9914.	1568.3	9948.
GR	1565.9	9954.	1565.2	9967.	1558.3	9980.	1557.2	9984.	1556.2	9987.
GR	1556.	10000.	1556.	10007.	1564.6	10027.	1565.6	10037.	1573.	10054.
GR	1572.8	10074.	1573.4	10093.	1574.	10112.	1575.	10135.	1575.4	10163.
GR	1575.6	10171.								

THE CENTERLINE OF CAVE BUTTE DAM IS AT RM 27.365.

FOLLOWING IS THE TRIBUTARY RUN FOR THE EAST FORK OF CAVE CREEK.

SECTION 19.56 IS JUST DOWNSTREAM OF THE CONFLUENCE WITH THE EAST
 FORK. THIS SECTION IS USED TO BEGIN THE TRIBUTARY RUN FOR THE
 EAST FORK OF CAVE CREEK. THE CONFLUENCE OCCURS AT RM 19.608

NC	0.035	0.035	0.035	0.1	0.3					
QT	2.	14600.	14600.							
ET			4.1	9921.37	10061.					
X1	-19.56	17.	9929.	10065.	730.	720.	729.			
GR	1346.1	9801.	1329.7	9902.	1329.7	9929.	1316.5	9950.	1316.8	9978.
GR	1315.6	10000.	1315.6	10008.	1316.6	10026.	1316.4	10035.	1317.5	10043.
GR	1330.6	10065.	1330.8	10099.	1330.5	10146.	1330.2	10195.	1330.9	10208.
GR	1331.2	10223.	1332.1	10301.						

SECTION 0.029 IS JUST UPSTREAM OF THE CONFLUENCE WITH CAVE CREEK
 WASH. SECTION 19.556 DOWNSTREAM IN THE WASH IS USED TO START THE
 RUN ON THE EAST FORK.

QT	2.	9500.	9500.							
NC	0.035	0.035	0.015							
ET			4.1	9942.56	10073.1					
X1	0.029	15.	9942.	10043.	380.	450.	430.			
GR	1336.7	9849.	1332.4	9893.	1329.5	9942.	1326.3	9954.	1326.3	9963.
GR	1319.8	9982.	1319.6	9995.	1319.6	10000.	1319.6	10019.	1328.2	10043.
GR	1330.	10090.	1330.3	10128.	1332.4	10166.	1333.1	10216.	1333.1	10217.
NC	0.035	0.035	0.03							
ET			4.1	9905.	10092.					
X1	0.112	22.	9887.	10101.	430.	450.	483.			
GR	1357.6	9597.	1333.1	9743.	1332.6	9804.	1332.	9816.	1331.8	9863.
GR	1332.1	9887.	1329.4	9906.	1329.4	9915.	1323.4	9937.	1322.3	9949.
GR	1321.5	9985.	1321.6	9999.	1321.6	10000.	1322.	10037.	1323.2	10049.
GR	1329.3	10076.	1334.8	10101.	1334.8	10139.	1333.4	10214.	1334.8	10286.

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GR	1334.5	10320.	1334.5	10321.						
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ET			4.1	9910.	10110.					
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X1	0.198	26.	9897.	10133.	460.	420.	454.			
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GR	1334.8	9569.	1336.5	9570.	1335.1	9591.	1335.7	9694.	1333.8	9754.
GR	1333.3	9863.	1332.4	9897.	1329.4	9916.	1325.5	9937.	1323.8	9965.
GR	1324.5	9981.	1324.8	9999.	1324.8	10000.	1324.1	10044.	1324.5	10058.
GR	1328.8	10085.	1328.8	10093.	1336.3	10122.	1337.8	10133.	1336.	10138.
GR	1337.3	10170.	1337.1	10262.	1337.	10356.	1345.1	10370.	1337.1	10382.
GR	1336.7	10417.								

ET			4.1	9903.	10054.					
X1	0.288	20.	9885.	10069.	470.	460.	475.			
GR	1338.2	9550.	1337.6	9684.	1336.1	9733.	1336.9	9848.	1336.	9885.
GR	1328.9	9933.	1326.6	9954.	1325.9	9978.	1325.7	10000.	1328.5	10026.
GR	1335.9	10069.	1335.9	10078.	1336.7	10089.	1336.2	10101.	1338.	10213.
GR	1339.6	10443.	1347.3	10459.	1341.	10472.	1341.9	10485.	1339.9	10517.

ET			4.1	9912.	10094.					
X1	0.398	19.	9904.	10119.	600.	540.	581.			
GR	1340.2	9739.	1340.7	9804.	1339.3	9843.	1338.9	9904.	1330.2	9949.
GR	1329.4	9979.	1328.8	10000.	1329.7	10061.	1338.1	10098.	1338.1	10105.
GR	1340.6	10119.	1338.4	10126.	1338.6	10168.	1340.5	10175.	1339.9	10190.
GR	1339.7	10352.	1339.2	10456.	1339.5	10478.	1339.8	10533.		

ET			4.1	9904.	10175.					
X1	0.482	20.	9937.	10024.	440.	270.	444.			
GR	1347.	9903.	1341.4	9904.	1341.1	9937.	1337.1	9953.	1333.4	9962.
GR	1331.2	9988.	1331.3	10000.	1331.3	10008.	1338.	10024.	1340.8	10093.
GR	1340.9	10125.	1341.6	10161.	1340.4	10236.	1341.6	10256.	1340.	10291.
GR	1341.1	10315.	1340.9	10402.	1341.5	10528.	1341.5	10640.	1343.	10910.

ET			4.1	9870.	10080.					
X1	0.575	19.	9869.	10049.	460.	500.	491.			
GR	1348.	9777.	1342.8	9778.	1340.2	9869.	1337.1	9896.	1341.1	9944.
GR	1337.8	9977.	1331.7	9990.	1331.5	9997.	1331.5	10000.	1332.	10011.
GR	1338.9	10023.	1343.1	10049.	1342.5	10105.	1343.5	10113.	1342.9	10186.
GR	1341.8	10239.	1342.	10274.	1343.2	10411.	1345.4	10755.		

QT	2.	9400.	9400.							
ET			4.1	9875.	10035.					
X1	0.697	16.	9847.	10023.	640.	640.	644.			
GR	1346.4	9847.	1345.3	9855.	1338.8	9882.	1338.1	9888.	1339.	9900.

GR	1340.4	9912.	1343.4	9919.	1341.4	9921.	1339.9	9950.	1334.9	9967.
GR	1334.6	10000.	1334.	10007.	1341.4	10023.	1343.8	10061.	1345.4	10102.
GR	1346.4	10237.								
NC	0.035	0.035	0.035							
ET			4.1	9880.	10040.					
XI	0.826	11.	9929.	10050.	680.	660.	681.			
GR	1349.5	9815.	1346.4	9893.	1345.5	9929.	1342.7	9969.	1338.8	9974.
GR	1338.8	9988.	1338.8	10000.	1339.2	10009.	1349.5	10050.	1350.1	10066.
GR	1351.	10219.								

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ET			4.1	9870.	10030.					
XI	0.945	20.	9856.	10034.	680.	600.	628.			
GR	1352.7	9469.	1352.6	9548.	1351.8	9674.	1351.8	9704.	1349.	9769.
GR	1349.8	9819.	1349.5	9843.	1348.6	9856.	1345.5	9866.	1346.8	9929.
GR	1347.7	9956.	1340.4	9978.	1340.8	10000.	1340.8	10008.	1349.5	10034.
GR	1350.1	10046.	1350.1	10100.	1352.8	10215.	1353.4	10254.	1353.	10284.
ET			4.1	9870.	10030.					
XI	1.035	22.	9841.	10022.	440.	460.	475.			
GR	1354.	9670.	1350.5	9723.	1352.3	9776.	1352.	9795.	1348.6	9823.
GR	1348.4	9832.	1350.8	9841.	1348.1	9844.	1349.2	9871.	1349.4	9908.
GR	1345.9	9921.	1348.6	9941.	1348.1	9948.	1343.9	9966.	1343.3	9983.
GR	1342.3	9992.	1341.9	10000.	1348.8	10022.	1351.2	10046.	1352.5	10059.
GR	1352.4	10100.	1353.	10153.						
NC	0.04	0.04	0.04							
ET			4.1	9890.	10050.					
XI	1.121	19.	9868.	10069.	480.	440.	454.			
GR	1355.2	9850.	1355.	9868.	1348.4	9897.	1346.1	9910.	1345.9	9931.
GR	1346.4	9955.	1345.1	9966.	1343.6	9994.	1343.6	10000.	1348.1	10015.
GR	1348.8	10036.	1350.6	10048.	1351.1	10059.	1353.6	10069.	1354.1	10082.
GR	1354.2	10121.	1355.	10134.	1355.1	10173.	1355.	10175.		
ET			4.1	9950.	10110.					
XI	1.204	16.	9949.	10043.	430.	450.	438.			
GR	1355.4	9930.	1355.6	9949.	1348.3	9964.	1348.3	9978.	1344.3	9991.
GR	1344.3	9995.	1344.8	10000.	1348.3	10027.	1352.5	10043.	1353.8	10057.

GR	1353.7	10072.	1353.5	10098.	1354.2	10165.	1356.1	10178.	1355.8	10262.
GR	1356.3	10334.								
QT	2.	9100.	9100.							
ET			4.1	9905.	10060.					
X1	1.315	17.	9904.	10074.	720.	700.	734.			
GR	1359.7	9904.	1352.7	9916.	1350.3	9931.	1348.8	10000.	1351.1	10012.
GR	1351.6	10028.	1353.4	10043.	1353.4	10056.	1356.5	10064.	1359.	10074.
GR	1357.8	10085.	1358.	10091.	1358.	10130.	1352.	10150.	1352.	10170.
GR	1358.	10230.	1360.	10240.						
NC	0.035	0.035	0.025							
ET			4.1	9895.	10085.					
X1	1.420	9.	9895.	10085.	380.	420.	407.			
GR	1364.	9860.	1362.	9870.	1360.	9895.	1356.	9910.	1354.9	10000.
GR	1356.	10070.	1360.	10085.	1362.	10100.	1364.	10120.		

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

0

CCHV= .100 CEHV= .300

*SECNO 17.588

17.588	14.09	1283.69	.00	1283.69	1284.02	.33	.00	.00	1278.10
15400.0	3410.6	11671.0	318.3	1017.0	2337.7	133.8	.0	.0	1276.40
.00	3.35	4.99	2.38	.040	.040	.040	.000	1269.60	9777.93
.000750	440.	496.	560.	0	0	0	.00	451.78	10229.71

FLOW DISTRIBUTION FOR SECNO= 17.59 CWSEL= 1283.69

STA= 9778. 9835. 9854. 9873. 9909. 9982. 10193. 10230.

PER Q=	6.7	5.2	4.0	3.9	2.5	75.8	2.1
AREA=	307.3	177.5	152.8	192.6	187.0	2337.7	133.8
VEL=	3.3	4.5	4.0	3.1	2.0	5.0	2.4

DEPTH= 5.4 9.3 8.0 5.3 2.6 11.1 3.6

*SECNO 17.662

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .50

17.662	12.22	1283.82	.00	.00	1284.71	.89	.52	.17	1276.40
15400.0	3988.7	11364.7	46.6	605.8	1441.9	21.3	24.8	3.4	1281.60
.01	6.58	7.88	2.19	.040	.040	.040	.000	1271.60	9829.44
.003036	380.	391.	400.	2	0	0	.00	319.71	10149.15

FLOW DISTRIBUTION FOR SECNO= 17.66 CWSEL= 1283.82

STA= 9829. 9835. 9844. 9871. 9911. 9941. 10130. 10149.

PER Q=	.0	.9	5.6	9.3	10.1	73.8	.3		
AREA=	3.1	30.8	139.7	223.0	209.2	1441.9	21.3		
VEL=	1.4	4.3	6.1	6.4	7.5	7.9	2.2		
DEPTH=	.6	3.4	5.2	5.6	7.0	7.6	1.1		

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 17.783

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .66

17.783	10.18	1285.58	.00	.00	1287.86	2.28	2.74	.42	1280.50
15400.0	296.5	14381.2	722.3	52.5	1157.6	106.7	48.6	7.0	1281.10
.03	5.65	12.42	6.77	.040	.040	.040	.000	1275.40	9900.35
.006939	540.	639.	500.	3	0	0	.00	201.37	10101.72

FLOW DISTRIBUTION FOR SECNO= 17.78 CWSEL= 1285.58

STA= 9900. 9921. 10064. 10074. 10097. 10102.

PER Q=	1.9	93.4	2.4	2.3	.0				
AREA=	52.5	1157.6	43.8	60.5	2.3				
VEL=	5.7	12.4	8.3	5.9	1.9				
DEPTH=	2.5	8.1	4.4	2.6	.5				

*SECNO 17.932

3301 HV CHANGED MORE THAN HVINS

17.932	13.08	1290.98	1290.58	.00	1294.60	3.62	6.34	.40	1289.70
15400.0	60.0	15314.7	25.3	22.4	1000.3	10.3	69.9	10.3	1290.20
.04	2.68	15.31	2.46	.040	.040	.040	.000	1277.90	9921.07
.009453	790.	787.	780.	5	11	0	.00	164.24	10085.31

FLOW DISTRIBUTION FOR SECNO= 17.93 CWSEL= 1290.98

STA= 9921. 9956. 10066. 10083. 10085.

PER Q= .4 99.4 .2 .0

AREA= 22.4 1000.3 9.9 .4

VEL= 2.7 15.3 2.5 1.2

DEPTH= .6 9.1 .6 .2

CCHV= .300 CEHV= .500

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 18.042

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

18.042	12.01	1294.31	.00	.00	1298.14	3.83	3.43	.10	1307.40
15400.0	.0	15400.0	.0	.0	980.7	.0	83.3	12.1	1307.40
.05	.00	15.70	.00	.000	.025	.000	.000	1282.30	9951.61
.004040	620.	581.	550.	4	0	0	.00	96.76	10048.37

FLOW DISTRIBUTION FOR SECNO= 18.04 CWSEL= 1294.31

STA= 9952. 10049.

PER Q= 100.0

AREA= 980.7

VEL= 15.7

DEPTH= 10.1

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.05	1.56	3.00	.00	75.00	4.00	1059.00	.81	1280.20	1279.90	

*SECNO 18.061

3301 HV CHANGED MORE THAN HVINS

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
1299.43	1299.04	1.15	0.	15400.	1059.	1060.	1293.20	1301.60	0.

18.061	13.34	1296.44	.00	.00	1299.43	2.99	1.29	.00	1308.20
15400.0	.0	15400.0	.0	.0	1109.9	.0	85.7	12.3	1308.20
.06	.00	13.88	.00	.000	.025	.000	.000	1283.10	9951.54
.002757	101.	101.	101.	4	0	0	.00	96.89	10048.43

FLOW DISTRIBUTION FOR SECNO= 18.06 CWSEL= 1296.44

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA= 9952. 10049.

PER Q= 100.0

AREA= 1109.9

VEL= 13.9

DEPTH= 11.5

*SECNO 18.081

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.03

18.081	18.44	1299.54	.00	.00	1300.24	.71	.13	.69	1286.60
15400.0	1235.5	12528.7	1635.8	321.6	1737.8	383.5	90.0	12.7	1284.90
.06	3.84	7.21	4.27	.035	.035	.035	.000	1281.10	9876.94
.000672	80.	106.	130.	3	0	0	.00	229.58	10106.51

FLOW DISTRIBUTION FOR SECNO= 18.08 CWSEL= 1299.54

STA= 9877. 9899. 9942. 10045. 10088. 10107.

PER Q= .1 7.9 81.4 10.5 .2

AREA= 14.7 306.9 1737.8 362.8 20.7

VEL= .8 4.0 7.2 4.4 1.2

DEPTH= .7 7.1 16.9 8.4 1.1

CCHV= .100 CEHV= .300

*SECNO 18.174

18.174	18.52	1300.22	.00	.00	1300.52	.30	.24	.04	1288.70
15400.0	1569.9	11409.1	2421.0	475.1	2330.4	1163.1	126.2	17.3	1294.60
.09	3.30	4.90	2.08	.035	.035	.035	.000	1281.70	9856.87
.000364	500.	491.	490.	2	0	0	.00	597.84	10454.71

FLOW DISTRIBUTION FOR SECNO= 18.17 CWSEL= 1300.22

STA= 9857. 9904. 9915. 9919. 10073. 10142. 10182. 10236. 10455.

PER Q= 5.0 3.9 1.3 74.1 4.6 4.8 4.1 2.3

AREA=	288.0	138.3	48.9	2330.4	313.6	260.8	268.3	320.4
VEL=	2.6	4.4	4.1	4.9	2.2	2.8	2.4	1.1
DEPTH=	6.1	12.6	12.2	15.1	4.5	6.5	5.0	1.5

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONTR	CORAR	TOPWID	ENDST

*SECNO 18.269

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .64

18.269	16.37	1300.17	.00	.00	1300.93	.76	.27	.14	1288.40
15400.0	2261.7	12456.3	682.0	445.5	1677.2	198.9	162.4	22.1	1292.40
.11	5.08	7.43	3.43	.035	.035	.035	.000	1283.80	9881.86
.000901	500.	502.	500.	2	0	0	.00	228.73	10110.59

FLOW DISTRIBUTION FOR SECNO= 18.27 CWSEL= 1300.17

STA= 9882. 9928. 9942. 10060. 10071. 10111.

PER Q=	7.5	7.2	80.9	2.3	2.1
AREA=	278.5	166.9	1677.2	76.7	122.2
VEL=	4.1	6.7	7.4	4.6	2.7
DEPTH=	6.0	11.9	14.2	7.0	3.1

*SECNO 18.362

18.362	15.24	1300.54	.00	.00	1301.51	.97	.51	.06	1290.00
15400.0	1154.3	13225.2	1020.5	240.2	1585.2	239.3	187.2	24.6	1290.60
.13	4.80	8.34	4.26	.035	.035	.035	.000	1285.30	9895.20
.001223	490.	491.	510.	2	0	0	.00	212.97	10108.18

FLOW DISTRIBUTION FOR SECNO= 18.36 CWSEL= 1300.54

STA= 9895. 9905. 9942. 10060. 10108.

PER Q=	.1	7.4	85.9	6.6
AREA=	9.5	230.7	1585.2	239.3
VEL=	1.4	4.9	8.3	4.3
DEPTH=	1.0	6.2	13.4	5.0

*SECNO 18.445

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

18.445	18.09	1305.39	1305.39	.00	1307.48	2.09	.94	.34	1290.00
15400.0	5165.6	3758.3	6476.1	569.9	217.6	715.8	205.8	27.8	1290.00

.14	9.06	17.27	9.05	.035	.035	.035	.000	1287.30	9885.22
.004315	470.	440.	460.	20	11	0	.00	386.47	10271.68

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 18.44 CWSEL= 1305.39

STA= 9885. 9920. 9978. 9992. 10005. 10040. 10060. 10097. 10200. 10272.

PER Q=	3.3	18.8	11.5	24.4	30.6	4.3	3.9	3.2	.1
AREA=	93.8	327.2	149.0	217.6	363.7	87.8	107.0	143.3	14.0
VEL=	5.4	8.8	11.9	17.3	12.9	7.5	5.7	3.5	.9
DEPTH=	2.7	5.6	10.6	16.7	10.4	4.4	2.9	1.4	.2

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	2.34	3.00	.00	6.11	1.00	33.20	.00	1287.70	1287.40	

*SECNO 18.456

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.46

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
9123.38	1308.44	.96	15108.	298.	33.	33.	1294.20	1299.50	458.
18.456	19.61	1307.31	.00	.00	1308.31	1.00	.83	.00	1290.40
15400.0	5168.4	2970.6	7261.0	741.4	237.5	1182.5	208.3	28.3	1290.40
.14	6.97	12.51	6.14	.035	.035	.035	.000	1287.70	9873.21
.002014	60.	60.	60.	3	0	8	.00	443.73	10316.94

FLOW DISTRIBUTION FOR SECNO= 18.46 CWSEL= 1307.31

STA= 9873. 9880. 9920. 9978. 9992. 10005. 10040. 10060. 10097. 10200. 10310. 10317.

PER Q=	.0	4.6	19.1	9.8	19.3	26.2	4.8	5.4	7.6	3.0	.0
AREA=	2.4	152.8	415.8	170.4	237.5	417.2	118.4	163.5	300.7	178.1	4.6
VEL=	1.0	4.6	7.1	8.9	12.5	9.7	6.2	5.1	3.9	2.6	1.4
DEPTH=	.4	3.8	7.2	12.2	18.3	11.9	5.9	4.4	2.9	1.6	.7

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

*SECNO 18.545

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.09

18.545	18.98	1308.28	.00	.00	1308.76	.47	.39	.05	1294.10
15400.0	1745.2	11300.0	2354.7	495.0	1857.3	682.4	236.0	32.3	1293.80
.17	3.53	6.08	3.45	.035	.035	.035	.000	1289.30	9881.31
.000460	440.	466.	480.	2	0	0	.00	288.68	10169.98

FLOW DISTRIBUTION FOR SECNO= 18.55 CWSEL= 1308.28

STA= 9881. 9889. 9951. 10058. 10073. 10094. 10108. 10121. 10135. 10170.

PER Q=	.0	11.3	73.4	5.4	4.8	1.9	1.0	1.1	1.0
AREA=	6.1	488.9	1857.3	179.8	188.7	93.6	60.3	67.7	92.4
VEL=	.8	3.6	6.1	4.6	3.9	3.2	2.5	2.6	1.7
DEPTH=	.8	7.9	17.4	12.0	9.0	6.7	4.6	4.8	2.6

*SECNO 18.575

18.575	19.13	1308.43	.00	.00	1308.83	.41	.07	.01	1291.50
15400.0	3584.2	3152.3	8663.5	833.2	511.1	1731.9	247.2	33.3	1289.70
.18	4.30	6.17	5.00	.035	.035	.035	.000	1289.30	9880.61
.000442	160.	160.	160.	2	0	0	.00	290.32	10170.93

FLOW DISTRIBUTION FOR SECNO= 18.58 CWSEL= 1308.43

STA= 9881. 9951. 9972. 10000. 10018. 10040. 10058. 10073. 10094. 10135. 10171.

PER Q=	11.4	11.8	20.5	13.8	16.2	10.8	5.4	4.8	4.1	1.1
AREA=	505.0	328.2	511.1	337.1	403.2	293.0	181.9	191.7	227.4	97.5
VEL=	3.5	5.5	6.2	6.3	6.2	5.7	4.5	3.9	2.8	1.7
DEPTH=	7.2	15.6	18.3	18.7	18.3	16.3	12.1	9.1	5.5	2.7

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	10.40	1.00	56.50	.00	1289.40	1289.30

*SECNO 18.583

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
						AREA			
3108.06	1308.92	.09	14974.	431.	57.	56.	1295.40	1299.00	288.

18.583	20.10	1309.50	.00	.00	1309.84	.34	1.00	.00	1291.60
15400.0	3685.4	3046.3	8668.3	924.1	538.2	1900.7	250.2	33.6	1289.80
.18	3.99	5.66	4.56	.035	.035	.035	.000	1289.40	9875.91
.000347	40.	40.	40.	2	0	7	.00	301.44	10177.35

FLOW DISTRIBUTION FOR SECNO= 18.58 CWSEL= 1309.50

STA= 9876. 9951. 9972. 10000. 10018. 10040. 10058. 10073. 10094. 10121. 10177.

PER Q=	12.3	11.6	19.8	13.3	15.7	10.5	5.4	5.1	3.4	2.9
AREA=	575.5	348.5	538.2	354.6	424.5	310.5	196.5	212.0	183.9	218.7
VEL=	3.3	5.1	5.7	5.8	5.7	5.2	4.2	3.7	2.8	2.0
DEPTH=	7.7	16.6	19.2	19.7	19.3	17.2	13.1	10.1	6.8	3.9

*SECNO 18.640

18.640	19.23	1309.43	.00	.00	1310.07	.64	.14	.09	1294.60
15400.0	2345.6	9850.5	3203.9	512.4	1350.9	710.6	271.0	35.5	1293.40
.19	4.58	7.29	4.51	.035	.035	.035	.000	1290.20	9879.37
.000663	300.	301.	310.	2	0	0	.00	255.52	10134.89

FLOW DISTRIBUTION FOR SECNO= 18.64 CWSEL= 1309.43

STA= 9879. 9887. 9920. 9955. 10033. 10111. 10132. 10135.

PER Q=	.0	2.3	12.9	64.0	20.6	.2	.0
AREA=	3.9	129.6	378.9	1350.9	688.5	21.6	.6
VEL=	.7	2.7	5.3	7.3	4.6	1.1	.4
DEPTH=	.5	3.9	10.8	17.3	8.8	1.0	.2

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 18.734

18.734	17.28	1309.68	.00	.00	1310.53	.84	.40	.06	1298.60
15400.0	1314.3	13486.7	599.0	303.8	1747.6	174.8	298.3	38.3	1300.80
.21	4.33	7.72	3.43	.035	.035	.035	.000	1292.40	9883.01
.000985	490.	496.	500.	0	0	0	.00	228.83	10111.84

FLOW DISTRIBUTION FOR SECNO= 18.73 CWSEL= 1309.68

STA= 9883. 9888. 9938. 10062. 10094. 10104. 10112.

PER Q=	.0	8.5	87.6	3.7	.1	.1
AREA=	2.4	301.3	1747.6	152.9	13.8	8.1
VEL=	.8	4.4	7.7	3.7	1.6	1.3
DEPTH=	.5	6.0	14.1	4.8	1.4	1.0

*SECNO 18.832

18.832	16.99	1310.19	.00	.00	1311.04	.85	.51	.00	1302.80
15400.0	437.5	12951.8	2010.7	137.9	1657.8	397.7	324.5	40.9	1297.10
.23	3.17	7.81	5.06	.035	.035	.035	.000	1293.20	9891.67
.001003	480.	517.	540.	2	0	0	.00	216.17	10107.84

FLOW DISTRIBUTION FOR SECNO= 18.83 CWSEL= 1310.19

STA= 9892. 9929. 10046. 10095. 10108.

PER Q= 2.8 84.1 12.9 .2

AREA= 137.9 1657.8 381.7 16.0

VEL= 3.2 7.8 5.2 1.5

DEPTH= 3.7 14.2 7.8 1.2

*SECNO 18.925

18.925	16.04	1310.64	.00	.00	1311.60	.97	.53	.03	1297.60
15400.0	1711.9	12782.4	905.7	348.3	1523.8	210.1	348.6	43.3	1300.00
.25	4.92	8.39	4.31	.035	.035	.035	.000	1294.60	9887.57
.001144	480.	491.	500.	2	0	0	.00	200.07	10087.64

FLOW DISTRIBUTION FOR SECNO= 18.92 CWSEL= 1310.64

STA= 9888. 9941. 10048. 10087.

PER Q= 11.1 83.0 5.9

AREA= 348.3 1523.8 210.1

VEL= 4.9 8.4 4.3

DEPTH= 6.5 14.2 5.4

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 19.018

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .63

19.018	13.29	1310.89	.00	.00	1312.69	1.80	.84	.25	1305.10
15400.0	489.5	14883.1	27.4	106.9	1362.9	10.7	368.5	45.4	1308.40
.26	4.58	10.92	2.56	.035	.035	.035	.000	1297.60	9866.12
.002864	460.	491.	520.	2	0	0	.00	172.44	10038.56

FLOW DISTRIBUTION FOR SECNO= 19.02 CWSEL= 1310.89

STA= 9866. 9903. 10030. 10039.

PER Q= 3.2 96.6 .2

AREA= 106.9 1362.9 10.7

VEL= 4.6 10.9 2.6

DEPTH= 2.9 10.7 1.2

*SECNO 19.117

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

19.117	13.89	1312.49	1312.49	.00	1316.85	4.37	2.18	.77	1302.90
15400.0	1414.2	11917.8	2068.0	148.6	652.4	198.2	383.4	47.1	1301.50
.27	9.52	18.27	10.43	.035	.035	.035	.000	1298.60	9942.00
.006608	490.	523.	560.	20	8	0	.00	120.09	10062.09

STA= 9942. 9973. 10026. 10062.

PER Q= 9.2 77.4 13.4

AREA= 148.6 652.4 198.2

VEL= 9.5 18.3 10.4

DEPTH= 4.8 12.3 5.5

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	CLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 19.210

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.61

19.210	16.99	1317.19	.00	.00	1319.01	1.82	1.90	.25	1312.00
15400.0	227.0	14955.2	217.8	57.2	1364.2	55.0	397.4	48.7	1312.00
.28	3.97	10.96	3.96	.035	.035	.035	.000	1300.20	9922.94
.002538	500.	491.	490.	3	0	0	.00	158.26	10081.20

FLOW DISTRIBUTION FOR SECNO= 19.21 CWSEL= 1317.19

STA= 9923. 9945. 10060. 10081.

PER Q= 1.5 97.1 1.4

AREA= 57.2 1364.2 55.0

VEL= 4.0 11.0 4.0

DEPTH= 2.6 11.9 2.6

CCHV= .300 CEHV= .500

*SECNO 19.283

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1324.00 ELREA= 1324.00

19.283	8.22	1319.92	1319.92	.00	1324.04	4.12	1.64	1.15	1311.70
14600.0	.0	14600.0	.0	.0	896.1	.0	407.9	49.9	1311.70
.29	.00	16.29	.00	.000	.035	.000	.000	1311.70	9948.00
.008876	390.	386.	390.	20	11	0	.00	109.00	10057.00

FLOW DISTRIBUTION FOR SECNO= 19.28 CWSEL= 1319.92

STA= 9948. 10057.

PER Q= 100.0

AREA= 896.1

VEL= 16.3

DEPTH= 8.2

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SECNO	DEPTH	CWSEL	CRIBS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1318.71 , NOT 1319.92 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.56	3.00	.00	109.00	4.50	1304.00	.00	1311.70	1311.70	

*SECNO 19.299

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.47

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1320.16 BRIDGE VELOCITY= 16.51 CALCULATED CHANNEL AREA= 884.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
1322.96	1324.65	.00	0.	14600.	1304.	1306.	1324.20	1326.50	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1325.00 ELREA= 1325.00

19.299	10.36	1322.06	.00	.00	1324.65	2.60	.61	.00	1311.70
14600.0	.0	14600.0	.0	.0	1128.7	.0	409.9	50.1	1311.70
.29	.00	12.94	.00	.000	.035	.000	.000	1311.70	9948.00
.004112	86.	86.	86.	0	0	0	.00	109.00	10057.00

FLOW DISTRIBUTION FOR SECNO= 19.30 CWSEL= 1322.06

STA= 9948. 10057.

PER Q= 100.0

AREA= 1128.7

VEL= 12.9

DEPTH= 10.4

*SECNO 19.313

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

19.313	11.61	1323.31	.00	.00	1325.17	1.87	.30	.22	1327.90
14600.0	.0	14600.0	.0	.0	1330.9	.0	412.0	50.3	1325.50
.29	.00	10.97	.00	.000	.035	.000	.000	1311.70	9944.34
.004073	75.	74.	75.	4	0	0	.00	159.66	10104.00

FLOW DISTRIBUTION FOR SECNO= 19.31 CWSEL= 1323.31

STA= 9944. 10112.

PER Q= 100.0

AREA= 1330.9

VEL= 11.0

DEPTH= 8.3

CCHV= .100 CEHV= .300

*SECNO 19.418

19.418	12.59	1325.59	.00	.00	1327.43	1.83	2.25	.00	1328.00
14600.0	.0	14600.0	.0	.0	1343.4	.0	429.0	52.4	1326.10
.31	.00	10.87	.00	.000	.035	.000	.000	1313.00	9955.11
.004041	570.	554.	530.	2	0	0	.00	162.69	10117.80

FLOW DISTRIBUTION FOR SECNO= 19.42 CWSEL= 1325.59

STA= 9955. 10120.

PER Q= 100.0

AREA= 1343.4

VEL= 10.9

DEPTH= 8.3

*SECNO 19.560

19.560	12.61	1328.21	.00	.00	1330.15	1.94	2.69	.03	1329.70
14600.0	.0	14600.0	.0	.0	1307.1	.0	451.2	54.8	1330.60
.32	.00	11.17	.00	.000	.035	.000	.000	1315.60	9931.38
.003389	730.	729.	720.	2	0	0	.00	129.60	10060.98

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 19.56 CWSEL= 1328.21

STA= 9931. 10065.

PER Q= 100.0

AREA= 1307.1

VEL= 11.2

DEPTH= 10.1

CCHV= .300 CEHV= .500

*SECNO 19.625

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.55

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1332.00 ELREA= 1332.00

19.625	12.29	1329.89	.00	.00	1330.82	.93	.37	.30	1317.60
5700.0	.0	5700.0	.0	.0	737.6	.0	459.7	55.6	1317.60
.34	.00	7.73	.00	.000	.015	.000	.000	1317.60	9965.00
.000214	580.	364.	70.	2	0	0	.00	60.00	10025.00

FLOW DISTRIBUTION FOR SECNO= 19.63 CWSEL= 1329.89

STA= 9965. 10025.

PER Q= 100.0

AREA= 737.6

VEL= 7.7

DEPTH= 12.3

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.05	1.56	3.00	100.00	60.00	2.00	564.00	.00	1318.60	1317.60	

*SECNO 19.691

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
1332.37	1331.05	.08	0.	5700.	564.	563.	1328.30	1334.80	0.

AREA

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1333.00 ELREA= 1333.00

19.691	12.93	1331.53	.00	.00	1332.37	.84	1.55	.00	1318.60
5700.0	.0	5700.0	.0	.0	775.9	.0	465.8	56.1	1318.60
.35	.00	7.35	.00	.000	.015	.000	.000	1318.60	9965.00
.000181	330.	350.	430.	2	0	0	.00	60.00	10025.00

FLOW DISTRIBUTION FOR SECNO= 19.69 CWSEL= 1331.53

STA= 9965. 10025.

PER Q= 100.0

AREA= 775.9

VEL= 7.3

DEPTH= 12.9

*SECNO 19.742

19.742	12.89	1331.99	.00	.00	1332.51	.52	.05	.10	1331.60
5700.0	.8	5699.0	.2	3.4	985.5	.8	471.3	56.6	1331.00
.36	.23	5.78	.30	.035	.015	.035	.000	1319.10	9935.22
.000165	80.	269.	470.	2	0	0	.00	108.35	10043.57

FLOW DISTRIBUTION FOR SECNO= 19.74 CWSEL= 1331.99

STA= 9935. 9948. 10042. 10044.

PER Q= .0 100.0 .0

AREA= 3.4 985.5 .8

VEL= .2 5.8 .3

DEPTH= .3 10.5 .5

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300

*SECNO 19.847

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .36

19.847	13.34	1332.14	.00	.00	1332.73	.59	.20	.02	1336.30
5700.0	.0	5700.0	.0	.0	925.1	.0	483.4	58.0	1335.80
.39	.00	6.16	.00	.000	.035	.000	.000	1318.80	9940.63
.001296	570.	554.	520.	2	0	0	.00	109.85	10050.49

FLOW DISTRIBUTION FOR SECNO= 19.85 CWSEL= 1332.14

STA= 9941. 10062.

PER Q= 100.0

AREA= 925.1

VEL= 6.2

DEPTH= 8.4

*SECNO 19.960

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .39

19.960	7.77	1332.37	1332.22	.00	1334.93	2.55	1.61	.59	1330.00
5700.0	38.9	5629.3	31.8	9.0	436.7	7.5	492.9	59.3	1330.00
.40	4.31	12.89	4.25	.035	.035	.035	.000	1324.60	9950.40
.008699	640.	597.	560.	4	11	0	.00	86.88	10037.28

FLOW DISTRIBUTION FOR SECNO= 19.96 CWSEL= 1332.37

STA= 9950. 9958. 10031. 10037.

PER Q= .7 98.8 .6

AREA= 9.0 436.7 7.5

VEL= 4.3 12.9 4.3

DEPTH= 1.2 6.0 1.2

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .300 CEHV= .500

*SECNO 19.974

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.51

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1336.00 ELREA= 1336.00

19.974	9.51	1333.31	.00	.00	1335.46	2.14	.41	.12	1323.80
5700.0	.0	5700.0	.0	.0	485.1	.0	493.7	59.4	1323.80
.40	.00	11.75	.00	.000	.035	.000	.000	1323.80	9969.00
.003800	105.	74.	65.	3	0	0	.00	51.00	10020.00

FLOW DISTRIBUTION FOR SECNO= 19.97 CWSEL= 1333.31

STA= 9969. 10020.

PER Q= 100.0

AREA= 485.1

VEL= 11.8

DEPTH= 9.5

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	.156	3.00	.00	51.00	3.00	480.00	.00	1324.10	1323.80	

*SECNO 19.986

3301 HV CHANGED MORE THAN HVINS

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
1336.73	1336.01	.92	0.	5700.	480.	480.	1334.10	1337.90	0.
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=					1337.00	ELREA=	1337.00		
19.986	11.45	1335.25	.00	.00	1336.73	1.48	1.27	.00	1323.80
5700.0	.0	5700.0	.0	.0	584.0	.0	494.4	59.5	1323.80
.40	.00	9.76	.00	.000	.035	.000	.000	1323.80	9969.00
.002047	61.	61.	61.	3	0	0	.00	51.00	10020.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 19.99 CWSEL= 1335.25

STA= 9969. 10020.

PER Q= 100.0

AREA= 584.0

VEL= 9.8

DEPTH= 11.5

*SECNO 20.049

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=					1340.00	ELREA=	1339.40		
20.049	11.25	1338.35	1338.35	.00	1341.90	3.54	1.32	1.03	1343.40
5700.0	.0	5700.0	.0	.0	377.3	.0	498.1	59.9	1339.40
.41	.00	15.11	.00	.000	.035	.000	.000	1327.10	9971.56
.010738	305.	333.	345.	20	8	0	.00	53.63	10025.19

FLOW DISTRIBUTION FOR SECNO= 20.05 CWSEL= 1338.35

STA= 9972. 10027.

PER Q= 100.0

AREA= 377.3

VEL= 15.1

DEPTH= 7.0

CCHV= .100 CEHV= .300

*SECNO 20.144

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.69

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=					1344.00	ELREA=		1340.80	
20.144	12.58	1343.48	.00	.00	1345.07	1.58	2.97	.20	1344.60
5700.0	.0	5588.6	111.4	.0	548.7	32.7	503.6	60.7	1340.80
.42	.00	10.19	3.41	.000	.035	.040	.000	1330.90	9960.58
.003744	490.	502.	500.	2	0	0	.00	83.94	10044.51

FLOW DISTRIBUTION FOR SECNO= 20.14 CWSEL= 1343.48

STA= 9961. 10025. 10040. 10045.

PER Q= 98.0 1.9 .1

AREA= 548.7 29.8 2.9

VEL= 10.2 3.6 1.6

DEPTH= 8.5 2.0 .6

*SECNO 20.242

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=					1348.00	ELREA=		1342.80	
20.242	12.19	1345.49	.00	.00	1347.06	1.57	1.99	.00	1347.20
5700.0	.0	5546.3	153.7	.0	545.0	40.2	510.6	61.7	1342.80
.44	.00	10.18	3.83	.000	.035	.040	.000	1333.30	9961.30
.003942	470.	517.	560.	3	0	0	.00	88.68	10049.98

FLOW DISTRIBUTION FOR SECNO= 20.24 CWSEL= 1345.49

STA= 9961. 10029. 10041. 10050.

PER Q= 97.3 2.2 .5

AREA= 545.0 29.9 10.3

VEL= 10.2 4.3 2.5

DEPTH= 8.1 2.5 1.1

*SECNO 20.335

20.335	10.14	1347.44	.00	.00	1348.61	1.17	1.51	.04	1344.00
5700.0	31.7	5639.2	29.1	12.8	646.3	11.8	517.7	62.7	1344.00
.46	2.48	8.72	2.46	.040	.035	.040	.000	1337.30	9950.57
.002469	510.	491.	470.	2	0	0	.00	88.31	10038.88

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 20.33 CWSEL= 1347.44

STA= 9951. 9958. 10032. 10039.

PER Q= .6 98.9 .5

AREA= 12.8 646.3 11.8

VEL= 2.5 8.7 2.5

DEPTH= 1.7 8.7 1.7

CCHV= .300 CEHV= .500

*SECNO 20.347

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1351.50 ELREA= 1351.50

20.347 10.04 1347.24 .00 .00 1349.16 1.92 .18 .38 1337.20

5700.0 .0 5700.0 .0 .0 512.0 .0 518.5 62.8 1337.20

.46 .00 11.13 .00 .000 .035 .000 .000 1337.20 9970.00

.003174 1. 63. 150. 2 0 0 .00 51.00 10021.00

FLOW DISTRIBUTION FOR SECNO= 20.35 CWSEL= 1347.24

STA= 9970. 10021.

PER Q= 100.0

AREA= 512.0

VEL= 11.1

DEPTH= 10.0

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	100.00	51.00	3.00	576.00	.00	1337.70	1337.20

*SECNO 20.366

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1347.00 BRIDGE VELOCITY= 12.43 CALCULATED CHANNEL AREA= 446.

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN

AREA

.00 1349.64 .73 0. 5700. 576. 576. 1349.70 1354.50 0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1352.50 ELREA= 1352.50

20.366	10.77	1347.97	.00	.00	1349.64	1.67	.48	.00	1337.20
5700.0	.0	5700.0	.0	.0	549.1	.0	519.7	63.0	1337.20
.46	.00	10.38	.00	.000	.035	.000	.000	1337.20	9970.00
.002515	100.	100.	100.	0	0	0	.00	51.00	10021.00

FLOW DISTRIBUTION FOR SECNO= 20.37 CWSEL= 1347.97

STA= 9970. 10021.

PER Q= 100.0

AREA= 549.1

VEL= 10.4

DEPTH= 10.8

*SECNO 20.423

3301 HV CHANGED MORE THAN HVINS

20.423	11.57	1349.57	.00	.00	1350.51	.94	.65	.22	1345.00
5700.0	101.7	5266.2	332.1	37.2	655.8	86.9	524.3	63.5	1344.30
.47	2.73	8.03	3.82	.040	.035	.040	.000	1338.00	9958.69
.001888	415.	301.	205.	3	0	0	.00	112.82	10071.51

FLOW DISTRIBUTION FOR SECNO= 20.42 CWSEL= 1349.57

STA= 9959. 9975. 10045. 10055. 10072.

PER Q= 1.8 92.4 4.0 1.8

AREA= 37.2 655.8 49.2 37.7

VEL= 2.7 8.0 4.7 2.7

DEPTH= 2.3 9.4 4.9 2.3

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 20.430

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1352.50 ELREA= 1352.50

20.430	9.83	1349.13	.00	.00	1351.13	2.01	.09	.53	1339.30
5700.0	.0	5700.0	.0	.0	501.4	.0	524.8	63.6	1339.30
.47	.00	11.37	.00	.000	.035	.000	.000	1339.30	9985.00
.003403	1.	37.	65.	2	0	0	.00	51.00	10036.00

FLOW DISTRIBUTION FOR SECNO= 20.43 CWSEL= 1349.13

STA= 9985. 10036.

PER Q= 100.0

AREA= 501.4

VEL= 11.4

DEPTH= 9.8

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	100.00	51.00	3.00	576.00	.00	1339.30	1339.30

*SECNO 20.444

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1348.59 BRIDGE VELOCITY= 12.79 CALCULATED CHANNEL AREA= 446.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN	
	1351.50	1351.64	.80	0.	5700.	576.	576.	1351.30	1355.50	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1353.50 ELREA= 1353.50

20.444	10.62	1349.92	.00	.00	1351.64	1.72	.51	.00	1339.30
5700.0	.0	5700.0	.0	.0	541.8	.0	525.7	63.7	1339.30
.47	.00	10.52	.00	.000	.035	.000	.000	1339.30	9985.00
.002628	70.	70.	70.	0	0	0	.00	51.00	10036.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 20.44 CWSEL= 1349.92

STA= 9985. 10036.

PER Q= 100.0

AREA= 541.8

VEL= 10.5

DEPTH= 10.6

*SECNO 20.529

3301 HV CHANGED MORE THAN HVINS

20.529	9.25	1352.25	.00	.00	1352.95	.70	1.00	.31	1350.20
5700.0	165.5	5398.1	136.3	70.2	784.4	61.5	533.2	64.9	1350.40
.49	2.36	6.88	2.22	.040	.035	.040	.000	1343.00	9905.35
.001924	545.	449.	375.	3	0	0	.00	189.83	10095.18

FLOW DISTRIBUTION FOR SECNO= 20.53 CWSEL= 1352.25

STA= 9905. 9910. 9947. 10055. 10090. 10095.

PER Q= .1 2.8 94.7 2.3 .1

AREA= 3.6 66.6 784.4 57.8 3.8

VEL= 1.3 2.4 6.9 2.3 1.3
 DEPTH= .8 1.8 7.3 1.7 .7
 CCHV= .100 CEHV= .300

*SECNO 20.628

20.628 10.01 1353.31 .00 .00 1353.74 .43 .76 .03 1357.10
 5700.0 .0 5700.0 .0 .0 1089.4 .0 545.3 67.0 1356.30
 .52 .00 5.23 .00 .000 .035 .000 .000 1343.30 9917.80
 .001125 530. 523. 520. 2 0 0 .00 150.61 10068.41

FLOW DISTRIBUTION FOR SECNO= 20.63 CWSEL= 1353.31

STA= 9918. 10076.

PER Q= 100.0

AREA= 1089.4

VEL= 5.2

DEPTH= 7.2

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 20.725

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.725 8.84 1356.04 1356.04 .00 1359.09 3.06 1.32 .79 1360.40
 5700.0 .0 5700.0 .0 .0 406.2 .0 554.0 68.2 1361.00
 .53 .00 14.03 .00 .000 .035 .000 .000 1347.20 9959.29
 .010764 510. 512. 520. 20 11 0 .00 67.22 10026.51

FLOW DISTRIBUTION FOR SECNO= 20.73 CWSEL= 1356.04

STA= 9959. 10036.

PER Q= 100.0

AREA= 406.2

VEL= 14.0

DEPTH= 6.0

CCHV= .300 CEHV= .500

*SECNO 20.737

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1363.00 ELREA= 1363.00

20.737	7.27	1358.17	1358.17	.00	1361.84	3.67	.80	.31	1350.90
5700.0	.0	5700.0	.0	.0	370.6	.0	554.8	68.4	1350.90
.53	.00	15.38	.00	.000	.035	.000	.000	1350.90	9968.00
.009320	80.	80.	80.	20	15	0	.00	51.00	10019.00

FLOW DISTRIBUTION FOR SECNO= 20.74 CWSEL= 1358.17

STA= 9968. 10019.

PER Q= 100.0

AREA= 370.6

VEL= 15.4

DEPTH= 7.3

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1356.93 , NOT 1358.17 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	1.56	3.00	100.00	51.00	3.00	576.00	.00	1351.00	1350.90	

*SECNO 20.750

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.59

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1358.54 BRIDGE VELOCITY= 15.64 CALCULATED CHANNEL AREA= 362.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
.00	1362.70	.00	0.	5700.	576.	576.	1363.00	1366.00	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1364.00 ELREA= 1364.00

20.750	9.60	1360.60	.00	.00	1362.70	2.11	.86	.00	1351.00
5700.0	.0	5700.0	.0	.0	489.5	.0	555.5	68.4	1351.00
.53	.00	11.64	.00	.000	.035	.000	.000	1351.00	9968.00
.003686	71.	71.	71.	0	0	0	.00	51.00	10019.00

FLOW DISTRIBUTION FOR SECNO= 20.75 CWSEL= 1360.60

STA= 9968. 10019.

PER Q= 100.0

AREA= 489.5

VEL= 11.6

DEPTH= 9.6

*SECNO 20.819

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .67

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1366.90 ELREA= 1366.90

20.819	5.87	1362.37	.00	.00	1364.78	2.41	1.92	.15	1356.50
5700.0	.0	5700.0	.0	.0	457.6	.0	559.4	69.0	1356.50
.54	.00	12.46	.00	.000	.035	.000	.000	1356.50	9965.00
.008133	375.	365.	345.	3	0	0	.00	78.00	10043.00

FLOW DISTRIBUTION FOR SECNO= 20.82 CWSEL= 1362.37

STA= 9965. 10043.

PER Q= 100.0

AREA= 457.6

VEL= 12.5

DEPTH= 5.9

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1361.20 , NOT 1362.37 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.56	3.00	100.00	77.30	3.30	655.00	.00	1357.40	1356.50

*SECNO 20.841

3301 HV CHANGED MORE THAN HVINS

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1362.64 BRIDGE VELOCITY= 13.54 CALCULATED CHANNEL AREA= 388.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN	
						AREA				
	1364.20	1366.08	.00	0.	5700.	655.	592.	1365.40	1369.90	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1367.90 ELREA= 1367.90

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
20.841	6.98	1364.38	.00	.00	1366.08	1.70	1.31	.00	1357.40
5700.0	.0	5700.0	.0	.0	544.7	.0	560.7	69.2	1357.40
.54	.00	10.46	.00	.000	.035	.000	.000	1357.40	9965.00
.004551	115.	115.	115.	0	0	0	.00	78.00	10043.00

FLOW DISTRIBUTION FOR SECNO= 20.84 CWSEL= 1364.38

STA= 9965. 10043.

PER Q= 100.0

AREA= 544.7

VEL= 10.5

DEPTH= 7.0

*SECNO 20.860

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1365.30 ELREA= 1367.60

20.860	9.68	1365.98	.00	.00	1366.67	.69	.28	.30	1365.30
5700.0	86.2	5613.8	.0	77.9	834.8	.0	562.4	69.6	1367.60
.55	1.11	6.72	.00	.040	.035	.000	.000	1356.30	9800.89
.001946	90.	100.	110.	2	0	0	.00	261.14	10062.04

FLOW DISTRIBUTION FOR SECNO= 20.86 CWSEL= 1365.98

STA= 9801. 9846. 9942. 10066.

PER Q= .4 1.1 98.5

AREA= 21.8 56.1 834.8

VEL= 1.0 1.1 6.7

DEPTH= .5 .6 7.0

CCHV= .100 CEHV= .300

*SECNO 20.942

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3265 DIVIDED FLOW

20.942	7.69	1367.29	.00	.00	1367.72	.43	1.02	.03	1368.60
5700.0	.0	3724.4	1975.6	.0	673.2	417.4	572.7	72.7	1366.50
.57	.02	5.53	4.73	.040	.035	.035	.000	1359.60	9629.81
.002779	530.	433.	490.	2	0	0	.00	313.22	10168.29

FLOW DISTRIBUTION FOR SECNO= 20.94 CWSEL= 1367.29

STA= 9630. 10024. 10027. 10053. 10070. 10114. 10153. 10168.

PER Q=	65.3	.3	5.3	2.5	6.4	17.0	3.3		
AREA=	673.2	5.1	69.9	37.2	96.3	165.3	43.5		
VEL=	5.5	2.9	4.3	3.8	3.8	5.9	4.3		
DEPTH=	4.0	1.7	2.7	2.2	2.2	4.2	2.8		

*SECNO 21.036

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

21.036	8.45	1371.95	1371.95	.00	1373.07	1.12	1.76	.21	1370.70
5700.0	367.1	5202.8	130.1	186.3	586.7	55.7	583.6	77.4	1370.40
.59	1.97	8.87	2.34	.040	.035	.040	.000	1363.50	9568.93
.004734	490.	496.	490.	20	12	0	.00	520.10	10089.02

FLOW DISTRIBUTION FOR SECNO= 21.04 CWSEL= 1371.95

STA= 9569. 9665. 9728. 9758. 9867. 9912. 10020. 10041. 10075. 10089.

PER Q=	.7	.5	.1	2.7	2.5	91.3	1.2	.9	.2
AREA=	31.1	21.8	5.9	75.9	51.6	586.7	24.1	25.4	6.3
VEL=	1.2	1.3	.9	2.0	2.8	8.9	2.8	2.1	1.5
DEPTH=	.3	.3	.2	.7	1.1	5.4	1.1	.7	.4

*SECNO 21.127

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1374.00 ELREA= 1375.00

21.127	8.05	1374.75	1374.75	.00	1375.74	1.00	2.13	.01	1374.20
5700.0	1077.1	4622.9	.0	394.1	525.4	.0	592.7	82.0	1375.00
.61	2.73	8.80	.00	.040	.035	.000	.000	1366.70	9631.62
.004360	400.	480.	500.	2	10	0	.00	434.39	10066.01

FLOW DISTRIBUTION FOR SECNO= 21.13 CWSEL= 1374.75

STA= 9632. 9634. 9666. 9759. 9860. 9913. 9974. 10067.

PER Q=	.0	1.7	5.8	6.7	2.9	1.8	81.1		
AREA=	1.4	36.7	115.9	130.9	60.7	48.6	525.4		
VEL=	1.6	2.7	2.8	2.9	2.7	2.1	8.8		

DEPTH= .6 1.1 1.2 1.3 1.1 .8 5.7

*SECNO 21.230

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

21.230	8.36	1380.36	1380.36	.00	1381.67	1.30	2.99	.09	1379.30
5700.0	508.8	4046.9	1144.3	153.5	391.9	191.5	603.1	86.7	1380.60
.62	3.32	10.33	5.98	.040	.035	.040	.000	1372.00	9818.28
.007215	560.	544.	500.	20	8	0	.00	304.81	10126.36

FLOW DISTRIBUTION FOR SECNO= 21.23 CWSEL= 1380.36

STA=	9818.	9879.	9930.	9967.	10048.	10083.	10102.	10117.	10126.
PER Q=	3.2	3.0	2.7	71.0	6.7	6.3	4.7	2.5	
AREA=	57.4	52.7	43.4	391.9	69.9	55.4	42.2	24.0	
VEL=	3.2	3.3	3.5	10.3	5.4	6.4	6.3	5.9	
DEPTH=	.9	1.0	1.2	5.0	2.0	2.9	2.8	2.6	

*SECNO 21.363

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3265 DIVIDED FLOW

3280 CROSS SECTION 21.36 EXTENDED .36 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.07

21.363	9.27	1383.37	.00	.00	1383.90	.53	2.16	.08	1384.40
5700.0	98.2	5566.2	35.7	50.6	939.1	46.3	617.4	92.2	1382.10
.66	1.94	5.93	.77	.040	.035	.040	.000	1374.10	9556.04
.001686	740.	702.	700.	2	0	0	.00	366.91	10337.00

FLOW DISTRIBUTION FOR SECNO= 21.36 CWSEL= 1383.37

STA=	9556.	9923.	10088.	10337.					
PER Q=	1.7	97.7	.6						
AREA=	50.6	939.1	46.3						
VEL=	1.9	5.9	.8						
DEPTH=	.1	6.3	.2						

*SECNO 21.484

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

21.484	8.03	1386.53	1386.53	.00	1387.44	.92	1.88	.11	1386.90
5700.0	2045.4	3648.0	6.6	511.1	400.0	4.0	631.7	98.5	1386.50
.68	4.00	9.12	1.63	.040	.035	.040	.000	1378.50	9497.84
.006378	650.	639.	520.	20	12	0	.00	514.70	10076.82

FLOW DISTRIBUTION FOR SECNO= 21.48 CWSEL= 1386.53

STA=	9498.	9614.	9647.	9678.	9805.	9837.	9867.	9892.	9920.	10026.	10077.
PER Q=	3.6	3.1	3.3	5.0	6.8	6.6	5.3	2.1	64.0	.1	
AREA=	82.4	47.2	47.4	95.5	74.5	71.4	58.2	34.5	400.0	4.0	
VEL=	2.5	3.8	3.9	3.0	5.2	5.3	5.2	3.5	9.1	1.6	
DEPTH=	.7	1.4	1.5	.8	2.3	2.4	2.3	1.2	4.5	.1	

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 21.576

3265 DIVIDED FLOW

3280 CROSS SECTION 21.58 EXTENDED .54 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

21.576	7.14	1389.24	1389.24	.00	1390.02	.78	2.51	.01	1390.00
5700.0	720.9	4008.4	970.7	336.1	487.8	285.9	641.4	104.4	1388.30
.70	2.15	8.22	3.39	.040	.035	.040	.000	1382.10	9388.00
.005020	320.	486.	480.	2	12	0	.00	868.38	10340.54

FLOW DISTRIBUTION FOR SECNO= 21.58 CWSEL= 1389.24

STA=	9388.	9500.	9643.	9821.	9929.	10087.	10140.	10199.	10281.	10341.
PER Q=	3.6	3.0	3.3	2.7	70.3	6.8	6.0	3.7	.5	
AREA=	89.6	81.4	95.4	69.6	487.8	97.3	94.6	78.7	15.4	
VEL=	2.3	2.1	2.0	2.2	8.2	4.0	3.6	2.7	1.9	
DEPTH=	.8	.6	.5	.6	4.6	1.8	1.6	1.0	.3	

*SECNO 21.669

3265 DIVIDED FLOW

3280 CROSS SECTION 21.67 EXTENDED .18 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

21.669	9.38	1393.38	1393.38	.00	1393.98	.60	2.28	.02	1393.80
5500.0	905.3	2788.4	1806.3	390.6	338.0	558.6	654.3	114.0	1392.00
.72	2.32	8.25	3.23	.040	.035	.040	.000	1384.00	9392.00
.004519	440.	491.	470.	20	16	0	.00	977.37	10414.00

FLOW DISTRIBUTION FOR SECNO= 21.67 CWSEL= 1393.38

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV				
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV				
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA				
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST				
STA=	9392.	9515.	9663.	9893.	9949.	9959.	10031.	10074.	10124.	10182.	10245.	10303.	10361.

PER Q=	3.0	4.9	3.2	5.1	.2	50.7	5.1	4.6	5.6	5.2	4.2	4.5
AREA=	80.3	122.7	95.6	85.0	6.8	338.0	76.4	76.3	91.4	89.8	76.9	79.8
VEL=	2.1	2.2	1.8	3.3	1.9	8.3	3.7	3.3	3.4	3.2	3.0	3.1
DEPTH=	.7	.8	.4	1.5	.7	5.3	1.8	1.5	1.6	1.4	1.3	1.4

STA= 10361. 10401. 10414.

PER Q=	3.1	.6
AREA=	54.9	13.1
VEL=	3.1	2.5
DEPTH=	1.4	1.0

*SECNO 21.742

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

21.742	8.78	1395.18	1395.18	.00	1396.38	1.19	1.92	.18	1394.70
5500.0	29.1	5238.8	232.0	28.7	583.5	122.4	663.5	121.0	1394.20
.74	1.02	8.98	1.90	.040	.035	.040	.000	1386.40	9744.71
.005365	430.	385.	390.	2	8	0	.00	525.85	10353.48

FLOW DISTRIBUTION FOR SECNO= 21.74 CWSEL= 1395.18

STA= 9745. 9975. 10091. 10240. 10353.

PER Q=	.5	95.3	3.1	1.1
AREA=	28.7	583.5	80.6	41.8
VEL=	1.0	9.0	2.1	1.5
DEPTH=	.1	5.0	.5	.4

*SECNO 21.840

21.840	6.94	1398.04	.00	.00	1398.83	.80	2.42	.04	1396.20
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5500.0	945.8	4157.0	397.3	210.1	524.6	174.1	672.7	126.0	1397.00
.76	4.50	7.92	2.28	.040	.035	.040	.000	1391.10	9857.22
.004314	430.	517.	430.	2	0	0	.00	437.88	10295.09

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 21.84 CWSEL= 1398.04

STA=	9857.	9860.	9882.	9913.	9931.	9946.	10054.	10097.	10145.	10186.	10227.	10273.	10295.
PER Q=	.0	2.2	7.6	4.7	2.6	75.6	2.9	2.7	.6	.4	.6	.1	
AREA=	1.0	36.1	86.5	52.1	34.4	524.6	55.6	54.8	20.2	16.1	22.6	4.9	
VEL=	1.2	3.4	4.8	5.0	4.2	7.9	2.9	2.7	1.5	1.3	1.5	.9	
DEPTH=	.4	1.6	2.8	2.9	2.3	4.9	1.3	1.1	.5	.4	.5	.2	

*SECNO 21.895

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

21.895	7.77	1399.67	1399.67	.00	1400.47	.80	1.34	.00	1398.00
5500.0	1555.3	2864.4	1080.2	327.5	311.9	397.8	679.0	129.1	1397.70
.77	4.75	9.18	2.72	.040	.035	.040	.000	1391.90	9834.78
.004943	330.	290.	220.	1	8	0	.00	596.22	10431.00

FLOW DISTRIBUTION FOR SECNO= 21.90 CWSEL= 1399.67

STA=	9835.	9885.	9919.	9939.	9975.	10031.	10113.	10187.	10251.	10292.	10364.	10431.
PER Q=	9.5	9.9	4.3	4.6	52.1	4.2	4.1	4.1	3.1	3.0	1.2	
AREA=	112.3	100.9	49.3	64.9	311.9	84.3	80.6	76.1	54.0	65.9	36.8	
VEL=	4.7	5.4	4.8	3.9	9.2	2.7	2.8	3.0	3.1	2.5	1.8	
DEPTH=	2.2	3.0	2.5	1.8	5.6	1.0	1.1	1.2	1.3	.9	.5	

*SECNO 21.933

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.01

21.933	4.06	1400.86	.00	.00	1400.99	.13	.46	.07	1398.00
5500.0	1740.2	3230.1	529.7	808.7	951.6	269.8	686.4	132.8	1398.00
.79	2.15	3.39	1.96	.040	.035	.040	.000	1396.80	9314.75
.001221	210.	210.	210.	2	0	0	.00	970.39	10285.14

FLOW DISTRIBUTION FOR SECNO= 21.93 CWSEL= 1400.86

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
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Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV	
TIME	VLOB	VCH	VROB	XLN	XLNCH	XLNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	
STA=	9315.	9440.	9590.	9680.	9725.	9780.	9840.	9865.	10140.	10285.
PER Q=	.4	2.0	6.0	7.2	8.8	5.1	2.1	58.7	9.6	
AREA=	35.1	106.5	167.4	142.2	173.8	129.6	54.0	951.6	269.8	
VEL=	.6	1.0	2.0	2.8	2.8	2.2	2.2	3.4	2.0	
DEPTH=	.3	.7	1.9	3.2	3.2	2.2	2.2	3.5	1.9	

*SECNO 21.953

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

21.953	7.06	1401.06	1401.06	.00	1402.01	.94	.20	.24	1400.20
5500.0	2374.6	2981.8	143.6	470.2	313.0	32.2	688.8	134.1	1398.30
.79	5.05	9.53	4.45	.045	.045	.045	.000	1394.00	9424.44
.009459	75.	74.	75.	20	14	0	.00	459.91	10052.98

FLOW DISTRIBUTION FOR SECNO= 21.95 CWSEL= 1401.06

STA=	9424.	9678.	9699.	9714.	9725.	9735.	9759.	9768.	9782.	9810.	9965.	9969.	10029.
PER Q=	4.1	3.5	4.1	5.2	4.3	4.5	3.3	5.0	5.9	3.2	.3	54.2	
AREA=	94.3	39.1	37.7	38.5	33.6	48.3	27.1	41.5	60.5	45.2	4.4	313.0	
VEL=	2.4	4.9	5.9	7.4	7.1	5.1	6.6	6.6	5.4	3.8	3.4	9.5	
DEPTH=	.4	1.9	2.5	3.5	3.4	2.0	3.0	3.0	2.2	.3	1.1	5.2	

STA= 10029. 10053.

PER Q= 2.6

AREA= 32.2

VEL= 4.5

DEPTH= 1.3

*SECNO 22.065

3265 DIVIDED FLOW

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XLNCH	XLNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.94

22.065	8.28	1404.08	.00	.00	1404.25	.17	2.17	.08	1404.10
5500.0	4154.8	1273.9	71.3	1389.6	294.2	31.6	702.6	140.5	1402.00
.83	2.99	4.33	2.26	.045	.045	.045	.000	1395.80	9242.08
.002509	430.	591.	630.	4	0	0	.00	777.84	10049.66

FLOW DISTRIBUTION FOR SECNO= 22.07 CWSEL= 1404.08

STA= 9242. 9500. 9594. 9645. 9657. 9680. 9700. 9731. 9785. 9816. 9869. 9890. 9961.

PER Q=	24.1	5.7	7.6	3.2	5.9	5.3	3.8	4.5	6.5	4.9	3.7	.4
AREA=	500.1	143.7	124.0	44.8	83.5	73.6	69.7	80.3	99.4	92.7	60.5	17.3
VEL=	2.7	2.2	3.4	4.0	3.9	3.9	3.0	3.1	3.6	2.9	3.3	1.2
DEPTH=	1.9	1.5	2.4	3.7	3.6	3.7	2.2	1.5	3.2	1.7	2.9	.2

STA= 9961. 10028. 10050.

PER Q=	23.2	1.3
AREA=	294.2	31.6
VEL=	4.3	2.3
DEPTH=	4.4	1.5

*SECNO 22.165

3265 DIVIDED FLOW

22.165	10.25	1405.25	.00	.00	1405.46	.21	1.20	.01	1400.90
5500.0	4034.5	1433.3	32.3	1386.7	266.1	24.2	723.2	150.3	1403.70
.87	2.91	5.39	1.33	.045	.045	.045	.000	1395.00	9137.48
.002042	530.	528.	530.	3	0	0	.00	828.27	10060.52

FLOW DISTRIBUTION FOR SECNO= 22.17 CWSEL= 1405.25

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV				
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV				
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA				
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST				
STA=	9137.	9204.	9213.	9222.	9232.	9256.	9308.	9425.	9595.	9637.	9645.	9657.	9669.
PER Q=	6.3	3.5	4.4	3.9	4.4	3.3	3.9	3.3	4.7	3.6	4.9	3.2	
AREA=	119.1	44.6	51.3	50.0	75.7	85.9	131.5	109.1	86.3	43.2	61.2	47.4	
VEL=	2.9	4.3	4.8	4.3	3.2	2.1	1.6	1.6	3.0	4.6	4.4	3.7	
DEPTH=	1.8	5.0	5.7	5.0	3.2	1.7	1.1	.6	2.1	5.4	5.1	4.0	

STA= 9669. 9701. 9834. 9862. 9946. 9983. 10018. 10061.

PER Q=	3.2	4.7	5.0	4.2	6.9	26.1	.6
AREA=	67.7	111.6	86.4	98.9	116.8	266.1	24.2
VEL=	2.6	2.3	3.2	2.4	3.3	5.4	1.3
DEPTH=	2.1	.8	3.1	1.2	3.2	7.6	.6

*SECNO 22.273

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .54

22.273	7.26	1406.66	.00	.00	1407.38	.71	1.77	.15	1404.10
5500.0	1973.6	3526.4	.0	437.6	454.3	.0	737.9	157.2	1406.90
.90	4.51	7.76	.00	.045	.045	.000	.000	1399.40	9320.96
.006928	470.	570.	580.	2	0	0	.00	419.21	10027.44

FLOW DISTRIBUTION FOR SECNO= 22.27 CWSEL= 1406.66

STA= 9321. 9344. 9359. 9574. 9598. 9754. 9774. 9915. 9933. 10028.

PER Q=	4.7	5.4	3.4	4.9	3.1	6.8	3.1	4.5	64.1
AREA=	48.7	48.9	64.5	55.6	64.2	62.5	46.1	47.1	454.3
VEL=	5.3	6.0	2.9	4.8	2.7	6.0	3.7	5.2	7.8
DEPTH=	2.1	3.3	.3	2.3	.4	3.1	.3	2.6	4.8

*SECNO 22.410

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	CLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3720 CRITICAL DEPTH ASSUMED

22.410	10.22	1414.22	1414.22	.00	1415.98	1.76	5.65	.31	1410.70
5500.0	768.3	4585.8	145.9	157.3	400.5	38.0	750.4	162.4	1411.30
.92	4.89	11.45	3.83	.045	.045	.045	.000	1404.00	9854.46
.008756	750.	723.	630.	3	11	0	.00	193.61	10066.88

FLOW DISTRIBUTION FOR SECNO= 22.41 CWSEL= 1414.22

STA= 9854. 9903. 9954. 9967. 9973. 10027. 10067.

PER Q=	3.5	3.7	4.4	2.4	83.4	2.7			
AREA=	55.7	43.9	38.0	19.6	400.5	38.0			
VEL=	3.5	4.6	6.3	6.8	11.5	3.8			
DEPTH=	1.1	.9	2.9	3.3	7.4	1.0			

*SECNO 22.483

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.56

22.483	10.96	1416.46	.00	.00	1416.58	.12	.44	.16	1411.10
5500.0	301.1	4551.8	647.1	194.8	1523.7	375.4	762.3	164.7	1411.20
.95	1.55	2.99	1.72	.045	.045	.045	.000	1405.50	9874.91

.000421 380. 385. 390. 3 0 0 .00 325.09 10199.99

FLOW DISTRIBUTION FOR SECNO= 22.48 CWSEL= 1416.46

STA= 9875. 9891. 9915. 9941. 10105. 10120. 10138. 10156. 10175. 10191. 10200.

PER Q=	.2	1.6	3.7	82.8	2.4	2.2	2.1	2.6	2.1	.3
AREA=	16.5	65.0	113.3	1523.7	70.6	72.1	69.4	79.9	66.5	16.9
VEL=	.7	1.3	1.8	3.0	1.9	1.7	1.7	1.8	1.8	1.0
DEPTH=	1.0	2.7	4.4	9.3	4.7	4.0	3.9	4.2	4.2	1.9

*SECNO 22.578

3301 HV CHANGED MORE THAN HVINS

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .31

22.578	9.65	1416.34	.00	.00	1417.33	.99	.50	.26	1416.60
5500.0	.0	5500.0	.0	.0	688.9	.0	778.3	167.1	1421.20
.97	.00	7.98	.00	.000	.045	.000	.000	1406.70	9968.38
.004498	540.	502.	490.	3	0	0	.00	95.82	10064.20

FLOW DISTRIBUTION FOR SECNO= 22.58 CWSEL= 1416.34

STA= 9968. 10072.

PER Q= 100.0
 AREA= 688.9
 VEL= 8.0
 DEPTH= 7.2

*SECNO 22.675

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.57

22.675	8.31	1418.01	.00	.00	1418.14	.14	.72	.09	1419.80
5500.0	.0	5500.0	.0	.0	1858.1	.0	793.3	169.4	1420.00
1.02	.00	2.96	.00	.000	.045	.000	.000	1409.70	9740.49
.000680	570.	512.	480.	2	0	0	.00	287.90	10028.39

FLOW DISTRIBUTION FOR SECNO= 22.67 CWSEL= 1418.01

STA= 9740. 10032.

PER Q= 100.0
 AREA= 1858.1
 VEL= 3.0
 DEPTH= 6.5

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .51

22.794	7.85	1418.55	.00	.00	1418.97	.42	.75	.09	1417.80
5500.0	1.3	5395.1	103.6	1.5	1029.4	42.0	814.4	173.0	1416.10
1.05	.87	5.24	2.47	.045	.045	.045	.000	1410.70	9978.95
.002603	460.	628.	500.	2	0	0	.00	215.74	10194.69

FLOW DISTRIBUTION FOR SECNO= 22.79 CWSEL= 1418.55

STA= 9979. 9983. 10169. 10189. 10195.

PER Q=	.0	98.1	1.8	.1
AREA=	1.5	1029.4	38.1	3.9
VEL=	.9	5.2	2.6	1.3
DEPTH=	.4	5.5	1.9	.7

*SECNO 22.880

22.880	7.05	1420.05	.00	.00	1420.62	.58	1.60	.05	1426.40
5500.0	.0	5500.0	.0	.0	901.9	.0	824.7	175.2	1424.20
1.07	.00	6.10	.00	.000	.045	.000	.000	1413.00	9952.13
.005065	440.	454.	480.	2	0	0	.00	211.78	10163.91

FLOW DISTRIBUTION FOR SECNO= 22.88 CWSEL= 1420.05

STA= 9952. 10167.

PER Q=	100.0
AREA=	901.9
VEL=	6.1
DEPTH=	4.3

*SECNO 22.990

22.990	5.73	1423.63	.00	.00	1424.26	.62	3.62	.01	1425.40
5500.0	.0	5500.0	.0	.0	869.8	.0	836.5	178.4	1427.90
1.10	.00	6.32	.00	.000	.045	.000	.000	1417.90	9754.06
.007840	480.	581.	530.	3	0	0	.00	272.08	10026.14

FLOW DISTRIBUTION FOR SECNO= 22.99 CWSEL= 1423.63

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA= 9754. 10034.

PER Q= 100.0
 AREA= 869.8
 VEL= 6.3
 DEPTH= 3.2

*SECNO 23.097

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

23.097	4.79	1429.89	1429.89	.00	1431.46	1.57	6.49	.28	1432.30
5500.0	38.9	5461.1	.0	13.4	541.7	.0	845.7	181.4	1430.80
1.11	2.89	10.08	.00	.045	.045	.000	.000	1425.10	9899.14
.018369	640.	565.	490.	10	11	0	.00	186.86	10117.43

FLOW DISTRIBUTION FOR SECNO= 23.10 CWSEL= 1429.89

STA= 9899. 9916. 9925. 9927. 10121.

PER Q= .4 .3 .0 99.3
 AREA= 8.3 4.8 .2 541.7
 VEL= 2.9 3.0 1.2 10.1
 DEPTH= .5 .5 .1 3.4

*SECNO 23.168

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRAATIO = 3.09

23.168	4.15	1433.05	.00	.00	1433.22	.17	1.62	.14	1429.50
5500.0	763.8	4435.3	300.9	310.9	1269.5	143.5	855.3	184.7	1430.30
1.15	2.46	3.49	2.10	.045	.045	.045	.000	1428.90	9604.29
.001925	330.	375.	300.	5	0	0	.00	609.23	10213.52

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 23.17 CWSEL= 1433.05

STA= 9604. 9657. 9718. 9777. 10116. 10176. 10214.

PER Q= .6 4.1 9.2 80.6 5.0 .5
 AREA= 33.0 106.8 171.1 1269.5 120.0 23.5

VEL= 1.1 2.1 2.9 3.5 2.3 1.1
 DEPTH= .6 1.8 2.9 3.7 2.0 .6

*SECNO 23.253

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

23.253	9.33	1434.53	1434.53	.00	1437.36	2.83	1.55	.80	1437.50
3400.0	.0	3400.0	.0	.0	252.0	.0	865.7	188.1	1444.20
1.16	.00	13.49	.00	.000	.040	.000	.000	1425.20	9978.44
.014919	470.	459.	450.	20	17	0	.00	44.74	10023.18

FLOW DISTRIBUTION FOR SECNO= 23.25 CWSEL= 1434.53

STA= 9978. 10038.

PER Q= 100.0

AREA= 252.0

VEL= 13.5

DEPTH= 5.6

*SECNO 23.334

3301 HV CHANGED MORE THAN HVINS

23.334	7.79	1440.39	.00	.00	1441.83	1.43	4.33	.14	1443.80
3400.0	.0	3400.0	.0	.0	353.7	.0	868.6	188.7	1449.80
1.17	.00	9.61	.00	.000	.040	.000	.000	1432.60	9969.06
.007640	400.	417.	420.	2	0	0	.00	66.92	10035.98

FLOW DISTRIBUTION FOR SECNO= 23.33 CWSEL= 1440.39

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA= 9969. 10055.

PER Q= 100.0

AREA= 353.7

VEL= 9.6

DEPTH= 5.3

*SECNO 23.416

23.416	7.32	1443.82	.00	.00	1445.60	1.77	3.67	.10	1447.80
3400.0	.0	3400.0	.0	.0	318.3	.0	871.9	189.3	1450.20
1.18	.00	10.68	.00	.000	.040	.000	.000	1436.50	9980.93

.009442 400. 433. 430. 3 0 0 .00 59.14 10040.07

FLOW DISTRIBUTION FOR SECNO= 23.42 CWSEL= 1443.82

STA= 9981. 10053.

PER Q= 100.0

AREA= 318.3

VEL= 10.7

DEPTH= 5.4

*SECNO 23.514

23.514 8.51 1448.11 .00 .00 1449.46 1.35 3.82 .04 1451.40

3400.0 .0 3400.0 .0 .0 364.8 .0 876.0 190.0 1451.10

1.19 .00 9.32 .00 .000 .040 .000 .000 1439.60 9977.54

.005937 560. 517. 470. 2 0 0 .00 57.47 10035.01

FLOW DISTRIBUTION FOR SECNO= 23.51 CWSEL= 1448.11

STA= 9978. 10039.

PER Q= 100.0

AREA= 364.8

VEL= 9.3

DEPTH= 6.3

*SECNO 23.544

3301 HV CHANGED MORE THAN HVINS

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SECNO DEPTH CWSEL CRIWS WSELK EG HV HL OLOSS L-BANK ELEV

Q QLOB QCH QROB ALOB ACH AROB VOL TWA R-BANK ELEV

TIME VLOB VCH VROB XNL XNCH XNR WTN ELMIN SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

23.544 7.51 1448.91 .00 .00 1450.79 1.88 1.17 .16 1453.20

3400.0 .0 3400.0 .0 .0 309.4 .0 877.2 190.2 1452.90

1.20 .00 10.99 .00 .000 .040 .000 .000 1441.40 9978.90

.009552 190. 158. 150. 2 0 0 .00 54.80 10033.70

FLOW DISTRIBUTION FOR SECNO= 23.54 CWSEL= 1448.91

STA= 9979. 10039.

PER Q= 100.0

AREA= 309.4

VEL= 11.0

DEPTH= 5.6

SPECIAL BRIDGE

SB XK XKOR COFQ RDLEN BWC BWP BAREA SS ELCHU ELCHD

1.25 2.48 3.20 .00 5.70 1.00 14.10 .00 1442.00 1441.40

*SECNO 23.555

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.95

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
3688.08	1453.59	2.80	3249.	152.	14.	14.	1445.00	1449.00	140.
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=					1480.00	ELREA=	1480.00		
23.555	10.64	1452.64	.00	.00	1453.37	.74	2.58	.00	1453.80
3400.0	.0	3400.0	.0	.0	493.8	.0	877.8	190.3	1453.50
1.20	.00	6.89	.00	.000	.040	.000	.000	1442.00	9974.59
.002505	60.	60.	60.	2	0	8	.00	63.27	10037.86

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 23.56 CWSEL= 1452.64

STA= 9975. 10039.

PER Q= 100.0
 AREA= 493.8
 VEL= 6.9
 DEPTH= 7.8

*SECNO 23.591

3280 CROSS SECTION 23.59 EXTENDED 1.15 FEET

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=					1480.00	ELREA=	1480.00		
23.591	8.95	1453.15	.00	.00	1453.93	.78	.54	.01	1452.90
3400.0	.0	3400.0	.0	.0	478.5	.0	879.9	190.6	1453.80
1.21	.00	7.11	.00	.000	.040	.000	.000	1444.20	9968.00
.003292	100.	190.	210.	3	0	0	.00	75.49	10043.49

FLOW DISTRIBUTION FOR SECNO= 23.59 CWSEL= 1453.15

STA= 9968. 10045.

PER Q= 100.0
 AREA= 478.5
 VEL= 7.1
 DEPTH= 6.3

*SECNO 23.691

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1480.00 ELREA= 1480.00

23.691	8.75	1455.15	.00	.00	1456.48	1.33	2.39	.16	1457.60
3400.0	.0	3400.0	.0	.0	367.9	.0	885.0	191.4	1455.30
1.22	.00	9.24	.00	.000	.040	.000	.000	1446.40	9970.39
.006585	510.	528.	540.	2	0	0	.00	65.33	10035.72

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 23.69 CWSEL= 1455.15

STA= 9970. 10036.

PER Q= 100.0

AREA= 367.9

VEL= 9.2

DEPTH= 5.6

*SECNO 23.815

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1480.00 ELREA= 1480.00

23.815	9.31	1459.01	.00	.00	1460.09	1.08	3.59	.02	1458.90
4350.0	.0	4350.0	.0	.0	520.9	.0	891.7	192.5	1457.80
1.25	.00	8.35	.00	.000	.040	.000	.000	1449.70	9951.00
.004797	650.	655.	680.	3	0	0	.00	86.00	10037.00

FLOW DISTRIBUTION FOR SECNO= 23.82 CWSEL= 1459.01

STA= 9951. 10037.

PER Q= 100.0

AREA= 520.9

VEL= 8.4

DEPTH= 6.1

*SECNO 23.912

3280 CROSS SECTION 23.91 EXTENDED .14 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1480.00 ELREA= 1480.00

23.912	13.14	1461.04	.00	.00	1462.18	1.14	2.07	.02	1461.30
5300.0	.0	5300.0	.0	.0	619.1	.0	898.4	193.5	1460.90
1.26	.00	8.56	.00	.000	.040	.000	.000	1447.90	9967.41
.003558	480.	512.	510.	3	0	0	.00	75.59	10043.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 23.91 CWSEL= 1461.04

STA= 9967. 10043.

PER Q= 100.0

AREA= 619.1

VEL= 8.6

DEPTH= 8.2

*SECNO 23.989

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

23.989	12.91	1462.61	.00	.00	1463.23	.63	1.00	.05	1465.60
5300.0	.0	5300.0	.0	.0	835.0	.0	905.2	194.3	1465.80
1.28	.00	6.35	.00	.000	.040	.000	.000	1449.70	9944.77
.001801	400.	407.	410.	2	0	0	.00	98.91	10043.68

FLOW DISTRIBUTION FOR SECNO= 23.99 CWSEL= 1462.61

STA= 9945. 10049.

PER Q= 100.0

AREA= 835.0

VEL= 6.3

DEPTH= 8.4

CCHV= .300 CEHV= .500

*SECNO 24.086

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1463.70 ELREA= 1463.70

24.086	9.84	1463.44	.00	.00	1464.31	.87	.95	.12	1453.60
5300.0	.0	5300.0	.0	.0	708.4	.0	914.3	195.3	1453.60
1.30	.00	7.48	.00	.000	.040	.000	.000	1453.60	9972.00
.001924	450.	512.	560.	4	0	0	.00	72.00	10044.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 24.09 CWSEL= 1463.44

STA= 9972. 10044.

PER Q= 100.0

AREA= 708.4

VEL= 7.5

DEPTH= 9.8

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	3.00	100.00	71.60	3.00	590.00	.00	1453.60	1453.60

*SECNO 24.096

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN	
1465.39	1464.37	.08	0.	5300.	590.	590.	1462.20	1466.70	0.	
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=					1466.00	ELREA=	1466.00			
24.096	11.11	1464.71	.00	.00	1465.39	.68	1.09	.00	1453.60	
5300.0	.0	5300.0	.0	.0	800.4	.0	915.2	195.4	1453.60	
1.30	.00	6.62	.00	.000	.040	.000	.000	1453.60	9972.00	
.001280	56.	56.	56.	2	0	0	.00	72.00	10044.00	

FLOW DISTRIBUTION FOR SECNO= 24.10 CWSEL= 1464.71

STA= 9972. 10044.

PER Q= 100.0

AREA= 800.4

VEL= 6.6

DEPTH= 11.1

*SECNO 24.106

24.106	11.01	1465.21	.00	.00	1465.55	.34	.05	.10	1464.10
5300.0	1.1	4877.6	421.3	1.3	1012.1	185.1	916.4	195.5	1458.50
1.30	.80	4.82	2.28	.035	.040	.050	.000	1454.20	9952.58
.000889	80.	53.	20.	2	0	0	.00	166.78	10119.36

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 24.11 CWSEL= 1465.21

STA= 9953. 9955. 10064. 10091. 10108. 10119.

PER Q=	.0	92.0	6.6	1.2	.1
AREA=	1.3	1012.1	135.4	41.1	8.6
VEL=	.8	4.8	2.6	1.6	.7

DEPTH= .6 9.3 5.0 2.4 .8

CCHV= .100 CEHV= .300

*SECNO 24.195

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.49

24.195	12.09	1465.69	.00	.00	1465.84	.15	.27	.02	1470.40
5300.0	.0	5300.0	.0	.0	1706.8	.0	932.0	197.5	1466.40
1.35	.00	3.11	.00	.000	.040	.000	.000	1453.60	9941.09
.000402	470.	470.	460.	2	0	0	.00	196.58	10137.67

FLOW DISTRIBUTION FOR SECNO= 24.19 CWSEL= 1465.69

STA= 9941. 10142.

PER Q= 100.0

AREA= 1706.8

VEL= 3.1

DEPTH= 8.7

*SECNO 24.322

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.22

24.322	14.31	1465.91	.00	.00	1465.95	.04	.10	.01	1463.50
5300.0	6.2	4200.3	1093.4	14.5	2371.1	1071.5	971.3	201.7	1456.80
1.46	.43	1.77	1.02	.035	.040	.050	.000	1451.60	9858.94
.000081	640.	671.	630.	2	0	0	.00	366.31	10225.25

FLOW DISTRIBUTION FOR SECNO= 24.32 CWSEL= 1465.91

STA= 9859. 9871. 10064. 10134. 10177. 10220. 10225.

PER Q= .1 79.3 12.9 5.9 1.8 .0

AREA= 14.5 2371.1 606.3 312.3 151.0 1.9

VEL= .4 1.8 1.1 1.0 .6 .1

DEPTH= 1.2 12.3 8.7 7.3 3.5 .4

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 24.444

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .33

24.444	8.65	1465.95	.00	.00	1466.10	.15	.12	.03	1465.00
5300.0	.4	4211.2	1088.5	.7	1324.9	405.4	1008.9	206.4	1461.70
1.52	.49	3.18	2.69	.045	.045	.045	.000	1457.30	9926.47
.000727	640.	644.	600.	2	0	0	.00	277.67	10204.13

FLOW DISTRIBUTION FOR SECNO= 24.44 CWSEL= 1465.95

STA= 9926. 9928. 10122. 10142. 10166. 10180. 10204.

PER Q= .0 79.5 6.0 8.3 4.0 2.3

AREA= .7 1324.9 113.1 147.7 76.4 68.2

VEL= .5 3.2 2.8 3.0 2.8 1.7

DEPTH= .5 6.8 5.7 6.2 5.5 2.8

*SECNO 24.542

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .28

24.542 6.53 1466.33 .00 .00 1467.25 .92 .91 .23 1464.00

5300.0 26.1 5273.9 .0 7.8 684.1 .0 1023.3 209.1 1467.80

1.54 3.33 7.71 .00 .045 .045 .000 .000 1459.80 9907.26

.008955 470. 517. 530. 2 0 0 .00 181.23 10181.31

FLOW DISTRIBUTION FOR SECNO= 24.54 CWSSEL= 1466.33

STA= 9907. 9914. 10187.

PER Q= .5 99.5

AREA= 7.8 684.1

VEL= 3.3 7.7

DEPTH= 1.2 3.9

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SECNO DEPTH CWSSEL CRIWS WSELK EG HV HL CLOSS L-BANK ELEV

Q QLOB QCH QROB ALOB ACH AROB VOL TWA R-BANK ELEV

TIME VLOB VCH VROB XNL XNCH XNR WTN ELMIN SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

*SECNO 24.635

24.635 5.25 1472.05 1471.83 .00 1473.32 1.28 5.97 .11 1474.50

5300.0 .0 5300.0 .0 .0 584.2 .0 1030.5 211.2 1472.40

1.55 .00 9.07 .00 .000 .045 .000 .000 1466.80 9911.01

.017410 650. 491. 220. 12 15 0 .00 194.18 10105.18

FLOW DISTRIBUTION FOR SECNO= 24.64 CWSSEL= 1472.05

STA= 9911. 10111.

PER Q= 100.0

AREA= 584.2

VEL= 9.1

DEPTH= 3.0

*SECNO 24.738

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.23

24.738	4.89	1476.89	.00	.00	1477.18	.29	3.76	.10	1481.20
5200.0	.0	1399.4	3800.6	.0	323.2	872.8	1042.5	214.9	1480.90
1.59	.00	4.33	4.35	.000	.045	.045	.000	1472.00	9936.06
.003356	350.	544.	630.	4	0	0	.00	355.18	10340.68

FLOW DISTRIBUTION FOR SECNO= 24.74 CWSEL= 1476.89

STA= 9936. 10038. 10088. 10127. 10224. 10291. 10330. 10341.

PER Q=	26.9	.6	10.4	33.5	19.3	8.4	.9		
AREA=	323.2	12.1	128.1	372.1	230.2	112.5	17.5		
VEL=	4.3	2.5	4.2	4.7	4.4	3.9	2.6		
DEPTH=	3.4	.2	3.3	3.8	3.4	2.9	1.6		

*SECNO 24.838

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

24.838	5.63	1480.33	1480.33	.00	1480.92	.60	3.02	.09	1483.80
5200.0	.0	1244.3	3955.7	.0	140.6	777.8	1053.9	220.2	1483.50
1.61	.00	8.85	5.09	.000	.045	.045	.000	1474.70	9968.35
.016849	470.	528.	450.	1	12	0	.00	650.49	10633.62

FLOW DISTRIBUTION FOR SECNO= 24.84 CWSEL= 1480.33

STA= 9968. 10019. 10066. 10111. 10162. 10185. 10219. 10270. 10365. 10450. 10630. 10634.

PER Q=	23.9	3.3	4.2	6.7	3.0	4.5	6.7	12.5	11.2	23.7	.1
AREA=	140.6	39.1	48.4	67.6	30.5	45.1	67.6	125.9	112.7	238.6	2.4
VEL=	8.8	4.4	4.5	5.2	5.2	5.2	5.2	5.2	5.2	5.2	3.1
DEPTH=	3.1	.8	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3	.7

*SECNO 24.943

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.83

24.943	5.74	1483.44	.00	.00	1483.57	.12	2.60	.05	1481.80
5200.0	851.4	498.4	3850.1	351.0	132.5	1408.1	1072.0	229.6	1484.80
1.67	2.43	3.76	2.73	.045	.045	.045	.000	1477.70	9801.22
.002110	530.	554.	570.	7	0	0	.00	799.36	10618.77

FLOW DISTRIBUTION FOR SECNO= 24.94 CWSEL= 1483.44

STA=	9801.	9813.	9926.	9945.	9983.	10017.	10044.	10080.	10540.	10610.	10619.
PER Q=	.3	12.7	1.6	1.8	9.6	.5	4.7	59.5	9.1	.3	
AREA=	10.3	253.6	36.0	51.1	132.5	13.8	88.0	1124.5	171.1	10.7	
VEL=	1.4	2.6	2.3	1.8	3.8	1.7	2.8	2.8	2.8	1.7	
DEPTH=	.9	2.2	1.9	1.3	4.2	.5	2.4	2.4	2.4	1.2	

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 25.048

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.048	3.57	1487.27	1487.27	.00	1487.98	.71	2.60	.18	1486.60
5200.0	1444.5	645.1	3110.4	283.5	84.2	430.3	1088.6	238.1	1493.60
1.69	5.10	7.66	7.23	.045	.045	.045	.000	1483.70	9705.76
.020608	580.	554.	520.	20	14	0	.00	557.24	10481.24

FLOW DISTRIBUTION FOR SECNO= 25.05 CWSEL= 1487.27

STA=	9706.	9817.	9941.	9966.	10017.	10154.	10223.	10247.	10450.	10470.	10481.
------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------

PER Q=	8.8	16.9	2.2	12.4	18.7	10.0	12.0	3.8	13.1	2.3
AREA=	101.7	157.6	24.3	84.2	157.2	91.1	66.4	31.9	65.4	18.4
VEL=	4.5	5.6	4.6	7.7	6.2	5.7	9.4	6.1	10.4	6.4
DEPTH=	.9	1.3	1.0	2.1	1.1	1.3	2.8	.2	3.3	1.6

*SECNO 25.163

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.21

25.163	6.19	1492.19	.00	.00	1492.51	.31	4.49	.04	1491.60
4900.0	205.3	1143.6	3551.1	73.5	218.9	823.3	1101.7	244.5	1493.10
1.73	2.79	5.23	4.31	.045	.045	.045	.000	1486.00	9922.08
.003749	640.	607.	580.	5	0	0	.00	369.01	10297.84

FLOW DISTRIBUTION FOR SECNO= 25.16 CWSEL= 1492.19

STA=	9922.	9947.	9965.	9972.	10025.	10044.	10088.	10147.	10220.	10291.	10298.
------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------

PER Q=	1.0	2.6	.5	23.3	1.3	12.6	16.9	20.9	20.3	.6
AREA=	24.8	38.6	10.1	218.9	23.6	140.5	188.4	233.1	226.7	10.9
VEL=	2.0	3.4	2.5	5.2	2.7	4.4	4.4	4.4	4.4	2.6

DEPTH= 1.0 2.1 1.4 4.3 1.2 3.2 3.2 3.2 3.2 1.6

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 25.262

3280 CROSS SECTION 25.26 EXTENDED .01 FEET

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1491.60 ELREA= 1510.00

25.262	10.01	1494.01	.00	.00	1494.20	.19	1.68	.01	1491.60
4900.0	4119.0	781.0	.0	1187.1	220.4	.0	1116.5	249.7	1496.80
1.77	3.47	3.54	.00	.045	.045	.000	.000	1484.00	9501.71
.002847	470.	523.	570.	5	0	0	.00	521.78	10023.49

FLOW DISTRIBUTION FOR SECNO= 25.26 CWSEL= 1494.01

STA= 9502. 9513. 9547. 9618. 9646. 9689. 9707. 9823. 9948. 10030.

PER Q=	1.4	12.9	14.3	3.6	4.5	1.1	18.7	27.4	15.9
AREA=	24.9	139.8	199.6	60.5	82.2	24.5	285.5	370.1	220.4
VEL=	2.8	4.5	3.5	2.9	2.7	2.2	3.2	3.6	3.5
DEPTH=	2.2	4.1	2.8	2.2	1.9	1.4	2.5	3.0	2.9

*SECNO 25.374

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.374	6.07	1499.37	1499.37	.00	1499.62	.26	1.89	.02	1499.30
4900.0	3795.5	1104.5	.0	981.1	238.1	.0	1136.5	256.5	1498.80
1.81	3.87	4.64	2.06	.045	.045	.045	.000	1493.30	9655.94
.002869	680.	591.	300.	20	20	0	.00	367.07	10023.00

FLOW DISTRIBUTION FOR SECNO= 25.37 CWSEL= 1499.37

STA= 9656. 9659. 9704. 9838. 9920. 9933. 9944. 9950. 9955. 9963. 9969. 10023.

PER Q=	.0	6.3	39.3	22.9	3.4	1.8	.5	.9	2.0	.3	22.5
AREA=	1.8	101.9	471.1	280.1	42.4	27.1	9.4	13.3	25.7	8.2	238.1
VEL=	1.2	3.0	4.1	4.0	3.9	3.2	2.4	3.2	3.8	2.1	4.6
DEPTH=	.6	2.3	3.5	3.4	3.3	2.5	1.6	2.7	3.2	1.4	4.4

*SECNO 25.434

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=				1504.90	ELREA=	1504.00			
25.434	8.17	1503.97	1503.97	.00	1506.92	2.95	1.79	.81	1504.90
4900.0	.0	4900.0	.0	.0	355.5	.0	1143.2	258.3	1504.00
1.82	.00	13.78	.00	.000	.035	.000	.000	1495.80	9970.53
.011721	400.	317.	190.	20	14	0	.00	65.40	10035.93

FLOW DISTRIBUTION FOR SECNO= 25.43 CWSEL= 1503.97

STA= 9971. 10036.

PER Q= 100.0

AREA= 355.5

VEL= 13.8

DEPTH= 5.4

*SECNO 25.500

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.25

25.500	10.04	1507.74	.00	.00	1508.08	.34	.91	.26	1511.50
4900.0	.0	4900.0	.0	.0	1043.7	.0	1148.8	259.3	1509.00
1.84	.00	4.69	.00	.000	.035	.000	.000	1497.70	9923.52
.001109	250.	349.	420.	2	0	0	.00	170.83	10094.35

FLOW DISTRIBUTION FOR SECNO= 25.50 CWSEL= 1507.74

STA= 9924. 10105.

PER Q= 100.0

AREA= 1043.7

VEL= 4.7

DEPTH= 6.1

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .300 CEHV= .500

*SECNO 25.523

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.83

25.523	11.99	1507.99	.00	.00	1508.19	.20	.07	.04	1498.00
4900.0	472.4	3501.1	926.6	229.7	885.4	337.9	1152.3	259.7	1498.00
1.85	2.06	3.95	2.74	.050	.035	.035	.000	1496.00	9930.02
.000331	120.	121.	120.	2	0	0	.00	161.62	10091.63

FLOW DISTRIBUTION FOR SECNO= 25.52 CWSEL= 1507.99

STA= 9930. 9950. 9963. 10037. 10050. 10092.

PER Q= 3.0 6.7 71.5 9.5 9.4

AREA= 99.8 129.9 885.4 129.9 208.0

VEL= 1.5 2.5 4.0 3.6 2.2

DEPTH= 5.0 10.0 12.0 10.0 5.0

*SECNO 25.534

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.534	5.21	1510.75	1510.75	.00	1513.36	2.61	.04	1.20	1515.00
4900.0	.0	4900.0	.0	.0	378.2	.0	1153.5	259.9	1515.00
1.85	.00	12.96	.00	.000	.015	.000	.000	1505.54	9963.45
.002246	58.	58.	58.	20	14	0	.00	73.10	10036.55

FLOW DISTRIBUTION FOR SECNO= 25.53 CWSEL= 1510.75

STA= 9963. 10037.

PER Q= 100.0

AREA= 378.2

VEL= 13.0

DEPTH= 5.2

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 25.551

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.48

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

25.551	6.67	1512.21	1510.75	.00	1513.80	1.58	.13	.31	1515.00
4900.0	.0	4900.0	.0	.0	485.2	.0	1154.4	260.1	1515.00
1.85	.00	10.10	.00	.000	.015	.000	.000	1505.54	9963.29
.001025	90.	90.	90.	25	5	0	.00	73.41	10036.71

FLOW DISTRIBUTION FOR SECNO= 25.55 CWSEL= 1512.21

STA= 9963. 10037.

PER Q= 100.0

AREA= 485.2

VEL= 10.1

DEPTH= 6.6

*SECNO 25.557

25.557	6.54	1512.08	.00	.00	1514.01	1.93	.04	.18	1515.00
4900.0	.0	4900.0	.0	.0	439.0	.0	1154.7	260.1	1515.00
1.86	.00	11.16	.00	.000	.015	.000	.000	1505.54	9959.87
.001385	32.	32.	32.	2	0	0	.00	80.27	10040.13

FLOW DISTRIBUTION FOR SECNO= 25.56 CWSEL= 1512.08

STA= 9960. 10046.

PER Q= 100.0

AREA= 439.0

VEL= 11.2

DEPTH= 5.5

*SECNO 25.561

3301 HV CHANGED MORE THAN HVINS

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
25.561	8.76	1514.36	.00	.00	1514.55	.19	.02	.52	1514.90
2900.0	.0	2900.0	.0	.0	825.4	.0	1155.0	260.2	1515.20
1.86	.00	3.51	.00	.000	.035	.000	.000	1505.60	9949.33
.000529	20.	21.	20.	3	0	0	.00	117.68	10067.02

FLOW DISTRIBUTION FOR SECNO= 25.56 CWSEL= 1514.36

STA= 9949. 10069.

PER Q= 100.0

AREA= 825.4

VEL= 3.5

DEPTH= 7.0

CCHV= .100 CEHV= .300

*SECNO 25.680

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.43

25.680	8.24	1514.74	.00	.00	1514.78	.04	.21	.02	1514.40
2700.0	297.0	1319.3	1083.6	333.0	759.6	733.6	1174.2	265.7	1511.20
1.97	.89	1.74	1.48	.035	.035	.035	.000	1506.50	9471.45
.000225	580.	628.	660.	2	0	0	.00	663.75	10305.23

FLOW DISTRIBUTION FOR SECNO= 25.68 CWSEL= 1514.74

STA= 9471. 9688. 9796. 9927. 10093. 10167. 10278. 10295. 10305.

PER Q=	3.0	6.6	1.4	48.9	10.6	21.6	6.6	1.4
AREA=	82.4	169.5	81.1	759.6	217.7	393.2	91.7	30.9
VEL=	1.0	1.0	.5	1.7	1.3	1.5	2.0	1.2
DEPTH=	.4	1.6	.6	4.6	2.9	3.5	5.4	3.0

*SECNO 25.786

3265 DIVIDED FLOW

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1518.90 ELREA= 1515.80

25.786	5.62	1516.32	1516.32	.00	1516.97	.64	.32	.18	1518.90
2500.0	.0	1867.5	632.5	.0	258.0	212.4	1188.2	271.9	1515.80
1.99	.00	7.24	2.98	.000	.035	.035	.000	1510.70	9982.01
.005773	600.	560.	470.	20	18	0	.00	351.98	10442.86

FLOW DISTRIBUTION FOR SECNO= 25.79 CWSEL= 1516.32

STA= 9982. 10056. 10189. 10273. 10418. 10435. 10440. 10443.

PER Q=	74.7	11.2	3.6	2.1	5.7	2.4	.4
AREA=	258.0	102.9	43.0	22.1	30.2	11.1	3.0
VEL=	7.2	2.7	2.1	2.3	4.7	5.5	2.9
DEPTH=	3.5	.8	.5	.2	1.8	2.2	1.1

*SECNO 25.947

25.947	6.67	1521.07	.00	.00	1521.63	.56	4.65	.01	1522.70
2300.0	.0	1967.1	332.9	.0	315.1	80.7	1196.6	276.8	1520.60
2.03	.00	6.24	4.13	.000	.035	.035	.000	1514.40	9958.72
.005225	870.	850.	830.	2	0	0	.00	164.54	10123.26

FLOW DISTRIBUTION FOR SECNO= 25.95 CWSEL= 1521.07

STA= 9959. 10066. 10107. 10113. 10119. 10123.

PER Q= 85.5 6.7 3.2 3.9 .7

AREA= 315.1 46.3 14.0 15.5 4.9

VEL= 6.2 3.3 5.3 5.8 3.1

DEPTH= 2.9 1.1 2.3 2.6 1.1

*SECNO 26.058

26.058 7.29 1523.49 .00 .00 1523.98 .49 2.35 .01 1522.00

2200.0 620.8 1579.2 .0 178.1 251.8 .0 1202.0 279.1 1524.00

2.06 3.49 6.27 .00 .035 .035 .000 .000 1516.20 9841.26

.003212 540. 586. 570. 2 0 0 .00 182.03 10023.28

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SECNO DEPTH CWSEL CRIWS WSELK EG HV HL OLOSS L-BANK ELEV

Q QLOB QCH QROB ALOB ACH AROB VOL TWA R-BANK ELEV

TIME VLOB VCH VROB XNL XNCH XNR WTN ELMIN SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

FLOW DISTRIBUTION FOR SECNO= 26.06 CWSEL= 1523.49

STA= 9841. 9904. 9927. 9951. 9966. 10024.

PER Q= 4.3 7.2 11.6 5.1 71.8

AREA= 46.6 43.3 58.4 29.8 251.8

VEL= 2.0 3.7 4.4 3.8 6.3

DEPTH= .7 1.9 2.4 2.0 4.4

*SECNO 26.152

26.152 4.99 1524.99 .00 .00 1525.46 .46 1.47 .00 1525.40

2000.0 .0 2000.0 .0 .0 366.7 .0 1206.0 280.4 1526.00

2.09 .00 5.45 .00 .000 .035 .000 .000 1520.00 9958.10

.003182 240. 496. 550. 2 0 0 .00 105.87 10063.97

FLOW DISTRIBUTION FOR SECNO= 26.15 CWSEL= 1524.99

STA= 9958. 10069.

PER Q= 100.0

AREA= 366.7

VEL= 5.5

DEPTH= 3.5

*SECNO 26.265

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

26.265 6.15 1528.15 1528.15 .00 1529.39 1.24 3.01 .23 1531.70

1900.0	.0	1758.2	141.8	.0	190.6	38.9	1210.1	281.8	1526.50
2.11	.00	9.23	3.64	.000	.035	.035	.000	1522.00	9972.98
.009530	580.	597.	610.	5	11	0	.00	103.26	10076.25

FLOW DISTRIBUTION FOR SECNO= 26.26 CWSEL= 1528.15

STA= 9973. 10029. 10076.

PER Q= 92.5 7.5

AREA= 190.6 38.9

VEL= 9.2 3.6

DEPTH= 3.4 .8

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 26.372

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.96

26.372	7.55	1531.35	.00	.00	1531.67	.32	2.19	.09	1531.60
1700.0	.0	1700.0	.0	.0	372.2	.0	1214.0	283.1	1533.80
2.14	.00	4.57	.00	.000	.035	.000	.000	1523.80	9967.15
.001979	600.	565.	510.	3	0	0	.00	97.17	10064.32

FLOW DISTRIBUTION FOR SECNO= 26.37 CWSEL= 1531.35

STA= 9967. 10080.

PER Q= 100.0

AREA= 372.2

VEL= 4.6

DEPTH= 3.8

*SECNO 26.492

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.99

26.492	6.45	1532.15	.00	.00	1532.22	.08	.53	.02	1537.50
1600.0	.0	1600.0	.0	.0	720.9	.0	1221.9	285.1	1536.00
2.22	.00	2.22	.00	.000	.035	.000	.000	1525.70	9885.25
.000442	640.	634.	610.	3	0	0	.00	183.14	10068.38

FLOW DISTRIBUTION FOR SECNO= 26.49 CWSEL= 1532.15

STA= 9885. 10084.

PER Q= 100.0

AREA= 720.9

VEL= 2.2

DEPTH= 3.9

*SECNO 26.582

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 6.37

26.582	8.14	1532.24	.00	.00	1532.24	.00	.01	.01	1528.20
1300.0	594.6	479.1	226.4	1979.9	1035.9	773.7	1246.2	290.0	1527.20
2.59	.30	.46	.29	.040	.030	.040	.000	1524.10	9470.61
.000007	460.	475.	480.	2	0	0	.00	718.47	10189.08

FLOW DISTRIBUTION FOR SECNO= 26.58 CWSEL= 1532.24

STA= 9471. 9539. 9568. 9602. 9655. 9691. 9725. 9752. 9786. 9845. 9869. 10028. 10086.

PER Q=	6.7	5.0	4.9	6.6	4.4	4.0	3.2	3.7	5.3	2.0	36.9	7.5
AREA=	281.5	186.8	198.6	282.5	188.7	174.8	140.2	168.0	258.0	100.6	1035.9	315.7
VEL=	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.5	.3
DEPTH=	4.1	6.4	5.8	5.3	5.2	5.1	5.2	4.9	4.4	4.2	6.5	5.4

STA= 10086. 10123. 10157. 10189.

PER Q=	4.7	3.8	1.4
AREA=	199.5	170.6	87.9
VEL=	.3	.3	.2
DEPTH=	5.4	5.0	2.7

*SECNO 26.673

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1535.00 ELREA= 1533.20

26.673	2.18	1533.98	1533.98	.00	1534.51	.53	.01	.16	1534.30
1300.0	.0	1094.7	205.3	.0	174.3	74.2	1269.0	295.3	1533.20
2.61	.00	6.28	2.77	.000	.030	.040	.000	1531.80	9957.84
.009696	510.	480.	460.	20	14	0	.00	239.18	10280.56

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 26.67 CWSEL= 1533.98

STA=	9958.	10077.	10105.	10120.	10205.	10237.	10265.	10281.	
PER Q=	84.2	5.2	.9	.0	3.6	5.2	.9		
AREA=	174.3	21.8	5.8	.3	18.5	21.8	6.1		
VEL=	6.3	3.1	1.9	1.2	2.5	3.1	1.9		
DEPTH=	1.5	.8	.4	.0	.6	.8	.4		

*SECNO 26.784

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

26.784	3.48	1546.18	1546.18	.00	1547.20	1.02	5.95	.15	1551.20
1100.0	.0	1100.0	.0	.0	135.8	.0	1271.5	297.3	1551.50
2.63	.00	8.10	.00	.000	.030	.000	.000	1542.70	9980.90
.010938	590.	586.	530.	20	14	0	.00	68.01	10048.91

FLOW DISTRIBUTION FOR SECNO= 26.78 CWSEL= 1546.18

STA= 9981. 10080.

PER Q=	100.0
AREA=	135.8
VEL=	8.1
DEPTH=	2.0

*SECNO 26.883

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 42.71

26.883	7.21	1547.31	.00	.00	1547.31	.00	.01	.10	1544.70
1000.0	.9	936.4	62.7	9.9	2370.0	292.0	1288.3	300.3	1542.80
3.01	.10	.40	.21	.040	.030	.040	.000	1540.10	9765.39
.000005	530.	523.	500.	2	0	0	.00	434.21	10199.60

FLOW DISTRIBUTION FOR SECNO= 26.88 CWSEL= 1547.31

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA= 9765. 9773. 10122. 10148. 10166. 10179. 10194. 10200.

PER Q=	.1	93.6	2.7	2.0	1.1	.4	.0		
AREA=	9.9	2370.0	119.8	85.6	52.1	31.6	2.8		

VEL= .1 .4 .2 .2 .2 .1 .1
 DEPTH= 1.3 6.8 4.6 4.8 4.0 2.1 .5

*SECNO 26.984

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .52

26.984 6.81 1547.31 .00 .00 1547.32 .00 .00 .00 1545.50
 900.0 1.3 764.0 134.7 9.7 1283.2 393.8 1314.4 305.0 1546.50
 3.27 .13 .60 .34 .040 .030 .040 .000 1540.50 9932.30
 .000015 480. 533. 460. 2 0 0 .00 371.10 10336.41

FLOW DISTRIBUTION FOR SECNO= 26.98 CWSEL= 1547.31

STA= 9932. 9943. 10170. 10256. 10271. 10290. 10323. 10336.

PER Q= .1 84.9 3.2 3.2 3.7 4.2 .7
 AREA= 9.7 1283.2 94.9 71.5 86.1 115.2 26.1
 VEL= .1 .6 .3 .4 .4 .3 .2
 DEPTH= .9 5.7 1.1 4.8 4.5 3.5 1.9

*SECNO 27.060

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1565.00 ELREA= 1562.60

27.060 5.36 1559.46 1559.46 .00 1561.02 1.56 .02 .47 1560.80
 900.0 .0 900.0 .0 .0 89.8 .0 1322.8 307.0 1562.60
 3.28 .00 10.02 .00 .000 .030 .000 .000 1554.10 9983.67
 .010153 270. 401. 470. 20 15 0 .00 29.47 10013.14

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SECNO DEPTH CWSEL CRIWS WSELK EG HV HL OLOSS L-BANK ELEV
 Q QLOB QCH QROB ALOB ACH AROB VOL TWA R-BANK ELEV
 TIME VLOB VCH VROB XNL XNCH XNR WIN ELMIN SSTA
 SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

FLOW DISTRIBUTION FOR SECNO= 27.06 CWSEL= 1559.46

STA= 9984. 10019.

PER Q= 100.0
 AREA= 89.8
 VEL= 10.0
 DEPTH= 3.0

*SECNO 27.166

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.65

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1565.00 ELREA= 1565.00

27.166	6.98	1562.18	.00	.00	1562.35	.17	1.19	.14	1564.20
600.0	.0	600.0	.0	.0	181.4	.0	1324.6	307.4	1563.90
3.33	.00	3.31	.00	.000	.030	.000	.000	1555.20	9981.04
.000644	560.	560.	560.	3	0	0	.00	38.99	10020.03

FLOW DISTRIBUTION FOR SECNO= 27.17 CWSEL= 1562.18

STA= 9981. 10023.

PER Q= 100.0

AREA= 181.4

VEL= 3.3

DEPTH= 4.7

*SECNO 27.294

27.294	6.54	1562.54	.00	.00	1562.59	.05	.23	.01	1565.20
400.0	.0	400.0	.0	.0	232.9	.0	1327.8	308.1	1564.60
3.44	.00	1.72	.00	.000	.030	.000	.000	1556.00	9972.01
.000167	710.	676.	630.	3	0	0	.00	50.20	10022.21

FLOW DISTRIBUTION FOR SECNO= 27.29 CWSEL= 1562.54

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA= 9972. 10027.

PER Q= 100.0

AREA= 232.9

VEL= 1.7

DEPTH= 4.6

CCHV= .100 CEHV= .300

*SECNO -19.560

START TRIB COMP

-19.560	19.560	1328.212							
-19.560	12.61	1328.21	.00	.00	1330.15	1.93	.00	.00	1329.70
14600.0	.0	14600.0	.0	.0	1307.9	.0	1340.7	309.6	1330.60
3.45	.00	11.16	.00	.000	.035	.000	.000	1315.60	9931.37
.003382	730.	729.	720.	0	0	0	.00	129.62	10060.99

FLOW DISTRIBUTION FOR SECNO= -19.56 CWSEL= 1328.21

STA= 9931. 10065.

PER Q= 100.0

AREA= 1307.9

VEL= 11.2

DEPTH= 10.1

*SECNO .029

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

.029	9.75	1329.35	1329.35	.00	1332.60	3.24	1.11	.39	1329.50
9500.0	.0	9478.3	21.7	.0	654.9	17.3	1350.5	310.9	1328.20
3.46	.00	14.47	1.25	.000	.015	.035	.000	1319.60	9942.56
.001821	380.	430.	450.	20	15	0	.00	130.50	10073.06

FLOW DISTRIBUTION FOR SECNO= .03 CWSEL= 1329.35

STA= 9943. 10043. 10073.

PER Q= 99.8 .2

AREA= 654.9 17.3

VEL= 14.5 1.3

DEPTH= 6.5 .6

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .112

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.48

.112	11.44	1332.94	.00	.00	1333.44	.50	.57	.27	1332.10
9500.0	100.1	9399.9	.0	87.6	1654.0	.0	1363.8	313.4	1334.80
3.49	1.14	5.68	.00	.035	.030	.000	.000	1321.50	9762.30
.000828	430.	483.	450.	3	0	0	.00	330.25	10092.55

FLOW DISTRIBUTION FOR SECNO= .11 CWSEL= 1332.94

STA= 9762. 9804. 9816. 9863. 9887. 10101.

PER Q= .0 .1 .6 .3 98.9

AREA= 7.1 7.7 49.0 23.8 1654.0

VEL= .4 .9 1.3 1.2 5.7

DEPTH= .2 .6 1.0 1.0 8.0

*SECNO .198

.198	9.51	1333.31	.00	.00	1333.94	.63	.46	.04	1332.40
9500.0	13.9	9486.1	.0	15.6	1493.4	.0	1380.7	316.4	1337.80
3.51	.89	6.35	.00	.035	.030	.000	.000	1323.80	9860.87
.001241	460.	454.	420.	2	0	0	.00	249.57	10110.44

FLOW DISTRIBUTION FOR SECNO= .20 CWSSEL= 1333.31

STA= 9861. 9897. 10133.

PER Q= .1 99.9

AREA= 15.6 1493.4

VEL= .9 6.4

DEPTH= .4 7.0

*SECNO .288

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

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SECNO	DEPTH	CWSSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3720 CRITICAL DEPTH ASSUMED

.288	7.61	1333.31	1333.31	.00	1335.83	2.52	1.21	.57	1336.00
9500.0	.0	9500.0	.0	.0	745.7	.0	1393.0	318.6	1335.90
3.52	.00	12.74	.00	.000	.030	.000	.000	1325.70	9903.19
.007920	470.	475.	460.	3	15	0	.00	150.75	10053.94

FLOW DISTRIBUTION FOR SECNO= .29 CWSSEL= 1333.31

STA= 9903. 10069.

PER Q= 100.0

AREA= 745.7

VEL= 12.7

DEPTH= 4.9

*SECNO .398

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.79

.398	8.47	1337.27	.00	.00	1338.35	1.08	2.37	.14	1338.90
9500.0	.0	9500.0	.0	.0	1138.7	.0	1405.6	320.8	1340.60
3.54	.00	8.34	.00	.000	.030	.000	.000	1328.80	9912.48
.002485	600.	581.	540.	2	0	0	.00	181.83	10094.30

FLOW DISTRIBUTION FOR SECNO= .40 CWSSEL= 1337.27

STA= 9912. 10119.

PER Q= 100.0

AREA= 1138.7

VEL= 8.3

DEPTH= 6.3

*SECNO .482

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

.482	11.15	1342.35	1342.35	.00	1343.41	1.05	1.00	.00	1341.10
9500.0	79.0	6887.4	2533.6	36.5	722.3	941.8	1418.2	324.7	1338.00
3.55	2.17	9.54	2.69	.035	.030	.035	.000	1331.20	9903.83
.002295	440.	444.	270.	20	12	0	.00	889.74	10793.57

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .48 CWSEL= 1342.35

STA= 9904. 9937. 10024. 10093. 10236. 10315. 10402. 10528. 10794.

PER Q=	.8	72.5	9.0	4.9	3.6	3.1	3.4	2.6
AREA=	36.4	722.3	203.8	189.3	124.7	117.7	145.3	161.1
VEL=	2.2	9.5	4.2	2.5	2.8	2.5	2.2	1.6
DEPTH=	1.1	8.3	3.0	1.3	1.6	1.4	1.2	.6

*SECNO .575

.575	12.32	1343.82	.00	.00	1344.53	.71	1.09	.03	1340.20
9500.0	727.3	7778.2	994.5	211.3	1057.4	451.4	1437.5	333.9	1343.10
3.57	3.44	7.36	2.20	.035	.030	.035	.000	1331.50	9777.80
.002143	460.	491.	500.	3	0	0	.00	730.21	10508.02

FLOW DISTRIBUTION FOR SECNO= .57 CWSEL= 1343.82

STA= 9778. 9869. 10049. 10105. 10113. 10186. 10239. 10274. 10411. 10508.

PER Q=	7.7	81.9	1.2	.1	.7	2.1	2.1	4.0	.3
AREA=	211.3	1057.4	57.1	6.6	45.3	77.9	67.2	167.2	30.1
VEL=	3.4	7.4	2.0	1.7	1.4	2.5	3.0	2.2	.9
DEPTH=	2.3	5.9	1.0	.8	.6	1.5	1.9	1.2	.3

*SECNO .697

.697	11.06	1345.06	.00	.00	1346.10	1.04	1.47	.10	1346.40
9400.0	.0	9013.5	386.5	.0	1081.8	113.6	1459.0	341.1	1341.40
3.59	.00	8.33	3.40	.000	.030	.035	.000	1334.00	9856.01

.002432 640. 644. 640. 2 0 0 .00 237.20 10093.21

FLOW DISTRIBUTION FOR SECNO= .70 CWSEL= 1345.06

STA= 9856. 10023. 10061. 10093.

PER Q= 95.9 3.8 .3

AREA= 1081.8 93.4 20.2

VEL= 8.3 3.8 1.5

DEPTH= 6.5 2.5 .6

*SECNO .826

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SECNO DEPTH CWSEL CRIWS WSELK EG HV HL OLOSS L-BANK ELEV

Q QLOB QCH QROB ALOB ACH AROB VOL TWA R-BANK ELEV

TIME VLOB VCH VROB XNL XNCH XNR WTN ELMIN SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

.826 9.49 1348.29 1348.29 .00 1350.53 2.23 2.75 .36 1345.50

9400.0 729.3 8670.7 .0 129.5 700.6 .0 1474.8 344.5 1349.50

3.61 5.63 12.38 .00 .035 .035 .000 .000 1338.80 9845.35

.007973 680. 681. 660. 20 15 0 .00 199.85 10045.20

FLOW DISTRIBUTION FOR SECNO= .83 CWSEL= 1348.29

STA= 9845. 9893. 9929. 10050.

PER Q= 1.8 6.0 92.2

AREA= 45.1 84.4 700.6

VEL= 3.7 6.7 12.4

DEPTH= .9 2.3 6.0

*SECNO .945

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.23

.945 11.72 1352.12 .00 .00 1352.63 .52 1.93 .17 1348.60

9400.0 1059.5 7814.3 526.3 363.8 1260.4 223.3 1494.4 350.1 1349.50

3.64 2.91 6.20 2.36 .035 .035 .035 .000 1340.40 9624.18

.001604 680. 628. 600. 3 0 0 .00 561.70 10185.88

FLOW DISTRIBUTION FOR SECNO= .94 CWSEL= 1352.12

STA= 9624. 9674. 9704. 9769. 9819. 9843. 9856. 10034. 10046. 10100. 10186.

PER Q= .0 .1 2.9 4.8 2.0 1.5 83.1 .9 3.1 1.6

AREA= 7.9 9.5 111.6 135.8 59.2 39.9 1260.4 27.8 108.9 86.6

VEL=	.5	.8	2.4	3.3	3.1	3.6	6.2	3.0	2.7	1.7
DEPTH=	.2	.3	1.7	2.7	2.5	3.1	7.1	2.3	2.0	1.0

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONI	CORAR	TOPWID	ENDST

*SECNO 1.035

1.035	11.03	1352.93	.00	.00	1353.65	.72	.96	.06	1350.80
9400.0	1059.6	7955.9	384.6	284.3	1102.8	116.6	1512.3	355.5	1348.80
3.66	3.73	7.21	3.30	.035	.035	.035	.000	1341.90	9686.18
.002658	440.	475.	460.	3	0	0	.00	460.77	10146.95

FLOW DISTRIBUTION FOR SECNO= 1.03 CWSEL= 1352.93

STA= 9686. 9723. 9776. 9795. 9823. 9832. 9841. 10022. 10046. 10059. 10100. 10147.

PER Q=	1.2	2.5	.3	3.3	2.5	1.5	84.6	3.3	.3	.3	.1
AREA=	44.8	81.2	14.8	73.7	39.9	30.0	1102.8	70.4	14.1	19.7	12.5
VEL=	2.5	2.9	1.9	4.2	5.9	4.8	7.2	4.5	2.3	1.3	.9
DEPTH=	1.2	1.5	.8	2.6	4.4	3.3	6.1	2.9	1.1	.5	.3

*SECNO 1.121

1.121	10.56	1354.16	.00	.00	1354.96	.80	1.29	.02	1355.00
9400.0	.0	9396.0	4.0	.0	1310.2	4.9	1527.1	359.1	1353.60
3.68	.00	7.17	.82	.000	.040	.040	.000	1343.60	9871.67
.003028	480.	454.	440.	2	0	0	.00	235.28	10106.95

FLOW DISTRIBUTION FOR SECNO= 1.12 CWSEL= 1354.16

STA= 9872. 10069. 10082. 10107.

PER Q=	100.0	.0	.0
AREA=	1310.2	4.1	.8
VEL=	7.2	.9	.2
DEPTH=	6.6	.3	.0

*SECNO 1.204

3265 DIVIDED FLOW

3280 CROSS SECTION 1.20 EXTENDED .02 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
-------	-------	-------	-------	-------	----	----	----	-------	-------------

Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
1.204	11.12	1355.42	1355.42	.00	1357.51	2.09	2.02	.39	1355.60
9400.0	.0	8391.4	1008.6	.0	689.1	214.7	1538.3	361.4	1352.50
3.69	.03	12.18	4.70	.040	.040	.040	.000	1344.30	9930.00
.007829	430.	438.	450.	2	9	0	.00	226.07	10173.36

FLOW DISTRIBUTION FOR SECNO= 1.20 CWSEL= 1355.42

STA= 9930. 10043. 10057. 10072. 10098. 10165. 10173.

PER Q=	89.3	1.9	1.2	2.5	5.0	.1
AREA=	689.1	31.8	25.1	47.4	105.3	5.1
VEL=	12.2	5.7	4.6	4.9	4.4	2.4
DEPTH=	7.4	2.3	1.7	1.8	1.6	.6

*SECNO 1.315

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.29

1.315	10.53	1359.33	.00	.00	1359.72	.39	2.04	.17	1359.70
9100.0	.0	6944.0	2156.0	.0	1301.1	568.6	1561.3	366.0	1359.00
3.73	.00	5.34	3.79	.000	.040	.040	.000	1348.80	9904.63
.001396	720.	734.	700.	3	0	0	.00	332.04	10236.67

FLOW DISTRIBUTION FOR SECNO= 1.32 CWSEL= 1359.33

STA= 9905. 10074. 10085. 10091. 10130. 10150. 10170. 10230. 10237.

PER Q=	76.3	.1	.2	1.0	3.4	8.4	10.5	.1
AREA=	1301.1	10.3	8.6	52.0	86.7	146.7	260.0	4.4
VEL=	5.3	1.3	1.8	1.7	3.6	5.2	3.7	1.0
DEPTH=	7.7	.9	1.4	1.3	4.3	7.3	4.3	.7

*SECNO 1.420

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL, CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3720 CRITICAL DEPTH ASSUMED

1.420	5.09	1359.99	1359.99	.00	1362.07	2.08	1.02	.51	1360.00
9100.0	.0	9100.0	.0	.0	786.8	.0	1573.8	368.5	1360.00

3.74 .00 11.57 .00 .000 .025 .000 .000 1354.90 9895.02
 .005734 380. 407. 420. 20 11 0 .00 189.95 10084.98

FLOW DISTRIBUTION FOR SECNO= 1.42 CWSEL= 1359.99

STA= 9895. 10085.

PER Q= 100.0

AREA= 786.8

VEL= 11.6

DEPTH= 4.1

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T1 MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY, ACDC TO DAM
 T2 FLOOD CONTROL DISTRICT OF MARICOPA COUNTY 1989 BY BURGESS & NIPLE
 T3 CAVE CREEK WASH FLOODWAY J.MISCHLER

J1 ICHECK INQ NINV IDIR STRT METRIC HVINS Q WSEL FQ
 3. 1284.69
 J2 NPROF I PLOT PRFVS XSECV XSECH FN ALLDC IBW CHNIM ITRACE
 15. -1.

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SECNO DEPTH CWSEL CRIWS WSELK EG HV HL OLOSS L-BANK ELEV
 Q QLOB QCH QROB ALOB ACH AROB VOL TWA R-BANK ELEV
 TIME VLOB VCH VROB XNL XNCH XNR WTN ELMIN SSTA
 SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

*PROF 2

0

CCHV= .100 CEHV= .300

*SECNO 17.588

2800 NAT Q1= 5622.52 WSELK= 1283.69 ENC Q1= 5622.52 WSEL= 1284.69 RATIO= .0000

NAT Q1= 6698. RATIOS LOB, CH, ROB= .2409 .7347 .0244 WSEL= 1284.69

3470 ENCROACHMENT STATIONS= 9855.2 10193.0 TYPE= 4 TARGET= .161

17.588 15.09 1284.69 .00 1283.69 1285.08 .39 .00 .00 1278.10
 15400.0 1964.8 13435.2 .0 646.6 2548.7 .0 .0 .0 1276.40
 .00 3.04 5.27 .00 .040 .040 .000 .000 1269.60 9855.24
 .000784 440. 496. 560. 0 0 0 .00 337.76 10193.00

*SECNO 17.662

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .54

3470 ENCROACHMENT STATIONS= 9900.0 10150.0 TYPE= 1 TARGET= 250.000

17.662 13.21 1284.81 .00 1283.82 1285.77 .96 .51 .17 1276.40

15400.0	2238.0	13039.2	122.7	318.6	1628.5	41.0	23.1	2.6	1281.60
.01	7.02	8.01	2.99	.040	.040	.040	.000	1271.60	9900.00
.002664	380.	391.	400.	2	0	0	.00	250.00	10150.00

*SECNO 17.783

2800 NAT Q1= 1848.70 WSELK= 1285.58 ENC Q1= 2096.47 WSEL= 1286.58 RATIO= -.1340

NAT Q1= 2292. RATIOS LOB, CH, ROB= .0251 .9148 .0601 WSEL= 1286.58

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .64

3470 ENCROACHMENT STATIONS= 9921.0 10064.0 TYPE= 4 TARGET= .085

17.783	10.97	1286.37	.00	1285.58	1288.65	2.28	2.49	.40	1280.50
15400.0	.0	15400.0	.0	.0	1271.4	.0	46.6	5.4	1281.10
.03	.00	12.11	.00	.000	.040	.000	.000	1275.40	9921.00
.006431	540.	639.	500.	2	0	0	.00	143.00	10064.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 17.932

2800 NAT Q1= 1583.93 WSELK= 1290.98 ENC Q1= 1874.27 WSEL= 1291.98 RATIO= -.1833

NAT Q1= 1919. RATIOS LOB, CH, ROB= .0153 .9768 .0079 WSEL= 1291.98

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9956.0 10066.0 TYPE= 4 TARGET= .023

17.932	13.51	1291.41	.00	1290.98	1294.76	3.36	5.79	.32	1289.70
15400.0	.0	15400.0	.0	.0	1047.0	.0	67.6	7.7	1290.20
.04	.00	14.71	.00	.000	.040	.000	.000	1277.90	9956.00
.008488	790.	787.	780.	2	0	0	.00	110.00	10066.00

CCHV= .300 CEHV= .500

*SECNO 18.042

2800 NAT Q1= 2422.94 WSELK= 1294.31 ENC Q1= 2802.31 WSEL= 1295.31 RATIO= -.1566

NAT Q1= 2802. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 1295.31

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.48

3470 ENCROACHMENT STATIONS= 9951.0 10049.0 TYPE= 4 TARGET= .000

18.042	12.13	1294.43	.00	1294.31	1298.17	3.74	3.22	.19	1357.40
15400.0	.0	15400.0	.0	.0	992.5	.0	81.2	9.1	1307.40
.05	.00	15.52	.00	.000	.025	.000	.000	1282.30	9951.60
.003893	620.	581.	550.	2	0	0	.00	96.78	10048.38

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.56	3.00	.00	75.00	4.00	1059.00	.81	1280.20	1279.90

*SECNO 18.061

BTCARD, BRIDGE STENCL= 9951.00 STENCR= 10049.00

2800 NAT Q1= 2933.00 WSELK= 1296.44 ENC Q1= 3334.23 WSEL= 1297.44 RATIO= -.1368

NAT Q1= 3334. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 1297.44

3301 HV CHANGED MORE THAN HVINS

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
						AREA			
1299.55	1299.06	1.10	0.	15400.	1059.	1060.	1293.20	1301.60	0.
3470 ENCROACHMENT STATIONS=	9951.0	10049.0	TYPE=	4	TARGET=	.000			
18.061	13.59	1296.69	.00	1296.44	1299.55	2.86	1.38	.00	1358.20
15400.0	.0	15400.0	.0	.0	1133.8	.0	83.6	9.3	1308.20
.06	.00	13.58	.00	.000	.025	.000	.000	1283.10	9951.53
.002582	101.	101.	101.	3	0	0	.00	96.91	10048.45

*SECNO 18.081

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.96

3470 ENCROACHMENT STATIONS=	9900.0	10085.0	TYPE=	1	TARGET=	185.000			
18.081	18.51	1299.61	.00	1299.54	1300.32	.71	.13	.65	1286.60
15400.0	1220.6	12608.4	1571.0	308.4	1745.1	357.6	88.0	9.7	1284.90
.06	3.96	7.22	4.39	.035	.035	.035	.000	1281.10	9900.00
.000671	80.	106.	130.	3	0	0	.00	185.00	10085.00

CCHV= .100 CEHV= .300

*SECNO 18.174

3470 ENCROACHMENT STATIONS=	9857.0	10125.0	TYPE=	1	TARGET=	268.000			
18.174	18.48	1300.18	.00	1300.22	1300.63	.45	.28	.03	1288.70
15400.0	1800.2	13116.1	483.8	472.7	2324.4	213.2	118.6	12.2	1294.60
.09	3.81	5.64	2.27	.035	.035	.035	.000	1281.70	9857.02
.000485	500.	491.	490.	2	0	0	.00	267.98	10125.00

*SECNO 18.269

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XLNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 9882.2 10110.0 TYPE= 1 TARGET= 227.800

18.269	16.50	1300.30	.00	1300.17	1301.04	.74	.32	.09	1288.40
15400.0	2281.3	12415.2	703.5	452.7	1691.6	205.0	149.4	15.1	1292.40
.11	5.04	7.34	3.43	.035	.035	.035	.000	1283.80	9882.20
.000870	500.	502.	500.	2	0	0	.00	227.80	10110.00

*SECNO 18.362

3470 ENCROACHMENT STATIONS= 9895.6 10107.8 TYPE= 1 TARGET= 212.200

18.362	15.34	1300.64	.00	1300.54	1301.60	.95	.50	.06	1290.00
15400.0	1169.8	13188.3	1041.9	244.9	1597.1	244.2	174.5	17.6	1290.60
.12	4.78	8.26	4.27	.035	.035	.035	.000	1285.30	9895.60
.001186	490.	491.	510.	1	0	0	.00	212.20	10107.80

*SECNO 18.445

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9885.0 10110.0 TYPE= 1 TARGET= 225.000

18.445	17.61	1304.91	1304.91	1305.39	1307.77	2.86	1.00	.57	1290.00
15400.0	5150.6	4076.3	6173.1	519.2	211.4	537.3	191.9	19.8	1290.00
.13	9.92	19.29	11.49	.035	.035	.035	.000	1287.30	9888.33
.005594	470.	440.	460.	20	11	0	.00	221.67	10110.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	2.34	3.00	.00	6.11	1.00	33.20	.00	1287.70	1287.40	

*SECNO 18.456

BTCARD, BRIDGE STENCL= 9885.00 STENCR= 10110.00

3301 HV CHANGED MORE THAN HVINS

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XLNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.86

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN	
						AREA				
9122.90	1309.51	1.74	15031.	376.	33.	33.	1294.20	1299.50	225.	
3470 ENCROACHMENT STATIONS=			9885.0	10110.0	TYPE=	1	TARGET=	225.000		
18.456	20.82	1308.52	.00	1307.31	1309.57	1.05	1.80	.00	1290.40	
15400.0	5931.9	2952.3	6515.8	862.2	253.1	874.7	194.1	20.2	1290.40	
.14	6.88	11.66	7.45	.035	.035	.035	.000	1287.70	9885.00	
.001609	60.	60.	60.	3	0	7	.00	225.00	10110.00	

*SECNO 18.545

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.19

3470 ENCROACHMENT STATIONS=			9881.4	10169.8	TYPE=	1	TARGET=	288.399	
18.545	20.26	1309.56	.00	1308.28	1309.93	.37	.29	.07	1294.10
15400.0	1923.3	10840.1	2636.6	584.0	1994.2	825.5	222.8	22.9	1293.80
.16	3.29	5.44	3.19	.035	.035	.035	.000	1289.30	9881.40
.000334	440.	466.	480.	2	0	0	.00	288.40	10169.80

*SECNO 18.575

3470 ENCROACHMENT STATIONS=			9880.7	10170.8	TYPE=	1	TARGET=	290.100	
18.575	20.37	1309.67	.00	1308.43	1309.99	.32	.05	.00	1291.50
15400.0	3707.2	3015.7	8677.1	946.3	545.8	1943.6	235.4	23.9	1289.70
.17	3.92	5.53	4.46	.035	.035	.035	.000	1289.30	9880.70
.000325	160.	160.	160.	2	0	0	.00	290.10	10170.80

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	1.56	3.00	.00	10.40	1.00	56.50	.00	1289.40	1289.30	

*SECNO 18.583

BTCARD, BRIDGE STENCL= 9876.10 STENCR= 10177.20

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN	
						AREA				
3109.30	1310.06	.06	15166.	309.	57.	56.	1295.40	1299.00	290.	
3470 ENCROACHMENT STATIONS=			9876.1	10177.2	TYPE=	1	TARGET=	301.101		

18.583	20.69	1310.09	.00	1309.50	1310.39	.31	.40	.00	1291.60
15400.0	3739.8	2983.7	8676.5	980.5	554.7	2005.0	238.6	24.2	1289.80
.17	3.81	5.38	4.33	.035	.035	.035	.000	1289.40	9876.10
.000301	40.	40.	40.	2	0	8	.00	301.10	10177.20

*SECNO 18.640

3470 ENCROACHMENT STATIONS=	9879.6	10134.7	TYPE=	1	TARGET=	255.101			
18.640	19.82	1310.02	.00	1309.43	1310.59	.57	.12	.08	1294.60
15400.0	2433.4	9638.4	3328.3	557.4	1397.4	771.3	260.5	26.2	1293.40
.19	4.37	6.90	4.32	.035	.035	.035	.000	1290.20	9879.60
.000567	300.	301.	310.	2	0	0	.00	255.10	10134.70

*SECNO 18.734

3470 ENCROACHMENT STATIONS=	9883.2	10111.7	TYPE=	1	TARGET=	228.500			
18.734	17.84	1310.24	.00	1309.68	1310.99	.75	.34	.05	1298.60
15400.0	1412.7	13301.7	685.5	334.5	1817.1	202.6	289.4	28.9	1300.80
.21	4.22	7.32	3.38	.035	.035	.035	.000	1292.40	9883.20
.000841	490.	496.	500.	0	0	0	.00	228.50	10111.70

*SECNO 18.832

3470 ENCROACHMENT STATIONS=	9891.8	10107.0	TYPE=	1	TARGET=	215.200			
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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
18.832	17.46	1310.66	.00	1310.19	1311.44	.78	.44	.01	1302.80
15400.0	497.2	12812.5	2090.3	155.5	1713.0	426.4	317.0	31.5	1297.10
.23	3.20	7.48	4.90	.035	.035	.035	.000	1293.20	9891.80
.000880	480.	517.	540.	2	0	0	.00	215.20	10107.00

*SECNO 18.925

3470 ENCROACHMENT STATIONS=	9887.7	10087.5	TYPE=	1	TARGET=	199.800			
18.925	16.45	1311.05	.00	1310.64	1311.94	.89	.46	.03	1297.60
15400.0	1782.2	12651.3	966.5	370.2	1567.8	226.4	342.1	33.9	1300.00
.25	4.81	8.07	4.27	.035	.035	.035	.000	1294.60	9887.70
.001019	480.	491.	500.	2	0	0	.00	199.80	10087.50

*SECNO 19.018

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .63

3470 ENCROACHMENT STATIONS=	9866.3	10038.5	TYPE=	1	TARGET=	172.200			
19.018	13.66	1311.26	.00	1310.89	1312.92	1.66	.75	.23	1305.10

15400.0	558.1	14803.5	38.4	120.2	1408.9	13.8	362.9	36.0	1308.40
.26	4.64	10.51	2.79	.035	.035	.035	.000	1297.60	9866.30
.002537	460.	491.	520.	2	0	0	.00	172.20	10038.50

*SECNO 19.117

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	9942.1	10061.9	TYPE=	1	TARGET=	119.801			
19.117	14.08	1312.68	1312.68	1312.49	1316.84	4.15	1.97	.75	1302.90
15400.0	1457.2	11826.8	2116.0	154.6	662.8	205.2	378.3	37.7	1301.50
.27	9.42	17.84	10.31	.035	.035	.035	.000	1298.60	9942.10
.006175	490.	523.	560.	20	8	0	.00	119.80	10061.90

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 19.210

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.54

3470 ENCROACHMENT STATIONS=	9923.1	10081.0	TYPE=	1	TARGET=	157.900			
19.210	16.90	1317.10	.00	1317.19	1318.95	1.85	1.88	.23	1312.00
15400.0	219.5	14969.9	210.6	55.2	1353.6	53.1	392.3	39.3	1312.00
.28	3.97	11.06	3.97	.035	.035	.035	.000	1300.20	9923.33
.002610	500.	491.	490.	3	0	0	.00	157.49	10080.82

CCHV= .300 CEHV= .500

*SECNO 19.283

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=	1324.00	ELREA=	1324.00						
19.283	8.22	1319.92	1319.92	1319.92	1324.04	4.13	1.67	1.14	1311.70
14600.0	.0	14600.0	.0	.0	895.7	.0	402.8	40.5	1311.70
.29	.00	16.30	.00	.000	.035	.000	.000	1311.70	9948.00
.008889	390.	386.	390.	20	11	0	.00	109.00	10057.00

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1318.71 , NOT 1319.92 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	3.00	.00	109.00	4.50	1304.00	.00	1311.70	1311.70

*SECNO 19.299

3301 HV CHANGED MORE THAN HVINS

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.47

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1320.16 BRIDGE VELOCITY= 16.51 CALCULATED CHANNEL AREA= 884.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
1322.95	1324.65	.00	0.	14600.	1304.	1306.	1324.20	1326.50	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1325.00 ELREA= 1325.00

19.299	10.36	1322.06	.00	1322.06	1324.65	2.60	.61	.00	1311.70
14600.0	.0	14600.0	.0	.0	1128.7	.0	404.8	40.7	1311.70
.29	.00	12.94	.00	.000	.035	.000	.000	1311.70	9948.00
.004112	86.	86.	86.	0	0	0	.00	109.00	10057.00

*SECNO 19.313

2800 NAT Q1= 2287.58 WSELK= 1323.31 ENC Q1= 2700.20 WSEL= 1324.31 RATIO= -.1804

NAT Q1= 2700. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 1324.31

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9932.0 10112.0 TYPE= 4 TARGET= .000

19.313	11.60	1323.30	.00	1323.31	1325.17	1.87	.30	.22	1327.90
14600.0	.0	14600.0	.0	.0	1330.4	.0	406.9	40.9	1325.50
.29	.00	10.97	.00	.000	.035	.000	.000	1311.70	9944.35
.004078	75.	74.	75.	4	0	0	.00	159.64	10103.99

CCHV= .100 CEHV= .300

*SECNO 19.418

2800 NAT Q1= 2296.67 WSELK= 1325.59 ENC Q1= 2729.66 WSEL= 1326.59 RATIO= -.1885

NAT Q1= 2731. RATIOS LOB, CH, ROB= .0000 .9994 .0006 WSEL= 1326.59

3470 ENCROACHMENT STATIONS= 9948.0 10120.0 TYPE= 4 TARGET= .001

19.418	12.59	1325.59	.00	1325.59	1327.43	1.83	2.25	.00	1328.00
14600.0	.0	14600.0	.0	.0	1343.4	.0	423.9	42.9	1326.10
.31	.00	10.87	.00	.000	.035	.000	.000	1313.00	9955.11

.004041 570. 554. 530. 3 0 0 .00 162.69 10117.80

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 19.560

2800 NAT Q1= 2508.10 WSELK= 1328.21 ENC Q1= 2890.11 WSEL= 1329.21 RATIO= -.1523

NAT Q1= 2890. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 1329.21

3470 ENCROACHMENT STATIONS= 9929.0 10065.0 TYPE= 4 TARGET= .000

19.560	12.61	1328.21	.00	1328.21	1330.15	1.93	2.69	.03	1329.70
14600.0	.0	14600.0	.0	.0	1308.0	.0	446.0	45.4	1330.60
.33	.00	11.16	.00	.000	.035	.000	.000	1315.60	9931.37
.003382	730.	729.	720.	2	0	0	.00	129.63	10060.99

CCHV= .300 CEHV= .500

*SECNO 19.625

2800 NAT Q1= 3892.33 WSELK= 1329.89 ENC Q1= 4433.23 WSEL= 1330.89 RATIO= -.1390

NAT Q1= 4433. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 1330.89

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9965.0 10025.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1332.00 ELREA= 1332.00

19.625	12.35	1329.95	.00	1329.89	1330.87	.92	.42	.30	1317.60
5700.0	.0	5700.0	.0	.0	741.2	.0	454.6	46.2	1317.60
.34	.00	7.69	.00	.000	.015	.000	.000	1317.60	9965.00
.000271	580.	364.	70.	3	0	0	.00	60.00	10025.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.05	1.56	3.00	100.00	60.00	2.00	564.00	.00	1318.60	1317.60	

*SECNO 19.691

2800 NAT Q1= 4235.58 WSELK= 1331.53 ENC Q1= 4792.54 WSEL= 1332.53 RATIO= -.1315

NAT Q1= 4793. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 1332.53

PRESSURE FLOW

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

EGPRS EGLWC H3 QWEIR QPR BAREA TRAPEZOID ELLC ELTRD WEIRLN

AREA

1332.43 1331.10 .08 0. 5700. 564. 563. 1328.30 1334.80 0.

3470 ENCROACHMENT STATIONS= 9965.0 10025.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1333.00 ELREA= 1333.00

19.691 13.00 1331.60 .00 1331.53 1332.43 .83 1.56 .00 1318.60

5700.0 .0 5700.0 .0 .0 780.3 .0 460.7 46.7 1318.60

.35 .00 7.30 .00 .000 .015 .000 .000 1318.60 9965.00

.000231 330. 350. 430. 2 0 0 .00 60.00 10025.00

*SECNO 19.742

3470 ENCROACHMENT STATIONS= 9953.0 10038.0 TYPE= 1 TARGET= 85.000

19.742 12.93 1332.03 .00 1331.99 1332.57 .54 .05 .09 100000.00

5700.0 .0 5700.0 .0 .0 969.0 .0 466.1 47.1 100000.00

.36 .00 5.88 .00 .000 .015 .000 .000 1319.10 9953.00

.000167 80. 269. 470. 2 0 0 .00 85.00 10038.00

CCHV= .100 CEHV= .300

*SECNO 19.847

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .36

3470 ENCROACHMENT STATIONS= 9957.0 10043.0 TYPE= 1 TARGET= 86.000

19.847 13.34 1332.14 .00 1332.14 1332.81 .67 .20 .04 100000.00

5700.0 .0 5700.0 .0 .0 868.5 .0 477.8 48.2 100000.00

.39 .00 6.56 .00 .000 .035 .000 .000 1318.80 9957.00

.001291 570. 554. 520. 0 0 0 .00 86.00 10043.00

*SECNO 19.960

3301 HV CHANGED MORE THAN HVINS

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SECNO DEPTH CWSEL CRIWS WSELK EG HV HL OLOSS L-BANK ELEV

Q QLOB QCH QROB ALOB ACH AROB VOL TWA R-BANK ELEV

TIME VLOB VCH VROB XNL XNCH XNR WIN ELMIN SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .37

3470 ENCROACHMENT STATIONS= 9958.0 10031.0 TYPE= 1 TARGET= 73.000

19.960 7.83 1332.43 .00 1332.37 1335.03 2.60 1.64 .58 1330.00

5700.0 .0 5700.0 .0 .0 440.5 .0 486.8 49.3 100000.00

.40 .00 12.94 .00 .000 .035 .000 .000 1324.60 9958.00

.009425 640. 597. 560. 2 0 0 .00 73.00 10031.00

CCHV= .300 CEHV= .500

*SECNO 19.974

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.49

3470 ENCROACHMENT STATIONS= 9969.0 10020.0 TYPE= 1 TARGET= 51.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1336.00 ELREA= 1336.00

19.974	9.87	1333.67	.00	1333.31	1335.66	1.99	.45	.18	1323.80
5700.0	.0	5700.0	.0	.0	503.0	.0	487.6	49.4	100000.00
.40	.00	11.33	.00	.000	.035	.000	.000	1323.80	9969.00
.004262	105.	74.	65.	3	0	0	.00	51.00	10020.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	1.56	3.00	.00	51.00	3.00	480.00	.00	1324.10	1323.80	

*SECNO 19.986

BTICARD, BRIDGE STENCL= 9969.00 STENCR= 10020.00

3301 HV CHANGED MORE THAN HVINS

PRESSURE FLOW

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN

AREA

1337.08	1336.16	.79	0.	5700.	480.	480.	1334.10	1337.90	0.
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3470 ENCROACHMENT STATIONS= 9969.0 10020.0 TYPE= 1 TARGET= 51.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1337.00 ELREA= 1337.00

19.986	11.92	1335.72	.00	1335.25	1337.08	1.37	1.42	.00	1323.80
5700.0	.0	5700.0	.0	.0	607.9	.0	488.4	49.5	100000.00
.40	.00	9.38	.00	.000	.035	.000	.000	1323.80	9969.00
.002370	61.	61.	61.	3	0	0	.00	51.00	10020.00

*SECNO 20.049

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9975.0 10025.0 TYPE= 1 TARGET= 50.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1340.00 ELREA= 100000.00

20.049	11.10	1338.20	1338.20	1338.35	1341.96	3.76	1.48	1.20	100000.00
5700.0	.0	5700.0	.0	.0	366.4	.0	492.1	49.9	100000.00

.41	.00	15.56	.00	.000	.035	.000	.000	1327.10	9975.00
.011186	305.	333.	345.	20	11	0	.00	49.93	10024.93

CCHV= .100 CEHV= .300

*SECNO 20.144

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.73

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3470	ENCROACHMENT STATIONS=	9972.0	10029.0	TYPE=	1	TARGET=	57.000		

3495	OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=	1344.00	ELREA=	1340.80					
20.144	12.48	1343.38	.00	1343.48	1345.17	1.79	3.01	.20	100000.00
5700.0	.0	5671.1	28.9	.0	526.6	9.6	497.3	50.5	1340.80
.42	.00	10.77	3.02	.000	.035	.040	.000	1330.90	9972.00
.003733	490.	502.	500.	2	0	0	.00	57.00	10029.00

*SECNO 20.242

3470	ENCROACHMENT STATIONS=	9964.0	10035.0	TYPE=	1	TARGET=	71.000		
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3495	OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=	1348.00	ELREA=	1342.80					
20.242	12.21	1345.51	.00	1345.49	1347.16	1.65	1.98	.01	100000.00
5700.0	.0	5645.3	54.7	.0	545.7	15.7	503.8	51.2	1342.80
.44	.00	10.35	3.49	.000	.035	.040	.000	1333.30	9964.00
.003905	470.	517.	560.	3	0	0	.00	71.00	10035.00

*SECNO 20.335

3470	ENCROACHMENT STATIONS=	9963.0	10036.0	TYPE=	1	TARGET=	73.000		
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20.335	10.24	1347.54	.00	1347.44	1348.79	1.25	1.59	.04	100000.00
5700.0	.0	5672.0	28.0	.0	630.1	10.2	510.6	52.0	1344.00
.45	.00	9.00	2.76	.000	.035	.040	.000	1337.30	9963.00
.002739	510.	491.	470.	2	0	0	.00	73.00	10036.00

CCHV= .300 CEHV= .500

*SECNO 20.347

3301 HV CHANGED MORE THAN HVINS

3495	OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=	1351.50	ELREA=	1351.50					
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20.347	10.22	1347.42	.00	1347.24	1349.28	1.86	.18	.30	1337.20
5700.0	.0	5700.0	.0	.0	521.2	.0	511.4	52.1	1337.20
.45	.00	10.94	.00	.000	.035	.000	.000	1337.20	9970.00
.002991	1.	63.	150.	2	0	0	.00	51.00	10021.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	1.56	3.00	100.00	51.00	3.00	576.00	.00	1337.70	1337.20	

*SECNO 20.366

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
1349.79	1349.73	.68	0.	5700.	576.	576.	1349.70	1354.50	0.

AREA

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1352.50 ELREA= 1352.50

20.366	10.98	1348.18	.00	1347.97	1349.79	1.61	.52	.00	1337.20
5700.0	.0	5700.0	.0	.0	560.2	.0	512.7	52.3	1337.20
.46	.00	10.17	.00	.000	.035	.000	.000	1337.20	9970.00
.002352	100.	100.	100.	3	0	0	.00	51.00	10021.00

*SECNO 20.423

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	9958.0	10072.0	TYPE=	1	TARGET=	114.000			
20.423	11.71	1349.71	.00	1349.57	1350.61	.91	.61	.21	1345.00
5700.0	107.1	5250.9	342.0	39.5	665.4	90.5	517.3	52.8	1344.30
.47	2.71	7.89	3.78	.040	.035	.040	.000	1338.00	9958.20
.001788	415.	301.	205.	3	0	0	.00	113.80	10072.00

*SECNO 20.430

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=	1352.50	ELREA=	1352.50						
20.430	9.97	1349.27	.00	1349.13	1351.22	1.95	.09	.52	1339.30
5700.0	.0	5700.0	.0	.0	508.8	.0	517.9	52.9	1339.30
.47	.00	11.20	.00	.000	.035	.000	.000	1339.30	9985.00
.003242	1.	37.	65.	2	0	0	.00	51.00	10036.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	100.00	51.00	3.00	576.00	.00	1339.30	1339.30

*SECNO 20.444

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1348.77 BRIDGE VELOCITY= 12.54 CALCULATED CHANNEL AREA= 455.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
						AREA			
1351.64	1351.71	.75	0.	5700.	576.	576.	1351.30	1355.50	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1353.50 ELREA= 1353.50

20.444	10.72	1350.02	.00	1349.92	1351.71	1.69	.49	.00	1339.30
5700.0	.0	5700.0	.0	.0	546.8	.0	518.7	53.0	1339.30
.47	.00	10.43	.00	.000	.035	.000	.000	1339.30	9985.00
.002550	70.	70.	70.	0	0	0	.00	51.00	10036.00

*SECNO 20.529

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9930.0 10069.0 TYPE= 1 TARGET= 139.000

20.529	9.24	1352.24	.00	1352.25	1353.01	.77	1.02	.28	1350.20
5700.0	79.8	5564.0	56.2	32.8	783.6	24.7	525.9	54.0	1350.40
.49	2.44	7.10	2.28	.040	.035	.040	.000	1343.00	9930.00
.002052	545.	449.	375.	3	0	0	.00	139.00	10069.00

CCHV= .100 CEHV= .300

*SECNO 20.628

3470 ENCROACHMENT STATIONS= 9935.0 10065.0 TYPE= 1 TARGET= 130.000

20.628	10.04	1353.34	.00	1353.31	1353.79	.45	.75	.03	100000.00
5700.0	.0	5700.0	.0	.0	1059.1	.0	537.3	55.6	100000.00
.52	.00	5.38	.00	.000	.035	.000	.000	1343.30	9935.00
.001054	530.	523.	520.	2	0	0	.00	130.00	10065.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 20.725

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9962.0 10026.0 TYPE= 1 TARGET= 64.000

20.725	8.74	1355.94	1355.94	1356.04	1359.12	3.18	1.26	.82	100000.00
5700.0	.0	5700.0	.0	.0	398.2	.0	545.9	56.7	100000.00
.53	.00	14.31	.00	.000	.035	.000	.000	1347.20	9962.00
.011046	510.	512.	520.	20	15	0	.00	64.00	10026.00

CCHV= .300 CEHV= .500

*SECNO 20.737

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1363.00 ELREA= 1363.00

20.737	7.30	1358.20	1358.20	1358.17	1361.84	3.64	.80	.23	1350.90
5700.0	.0	5700.0	.0	.0	372.1	.0	546.6	56.8	1350.90
.53	.00	15.32	.00	.000	.035	.000	.000	1350.90	9968.00
.009201	80.	80.	80.	20	11	0	.00	51.00	10019.00

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1356.93 , NOT 1358.20 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	100.00	51.00	3.00	576.00	.00	1351.00	1350.90

*SECNO 20.750

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.58

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1358.54 BRIDGE VELOCITY= 15.64 CALCULATED CHANNEL AREA= 362.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
.00	1362.70	.00	0.	5700.	576.	576.	1363.00	1366.00	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1364.00 ELREA= 1364.00

20.750	9.60	1360.60	.00	1360.60	1362.70	2.11	.86	.00	1351.00
5700.0	.0	5700.0	.0	.0	489.5	.0	547.3	56.9	1351.00
.53	.00	11.64	.00	.000	.035	.000	.000	1351.00	9968.00
.003686	71.	71.	71.	0	0	0	.00	51.00	10019.00

*SECNO 20.819

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .67

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1366.90 ELREA= 1366.90

20.819	5.87	1362.37	.00	1362.37	1364.78	2.41	1.92	.15	1356.50
5700.0	.0	5700.0	.0	.0	457.7	.0	551.2	57.4	1356.50
.54	.00	12.45	.00	.000	.035	.000	.000	1356.50	9965.00
.008131	375.	365.	345.	3	0	0	.00	78.00	10043.00

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1361.20 , NOT 1362.37 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.05	1.56	3.00	100.00	77.30	3.30	655.00	.00	1357.40	1356.50	

*SECNO 20.841

3301 HV CHANGED MORE THAN HVINS

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1362.64 BRIDGE VELOCITY= 13.54 CALCULATED CHANNEL AREA= 388.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
						AREA			

1364.20	1366.08	.00	0.	5700.	655.	592.	1365.40	1369.90	0.
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1367.90 ELREA= 1367.90

20.841	6.98	1364.38	.00	1364.38	1366.08	1.70	1.31	.00	1357.40
5700.0	.0	5700.0	.0	.0	544.7	.0	552.6	57.6	1357.40
.54	.00	10.46	.00	.000	.035	.000	.000	1357.40	9965.00
.004551	115.	115.	115.	0	0	0	.00	78.00	10043.00

*SECNO 20.860

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.51

3470 ENCROACHMENT STATIONS= 9904.0 10060.0 TYPE= 1 TARGET= 156.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1365.30 ELREA= 1367.60

20.860	9.64	1365.94	.00	1365.98	1366.67	.72	.29	.29	1365.30
5700.0	26.8	5673.2	.0	22.9	828.9	.0	554.2	57.9	100000.00
.54	1.17	6.84	.00	.040	.035	.000	.000	1356.30	9904.00
.002004	90.	100.	110.	3	0	0	.00	156.00	10060.00

CCHV= .100 CEHV= .300

*SECNO 20.942

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .65

3470 ENCROACHMENT STATIONS= 9860.0 10110.0 TYPE= 1 TARGET= 250.000

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
20.942	7.63	1367.23	.00	1367.29	1367.96	.74	1.29	.00	100000.00
5700.0	.0	4745.2	954.8	.0	657.8	192.3	562.8	60.0	1366.50
.56	.00	7.21	4.97	.000	.035	.035	.000	1359.60	9860.00
.004787	530.	433.	490.	2	0	0	.00	250.00	10110.00

*SECNO 21.036

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9810.0 10060.0 TYPE= 1 TARGET= 250.000

21.036	7.98	1371.48	1371.48	1371.95	1373.10	1.62	2.89	.26	1370.70
5700.0	112.5	5545.8	41.7	52.9	536.0	19.5	571.1	62.9	1370.40
.58	2.13	10.35	2.14	.040	.035	.040	.000	1363.50	9810.00
.007272	490.	496.	490.	4	8	0	.00	250.00	10060.00

*SECNO 21.127

3470 ENCROACHMENT STATIONS= 9900.0 10060.0 TYPE= 1 TARGET= 160.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1374.00 ELREA= 100000.00

21.127	7.93	1374.63	1374.23	1374.75	1376.44	1.81	3.28	.06	1374.20
5700.0	130.2	5569.8	.0	53.9	510.7	.0	577.4	65.0	100000.00
.59	2.42	10.91	.00	.040	.035	.000	.000	1366.70	9900.00
.006491	400.	480.	500.	4	8	0	.00	160.00	10060.00

*SECNO 21.230

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9900.0 10125.0 TYPE= 1 TARGET= 225.000

21.230	8.37	1380.37	1380.37	1380.36	1381.88	1.52	3.89	.03	1379.30
5700.0	251.2	4277.1	1171.6	71.9	392.1	188.7	585.0	67.3	1380.60
.60	3.49	10.91	6.21	.040	.035	.040	.000	1372.00	9900.00
.008046	560.	544.	500.	2	8	0	.00	221.77	10125.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 21.363

3280 CROSS SECTION 21.36 EXTENDED .59 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.26

3470 ENCROACHMENT STATIONS=-	9930.0	10130.0	TYPE=	1	TARGET=	200.000			
21.363	9.48	1383.58	.00	1383.37	1384.11	.53	2.12	.10	100000.00
5700.0	.0	5684.3	15.7	.0	973.2	13.0	598.2	70.5	1382.10
.64	.00	5.84	1.21	.000	.035	.040	.000	1374.10	9939.05
.001572	740.	702.	700.	3	0	0	.00	166.44	10105.49

*SECNO 21.484

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=-	9852.0	10077.0	TYPE=	1	TARGET=	225.000			
21.484	8.59	1387.09	1387.09	1386.53	1388.54	1.45	1.90	.28	1386.90
5700.0	967.4	4674.8	57.9	169.6	452.1	25.2	610.1	73.2	1386.50
.66	5.70	10.34	2.30	.040	.035	.040	.000	1378.50	9852.00
.007569	650.	639.	520.	20	10	0	.00	215.51	10077.00

*SECNO 21.576

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS=-	9940.0	10165.0	TYPE=	1	TARGET=	225.000			
21.576	8.08	1390.18	.00	1389.24	1391.06	.88	2.46	.06	1390.00
5700.0	16.5	4724.2	959.3	13.1	587.5	214.0	617.9	75.4	1388.30
.67	1.25	8.04	4.48	.040	.035	.040	.000	1382.10	9940.00
.003827	320.	486.	480.	2	0	0	.00	225.00	10165.00

*SECNO 21.669

3280 CROSS SECTION 21.67 EXTENDED .59 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	9890.0	10115.0	TYPE=	1	TARGET=	225.000				
21.669	9.89	1393.89	1393.89	1393.38	1395.24	1.35	2.45	.14	1393.80	
5500.0	629.5	3935.4	935.1	132.0	372.7	181.3	626.2	77.9	1392.00	
.69	4.77	10.56	5.16	.040	.035	.040	.000	1384.00	9890.00	
.007088	440.	491.	470.	20	9	0	.00	225.00	10115.00	

*SECNO 21.742

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.58

3470 ENCROACHMENT STATIONS=	9940.0	10140.0	TYPE=	1	TARGET=	200.000				
21.742	9.76	1396.16	.00	1395.18	1396.95	.79	1.66	.06	1394.70	
5500.0	87.3	5127.9	284.8	40.6	697.0	94.6	633.0	79.8	1394.20	
.70	2.15	7.36	3.01	.040	.035	.040	.000	1386.40	9940.00	
.002841	430.	385.	390.	2	0	0	.00	200.00	10140.00	

*SECNO 21.840

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

3470 ENCROACHMENT STATIONS=	9900.0	10100.0	TYPE=	1	TARGET=	200.000				
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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
21.840	6.82	1397.92	.00	1398.04	1399.09	1.17	2.02	.11	1396.20
5500.0	625.7	4701.1	173.2	119.2	511.9	54.7	641.7	82.0	1397.00
.72	5.25	9.18	3.17	.040	.035	.040	.000	1391.10	9900.00
.005989	430.	517.	430.	2	0	0	.00	200.00	10100.00

*SECNO 21.895

3470 ENCROACHMENT STATIONS=	9830.0	10080.0	TYPE=	1	TARGET=	250.000				
21.895	7.82	1399.72	.00	1399.67	1401.04	1.32	1.90	.05	1398.00	
5500.0	1891.4	3424.0	184.5	333.8	314.5	54.1	646.5	83.5	1397.70	
.73	5.67	10.89	3.41	.040	.035	.040	.000	1391.90	9834.63	
.006875	330.	290.	220.	3	0	0	.00	245.37	10080.00	

*SECNO 21.933

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.29

3470 ENCROACHMENT STATIONS= 9650.0 10070.0 TYPE= 1 TARGET= 420.000

21.933	4.68	1401.48	.00	1400.86	1401.69	.20	.53	.11	1398.00
5500.0	2120.4	3379.6	.0	708.6	857.3	.0	651.9	85.1	100000.00
.75	2.99	3.94	.00	.040	.035	.000	.000	1396.80	9650.00
.001314	210.	210.	210.	2	0	0	.00	420.00	10070.00

*SECNO 21.953

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .40

3470 ENCROACHMENT STATIONS= 9630.0 10051.0 TYPE= 1 TARGET= 421.000

21.953	7.20	1401.20	.00	1401.06	1402.09	.89	.20	.21	1400.20
5500.0	2410.7	2933.1	156.2	454.9	321.8	35.3	654.0	85.7	1398.30
.75	5.30	9.11	4.43	.045	.045	.045	.000	1394.00	9630.00
.008342	75.	74.	75.	3	0	0	.00	310.27	10051.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 22.065

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.50

3470 ENCROACHMENT STATIONS= 9620.0 10030.0 TYPE= 1 TARGET= 410.000

22.065	8.68	1404.48	.00	1404.08	1404.84	.36	2.69	.05	1404.10
5500.0	3697.1	1792.4	10.5	839.8	320.8	4.9	665.0	89.5	1402.00
.78	4.40	5.59	2.16	.045	.045	.045	.000	1395.80	9620.00
.003732	430.	591.	630.	3	0	0	.00	396.88	10030.00

*SECNO 22.165

3265 DIVIDED FLOW

3280 CROSS SECTION 22.17 EXTENDED .36 FEET

3470 ENCROACHMENT STATIONS= 9620.0 10020.0 TYPE= 1 TARGET= 400.000

22.165	11.06	1406.06	.00	1405.25	1406.42	.36	1.58	.00	1400.90
5500.0	3632.3	1859.8	8.0	953.4	294.5	4.6	679.7	94.2	1403.70
.81	3.81	6.31	1.73	.045	.045	.045	.000	1395.00	9620.00
.002451	530.	528.	530.	3	0	0	.00	381.09	10020.00

*SECNO 22.273

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

3470 ENCROACHMENT STATIONS=	9650.0	10027.0	TYPE=	1	TARGET=	377.000				
22.273	8.21	1407.61	.00	1406.66	1408.32	.72	1.80	.11	1404.10	
5500.0	1439.3	4060.7	.0	336.1	542.6	.0	692.2	98.0	100000.00	
.83	4.28	7.48	.00	.045	.045	.000	.000	1399.40	9650.00	
.005127	470.	570.	580.	2	0	0	.00	292.44	10027.00	

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 22.410

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	9860.0	10040.0	TYPE=	1	TARGET=	180.000				
22.410	10.09	1414.09	1414.09	1414.22	1416.01	1.92	4.99	.36	1410.70	
5500.0	717.5	4672.2	110.3	142.7	393.2	23.9	704.2	101.9	1411.30	
.85	5.03	11.88	4.63	.045	.045	.045	.000	1404.00	9860.00	
.009664	750.	723.	630.	5	11	0	.00	159.26	10040.00	

*SECNO 22.483

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.12

3470 ENCROACHMENT STATIONS=	9890.0	10050.0	TYPE=	1	TARGET=	160.000				
22.483	11.24	1416.74	.00	1416.46	1417.04	.30	.87	.16	1411.10	
5500.0	505.1	4994.9	.0	194.8	1098.2	.0	712.4	103.3	100000.00	
.87	2.59	4.55	.00	.045	.045	.000	.000	1405.50	9890.00	
.000990	380.	385.	390.	3	0	0	.00	160.00	10050.00	

*SECNO 22.578

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .56

3470 ENCROACHMENT STATIONS=	9968.0	10064.0	TYPE=	1	TARGET=	96.000				
22.578	10.52	1417.22	.00	1416.34	1418.01	.79	.82	.15	1416.60	
5500.0	.0	5500.0	.0	.0	772.8	.0	724.4	104.8	100000.00	
.89	.00	7.12	.00	.000	.045	.000	.000	1406.70	9968.00	
.003142	540.	502.	490.	3	0	0	.00	96.00	10064.00	

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 22.675

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.68

3470 ENCROACHMENT STATIONS=	9830.0	10028.0	TYPE=	1	TARGET=	198.000			
22.675	9.02	1418.72	.00	1418.01	1418.96	.24	.89	.05	100000.00
5500.0	.0	5500.0	.0	.0	1407.4	.0	737.2	106.5	100000.00
.93	.00	3.91	.00	.000	.045	.000	.000	1409.70	9830.00
.001107	570.	512.	480.	2	0	0	.00	198.00	10028.00

*SECNO 22.794

3470 ENCROACHMENT STATIONS=	9977.0	10160.0	TYPE=	1	TARGET=	183.000			
22.794	8.80	1419.50	.00	1418.55	1419.84	.34	.85	.03	1417.80
5500.0	9.5	5490.5	.0	6.8	1168.8	.0	755.8	109.2	100000.00
.97	1.38	4.70	.00	.045	.045	.000	.000	1410.70	9977.00
.001709	460.	628.	500.	2	0	0	.00	183.00	10160.00

*SECNO 22.880

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .52

3470 ENCROACHMENT STATIONS=	9951.0	10120.0	TYPE=	1	TARGET=	169.000			
22.880	7.53	1420.53	.00	1420.05	1421.31	.78	1.34	.13	100000.00
5500.0	.0	5500.0	.0	.0	775.9	.0	766.0	111.1	100000.00
.99	.00	7.09	.00	.000	.045	.000	.000	1413.00	9951.00
.006285	440.	454.	480.	2	0	0	.00	169.00	10120.00

*SECNO 22.990

3470 ENCROACHMENT STATIONS=	9890.0	10026.0	TYPE=	1	TARGET=	136.000			
22.990	6.73	1424.63	.00	1423.63	1425.77	1.14	4.35	.11	100000.00
5500.0	.0	5500.0	.0	.0	642.8	.0	775.4	113.1	100000.00
1.00	.00	8.56	.00	.000	.045	.000	.000	1417.90	9890.00
.009071	480.	581.	530.	2	0	0	.00	136.00	10026.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 23.097

3470 ENCROACHMENT STATIONS=	9958.0	10090.0	TYPE=	1	TARGET=	132.000			
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23.097	5.50	1430.60	.00	1429.89	1432.09	1.50	6.22	.11	100000.00
5500.0	.0	5500.0	.0	.0	560.5	.0	783.2	114.8	100000.00
1.02	.00	9.81	.00	.000	.045	.000	.000	1425.10	9958.00
.013626	640.	565.	490.	3	0	0	.00	132.00	10090.00

*SECNO 23.168

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.41

3470 ENCROACHMENT STATIONS=	9830.0	10140.0	TYPE=	1	TARGET=	310.000			
23.168	4.79	1433.69	.00	1433.05	1433.96	.27	1.75	.12	100000.00
5500.0	.0	5266.2	233.8	.0	1248.3	74.2	791.3	116.7	1430.30
1.04	.00	4.22	3.15	.000	.045	.045	.000	1428.90	9830.00
.002339	330.	375.	300.	3	0	0	.00	310.00	10140.00

*SECNO 23.253

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	9978.5	10023.2	TYPE=	1	TARGET=	44.700			
23.253	9.28	1434.48	1434.48	1434.53	1437.36	2.88	1.82	.78	100000.00
3400.0	.0	3400.0	.0	.0	249.8	.0	799.5	118.6	100000.00
1.05	.00	13.61	.00	.000	.040	.000	.000	1425.20	9978.53
.015287	470.	459.	450.	20	17	0	.00	44.57	10023.10

*SECNO 23.334

3301 HV CHANGED MORE THAN HVINS

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.43

3470 ENCROACHMENT STATIONS=	9969.0	10036.0	TYPE=	1	TARGET=	67.000			
23.334	7.82	1440.42	.00	1440.39	1441.84	1.42	4.34	.15	100000.00
3400.0	.0	3400.0	.0	.0	355.5	.0	802.4	119.1	100000.00
1.07	.00	9.56	.00	.000	.040	.000	.000	1432.60	9969.01
.007526	400.	417.	420.	2	0	0	.00	66.99	10036.00

*SECNO 23.416

23.416	7.32	1443.82	.00	1443.82	1445.59	1.78	3.65	.11	1447.80
3400.0	.0	3400.0	.0	.0	317.8	.0	805.8	119.7	1450.20

1.08	.00	10.70	.00	.000	.040	.000	.000	1436.50	9980.95
.009483	400.	433.	430.	3	0	0	.00	59.11	10040.06

*SECNO 23.514

23.514	8.51	1448.11	.00	1448.11	1449.46	1.35	3.82	.04	1451.40
3400.0	.0	3400.0	.0	.0	365.0	.0	809.8	120.4	1451.10
1.09	.00	9.32	.00	.000	.040	.000	.000	1439.60	9977.53
.005927	560.	517.	470.	2	0	0	.00	57.48	10035.02

*SECNO 23.544

3301 HV CHANGED MORE THAN HVINS

23.544	7.52	1448.92	.00	1448.91	1450.79	1.87	1.17	.16	1453.20
3400.0	.0	3400.0	.0	.0	309.5	.0	811.1	120.6	1452.90
1.10	.00	10.98	.00	.000	.040	.000	.000	1441.40	9978.90
.009541	190.	158.	150.	2	0	0	.00	54.80	10033.70

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	2.48	3.20	.00	5.70	1.00	14.10	.00	1442.00	1441.40	

*SECNO 23.555

3301 HV CHANGED MORE THAN HVINS

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.95

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									

3688.08	1453.58	2.79	3249.	152.	14.	14.	1445.00	1449.00	140.
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1480.00 ELREA= 1480.00

23.555	10.64	1452.64	.00	1452.64	1453.37	.74	2.58	.00	1453.80
3400.0	.0	3400.0	.0	.0	493.8	.0	811.6	120.7	1453.50
1.10	.00	6.89	.00	.000	.040	.000	.000	1442.00	9974.59
.002505	60.	60.	60.	2	0	8	.00	63.27	10037.86

*SECNO 23.591

3280 CROSS SECTION 23.59 EXTENDED 1.15 FEET

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1480.00 ELREA= 1480.00

23.591	8.95	1453.15	.00	1453.15	1453.93	.78	.54	.01	1452.90
3400.0	.0	3400.0	.0	.0	478.5	.0	813.7	121.0	1453.80

1.11	.00	7.11	.00	.000	.040	.000	.000	1444.20	9968.00
.003293	100.	190.	210.	3	0	0	.00	75.49	10043.49

*SECNO 23.691

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1480.00 ELREA= 1480.00									
23.691	8.75	1455.15	.00	1455.15	1456.48	1.33	2.39	.16	1457.60
3400.0	.0	3400.0	.0	.0	367.9	.0	818.9	121.9	1455.30
1.12	.00	9.24	.00	.000	.040	.000	.000	1446.40	9970.39
.006584	510.	528.	540.	2	0	0	.00	65.33	10035.72

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XLNCH	XLNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 23.815

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1480.00 ELREA= 1480.00									
23.815	9.31	1459.01	.00	1459.01	1460.09	1.08	3.59	.02	1458.90
4350.0	.0	4350.0	.0	.0	520.9	.0	825.5	123.0	1457.80
1.14	.00	8.35	.00	.000	.040	.000	.000	1449.70	9951.00
.004797	650.	655.	680.	3	0	0	.00	86.00	10037.00

*SECNO 23.912

3280 CROSS SECTION 23.91 EXTENDED .14 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1480.00 ELREA= 1480.00									
23.912	13.14	1461.04	.00	1461.04	1462.18	1.14	2.07	.02	1461.30
5300.0	.0	5300.0	.0	.0	619.1	.0	832.2	124.0	1460.90
1.16	.00	8.56	.00	.000	.040	.000	.000	1447.90	9967.41
.003558	480.	512.	510.	3	0	0	.00	75.59	10043.00

*SECNO 23.989

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

23.989	12.91	1462.61	.00	1462.61	1463.23	.63	1.00	.05	1465.60
5300.0	.0	5300.0	.0	.0	835.0	.0	839.0	124.8	1465.80
1.18	.00	6.35	.00	.000	.040	.000	.000	1449.70	9944.77
.001801	400.	407.	410.	2	0	0	.00	98.91	10043.68

CCHV= .300 CEHV= .500

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 24.086

3495	OVERBANK AREA ASSUMED NON-EFFECTIVE,	ELLEA=	1463.70	ELREA=	1463.70				
24.086	9.84	1463.44	.00	1463.44	1464.31	.87	.95	.12	1453.60
5300.0	.0	5300.0	.0	.0	708.4	.0	848.1	125.8	1453.60
1.20	.00	7.48	.00	.000	.040	.000	.000	1453.60	9972.00
.001924	450.	512.	560.	4	0	0	.00	72.00	10044.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.56	3.00	100.00	71.60	3.00	590.00	.00	1453.60	1453.60	

*SECNO 24.096

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD	WEIRLN
AREA									
1465.39	1464.37	.08	0.	5300.	590.	590.	1462.20	1466.70	0.

3495	OVERBANK AREA ASSUMED NON-EFFECTIVE,	ELLEA=	1466.00	ELREA=	1466.00				
24.096	11.11	1464.71	.00	1464.71	1465.39	.68	1.09	.00	1453.60
5300.0	.0	5300.0	.0	.0	800.4	.0	849.1	125.9	1453.60
1.20	.00	6.62	.00	.000	.040	.000	.000	1453.60	9972.00
.001280	56.	56.	56.	2	0	0	.00	72.00	10044.00

*SECNO 24.106

3470	ENCROACHMENT STATIONS=	9955.0	10055.0	TYPE=	1	TARGET=	100.000		
24.106	10.80	1465.00	.00	1465.21	1465.52	.51	.07	.05	1464.10
5300.0	.0	5300.0	.0	.0	922.0	.0	850.1	126.0	100000.00
1.20	.00	5.75	.00	.000	.040	.000	.000	1454.20	9955.00
.001433	80.	53.	20.	2	0	0	.00	100.00	10055.00

CCHV= .100 CEHV= .300

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 24.195

3470	ENCROACHMENT STATIONS=	9950.0	10050.0	TYPE=	1	TARGET=	100.000		
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24.195	12.08	1465.68	.00	1465.69	1466.01	.34	.48	.02	100000.00
5300.0	.0	5300.0	.0	.0	1134.9	.0	861.2	127.0	100000.00
1.23	.00	4.67	.00	.000	.040	.000	.000	1453.60	9950.00
.000766	470.	470.	460.	2	0	0	.00	100.00	10050.00

*SECNO 24.322

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.71

3470 ENCROACHMENT STATIONS=	9940.0	10080.0	TYPE=	1	TARGET=	140.000			
24.322	14.57	1466.17	.00	1465.91	1466.31	.15	.28	.02	100000.00
5300.0	.0	5067.6	232.4	.0	1628.2	148.2	883.6	128.9	1456.80
1.29	.00	3.11	1.57	.000	.040	.050	.000	1451.60	9940.00
.000262	640.	671.	630.	2	0	0	.00	140.00	10080.00

*SECNO 24.444

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .43

3470 ENCROACHMENT STATIONS=	9927.0	10080.0	TYPE=	1	TARGET=	153.000			
24.444	9.07	1466.37	.00	1465.95	1466.70	.33	.33	.06	1465.00
5300.0	.9	5299.1	.0	1.1	1142.9	.0	905.1	131.0	100000.00
1.33	.84	4.64	.00	.045	.045	.000	.000	1457.30	9927.00
.001443	640.	644.	600.	2	0	0	.00	153.00	10080.00

*SECNO 24.542

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .44

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS=	9950.0	10160.0	TYPE=	1	TARGET=	210.000			
24.542	7.51	1467.31	.00	1466.33	1468.35	1.04	1.44	.21	100000.00
5300.0	.0	5300.0	.0	.0	647.3	.0	915.7	132.7	100000.00
1.35	.00	8.19	.00	.000	.045	.000	.000	1459.80	9950.00
.007420	470.	517.	530.	3	0	0	.00	121.98	10160.00

*SECNO 24.635

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .66

3470 ENCROACHMENT STATIONS=	9940.0	10060.0	TYPE=	1	TARGET=	120.000			
24.635	5.26	1472.06	1471.86	1472.05	1473.84	1.79	5.27	.22	100000.00
5300.0	.0	5300.0	.0	.0	494.0	.0	922.1	134.0	100000.00

1.36	.00	10.73	.00	.000	.045	.000	.000	1466.80	9940.00
.016891	650.	491.	220.	6	14	0	.00	120.00	10060.00

*SECNO 24.738

3265 DIVIDED FLOW

3280 CROSS SECTION 24.74 EXTENDED .20 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.96

3470 ENCROACHMENT STATIONS=-	9936.0	10200.0	TYPE=-	1	TARGET=-	264.000			
24.738	5.80	1477.80	.00	1476.89	1478.28	.48	4.30	.13	100000.00
5200.0	.0	2288.8	2911.2	.0	409.9	524.7	931.6	136.3	1480.90
1.39	.00	5.58	5.55	.000	.045	.045	.000	1472.00	9936.00
.004242	350.	544.	630.	3	0	0	.00	225.20	10200.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 24.838

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .55

3470 ENCROACHMENT STATIONS=-	9968.0	10350.0	TYPE=-	1	TARGET=-	382.000			
24.838	6.28	1480.98	.00	1480.33	1481.73	.75	3.37	.08	100000.00
5200.0	.0	1515.0	3685.0	.0	170.8	616.1	941.0	139.5	1483.50
1.41	.00	8.87	5.98	.000	.045	.045	.000	1474.70	9968.00
.013920	470.	528.	450.	3	0	0	.00	370.28	10350.00

*SECNO 24.943

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.35

3470 ENCROACHMENT STATIONS=-	9860.0	10300.0	TYPE=-	1	TARGET=-	440.000			
24.943	6.66	1484.36	.00	1483.44	1484.58	.22	2.79	.05	1481.80
5200.0	1224.1	735.7	3240.2	361.1	162.1	887.6	955.2	144.7	1484.80
1.45	3.39	4.54	3.65	.045	.045	.045	.000	1477.70	9860.00
.002529	530.	554.	570.	1	0	0	.00	433.65	10300.00

*SECNO 25.048

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3470	ENCROACHMENT STATIONS=		9850.0	10250.0	TYPE=	1	TARGET=	400.000	
	25.048	3.93	1487.63	1487.63	1487.27	1488.57	.94	3.07	.22 1486.60
	5200.0	1208.5	870.3	3121.2	181.3	98.5	396.4	968.1	149.7 1493.60
	1.47	6.67	8.84	7.87	.045	.045	.045	.000	1483.70 9850.00
	.022755	580.	554.	520.	20	14	0	.00	369.90 10250.00

*SECNO 25.163

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.23

3470	ENCROACHMENT STATIONS=		9940.0	10175.0	TYPE=	1	TARGET=	235.000	
	25.163	7.08	1493.08	.00	1492.19	1493.53	.45	4.91	.05 1491.60
	4900.0	360.3	1584.9	2954.8	89.1	264.8	573.5	979.1	153.9 1493.10
	1.50	4.04	5.98	5.15	.045	.045	.045	.000	1486.00 9940.00
	.004072	640.	607.	580.	6	0	0	.00	234.87 10175.00

*SECNO 25.262

3280 CROSS SECTION 25.26 EXTENDED 1.05 FEET

3470	ENCROACHMENT STATIONS=		9750.0	10023.0	TYPE=	1	TARGET=	273.000	
3495	OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=				1491.60	ELREA=	1510.00		
	25.262	11.04	1495.04	.00	1494.01	1495.36	.32	1.82	.01 1491.60
	4900.0	3562.1	1337.9	.0	783.5	298.1	.0	990.9	156.9 100000.00
	1.53	4.55	4.49	.00	.045	.045	.000	.000	1484.00 9750.00
	.003091	470.	523.	570.	4	0	0	.00	273.00 10023.00

*SECNO 25.374

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9925.0 10023.0 TYPE= 1 TARGET= 98.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1499.30 ELREA= 100000.00

25.374	6.87	1500.17	1500.17	1499.37	1502.33	2.16	3.90	.55	1499.30
4900.0	1342.9	3557.1	.0	145.4	281.4	.0	1002.1	159.6	100000.00
1.55	9.23	12.64	.00	.045	.045	.000	.000	1493.30	9925.00
.017615	680.	591.	300.	20	23	0	.00	98.00	10023.00

*SECNO 25.434

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9970.0 10036.0 TYPE= 1 TARGET= 66.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1504.90 ELREA= 100000.00

25.434	8.37	1504.17	1504.09	1503.97	1506.91	2.75	4.41	.17	100000.00
4900.0	.0	4900.0	.0	.0	368.4	.0	1005.1	160.3	100000.00
1.55	.00	13.30	.00	.000	.035	.000	.000	1495.80	9970.00
.010572	400.	317.	190.	6	11	0	.00	66.00	10036.00

*SECNO 25.500

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.36

3470 ENCROACHMENT STATIONS= 9970.0 10050.0 TYPE= 1 TARGET= 80.000

25.500	9.95	1507.65	.00	1507.74	1508.42	.77	1.31	.20	100000.00
4900.0	.0	4900.0	.0	.0	698.0	.0	1009.4	160.8	100000.00
1.57	.00	7.02	.00	.000	.035	.000	.000	1497.70	9970.00
.001894	250.	349.	420.	3	0	0	.00	80.00	10050.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .300 CEHV= .500

*SECNO 25.523

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.79

3470 ENCROACHMENT STATIONS= 9960.0 10040.0 TYPE= 1 TARGET= 80.000

25.523	12.20	1508.20	.00	1507.99	1508.63	.43	.12	.10	1498.00
4900.0	38.7	4806.1	55.2	30.6	900.8	30.6	1011.7	161.1	1498.00
1.57	1.26	5.34	1.80	.050	.035	.035	.000	1496.00	9960.00
.000589	120.	121.	120.	2	0	0	.00	80.00	10040.00

*SECNO 25.534

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.534	5.22	1510.76	1510.76	1510.75	1513.36	2.60	.06	1.08	1515.00
4900.0	.0	4900.0	.0	.0	378.4	.0	1012.6	161.2	1515.00
1.58	.00	12.95	.00	.000	.015	.000	.000	1505.54	9963.45
.002242	58.	58.	58.	20	14	0	.00	73.10	10036.55

*SECNO 25.551

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.48

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

25.551	6.67	1512.21	1510.75	1512.21	1513.80	1.58	.13	.31	1515.00
4900.0	.0	4900.0	.0	.0	485.0	.0	1013.5	161.3	1515.00
1.58	.00	10.10	.00	.000	.015	.000	.000	1505.54	9963.29
.001026	90.	90.	90.	25	5	0	.00	73.41	10036.71

*SECNO 25.557

25.557	6.53	1512.07	.00	1512.08	1514.01	1.94	.04	.18	1515.00
4900.0	.0	4900.0	.0	.0	438.7	.0	1013.8	161.4	1515.00
1.58	.00	11.17	.00	.000	.015	.000	.000	1505.54	9959.87
.001387	32.	32.	32.	2	0	0	.00	80.25	10040.13

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 25.561

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9949.0 10050.0 TYPE= 1 TARGET= 101.000

25.561	8.72	1514.32	.00	1514.36	1514.54	.23	.02	.51	100000.00
2900.0	.0	2900.0	.0	.0	759.6	.0	1014.1	161.4	100000.00
1.58	.00	3.82	.00	.000	.035	.000	.000	1505.60	9949.44
.000612	20.	21.	20.	3	0	0	.00	100.55	10050.00

CCHV= .100 CEHV= .300

*SECNO 25.680

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .49

3470 ENCROACHMENT STATIONS= 9950.0 10050.0 TYPE= 1 TARGET= 100.000

25.680	8.30	1514.80	.00	1514.74	1515.26	.45	.64	.07	100000.00
2700.0	.0	2700.0	.0	.0	499.5	.0	1023.2	162.9	100000.00

1.61	.00	5.41	.00	.000	.035	.000	.000	1506.50	9950.00
.002179	580.	628.	660.	2	0	0	.00	100.00	10050.00

*SECNO 25.786

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .44

3470 ENCROACHMENT STATIONS= 9982.0 10082.0 TYPE= 1 TARGET= 100.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1518.90 ELREA= 1515.80

25.786	5.65	1516.35	1516.23	1516.32	1517.71	1.36	2.18	.27	100000.00
2500.0	.0	2454.1	45.9	.0	260.1	15.6	1028.1	164.1	1515.80
1.63	.00	9.43	2.93	.000	.035	.035	.000	1510.70	9982.00
.009706	600.	560.	470.	6	14	0	.00	100.00	10082.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 25.947

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.57

3470 ENCROACHMENT STATIONS= 9959.0 10059.0 TYPE= 1 TARGET= 100.000

25.947	7.46	1521.86	.00	1521.07	1522.40	.54	4.61	.08	100000.00
2300.0	.0	2300.0	.0	.0	388.3	.0	1034.6	166.1	100000.00
1.67	.00	5.92	.00	.000	.035	.000	.000	1514.40	9959.00
.003343	870.	850.	830.	3	0	0	.00	100.00	10059.00

*SECNO 26.058

3470 ENCROACHMENT STATIONS= 9950.0 10023.0 TYPE= 1 TARGET= 73.000

26.058	7.63	1523.83	.00	1523.49	1524.65	.82	2.16	.08	1522.00
2200.0	173.5	2026.5	.0	37.7	271.4	.0	1039.3	167.2	100000.00
1.69	4.60	7.47	.00	.035	.035	.000	.000	1516.20	9950.00
.004141	540.	586.	570.	3	0	0	.00	73.00	10023.00

*SECNO 26.152

3470 ENCROACHMENT STATIONS= 9970.0 10040.0 TYPE= 1 TARGET= 70.000

26.152	5.70	1525.70	.00	1524.99	1526.20	.50	1.52	.03	100000.00
2000.0	.0	2000.0	.0	.0	351.9	.0	1042.9	168.0	100000.00
1.72	.00	5.68	.00	.000	.035	.000	.000	1520.00	9970.00
.002376	240.	496.	550.	2	0	0	.00	70.00	10040.00

*SECNO 26.265

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	9973.0	10060.0	TYPE=	1	TARGET=	87.000				
26.265	6.08	1528.08	1528.08	1528.15	1529.38	1.30	2.54	.24	100000.00	
1900.0	.0	1760.7	139.3	.0	186.6	32.1	1046.9	169.1	1526.50	
1.73	.00	9.44	4.34	.000	.035	.035	.000	1522.00	9973.34	
.010164	580.	597.	610.	0	8	0	.00	86.66	10060.00	

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 26.372

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.05

3470 ENCROACHMENT STATIONS=	9967.0	10064.0	TYPE=	1	TARGET=	97.000				
26.372	7.57	1531.37	.00	1531.35	1531.69	.32	2.21	.10	100000.00	
1700.0	.0	1700.0	.0	.0	374.4	.0	1050.7	170.2	100000.00	
1.77	.00	4.54	.00	.000	.035	.000	.000	1523.80	9967.05	
.001937	600.	565.	510.	3	0	0	.00	96.95	10064.00	

*SECNO 26.492

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.69

3470 ENCROACHMENT STATIONS=	9955.0	10045.0	TYPE=	1	TARGET=	90.000				
26.492	6.49	1532.19	.00	1532.15	1532.34	.15	.64	.02	100000.00	
1600.0	.0	1600.0	.0	.0	511.4	.0	1057.1	171.6	100000.00	
1.82	.00	3.13	.00	.000	.035	.000	.000	1525.70	9955.00	
.000602	640.	634.	610.	3	0	0	.00	90.00	10045.00	

*SECNO 26.582

3470 ENCROACHMENT STATIONS=	9945.0	10025.0	TYPE=	1	TARGET=	80.000				
26.582	8.33	1532.43	.00	1532.24	1532.52	.09	.17	.01	100000.00	
1300.0	.0	1300.0	.0	.0	544.1	.0	1062.9	172.5	100000.00	
1.88	.00	2.39	.00	.000	.030	.000	.000	1524.10	9945.00	
.000221	460.	475.	480.	2	0	0	.00	80.00	10025.00	

*SECNO 26.673

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 9970.0 10030.0 TYPE= 1 TARGET= 60.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1535.00 ELREA= 100000.00

26.673	3.14	1534.94	1534.94	1533.98	1536.17	1.23	.32	.34	100000.00
1300.0	.0	1300.0	.0	.0	146.0	.0	1066.7	173.3	100000.00
1.89	.00	8.91	.00	.000	.030	.000	.000	1531.80	9970.00
.010965	510.	480.	460.	20	18	0	.00	60.00	10030.00

*SECNO 26.784

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9981.0 10031.0 TYPE= 1 TARGET= 50.000

26.784	3.55	1546.25	1546.25	1546.18	1547.49	1.24	6.31	.00	100000.00
1100.0	.0	1100.0	.0	.0	123.1	.0	1068.5	174.0	100000.00
1.91	.00	8.94	.00	.000	.030	.000	.000	1542.70	9981.00
.010542	590.	586.	530.	13	8	0	.00	50.00	10031.00

*SECNO 26.883

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 5.95

3470 ENCROACHMENT STATIONS= 9975.0 10025.0 TYPE= 1 TARGET= 50.000

26.883	7.82	1547.92	.00	1547.31	1548.02	.10	.42	.11	100000.00
1000.0	.0	1000.0	.0	.0	391.3	.0	1071.6	174.6	100000.00
1.97	.00	2.56	.00	.000	.030	.000	.000	1540.10	9975.00
.000246	530.	523.	500.	3	0	0	.00	50.00	10025.00

*SECNO 26.984

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .56

3470 ENCROACHMENT STATIONS= 9975.0 10025.0 TYPE= 1 TARGET= 50.000

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

26.984	7.57	1548.07	.00	1547.31	1548.24	.17	.20	.02	100000.00
900.0	.0	900.0	.0	.0	273.3	.0	1075.6	175.2	100000.00

2.01	.00	3.29	.00	.000	.030	.000	.000	1540.50	9975.00
.000645	480.	533.	460.	2	0	0	.00	50.00	10025.00

*SECNO 27.060

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9883.7 10013.1 TYPE= 1 TARGET= 129.399

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1565.00 ELREA= 100000.00

27.060	5.35	1559.45	1559.45	1559.46	1561.02	1.57	.66	.42	1560.80
900.0	.0	900.0	.0	.0	89.6	.0	1077.3	175.6	100000.00
2.03	.00	10.05	.00	.000	.030	.000	.000	1554.10	9983.69
.010211	270.	401.	470.	20	19	0	.00	29.41	10013.10

*SECNO 27.166

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.66

3470 ENCROACHMENT STATIONS= 9881.1 10020.0 TYPE= 1 TARGET= 138.900

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1565.00 ELREA= 1565.00

27.166	6.98	1562.18	.00	1562.18	1562.35	.17	1.19	.14	1564.20
600.0	.0	600.0	.0	.0	181.6	.0	1079.1	176.1	100000.00
2.07	.00	3.30	.00	.000	.030	.000	.000	1555.20	9981.03
.000642	560.	560.	560.	3	0	0	.00	38.97	10020.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 27.294

3470 ENCROACHMENT STATIONS= 9972.0 10022.2 TYPE= 1 TARGET= 50.200

27.294	6.54	1562.54	.00	1562.54	1562.59	.05	.23	.01	100000.00
400.0	.0	400.0	.0	.0	232.9	.0	1082.3	176.7	100000.00
2.18	.00	1.72	.00	.000	.030	.000	.000	1556.00	9972.01
.000167	710.	676.	630.	3	0	0	.00	50.19	10022.20

CCHV= .100 CEHV= .300

*SECNO -19.560

START TRIB COMP

-19.560 19.560 1328.212

3470 ENCROACHMENT STATIONS= 9921.4 10061.0 TYPE= 1 TARGET= 139.630

-19.560	12.61	1328.21	.00	1328.21	1330.15	1.93	.00	.00	1329.70
14600.0	.0	14600.0	.0	.0	1307.9	.0	1095.2	178.2	100000.00
2.20	.00	11.16	.00	.000	.035	.000	.000	1315.60	9931.37
.003382	730.	729.	720.	0	0	0	.00	129.62	10060.99

*SECNO .029

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	9942.6	10073.1	TYPE=	1	TARGET=	130.540			
.029	9.83	1329.43	1329.43	1329.35	1332.59	3.16	1.09	.37	100000.00
9500.0	.0	9473.7	26.3	.0	662.9	19.7	1105.0	179.5	1328.20
2.21	.00	14.29	1.34	.000	.015	.035	.000	1319.60	9942.56
.001749	380.	430.	450.	20	15	0	.00	130.54	10073.10

*SECNO .112

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONI	CORAR	TOPWID	ENDST
3470 ENCROACHMENT STATIONS=	9905.0	10092.0	TYPE=	1	TARGET=	187.000			
.112	11.38	1332.88	.00	1332.94	1333.42	.55	.57	.26	100000.00
9500.0	.0	9500.0	.0	.0	1603.5	.0	1117.7	181.3	100000.00
2.23	.00	5.92	.00	.000	.030	.000	.000	1321.50	9905.00
.000847	430.	483.	450.	3	0	0	.00	187.00	10092.00

*SECNO .198

3470 ENCROACHMENT STATIONS=	9910.0	10110.0	TYPE=	1	TARGET=	200.000			
.198	9.46	1333.26	.00	1333.31	1333.92	.66	.46	.03	100000.00
9500.0	.0	9500.0	.0	.0	1458.9	.0	1133.6	183.3	100000.00
2.25	.00	6.51	.00	.000	.030	.000	.000	1323.80	9910.00
.001257	460.	454.	420.	2	0	0	.00	200.00	10110.00

*SECNO .288

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	9903.0	10054.0	TYPE=	1	TARGET=	151.000			
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.288	7.60	1333.30	1333.30	1333.31	1335.83	2.53	1.22	.56	100000.00
9500.0	.0	9500.0	.0	.0	744.7	.0	1145.6	185.2	100000.00
2.26	.00	12.76	.00	.000	.030	.000	.000	1325.70	9903.24
.007949	470.	475.	460.	4	15	0	.00	150.67	10053.90

*SECNO .398

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.79

3470 ENCROACHMENT STATIONS=	9912.0	10094.0	TYPE=	1	TARGET=	182.000			
.398	8.47	1337.27	.00	1337.27	1338.35	1.08	2.37	.14	100000.00
9500.0	.0	9500.0	.0	.0	1139.0	.0	1158.2	187.4	100000.00
2.28	.00	8.34	.00	.000	.030	.000	.000	1328.80	9912.47
.002478	600.	581.	540.	2	0	0	.00	181.53	10094.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XLNCH	XLNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .482

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	9904.0	10175.0	TYPE=	1	TARGET=	271.000			
.482	10.73	1341.93	1341.93	1342.35	1344.04	2.11	1.36	.31	1341.10
9500.0	46.3	8417.4	1036.3	22.4	685.2	239.4	1168.4	189.4	1338.00
2.29	2.07	12.28	4.33	.035	.030	.035	.000	1331.20	9904.00
.004085	440.	444.	270.	20	11	0	.00	271.00	10175.00

*SECNO .575

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	9870.0	10080.0	TYPE=	1	TARGET=	210.000			
.575	13.12	1344.62	.00	1343.82	1345.55	.94	1.40	.12	100000.00
9500.0	.0	9360.9	139.1	.0	1197.3	52.4	1180.8	192.2	1343.10
2.31	.00	7.82	2.66	.000	.030	.035	.000	1331.50	9870.00
.002104	460.	491.	500.	2	0	0	.00	210.00	10080.00

*SECNO .697

3470 ENCROACHMENT STATIONS=	9875.0	10035.0	TYPE=	1	TARGET=	160.000			
.697	11.85	1345.85	.00	1345.06	1346.82	.97	1.26	.01	100000.00
9400.0	.0	9211.7	188.3	.0	1156.1	48.9	1198.9	194.9	1341.40

2.33	.00	7.97	3.85	.000	.030	.035	.000	1334.00	9875.00
.001815	640.	644.	640.	3	0	0	.00	160.00	10035.00

*SECNO .826

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3470	ENCROACHMENT STATIONS=		9880.0	10040.0	TYPE=	1	TARGET=	160.000	
.826	9.39	1348.19	1348.19	1348.29	1350.60	2.41	2.30	.43	1345.50
9400.0	632.7	8767.3	.0	100.6	685.8	.0	1214.5	197.4	100000.00
2.35	6.29	12.78	.00	.035	.035	.000	.000	1338.80	9880.00
.008343	680.	681.	660.	20	16	0	.00	160.00	10040.00

*SECNO .945

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.85

3470	ENCROACHMENT STATIONS=		9870.0	10030.0	TYPE=	1	TARGET=	160.000	
.945	12.02	1352.42	.00	1352.12	1353.34	.92	2.60	.15	100000.00
9400.0	.0	9400.0	.0	.0	1219.2	.0	1229.0	199.7	100000.00
2.37	.00	7.71	.00	.000	.035	.000	.000	1340.40	9870.00
.002450	680.	628.	600.	3	0	0	.00	160.00	10030.00

*SECNO 1.035

3280 CROSS SECTION 1.03 EXTENDED .59 FEET

3470	ENCROACHMENT STATIONS=		9870.0	10030.0	TYPE=	1	TARGET=	160.000	
1.035	11.70	1353.60	.00	1352.93	1354.71	1.12	1.31	.06	100000.00
9400.0	.0	9229.4	170.6	.0	1081.4	35.2	1241.7	201.5	1348.80
2.39	.00	8.54	4.85	.000	.035	.035	.000	1341.90	9870.00
.003128	440.	475.	460.	3	0	0	.00	160.00	10030.00

*SECNO 1.121

3280 CROSS SECTION 1.12 EXTENDED .17 FEET

3470	ENCROACHMENT STATIONS=		9890.0	10050.0	TYPE=	1	TARGET=	160.000	
1.121	11.57	1355.17	.00	1354.16	1355.89	.71	1.14	.04	100000.00
9400.0	.0	9400.0	.0	.0	1386.1	.0	1254.7	203.1	100000.00
2.40	.00	6.78	.00	.000	.040	.000	.000	1343.60	9890.00

.002046 480. 454. 440. 2 0 0 .00 160.00 10050.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XLNCH	XLNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.204

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .53

3470 ENCROACHMENT STATIONS=	9950.0	10110.0	TYPE=	1	TARGET=	160.000
1.204	11.44	1355.74	.00	1355.42	1357.82	2.09 1.53 .41 100000.00
9400.0	.0	8621.8	778.2	.0	718.6	147.9 1266.1 204.7 1352.50
2.41	.00	12.00	5.26	.000	.040	.040 .000 1344.30 9950.00
.007180	430.	438.	450.	3	0	0 .00 160.00 10110.00

*SECNO 1.315

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.83

3470 ENCROACHMENT STATIONS=	9905.0	10060.0	TYPE=	1	TARGET=	155.000
1.315	10.99	1359.79	.00	1359.33	1360.51	.72 2.55 .14 100000.00
9100.0	.0	9100.0	.0	.0	1340.6	.0 1284.6 207.4 100000.00
2.44	.00	6.79	.00	.000	.040	.000 .000 1348.80 9905.00
.002012	720.	734.	700.	2	0	0 .00 155.00 10060.00

*SECNO 1.420

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .64

3470 ENCROACHMENT STATIONS=	9895.0	10085.0	TYPE=	1	TARGET=	190.000
1.420	5.29	1360.19	.00	1359.99	1362.08	1.89 1.22 .35 1360.00
9100.0	.0	9100.0	.0	.0	825.1	.0 1294.7 209.0 100000.00
2.45	.00	11.03	.00	.000	.025	.000 .000 1354.90 9895.00
.004908	380.	407.	420.	3	0	0 .00 190.00 10085.00

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THIS RUN EXECUTED 13OCT97 15:45:28

HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CAVE CREEK WASH

SUMMARY PRINTOUT

SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC
17.588	1269.60	1283.69	9777.93	10229.71	451.78	14.09	15400.00	.33	.00	.00	.00	.00
17.588	1269.60	1284.69	9855.24	10193.00	337.76	15.09	15400.00	.39	.00	.00	.00	.00
* 17.662	1271.60	1283.82	9829.44	10149.15	319.71	12.22	15400.00	.89	.13	.00	.00	.00
* 17.662	1271.60	1284.81	9900.00	10150.00	250.00	13.21	15400.00	.96	.12	.00	.00	.00
* 17.783	1275.40	1285.58	9900.35	10101.72	201.37	10.18	15400.00	2.28	1.76	.00	.00	.00
* 17.783	1275.40	1286.37	9921.00	10064.00	143.00	10.97	15400.00	2.28	1.56	.00	.00	.00
17.932	1277.90	1290.98	9921.07	10085.31	164.24	13.08	15400.00	3.62	5.40	.00	.00	.00
17.932	1277.90	1291.41	9956.00	10066.00	110.00	13.51	15400.00	3.36	5.03	.00	.00	.00
* 18.042	1282.30	1294.31	9951.61	10048.37	96.76	12.01	15400.00	3.83	3.33	.00	.00	.00
* 18.042	1282.30	1294.43	9951.60	10048.38	96.78	12.13	15400.00	3.74	3.03	.00	.00	.00
18.061	1283.10	1296.44	9951.54	10048.43	96.89	13.34	15400.00	2.99	2.13	.00	1301.60	1293.20
18.061	1283.10	1296.69	9951.53	10048.45	96.91	13.59	15400.00	2.86	2.26	.00	1301.60	1293.20
* 18.081	1281.10	1299.54	9876.94	10106.51	229.58	18.44	15400.00	.71	3.10	.00	.00	.00
* 18.081	1281.10	1299.61	9900.00	10085.00	185.00	18.51	15400.00	.71	2.92	.00	.00	.00
18.174	1281.70	1300.22	9856.87	10454.71	597.84	18.52	15400.00	.30	.68	.00	.00	.00
18.174	1281.70	1300.18	9857.02	10125.00	267.98	18.48	15400.00	.45	.57	.00	.00	.00
* 18.269	1283.80	1300.17	9881.86	10110.59	228.73	16.37	15400.00	.76	-.05	.00	.00	.00
18.269	1283.80	1300.30	9882.20	10110.00	227.80	16.50	15400.00	.74	.12	.00	.00	.00
18.362	1285.30	1300.54	9895.20	10108.18	212.97	15.24	15400.00	.97	.36	.00	.00	.00
18.362	1285.30	1300.64	9895.60	10107.80	212.20	15.34	15400.00	.95	.35	.00	.00	.00
* 18.445	1287.30	1305.39	9885.22	10271.68	386.47	18.09	15400.00	2.09	4.85	.00	.00	.00
* 18.445	1287.30	1304.91	9888.33	10110.00	221.67	17.61	15400.00	2.86	4.27	.00	.00	.00

SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC	
*	18.456	1287.70	1307.31	9873.21	10316.94	443.73	19.61	15400.00	1.00	1.92	15108.43	1299.50	1294.20
*	18.456	1287.70	1308.52	9885.00	10110.00	225.00	20.82	15400.00	1.05	3.61	15030.78	1299.50	1294.20
*	18.545	1289.30	1308.28	9881.31	10169.98	288.68	18.98	15400.00	.47	.97	.00	.00	.00
*	18.545	1289.30	1309.56	9881.40	10169.80	288.40	20.26	15400.00	.37	1.04	.00	.00	.00
	18.575	1289.30	1308.43	9880.61	10170.93	290.32	19.13	15400.00	.41	.14	.00	.00	.00
	18.575	1289.30	1309.67	9880.70	10170.80	290.10	20.37	15400.00	.32	.10	.00	.00	.00
	18.583	1289.40	1309.50	9875.91	10177.35	301.44	20.10	15400.00	.34	1.07	14974.04	1299.00	1295.40
	18.583	1289.40	1310.09	9876.10	10177.20	301.10	20.69	15400.00	.31	.42	15165.87	1299.00	1295.40
	18.640	1290.20	1309.43	9879.37	10134.89	255.52	19.23	15400.00	.64	-.07	.00	.00	.00
	18.640	1290.20	1310.02	9879.60	10134.70	255.10	19.82	15400.00	.57	-.06	.00	.00	.00
	18.734	1292.40	1309.68	9883.01	10111.84	228.83	17.28	15400.00	.84	.26	.00	.00	.00
	18.734	1292.40	1310.24	9883.20	10111.70	228.50	17.84	15400.00	.75	.21	.00	.00	.00
	18.832	1293.20	1310.19	9891.67	10107.84	216.17	16.99	15400.00	.85	.51	.00	.00	.00
	18.832	1293.20	1310.66	9891.80	10107.00	215.20	17.46	15400.00	.78	.43	.00	.00	.00
	18.925	1294.60	1310.64	9887.57	10087.64	200.07	16.04	15400.00	.97	.45	.00	.00	.00
	18.925	1294.60	1311.05	9887.70	10087.50	199.80	16.45	15400.00	.89	.39	.00	.00	.00
*	19.018	1297.60	1310.89	9866.12	10038.56	172.44	13.29	15400.00	1.80	.26	.00	.00	.00
*	19.018	1297.60	1311.26	9866.30	10038.50	172.20	13.66	15400.00	1.66	.21	.00	.00	.00
*	19.117	1298.60	1312.49	9942.00	10062.09	120.09	13.89	15400.00	4.37	1.59	.00	.00	.00
*	19.117	1298.60	1312.68	9942.10	10061.90	119.80	14.08	15400.00	4.15	1.43	.00	.00	.00
*	19.210	1300.20	1317.19	9922.94	10081.20	158.26	16.99	15400.00	1.82	4.70	.00	.00	.00
*	19.210	1300.20	1317.10	9923.33	10080.82	157.49	16.90	15400.00	1.85	4.42	.00	.00	.00
*	19.283	1311.70	1319.92	9948.00	10057.00	109.00	8.22	14600.00	4.12	2.73	.00	.00	.00

*	19.283	1311.70	1319.92	9948.00	10057.00	109.00	8.22	14600.00	4.13	2.82	.00	.00	.00
*	19.299	1311.70	1322.06	9948.00	10057.00	109.00	10.36	14600.00	2.60	2.13	.00	1326.50	1324.20
*	19.299	1311.70	1322.06	9948.00	10057.00	109.00	10.36	14600.00	2.60	2.14	.00	1326.50	1324.20
	19.313	1311.70	1323.31	9944.34	10104.00	159.66	11.61	14600.00	1.87	1.25	.00	.00	.00
	19.313	1311.70	1323.30	9944.35	10103.99	159.64	11.60	14600.00	1.87	1.25	.00	.00	.00
	19.418	1313.00	1325.59	9955.11	10117.80	162.69	12.59	14600.00	1.83	2.29	.00	.00	.00
	19.418	1313.00	1325.59	9955.11	10117.80	162.69	12.59	14600.00	1.83	2.29	.00	.00	.00
	19.560	1315.60	1328.21	9931.38	10060.98	129.60	12.61	14600.00	1.94	2.62	.00	.00	.00
	19.560	1315.60	1328.21	9931.37	10060.99	129.63	12.61	14600.00	1.93	2.62	.00	.00	.00
*	19.625	1317.60	1329.89	9965.00	10025.00	60.00	12.29	5700.00	.93	1.68	.00	.00	.00
	19.625	1317.60	1329.95	9965.00	10025.00	60.00	12.35	5700.00	.92	1.74	.00	.00	.00

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SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC	
19.691	1318.60	1331.53	9965.00	10025.00	60.00	12.93	5700.00	.84	1.64	.00	1334.80	1328.30	
19.691	1318.60	1331.60	9965.00	10025.00	60.00	13.00	5700.00	.83	1.65	.00	1334.80	1328.30	
19.742	1319.10	1331.99	9935.22	10043.57	108.35	12.89	5700.00	.52	.46	.00	.00	.00	
19.742	1319.10	1332.03	9953.00	10038.00	85.00	12.93	5700.00	.54	.43	.00	.00	.00	
*	19.847	1318.80	1332.14	9940.63	10050.49	109.85	13.34	5700.00	.59	.15	.00	.00	.00
*	19.847	1318.80	1332.14	9957.00	10043.00	86.00	13.34	5700.00	.67	.11	.00	.00	.00
*	19.960	1324.60	1332.37	9950.40	10037.28	86.88	7.77	5700.00	2.55	.24	.00	.00	.00
*	19.960	1324.60	1332.43	9958.00	10031.00	73.00	7.83	5700.00	2.60	.29	.00	.00	.00
*	19.974	1323.80	1333.31	9969.00	10020.00	51.00	9.51	5700.00	2.14	.94	.00	.00	.00
*	19.974	1323.80	1333.67	9969.00	10020.00	51.00	9.87	5700.00	1.99	1.24	.00	.00	.00
	19.986	1323.80	1335.25	9969.00	10020.00	51.00	11.45	5700.00	1.48	1.94	.00	1337.90	1334.10
	19.986	1323.80	1335.72	9969.00	10020.00	51.00	11.92	5700.00	1.37	2.05	.00	1337.90	1334.10
*	20.049	1327.10	1338.35	9971.56	10025.19	53.63	11.25	5700.00	3.54	3.10	.00	.00	.00

*	20.049	1327.10	1338.20	9975.00	10024.93	49.93	11.10	5700.00	3.76	2.49	.00	.00	.00
*	20.144	1330.90	1343.48	9960.58	10044.51	83.94	12.58	5700.00	1.58	5.13	.00	.00	.00
*	20.144	1330.90	1343.38	9972.00	10029.00	57.00	12.48	5700.00	1.79	5.17	.00	.00	.00
	20.242	1333.30	1345.49	9961.30	10049.98	88.68	12.19	5700.00	1.57	2.00	.00	.00	.00
	20.242	1333.30	1345.51	9964.00	10035.00	71.00	12.21	5700.00	1.65	2.13	.00	.00	.00
	20.335	1337.30	1347.44	9950.57	10038.88	88.31	10.14	5700.00	1.17	1.95	.00	.00	.00
	20.335	1337.30	1347.54	9963.00	10036.00	73.00	10.24	5700.00	1.25	2.03	.00	.00	.00
	20.347	1337.20	1347.24	9970.00	10021.00	51.00	10.04	5700.00	1.92	-.20	.00	.00	.00
	20.347	1337.20	1347.42	9970.00	10021.00	51.00	10.22	5700.00	1.86	-.12	.00	.00	.00
	20.366	1337.20	1347.97	9970.00	10021.00	51.00	10.77	5700.00	1.67	.73	.00	1354.50	1349.70
	20.366	1337.20	1348.18	9970.00	10021.00	51.00	10.98	5700.00	1.61	.76	.00	1354.50	1349.70
	20.423	1338.00	1349.57	9958.69	10071.51	112.82	11.57	5700.00	.94	1.60	.00	.00	.00
	20.423	1338.00	1349.71	9958.20	10072.00	113.80	11.71	5700.00	.91	1.52	.00	.00	.00
	20.430	1339.30	1349.13	9985.00	10036.00	51.00	9.83	5700.00	2.01	-.44	.00	.00	.00
	20.430	1339.30	1349.27	9985.00	10036.00	51.00	9.97	5700.00	1.95	-.43	.00	.00	.00
	20.444	1339.30	1349.92	9985.00	10036.00	51.00	10.62	5700.00	1.72	.80	.00	1355.50	1351.30
	20.444	1339.30	1350.02	9985.00	10036.00	51.00	10.72	5700.00	1.69	.75	.00	1355.50	1351.30
	20.529	1343.00	1352.25	9905.35	10095.18	189.83	9.25	5700.00	.70	2.33	.00	.00	.00
	20.529	1343.00	1352.24	9930.00	10069.00	139.00	9.24	5700.00	.77	2.22	.00	.00	.00
	20.628	1343.30	1353.31	9917.80	10068.41	150.61	10.01	5700.00	.43	1.06	.00	.00	.00
	20.628	1343.30	1353.34	9935.00	10065.00	130.00	10.04	5700.00	.45	1.10	.00	.00	.00

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	SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC
*	20.725	1347.20	1356.04	9959.29	10026.51	67.22	8.84	5700.00	3.06	2.72	.00	.00	.00
*	20.725	1347.20	1355.94	9962.00	10026.00	64.00	8.74	5700.00	3.18	2.60	.00	.00	.00
*	20.737	1350.90	1358.17	9968.00	10019.00	51.00	7.27	5700.00	3.67	2.13	.00	.00	.00

*	20.737	1350.90	1358.20	9968.00	10019.00	51.00	7.30	5700.00	3.64	2.25	.00	.00	.00
*	20.750	1351.00	1360.60	9968.00	10019.00	51.00	9.60	5700.00	2.11	2.43	.00	1366.00	1363.00
*	20.750	1351.00	1360.60	9968.00	10019.00	51.00	9.60	5700.00	2.11	2.40	.00	1366.00	1363.00
*	20.819	1356.50	1362.37	9965.00	10043.00	78.00	5.87	5700.00	2.41	1.77	.00	.00	.00
*	20.819	1356.50	1362.37	9965.00	10043.00	78.00	5.87	5700.00	2.41	1.77	.00	.00	.00
*	20.841	1357.40	1364.38	9965.00	10043.00	78.00	6.98	5700.00	1.70	2.01	.00	1369.90	1365.40
*	20.841	1357.40	1364.38	9965.00	10043.00	78.00	6.98	5700.00	1.70	2.01	.00	1369.90	1365.40
*	20.860	1356.30	1365.98	9800.89	10062.04	261.14	9.68	5700.00	.69	1.60	.00	.00	.00
*	20.860	1356.30	1365.94	9904.00	10060.00	156.00	9.64	5700.00	.72	1.56	.00	.00	.00
	20.942	1359.60	1367.29	9629.81	10168.29	313.22	7.69	5700.00	.43	1.31	.00	.00	.00
*	20.942	1359.60	1367.23	9860.00	10110.00	250.00	7.63	5700.00	.74	1.29	.00	.00	.00
*	21.036	1363.50	1371.95	9568.93	10089.02	520.10	8.45	5700.00	1.12	4.66	.00	.00	.00
*	21.036	1363.50	1371.48	9810.00	10060.00	250.00	7.98	5700.00	1.62	4.25	.00	.00	.00
*	21.127	1366.70	1374.75	9631.62	10066.01	434.39	8.05	5700.00	1.00	2.80	.00	.00	.00
	21.127	1366.70	1374.63	9900.00	10060.00	160.00	7.93	5700.00	1.81	3.15	.00	.00	.00
*	21.230	1372.00	1380.36	9818.28	10126.36	304.81	8.36	5700.00	1.30	5.62	.00	.00	.00
*	21.230	1372.00	1380.37	9900.00	10125.00	221.77	8.37	5700.00	1.52	5.74	.00	.00	.00
*	21.363	1374.10	1383.37	9556.04	10337.00	366.91	9.27	5700.00	.53	3.00	.00	.00	.00
*	21.363	1374.10	1383.58	9939.05	10105.49	166.44	9.48	5700.00	.53	3.21	.00	.00	.00
*	21.484	1378.50	1386.53	9497.84	10076.82	514.70	8.03	5700.00	.92	3.16	.00	.00	.00
*	21.484	1378.50	1387.09	9852.00	10077.00	215.51	8.59	5700.00	1.45	3.51	.00	.00	.00
*	21.576	1382.10	1389.24	9388.00	10340.54	868.38	7.14	5700.00	.78	2.71	.00	.00	.00
*	21.576	1382.10	1390.18	9940.00	10165.00	225.00	8.08	5700.00	.88	3.08	.00	.00	.00
*	21.669	1384.00	1393.38	9392.00	10414.00	977.37	9.38	5500.00	.60	4.13	.00	.00	.00
*	21.669	1384.00	1393.89	9890.00	10115.00	225.00	9.89	5500.00	1.35	3.72	.00	.00	.00
*	21.742	1386.40	1395.18	9744.71	10353.48	525.85	8.78	5500.00	1.19	1.80	.00	.00	.00

*	21.742	1386.40	1396.16	9940.00	10140.00	200.00	9.76	5500.00	.79	2.27	.00	.00	.00
	21.840	1391.10	1398.04	9857.22	10295.09	437.88	6.94	5500.00	.80	2.86	.00	.00	.00
*	21.840	1391.10	1397.92	9900.00	10100.00	200.00	6.82	5500.00	1.17	1.76	.00	.00	.00
*	21.895	1391.90	1399.67	9834.78	10431.00	596.22	7.77	5500.00	.80	1.63	.00	.00	.00
	21.895	1391.90	1399.72	9834.63	10080.00	245.37	7.82	5500.00	1.32	1.80	.00	.00	.00

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	SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC
*	21.933	1396.80	1400.86	9314.75	10285.14	970.39	4.06	5500.00	.13	1.19	.00	.00	.00
*	21.933	1396.80	1401.48	9650.00	10070.00	420.00	4.68	5500.00	.20	1.77	.00	.00	.00
*	21.953	1394.00	1401.06	9424.44	10052.98	459.91	7.06	5500.00	.94	.20	.00	.00	.00
*	21.953	1394.00	1401.20	9630.00	10051.00	310.27	7.20	5500.00	.89	-2.28	.00	.00	.00
*	22.065	1395.80	1404.08	9242.08	10049.66	777.84	8.28	5500.00	.17	3.02	.00	.00	.00
*	22.065	1395.80	1404.48	9620.00	10030.00	396.88	8.68	5500.00	.36	3.27	.00	.00	.00
	22.165	1395.00	1405.25	9137.48	10060.52	828.27	10.25	5500.00	.21	1.17	.00	.00	.00
	22.165	1395.00	1406.06	9620.00	10020.00	381.09	11.06	5500.00	.36	1.59	.00	.00	.00
*	22.273	1399.40	1406.66	9320.96	10027.44	419.21	7.26	5500.00	.71	1.42	.00	.00	.00
*	22.273	1399.40	1407.61	9650.00	10027.00	292.44	8.21	5500.00	.72	1.54	.00	.00	.00
*	22.410	1404.00	1414.22	9854.46	10066.88	193.61	10.22	5500.00	1.76	7.56	.00	.00	.00
*	22.410	1404.00	1414.09	9860.00	10040.00	159.26	10.09	5500.00	1.92	6.48	.00	.00	.00
*	22.483	1405.50	1416.46	9874.91	10199.99	325.09	10.96	5500.00	.12	2.23	.00	.00	.00
*	22.483	1405.50	1416.74	9890.00	10050.00	160.00	11.24	5500.00	.30	2.65	.00	.00	.00
*	22.578	1406.70	1416.34	9968.38	10064.20	95.82	9.65	5500.00	.99	-1.11	.00	.00	.00
*	22.578	1406.70	1417.22	9968.00	10064.00	96.00	10.52	5500.00	.79	.48	.00	.00	.00
*	22.675	1409.70	1418.01	9740.49	10028.39	287.90	8.31	5500.00	.14	1.66	.00	.00	.00
*	22.675	1409.70	1418.72	9830.00	10028.00	198.00	9.02	5500.00	.24	1.50	.00	.00	.00
*	22.794	1410.70	1418.55	9978.95	10194.69	215.74	7.85	5500.00	.42	.55	.00	.00	.00

22.794	1410.70	1419.50	9977.00	10160.00	183.00	8.80	5500.00	.34	.78	.00	.00	.00
22.880	1413.00	1420.05	9952.13	10163.91	211.78	7.05	5500.00	.58	1.49	.00	.00	.00
* 22.880	1413.00	1420.53	9951.00	10120.00	169.00	7.53	5500.00	.78	1.03	.00	.00	.00
22.990	1417.90	1423.63	9754.06	10026.14	272.08	5.73	5500.00	.62	3.59	.00	.00	.00
22.990	1417.90	1424.63	9890.00	10026.00	136.00	6.73	5500.00	1.14	4.10	.00	.00	.00
* 23.097	1425.10	1429.89	9899.14	10117.43	186.86	4.79	5500.00	1.57	6.25	.00	.00	.00
23.097	1425.10	1430.60	9958.00	10090.00	132.00	5.50	5500.00	1.50	5.97	.00	.00	.00
* 23.168	1428.90	1433.05	9604.29	10213.52	609.23	4.15	5500.00	.17	3.16	.00	.00	.00
* 23.168	1428.90	1433.69	9830.00	10140.00	310.00	4.79	5500.00	.27	3.09	.00	.00	.00
* 23.253	1425.20	1434.53	9978.44	10023.18	44.74	9.33	3400.00	2.83	1.48	.00	.00	.00
* 23.253	1425.20	1434.48	9978.53	10023.10	44.57	9.28	3400.00	2.88	.79	.00	.00	.00
23.334	1432.60	1440.39	9969.06	10035.98	66.92	7.79	3400.00	1.43	5.86	.00	.00	.00
* 23.334	1432.60	1440.42	9969.01	10036.00	66.99	7.82	3400.00	1.42	5.94	.00	.00	.00
23.416	1436.50	1443.82	9980.93	10040.07	59.14	7.32	3400.00	1.77	3.43	.00	.00	.00
23.416	1436.50	1443.82	9980.95	10040.06	59.11	7.32	3400.00	1.78	3.40	.00	.00	.00

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SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC
23.514	1439.60	1448.11	9977.54	10035.01	57.47	8.51	3400.00	1.35	4.28	.00	.00	.00
23.514	1439.60	1448.11	9977.53	10035.02	57.48	8.51	3400.00	1.35	4.30	.00	.00	.00
23.544	1441.40	1448.91	9978.90	10033.70	54.80	7.51	3400.00	1.88	.80	.00	.00	.00
23.544	1441.40	1448.92	9978.90	10033.70	54.80	7.52	3400.00	1.87	.80	.00	.00	.00
* 23.555	1442.00	1452.64	9974.59	10037.86	63.27	10.64	3400.00	.74	3.72	3249.50	1449.00	1445.00
* 23.555	1442.00	1452.64	9974.59	10037.86	63.27	10.64	3400.00	.74	3.72	3249.50	1449.00	1445.00
23.591	1444.20	1453.15	9968.00	10043.49	75.49	8.95	3400.00	.78	.51	.00	.00	.00
23.591	1444.20	1453.15	9968.00	10043.49	75.49	8.95	3400.00	.78	.51	.00	.00	.00
23.691	1446.40	1455.15	9970.39	10035.72	65.33	8.75	3400.00	1.33	2.01	.00	.00	.00

	23.691	1446.40	1455.15	9970.39	10035.72	65.33	8.75	3400.00	1.33	2.01	.00	.00	.00
*	23.815	1449.70	1459.01	9951.00	10037.00	86.00	9.31	4350.00	1.08	3.86	.00	.00	.00
*	23.815	1449.70	1459.01	9951.00	10037.00	86.00	9.31	4350.00	1.08	3.86	.00	.00	.00
*	23.912	1447.90	1461.04	9967.41	10043.00	75.59	13.14	5300.00	1.14	2.03	.00	.00	.00
*	23.912	1447.90	1461.04	9967.41	10043.00	75.59	13.14	5300.00	1.14	2.03	.00	.00	.00
*	23.989	1449.70	1462.61	9944.77	10043.68	98.91	12.91	5300.00	.63	1.56	.00	.00	.00
*	23.989	1449.70	1462.61	9944.77	10043.68	98.91	12.91	5300.00	.63	1.56	.00	.00	.00
	24.086	1453.60	1463.44	9972.00	10044.00	72.00	9.84	5300.00	.87	.83	.00	.00	.00
	24.086	1453.60	1463.44	9972.00	10044.00	72.00	9.84	5300.00	.87	.83	.00	.00	.00
	24.096	1453.60	1464.71	9972.00	10044.00	72.00	11.11	5300.00	.68	1.27	.00	1466.70	1462.20
	24.096	1453.60	1464.71	9972.00	10044.00	72.00	11.11	5300.00	.68	1.27	.00	1466.70	1462.20
	24.106	1454.20	1465.21	9952.58	10119.36	166.78	11.01	5300.00	.34	.50	.00	.00	.00
	24.106	1454.20	1465.00	9955.00	10055.00	100.00	10.80	5300.00	.51	.29	.00	.00	.00
*	24.195	1453.60	1465.69	9941.09	10137.67	196.58	12.09	5300.00	.15	.48	.00	.00	.00
	24.195	1453.60	1465.68	9950.00	10050.00	100.00	12.08	5300.00	.34	.67	.00	.00	.00
*	24.322	1451.60	1465.91	9858.94	10225.25	366.31	14.31	5300.00	.04	.22	.00	.00	.00
*	24.322	1451.60	1466.17	9940.00	10080.00	140.00	14.57	5300.00	.15	.49	.00	.00	.00
*	24.444	1457.30	1465.95	9926.47	10204.13	277.67	8.65	5300.00	.15	.04	.00	.00	.00
*	24.444	1457.30	1466.37	9927.00	10080.00	153.00	9.07	5300.00	.33	.20	.00	.00	.00
*	24.542	1459.80	1466.33	9907.26	10181.31	181.23	6.53	5300.00	.92	.37	.00	.00	.00
*	24.542	1459.80	1467.31	9950.00	10160.00	121.98	7.51	5300.00	1.04	.94	.00	.00	.00
	24.635	1466.80	1472.05	9911.01	10105.18	194.18	5.25	5300.00	1.28	5.72	.00	.00	.00
*	24.635	1466.80	1472.06	9940.00	10060.00	120.00	5.26	5300.00	1.79	4.75	.00	.00	.00
*	24.738	1472.00	1476.89	9936.06	10340.68	355.18	4.89	5200.00	.29	4.84	.00	.00	.00
*	24.738	1472.00	1477.80	9936.00	10200.00	225.20	5.80	5200.00	.48	5.74	.00	.00	.00

SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC
*	24.838	1474.70	1480.33	9968.35	10633.62	650.49	5.63	5200.00	.60	3.44	.00	.00
*	24.838	1474.70	1480.98	9968.00	10350.00	370.28	6.28	5200.00	.75	3.18	.00	.00
*	24.943	1477.70	1483.44	9801.22	10618.77	799.36	5.74	5200.00	.12	3.12	.00	.00
*	24.943	1477.70	1484.36	9860.00	10300.00	433.65	6.66	5200.00	.22	3.38	.00	.00
*	25.048	1483.70	1487.27	9705.76	10481.24	557.24	3.57	5200.00	.71	3.83	.00	.00
*	25.048	1483.70	1487.63	9850.00	10250.00	369.90	3.93	5200.00	.94	3.27	.00	.00
*	25.163	1486.00	1492.19	9922.08	10297.84	369.01	6.19	4900.00	.31	4.92	.00	.00
*	25.163	1486.00	1493.08	9940.00	10175.00	234.87	7.08	4900.00	.45	5.45	.00	.00
	25.262	1484.00	1494.01	9501.71	10023.49	521.78	10.01	4900.00	.19	1.82	.00	.00
	25.262	1484.00	1495.04	9750.00	10023.00	273.00	11.04	4900.00	.32	1.96	.00	.00
*	25.374	1493.30	1499.37	9655.94	10023.00	367.07	6.07	4900.00	.26	5.35	.00	.00
*	25.374	1493.30	1500.17	9925.00	10023.00	98.00	6.87	4900.00	2.16	5.12	.00	.00
*	25.434	1495.80	1503.97	9970.53	10035.93	65.40	8.17	4900.00	2.95	4.60	.00	.00
	25.434	1495.80	1504.17	9970.00	10036.00	66.00	8.37	4900.00	2.75	4.00	.00	.00
*	25.500	1497.70	1507.74	9923.52	10094.35	170.83	10.04	4900.00	.34	3.77	.00	.00
*	25.500	1497.70	1507.65	9970.00	10050.00	80.00	9.95	4900.00	.77	3.49	.00	.00
*	25.523	1496.00	1507.99	9930.02	10091.63	161.62	11.99	4900.00	.20	.25	.00	.00
*	25.523	1496.00	1508.20	9960.00	10040.00	80.00	12.20	4900.00	.43	.55	.00	.00
*	25.534	1505.54	1510.75	9963.45	10036.55	73.10	5.21	4900.00	2.61	2.76	.00	.00
*	25.534	1505.54	1510.76	9963.45	10036.55	73.10	5.22	4900.00	2.60	2.56	.00	.00
*	25.551	1505.54	1512.21	9963.29	10036.71	73.41	6.67	4900.00	1.58	1.46	.00	.00
*	25.551	1505.54	1512.21	9963.29	10036.71	73.41	6.67	4900.00	1.58	1.46	.00	.00
	25.557	1505.54	1512.08	9959.87	10040.13	80.27	6.54	4900.00	1.93	-.14	.00	.00
	25.557	1505.54	1512.07	9959.87	10040.13	80.25	6.53	4900.00	1.94	-.14	.00	.00
	25.561	1505.60	1514.36	9949.33	10067.02	117.68	8.76	2900.00	.19	2.29	.00	.00

	25.561	1505.60	1514.32	9949.44	10050.00	100.55	8.72	2900.00	.23	2.24	.00	.00	.00
*	25.680	1506.50	1514.74	9471.45	10305.23	663.75	8.24	2700.00	.04	.38	.00	.00	.00
*	25.680	1506.50	1514.80	9950.00	10050.00	100.00	8.30	2700.00	.45	.48	.00	.00	.00
*	25.786	1510.70	1516.32	9982.01	10442.86	351.98	5.62	2500.00	.64	1.58	.00	.00	.00
*	25.786	1510.70	1516.35	9982.00	10082.00	100.00	5.65	2500.00	1.36	1.55	.00	.00	.00
	25.947	1514.40	1521.07	9958.72	10123.26	164.54	6.67	2300.00	.56	4.75	.00	.00	.00
*	25.947	1514.40	1521.86	9959.00	10059.00	100.00	7.46	2300.00	.54	5.51	.00	.00	.00
	26.058	1516.20	1523.49	9841.26	10023.28	182.03	7.29	2200.00	.49	2.42	.00	.00	.00
	26.058	1516.20	1523.83	9950.00	10023.00	73.00	7.63	2200.00	.82	1.97	.00	.00	.00

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	SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC
	26.152	1520.00	1524.99	9958.10	10063.97	105.87	4.99	2000.00	.46	1.50	.00	.00	.00
	26.152	1520.00	1525.70	9970.00	10040.00	70.00	5.70	2000.00	.50	1.87	.00	.00	.00
*	26.265	1522.00	1528.15	9972.98	10076.25	103.26	6.15	1900.00	1.24	3.15	.00	.00	.00
*	26.265	1522.00	1528.08	9973.34	10060.00	86.66	6.08	1900.00	1.30	2.38	.00	.00	.00
*	26.372	1523.80	1531.35	9967.15	10064.32	97.17	7.55	1700.00	.32	3.20	.00	.00	.00
*	26.372	1523.80	1531.37	9967.05	10064.00	96.95	7.57	1700.00	.32	3.29	.00	.00	.00
*	26.492	1525.70	1532.15	9885.25	10068.38	183.14	6.45	1600.00	.08	.80	.00	.00	.00
*	26.492	1525.70	1532.19	9955.00	10045.00	90.00	6.49	1600.00	.15	.83	.00	.00	.00
*	26.582	1524.10	1532.24	9470.61	10189.08	718.47	8.14	1300.00	.00	.09	.00	.00	.00
	26.582	1524.10	1532.43	9945.00	10025.00	80.00	8.33	1300.00	.09	.24	.00	.00	.00
*	26.673	1531.80	1533.98	9957.84	10280.56	239.18	2.18	1300.00	.53	1.74	.00	.00	.00
*	26.673	1531.80	1534.94	9970.00	10030.00	60.00	3.14	1300.00	1.23	2.51	.00	.00	.00
*	26.784	1542.70	1546.18	9980.90	10048.91	68.01	3.48	1100.00	1.02	12.20	.00	.00	.00
*	26.784	1542.70	1546.25	9981.00	10031.00	50.00	3.55	1100.00	1.24	11.32	.00	.00	.00
*	26.883	1540.10	1547.31	9765.39	10199.60	434.21	7.21	1000.00	.00	1.13	.00	.00	.00

*	26.883	1540.10	1547.92	9975.00	10025.00	50.00	7.82	1000.00	.10	1.67	.00	.00	.00
*	26.984	1540.50	1547.31	9932.30	10336.41	371.10	6.81	900.00	.00	.00	.00	.00	.00
*	26.984	1540.50	1548.07	9975.00	10025.00	50.00	7.57	900.00	.17	.15	.00	.00	.00
*	27.060	1554.10	1559.46	9983.67	10013.14	29.47	5.36	900.00	1.56	12.15	.00	.00	.00
*	27.060	1554.10	1559.45	9983.69	10013.10	29.41	5.35	900.00	1.57	11.38	.00	.00	.00
*	27.166	1555.20	1562.18	9981.04	10020.03	38.99	6.98	600.00	.17	2.72	.00	.00	.00
*	27.166	1555.20	1562.18	9981.03	10020.00	38.97	6.98	600.00	.17	2.72	.00	.00	.00
	27.294	1556.00	1562.54	9972.01	10022.21	50.20	6.54	400.00	.05	.36	.00	.00	.00
	27.294	1556.00	1562.54	9972.01	10022.20	50.19	6.54	400.00	.05	.36	.00	.00	.00
	-19.560	1315.60	1328.21	9931.37	10060.99	129.62	12.61	14600.00	1.93	-234.33	.00	.00	.00
	-19.560	1315.60	1328.21	9931.37	10060.99	129.62	12.61	14600.00	1.93	-234.33	.00	.00	.00
*	.029	1319.60	1329.35	9942.56	10073.06	130.50	9.75	9500.00	3.24	1.14	.00	.00	.00
*	.029	1319.60	1329.43	9942.56	10073.10	130.54	9.83	9500.00	3.16	1.22	.00	.00	.00
*	.112	1321.50	1332.94	9762.30	10092.55	330.25	11.44	9500.00	.50	3.59	.00	.00	.00
*	.112	1321.50	1332.88	9905.00	10092.00	187.00	11.38	9500.00	.55	3.45	.00	.00	.00
	.198	1323.80	1333.31	9860.87	10110.44	249.57	9.51	9500.00	.63	.37	.00	.00	.00
	.198	1323.80	1333.26	9910.00	10110.00	200.00	9.46	9500.00	.66	.38	.00	.00	.00
*	.288	1325.70	1333.31	9903.19	10053.94	150.75	7.61	9500.00	2.52	.00	.00	.00	.00
*	.288	1325.70	1333.30	9903.24	10053.90	150.67	7.60	9500.00	2.53	.04	.00	.00	.00

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SECNO	ELMIN	CWSEL	SSTA	ENDST	TOPWID	DEPTH	Q	HV	DIFWSX	QWEIR	ELTRD	ELLC	
*	.398	1328.80	1337.27	9912.48	10094.30	181.83	8.47	9500.00	1.08	3.96	.00	.00	.00
*	.398	1328.80	1337.27	9912.47	10094.00	181.53	8.47	9500.00	1.08	3.96	.00	.00	.00
*	.482	1331.20	1342.35	9903.83	10793.57	889.74	11.15	9500.00	1.05	5.09	.00	.00	.00
*	.482	1331.20	1341.93	9904.00	10175.00	271.00	10.73	9500.00	2.11	4.66	.00	.00	.00
	.575	1331.50	1343.82	9777.80	10508.02	730.21	12.32	9500.00	.71	1.47	.00	.00	.00

.575	1331.50	1344.62	9870.00	10080.00	210.00	13.12	9500.00	.94	2.69	.00	.00	.00	
.697	1334.00	1345.06	9856.01	10093.21	237.20	11.06	9400.00	1.04	1.24	.00	.00	.00	
.697	1334.00	1345.85	9875.00	10035.00	160.00	11.85	9400.00	.97	1.23	.00	.00	.00	
*	.826	1338.80	1348.29	9845.35	10045.20	199.85	9400.00	2.23	3.24	.00	.00	.00	
*	.826	1338.80	1348.19	9880.00	10040.00	160.00	9400.00	2.41	2.34	.00	.00	.00	
*	.945	1340.40	1352.12	9624.18	10185.88	561.70	11.72	9400.00	.52	3.82	.00	.00	.00
*	.945	1340.40	1352.42	9870.00	10030.00	160.00	12.02	9400.00	.92	4.23	.00	.00	.00
1.035	1341.90	1352.93	9686.18	10146.95	460.77	11.03	9400.00	.72	.82	.00	.00	.00	
1.035	1341.90	1353.60	9870.00	10030.00	160.00	11.70	9400.00	1.12	1.17	.00	.00	.00	
1.121	1343.60	1354.16	9871.67	10106.95	235.28	10.56	9400.00	.80	1.23	.00	.00	.00	
1.121	1343.60	1355.17	9890.00	10050.00	160.00	11.57	9400.00	.71	1.58	.00	.00	.00	
*	1.204	1344.30	1355.42	9930.00	10173.36	226.07	11.12	9400.00	2.09	1.26	.00	.00	.00
*	1.204	1344.30	1355.74	9950.00	10110.00	160.00	11.44	9400.00	2.09	.57	.00	.00	.00
*	1.315	1348.80	1359.33	9904.63	10236.67	332.04	10.53	9100.00	.39	3.91	.00	.00	.00
*	1.315	1348.80	1359.79	9905.00	10060.00	155.00	10.99	9100.00	.72	4.05	.00	.00	.00
*	1.420	1354.90	1359.99	9895.02	10084.98	189.95	5.09	9100.00	2.08	.66	.00	.00	.00
*	1.420	1354.90	1360.19	9895.00	10085.00	190.00	5.29	9100.00	1.89	.40	.00	.00	.00

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CAVE CREEK WASH

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR	
17.588	1283.69	.00	1284.02	451.78	3410.65	11671.02	318.33	.00	.00	9982.00	10193.00	.00	
17.588	1284.69	1.00	1285.08	337.76	1964.85	13435.15	.00	.16	9855.24	9982.00	10193.00	10193.00	
*	17.662	1283.82	.00	1284.71	319.71	3988.73	11364.70	46.58	.00	.00	9941.00	10130.00	.00
*	17.662	1284.81	.99	1285.77	250.00	2238.05	13039.23	122.73	250.00	9900.00	9941.00	10130.00	10150.00

*	17.783	1285.58	.00	1287.86	201.37	296.49	14381.19	722.32	.00	.00	9921.00	10064.00	.00
*	17.783	1286.37	.79	1288.65	143.00	.00	15400.00	.00	.09	9921.00	9921.00	10064.00	10064.00
	17.932	1290.98	.00	1294.60	164.24	59.98	15314.69	25.33	.00	.00	9956.00	10066.00	.00
	17.932	1291.41	.42	1294.76	110.00	.00	15400.00	.00	.02	9956.00	9956.00	10066.00	10066.00
*	18.042	1294.31	.00	1298.14	96.76	.00	15400.00	.00	.00	.00	9951.00	10049.00	.00
*	18.042	1294.43	.12	1298.17	96.78	.00	15400.00	.00	.00	9951.00	9951.00	10049.00	10049.00
	18.061	1296.44	.00	1299.43	96.89	.00	15400.00	.00	.00	.00	9951.00	10049.00	.00
	18.061	1296.69	.25	1299.55	96.91	.00	15400.00	.00	.00	9951.00	9951.00	10049.00	10049.00
*	18.081	1299.54	.00	1300.24	229.58	1235.51	12528.72	1635.78	.00	.00	9942.00	10045.00	.00
*	18.081	1299.61	.07	1300.32	185.00	1220.63	12608.39	1570.98	185.00	9900.00	9942.00	10045.00	10085.00
	18.174	1300.22	.00	1300.52	597.84	1569.89	11409.13	2420.99	.00	.00	9919.00	10073.00	.00
	18.174	1300.18	-.04	1300.63	267.98	1800.18	13116.05	483.77	268.00	9857.00	9919.00	10073.00	10125.00
*	18.269	1300.17	.00	1300.93	228.73	2261.70	12456.32	681.98	.00	.00	9942.00	10060.00	.00
	18.269	1300.30	.12	1301.04	227.80	2281.27	12415.20	703.53	227.80	9882.20	9942.00	10060.00	10110.00
	18.362	1300.54	.00	1301.51	212.97	1154.29	13225.19	1020.51	.00	.00	9942.00	10060.00	.00
	18.362	1300.64	.11	1301.60	212.20	1169.84	13188.25	1041.91	212.20	9895.60	9942.00	10060.00	10107.80
*	18.445	1305.39	.00	1307.48	386.47	5165.58	3758.29	6476.14	.00	.00	9992.00	10005.00	.00
*	18.445	1304.91	-.48	1307.77	221.67	5150.63	4076.29	6173.07	225.00	9885.00	9992.00	10005.00	10110.00
*	18.456	1307.31	.00	1308.31	443.73	5168.41	2970.57	7261.02	.00	.00	9992.00	10005.00	.00
*	18.456	1308.52	1.21	1309.57	225.00	5931.90	2952.32	6515.78	225.00	9885.00	9992.00	10005.00	10110.00
*	18.545	1308.28	.00	1308.76	288.68	1745.21	11300.05	2354.74	.00	.00	9951.00	10058.00	.00
*	18.545	1309.56	1.28	1309.93	288.40	1923.29	10840.09	2636.61	288.40	9881.40	9951.00	10058.00	10169.80
	18.575	1308.43	.00	1308.83	290.32	3584.18	3152.32	8663.50	.00	.00	9972.00	10000.00	.00
	18.575	1309.67	1.24	1309.99	290.10	3707.22	3015.70	8677.08	290.10	9880.70	9972.00	10000.00	10170.80
	18.583	1309.50	.00	1309.84	301.44	3685.39	3046.31	8668.30	.00	.00	9972.00	10000.00	.00
	18.583	1310.09	.59	1310.39	301.10	3739.77	2983.72	8676.51	301.10	9876.10	9972.00	10000.00	10177.20

18.640	1309.43	.00	1310.07	255.52	2345.59	9850.54	3203.87	.00	.00	9955.00	10033.00	.00
18.640	1310.02	.60	1310.59	255.10	2433.35	9638.38	3328.26	255.10	9879.60	9955.00	10033.00	10134.70

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SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR	
18.734	1309.68	.00	1310.53	228.83	1314.28	13486.67	599.05	.00	.00	9938.00	10062.00	.00	
18.734	1310.24	.55	1310.99	228.50	1412.75	13301.70	685.55	228.50	9883.20	9938.00	10062.00	10111.70	
18.832	1310.19	.00	1311.04	216.17	437.54	12951.81	2010.65	.00	.00	9929.00	10046.00	.00	
18.832	1310.66	.47	1311.44	215.20	497.22	12812.49	2090.29	215.20	9891.80	9929.00	10046.00	10107.00	
18.925	1310.64	.00	1311.60	200.07	1711.89	12782.42	905.69	.00	.00	9941.00	10048.00	.00	
18.925	1311.05	.41	1311.94	199.80	1782.17	12651.31	966.52	199.80	9887.70	9941.00	10048.00	10087.50	
*	19.018	1310.89	.00	1312.69	172.44	489.51	14883.12	27.37	.00	.00	9903.00	10030.00	.00
*	19.018	1311.26	.36	1312.92	172.20	558.06	14803.54	38.40	172.20	9866.30	9903.00	10030.00	10038.50
*	19.117	1312.49	.00	1316.85	120.09	1414.18	11917.85	2067.97	.00	.00	9973.00	10026.00	.00
*	19.117	1312.68	.20	1316.84	119.80	1457.21	11826.79	2116.00	119.80	9942.10	9973.00	10026.00	10061.90
*	19.210	1317.19	.00	1319.01	158.26	227.00	14955.16	217.84	.00	.00	9945.00	10060.00	.00
*	19.210	1317.10	-.09	1318.95	157.49	219.47	14969.92	210.62	157.90	9923.10	9945.00	10060.00	10081.00
*	19.283	1319.92	.00	1324.04	109.00	.00	14600.00	.00	.00	.00	9948.00	10057.00	.00
*	19.283	1319.92	.00	1324.04	109.00	.00	14600.00	.00	.00	.00	9948.00	10057.00	.00
*	19.299	1322.06	.00	1324.65	109.00	.00	14600.00	.00	.00	.00	9948.00	10057.00	.00
*	19.299	1322.06	.00	1324.65	109.00	.00	14600.00	.00	.00	.00	9948.00	10057.00	.00
19.313	1323.31	.00	1325.17	159.66	.00	14600.00	.00	.00	.00	9932.00	10112.00	.00	
19.313	1323.30	.00	1325.17	159.64	.00	14600.00	.00	.00	9932.00	9932.00	10112.00	10112.00	
19.418	1325.59	.00	1327.43	162.69	.00	14600.00	.00	.00	.00	9948.00	10120.00	.00	
19.418	1325.59	.00	1327.43	162.69	.00	14600.00	.00	.00	9948.00	9948.00	10120.00	10120.00	
19.560	1328.21	.00	1330.15	129.60	.00	14600.00	.00	.00	.00	9929.00	10065.00	.00	

19.560	1328.21	.00	1330.15	129.63	.00	14600.00	.00	.00	9929.00	9929.00	10065.00	10065.00	
*	19.625	1329.89	.00	1330.82	60.00	.00	5700.00	.00	.00	.00	9965.00	10025.00	.00
	19.625	1329.95	.06	1330.87	60.00	.00	5700.00	.00	.00	9965.00	9965.00	10025.00	10025.00
	19.691	1331.53	.00	1332.37	60.00	.00	5700.00	.00	.00	.00	9965.00	10025.00	.00
	19.691	1331.60	.07	1332.43	60.00	.00	5700.00	.00	.00	9965.00	9965.00	10025.00	10025.00
	19.742	1331.99	.00	1332.51	108.35	.78	5698.99	.24	.00	.00	9948.00	10042.00	.00
	19.742	1332.03	.04	1332.57	85.00	.00	5700.00	.00	85.00	9953.00	9948.00	10042.00	10038.00
*	19.847	1332.14	.00	1332.73	109.85	.00	5700.00	.00	.00	.00	9929.00	10062.00	.00
*	19.847	1332.14	.00	1332.81	86.00	.00	5700.00	.00	86.00	9957.00	9929.00	10062.00	10043.00
*	19.960	1332.37	.00	1334.93	86.88	38.92	5629.33	31.75	.00	.00	9958.00	10031.00	.00
*	19.960	1332.43	.05	1335.03	73.00	.00	5700.00	.00	73.00	9958.00	9958.00	10031.00	10031.00
*	19.974	1333.31	.00	1335.46	51.00	.00	5700.00	.00	.00	.00	9969.00	10020.00	.00
*	19.974	1333.67	.35	1335.66	51.00	.00	5700.00	.00	51.00	9969.00	9969.00	10020.00	10020.00

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SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR	
19.986	1335.25	.00	1336.73	51.00	.00	5700.00	.00	.00	.00	9969.00	10020.00	.00	
19.986	1335.72	.47	1337.08	51.00	.00	5700.00	.00	51.00	9969.00	9969.00	10020.00	10020.00	
*	20.049	1338.35	.00	1341.90	53.63	.00	5700.00	.00	.00	.00	9954.00	10027.00	.00
*	20.049	1338.20	-.15	1341.96	49.93	.00	5700.00	.00	50.00	9975.00	9954.00	10027.00	10025.00
*	20.144	1343.48	.00	1345.07	83.94	.00	5588.64	111.36	.00	.00	9955.00	10025.00	.00
*	20.144	1343.38	-.11	1345.17	57.00	.00	5671.10	28.89	57.00	9972.00	9955.00	10025.00	10029.00
20.242	1345.49	.00	1347.06	88.68	.00	5546.27	153.73	.00	.00	9953.00	10029.00	.00	
20.242	1345.51	.02	1347.16	71.00	.00	5645.34	54.66	71.00	9964.00	9953.00	10029.00	10035.00	
20.335	1347.44	.00	1348.61	88.31	31.74	5639.18	29.07	.00	.00	9958.00	10032.00	.00	
20.335	1347.54	.10	1348.79	73.00	.00	5671.99	28.01	73.00	9963.00	9958.00	10032.00	10036.00	

20.347	1347.24	.00	1349.16	51.00	.00	5700.00	.00	.00	.00	9970.00	10021.00	.00	
20.347	1347.42	.18	1349.28	51.00	.00	5700.00	.00	.00	.00	9970.00	10021.00	.00	
20.366	1347.97	.00	1349.64	51.00	.00	5700.00	.00	.00	.00	9970.00	10021.00	.00	
20.366	1348.18	.22	1349.79	51.00	.00	5700.00	.00	.00	.00	9970.00	10021.00	.00	
20.423	1349.57	.00	1350.51	112.82	101.68	5266.19	332.13	.00	.00	9975.00	10045.00	.00	
20.423	1349.71	.14	1350.61	113.80	107.11	5250.90	341.99	114.00	9958.00	9975.00	10045.00	10072.00	
20.430	1349.13	.00	1351.13	51.00	.00	5700.00	.00	.00	.00	9985.00	10036.00	.00	
20.430	1349.27	.14	1351.22	51.00	.00	5700.00	.00	.00	.00	9985.00	10036.00	.00	
20.444	1349.92	.00	1351.64	51.00	.00	5700.00	.00	.00	.00	9985.00	10036.00	.00	
20.444	1350.02	.10	1351.71	51.00	.00	5700.00	.00	.00	.00	9985.00	10036.00	.00	
20.529	1352.25	.00	1352.95	189.83	165.51	5398.15	136.33	.00	.00	9947.00	10055.00	.00	
20.529	1352.24	-.01	1353.01	139.00	79.85	5563.98	56.17	139.00	9930.00	9947.00	10055.00	10069.00	
20.628	1353.31	.00	1353.74	150.61	.00	5700.00	.00	.00	.00	9909.00	10076.00	.00	
20.628	1353.34	.03	1353.79	130.00	.00	5700.00	.00	130.00	9935.00	9909.00	10076.00	10065.00	
*	20.725	1356.04	.00	1359.09	67.22	.00	5700.00	.00	.00	.00	9951.00	10036.00	.00
*	20.725	1355.94	-.09	1359.12	64.00	.00	5700.00	.00	64.00	9962.00	9951.00	10036.00	10026.00
*	20.737	1358.17	.00	1361.84	51.00	.00	5700.00	.00	.00	.00	9968.00	10019.00	.00
*	20.737	1358.20	.03	1361.84	51.00	.00	5700.00	.00	.00	.00	9968.00	10019.00	.00
*	20.750	1360.60	.00	1362.70	51.00	.00	5700.00	.00	.00	.00	9968.00	10019.00	.00
*	20.750	1360.60	.00	1362.70	51.00	.00	5700.00	.00	.00	.00	9968.00	10019.00	.00
*	20.819	1362.37	.00	1364.78	78.00	.00	5700.00	.00	.00	.00	9965.00	10043.00	.00
*	20.819	1362.37	.00	1364.78	78.00	.00	5700.00	.00	.00	.00	9965.00	10043.00	.00
*	20.841	1364.38	.00	1366.08	78.00	.00	5700.00	.00	.00	.00	9965.00	10043.00	.00
*	20.841	1364.38	.00	1366.08	78.00	.00	5700.00	.00	.00	.00	9965.00	10043.00	.00

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SECNO CWSEL DIFKWS EG TOPWID QLOB QCH QROB PERENC STENCL STCHL STCHR STENCR

*	20.860	1365.98	.00	1366.67	261.14	86.17	5613.83	.00	.00	.00	9942.00	10066.00	.00
*	20.860	1365.94	-.04	1366.67	156.00	26.83	5673.17	.00	156.00	9904.00	9942.00	10066.00	10060.00
	20.942	1367.29	.00	1367.72	313.22	.00	3724.38	1975.62	.00	.00	9854.00	10024.00	.00
*	20.942	1367.23	-.06	1367.96	250.00	.00	4745.17	954.83	250.00	9860.00	9854.00	10024.00	10110.00
*	21.036	1371.95	.00	1373.07	520.10	367.07	5202.79	130.15	.00	.00	9912.00	10020.00	.00
*	21.036	1371.48	-.47	1373.10	250.00	112.48	5545.82	41.70	250.00	9810.00	9912.00	10020.00	10060.00
*	21.127	1374.75	.00	1375.74	434.39	1077.09	4622.90	.00	.00	.00	9974.00	10067.00	.00
	21.127	1374.63	-.12	1376.44	160.00	130.17	5569.82	.00	160.00	9900.00	9974.00	10067.00	10060.00
*	21.230	1380.36	.00	1381.67	304.81	508.80	4046.90	1144.30	.00	.00	9967.00	10048.00	.00
*	21.230	1380.37	.00	1381.88	221.77	251.25	4277.13	1171.62	225.00	9900.00	9967.00	10048.00	10125.00
*	21.363	1383.37	.00	1383.90	366.91	98.15	5566.19	35.65	.00	.00	9928.00	10088.00	.00
*	21.363	1383.58	.21	1384.11	166.44	.00	5684.33	15.67	200.00	9930.00	9928.00	10088.00	10130.00
*	21.484	1386.53	.00	1387.44	514.70	2045.40	3648.02	6.58	.00	.00	9932.00	10026.00	.00
*	21.484	1387.09	.57	1388.54	215.51	967.36	4674.76	57.88	225.00	9852.00	9932.00	10026.00	10077.00
*	21.576	1389.24	.00	1390.02	868.38	720.87	4008.42	970.70	.00	.00	9980.00	10087.00	.00
*	21.576	1390.18	.94	1391.06	225.00	16.47	4724.25	959.29	225.00	9940.00	9980.00	10087.00	10165.00
*	21.669	1393.38	.00	1393.98	977.37	905.25	2788.42	1806.33	.00	.00	9962.00	10031.00	.00
*	21.669	1393.89	.52	1395.24	225.00	629.54	3935.40	935.05	225.00	9890.00	9962.00	10031.00	10115.00
*	21.742	1395.18	.00	1396.38	525.85	29.14	5238.84	232.02	.00	.00	9975.00	10091.00	.00
*	21.742	1396.16	.98	1396.95	200.00	87.25	5127.94	284.80	200.00	9940.00	9975.00	10091.00	10140.00
	21.840	1398.04	.00	1398.83	437.88	945.78	4156.96	397.26	.00	.00	9946.00	10054.00	.00
*	21.840	1397.92	-.12	1399.09	200.00	625.73	4701.10	173.18	200.00	9900.00	9946.00	10054.00	10100.00
*	21.895	1399.67	.00	1400.47	596.22	1555.35	2864.44	1080.21	.00	.00	9975.00	10031.00	.00
	21.895	1399.72	.05	1401.04	245.37	1891.44	3424.05	184.51	250.00	9830.00	9975.00	10031.00	10080.00
*	21.933	1400.86	.00	1400.99	970.39	1740.18	3230.12	529.70	.00	.00	9865.00	10140.00	.00
*	21.933	1401.48	.62	1401.69	420.00	2120.38	3379.62	.00	420.00	9650.00	9865.00	10140.00	10070.00

*	21.953	1401.06	.00	1402.01	459.91	2374.60	2981.81	143.59	.00	.00	9969.00	10029.00	.00
*	21.953	1401.20	.14	1402.09	310.27	2410.71	2933.11	156.19	421.00	9630.00	9969.00	10029.00	10051.00
*	22.065	1404.08	.00	1404.25	777.84	4154.77	1273.89	71.34	.00	.00	9961.00	10028.00	.00
*	22.065	1404.48	.40	1404.84	396.88	3697.13	1792.35	10.51	410.00	9620.00	9961.00	10028.00	10030.00
	22.165	1405.25	.00	1405.46	828.27	4034.46	1433.28	32.26	.00	.00	9983.00	10018.00	.00
	22.165	1406.06	.82	1406.42	381.09	3632.26	1859.77	7.97	400.00	9620.00	9983.00	10018.00	10020.00
*	22.273	1406.66	.00	1407.38	419.21	1973.64	3526.36	.00	.00	.00	9933.00	10028.00	.00
*	22.273	1407.61	.94	1408.32	292.44	1439.28	4060.72	.00	377.00	9650.00	9933.00	10028.00	10027.00

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	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	22.410	1414.22	.00	1415.98	193.61	768.28	4585.83	145.88	.00	.00	9973.00	10027.00	.00
*	22.410	1414.09	-.14	1416.01	159.26	717.48	4672.17	110.35	180.00	9860.00	9973.00	10027.00	10040.00
*	22.483	1416.46	.00	1416.58	325.09	301.10	4551.84	647.06	.00	.00	9941.00	10105.00	.00
*	22.483	1416.74	.29	1417.04	160.00	505.09	4994.91	.00	160.00	9890.00	9941.00	10105.00	10050.00
*	22.578	1416.34	.00	1417.33	95.82	.00	5500.00	.00	.00	.00	9968.00	10072.00	.00
*	22.578	1417.22	.88	1418.01	96.00	.00	5500.00	.00	96.00	9968.00	9968.00	10072.00	10064.00
*	22.675	1418.01	.00	1418.14	287.90	.00	5500.00	.00	.00	.00	9736.00	10032.00	.00
*	22.675	1418.72	.71	1418.96	198.00	.00	5500.00	.00	198.00	9830.00	9736.00	10032.00	10028.00
*	22.794	1418.55	.00	1418.97	215.74	1.34	5395.07	103.60	.00	.00	9983.00	10169.00	.00
	22.794	1419.50	.95	1419.84	183.00	9.46	5490.54	.00	183.00	9977.00	9983.00	10169.00	10160.00
	22.880	1420.05	.00	1420.62	211.78	.00	5500.00	.00	.00	.00	9927.00	10167.00	.00
*	22.880	1420.53	.49	1421.31	169.00	.00	5500.00	.00	169.00	9951.00	9927.00	10167.00	10120.00
	22.990	1423.63	.00	1424.26	272.08	.00	5500.00	.00	.00	.00	9739.00	10034.00	.00
	22.990	1424.63	1.00	1425.77	136.00	.00	5500.00	.00	136.00	9890.00	9739.00	10034.00	10026.00
*	23.097	1429.89	.00	1431.46	186.86	38.91	5461.09	.00	.00	.00	9951.00	10121.00	.00

23.097	1430.60	.71	1432.09	132.00	.00	5500.00	.00	132.00	9958.00	9951.00	10121.00	10090.00	
*	23.168	1433.05	.00	1433.22	609.23	763.81	4435.30	300.90	.00	.00	9777.00	10116.00	.00
*	23.168	1433.69	.64	1433.96	310.00	.00	5266.17	233.83	310.00	9830.00	9777.00	10116.00	10140.00
*	23.253	1434.53	.00	1437.36	44.74	.00	3400.00	.00	.00	.00	9973.00	10038.00	.00
*	23.253	1434.48	-.05	1437.36	44.57	.00	3400.00	.00	44.70	9978.50	9973.00	10038.00	10023.20
	23.334	1440.39	.00	1441.83	66.92	.00	3400.00	.00	.00	.00	9962.00	10055.00	.00
*	23.334	1440.42	.03	1441.84	66.99	.00	3400.00	.00	67.00	9969.00	9962.00	10055.00	10036.00
	23.416	1443.82	.00	1445.60	59.14	.00	3400.00	.00	.00	.00	9974.00	10053.00	.00
	23.416	1443.82	-.01	1445.59	59.11	.00	3400.00	.00	.00	.00	9974.00	10053.00	.00
	23.514	1448.11	.00	1449.46	57.47	.00	3400.00	.00	.00	.00	9973.00	10039.00	.00
	23.514	1448.11	.00	1449.46	57.48	.00	3400.00	.00	.00	.00	9973.00	10039.00	.00
	23.544	1448.91	.00	1450.79	54.80	.00	3400.00	.00	.00	.00	9973.00	10039.00	.00
	23.544	1448.92	.00	1450.79	54.80	.00	3400.00	.00	.00	.00	9973.00	10039.00	.00
*	23.555	1452.64	.00	1453.37	63.27	.00	3400.00	.00	.00	.00	9973.00	10039.00	.00
*	23.555	1452.64	.00	1453.37	63.27	.00	3400.00	.00	.00	.00	9973.00	10039.00	.00
	23.591	1453.15	.00	1453.93	75.49	.00	3400.00	.00	.00	.00	9968.00	10045.00	.00
	23.591	1453.15	.00	1453.93	75.49	.00	3400.00	.00	.00	.00	9968.00	10045.00	.00
	23.691	1455.15	.00	1456.48	65.33	.00	3400.00	.00	.00	.00	9965.00	10036.00	.00
	23.691	1455.15	.00	1456.48	65.33	.00	3400.00	.00	.00	.00	9965.00	10036.00	.00

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SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR	
*	23.815	1459.01	.00	1460.09	86.00	.00	4350.00	.00	.00	.00	9951.00	10037.00	.00
*	23.815	1459.01	.00	1460.09	86.00	.00	4350.00	.00	.00	.00	9951.00	10037.00	.00
*	23.912	1461.04	.00	1462.18	75.59	.00	5300.00	.00	.00	.00	9967.00	10043.00	.00
*	23.912	1461.04	.00	1462.18	75.59	.00	5300.00	.00	.00	.00	9967.00	10043.00	.00

*	23.989	1462.61	.00	1463.23	98.91	.00	5300.00	.00	.00	.00	9937.00	10049.00	.00
*	23.989	1462.61	.00	1463.23	98.91	.00	5300.00	.00	.00	.00	9937.00	10049.00	.00
	24.086	1463.44	.00	1464.31	72.00	.00	5300.00	.00	.00	.00	9972.00	10044.00	.00
	24.086	1463.44	.00	1464.31	72.00	.00	5300.00	.00	.00	.00	9972.00	10044.00	.00
	24.096	1464.71	.00	1465.39	72.00	.00	5300.00	.00	.00	.00	9972.00	10044.00	.00
	24.096	1464.71	.00	1465.39	72.00	.00	5300.00	.00	.00	.00	9972.00	10044.00	.00
	24.106	1465.21	.00	1465.55	166.78	1.08	4877.63	421.28	.00	.00	9955.00	10064.00	.00
	24.106	1465.00	-.21	1465.52	100.00	.00	5300.00	.00	100.00	9955.00	9955.00	10064.00	10055.00
*	24.195	1465.69	.00	1465.84	196.58	.00	5300.00	.00	.00	.00	9933.00	10142.00	.00
	24.195	1465.68	-.01	1466.01	100.00	.00	5300.00	.00	100.00	9950.00	9933.00	10142.00	10050.00
*	24.322	1465.91	.00	1465.95	366.31	6.23	4200.34	1093.43	.00	.00	9871.00	10064.00	.00
*	24.322	1466.17	.26	1466.31	140.00	.00	5067.63	232.37	140.00	9940.00	9871.00	10064.00	10080.00
*	24.444	1465.95	.00	1466.10	277.67	.36	4211.19	1088.46	.00	.00	9928.00	10122.00	.00
*	24.444	1466.37	.41	1466.70	153.00	.89	5299.11	.00	153.00	9927.00	9928.00	10122.00	10080.00
*	24.542	1466.33	.00	1467.25	181.23	26.14	5273.86	.00	.00	.00	9914.00	10187.00	.00
*	24.542	1467.31	.98	1468.35	121.98	.00	5300.00	.00	210.00	9950.00	9914.00	10187.00	10160.00
	24.635	1472.05	.00	1473.32	194.18	.00	5300.00	.00	.00	.00	9876.00	10111.00	.00
*	24.635	1472.06	.01	1473.84	120.00	.00	5300.00	.00	120.00	9940.00	9876.00	10111.00	10060.00
*	24.738	1476.89	.00	1477.18	355.18	.00	1399.36	3800.64	.00	.00	9897.00	10038.00	.00
*	24.738	1477.80	.91	1478.28	225.20	.00	2288.79	2911.21	264.00	9936.00	9897.00	10038.00	10200.00
*	24.838	1480.33	.00	1480.92	650.49	.00	1244.32	3955.67	.00	.00	9945.00	10019.00	.00
*	24.838	1480.98	.66	1481.73	370.28	.00	1515.04	3684.96	382.00	9968.00	9945.00	10019.00	10350.00
*	24.943	1483.44	.00	1483.57	799.36	851.43	498.44	3850.13	.00	.00	9983.00	10017.00	.00
*	24.943	1484.36	.92	1484.58	433.65	1224.11	735.71	3240.17	440.00	9860.00	9983.00	10017.00	10300.00
*	25.048	1487.27	.00	1487.98	557.24	1444.52	645.12	3110.36	.00	.00	9966.00	10017.00	.00
*	25.048	1487.63	.36	1488.57	369.90	1208.50	870.32	3121.17	400.00	9850.00	9966.00	10017.00	10250.00

*	25.163	1492.19	.00	1492.51	369.01	205.28	1143.60	3551.12	.00	.00	9972.00	10025.00	.00
*	25.163	1493.08	.89	1493.53	234.87	360.32	1584.93	2954.76	235.00	9940.00	9972.00	10025.00	10175.00
	25.262	1494.01	.00	1494.20	521.78	4118.96	781.04	.00	.00	.00	9948.00	10030.00	.00
	25.262	1495.04	1.03	1495.36	273.00	3562.09	1337.91	.00	273.00	9750.00	9948.00	10030.00	10023.00

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	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	25.374	1499.37	.00	1499.62	367.07	3795.47	1104.53	.00	.00	.00	9969.00	10023.00	.00
*	25.374	1500.17	.80	1502.33	98.00	1342.90	3557.10	.00	98.00	9925.00	9969.00	10023.00	10023.00
*	25.434	1503.97	.00	1506.92	65.40	.00	4900.00	.00	.00	.00	9968.00	10036.00	.00
	25.434	1504.17	.20	1506.91	66.00	.00	4900.00	.00	66.00	9970.00	9968.00	10036.00	10036.00
*	25.500	1507.74	.00	1508.08	170.83	.00	4900.00	.00	.00	.00	9908.00	10105.00	.00
*	25.500	1507.65	-.09	1508.42	80.00	.00	4900.00	.00	80.00	9970.00	9908.00	10105.00	10050.00
*	25.523	1507.99	.00	1508.19	161.62	472.40	3501.05	926.55	.00	.00	9963.00	10037.00	.00
*	25.523	1508.20	.21	1508.63	80.00	38.66	4806.13	55.21	80.00	9960.00	9963.00	10037.00	10040.00
*	25.534	1510.75	.00	1513.36	73.10	.00	4900.00	.00	.00	.00	9963.00	10037.00	.00
*	25.534	1510.76	.00	1513.36	73.10	.00	4900.00	.00	.00	.00	9963.00	10037.00	.00
*	25.551	1512.21	.00	1513.80	73.41	.00	4900.00	.00	.00	.00	9963.00	10037.00	.00
*	25.551	1512.21	.00	1513.80	73.41	.00	4900.00	.00	.00	.00	9963.00	10037.00	.00
	25.557	1512.08	.00	1514.01	80.27	.00	4900.00	.00	.00	.00	9954.00	10046.00	.00
	25.557	1512.07	.00	1514.01	80.25	.00	4900.00	.00	.00	.00	9954.00	10046.00	.00
	25.561	1514.36	.00	1514.55	117.68	.00	2900.00	.00	.00	.00	9948.00	10069.00	.00
	25.561	1514.32	-.04	1514.54	100.55	.00	2900.00	.00	101.00	9949.00	9948.00	10069.00	10050.00
*	25.680	1514.74	.00	1514.78	663.75	297.03	1319.35	1083.62	.00	.00	9927.00	10093.00	.00
*	25.680	1514.80	.06	1515.26	100.00	.00	2700.00	.00	100.00	9950.00	9927.00	10093.00	10050.00
*	25.786	1516.32	.00	1516.97	351.98	.00	1867.53	632.47	.00	.00	9978.00	10056.00	.00
*	25.786	1516.35	.03	1517.71	100.00	.00	2454.12	45.88	100.00	9982.00	9978.00	10056.00	10082.00

25.947	1521.07	.00	1521.63	164.54	.00	1967.12	332.87	.00	.00	9950.00	10066.00	.00	
*	25.947	1521.86	.79	1522.40	100.00	.00	2300.00	.00	100.00	9959.00	9950.00	10066.00	10059.00
26.058	1523.49	.00	1523.98	182.03	620.82	1579.18	.00	.00	.00	9966.00	10024.00	.00	
26.058	1523.83	.34	1524.65	73.00	173.53	2026.47	.00	73.00	9950.00	9966.00	10024.00	10023.00	
26.152	1524.99	.00	1525.46	105.87	.00	2000.00	.00	.00	.00	9956.00	10069.00	.00	
26.152	1525.70	.70	1526.20	70.00	.00	2000.00	.00	70.00	9970.00	9956.00	10069.00	10040.00	
*	26.265	1528.15	.00	1529.39	103.26	.00	1758.20	141.80	.00	.00	9955.00	10029.00	.00
*	26.265	1528.08	-.07	1529.38	86.66	.00	1760.69	139.31	87.00	9973.00	9955.00	10029.00	10060.00
*	26.372	1531.35	.00	1531.67	97.17	.00	1700.00	.00	.00	.00	9966.00	10080.00	.00
*	26.372	1531.37	.02	1531.69	96.95	.00	1700.00	.00	97.00	9967.00	9966.00	10080.00	10064.00
*	26.492	1532.15	.00	1532.22	183.14	.00	1600.00	.00	.00	.00	9866.00	10084.00	.00
*	26.492	1532.19	.04	1532.34	90.00	.00	1600.00	.00	90.00	9955.00	9866.00	10084.00	10045.00
*	26.582	1532.24	.00	1532.24	718.47	594.58	479.07	226.35	.00	.00	9869.00	10028.00	.00
26.582	1532.43	.19	1532.52	80.00	.00	1300.00	.00	80.00	9945.00	9869.00	10028.00	10025.00	

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SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR	
*	26.673	1533.98	.00	1534.51	239.18	.00	1094.68	205.32	.00	.00	9955.00	10077.00	.00
*	26.673	1534.94	.96	1536.17	60.00	.00	1300.00	.00	60.00	9970.00	9955.00	10077.00	10030.00
*	26.784	1546.18	.00	1547.20	68.01	.00	1100.00	.00	.00	.00	9975.00	10080.00	.00
*	26.784	1546.25	.07	1547.49	50.00	.00	1100.00	.00	50.00	9981.00	9975.00	10080.00	10031.00
*	26.883	1547.31	.00	1547.31	434.21	.94	936.36	62.70	.00	.00	9773.00	10122.00	.00
*	26.883	1547.92	.61	1548.02	50.00	.00	1000.00	.00	50.00	9975.00	9773.00	10122.00	10025.00
*	26.984	1547.31	.00	1547.32	371.10	1.28	764.04	134.68	.00	.00	9943.00	10170.00	.00
*	26.984	1548.07	.76	1548.24	50.00	.00	900.00	.00	50.00	9975.00	9943.00	10170.00	10025.00
*	27.060	1559.46	.00	1561.02	29.47	.00	900.00	.00	.00	.00	9980.00	10019.00	.00

*	27.060	1559.45	-.01	1561.02	29.41	.00	900.00	.00	129.40	9883.70	9980.00	10019.00	10013.10
*	27.166	1562.18	.00	1562.35	38.99	.00	600.00	.00	.00	.00	9977.00	10023.00	.00
*	27.166	1562.18	.00	1562.35	38.97	.00	600.00	.00	138.90	9881.10	9977.00	10023.00	10020.00
	27.294	1562.54	.00	1562.59	50.20	.00	400.00	.00	.00	.00	9967.00	10027.00	.00
	27.294	1562.54	.00	1562.59	50.19	.00	400.00	.00	50.20	9972.00	9967.00	10027.00	10022.20
	-19.560	1328.21	.00	1330.15	129.62	.00	14600.00	.00	.00	.00	9929.00	10065.00	.00
	-19.560	1328.21	.00	1330.15	129.62	.00	14600.00	.00	139.63	9921.37	9929.00	10065.00	10061.00
*	.029	1329.35	.00	1332.60	130.50	.00	9478.32	21.68	.00	.00	9942.00	10043.00	.00
*	.029	1329.43	.08	1332.59	130.54	.00	9473.71	26.29	130.54	9942.56	9942.00	10043.00	10073.10
*	.112	1332.94	.00	1333.44	330.25	100.06	9399.94	.00	.00	.00	9887.00	10101.00	.00
*	.112	1332.88	-.07	1333.42	187.00	.00	9500.00	.00	187.00	9905.00	9887.00	10101.00	10092.00
	.198	1333.31	.00	1333.94	249.57	13.92	9486.08	.00	.00	.00	9897.00	10133.00	.00
	.198	1333.26	-.05	1333.92	200.00	.00	9500.00	.00	200.00	9910.00	9897.00	10133.00	10110.00
*	.288	1333.31	.00	1335.83	150.75	.00	9500.00	.00	.00	.00	9885.00	10069.00	.00
*	.288	1333.30	-.01	1335.83	150.67	.00	9500.00	.00	151.00	9903.00	9885.00	10069.00	10054.00
*	.398	1337.27	.00	1338.35	181.83	.00	9500.00	.00	.00	.00	9904.00	10119.00	.00
*	.398	1337.27	.00	1338.35	181.53	.00	9500.00	.00	182.00	9912.00	9904.00	10119.00	10094.00
*	.482	1342.35	.00	1343.41	889.74	79.05	6887.36	2533.59	.00	.00	9937.00	10024.00	.00
*	.482	1341.93	-.43	1344.04	271.00	46.29	8417.40	1036.31	271.00	9904.00	9937.00	10024.00	10175.00
	.575	1343.82	.00	1344.53	730.21	727.34	7778.19	994.47	.00	.00	9869.00	10049.00	.00
	.575	1344.62	.80	1345.55	210.00	.00	9360.91	139.09	210.00	9870.00	9869.00	10049.00	10080.00
	.697	1345.06	.00	1346.10	237.20	.00	9013.49	386.51	.00	.00	9847.00	10023.00	.00
	.697	1345.85	.79	1346.82	160.00	.00	9211.68	188.32	160.00	9875.00	9847.00	10023.00	10035.00
*	.826	1348.29	.00	1350.53	199.85	729.25	8670.75	.00	.00	.00	9929.00	10050.00	.00
*	.826	1348.19	-.10	1350.60	160.00	632.65	8767.35	.00	160.00	9880.00	9929.00	10050.00	10040.00

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR	
*	.945	1352.12	.00	1352.63	561.70	1059.47	7814.26	526.27	.00	.00	9856.00	10034.00	.00
*	.945	1352.42	.31	1353.34	160.00	.00	9400.00	.00	160.00	9870.00	9856.00	10034.00	10030.00
	1.035	1352.93	.00	1353.65	460.77	1059.57	7955.86	384.58	.00	.00	9841.00	10022.00	.00
	1.035	1353.60	.66	1354.71	160.00	.00	9229.39	170.61	160.00	9870.00	9841.00	10022.00	10030.00
	1.121	1354.16	.00	1354.96	235.28	.00	9395.98	4.02	.00	.00	9868.00	10069.00	.00
	1.121	1355.17	1.01	1355.89	160.00	.00	9400.00	.00	160.00	9890.00	9868.00	10069.00	10050.00
*	1.204	1355.42	.00	1357.51	226.07	.00	8391.40	1008.60	.00	.00	9949.00	10043.00	.00
*	1.204	1355.74	.32	1357.82	160.00	.00	8621.78	778.22	160.00	9950.00	9949.00	10043.00	10110.00
*	1.315	1359.33	.00	1359.72	332.04	.00	6944.01	2155.99	.00	.00	9904.00	10074.00	.00
*	1.315	1359.79	.46	1360.51	155.00	.00	9100.00	.00	155.00	9905.00	9904.00	10074.00	10060.00
*	1.420	1359.99	.00	1362.07	189.95	.00	9100.00	.00	.00	.00	9895.00	10085.00	.00
*	1.420	1360.19	.19	1362.08	190.00	.00	9100.00	.00	190.00	9895.00	9895.00	10085.00	10085.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 17.662 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 17.662 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 17.783 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 17.783 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 18.042 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 18.042 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 18.081 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 18.081 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 18.269 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 18.445 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 18.445 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 18.445 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 18.445 PROFILE= 2 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 18.445 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 18.445 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 18.456 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 18.456 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 18.545 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 18.545 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 19.018 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 19.018 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 19.117 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 19.117 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

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CAUTION SECNO= 19.117 PROFILE= 2 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 19.117 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 19.117 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

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CAUTION SECNO= 19.299 PROFILE= 1 HYDRAULIC JUMP D.S.

WARNING SECNO= 19.299 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO= 19.299 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO= 20.049 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
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CAUTION SECNO= 20.737 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 20.737 PROFILE= 2 CRITICAL DEPTH ASSUMED
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CAUTION SECNO= 20.737 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

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WARNING SECNO= 20.860 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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WARNING SECNO= 20.860 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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CAUTION SECNO= 21.230 PROFILE= 1 CRITICAL DEPTH ASSUMED
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CAUTION SECNO= 21.742 PROFILE= 1 MINIMUM SPECIFIC ENERGY
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WARNING SECNO= 21.840 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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CAUTION SECNO= 21.895 PROFILE= 1 MINIMUM SPECIFIC ENERGY

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CAUTION SECNO= 21.953 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 21.953 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 21.953 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO= 23.253 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 23.253 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

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WARNING SECNO= 23.912 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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WARNING SECNO= 23.912 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 23.989 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 23.989 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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CAUTION SECNO= 24.838 PROFILE= 1 MINIMUM SPECIFIC ENERGY

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CAUTION SECNO= 25.048 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 25.048 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 25.048 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 25.048 PROFILE= 2 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 25.048 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 25.048 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 25.163 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 25.163 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 25.374 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 25.374 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 25.374 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 25.374 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 25.374 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 25.374 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 25.434 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 25.434 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 25.434 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 25.500 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 25.500 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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WARNING SECNO= 25.523 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 25.523 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 25.534 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 25.534 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 25.534 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 25.534 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 25.534 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 25.534 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 25.551 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO= 25.551 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO= 25.551 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO= 25.551 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 25.680 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 25.680 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 25.786 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 25.786 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 25.786 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO= 25.786 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 25.947 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO= 26.265 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 26.265 PROFILE= 1 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 26.265 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 26.265 PROFILE= 2 MINIMUM SPECIFIC ENERGY
WARNING SECNO= 26.372 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 26.372 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 26.492 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 26.492 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 26.582 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO= 26.673 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 26.673 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 26.673 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 26.673 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 26.673 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 26.673 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 26.784 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 26.784 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 26.784 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 26.784 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 26.784 PROFILE= 2 MINIMUM SPECIFIC ENERGY

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WARNING SECNO= 26.883 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 26.883 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 26.984 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 26.984 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 27.060 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 27.060 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 27.060 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 27.060 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 27.060 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 27.060 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 27.166 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 27.166 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= .029 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .029 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .029 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= .029 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .029 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .029 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= .112 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= .112 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= .288 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .288 PROFILE= 1 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .288 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .288 PROFILE= 2 MINIMUM SPECIFIC ENERGY

WARNING SECNO= .398 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= .398 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= .482 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .482 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .482 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= .482 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .482 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .482 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= .826 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .826 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .826 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= .826 PROFILE= 2 CRITICAL DEPTH ASSUMED

CAUTION SECNO= .826 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
 CAUTION SECNO= .826 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= .945 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= .945 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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CAUTION SECNO= 1.204 PROFILE= 1 CRITICAL DEPTH ASSUMED
 CAUTION SECNO= 1.204 PROFILE= 1 MINIMUM SPECIFIC ENERGY
 WARNING SECNO= 1.204 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO= 1.315 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 1.315 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO= 1.420 PROFILE= 1 CRITICAL DEPTH ASSUMED
 CAUTION SECNO= 1.420 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
 CAUTION SECNO= 1.420 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
 WARNING SECNO= 1.420 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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FLOODWAY DATA, CAVE CREEK WASH

PROFILE NO. 2

STATION	WIDTH	FLOODWAY		WATER SURFACE ELEVATION		
		SECTION	MEAN	WITH	WITHOUT	DIFFERENCE
		AREA	VELOCITY	FLOODWAY	FLOODWAY	
17.588	338.	3195.	4.8	1284.7	1283.7	1.0
17.662	250.	1988.	7.7	1284.8	1283.8	1.0
17.783	143.	1271.	12.1	1286.4	1285.6	.8
17.932	110.	1047.	14.7	1291.4	1291.0	.4
18.042	97.	992.	15.5	1294.4	1294.3	.1
18.061	97.	1134.	13.6	1296.6	1296.4	.2
18.081	185.	2411.	6.4	1299.6	1299.5	.1
18.174	268.	3010.	5.1	1300.2	1300.2	.0
18.269	228.	2349.	6.6	1300.3	1300.2	.1
18.362	212.	2086.	7.4	1300.6	1300.5	.1
18.445	222.	1268.	12.1	1304.9	1305.4	-.5
18.456	225.	1990.	7.7	1308.5	1307.3	1.2

18.545	288.	3404.	4.5	1309.6	1308.3	1.3
18.575	290.	3436.	4.5	1309.6	1308.4	1.2
18.583	301.	3540.	4.3	1310.1	1309.5	.6
18.640	255.	2726.	5.6	1310.0	1309.4	.6
18.734	228.	2354.	6.5	1310.3	1309.7	.6
18.832	215.	2295.	6.7	1310.7	1310.2	.5
18.925	200.	2164.	7.1	1311.0	1310.6	.4
19.018	172.	1543.	10.0	1311.3	1310.9	.4
19.117	120.	1023.	15.1	1312.7	1312.5	.2
19.210	157.	1462.	10.5	1317.1	1317.2	-.1
19.283	109.	896.	16.3	1319.9	1319.9	.0
19.299	109.	1129.	12.9	1322.1	1322.1	.0
19.313	160.	1330.	11.0	1323.3	1323.3	.0
19.418	163.	1343.	10.9	1325.6	1325.6	.0
19.560	130.	1308.	11.2	1328.2	1328.2	.0
19.625	60.	741.	7.7	1330.0	1329.9	.1
19.691	60.	780.	7.3	1331.6	1331.5	.1
19.742	85.	969.	5.9	1332.0	1332.0	.0
19.847	86.	868.	6.6	1332.1	1332.1	.0
19.960	73.	441.	12.9	1332.5	1332.4	.1
19.974	51.	503.	11.3	1333.7	1333.3	.4
19.986	51.	608.	9.4	1335.8	1335.3	.5
20.049	50.	366.	15.6	1338.2	1338.4	-.2
20.144	57.	536.	10.6	1343.4	1343.5	-.1
20.242	71.	561.	10.2	1345.5	1345.5	.0
20.335	73.	640.	8.9	1347.5	1347.4	.1
20.347	51.	521.	10.9	1347.4	1347.2	.2
20.366	51.	560.	10.2	1348.2	1348.0	.2
20.423	114.	796.	7.2	1349.7	1349.6	.1
20.430	51.	509.	11.2	1349.2	1349.1	.1

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FLOODWAY DATA, CAVE CREEK WASH

PROFILE NO. 2

STATION	WIDTH	----- FLOODWAY -----		WATER SURFACE ELEVATION		
		AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
20.444	51.	547.	10.4	1350.0	1349.9	.1
20.529	139.	841.	6.8	1352.3	1352.3	.0

20.628	130.	1059.	5.4	1353.3	1353.3	.0
20.725	64.	398.	14.3	1355.9	1356.0	-.1
20.737	51.	372.	15.3	1358.2	1358.2	.0
20.750	51.	490.	11.6	1360.6	1360.6	.0
20.819	78.	458.	12.5	1362.4	1362.4	.0
20.841	78.	545.	10.5	1364.4	1364.4	.0
20.860	156.	852.	6.7	1366.0	1366.0	.0
20.942	250.	850.	6.7	1367.2	1367.3	-.1
21.036	250.	608.	9.4	1371.4	1371.9	-.5
21.127	160.	565.	10.1	1374.6	1374.7	-.1
21.230	225.	653.	8.7	1380.4	1380.4	.0
21.363	166.	986.	5.8	1383.6	1383.4	.2
21.484	225.	647.	8.8	1387.1	1386.5	.6
21.576	225.	815.	7.0	1390.1	1389.2	.9
21.669	225.	686.	8.0	1393.9	1393.4	.5
21.742	200.	832.	6.6	1396.2	1395.2	1.0
21.840	200.	686.	8.0	1397.9	1398.0	-.1
21.895	245.	702.	7.8	1399.7	1399.7	.0
21.933	420.	1566.	3.5	1401.5	1400.9	.6
21.953	421.	812.	6.8	1401.2	1401.1	.1
22.065	410.	1165.	4.7	1404.5	1404.1	.4
22.165	400.	1253.	4.4	1406.0	1405.2	.8
22.273	377.	879.	6.3	1407.6	1406.7	.9
22.410	180.	560.	9.8	1414.1	1414.2	-.1
22.483	160.	1293.	4.3	1416.8	1416.5	.3
22.578	96.	773.	7.1	1417.2	1416.3	.9
22.675	198.	1407.	3.9	1418.7	1418.0	.7
22.794	183.	1176.	4.7	1419.5	1418.6	.9
22.880	169.	776.	7.1	1420.5	1420.0	.5
22.990	136.	643.	8.6	1424.6	1423.6	1.0
23.097	132.	561.	9.8	1430.6	1429.9	.7
23.168	310.	1322.	4.2	1433.7	1433.1	.6
23.253	45.	250.	13.6	1434.5	1434.5	.0
23.334	67.	355.	9.6	1440.4	1440.4	.0
23.416	59.	318.	10.7	1443.8	1443.8	.0
23.514	57.	365.	9.3	1448.1	1448.1	.0
23.544	55.	310.	11.0	1448.9	1448.9	.0
23.555	63.	494.	6.9	1452.6	1452.6	.0
23.591	75.	478.	7.1	1453.1	1453.1	.0

23.691 65. 368. 9.2 1455.2 1455.2 .0

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FLOODWAY DATA, CAVE CREEK WASH

PROFILE NO. 2

STATION	----- FLOODWAY -----			WATER SURFACE ELEVATION		
	WIDTH	SECTION	MEAN	WITH	WITHOUT	DIFFERENCE
		AREA	VELOCITY	FLOODWAY	FLOODWAY	
23.815	86.	521.	8.4	1459.0	1459.0	.0
23.912	76.	619.	8.6	1461.0	1461.0	.0
23.989	99.	835.	6.3	1462.6	1462.6	.0
24.086	72.	708.	7.5	1463.4	1463.4	.0
24.096	72.	800.	6.6	1464.7	1464.7	.0
24.106	100.	922.	5.7	1465.0	1465.2	-.2
24.195	100.	1135.	4.7	1465.7	1465.7	.0
24.322	140.	1776.	3.0	1466.2	1465.9	.3
24.444	153.	1144.	4.6	1466.4	1466.0	.4
24.542	210.	647.	8.2	1467.3	1466.3	1.0
24.635	120.	494.	10.7	1472.0	1472.0	.0
24.738	264.	935.	5.6	1477.8	1476.9	.9
24.838	382.	787.	6.6	1481.0	1480.3	.7
24.943	440.	1411.	3.7	1484.3	1483.4	.9
25.048	400.	676.	7.7	1487.7	1487.3	.4
25.163	235.	927.	5.3	1493.1	1492.2	.9
25.262	273.	1082.	4.5	1495.0	1494.0	1.0
25.374	98.	427.	11.5	1500.2	1499.4	.8
25.434	66.	368.	13.3	1504.2	1504.0	.2
25.500	80.	698.	7.0	1507.6	1507.7	-.1
25.523	80.	962.	5.1	1508.2	1508.0	.2
25.534	73.	378.	12.9	1510.8	1510.8	.0
25.551	73.	485.	10.1	1512.2	1512.2	.0
25.557	80.	439.	11.2	1512.1	1512.1	.0
25.561	101.	760.	3.8	1514.4	1514.4	.0
25.680	100.	500.	5.4	1514.8	1514.7	.1
25.786	100.	276.	9.1	1516.3	1516.3	.0
25.947	100.	388.	5.9	1521.9	1521.1	.8
26.058	73.	309.	7.1	1523.8	1523.5	.3
26.152	70.	352.	5.7	1525.7	1525.0	.7
26.265	87.	219.	8.7	1528.0	1528.1	-.1

26.372	97.	374.	4.5	1531.3	1531.3	.0
26.492	90.	511.	3.1	1532.1	1532.1	.0
26.582	80.	544.	2.4	1532.4	1532.2	.2
26.673	60.	146.	8.9	1535.0	1534.0	1.0
26.784	50.	123.	8.9	1546.3	1546.2	.1
26.883	50.	391.	2.6	1547.9	1547.3	.6
26.984	50.	273.	3.3	1548.1	1547.3	.8
27.060	29.	90.	10.0	1559.5	1559.5	.0
27.166	39.	182.	3.3	1562.2	1562.2	.0
27.294	50.	233.	1.7	1562.5	1562.5	.0
-19.560	130.	1308.	11.2	1328.2	1328.2	.0

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FLOODWAY DATA, CAVE CREEK WASH

PROFILE NO. 2

STATION	WIDTH	----- FLOODWAY -----		WATER SURFACE ELEVATION		
		SECTION	MEAN	WITH	WITHOUT	DIFFERENCE
		AREA	VELOCITY	FLOODWAY	FLOODWAY	
.029	131.	683.	13.9	1329.5	1329.4	.1
.112	187.	1603.	5.9	1332.8	1332.9	-.1
.198	200.	1459.	6.5	1333.3	1333.3	.0
.288	151.	745.	12.8	1333.3	1333.3	.0
.398	182.	1139.	8.3	1337.3	1337.3	.0
.482	271.	947.	10.0	1342.0	1342.4	-.4
.575	210.	1250.	7.6	1344.6	1343.8	.8
.697	160.	1205.	7.8	1345.9	1345.1	.8
.826	160.	786.	12.0	1348.2	1348.3	-.1
.945	160.	1219.	7.7	1352.4	1352.1	.3
1.035	160.	1117.	8.4	1353.6	1352.9	.7
1.121	160.	1386.	6.8	1355.2	1354.2	1.0
1.204	160.	867.	10.8	1355.7	1355.4	.3
1.315	155.	1341.	6.8	1359.8	1359.3	.5
1.420	190.	825.	11.0	1360.2	1360.0	.2

A.2.5.d: Letter of Map Revision Determination Document (10-09-0687P)



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 Phoenix Maricopa County Arizona	CHANNELIZATION	UPDATE
	COMMUNITY NO.: 040051		
IDENTIFIER	Cave Creek Channelization- Sec 19th Ave To Greenway Rd	APPROXIMATE LATITUDE & LONGITUDE: 33.626, -112.093 SOURCE: USGS QUADRANGLE DATUM: NAD 83	
ANNOTATED MAPPING ENCLOSURES		ANNOTATED STUDY ENCLOSURES	
TYPE: FIRM* NO.: 04013C1655 K DATE: September 30, 2005 TYPE: FIRM* NO.: 04013C1215 K DATE: September 30, 2005		DATE OF EFFECTIVE FLOOD INSURANCE STUDY: September 30, 2005 PROFILE(S): 54P AND 55P FLOODWAY DATA TABLE: 5	

Enclosures reflect changes to flooding sources affected by this revision.

FIRM - Flood Insurance Rate Map; ** FBFM - Flood Boundary and Floodway Map; *** FHBM - Flood Hazard Boundary Map

FLOODING SOURCE(S) & REVISED REACH(ES)

Cave Creek - from just upstream of 19th Avenue to approximately 1,200 feet upstream

SUMMARY OF REVISIONS

This Letter of Map Revision (LOMR) is a reissuance of a LOMR dated December 12, 2001 (Case No. 01-09-526P). The December 12 LOMR revised the boundaries of the base (1-percent-annual-chance) floodplain and floodway along Cave Creek so they are contained in a channel. The December 12 LOMR was not incorporated into the new countywide study that became effective on September 30, 2005. Therefore, this LOMR reissues the December 12 LOMR based on the effective FIRM for Maricopa County, Arizona and Incorporated Areas, dated September 30, 2005. This LOMR does not revise the 0.2-percent-annual-chance floodplain, base floodplain, or floodway boundaries from the December 12 LOMR along the revised reach.

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 Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 6730 Santa Barbara Court, Elkridge, MD 21075. Additional information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Dahlia Kasperski, P.E., CFM, Program Specialist
Engineering Management Branch
Mitigation Directorate



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.

NFIP regulations Subparagraph 60.3(b)(7) requires communities to ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management ordinances; therefore, responsibility for maintenance of the altered or relocated watercourse, including any related appurtenances such as bridges, culverts, and other drainage structures, rests with your community. We may request that your community submit a description and schedule of maintenance activities necessary to ensure this requirement.

COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance flood discharges computed in the FIS for your community without considering subsequent changes in watershed characteristics that could increase flood discharges. Future development of projects upstream could cause increased flood discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on flood discharges subsequent to the publication of the FIS report for your community and could, therefore, establish greater flood hazards 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 Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 6730 Santa Barbara Court, Elkridge, MD 21075. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

A handwritten signature in cursive script that reads "Dahlia Kasperski".

Dahlia Kasperski, P.E., CFM, Program Specialist
Engineering Management Branch
Mitigation Directorate



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 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 Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 6730 Santa Barbara Court, Elkridge, MD 21075. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

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Dahlia Kasperski, P.E., CFM, Program Specialist
Engineering Management Branch
Mitigation Directorate



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

PUBLIC NOTIFICATION OF REVISION

This revision is effective as of the date of this letter. Any requests to review or alter this determination should be made within 30 days and must be based on scientific or technical data.

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 Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 6730 Santa Barbara Court, Elkridge, MD 21075. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

A handwritten signature in black ink that reads "Dahlia Kasperski".

Dahlia Kasperski, P.E., CFM, Program Specialist
Engineering Management Branch
Mitigation Directorate

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Cave Creek								
A	17.588	338	3,195	4.8	1,283.7	1,283.7	1,284.7	1.0
B	17.662	250	1,988	7.7	1,283.9	1,283.9	1,284.9	1.0
C	17.783	143	1,271	12.1	1,285.6	1,285.6	1,286.4	0.8
D	17.932	110	1,047	14.7	1,291.0	1,291.0	1,291.4	0.4
E	18.081	185	2,411	6.4	1,299.5	1,299.5	1,299.6	0.1
F	18.174	268	3,010	5.1	1,300.2	1,300.2	1,300.2	0.0
G	18.269	228	2,349	6.6	1,300.2	1,300.2	1,300.3	0.1
H	18.362	212	2,086	7.4	1,300.5	1,300.5	1,300.6	0.1
I	18.456	223	1,315	11.7	1,307.3	1,307.3	1,307.3	0.0
J	18.545	288	3,071	5.0	1,308.3	1,308.3	1,308.4	0.1
K	18.640	255	2,581	6.0	1,309.4	1,309.4	1,309.5	0.1
L	18.734	228	2,232	6.9	1,309.7	1,309.7	1,309.7	0.0
M	18.832	215	2,198	7.0	1,310.2	1,310.2	1,310.2	0.0
N	18.925	200	2,086	7.4	1,310.6	1,310.6	1,310.7	0.1
O	19.018	172	1,483	10.4	1,310.9	1,310.9	1,310.9	0.0
P	19.117	120	1,023	15.1	1,312.5	1,312.5	1,312.7	0.2
Q	19.210	157	1,462	10.5	1,317.2	1,317.2	1,317.2	0.0
R	19.313	160	1,330	11.0	1,323.3	1,323.3	1,323.3	0.0
S	19.418	163	1,343	10.9	1,325.6	1,325.6	1,325.6	0.0
T	19.556	130	1,316	11.1	1,328.3	1,328.3	1,328.3	0.0
U	19.742	85	969	5.9	1,332.0	1,332.0	1,332.0	0.0
V	19.847	86	868	6.6	1,332.1	1,332.1	1,332.1	0.0
W	19.960	73	441	12.9	1,332.4	1,332.4	1,332.4	0.0
X	20.049	50	366	15.6	1,338.4	1,338.4	1,338.4	0.0
Y	20.144	57	536	10.6	1,343.5	1,343.5	1,343.5	0.0
Z	20.242	71	561	10.2	1,345.5	1,345.5	1,345.5	0.0

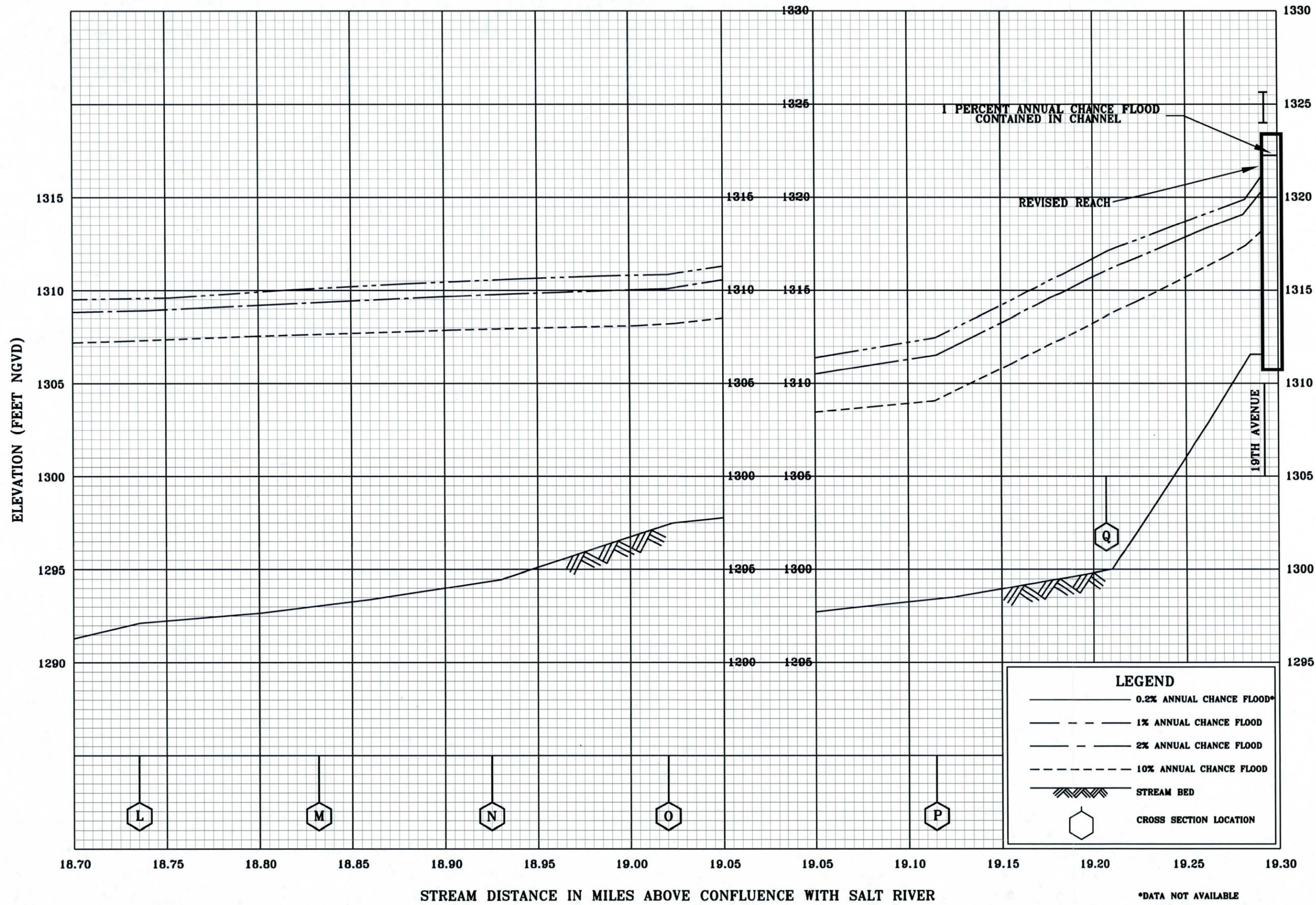
REVISED DATA



¹Miles Above Confluence With Salt River

REVISED TO
REFLECT LOMR
EFFECTIVE: January 29, 2010

T A B L E 5	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	MARICOPA COUNTY, AZ AND INCORPORATED AREAS	CAVE CREEK



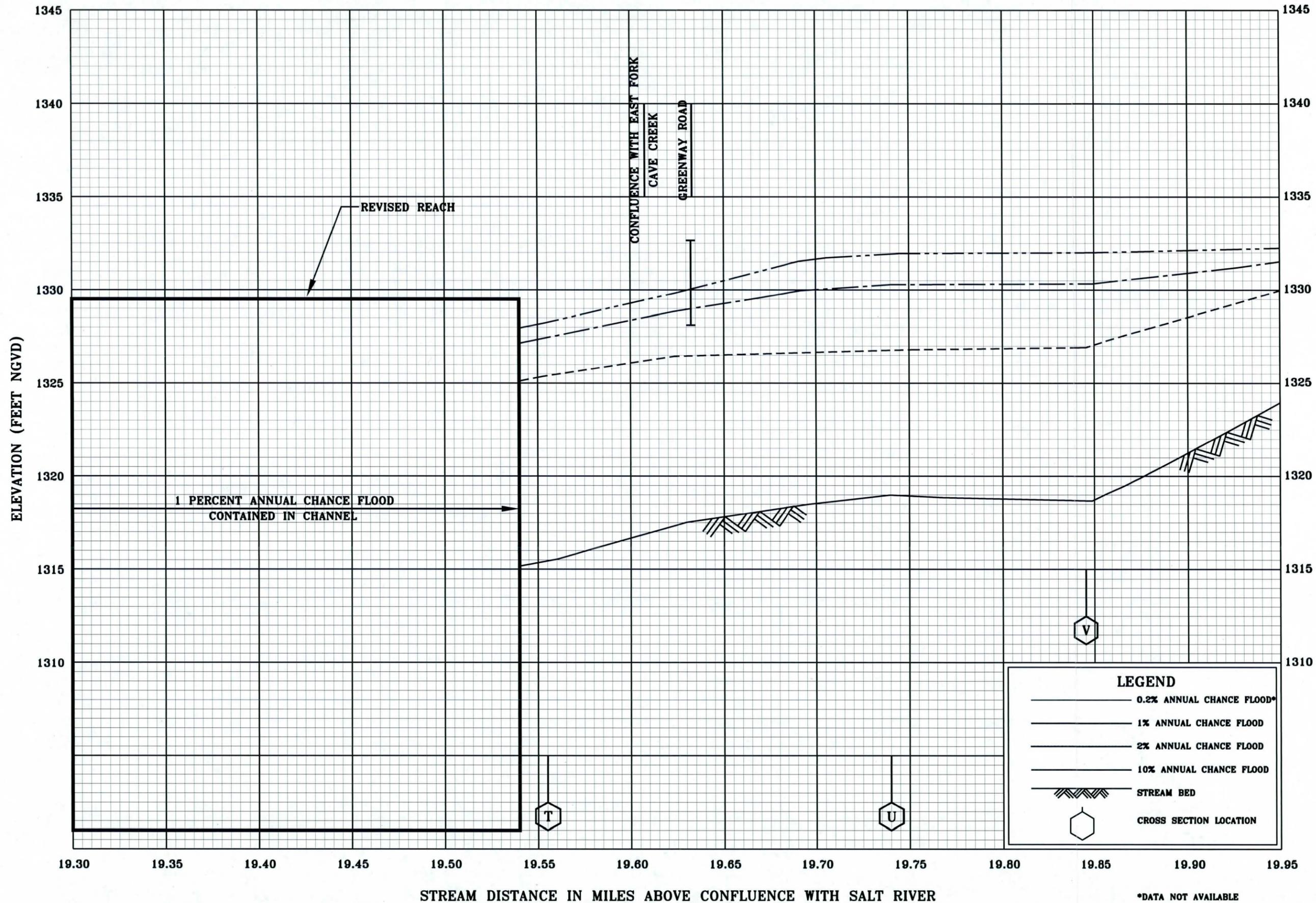
FLOOD PROFILES

REVISED TO REFLECT LOMR EFFECTIVE: January 29, 2010

CAVE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
 MARICOPA COUNTY, AZ
 AND INCORPORATED AREAS

54P



FEDERAL EMERGENCY MANAGEMENT AGENCY
 MARICOPA COUNTY, AZ
 AND INCORPORATED AREAS

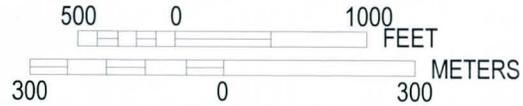
FLOOD PROFILES
 REVISIED TO
 REFLECT LOMR
 CAVE CREEK
 EFFECTIVE: January 29, 2010

Legend

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



MAP SCALE 1" = 1000'



NFIP

PANEL 1215K

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA
AND INCORPORATED AREAS

PANEL 1215 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHOENIX, CITY OF	040051	1215	K

**REVISED TO
REFLECT LOMR
EFFECTIVE: January 29, 2010**

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.

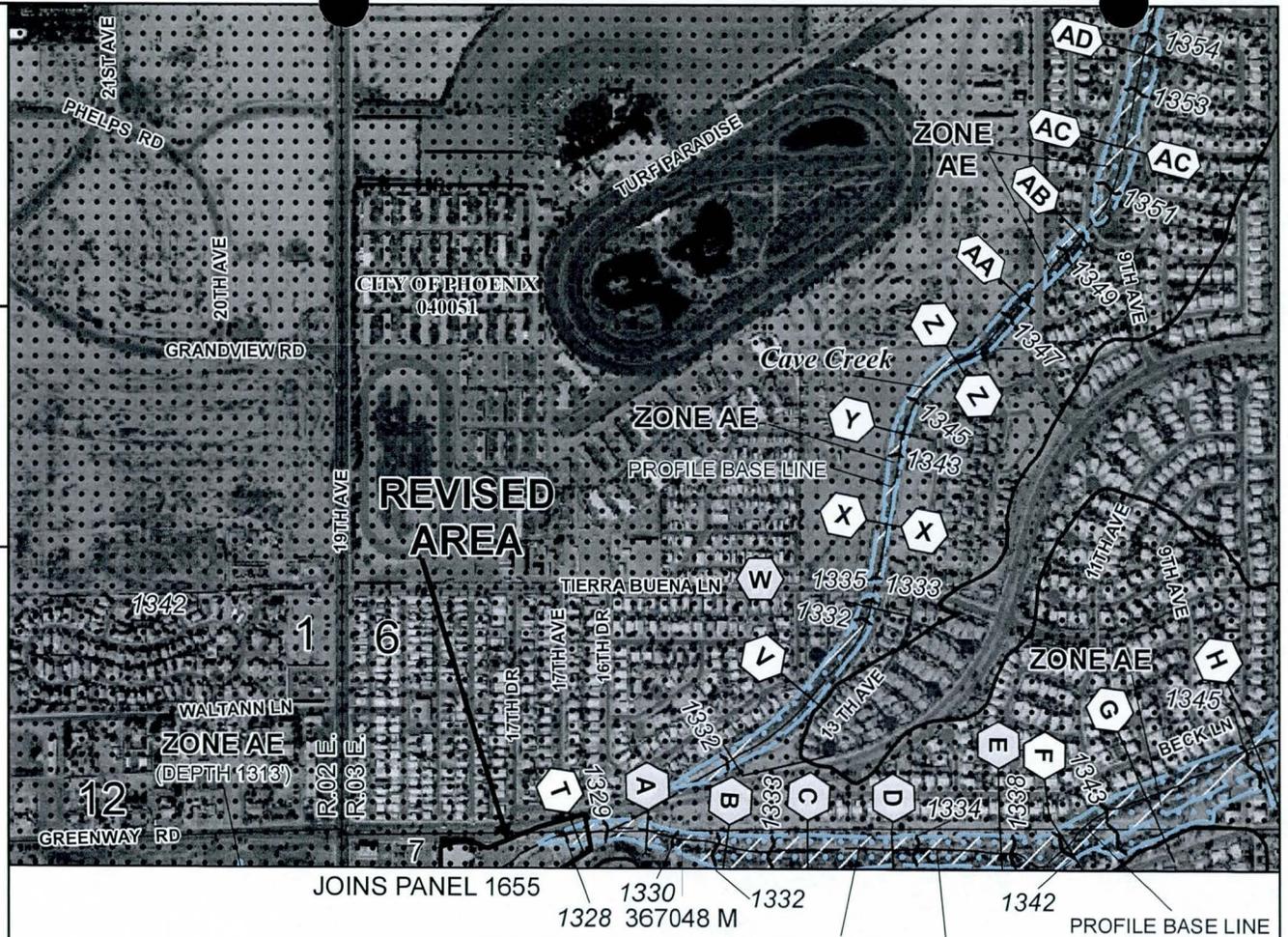


MAP NUMBER
04013C1215K

EFFECTIVE DATE
SEPTEMBER 30, 2005

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM



JOINS PANEL 1655
1328 367048 M
1330
1332
1342
PROFILE BASE LINE

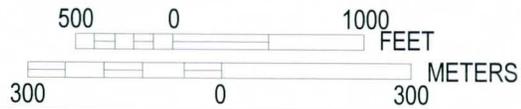
East Fork
Cave Creek

Legend

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



MAP SCALE 1" = 1000'



NFIP

PANEL 1655K

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA
AND INCORPORATED AREAS

PANEL 1655 OF 4350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHOENIX, CITY OF	040051	1655	K

**REVISED TO
REFLECT LOMR
EFFECTIVE: January 29, 2010**

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
04013C1655K

EFFECTIVE DATE
SEPTEMBER 30, 2005

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

1% ANNUAL CHANCE FLOOD DISCHARGE
CONTAINED IN CHANNEL

FLOODING EFFECTS FROM
EAST FORK CAVE CREEK



A.2.5.e: FEMA LOMR (01-09-526P) Letter



Federal Emergency Management Agency

Washington, D.C. 20472

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 01-09-526P

The Honorable Skip Rimsza
Mayor, City of Phoenix
200 Washington Street, 11th Floor
Phoenix, AZ 85003-1611

Community: City of Phoenix, AZ
Community No.: 040051
Panels Affected: 04013C1215 J and 1655 J
Effective Date of **DEC 12 2001**
This Revision:

102-I-A-C

Dear Mayor Rimsza:

This responds to a request that the Federal Emergency Management Agency (FEMA) revise the effective Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for Maricopa County, Arizona and Incorporated Areas (the effective FIRM and FIS report for your community), in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated September 20, 2000, Mr. Ray Dovalina, P.E., former Floodplain Manager, Street Transportation Department, City of Phoenix, requested that FEMA revise the FIRM and FIS report to show the effects of channelization along Cave Creek from just upstream to approximately 1,200 feet upstream of 19th Avenue. This request follows up on a Conditional Letter of Map Revision issued on November 2, 1999.

All data required to complete our review of this request were submitted with letters from Hasan Mushtaq, Ph.D., P.E., Floodplain Manager, Street Transportation Department, City of Phoenix; [REDACTED], P.E., R.L.S., Principal, and [REDACTED], Ph.D., P.E., Senior Water Resources Engineer, both with Wood, Patel & Associates, Inc.; and Mr. Dovalina.

We have completed our review of the submitted data and the flood data shown on the effective FIRM and in the effective FIS report. We have revised the FIRM and FIS report to modify the elevations and floodplain and floodway boundary delineations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) along Cave Creek from just upstream to approximately 1,400 feet upstream of 19th Avenue. As a result of the modifications, the Base Flood Elevations (BFEs) for Cave Creek increased in some areas and decreased in other areas, and the widths of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, and the regulatory floodway decreased. The channelized portion of Cave Creek from just upstream to approximately 1,200 feet upstream of 19th Avenue contains the base flood. The increase in BFE approximately 1,400 feet

upstream of 19th Avenue is contained in the effective channel. The modifications are shown on the enclosed annotated copies of FIRM Panels 04013C1215 J and 04013C1655 J, Profile Panels 54P and 55P, and affected portions of the Floodway Data Table. This Letter of Map Revision (LOMR) hereby revises the above-referenced panels of the effective FIRM and the affected portions of the FIS report, both dated July 19, 2001.

Because the increases in BFE are too small to affect the whole-foot BFEs currently shown on the effective FIRM, no increases in BFE will be published.

The modifications are effective as of the date shown above. The map panels as listed above and as modified by this letter will be used for all flood insurance policies and renewals issued for your community.

The following table is a partial listing of existing and modified BFEs:

Location	Existing BFE (feet)*	Modified BFE (feet)*
Approximately 100 feet upstream of 19th Avenue	1,323	None
Approximately 1,000 feet upstream of 19th Avenue	1,327	None

*Referenced to the National Geodetic Vertical Datum, rounded to the nearest whole foot

Public notification of the proposed modified BFEs will be given in the *Arizona Republic* on or about January 10 and January 17, 2002. A copy of this notification is enclosed. In addition, a notice of changes will be published in the *Federal Register*. Within 90 days of the second publication in the *Arizona Republic*, any interested party may request that FEMA reconsider the determination made by this LOMR. Any request for reconsideration must be based on scientific or technical data. All interested parties are on notice that, until the 90-day period elapses, the determination to modify the BFEs made by this LOMR may itself be modified.

Because this LOMR will not be printed and distributed to primary users, such as local insurance agents and mortgage lenders, your community will serve as a repository for these new data. We encourage you to disseminate the information reflected by this LOMR throughout the community, so that interested persons, such as property owners, local insurance agents, and mortgage lenders, may benefit from the information. We also encourage you to prepare a related article for publication in your community's local newspaper. This article should describe the assistance that officials of your community will give to interested persons by providing these data and interpreting the 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 panels and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

The floodway is provided to your community as a tool to regulate floodplain development. Therefore, the floodway modifications described in this LOMR, while acceptable to FEMA, must also be acceptable to your community and adopted by appropriate community action, as specified in Paragraph 60.3(d) of the NFIP regulations.

This LOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all floodplain development and for ensuring all necessary permits required by Federal or State law have been received. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If the State, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

The basis of this LOMR is, in whole or in part, a channel-modification project. NFIP regulations, as cited in Paragraph 60.3(b)(7), require that communities ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management regulations. Consequently, the ultimate responsibility for maintenance of the modified channel rests with your community.

This determination has been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and is in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 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 minimum NFIP criteria. These criteria are the minimum and do not supersede any State or local requirements of a more stringent nature. This includes adoption of the effective FIRM to which the regulations apply and the modifications described in this LOMR. Our records show that your community has met this requirement.

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

Mr. Jack Eldridge
Chief, Community Mitigation Programs Branch
Federal Emergency Management Agency, Region IX
The Presidio of San Francisco, Building 105
San Francisco, CA 94129-1250
(415) 923-7184

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please call the CCO for your community at the telephone number cited above. If you have any questions regarding this LOMR, please call our Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

Sincerely,



Max H. Yuan, P.E., Project Engineer
Hazards Study Branch
Federal Insurance and
Mitigation Administration

For: Matthew B. Miller, P.E., Chief
Hazards Study Branch
Federal Insurance and
Mitigation Administration

Enclosures

cc: Hasan Mushtaq, Ph.D., P.E.
Floodplain Manager
Street Transportation Department
City of Phoenix

Mr. Victor Calderon
Community Assistance Program Manager
Arizona Division of Emergency
Management

██████████ P.E., R.L.S.
Principal
Wood, Patel & Associates, Inc.

██████████, Ph.D., P.E.
Senior Water Resources Engineer
Wood, Patel & Associates, Inc.

CHANGES ARE MADE IN DETERMINATIONS OF BASE FLOOD ELEVATIONS FOR THE CITY OF PHOENIX, MARICOPA COUNTY, ARIZONA, UNDER THE NATIONAL FLOOD INSURANCE PROGRAM.

On July 19, 2001, the Federal Emergency Management Agency identified Special Flood Hazard Areas (SFHAs) in the City of Phoenix, Maricopa County, Arizona, through issuance of a Flood Insurance Rate Map (FIRM). The Federal Insurance and Mitigation Administration has determined that modification of the elevations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) for certain locations in this community is appropriate. The modified Base Flood Elevations (BFEs) revise the FIRM for the community.

The changes are being made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65.

A hydraulic analysis was performed to incorporate channelization along Cave Creek from just upstream to approximately 1,200 feet upstream of 19th Avenue and has resulted in a revised delineation of the regulatory floodway, a decrease in SFHA width, and increased and decreased BFEs for Cave Creek. The aforementioned channelized portion of Cave Creek contains the base flood. The table below indicates existing and modified BFEs for selected locations along the affected lengths of the flooding source(s) cited above. Because the increases in BFE are too small to affect the whole-foot BFEs currently shown on the effective FIRM, no increases in BFE will be published.

Location	Existing BFE (feet)*	Modified BFE (feet)*
Approximately 100 feet upstream of 19th Avenue	1,323	None
Approximately 1,000 feet upstream of 19th Avenue	1,327	None

*National Geodetic Vertical Datum, rounded to nearest whole foot

Under the above-mentioned Acts of 1968 and 1973, the Federal Insurance and Mitigation Administration must develop criteria for floodplain management. To participate in the National Flood Insurance Program (NFIP), the community must use the modified BFEs to administer the floodplain management measures of the NFIP. These modified BFEs will also be used to calculate the appropriate flood insurance premium rates for new buildings and their contents and for the second layer of insurance on existing buildings and contents.

Upon the second publication of notice of these changes in this newspaper, any person has 90 days in which he or she can request, through the Chief Executive Officer of the community, that the Federal Insurance and Mitigation Administration reconsider the determination. Any request for reconsideration must be based on knowledge of changed conditions or new scientific or technical data. All interested parties are on notice that until the 90-day period elapses, the Federal Insurance and Mitigation Administration's determination to modify the BFEs may itself be changed.

Any person having knowledge or wishing to comment on these changes should immediately notify:

The Honorable Skip Rimsza
Mayor, City of Phoenix
200 Washington Street, 11th Floor
Phoenix, AZ 85003-1611

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
						(FEET NGVD)		
Cave Creek Wash								
A	17.588	338	3,195	4.8	1,283.7	1,283.7	1,284.7	1.0
B	17.662	250	1,988.	7.7	1,283.9	1,283.9	1,284.9	1.0
C	17.783	143	1,271	12.1	1,285.6	1,285.6	1,286.4	0.8
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E	18.081	185	2,411	6.4	1,299.5	1,299.5	1,299.6	0.1
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G	18.269	228	2,349	6.6	1,300.2	1,300.2	1,300.3	0.1
H	18.362	212	2,086	7.4	1,300.5	1,300.5	1,300.6	0.1
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M	18.832	215	2,198	7.0	1,310.2	1,310.2	1,310.2	0.0
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P	19.117	120	1,023	15.1	1,312.5	1,312.5	1,312.7	0.2
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R	19.313	160	1,330	11.0	1,323.3	1,323.3	1,323.3	0.0
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T	19.556	130	1,316	11.1	1,328.3	1,328.3	1,328.3	0.0
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X	20.049	50	366	15.6	1,338.4	1,338.4	1,338.4	0.0
Y	20.144	57	536	10.6	1,343.5	1,343.5	1,343.5	0.0
Z	20.242	71	561	10.2	1,345.5	1,345.5	1,345.5	0.0

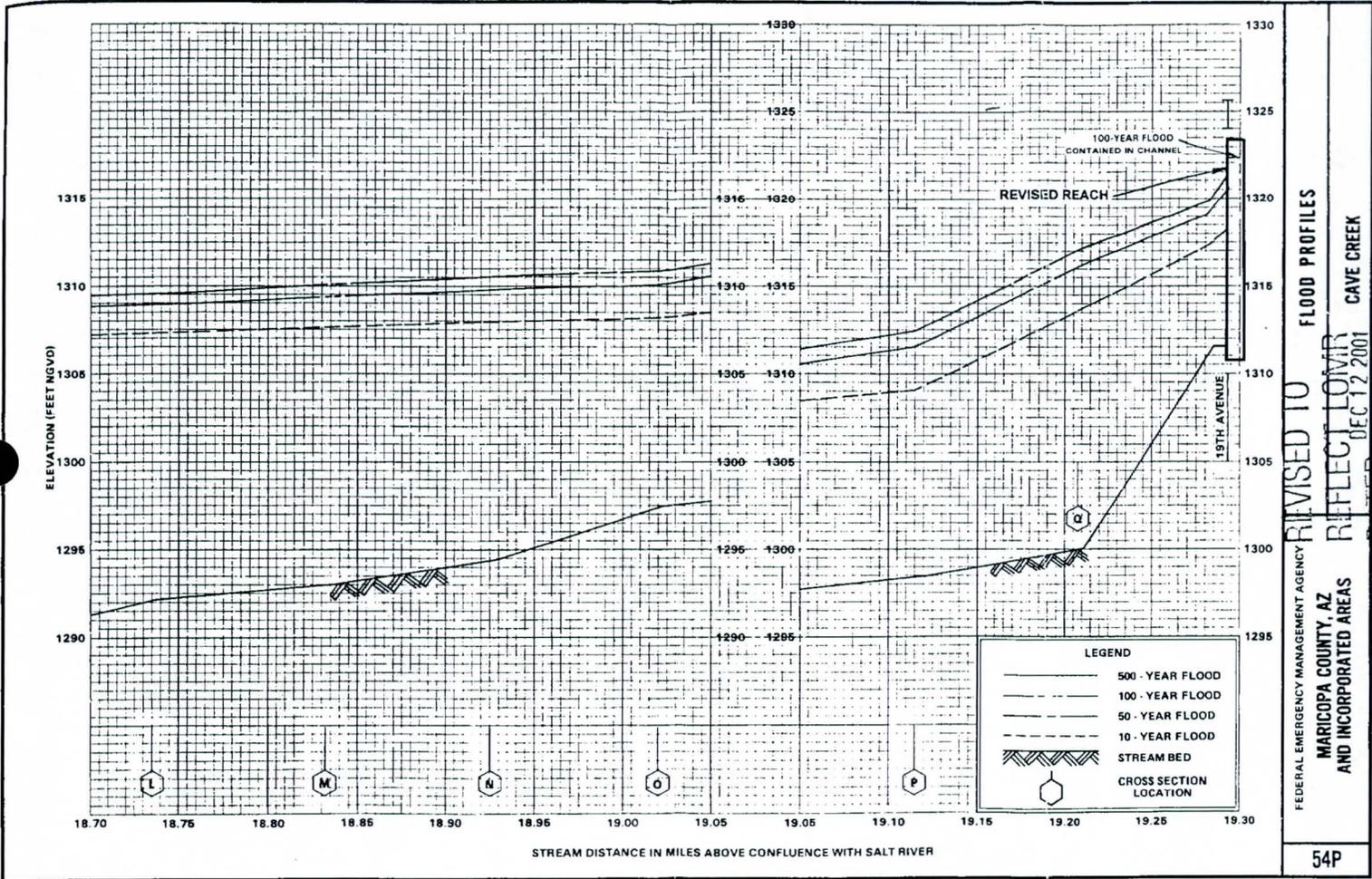
REVISED DATA

¹Miles Above Confluence With Salt River

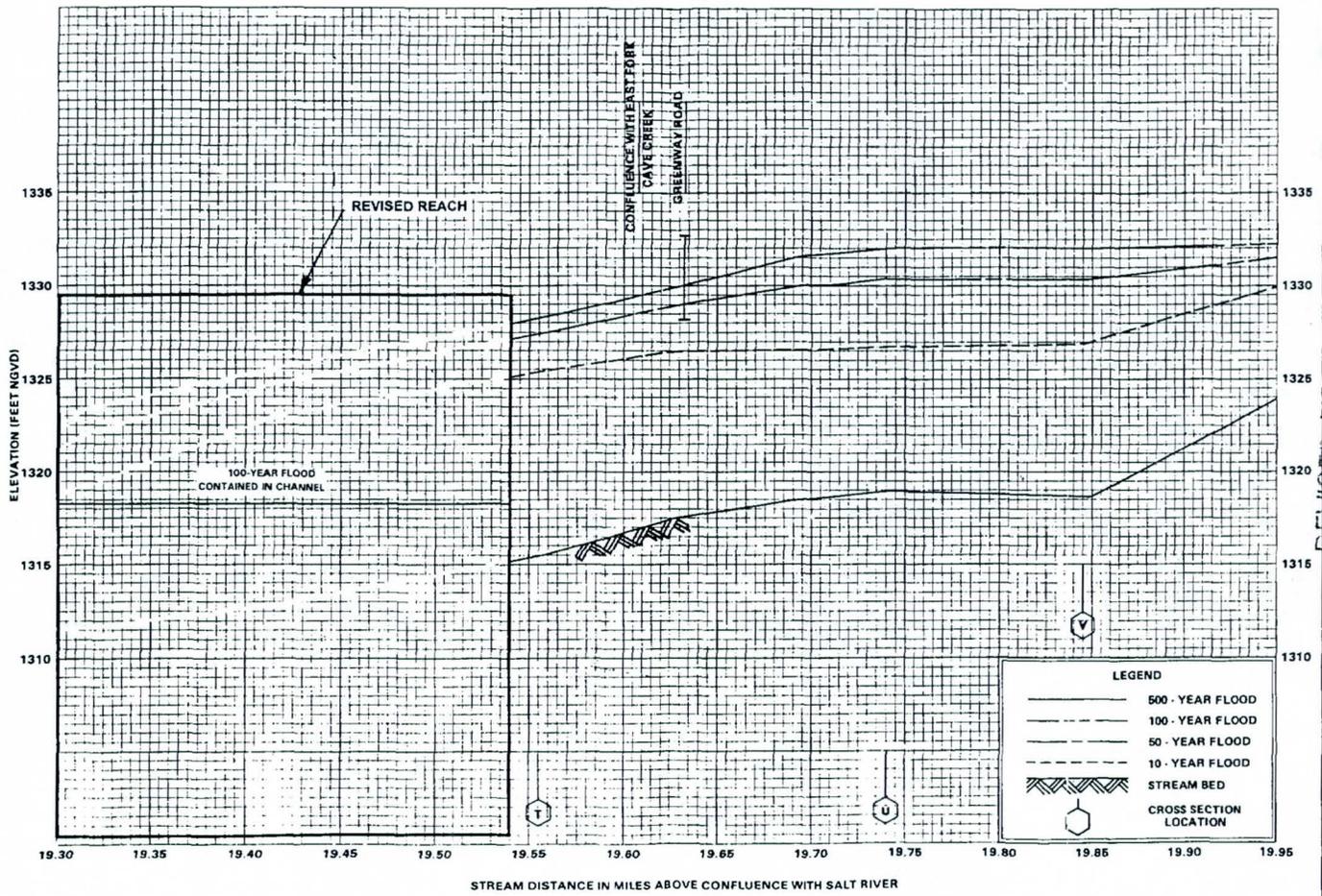
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FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

REVISED TO FLOODWAY DATA
REFLECT LOMR
CAVE CREEK WASH
DATED DEC 12 2001



FEDERAL EMERGENCY MANAGEMENT AGENCY
 MARICOPA COUNTY, AZ
 AND INCORPORATED AREAS
 FLOOD PROFILES
 CAVE CREEK
 REFLECT LOW RIVER
 DEC 12 2001



FEDERAL EMERGENCY MANAGEMENT AGENCY
 MARICOPA COUNTY, AZ
 AND INCORPORATED AREAS
 REVISION TO FLOOD PROFILES
 REFLECT LOWIR
 DATE DEC 12 2001
 CAVE CREEK

A.2.5.f: Technical Backup Excerpts from the LOMR (01-09-562P) Submittal

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1*****
* HEC-2 WATER SURFACE PROFILES *
* *
* Version 4.6.2; May 1991 *
* *
* RUN DATE 20NOV01 TIME 14:17:29 *
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*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET, SUITE D *
* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104 *
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20NOV01 14:17:29

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THIS RUN EXECUTED 20NOV01 14:17:29

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*****
HEC-2 WATER SURFACE PROFILES
Version 4.6.2; May 1991
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T1 Cave Creek Wash Floodplain Delineation Study at Greenway and East of
T2 19th Avenue. This Study Area Is Part of a Previous FEMA Floodplain
Delineation Study. This Model Is Adopted from the HEC-2 Model for
that Study with Design Geometric Data. Bottom Width = 90 ft,
Side Slope = 1:1, Bank Protection - Gabion Baskets (3X1.5),
"n" - Values = 0.035, 0.035, 0.035. WPA, Oct. 1998.

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MBJ REVISED THE CLOMR MODEL DESIGN.DAT TO INCLUDE AS-BUILT INVERT AND BANK
ELEVATIONS. FILENAME RDESIGN.DAT. NOVEMBER 16, 2001.
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T3 Cave Creek @ Greenway
File Location: W:\97660-Cavegren\NewHEC2\Fianl\Design.dat

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The Following Is the Original Model Comments.

MIDDLE CAVE CREEK FLOODPLAIN DELINEATION STUDY, ACDC TO DAM
FLOOD CONTROL DISTRICT OF MARICOPA CO. 1989 BY BURGESS & NIPLE
CAVE CREEK WASH NATURAL 100-YR J. MISCHLER

CAVE BUTTE DAM CONTROLS DISCHARGES UP TO THE 100 YEAR FLOOD.
ABOVE THE 100 YEAR FLOOD, THE EMERGENCY SPILLWAY WILL PASS FLOWS.
AS THE EFFORT TO COMPUTE 500 YEAR HYDROLOGY (WHICH WOULD REQUIRE
ANALYSIS OF THE ENTIRE WATERSHED ABOVE THE DAM) IS NOT JUSTIFIED
BY THE VALUE OF 500 YEAR FLOODPLAIN INFORMATION, THE FLOOD CONTROL
DISTRICT HAS BEEN GRANTED PERMISSION BY FEMA TO DELETE THE 500 YEAR
FLOOD FROM THE RESTUDY OF CAVE CREEK WASH. ONLY THE WATERSHED BELOW
THE DAM HAS BEEN CONSIDERED FOR HYDROLOGIC COMPUTATIONS OF THE 10, 50,
AND 100 YEAR FLOODS.

FLOODWAY RUN FROM SEDIMENT BASIN TO CAVE BUTTE DAM.

FOR SECTIONS 15.310 TO 16.971, REFER TO A SEPARATE SUPERCRITICAL
RUN FOR THE CORPS OF ENGINEERS' CONCRETE LINED CHANNEL. (NATURAL PROF)

FLOW IS WITHIN THE CORPS OF ENGINEER'S CHANNEL, SEDIMENT BASIN, OR
BROAD CRESTED WEIR INLET FROM RM15.015 TO 17.492, THEREFORE NO FLOODWAY
IS RUN FOR THIS REACH.

FILE LAST MODIFIED 1/26/90 MODIFIED BY MBJ ON NOVEMBER 16, 2001

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PAGE 2

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2.							1309.68	
J2	NPROF	IPL0T	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1.		-1.							15.
J3	38.	42.	1.	53.	54.	4.	8.	43.	10.	51.
J3	46	40.	41.		110.		200.			

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

QT	2.	15400.	15400.							
NC	0.035	0.035	0.035	0.1	0.3					
ET			4.1	9883.2	10111.7					
X1	18.734	19.	9938.	10062.	490.	500.	496.			
GR	1320.7	9713.	1316.3	9762.	1316.6	9809.	1319.2	9819.	1317.9	9841.
GR	1308.7	9888.	1298.6	9938.	1293.4	9971.	1294.2	9981.	1292.4	9992.
GR	1294.5	10000.	1294.4	10025.	1300.8	10062.	1309.	10094.	1307.6	10104.
GR	1312.9	10124.	1314.	10143.	1317.1	10178.	1319.9	10201.		
ET			4.1	9891.8	10107.					
X1	18.832	21.	9929.	10046.	480.	540.	517.			
GR	1326.2	9779.	1328.	9788.	1320.6	9826.	1316.	9853.	1312.5	9880.
GR	1302.8	9929.	1296.1	9960.	1293.5	9982.	1293.2	10000.	1293.2	10005.
GR	1294.8	10008.	1295.5	10027.	1297.1	10046.	1307.7	10095.	1314.1	10128.
GR	1314.1	10141.	1317.1	10187.	1320.3	10221.	1319.9	10247.	1318.6	10271.
GR	1319.2	10278.								
ET			4.1	9887.7	10087.5					
X1	18.925	14.	9941.	10048.	480.	500.	491.			
GR	1329.1	9741.	1315.9	9866.	1297.6	9941.	1297.3	9960.	1295.3	9989.
GR	1295.	10000.	1296.1	10006.	1295.4	10022.	1294.6	10025.	1296.3	10034.
GR	1300.	10048.	1310.5	10087.	1320.1	10132.	1321.3	10161.		
ET			4.1	9866.3	10038.5					
X1	19.018	20.	9903.	10030.	460.	520.	491.			
GR	1331.	9681.	1321.2	9775.	1313.9	9847.	1305.1	9903.	1298.1	9930.
GR	1298.	9948.	1298.1	9957.	1297.6	9974.	1299.	10000.	1308.4	10030.
GR	1325.3	10088.	1327.	10101.	1325.5	10109.	1330.2	10118.	1330.9	10124.
GR	1327.	10145.	1326.8	10211.	1328.8	10218.	1332.6	10260.	1331.8	10268.

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ET			4.1	9942.1	10061.9					
X1	19.117	10.	9973.	10026.	490.	560.	523.			
GR	1333.9	9803.	1331.8	9872.	1323.	9908.	1302.9	9973.	1299.2	9997.
GR	1298.7	10000.	1298.6	10010.	1301.5	10026.	1328.9	10116.	1333.	10144.
ET			4.1	9923.1	10081.					
X1	19.210	16.	9945.	10060.	500.	490.	491.			
GR	1333.2	9669.	1330.6	9853.	1328.7	9874.	1312.	9945.	1310.	9954.

ET			4.1	9953.	10038.					
X1	19.742	13.	9948.	10042.	80.	470.	269.			
GR	1335.7	9834.	1335.1	9893.	1333.4	9922.	1331.8	9937.	1331.6	9948.
GR	1319.1	9967.	1319.2	10000.	1319.7	10017.	1319.7	10027.	1331.	10042.
GR	1339.2	10055.	1337.7	10060.	1338.8	10100.				
NC	0.035	0.035	0.035	0.1	0.3					
ET			4.1	9957.	10043.					
X1	19.847	22.	9929.	10062.	570.	520.	554.			
GR	1339.8	9621.	1338.7	9726.	1341.6	9738.	1338.8	9759.	1339.	9806.
GR	1337.7	9915.	1336.1	9921.	1336.3	9929.	1320.2	9974.	1318.8	9989.
GR	1320.8	10000.	1320.5	10017.	1321.3	10023.	1328.8	10040.	1335.8	10062.
GR	1336.1	10070.	1336.6	10084.	1335.8	10150.	1336.	10160.	1338.3	10175.
GR	1339.2	10195.	1339.2	10198.						
ET			4.1	9958.	10031.					
X1	19.960	24.	9958.	10031.	640.	560.	597.			
GR	1340.4	9544.	1339.1	9638.	1336.7	9736.	1337.2	9768.	1338.2	9807.
GR	1338.9	9836.	1338.4	9908.	1340.1	9911.	1337.7	9917.	1339.1	9924.
GR	1337.2	9935.	1330.	9958.	1327.8	9964.	1326.1	9977.	1324.6	9990.
GR	1324.7	10000.	1326.1	10008.	1326.8	10023.	1330.	10031.	1340.6	10059.
GR	1340.8	10072.	1340.7	10099.	1340.1	10194.	1339.9	10251.		

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PAGE 6

SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

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CCHV=	.100	CEHV=	.300						
*SECNO	18.734								
	18.734	17.28	1309.68	.00	1309.68	1310.52	.84	.00	1298.60
	15400.0	1314.9	13485.5	599.6	304.0	1748.0	174.9	.0	1300.80
	.00	4.33	7.71	3.43	.035	.035	.035	.000	1292.40
	.000984	490.	496.	500.	0	0	0	.00	228.86
									10111.85

FLOW DISTRIBUTION FOR SECNO= 18.73 CWSEL= 1309.68

STA= 9883. 9888. 9938. 10062. 10094. 10104. 10112.

GR	1303.8	9978.	1301.4	9991.	1300.2	10000.	1301.3	10010.	1303.4	10026.
GR	1312.	10060.	1321.3	10098.	1327.	10127.	1332.5	10166.	1335.3	10191.
GR	1335.6	10192.								

19TH AVENUE (SPECIAL BRIDGE)

NC	0.035	0.035	0.035	0.3	0.5					
QT	2.	14600.	14600.							
X1	19.283	12.	9948.	10057.	390.	390.	386.		11.2	
X3	10.									
GR	1333.2	9669.	1330.6	9853.	1328.7	9874.	1312.	1324.	1324.	
GR	1300.5	10057.	1312.	10060.	1321.3	10098.	1327.	9945.	1300.5	9948.
GR	1335.3	10191.	1335.6	10192.				10127.	1332.5	10166.
SB	0.9	1.56	3.							
X1	19.299				109.	4.5	1304.	0.	1311.7	1311.7
					86.	86.	86.			

ELTRD IS 1324.5+2HV = 1326.5

X2			1.	1324.2	1326.5					
X3	10.									
BT	6.	9500.	1326.	0.	9650.	1324.5	0.	1325.	1325.	
BT	10000.	1325.7	0.	10275.	1324.9	0.	10460.	9855.	1325.3	0.
								1326.	0.	

MBJ REVISED THIS MODEL BY DISABLING THE ET CARD THAT PRECEDES CROSS SECTION 19

ET 10.41

NC	0.035	0.035	0.035	0.1	0.3					
X1	19.313	4.	65.3	155.3	75.	75.	75.			
GR	1326.0	50.	1311.83	65.3	1311.83	155.3	1324.12		170.6	
X1	19.349	4.	35.7	125.7	205.	175.	190.			
GR	1328	20.	1312.45	35.7	1312.45	125.7	1324.92		141.4	

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X1	19.387	4.	38.1	128.1	210.	190.	200.			
GR	1328.3	22.	1313.05	38.1	1313.05	128.1	1326.2		144.2	
X1	19.418	4.	37.6	127.6	185.	144.	164.			
GR	1329.1	22.	1313.5	37.6	1313.5	127.6	1326.71		143.2	

X1	19.443	4.	68.2	158.2	147.	122.	133.		
GR	1329.1	53.	1314.1	68.2	1314.1	158.2	1327.04	173.4	
X1	19.474	4.	70.7	160.7	160.	160.	160.		
GR	1327.6	56.	1314.4	70.7	1314.4	160.7	1326.57	175.4	
X1	19.505	4.	84.2	174.2	160.	175.	167.		
GR	1327.9	70.	1314.9	84.2	1314.9	174.2	1327.85	188.4	

SECTION 19.56 IS JUST DOWNSTREAM OF THE CONFLUENCE WITH THE EAST FORK. THIS SECTION IS USED TO BEGIN THE TRIBUTARY RUN FOR THE EAST FORK OF CAVE CREEK. THE CONFLUENCE OCCURS AT RM 19.608

X1	19.556	17.	9929.	10065.	262.	277.	270.		
GR	1346.1	9801.	1329.7	9902.	1329.7	9929.	1316.5	9950.	1316.8
GR	1315.6	10000.	1315.6	10008.	1316.6	10026.	1316.4	10035.	1317.5
GR	1330.6	10065.	1330.8	10099.	1330.5	10146.	1330.2	10195.	1330.9
GR	1331.2	10223.	1332.1	10301.					10208.

GREENWAY BRIDGE (SPECIAL BRIDGE). LARGE SKEW ACCOUNTED FOR PRIOR TO DATA INPUT BY ADJUSTING BWC ETC. DUE TO COMPLEX CHANNEL GEOMETRY DOWNSTREAM AT THE CONFLUENCE WITH THE EAST FORK, IT WAS MOST APPROPRIATE TO USE THE UPSTREAM SECTION, REPEATED AT THE DOWNSTREAM FACE. GR CARDS FROM SECTION 19.742 ARE REPEATED FOR 19.625 WITH PSXECE = -1.7

QT	2.	5700.	5700.						
NC	0.035	0.035	0.015	0.3	0.5				
X1	19.625	11.	9965.	10025.	580.	70.	364.		-1.7
X3	10.							1332.	1332.
GR	1335.7	9834.	1335.1	9893.	1333.4	9922.	1331.8	9937.	1331.6
GR	1319.3	9965.	1319.3	10025.	1331.	10042.	1339.2	10055.	1337.7
GR	1338.8	10100.							10060.
SB	1.05	1.56	3.	100.	60.	2.	564.	0.	1318.6
X1	19.691				330.	430.	350.		1.0

ELTRD IS 1332.8+2HV = 1334.8

X2			1.	1328.3	1334.8				
X3	10.							1333.	1333.

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ET			4.1	9953.	10038.					
X1	19.742	13.	9948.	10042.	80.	470.	269.			
GR	1335.7	9834.	1335.1	9893.	1333.4	9922.	1331.8	9937.	1331.6	9948.
GR	1319.1	9967.	1319.2	10000.	1319.7	10017.	1319.7	10027.	1331.	10042.
GR	1339.2	10055.	1337.7	10060.	1338.8	10100.				
NC	0.035	0.035	0.035	0.1	0.3					
ET			4.1	9957.	10043.					
X1	19.847	22.	9929.	10062.	570.	520.	554.			
GR	1339.8	9621.	1338.7	9726.	1341.6	9738.	1338.8	9759.	1339.	9806.
GR	1337.7	9915.	1336.1	9921.	1336.3	9929.	1320.2	9974.	1318.8	9989.
GR	1320.8	10000.	1320.5	10017.	1321.3	10023.	1328.8	10040.	1335.8	10062.
GR	1336.1	10070.	1336.6	10084.	1335.8	10150.	1336.	10160.	1338.3	10175.
GR	1339.2	10195.	1339.2	10198.						
ET			4.1	9958.	10031.					
X1	19.960	24.	9958.	10031.	640.	560.	597.			
GR	1340.4	9544.	1339.1	9638.	1336.7	9736.	1337.2	9768.	1338.2	9807.
GR	1338.9	9836.	1338.4	9908.	1340.1	9911.	1337.7	9917.	1339.1	9924.
GR	1337.2	9935.	1330.	9958.	1327.8	9964.	1326.1	9977.	1324.6	9990.
GR	1324.7	10000.	1326.1	10008.	1326.8	10023.	1330.	10031.	1340.6	10059.
GR	1340.8	10072.	1340.7	10099.	1340.1	10194.	1339.9	10251.		

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

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CCHV=	.100	CEHV=	.300						
*SECNO	18.734								
	18.734	17.28	1309.68	.00	1309.68	1310.52	.84	.00	1298.60
	15400.0	1314.9	13485.5	599.6	304.0	1748.0	174.9	.0	1300.80
	.00	4.33	7.71	3.43	.035	.035	.035	.000	1292.40
	.000984	490.	496.	500.	0	0	0	.00	228.86
									10111.85

FLOW DISTRIBUTION FOR SECNO= 18.73 CWSEL= 1309.68

STA= 9883. 9888. 9938. 10062. 10094. 10104. 10112.

PER Q=	.0	8.5	87.6	3.7	.1	.1
AREA=	2.5	301.5	1748.0	153.0	13.8	8.2
VEL=	.8	4.4	7.7	3.7	1.6	1.3
DEPTH=	.5	6.0	14.1	4.8	1.4	1.0

*SECNO 18.832

18.832	16.98	1310.18	.00	.00	1311.04	.85	.51	.00	1302.80
15400.0	437.0	12953.3	2009.7	137.7	1657.2	397.3	26.2	2.6	1297.10
.02	3.17	7.82	5.06	.035	.035	.035	.000	1293.20	9891.70
.001004	480.	517.	540.	0	0	0	.00	216.11	10107.81

FLOW DISTRIBUTION FOR SECNO= 18.83 CWSEL= 1310.18

STA=	9892.	9929.	10046.	10095.	10108.
PER Q=	2.8	84.1	12.9	.2	
AREA=	137.7	1657.2	381.4	15.9	
VEL=	3.2	7.8	5.2	1.5	
DEPTH=	3.7	14.2	7.8	1.2	

*SECNO 18.925

18.925	16.03	1310.63	.00	.00	1311.60	.97	.53	.03	1297.60
15400.0	1711.4	12783.5	905.0	348.0	1523.3	210.0	50.3	5.0	1300.00
.04	4.92	8.39	4.31	.035	.035	.035	.000	1294.60	9887.59
.001145	480.	491.	500.	2	0	0	.00	200.03	10087.62

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 18.92 CWSEL= 1310.63

STA=	9888.	9941.	10048.	10087.
PER Q=	11.1	83.0	5.9	
AREA=	348.0	1523.3	209.9	
VEL=	4.9	8.4	4.3	
DEPTH=	6.5	14.2	5.4	

*SECNO 19.018

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .63

19.018	13.29	1310.89	.00	.00	1312.69	1.80	.84	.25	1305.10
15400.0	488.9	14883.8	27.3	106.7	1362.4	10.6	70.3	7.1	1308.40
.05	4.58	10.92	2.56	.035	.035	.035	.000	1297.60	9866.15
.002868	460.	491.	520.	2	0	0	.00	172.40	10038.55

FLOW DISTRIBUTION FOR SECNO= 19.02 CWSEL= 1310.89

STA=	9866.	9903.	10030.	10039.
PER Q=	3.2	96.6	.2	
AREA=	106.7	1362.4	10.6	
VEL=	4.6	10.9	2.6	
DEPTH=	2.9	10.7	1.2	

*SECNO 19.117

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL, CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

19.117	13.89	1312.49	1312.49	.00	1316.85	4.37	2.18	.77	1302.90
15400.0	1414.3	11917.6	2068.1	148.6	652.5	198.3	85.1	8.8	1301.50
.06	9.52	18.27	10.43	.035	.035	.035	.000	1298.60	9942.00
.006606	490.	523.	560.	20	8	0	.00	120.09	10062.09

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 19.12 CWSEL= 1312.49

STA=	9942.	9973.	10026.	10062.
PER Q=	9.2	77.4	13.4	
AREA=	148.6	652.5	198.3	
VEL=	9.5	18.3	10.4	
DEPTH=	4.8	12.3	5.5	

*SECNO 19.210

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.61

19.210	16.99	1317.19	.00	.00	1319.01	1.82	1.90	.25	1312.00
15400.0	227.0	14955.2	217.8	57.2	1364.2	55.0	99.1	10.4	1312.00
.07	3.97	10.96	3.96	.035	.035	.035	.000	1300.20	9922.94
.002538	500.	491.	490.	3	0	0	.00	158.26	10081.20

FLOW DISTRIBUTION FOR SECNO= 19.21 CWSEL= 1317.19

STA= 9923. 9945. 10060. 10081.
PER Q= 1.5 97.1 1.4
AREA= 57.2 1364.2 55.0
VEL= 4.0 11.0 4.0
DEPTH= 2.6 11.9 2.6

CCHV= .300 CEHV= .500

*SECNO 19.283

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL, CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1324.00 ELREA= 1324.00

19.283	8.22	1319.92	1319.92	.00	1324.04	4.12	1.64	1.15	1311.70
14600.0	.0	14600.0	.0	.0	896.0	.0	109.6	11.6	1311.70
.08	.00	16.29	.00	.000	.035	.000	.000	1311.70	9948.00
.008876	390.	386.	390.	20	11	0	.00	109.00	10057.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 19.28 CWSEL= 1319.92

STA= 9948. 10057.
PER Q= 100.0
AREA= 896.0

VEL= 16.3
 DEPTH= 8.2

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1318.71 , NOT 1319.92 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	3.00	.00	109.00	4.50	1304.00	.00	1311.70	1311.70

*SECNO 19.299

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.47

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1320.16 BRIDGE VELOCITY= 16.51 CALCULATED CHANNEL AREA= 884.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1322.96	1324.65	.00	0.	14600.	1304.	1306.	1324.20	1326.50	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1325.00 ELREA= 1325.00

19.299	10.36	1322.06	.00	.00	1324.65	2.60	.61	.00	1311.70
14600.0	.0	14600.0	.0	.0	1128.7	.0	111.6	11.8	1311.70
.08	.00	12.94	.00	.000	.035	.000	.000	1311.70	9948.00
.004112	86.	86.	86.	0	0	0	.00	109.00	10057.00

FLOW DISTRIBUTION FOR SECNO= 19.30 CWSEL= 1322.06

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	QLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA= 9948. 10057.
 PER Q= 100.0

AREA= 1128.7
 VEL= 12.9
 DEPTH= 10.4

CCHV= .100 CEHV= .300
 *SECNO 19.313

3301 HV CHANGED MORE THAN HVINS

19.313	10.03	1321.86	.00	.00	1325.26	3.39	.37	.24	1311.83
14600.0	421.7	13672.0	506.3	54.4	903.1	62.7	113.5	12.0	1311.83
.08	7.76	15.14	8.08	.035	.035	.035	.000	1311.83	54.47
.005874	75.	75.	75.	3	0	0	.00	113.33	167.79

FLOW DISTRIBUTION FOR SECNO= 19.31 CWSEL= 1321.86

STA=	54.	65.	155.	168.
PER Q=	2.9	93.6	3.5	
AREA=	54.4	903.1	62.7	
VEL=	7.8	15.1	8.1	
DEPTH=	5.0	10.0	5.0	

*SECNO 19.349

3301 HV CHANGED MORE THAN HVINS

19.349	11.04	1323.49	.00	.00	1326.26	2.78	.94	.06	1312.45
14600.0	422.7	13615.0	562.4	61.5	993.1	76.6	118.2	12.5	1312.45
.09	6.88	13.71	7.34	.035	.035	.035	.000	1312.45	24.56
.004244	205.	190.	175.	3	0	0	.00	115.03	139.59

FLOW DISTRIBUTION FOR SECNO= 19.35 CWSEL= 1323.49

STA=	25.	36.	126.	140.
PER Q=	2.9	93.3	3.9	
AREA=	61.5	993.1	76.6	
VEL=	6.9	13.7	7.3	
DEPTH=	5.5	11.0	5.5	

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 19.387

19.387	11.49	1324.54	.00	.00	1327.08	2.54	.79	.02	1313.05
14600.0	465.2	13571.5	563.3	69.6	1033.7	80.8	123.5	13.0	1313.05
.09	6.68	13.13	6.97	.035	.035	.035	.000	1313.05	25.97
.003689	210.	200.	190.	2	0	0	.00	116.19	142.16

FLOW DISTRIBUTION FOR SECNO= 19.39

CWSEL= 1324.54

STA=	26.	38.	128.	142.
PER Q=	3.2	93.0	3.9	
AREA=	69.6	1033.7	80.8	
VEL=	6.7	13.1	7.0	
DEPTH=	5.7	11.5	5.7	

*SECNO 19.418

19.418	11.70	1325.20	.00	.00	1327.67	2.47	.59	.01	1313.50
14600.0	442.1	13608.6	549.3	68.4	1052.5	80.8	128.0	13.4	1313.50
.09	6.46	12.93	6.80	.035	.035	.035	.000	1313.50	25.91
.003493	185.	164.	144.	1	0	0	.00	115.51	141.41

FLOW DISTRIBUTION FOR SECNO= 19.42

CWSEL= 1325.20

STA=	26.	38.	128.	141.
PER Q=	3.0	93.2	3.8	
AREA=	68.4	1052.5	80.8	
VEL=	6.5	12.9	6.8	
DEPTH=	5.8	11.7	5.8	

*SECNO 19.443

19.443	11.53	1325.63	.00	.00	1328.17	2.54	.48	.02	1314.10
14600.0	443.8	13618.1	538.1	67.3	1037.4	78.0	131.6	13.8	1314.10
.10	6.59	13.13	6.90	.035	.035	.035	.000	1314.10	56.52
.003670	147.	133.	122.	2	0	0	.00	115.22	171.74

FLOW DISTRIBUTION FOR SECNO= 19.44

CWSEL= 1325.63

STA=	57.	68.	158.	172.
PER Q=	3.0	93.3	3.7	
AREA=	67.3	1037.4	78.0	
VEL=	6.6	13.1	6.9	
DEPTH=	5.8	11.5	5.8	

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 19.474

19.474	12.07	1326.47	.00	.00	1328.74	2.27	.54	.03	1314.40
14600.0	521.6	13499.5	578.9	81.2	1086.6	88.0	136.1	14.2	1314.40
.10	6.43	12.42	6.58	.035	.035	.035	.000	1314.40	57.25
.003091	160.	160.	160.	2	0	0	.00	118.03	175.28

FLOW DISTRIBUTION FOR SECNO=

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Cave Creek @ Greenway

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
18.734	.00	.00	.00	1292.40	15400.00	1309.68	.00	1310.52	9.84	7.71	2226.86	4908.94
18.734	.00	.00	.00	1292.40	15400.00	1309.68	.00	1310.52	9.84	7.71	2226.85	4908.99
18.832	517.00	.00	.00	1293.20	15400.00	1310.18	.00	1311.04	10.04	7.82	2192.21	4859.79
18.832	517.00	.00	.00	1293.20	15400.00	1310.18	.00	1311.04	10.04	7.82	2192.14	4860.21
18.925	491.00	.00	.00	1294.60	15400.00	1310.63	.00	1311.60	11.45	8.39	2081.32	4550.59
18.925	491.00	.00	.00	1294.60	15400.00	1310.63	.00	1311.60	11.45	8.39	2081.27	4550.97
* 19.018	491.00	.00	.00	1297.60	15400.00	1310.89	.00	1312.69	28.68	10.92	1479.73	2875.51
* 19.018	491.00	.00	.00	1297.60	15400.00	1310.89	.00	1312.69	28.68	10.92	1479.77	2875.85
* 19.117	523.00	.00	.00	1298.60	15400.00	1312.49	1312.49	1316.85	66.06	18.27	999.32	1894.70
* 19.117	523.00	.00	.00	1298.60	15400.00	1312.68	1312.68	1316.84	61.69	17.84	1022.94	1960.69
* 19.210	491.00	.00	.00	1300.20	15400.00	1317.19	.00	1319.01	25.38	10.96	1476.38	3056.89
* 19.210	491.00	.00	.00	1300.20	15400.00	1317.10	.00	1318.95	26.10	11.06	1461.75	3014.20
* 19.283	386.00	.00	.00	1311.70	14600.00	1319.92	1319.92	1324.04	88.76	16.29	896.04	1549.69
* 19.283	386.00	.00	.00	1311.70	14600.00	1319.92	1319.92	1324.04	88.86	16.30	895.75	1548.85
* 19.299	86.00	1326.50	1324.20	1311.70	14600.00	1322.06	.00	1324.65	41.12	12.94	1128.71	2276.85
* 19.299	86.00	1326.50	1324.20	1311.70	14600.00	1322.06	.00	1324.65	41.12	12.94	1128.71	2276.85
19.313	75.00	.00	.00	1311.83	14600.00	1321.86	.00	1325.26	58.74	15.14	1020.10	1904.95
19.313	75.00	.00	.00	1311.83	14600.00	1321.86	.00	1325.26	58.75	15.14	1020.08	1904.87
19.349	190.00	.00	.00	1312.45	14600.00	1323.49	.00	1326.26	42.44	13.71	1131.20	2241.16
19.349	190.00	.00	.00	1312.45	14600.00	1323.49	.00	1326.26	42.44	13.71	1131.18	2241.11
19.387	200.00	.00	.00	1313.05	14600.00	1324.54	.00	1327.08	36.89	13.13	1184.14	2403.81
19.387	200.00	.00	.00	1313.05	14600.00	1324.54	.00	1327.08	36.88	13.13	1184.21	2404.03

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
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XLCH

ELMIN

19.418	164.00	.00	.00	1313.50	14600.00	1325.20	.00	1327.67	34.93	12.93	1201.68	2470.34
19.418	164.00	.00	.00	1313.50	14600.00	1325.20	.00	1327.67	34.93	12.93	1201.70	2470.43
19.443	133.00	.00	.00	1314.10	14600.00	1325.63	.00	1328.17	36.70	13.13	1182.80	2409.89
19.443	133.00	.00	.00	1314.10	14600.00	1325.63	.00	1328.17	36.70	13.13	1182.80	2409.89
19.474	160.00	.00	.00	1314.40	14600.00	1326.47	.00	1328.74	30.91	12.42	1255.80	2626.11
19.474	160.00	.00	.00	1314.40	14600.00	1326.47	.00	1328.74	30.91	12.42	1255.80	2626.11
19.505	167.00	.00	.00	1314.90	14600.00	1326.96	.00	1329.27	31.33	12.50	1245.14	2608.38
19.505	167.00	.00	.00	1314.90	14600.00	1326.96	.00	1329.27	31.33	12.50	1245.14	2608.38
19.556	270.00	.00	.00	1315.60	14600.00	1328.26	.00	1330.18	33.24	11.10	1315.69	2532.47
19.556	270.00	.00	.00	1315.60	14600.00	1328.26	.00	1330.18	33.24	11.10	1315.69	2532.47
* 19.625	364.00	.00	.00	1317.60	5700.00	1329.91	.00	1330.84	2.13	7.71	738.87	3903.68
* 19.625	364.00	.00	.00	1317.60	5700.00	1329.91	.00	1330.84	2.13	7.71	738.87	3903.68
19.691	350.00	1334.80	1328.30	1318.60	5700.00	1331.55	.00	1332.39	1.80	7.33	777.30	4247.91
19.691	350.00	1334.80	1328.30	1318.60	5700.00	1331.55	.00	1332.39	1.80	7.33	777.30	4247.91
19.742	269.00	.00	.00	1319.10	5700.00	1332.01	.00	1332.53	1.63	5.77	992.00	4459.16
19.742	269.00	.00	.00	1319.10	5700.00	1331.98	.00	1332.52	1.69	5.91	964.44	4382.14
* 19.847	554.00	.00	.00	1318.80	5700.00	1332.16	.00	1332.74	12.88	6.15	927.37	1588.47
* 19.847	554.00	.00	.00	1318.80	5700.00	1332.09	.00	1332.76	13.15	6.60	863.31	1572.03
* 19.960	597.00	.00	.00	1324.60	5700.00	1332.39	1332.22	1334.93	86.10	12.85	454.71	614.29
* 19.960	597.00	.00	.00	1324.60	5700.00	1332.39	.00	1335.02	96.23	13.03	437.60	581.07

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Cave Creek @ Greenway

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
18.734	15400.00	1309.68	.00	.00	.00	228.86	.00
18.734	15400.00	1309.68	.00	.00	.00	228.50	.00
18.832	15400.00	1310.18	.00	.50	.00	216.11	517.00
18.832	15400.00	1310.18	.00	.50	.00	215.20	517.00
18.925	15400.00	1310.63	.00	.45	.00	200.03	491.00
18.925	15400.00	1310.63	.00	.45	.00	199.80	491.00

*	19.018	15400.00	1310.89	.00	.26	.00	172.40	491.00
*	19.018	15400.00	1310.89	.00	.26	.00	172.20	491.00
*	19.117	15400.00	1312.49	.00	1.60	.00	120.09	523.00
*	19.117	15400.00	1312.68	.20	1.79	.20	119.80	523.00
*	19.210	15400.00	1317.19	.00	4.70	.00	158.26	491.00
*	19.210	15400.00	1317.10	-.09	4.41	-.09	157.48	491.00
*	19.283	14600.00	1319.92	.00	2.73	.00	109.00	386.00
*	19.283	14600.00	1319.92	.00	2.82	.00	109.00	386.00
*	19.299	14600.00	1322.06	.00	2.13	.00	109.00	86.00
*	19.299	14600.00	1322.06	.00	2.14	.00	109.00	86.00
	19.313	14600.00	1321.86	.00	-1.19	.00	113.33	75.00
	19.313	14600.00	1321.86	.00	-1.19	.00	113.33	75.00
	19.349	14600.00	1323.49	.00	1.62	.00	115.03	190.00
	19.349	14600.00	1323.49	.00	1.62	.00	115.03	190.00
	19.387	14600.00	1324.54	.00	1.05	.00	116.19	200.00
	19.387	14600.00	1324.54	.00	1.05	.00	116.19	200.00
	19.418	14600.00	1325.20	.00	.67	.00	115.51	164.00
	19.418	14600.00	1325.20	.00	.67	.00	115.51	164.00
	19.443	14600.00	1325.63	.00	.42	.00	115.22	133.00
	19.443	14600.00	1325.63	.00	.42	.00	115.22	133.00
	19.474	14600.00	1326.47	.00	.84	.00	118.03	160.00
	19.474	14600.00	1326.47	.00	.84	.00	118.03	160.00
	19.505	14600.00	1326.96	.00	.49	.00	116.41	167.00
	19.505	14600.00	1326.96	.00	.49	.00	116.41	167.00
	19.556	14600.00	1328.26	.00	1.30	.00	129.82	270.00
	19.556	14600.00	1328.26	.00	1.30	.00	129.82	270.00

*ADDED
Simplified
Channel proposed*

*Channel compared with existing
11.59*

*Channel compared with
11.45 12.313*

10.66

10.05

10.17

10.26

10.10

10.36

10.5 Max INCREASE

10.39 14.412

*10.5 Max INCREASE
19.556
Channel
in program
channel*

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
* 19.625	5700.00	1329.91	.00	1.65	.00	60.00	364.00
* 19.625	5700.00	1329.91	.00	1.65	.00	60.00	364.00
19.691	5700.00	1331.55	.00	1.64	.00	60.00	350.00
19.691	5700.00	1331.55	.00	1.64	.00	60.00	350.00

10.25

10.29

*10.2
Channel
in program
19.625
channel*

*10.00
19.691
Channel
in program*

WARNING SECNO= 19.960 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 19.960 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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FLOODWAY DATA, Cave Creek @ Greenway
 PROFILE NO. 2

STATION	FLOODWAY		MEAN VELOCITY	WATER SURFACE ELEVATION		
	WIDTH	SECTION AREA		WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
18.734	228.	2227.	6.9	1309.7	1309.7	.0
18.832	215.	2192.	7.0	1310.2	1310.2	.0
18.925	200.	2081.	7.4	1310.6	1310.6	.0
19.018	172.	1480.	10.4	1310.9	1310.9	.0
19.117	120.	1023.	15.1	1312.7	1312.5	.2
19.210	157.	1462.	10.5	1317.1	1317.2	-.1
19.283	109.	896.	16.3	1319.9	1319.9	.0
19.299	109.	1129.	12.9	1322.1	1322.1	.0
19.313	113.	1020.	14.3	1321.9	1321.9	.0
19.349	115.	1131.	12.9	1323.5	1323.5	.0
19.387	116.	1184.	12.3	1324.5	1324.5	.0
19.418	116.	1202.	12.1	1325.2	1325.2	.0
19.443	115.	1183.	12.3	1325.6	1325.6	.0
19.474	118.	1256.	11.6	1326.5	1326.5	.0
19.505	116.	1245.	11.7	1327.0	1327.0	.0
19.556	130.	1316.	11.1	1328.3	1328.3	.0
19.625	60.	739.	7.7	1329.9	1329.9	.0
19.691	60.	777.	7.3	1331.6	1331.6	.0
19.742	85.	964.	5.9	1332.0	1332.0	.0
19.847	86.	863.	6.6	1332.1	1332.2	-.1
19.960	73.	438.	13.0	1332.4	1332.4	.0

	19.742	5700.00	1332.01 ^{10.00}	.00	.46	.00	108.58	269.00	10.27
	19.742	5700.00	1331.98	-.03	.43	-.03	85.00	269.00	
*	19.847	5700.00	1332.16 ^{10.00}	.00	.15	.00	109.98	554.00	10.26
*	19.847	5700.00	1332.09	-.07	.11	-.07	86.00	554.00	
*	19.960	5700.00	1332.39 ^{10.00}	.00	.23	.00	86.98	597.00	10.16
*	19.960	5700.00	1332.39	.00	.30	.00	73.00	597.00	

10.02 slightly out
10.02
10.00

1

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SUMMARY OF ERRORS AND SPECIAL NOTES

- WARNING SECNO= 19.018 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
- WARNING SECNO= 19.018 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

- CAUTION SECNO= 19.117 PROFILE= 1 CRITICAL DEPTH ASSUMED
- CAUTION SECNO= 19.117 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
- CAUTION SECNO= 19.117 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
- CAUTION SECNO= 19.117 PROFILE= 2 CRITICAL DEPTH ASSUMED
- CAUTION SECNO= 19.117 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
- CAUTION SECNO= 19.117 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

- WARNING SECNO= 19.210 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
- WARNING SECNO= 19.210 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

- CAUTION SECNO= 19.283 PROFILE= 1 CRITICAL DEPTH ASSUMED
- CAUTION SECNO= 19.283 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
- CAUTION SECNO= 19.283 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
- CAUTION SECNO= 19.283 PROFILE= 2 CRITICAL DEPTH ASSUMED
- CAUTION SECNO= 19.283 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
- CAUTION SECNO= 19.283 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

- CAUTION SECNO= 19.299 PROFILE= 1 HYDRAULIC JUMP D.S.
- WARNING SECNO= 19.299 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
- CAUTION SECNO= 19.299 PROFILE= 2 HYDRAULIC JUMP D.S.
- WARNING SECNO= 19.299 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

- WARNING SECNO= 19.625 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
- WARNING SECNO= 19.625 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

- WARNING SECNO= 19.847 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
- WARNING SECNO= 19.847 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 19.960 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 19.960 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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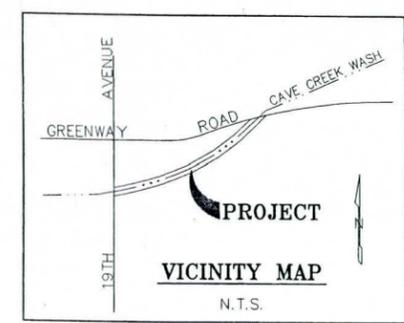
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FLOODWAY DATA, Cave Creek @ Greenway
 PROFILE NO. 2

STATION	----- FLOODWAY -----		WATER SURFACE ELEVATION			
	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
18.734	228.	2227.	6.9	1309.7	1309.7	.0
18.832	215.	2192.	7.0	1310.2	1310.2	.0
18.925	200.	2081.	7.4	1310.6	1310.6	.0
19.018	172.	1480.	10.4	1310.9	1310.9	.0
19.117	120.	1023.	15.1	1312.7	1312.5	.2
19.210	157.	1462.	10.5	1317.1	1317.2	-.1
19.283	109.	896.	16.3	1319.9	1319.9	.0
19.299	109.	1129.	12.9	1322.1	1322.1	.0
19.313	113.	1020.	14.3	1321.9	1321.9	.0
19.349	115.	1131.	12.9	1323.5	1323.5	.0
19.387	116.	1184.	12.3	1324.5	1324.5	.0
19.418	116.	1202.	12.1	1325.2	1325.2	.0
19.443	115.	1183.	12.3	1325.6	1325.6	.0
19.474	118.	1256.	11.6	1326.5	1326.5	.0
19.505	116.	1245.	11.7	1327.0	1327.0	.0
19.556	130.	1316.	11.1	1328.3	1328.3	.0
19.625	60.	739.	7.7	1329.9	1329.9	.0
19.691	60.	777.	7.3	1331.6	1331.6	.0
19.742	85.	964.	5.9	1332.0	1332.0	.0
19.847	86.	863.	6.6	1332.1	1332.2	-.1
19.960	73.	438.	13.0	1332.4	1332.4	.0

CAVE CREEK WASH CHANNELIZATION BANK PROTECTION PLAN SEC 19TH AVE. AT GREENWAY RD. CITY OF PHOENIX, ARIZONA



CITY GENERAL NOTES

- A GRADING PERMIT IS REQUIRED UNDER CHAPTER 32A OF THE PHOENIX CITY CODE.
- HAUL PERMITS, WHEN REQUIRED, MUST BE OBTAINED PRIOR TO OR CONCURRENTLY WITH THE GRADING AND DRAINAGE PERMIT.
- EXCAVATING CONTRACTOR MUST GIVE LOCATION FOR WASTING EXCESS EXCAVATION AND A LETTER FROM OWNER GIVING PERMISSION FOR DISPOSAL PRIOR TO STARTING ON-SITE CONSTRUCTION. IF EXCESS EXCAVATION EXCEEDS 100 CUBIC YARDS, THE DISPOSAL SITE WILL ALSO REQUIRE A GRADING AND DRAINAGE PERMIT.
- DEVELOPMENT SERVICES DEPARTMENT'S FIELD INSPECTION GROUP SHALL BE NOTIFIED 48 HOURS BEFORE ANY ON-SITE AND/OR OFF-SITE CONSTRUCTION BEGINS, TELEPHONE (602) 262-7811.
- MINIMUM FINISH FLOOR ELEVATIONS SHOWN ARE SAFE FROM THE 100 YEAR FLOOD OR PER MINIMUM SPECIFIED IN THE CITY OF PHOENIX STORM DRAIN DESIGN MANUAL, WHICHEVER IS GREATER.
- STAKING OF FINISHED FLOORS OR BUILDING PADS IS THE RESPONSIBILITY OF THE DEVELOPER AND HIS ENGINEER. THE OWNER'S ENGINEER SHALL SUBMIT ONE SEALED COPY OF THIS GRADING AND DRAINAGE PLAN DESIGNATED AS "RECORD DRAWING" (BEARING AN ORIGINAL SIGNATURE) PRIOR TO THE REQUEST FOR FINAL INSPECTION.
- A SEPARATE PERMIT IS NECESSARY FOR ANY OFFSITE CONSTRUCTION.
- AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
- GRADING AND DRAINAGE PLAN APPROVAL INCLUDES THE CONSTRUCTION OF ALL SURFACE IMPROVEMENTS SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN, INCLUDING, BUT NOT LIMITED TO, RETENTION AREAS, SEDIMENTATION BASINS, AND/OR OTHER DRAINAGE FACILITIES, DRAINAGE PATTERNS, WALLS, CURBS, ASPHALT PAVEMENT AND BUILDING FLOOR ELEVATIONS.
- ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTOR DITCHES, PIPES, PROTECTIVE BERMS, BARRIER WALLS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT ADJACENT BUILDINGS OR PROPERTY FROM STORM RUNOFF MUST BE COMPLETED PRIOR TO ANY STRUCTURE BEING BUILT.
- CERTIFICATE OF OCCUPANCY (C. OF O.) AND/OR FINAL ELECTRICAL CLEARANCE FOR ANY BUILDING IS DENIED UNTIL ALL GRADING AND DRAINAGE IMPROVEMENTS ARE COMPLETED.
- THE ENGINEERING DESIGN ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. CONSTRUCTION QUANTITIES ON THESE PLANS ARE NOT VERIFIED BY THE CITY. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT THE CITY FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE, HEALTH SAFETY, OR OTHER DESIGN ISSUES.
- HAULS GREATER THEN 10,000 CUBIC YARDS REQUIRE A PERMIT AND APPROVED HAUL ROUTE PRIOR TO ISSUANCE OF GRADING AND DRAINAGE PERMIT.
- DAMAGED AND/OR DISPLACED CONCRETE CURB, GUTTER, SIDEWALK, OR DRIVEWAY SLAB THAT IS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED, AS NOTED BY CITY INSPECTORS, BEFORE FINAL ACCEPTANCE OF THE WORK.
- CONSTRUCTION WITHIN THE RIGHT-OF WAY SHALL CONFORM TO THE LATEST APPLICABLE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS AND THE LATEST CITY OF PHOENIX SUPPLEMENTALS TO THE MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS.
- PLAN APPROVAL IS VALID FOR TWELVE (12) MONTHS, IF APPROVAL EXPIRES, THE PLANS MUST BE RESUBMITTED FOR CITY UPDATE RE14EW AND APPROVAL.
- COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601.
- OBSTRUCTIONS TO PROPOSED IMPROVEMENTS IN THE RIGHT-OF-WAY SHALL BE REMOVED OR RELOCATED BEFORE BEGINNING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
- THE ACTUAL POINT OF PAVEMENT MATCHING AND/OR TERMINATION SHALL BE DETERMINED IN THE FIELD BY THE CITY OF PHOENIX, DEVELOPMENT SERVICES DEPARTMENT FIELD INSPECTOR.
- TREES AND SHRUBBERY IN THE RIGHT-OF-WAY THAT CONFLICT WITH PROPOSED IMPROVEMENTS SHALL NOT BE REMOVED WITHOUT APPROVAL OF THE CITY LANDSCAPE ARCHITECT OR HIS ASSIGNEES. THE PERMITTEE SHALL BE RESPONSIBLE FOR OBTAINING AUTHORIZATION TO REMOVE AND/OR RELOCATE SAID TREES, OR SHRUBBERY BY CALLING THE DEVELOPMENT SERVICES LANDSCAPE ARCHITECT AT (602) 256-4116.

1 CLARIFICATION TO PLAN

DIRECTION WAS GIVEN BY DARREL WOOD P.E. CIVIL NO. 13138, AZ. TO THE CONTRACTOR AS FOLLOWS.

EAST-END OF PROJECT BOTH NORTH AND SOUTH BANK. PLACE GROUT PER MAG SECTION 776 COARSE, 4,000 PSI, 3 INCH STEEP; PLACE #4 REBAR EVERY 18 INCHES ON CENTER TO CONCRETE CHANNEL AND EXTEND 12 INCHES MIN. INTO GABIONS, WITH #4 REBAR CONTINUOUS, EPOXY WITH HILTY HY 150 OR EQUAL.

THIS SOLUTION FILLS THE GAP BETWEEN THE STEPPED GABIONS AND THE SLOPED CONCRETE CHANNEL.

DEVELOPER
THE BARCLAY GROUP
8145 NORTH 86TH PLACE
SCOTTSDALE, ARIZONA 85258
PH: 602-996-9399
FX: 602-596-6366
CONTACT: JACK STEWARD

ENGINEER
WOOD, PATEL & ASSOCIATES, INC.
1550 E. MISSOURI AVE. #203
PHOENIX, AZ 85014
PH: 602-234-1344
FX: 602-234-1322
CONTACT: DARREL WOOD

BENCHMARK

CITY OF PHOENIX BRASS CAP IN HANDHOLE AT THE INTERSECTION OF 19TH AVENUE AND GREENWAY ROAD. ELEV. = 1326.15 (CITY OF PHOENIX DATUM)

SHEET INDEX

COVER	1
CHANNEL PLAN	2
CHANNEL PLAN & PROFILE	3-4

UTILITY COMPANY APPROVALS

- THESE PLANS HAVE BEEN SUBMITTED TO THE LISTED UTILITY COMPANIES. THE WORK CONTAINED IN THESE PLANS HAS BEEN APPROVED OR NO UTILITY CONFLICT FOUND BY THESE COMPANIES WITHIN THEIR AREA OF INTEREST. THE LOCATIONS, AS SHOWN, OF THE GAS, TELEPHONE, AND POWER LINES AND CONNECTIONS THERE TO AGREE WITH THE INFORMATION CONTAINED IN EACH UTILITY COMPANY'S RECORDS. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS AND/OR AS OTHERWISE NOTED ON THESE PLANS. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THE UTILITY AND THE DEVELOPER'S AGENT.
 - THE CITY WILL NOT PARTICIPATE IN THE COST OF CONSTRUCTION OR UTILITY RELOCATION.
- | UTILITY | UTILITY COMPANY | DATE |
|----------------|---------------------|---------|
| CABLE TV | COX COMMUNICATIONS | 3-30-99 |
| COMMUNICATIONS | U.S. WEST | 3-30-99 |
| COMMUNICATIONS | A.T.&T. | 3-30-99 |
| COMMUNICATIONS | M.C.I. | 3-30-99 |
| GAS | SOUTHWEST GAS | 3-30-99 |
| PETROLEUM | EL PASO NATURAL GAS | 3-30-99 |
| POWER | A.P.S. | 3-30-99 |
| IRRIGATION | S.R.V.W.U.A. | 3-30-99 |

THE QUANTITIES SHOWN ARE AN ESTIMATE ONLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES BEFORE BIDDING.

ESTIMATED QUANTITIES

GABION BASKET	5250 CY
FILTER FABRIC MIRAFI - 140 N OR APPROVED EQUAL	11,000 SY
CUT *	18,000 CY
FILL *	30,000 CY

* ASSUMED NO SHRINK OR SWELL

LEGEND

EXISTING	DESCRIPTION	PROPOSED
○ ○ ○	SURVEY MARKER	○ ○ ○
=====	CURB & GUTTER	=====
-----	SIDEWALK	-----
=====	EXTRUDED/SINGLE CURB	=====
TC 71.60 G 71.10	TOP OF CURB ELEVATION	TC 71.60 G 71.10
P 71.60	GUTTER ELEVATION	P 71.60
(71.6)	PAVEMENT ELEVATION	(71.6)
-----	NATURAL GRADE ELEVATION	71.6
-----	CONTOURS	-----
=====	A.C. PAVEMENT	=====
-----	WATER LINE AND VALVE	-----
-----	FIRE HYDRANT	-----
-----	SEWER LINE & MANHOLE	-----
-----	SEWER CLEANOUT	-----
-----	STORM DRAIN & MANHOLE	-----
-----	WATER LINE REDUCER	-----
-----	POWER POLE	-----
-----	FENCE	-----
-----	LIGHT POLE	-----
-----	VERTICAL CURB & GUTTER	-----
-----	SCUPPER	-----
-----	BARBED WIRE FENCE	-----
-----	ELECTRIC JUNCTION BOX	-----
-----	STREET LIGHT	-----
-----	PARKING LIGHT	-----
-----	IRRIGATION VALVE BOX	-----
-----	WATER VALVE	-----
-----	WATER MANHOLE	-----
-----	WATER METER	-----
-----	WATER SERVICE	-----
-----	FIRE HYDRANT	-----
-----	CATCH BASIN	-----
-----	STORM DRAIN MANHOLE	-----
-----	TRAFFIC SIGNAL	-----
-----	TRAFFIC SIGNAL JUNCTION BOX	-----
-----	TELEPHONE MANHOLE	-----
-----	SEWER MANHOLE	-----
-----	GAS LINE MARKER	-----
-----	GAS VALVE	-----
-----	GAS SERVICE	-----
-----	GAS MANHOLE	-----
-----	SIGN	-----
-----	CONCRETE	-----
-----	BASE FLOOD ELEVATION	-----
-----	WATER SURFACE ELEVATION	-----
-----	VELOCITY	-----
-----	HEC-2 SECTION No.	-----
-----	PROPERTY LINE	-----

SPECIFICATION FOR GABION

MESH OPENING	HEX. NOM. 3 1/2"
WIRE FOR NETTING	0.1181" NOM. DIA.
WIRE FOR SELVEDGES	0.1535" NOM. DIA.
WIRE FOR BINDING	0.0866" NOM. DIA.
ZINC COATING	0.80 OZS. PER SQ. FT.

GRADATION TABLE

% FINER BY WEIGHT	SIZE
100	12"
75	8"
50	6"
20	4"
5	2" OR LESS

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORDED DRAWING" MEASUREMENTS AND SURVEY MONUMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
27239
REGISTRATION NUMBER

DATE
6/15/99



CITY OFFSITE NOTES

- DAMAGED AND/OR DISPLACED CONCRETE CURB, GUTTER, SIDEWALK, OR DRIVEWAY SLAB THAT IS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED, AS NOTED BY CITY INSPECTORS, BEFORE FINAL ACCEPTANCE OF THE WORK.
- CONSTRUCTION WITHIN THE RIGHT-OF-WAY SHALL CONFORM TO THE LATEST APPLICABLE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS AND THE LATEST CITY OF PHOENIX SUPPLEMENTALS TO THE MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS.
- PLAN APPROVAL IS VALID FOR TWELVE MONTHS. IF APPROVAL EXPIRES, THE PLANS MUST BE RESUBMITTED FOR AN UPDATE REVIEW AND APPROVAL.
- COMPACTION SHALL COMPLY WITH MAG SECTION 601.
- OBSTRUCTIONS TO PROPOSED IMPROVEMENTS IN THE RIGHT-OF-WAY SHALL BE REMOVED OR RELOCATED BEFORE BEGINNING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
- THE ACTUAL POINT OF PAVEMENT MATCHING, AND/OR TERMINATION, SHALL BE DETERMINED IN THE FIELD BY THE CITY OF PHOENIX, DEVELOPMENT SERVICES DEPARTMENT FIELD INSPECTOR.
- TREES AND SHRUBBERY IN THE RIGHT-OF-WAY THAT CONFLICT WITH PROPOSED IMPROVEMENTS SHALL NOT BE REMOVED OR RELOCATED WITHOUT APPROVAL OF THE CITY LANDSCAPE ARCHITECT OR HIS ASSIGNEES. THE PERMITTEE SHALL BE RESPONSIBLE FOR OBTAINING AUTHORIZATION TO REMOVE AND/OR RELOCATE SAID TREES OR SHRUBBERY BY CALLING THE DEVELOPMENT SERVICES DEPARTMENT LANDSCAPE ARCHITECT AT 256-4116.

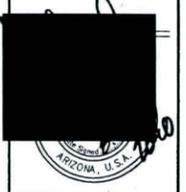
ENGINEERS NOTES

- MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTALS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THESE PLANS IN THEIR ENTIRETY.
- ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE MAG STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE CITY OF PHOENIX UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY USED DURING CONSTRUCTION UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS.
- THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THESE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THESE PLANS.
- THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO ERROR AND OMISSION. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS.
- A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL 48 HOURS IN ADVANCE FOR BLUE STAKE (263-1100) PRIOR TO ANY EXCAVATION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
- ALL PAVING, GRADING, EXCAVATION, TRENCHING, PIPE BEDDING, CUT FILL AND BACK FILL SHALL COMPLY WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS. GEOTECHNICAL COMPANY IS SPEEDIE ASSOCIATES INC. PROJECT NO. 970600 EA.
- THIS PROJECT IS IN A FLOODPLAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE PROJECT WITH WEATHER CONDITIONS AND PROTECT THE PROJECT SITE, WORKERS, EQUIPMENT, ETC. FROM WEATHER CONDITIONS.

REV	DESCRIPTION	DATE

CAVE CREEK WASH CHANNELIZATION
BANK PROTECTION PLAN
SEC 19TH AVENUE @ GREENWAY RD.

SEP 12 2000



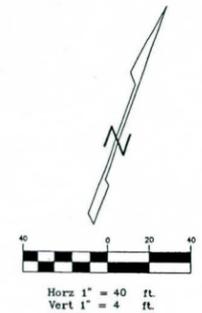
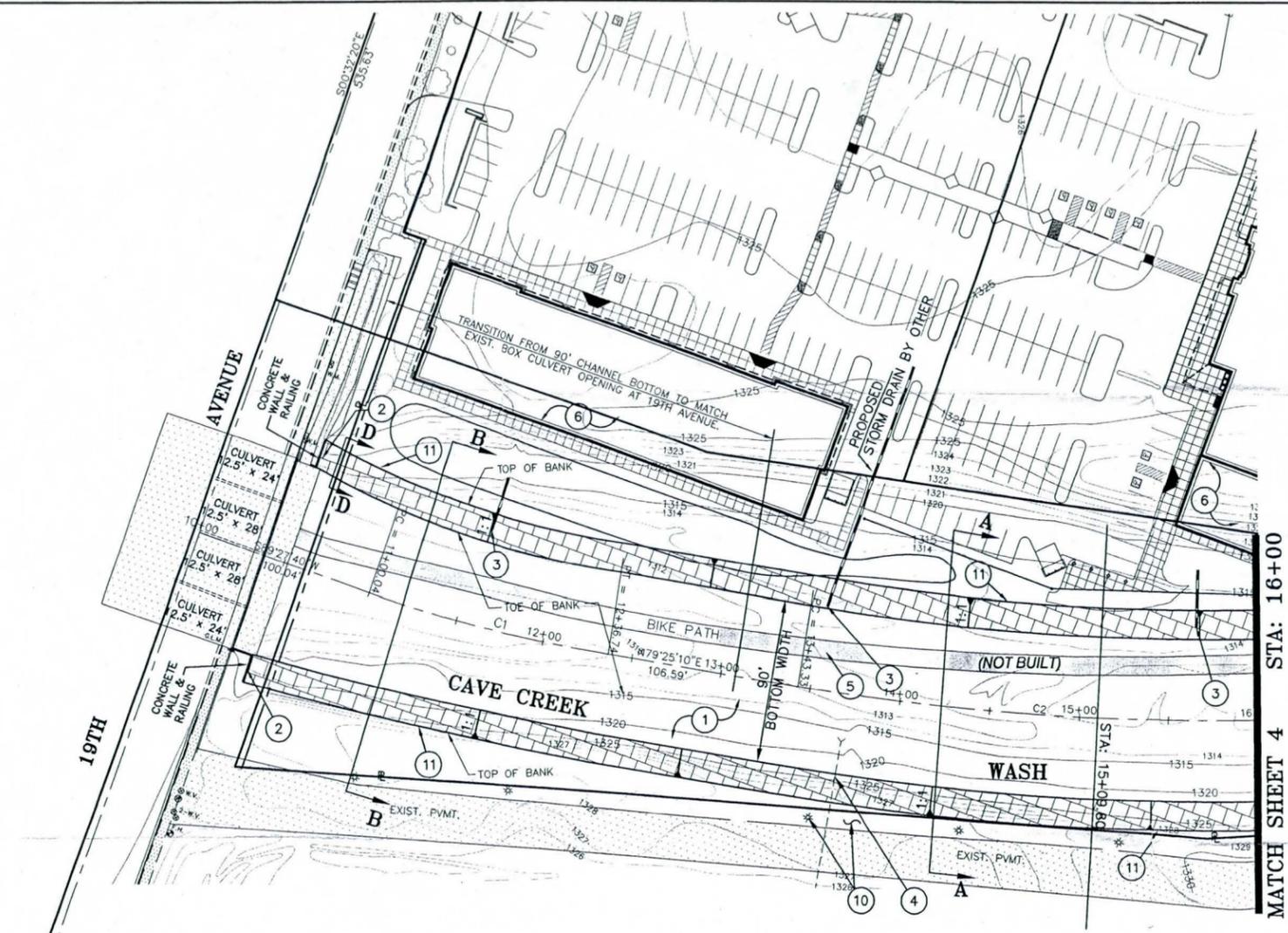
WOOD/PATEL
CIVIL ENGINEERS
HYDROLOGISTS
LAND SURVEYORS
1650 East Missouri
Suite 203
Phoenix, AZ 85014
Phone: (602) 234-1344
Fax: (602) 234-1322

ENGINEER
D. WOOD
DESIGNER
S. ZOU
CAD TECHNICIAN
T. MASSEY
SCALE (HORIZONTAL)
N/A
SCALE (VERTICAL)
N/A
DATE
06/07/99
JOB NUMBER
97660
SHEET
1 OF 4

1 ADDED NOTE AND MISCELLANEOUS INFORMATION FOR AS-BUILTS
AUGUST 14, 2000

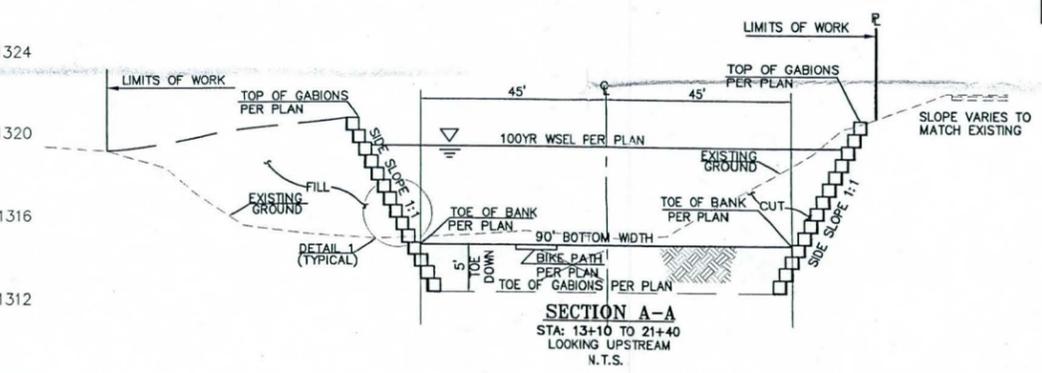
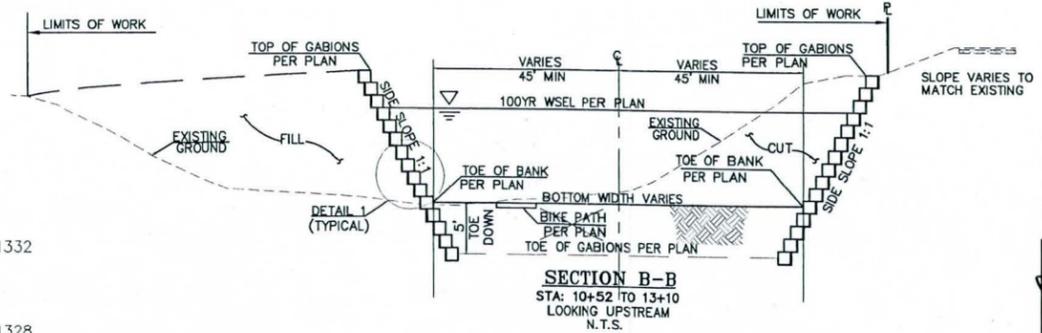
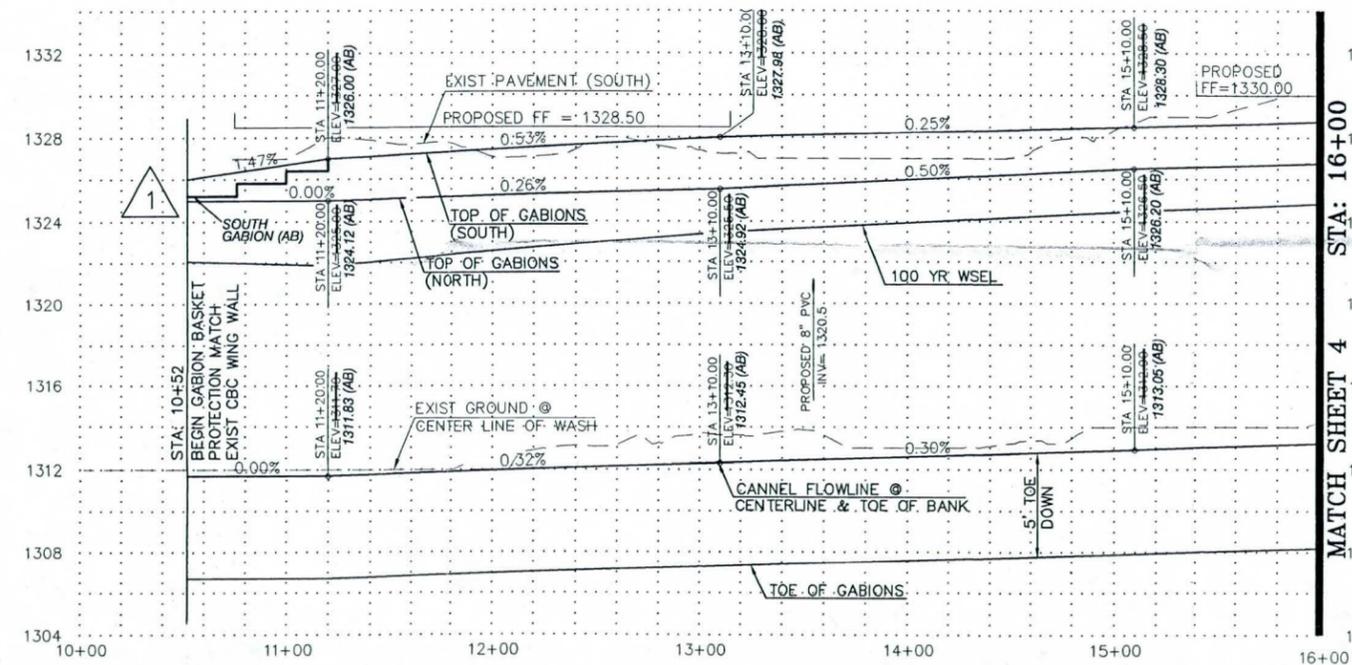


QS#34-25 98-6866



CONSTRUCTION NOTES

- 1 CONTRACTOR TO PERFORM EARTHWORK (CUT & FILL) PER PLAN INSURE COMPACTION REQUIREMENTS.
- 2 CONSTRUCT GABION CUTOFF WALL PER SECTION D-D AND DETAIL 2 TO TIE IN EXISTING BOX CULVERT WING WALL. SECURE GABIONS TO EXISTING WING WALL.
- 3 PIPE OUTLET AT GABION BASKETS PER DETAIL 3, MODIFY AND SECURE PIPE AND BASKET. PIPE SIZE, INVERT ELEVATIONS, SLOPES, LOCATIONS, AND TYPES ARE FROM GRADING AND DRAINAGE PLAN BY CELLA BAR AND ASSOCIATES JOB#242063.02.
- 4 AS NECESSARY, CUT, ADJUST OR REPLACE EXISTING STORM DRAIN WITHIN WORK LIMITS TO MATCH GABION BASKET PROTECTION PER DETAIL 3.
- 5 CONSTRUCT BIKE PATH 10 FEET WIDE, 3" AC (D 1/2) PAVEMENT OVER 95% COMPACTED SUBGRADE.
- 6 PROPOSED FINISHED FLOOR ELEVATIONS AND PROPOSED SITE IMPROVEMENTS SHOWN FOR INFORMATION ONLY. CONTRACTOR TO COORDINATE ALL WORK WITH CELLA BAR AND ASSOCIATES JOB# 242063.02.
- 7 REMOVE CONCRETE RIPRAP NORTH & SOUTH SIDE APPROX. 180 S.Y. CO NOT DISTURB CONCRETE CHANNEL.
- 8 CONSTRUCT GABION CUT OFF WALL PER SECTION E-E AND DETAIL 2 TO TIE IN EXISTING CONCRETE CHANNEL MODIFY EXISTING CONCRETE CHANNEL AS NECESSARY TO SECURE GABIONS.
- 9 CONTRACTOR TO FIELD MATCH LOW AREAS AND ADJUST GABIONS ACCORDINGLY.
- 10 DO NOT DISTURB EXISTING IMPROVEMENTS, AND FACILITIES REPAIR ANY DAMAGE INSIDE AND OUTSIDE WORK LIMITS.
- 11 TOP OF GABIONS TO MATCH EXISTING / PROPOSED GROUND - DO NOT BLOCK SURFACE RUNOFF.



1
AUGUST 14, 2000
ADDED NOTE AND MISCELLANEOUS INFORMATION FOR AS-BUILTS

REV	DESCRIPTION	DATE

CAVE CREEK WASH CHANNELIZATION
BANK PROTECTION PLAN
SEC 19TH AVENUE @ GREENWAY RD.

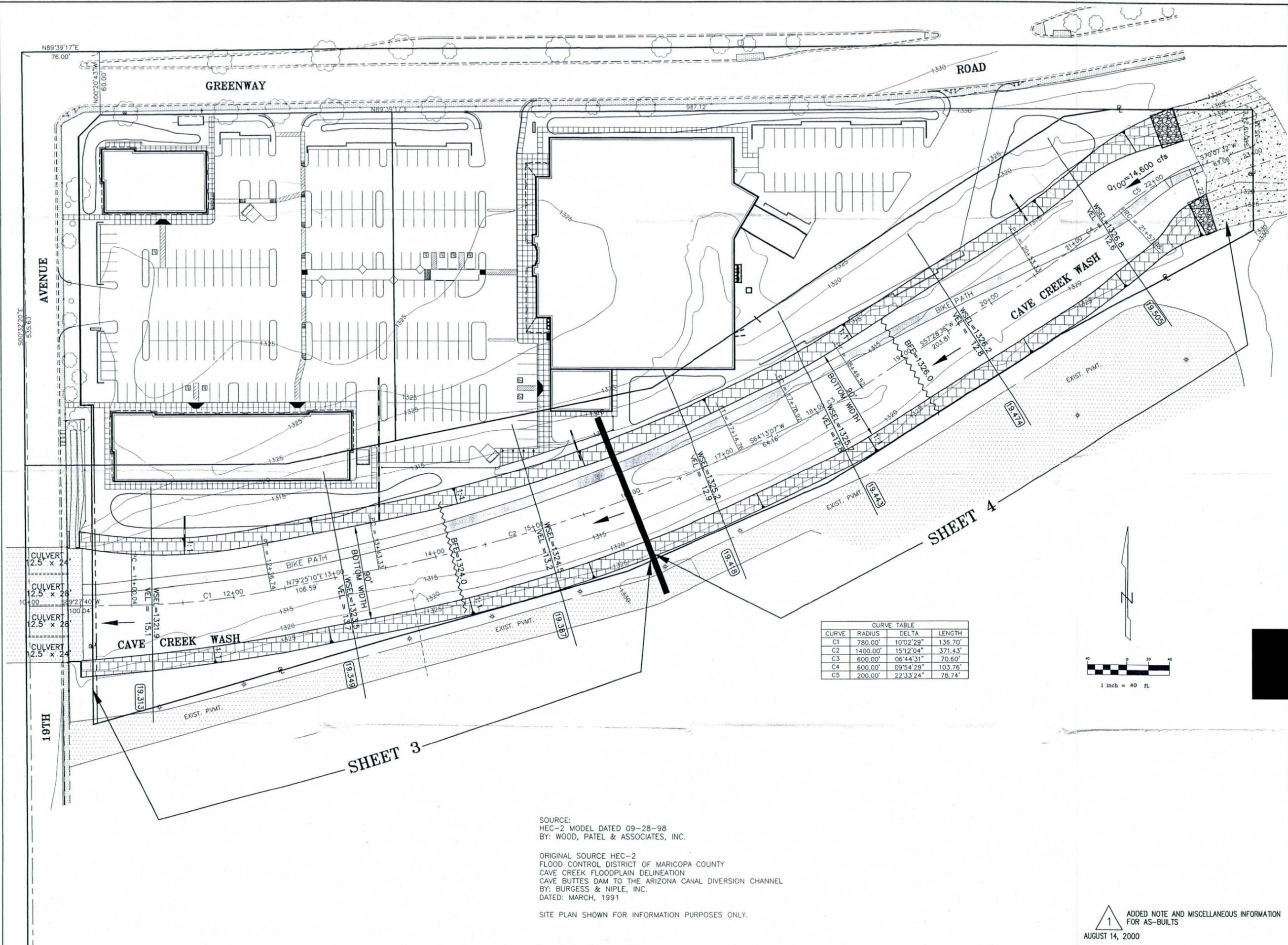
SEP 12 2000

WOOD/PATEL
CIVIL ENGINEERS
HYDROLOGISTS
LAND SURVEYORS
1550 East Missouri
Suite 203
Phoenix, AZ 85014
Phone: (602) 234-1344
Fax: (602) 234-1322

ENGINEER D. WOOD	DESIGNER S. ZOU
CAD TECHNICIAN T. MASSEY	SCALE (HORIZONTAL) 1" = 40'
SCALE (VERTICAL) 1" = 4'	DATE 06/07/99
JOB NUMBER 97660	SHEET 3 OF 4

N:\97660\3\CD\3\0813P3.DWG

QS#34-25 98-6866



CURVE TABLE			
CURVE	RADIUS	DELTA	LENGTH
C1	780.00'	10°02'29"	136.70'
C2	1400.00'	15°12'04"	371.43'
C3	600.00'	06°44'31"	70.60'
C4	600.00'	09°54'29"	103.76'
C5	200.00'	22°33'24"	78.74'

SOURCE:
 HEC-2 MODEL DATED 09-28-98
 BY: WOOD, PATEL & ASSOCIATES, INC.

ORIGINAL SOURCE HEC-2
 FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 CAVE CREEK FLOODPLAIN DELINEATION
 CAVE BUTTES DAM TO THE ARIZONA CANAL DIVERSION CHANNEL
 BY: BURGESS & NIPLE, INC.
 DATED: MARCH, 1991

SITE PLAN SHOWN FOR INFORMATION PURPOSES ONLY.

REV	DESCRIPTION	DATE

CAVE CREEK WASH CHANNELIZATION
 BANK PROTECTION PLAN
 SEC 19TH AVENUE @ GREENWAY RD.

SEP 12 2000



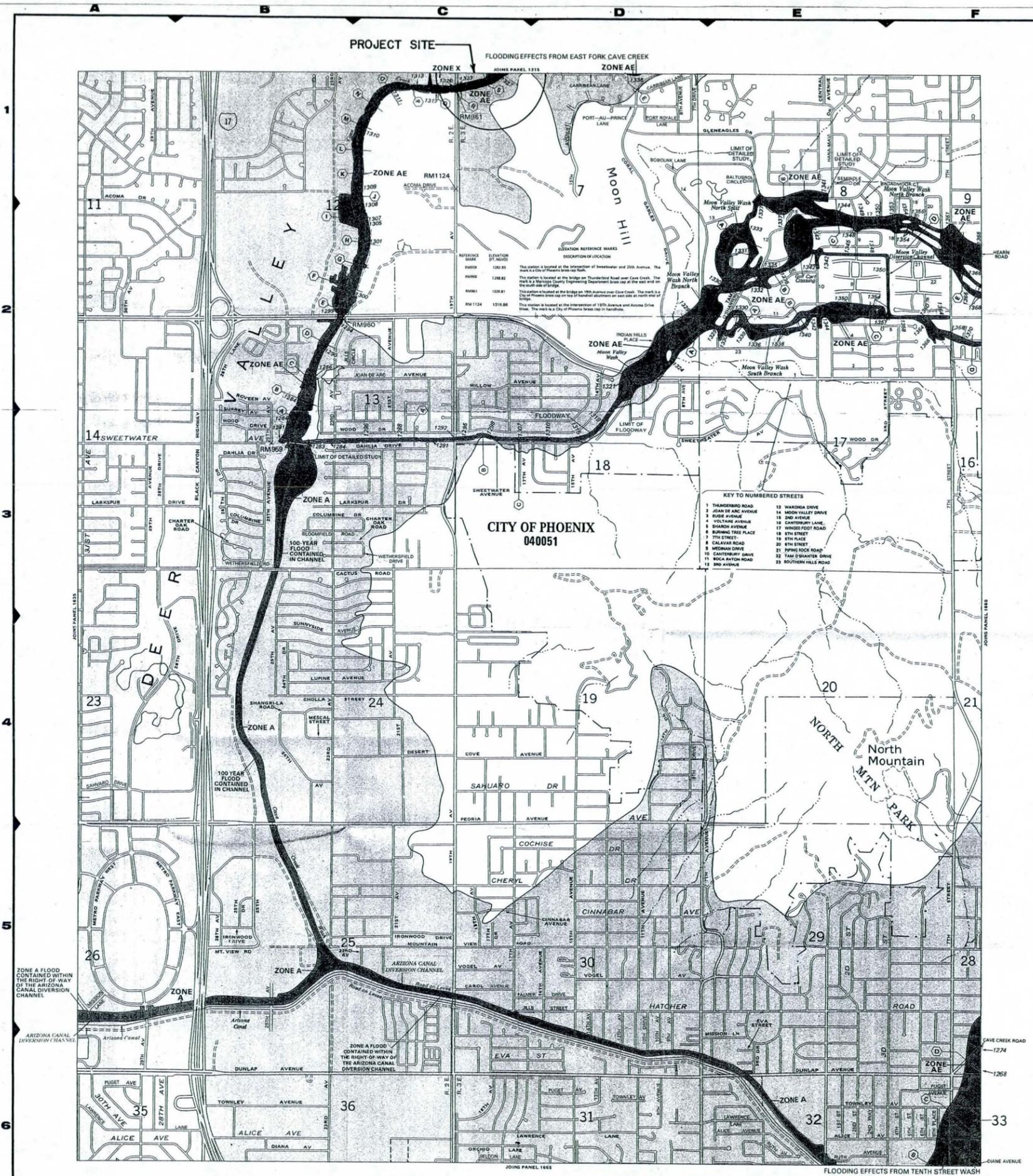
WOOD/PATEL
 CIVIL ENGINEERS
 HYDROLOGISTS
 LAND SURVEYORS
 1550 East Missouri
 Suite 203
 Phoenix, AZ 85014
 Phone: (602) 234-1344
 Fax: (602) 234-1322

ENGINEER *D. WOOD*
 DESIGNER *S. ZOU*
 CAD TECHNICIAN *T. MASSEY*
 SCALE (HORIZONTAL) 1" = 40'
 SCALE (VERTICAL) N/A

DATE 06/07/99
 JOB NUMBER 97660
 SHEET 2 OF 4

1
 AUGUST 14, 2000
 ADDED NOTE AND MISCELLANEOUS INFORMATION FOR AS-BUILTS

QS#34-25 98-6866



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 3 NORTH, RANGE 2 EAST AND TOWNSHIP 3 NORTH, RANGE 3 EAST

LEGEND

- SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD**
- ZONE A** No base flood elevations determined.
 - ZONE AE** Base flood elevations determined.
 - ZONE AH** Flood depths of 1 to 3 feet (usually areas of residential) base flood elevations determined.
 - ZONE AD** Flood depths of 1 to 3 feet (usually sheet flow on steep terrain); average depths determined; for areas of sheet flow flooding, velocities also determined.
 - ZONE ABB** To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
 - ZONE V** Coastal flood with velocity hazard (see section) no base elevations determined.
 - ZONE VE** Coastal flood with velocity hazard (see section) base flood elevations determined.
- FLOODWAY AREAS IN ZONE AE**
- OTHER FLOOD AREAS**
 - ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.
 - OTHER AREAS**
 - ZONE X** Areas determined to be outside 500-year flood plain.
 - ZONE D** Areas in which flood hazards are undetermined.
- BOUNDARIES**
- Flood Boundary
 - - - Floodway Boundary
 - - - Zone D Boundary
 - - - Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- SYMBOLS**
- 573 Base Flood Elevation Line, Elevation in Feet
 - (EL 987) Cross Section Line
 - (EL 987) Base Flood Elevation in Feet Where Uniform Within Zone*
 - RM7x Elevation Reference Mark
- *Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100-year flood) include Zones A, A1, 30, AE, AH, AD, ABB, V, VE, 30, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only to the shoreline.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of the map.

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP:
JUNE 18, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 29, 1989
SEPTEMBER 4, 1991
DECEMBER 2, 1993

Map revised SEPTEMBER 30, 1995 to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to add and update roads and road names, to reflect updated topographic information, to incorporate previously issued letters of map revision, and to incorporate previously issued letters of map amendment.

AREA TO BE REMOVED FROM ZONE AE (Hatched pattern)

NEW FLOOD PLAIN ZONE AE (White)

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

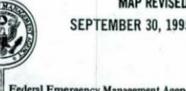
MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

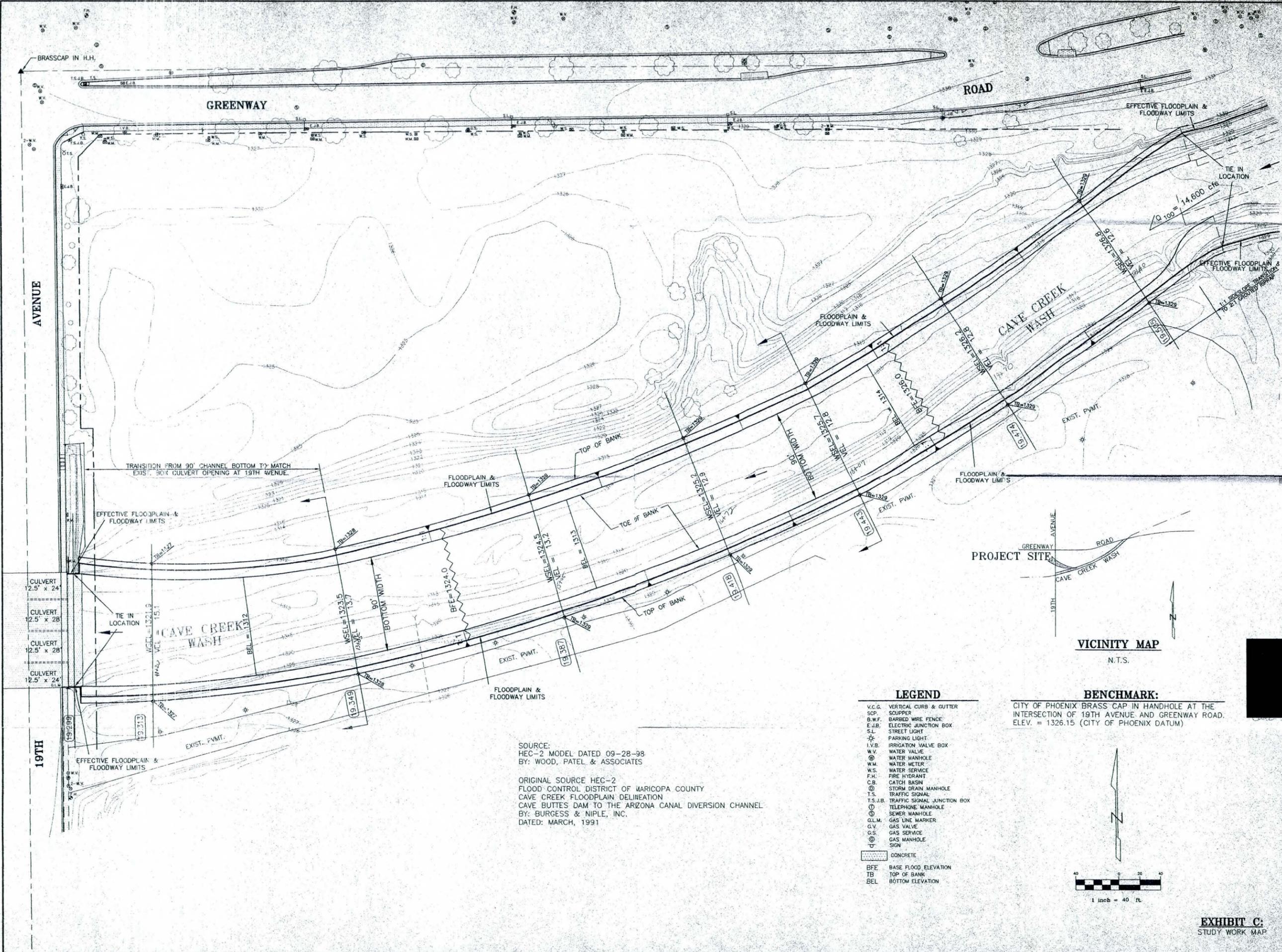
PANEL 1655 OF 4350

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
PRESENT CITY OF 04013C 1655 H

EXHIBIT D
ANNOTATED FIRM PANEL

MAP NUMBER 04013C1655 H
MAP REVISED: SEPTEMBER 30, 1995





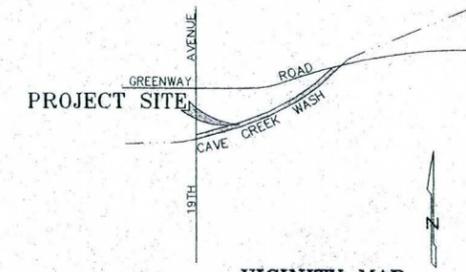
AVENUE

GREENWAY

ROAD

SEC 19TH AVENUE AT GREENWAY ROAD
CAVE CREEK WASH CHANNELIZATION

PRELIMINARY
NOT
FOR
CONSTRUCTION
OR RECORDING



VICINITY MAP

N.T.S.

SOURCE:
HEC-2 MODEL DATED 09-28-98
BY: WOOD, PATEL & ASSOCIATES

ORIGINAL SOURCE HEC-2
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CAVE CREEK FLOODPLAIN DELINEATION
CAVE BUTTES DAM TO THE ARIZONA CANAL DIVERSION CHANNEL
BY: BURGESS & NIPLE, INC.
DATED: MARCH, 1991

LEGEND

- V.C.G. VERTICAL CURB & GUTTER
- SC. SCUPPER
- B.W.F. BARBED WIRE FENCE
- E.J.B. ELECTRIC JUNCTION BOX
- S.L. STREET LIGHT
- P.V. PARKING VALVE
- I.V.B. IRRIGATION VALVE BOX
- W.V. WATER VALVE
- W.M. WATER MANHOLE
- W.M. WATER METER
- W.S. WATER SERVICE
- F.H. FIRE HYDRANT
- C.B. CATCH BASIN
- S.D.M. STORM DRAIN MANHOLE
- T.S. TRAFFIC SIGNAL
- T.S.J.B. TRAFFIC SIGNAL JUNCTION BOX
- T. TELEPHONE MANHOLE
- S.M. SEWER MANHOLE
- G.L.M. GAS LINE MARKER
- G.V. GAS VALVE
- G.S. GAS SERVICE
- G.M. GAS MANHOLE
- SIGN SIGN
- CONCRETE CONCRETE
- BFE BASE FLOOD ELEVATION
- TB TOP OF BANK
- BEL BOTTOM ELEVATION

BENCHMARK:

CITY OF PHOENIX BRASS CAP IN HANDHOLE AT THE
INTERSECTION OF 19TH AVENUE AND GREENWAY ROAD.
ELEV. = 1326.15 (CITY OF PHOENIX DATUM)

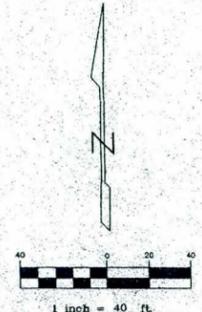
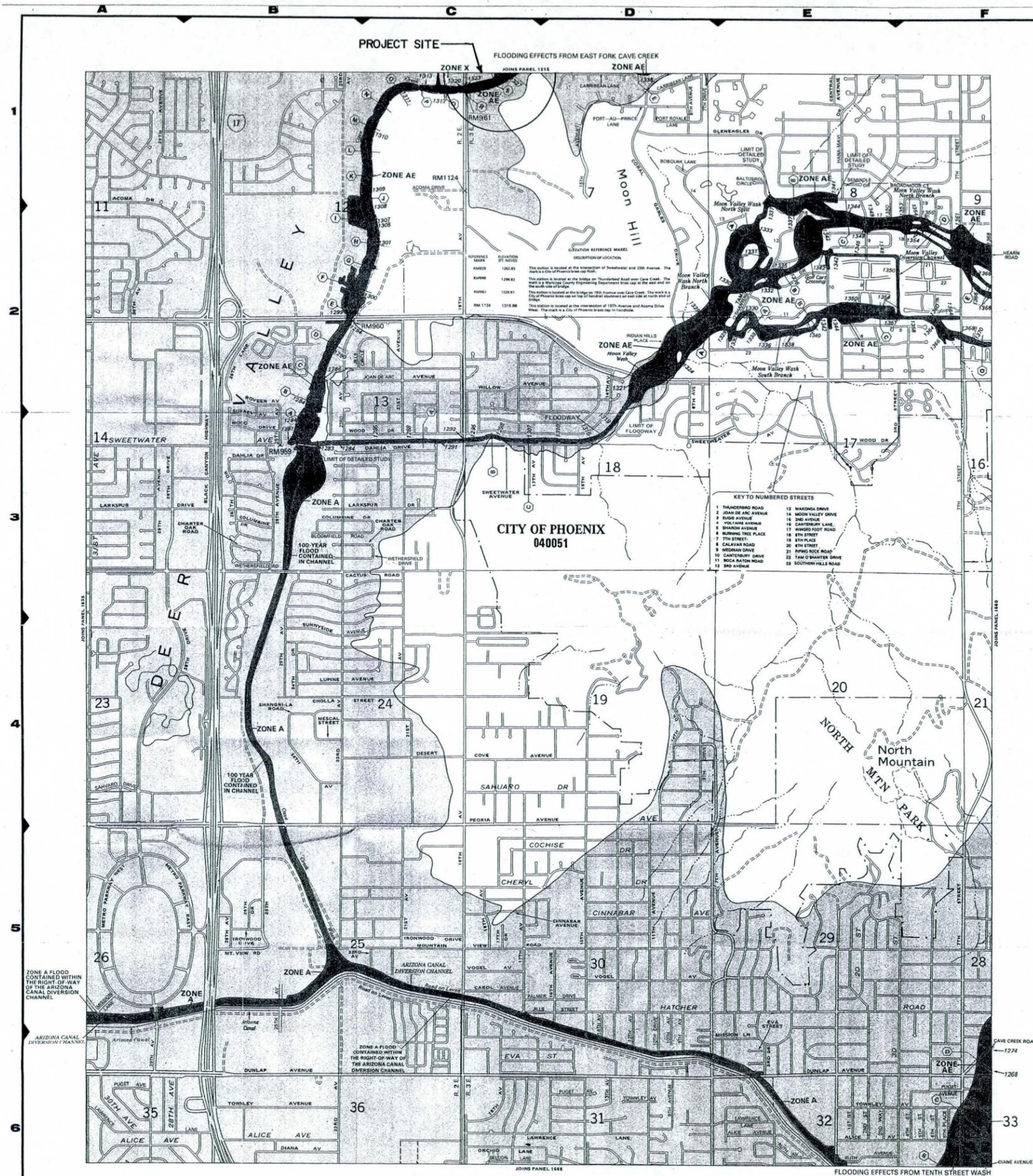


EXHIBIT C:
STUDY WORK MAP

WOOD/PATEL
CIVIL ENGINEERS
HYDROLOGISTS
LAND SURVEYORS
1550 East Missouri
Suite 203
Phoenix, AZ 85014
Phone: (602) 234-1344
Fax: (602) 234-1322
ENGINEER DW
DESIGNER SZ
CAD TECHNICIAN JM
SCALE (HORIZONTAL) 1" = 40'
SCALE (VERTICAL) N/A
DATE 08/05/99
JOB NUMBER 97660
SHEET 1 OF 1
970813120001 WORK.DWG



PROJECT SITE
FLOODING EFFECTS FROM EAST FORK CAVE CREEK

CITY OF PHOENIX
040051

KEY TO NUMBERED STREETS

1 THUNDERBOLT ROAD	13 WAKONDA DRIVE
2 SPAN DE ARIZ AVENUE	14 MOON VALLEY DRIVE
3 RUGBY AVENUE	15 2ND AVENUE
4 VOLTAGE AVENUE	16 CANTERBURY LANE
5 SHARON AVENUE	17 WINGED FOOT ROAD
6 BIRMINGHAM PLACE	18 8TH STREET
7 7TH STREET	19 8TH PLACE
8 CALAVAN ROAD	20 8TH STREET
9 MEDMAN DRIVE	21 PINE RIDGE ROAD
10 CANTERBURY DRIVE	22 TAM O'SHANTER DRIVE
11 BOCA RATON ROAD	23 SOUTHERN HILLS ROAD
12 3RD AVENUE	

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 3 NORTH, RANGE 2 EAST AND TOWNSHIP 3 NORTH, RANGE 3 EAST

- LEGEND**
- SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD**
- ZONE A No base flood elevations determined.
 - ZONE AE Base flood elevations determined.
 - ZONE AH Flood depths of 1 to 3 feet (locality areas of ponding); base flood elevations determined.
 - ZONE AD Flood depths of 1 to 3 feet (locality areas of flow on sloping terrain); average depths determined. For areas of abraded log floating, velocities also determined.
 - ZONE ABS To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
 - ZONE V Coastal flood with velocity hazard (wave action); no base elevations determined.
 - ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.
- FLOODWAY AREAS IN ZONE AE**
- OTHER FLOOD AREAS
 - ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 100-year flood.
 - OTHER AREAS
 - ZONE X Areas determined to be outside 500-year flood plain.
 - ZONE D Areas in which flood hazards are undetermined.
- BOUNDARIES**
- Flood Boundary
 - Floodway Boundary
 - Zone D Boundary
 - Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- SYMBOLS**
- Base Flood Elevation Line, Elevation in Feet
 - Cross Section Line
 - Base Flood Elevation in Feet Where Uniform Within Zone*
 - Elevation Reference Mark
- *Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100-year flood) include Zones A, A1, A3, AE, AH, AD, ABS, V, VE, and D.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

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Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only to landward of the shoreline.

Corporate limits shown are current as of the date of this map. The user should consult appropriate community officials to determine if corporate limits have changed subsequent to the issuance of the map.

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP:
APRIL 18, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 29, 1988
SEPTEMBER 14, 1991
DECEMBER 3, 1993

Map revised SEPTEMBER 30, 1995 to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to add and update roads and road names, to reflect updated topographic information, to incorporate previously issued letters of map revision, and to incorporate previously issued letters of map amendment.

AREA TO BE REMOVED FROM ZONE AE

NEW FLOOD PLAN ZONE AE

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 1655 OF 4350

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
PHOENIX CITY OF 040051 1655 H

EXHIBIT D
ANNOTATED FIRM PANEL

MAP NUMBER
04013C1655 H

MAP REVISED:
SEPTEMBER 30, 1995

Federal Emergency Management Agency



**APPENDIX B: GENERAL DOCUMENTATION AND
CORRESPONDENCE**

- B.1 General Project Documentation and Correspondence**
- B.2 Contract Documents**
- B.3 Public Notification**
- B.4 FEMA Correspondence**

**B.1: GENERAL PROJECT DOCUMENTATION AND
CORRESPONDENCE**

B.2: CONTRACT DOCUMENTS



Exhibit A

Scope of Services

Greenway Parkway Bridge at Cave Creek Wash: Greenway Parkway East of 17th Avenue Over Cave Creek Wash Design Services

CITY OF PHOENIX PROJECT NO. ST85110069

INTRODUCTION

The Greenway Parkway Bridge over Cave Creek Wash was completed in 1988. Shortly after construction, several wide, full depth cracks appeared in the deck and pier cap beam. Additionally, smaller hairline cracks appeared in the abutments near the acute corners of the heavily skewed bridge. The bridge's approach slabs began to heave and settle as the bridge deck rotated in a counterclockwise direction. This rotation further caused the retaining walls and vehicular barriers to rotate out of plane creating potential snagging hazards to passing vehicles.

Studies have been concluded that recommend replacement of the bridge with a box culvert system. Listed below are the required items of work necessary to design and provide construction documents for the box culvert system along with associated road replacements, channel analyses and modifications, and traffic control.

ASSUMPTIONS

1. Design for the project will be continuous as noted on the proposed schedule with no City delays greater than 30 days.
2. No City-owned utility relocation designs will be necessary.
3. There will not be a need to reconstruct an equestrian path in the wash.
4. The pedestrian path along Cave Creek Wash will be closed during construction.
5. Soil borings will be able to be performed using hollow-stem auger drilling methods.
6. Geotechnical investigation field work will be able to be performed during normal working hours (7 a.m. to 5 p.m.).
7. A truck-mounted drill rig will be used for the two 40-foot deep soil borings and a small rubber-tracked ATV drill rig will be used for the two borings in the channel. Work will be done in accordance with US Army Corps of Engineers' Nationwide Permit #6.
8. No rock coring will be performed. Borings will be terminated at top of rock if rock is encountered and drilling refusal occurs.
9. No environmental sampling, fieldwork, or laboratory testing will be performed.

CITY RESPONSIBILITY

The City of Phoenix shall provide the following:



- Potholing services. The City will provide potholing at locations identified by the consultant for the purpose of locating underground utilities.
- Environmental documentation and coordination.
- Utility maps for both public and private companies.
- Aerial photographs and Quarter Section Maps.
- Street Transportation Department Boilerplate Specification template and latest Bid Item Catalog.
- The City will provide communication and public involvement with the surrounding community.

Consultant Scope of Services

All work shall be done in accordance with the City of Phoenix Draft Administration Procedure 155, March 2008 (AP 155), the City of Phoenix Storm Water Policies and Standards Manual, MAG Standard Details and Specifications (latest edition), City of Phoenix Supplements to MAG (latest edition), City of Phoenix Street Transportation Department boilerplate specifications (latest edition), and City of Phoenix CAD Standards (latest edition). Flood Control District of Maricopa County (FCDMC) will provide the Consultant with the Cave Creek Wash Paving As-Built Plans, if available.

1. DATA RESEARCH

The Consultant shall research and collect available roadway, wash, utility infrastructure, geology, topographic information, soil surveys, geologic literature, and aerial photographs of the project area for base map development, geotechnical analysis and report, drainage analysis and reports and roadway plan preparation. This shall include researching pertinent City of Phoenix central files. The City will provide the Consultant with utility maps from both public and private utilities.

2. COORDINATION

This task will include the effort for the Consultant to coordinate the project with the City departments, franchise utilities, other Consultants, and the public.

A. COORDINATION WITH THE CITY

The Consultant will coordinate with City staff, in particular the project manager from the Street Transportation Department. Coordination meetings will be held as described below between the Consultant and City staff. Continuing communications will be maintained via telephone, facsimile or e-mail transmission. Meetings (not to exceed a total of six (6)) may include the following:

- **Kick-off Meeting** - Prior to beginning work on the project, the Consultant will meet with City staff to discuss the project, and obtain copies of the documentation that the City of Phoenix is to provide.



- **Review Comment Meeting(s)** - After the City has completed its review of each submittal (25%, 40%, 70%, 90%, 100%), a meeting will be held, if necessary, to review City comments.

B. COORDINATION WITH THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY (FCDMC)

The Consultant, will work through the City Project Manager and Contracts Specialist, to coordinate with the FCDMC staff with regards to the design criteria, hydrologic, hydraulic and scour/sediment transport analyses in conjunction with the design of the box culvert bridge over Cave Creek Wash. This task may include the following meetings (not to exceed five (5)):

- Initial meeting
- Meeting after defining the design criteria
- Comment resolution meeting after review of Preliminary Drainage Report and 40% plans
- Comment resolution meeting after review of Final Drainage Report and 70% plans
- Comment resolution meeting after review of 90% plans

C. UTILITY COORDINATION

There are several existing utilities that could be in conflict with the proposed roadway improvements including APS Electric, Qwest Communications, Cox Communications, Southwest Gas, City of Phoenix Water, City of Phoenix Sanitary Sewer, and City of Phoenix Storm Drain.

Existing utilities within the project limits will be investigated for horizontal and vertical conflicts with the proposed improvements.

The private utility companies will be responsible for providing designs to relocate their conflicting facilities. Consultant will provide coordination throughout the design.

The Consultant will locate and identify needed record drawings for utilities in close proximity to the proposed improvements. The Consultant will then request these drawings from the City for use on the project.

The Consultant will provide supplemental information to the City as needed to coordinate this project with applicable utility companies in accordance with the Central Arizona Coordinating Committee handbook. The City will make contacts with applicable utility companies and furnish the necessary plans, arrange coordination meetings, and obtain necessary approvals from those utility companies. The Consultant will attend utility coordination meetings as necessary, assumed not to exceed three (3).



Potholing for the purpose of locating underground utilities will be provided by the City. The Consultant will provide the City with a list of recommended potholing locations. Consultant shall provide Level "C" utility investigation survey to identify utilities using existing visible features and, if necessary, Level "B" electronic locating of traceable underground utilities. Subsurface investigation may require adherence to ASCE Standard 38-02.

D. OTHER RECORD DRAWINGS

The Consultant shall locate and identify any other available record drawings necessary and request those drawings from the appropriate City Department for use during the design.

3. STRUCTURE SELECTION REPORT

The Consultant shall prepare a final report based on the concepts presented in the Preliminary Engineering and Project Scoping Report document, including a cost-benefit analysis to evaluate the lifetime costs, and construction schedule impacts of various box culvert options.

The Consultant shall investigate and provide a report recommending the optimum culvert alternative (precast or cast-in-place) with the goal of minimizing driver and pedestrian inconvenience and/or construction cost.

The report will include a comparison between a five span 12'x12' concrete box culvert and a three span, 25'x14' concrete box culvert. Items to be compared include:

- a. Hydraulic efficiency of the three versus five barrel arrangement.
- b. Constructability under phased traffic and impacts to the number of lanes that can be kept open, with the goal of maintaining two lanes open in each direction during the duration of construction.
- c. Cost efficiency of precast versus cast-in-place construction. For example, precast construction intuitively minimizes traffic disruption but construction could be an issue. If the three barrel option functions better hydraulically, the length of the precast sections would be very short due to the large section weight. More sections mean more pieces to lift into place and more joints.
- d. End geometry of the barrels. The ends can be perpendicular to the barrel longitudinal axis or skewed up to 45° to minimize protrusion beyond the roadway edge.
- e. Any needs to change the profile of the roadway will be evaluated.

The report will also include a discussion concerning the multi-use paths beneath existing structure since they may have an impact on the box vertical dimension. **The consultant assumes there will be no equestrian path designed through the box culverts and that the pedestrian path will be closed during construction.**



A preliminary access road plan will be prepared in the existing right-of-way (if possible) to allow for the construction of the new culverts. This access road will be designed to remain for use by the City of Phoenix maintenance crews in the future. The road shall be a minimum of 10' wide, maximum longitudinal slope of 10%, and have an all-weather surface. Access to both sides of the bridge will be evaluated, with at least one road designed to access the upstream side of the bridge.

A preliminary traffic control plan and study will be prepared and submitted for review to provide two (2) lanes in each direction during construction. The study will also address the need for possible weekend closures during construction, construction phasing plans, and will make recommendations, if necessary, to provide a modified configuration for traffic control.

4. **BASE SHEET PREPARATION**

Base sheets will be prepared for approximately 1,500 Linear Feet of Greenway Parkway. Plan and profile sheets at a horizontal scale of 1"=20' shall be prepared to depict the acquired survey field data described above, utility and right-of-way information, and other existing improvement features necessary for the proposed design. City-provided CAD base sheets, cover sheet, note sheet, and title blocks shall be used.

5. **PRELIMINARY ROADWAY DESIGN**

A preliminary (25%) roadway geometric plan will be prepared and delivered to the City in hard copy and electronic format for review. The horizontal plan hard copy will be prepared as a strip map at a scale of 1"=20'. A minimum of thirty (30) days shall be allowed for the City's review and final adjustment of the geometric plan.

6. **DRAINAGE ANALYSES, DESIGN AND REPORT**

The analysis and design for the Greenway Parkway Bridge over Cave Creek Wash and associated channel and roadway drainage improvements will be performed based on the latest edition of the City of Phoenix Storm Water Policies and Standards Manual and the Drainage Design Manuals (Hydrology and Hydraulics) prepared by the Flood Control District of Maricopa County (FCDMC). Existing drainage reports or related hydrologic/hydraulic analyses will also be utilized to assist in preparing the drainage designs.

Extent of Bridge Hydraulics Study: The downstream limit of the study will be the 19th Ave Bridge over Cave Creek Wash. The upstream limit of the study will be the Terra Buena Bridge over Cave Creek. Also, the upstream limit for East Fork will be at 12th Avenue. The hydraulic analyses will be based on field surveyed cross sections that will be obtained at approximately the same locations as in the earlier hydraulic study for Cave Creek Wash prepared by Burgess & Niple in 1991 and as depicted on



the current Flood Insurance Study (FIS) by Federal Emergency Management Agency (FEMA).

Bridge and Associated Channel Hydrology: Design flows will be based on the existing watershed condition hydrology that was prepared in the 1991 Cave Creek study by Burgess & Niple. This study will be provided by the FCDMC. However, the pre- and post-condition hydraulic models will also be analyzed for the future watershed condition flows provided by the FCDMC. The 10-, 50-, and 100-year frequency peak discharges will be analyzed in the hydraulic models.

Bridge and Associated Channel Hydraulics: Pre- and Post-Project Condition HEC-RAS hydraulic models will be prepared for the Greenway Parkway Bridge over Cave Creek Wash. The intent of the hydraulic modeling will be to demonstrate that the design discharges safely pass through the bridge while complying with the City design criteria and not adversely impacting upstream and downstream conditions such as 100-year water surface elevations. The post-project hydraulic modeling is anticipated to include a multi-cell box culvert (as replacement for the bridge) and transition channels (from fully developed channel section to the multi-cell box culvert – both upstream and downstream of the culvert). Junction with East Fork will be modeled with momentum equation as necessary. A site investigation will be necessary to prepare the discretionary hydraulic parameters such as channel roughness, expansion/contraction coefficients and ineffective flow areas.

Roadway Drainage: The existing roadway and associated drainage facilities such as inlets and storm drains will need to be replaced in conjunction with the bridge replacement design. In this regard, Rational Method will be used to obtain design flows and pavement spread, inlet hydraulics and storm drain hydraulic analysis will be performed for the replacement facilities to ensure that they are sized appropriately.

Drainage Report: The drainage report shall document the drainage analyses for the multi-cell box culvert and associated channel improvements as well as the roadway drainage facilities. The multi-cell box culvert hydrology and hydraulics analyses will be presented in a manner that is compatible with the documentation required for the Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR). The drainage report will also include onsite and offsite hydrology, storm drain sizing, street flow, catch basin locations, connector pipe sizes, and ultimate outfall facilities.

Drainage Plans: Drainage design for the multi-cell box culvert, upstream and downstream transition channels and roadway drainage improvements will be depicted on plan-profile sheets as well as general notes and details sheets.

7. CONDITIONAL LETTER OF MAP REVISION (CLOMR) and LETTER OF MAP REVISION (LOMR)

CLOMR and LOMR: The CLOMR and LOMR submittals to FEMA will include the following items:



- a) Duplicate Effective (HEC-2) Model – this will be the current HEC-2 model provided by FCDMC and adjusted to show results similar to the data shown in the FIS.
- b) Corrected Effective (HEC-2) Model – this will be the Duplicate Effective HEC-2 Model corrected for additional piers and any other items that are discovered.
- c) Existing or Pre-Project Conditions (HEC-RAS) Model – this HEC-RAS model will be based on field surveyed cross sections between the 19th Ave Bridge and Tierra Buena Bridge; Field survey for the cross sections will be approximately at the same locations as in the current HEC-2 model.
- d) Revised or Post-Project Conditions (HEC-RAS) Model – this HEC-RAS model will use the existing condition HEC-RAS model as the base model and include data for the multi-cell box culvert at Greenway Parkway.

The relevant CLOMR and LOMR MT-2 forms 1-3 (Overview & Concurrence, Riverine Hydrology & Hydraulics and Riverine Structures forms) will be prepared..

Drainage Submittals: The Consultant shall make two (2) submittals for approval to the City. The first submittal shall be a "redline" report for review. The final submittal shall address City's review comments and include final calculations and design.

Storm drain plans will be developed in accordance with the requirements in the Draft AP 155, City of Phoenix Storm Water Policies and Standards Manual, MAG Uniform Standard Specifications and Details, and the current City Supplements to the MAG Standards.

8. CULVERT AND RETAINING WALL DESIGN AND PLAN PREPARATION

Culvert and retaining wall design will be performed in accordance with the 17th Edition of AASHTO Standard Specifications for Highway Bridges and the ADOT Bridge Practice Guidelines. Specifically, a geometric layout of the replacement boxes will be developed; details of typical joints, headwalls and railing details will be designed, and the demolition of the existing bridge and construction of the culverts will be coordinated with the roadway traffic phasing plan to determine phasing. Additionally, culvert wingwalls and retaining walls will be designed and details will be developed. This will lead to the identification of the necessary limits of the replacement for the existing retaining walls and the existing concrete lining in the wash.

9. FIRST SUBMITTAL – HORIZONTAL GEOMETRIC LAYOUT (25%)

A preliminary (25%) roadway geometric plan will be prepared and delivered to the City in hard copy and electronic format for review. The horizontal plan hard copy will be prepared as a strip map at a scale of 1"=20'. The horizontal plan will also show the proposed multi-cell box culvert and the upstream and downstream transition channels.



10. SECOND SUBMITTAL – GRADE AND ALIGNMENT PLANS (40%)

40% submittal will include the City-approved roadway geometrics and preliminary vertical alignment. Paving plans will be prepared in accordance with Draft Administrative Procedure 155, March 2008. Designs shall be placed on combined plan and profile sheets whenever possible, at a horizontal scale 1"=20', and a vertical scale of 1"=2'. The profile shall show four profile lines (if necessary); one for each new outside curb line, and one for each median curb line. Median curb elevations can be depicted in plan view, if desired.

The multi-cell box culvert, the upstream and downstream transition channels will be depicted on plan-profile sheets from the northern limit of the existing concrete lining to the southern limit of the existing concrete lining in Cave Creek Wash. The preliminary drainage report will be submitted at this stage.

A blank Quantity Summary Sheet that lists all the potential bid items will be prepared at this stage.

11. THIRD SUBMITTAL – PRELIMINARY PLANS (70%)

70% preliminary design submittal shall include the following, prepared in accordance with Draft Administrative Procedure 155, March 2008:

- Plan Sheets to include:
 - Cover Sheet
 - Plan Sheet Index
 - Key map
 - Legend and Notes Sheet
 - Quantity Summary Sheet
 - General Plan and Profile Sheets
 - Preliminary Paving Plan and Profile Sheets
 - Storm Drain Sheets - Storm drain design shall be placed on separate combined plan and profile sheets at a horizontal scale of 1"=20', and a vertical scale of 1"=2'. Profiles of lateral connections shall be shown on separate storm drain cross-section sheets. Alternative pipe chart and storm drain design summary sheets will also be prepared by the Consultant.
 - Box culvert plans and details - Multi-cell box culvert and transition channels will be shown in plan view and profile on separate sheets.



- o Electrical site plan
 - Final Drainage Report
 - Redlined Right-of-Way Map
 - Preliminary opinion of probable construction cost
 - Technical Specifications Outline.
 - Stormwater Management Plan to include sediment and erosion control measures and best management practices as recommended by the City guidelines and as suggested within the FCDMC's Erosion Control Manual.
 - Final Traffic Control Plan
 - AutoCAD base files submitted to the City for internal development of Signing and Striping Plans.

12. FOURTH SUBMITTAL – FIELD REVIEW PLANS (90%)

90% PS&E submittal shall include all items listed in Task 13 above, progressed to a further design level, with previous review comments fully addressed. A draft of the technical specifications shall be submitted at this stage.

13. FINAL CONSTRUCTION DOCUMENT SUBMITTAL (100%)

100% final construction document submittal is to include all plans, reports, opinions of probable construction cost, and technical specifications submitted during the 70% and 90% submittals, progressed to a final design level and sealed in accordance with Draft Administrative Procedure 155, March 2008. Listed below is the estimated final sheet count for the project:

SHEET TYPE	# SHEETS
Cover Sheet	1
Key Map & Plan Sheet Index	1
Legend and Notes	2
Quantity Summary Sheets	2
Typical Sections	2



Geometric and Detail Sheets	2
Paving Plan and Profile	5
Channel Access Road Plan and Profile	1
Storm Drain Design Data Summary Sheet	1
Alternate Pipe Material Chart	1
Storm Drain Plan and Profile	3
Connector Pipe Profiles	2
Channel Plan & Profile	4
Channel Details	3
Bridge Removal Plans	2
Concrete Box Culvert Plan and Profile	10
Box Culvert Construction Phasing Plan	2
Box Culvert Details	6
Street Lighting Plans and Details	3
Storm Water Pollution Prevention Plans	6
Traffic Control Plans	4
Roadway Cross Sections (12 per sheet)	3
Channel Cross Sections (6 per sheet)	4
TOTAL SHEETS	70

DELIVERABLES

The Consultant shall provide the City of Phoenix the following deliverables:

- 25% Submittal: One (1) strip map at 1" = 20'; one (1) full size set of plan prints (bond); two (2) half-size sets of plan prints (bond); and electronic AutoCAD and scaleable pdf files.
- 40% Submittal: Two (2) full size sets of plan prints (bond); One (1) full size set of sheets loose; five (5) copies of Preliminary Drainage Report ; Two (2) half-size sets



of plan prints (bond); One (1) half-size set of plan prints loose; and electronic AutoCAD and scaleable pdf files.

- 70% Submittal: Six (6) full size sets of plan prints (bond); six (6) half-size sets of plan prints (bond); six (6) copies of the preliminary opinion of probable construction cost; six (6) copies of technical specifications outline; and electronic AutoCAD and scaleable pdf files.
- 90% Submittal: Six (6) full size sets of plan prints (bond); six (6) half-size sets of plan prints (bond); six (6) copies of the pre-final opinion of probable construction cost; (6) copies of draft technical specifications; and electronic AutoCAD and scaleable pdf files.
- 100% Submittal: Six (6) full size sets of plan prints (bond); one (1) set of full size sealed mylar plans; four (4) copies of sealed Drainage Report; one (1) copy of sealed Final Technical Specifications; one (1) sealed copy of Final Opinion of Probable Construction Cost; and one (1) set of electronic files including drawing files, documents, spreadsheets, etc.; final sealed and signed, scaleable pdf files; and final design spreadsheets
- The Consultant shall prepare the necessary documentation to obtain Conditional Letter of Map Revision (CLOMR) after preparation of preliminary design documents and the preliminary drainage report. An application for a final Letter of Map Revision (LOMR) will be prepared after design and construction is complete. The CLOMR shall include filing the Standard Federal Emergency Management Agency (FEMA) CLOMR forms for hydrology and hydraulics along with backup documentation.

GEOTECHNICAL INVESTIGATION, ANALYSIS, AND REPORT (ALLOWANCE)

Field Investigation: Prior to commencing the geotechnical investigation, Arizona Bluestake will be notified of the proposed boring locations. In addition, right of way permits will be obtained from the City of Phoenix Street Transportation Department. The geotechnical investigation shall consist of hollow stem auger drilling and SPT sampling through the site subsoils. Soil samples will be collected for use in determining the engineering characteristics of the subsurface materials.

The geotechnical exploration will include the drilling of four borings; two on Greenway Parkway and two in the wash channel next to the north and south edges of the existing bridge.

The drilling will be logged in the field by a professional geotechnical engineer or geologist. After collecting soil samples from the borings, geotechnical laboratory testing will be performed on selected soil samples to measure pertinent engineering parameters. Laboratory testing will include moisture contents, Atterberg limits, sieve analyses, unit weight determination (if appropriate samples can be secured), and corrosivity testing (pH, resistivity, sulfates and chlorides).

Data Compilation and Analysis: The field generated boring logs and the laboratory classification test information will be used to develop boring logs for all of the borings drilled on site. Soil parameters for use in the geotechnical analyses will be obtained



from the proposed field investigation. A geologic profile will be developed relating the subsurface conditions to the structure location and geometry.

Geotechnical Report: A Geotechnical Evaluation Report will be prepared which will present the results from Gannett Fleming's borings investigation. This report will include the following:

- A discussion on the geologic setting and geologic hazards
- Foundation recommendations for the proposed multiple box culvert, including recommended foundation type and recommended bearing depths/elevations
- Allowable bearing pressures or capacities and estimated total settlement for foundations
- Recommendations for wing walls and retaining walls, including allowable bearing pressure, lateral earth pressures, backfill type and compaction, and drainage
- Design recommendations to account for abandoned-in-place bridge footings
- Construction considerations relating to soil and groundwater conditions
- Earthwork recommendations including site preparation, excavation and grading, fill material and compaction requirements and design R-values
- Seismic design parameters for foundations
- Flexible pavement design for the Greenway Parkway approaches
- Constructed slopes

Soil boring logs shall be supplied per AP-155 Requirements.

Deliverable: Four (4) copies of the preliminary geotechnical report at the 40% Submittal; four (4) copies of the sealed Geotechnical Report at the 100% Submittal.

FIELD SURVEY (ALLOWANCE)

The Consultant shall provide field survey in accordance with the City of Phoenix Draft Administrative Procedure 155, March 2008. The field data shall be collected utilizing electronic data collectors. Both hard copies and electronic files of the field survey shall be provided to the City. All surveys shall be presented by monument line station and offset.

The survey topographic limits for this project are as follows (Shown in Attachment 1):

- Greenway Parkway survey will begin at the eastern curb return of the second Greenway Parkway entry into the Greenway Plaza Shopping Center (approximately 1,046 feet west of the western most point of the existing bridge abutment) and shall extend to approximately 1,000 feet east of the eastern most point of the existing bridge abutment. Survey limits are 100' from curb returns. Survey will also locate and dimension utilities above ground and inverts of utilities below ground. Perpendicular to the monument



line, surveys shall extend beyond any existing and proposed rights-of-way and proposed design features to the extents described in Draft Administrative Procedure 155, March 2008.

- Cave Creek Wash topographic survey will begin 1,500 feet downstream of the 19th Ave Bridge over Cave Creek and extend upstream to 1,500 feet north of the Tierra Buena Bridge over Cave Creek Wash. The survey will also include the East Fork from its confluence with Cave Creek Wash to 12th Avenue. Also the upstream and downstream concrete lined channels will be clearly dimensioned. Cross sections shall be at approximately the same locations as shown on the FEMA FIRM panels. Intermediate cross sections will be taken if the spacing exceeds 400 feet. Cross sections will be taken at locations where there is a significant change in the channel geometry such as at interface of concrete and earthen channel, at bends in the channel, etc. An adequate number of data points will also be taken along each cross-section such that variations in elevations and channel roughness/vegetation can be described. Cross sections will be oriented perpendicular to the flow due to the larger storm event.

The City will provide the Consultant with the vertical and horizontal control in the form of two City approved benchmarks. The City will provide the vertical datum elevation for each benchmark.

Deliverable: Original survey notes, provided at the 100% Submittal.

RIGHT-OF-WAY AND EASEMENTS

The Consultant shall prepare a right-of-way strip map showing existing right-of-way and land parcels within the project limits. The Consultant shall use current quarter section map information in electronic format, provided by the City, to prepare the map. The map shall be produced at 1" = 100' scale in a 24" x 36" format.

Consultant shall prepare exhibits and calculations for right-of-way and easements to be acquired for this improvement project. These hard copies shall be prepared in 8 1/2" x 11" format using the calculation sheet provided by the City of Phoenix. The Consultant shall prepare a redlined right-of-way map that shall be submitted to the City along with the 70% design submittal. A final right-of-way map incorporating City review comments shall be submitted on mylar and electronic format. Area calculations shall also be prepared and submitted at that time.

Deliverable: six (6) full size set of redlined right-of-way strip map and area calculations, provided at the 70% Submittal, and six (6) electronic copies of the Right of Way map at the 100% Submittal.

B.3: PUBLIC NOTIFICATION

PUBLIC NOTIFICATION

The City of Phoenix Street Transportation Department Floodplain Management, in accordance with National Flood Insurance Program regulation 65.7(b)(1), hereby gives notice of its intent to revise the floodway, generally located along Cave Creek and its East Fork in the vicinity of the Greenway Parkway crossing. Specifically, the floodway shall be revised from approximately 1,100 feet southwest of the existing Greenway Parkway Bridge over Cave Creek to 1,890 feet northeast of the same bridge and 500 feet east of the existing Greenway Parkway Bridge over Cave Creek for the East Fork. As a result of this project the Base Flood Elevations (BFE) during the 1% annual chance (100 year) storm event will increase slightly within this reach of Cave Creek but the flow will still remain contained within the existing Cave Creek channel. The BFE will increase from 1331.68 feet to 1332.35 feet at the proposed Greenway Parkway multi-cell box culvert. The maximum increase in BFE of 1.8 feet in East Fork will occur just 100 feet downstream of the proposed Greenway Parkway multi-cell box culvert. However, the flow will remain confined within the channel and below the top of the channel banks. This increase in BFE is due to new topographic mapping, and not a result of this project. The maximum increase in of 0.7 feet in BFE within Cave Creek will be 270 feet upstream of the proposed Greenway Parkway multi-cell box culvert. However, again this flow will remain confined within the channel and below the top of the channel banks. The increase in BFE will be reduced to zero feet in Cave Creek at 1,890 feet northeast of the proposed Greenway Parkway multi-cell box culvert.

Maps and detailed analyses of the revision can be reviewed at the City of Phoenix Street Transportation Department at 200 W Washington Street, 5th Floor, Phoenix, AZ 85003. Interested persons may call Floodplain Management at (602) 262-4960 for additional information from 8 am to 5 pm.



City of Phoenix

City of Phoenix, Floodplain Management, 200 W. Washington St., Phoenix, AZ 85003
(602) 262-4960 (phone) (602) 262-7322 (fax)

October 24, 2013

Coral Gables Estates Homeowners
8765 W Kelton Lane
Building A-1, Suite 102
Peoria, AZ 85382

**Re: Notification of Increases in 1% (100-year) Annual Chance Water-Surface Elevations
and Floodway Revision for Cave Creek**

Dear Property Owner:

The Flood Insurance Rate Map (FIRM) depicts land which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The FIRM is used to determine flood insurance rates and to help the community with floodplain management. Additionally, the FIRM for a community depicts the floodplain, the area which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The floodway is the portion of the floodplain that includes the channel of a river or other watercourse and the adjacent land area that must be reserved in order to discharge the base flood without cumulatively increasing the water-surface elevation by more than a designated height.

The City of Phoenix is applying for a Conditional Letter of Map Revision (CLOMR) from the Federal Emergency Management Agency (FEMA) to revise FIRM 04013C1215K and 04013C1655K for the City of Phoenix, Arizona, along Cave Creek from approximately 1,890 feet northeast of the existing Greenway Parkway Bridge to 1,100 feet southwest of the same bridge and along East Fork from the confluence with Cave Creek to 1,500 feet upstream of the confluence. The City of Phoenix is proposing to revise the FIRM due to the proposed construction of a new/replacement multi-cell box culvert under Greenway Parkway. The Base Flood Elevations (BFEs) will increase within this reach of Cave Creek and East Fork. The maximum increase in Cave Creek BFEs during the 1% annual chance (100-year) storm event will occur in the portion of Cave Creek between Greenway Parkway and Tierra Buena and is estimated to be approximately 0.7 feet and it will be reduced to zero feet at a distance 1,890 feet northeast of the Greenway Parkway culvert. The maximum increase in East Fork BFEs during the 1% annual chance (100-year) storm event will occur at the confluence with Cave Creek and is estimated to be approximately 1.8 feet and it will be reduced to zero feet at a

distance 500 feet upstream of the confluence. The increase in the BFEs is due to new topographic mapping, and not a result of this project.

The City of Phoenix Street Transportation Department, in accordance with National Flood Insurance Program regulation 65.7(b)(1), hereby gives notice of its intent to revise the 1% annual chance (100-year) floodway, generally located along Cave Creek between Greenway Parkway and Tierra Buena Lane. Additionally, the floodway along the East Fork of Cave Creek upstream of the Cave Creek confluence will be revised. Specifically, the floodway along Cave Creek shall be revised from a point 270 upstream of the proposed multi-cell box culvert under Greenway Parkway to a point 1,890 feet upstream of the same proposed culvert. The floodway along the East Fork of Cave Creek shall be revised from the confluence with Cave Creek to a point 590 feet upstream of the confluence. As a result of the floodway revision the floodway shall narrow with a maximum narrowing of 6.6 feet at a point approximately 195 feet downstream of the proposed multi-cell box culvert under Greenway Parkway.

This letter is to inform you of the proposed increases in the 1% annual chance water-surface elevations on your properties at 7631 E Greenway Rd, Phoenix AZ 85023 (parcel number 208-16-473A), 1503 N 15th Drive, Phoenix, AZ 85023 (parcel number 208-16-443) and parcel number 208-16-282C which does not have a property address listed on the Maricopa County Assessor's website.

Maps and detailed analyses of the floodway revision can be reviewed at the City of Phoenix Street Transportation Department at 200 W Washington Street, 5th Floor, Phoenix, AZ 85003. If you have any questions or concerns about the proposed project or its effect on your property, you may contact Floodplain Management at 602 262-4960 from 8 am to 5 pm Monday to Friday.

Sincerely,



Hasan Mushtaq, PhD, PE, CFM
Floodplain Manager



City of Phoenix

City of Phoenix, Floodplain Management, 200 W. Washington St., Phoenix, AZ 85003
(602) 262-4960 (phone) (602) 262-7322 (fax)

October 24, 2013

Zenepe Koci
350 E Bell Road
No J 13
Peoria, AZ 85022

**Re: Notification of Increases in 1% (100-year) Annual Chance Water-Surface Elevations
and Floodway Revision for Cave Creek**

Dear Property Owner:

The Flood Insurance Rate Map (FIRM) depicts land which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The FIRM is used to determine flood insurance rates and to help the community with floodplain management. Additionally, the FIRM for a community depicts the floodplain, the area which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The floodway is the portion of the floodplain that includes the channel of a river or other watercourse and the adjacent land area that must be reserved in order to discharge the base flood without cumulatively increasing the water-surface elevation by more than a designated height.

The City of Phoenix is applying for a Conditional Letter of Map Revision (CLOMR) from the Federal Emergency Management Agency (FEMA) to revise FIRM 04013C1215K and 04013C1655K for the City of Phoenix, Arizona along Cave Creek from approximately 1,890 feet northeast of the existing Greenway Parkway Bridge to 1,100 feet southwest of the same bridge and along East Fork from the confluence with Cave Creek to 1,500 feet upstream of the confluence. The City of Phoenix is proposing to revise the FIRM due to the proposed construction of a new/replacement multi-cell box culvert under Greenway Parkway. The Base Flood Elevations (BFEs) will increase within this reach of Cave Creek and East Fork. The maximum increase in Cave Creek BFEs during the 1% annual chance (100-year) storm event will occur in the portion of Cave Creek between Greenway Parkway and Tierra Buena and is estimated to be approximately 0.7 feet and it will be reduced to zero feet at a distance 1,890 feet northeast of the Greenway Parkway culvert. The maximum increase in East Fork BFEs during the 1% annual chance (100-year) storm event will occur at the confluence with Cave Creek and is estimated to be approximately 1.8 feet and it will be reduced to zero feet at a

distance 500 feet upstream of the confluence. The increase in the BFEs is due to new topographic mapping, and not a result of this project.

The City of Phoenix Street Transportation Department, in accordance with National Flood Insurance Program regulation 65.7(b)(1), hereby gives notice of its intent to revise the 1% annual chance (100-year) floodway, generally located along Cave Creek between Greenway Parkway and Tierra Buena Lane. Additionally, the floodway along the East Fork of Cave Creek upstream of the Cave Creek confluence will be revised. Specifically, the floodway along Cave Creek shall be revised from a point 270 feet upstream of the proposed multi-cell box culvert under Greenway Parkway to a point 1,890 feet upstream of the same proposed culvert. The floodway along the East Fork of Cave Creek shall be revised from the confluence with Cave Creek to a point 590 feet upstream of the confluence. As a result of the floodway revision the floodway shall narrow with a maximum narrowing of 6.6 feet at a point approximately 195 feet downstream of the proposed multi-cell box culvert under Greenway Parkway.

This letter is to inform you of the proposed increases in the 1% annual chance water-surface elevations on your property at 1501 W Beck Lane, Phoenix, AZ 85023 (parcel number 208-13-173).

Maps and detailed analyses of the floodway revision can be reviewed at the City of Phoenix Street Transportation Department at 200 W Washington Street, 5th Floor, Phoenix, AZ 85003. If you have any questions or concerns about the proposed project or its effect on your property, you may contact Floodplain Management at 602 262-4960 from 8 am to 5 pm Monday to Friday.

Sincerely,



Hasan Mushtaq, PhD, PE, CFM
Floodplain Manager

B.4: FEMA CORRESPONDENCE

There has not yet been any FEMA correspondence in conjunction with this study.



APPENDIX C: SURVEY FIELD NOTES

- C.1 Digital Projection Information**
- C.2 Survey Field Notes for Aerial Mapping Control**
- C.3 Survey Field Notes for Hydrologic Modeling**
- C.4 Survey Field Notes for Hydraulic Mapping**

C.1: DIGITAL PROJECTION INFORMATION

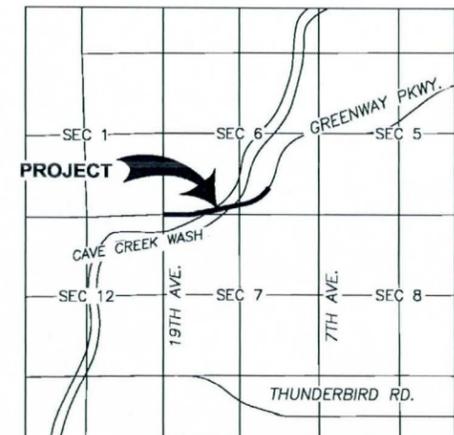
GREENWAY BRIDGE AT CAVE CREEK WASH TOPOGRAPHIC SURVEY

EXHIBIT "B"
SHT 2 OF 2

F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.	ST85110069	2	2
PREMIER				
ENGINEERING CORPORATION 6437 W. CHANDLER BLVD, STE. 1 CHANDLER, AZ 85226 480-829-6000				
DES: JIB	DR: JIB	CK: RSM	DATE: 02/13	

LEGEND

- CENTERLINE
- SECTION LINE/MID-SECTION LINE
- TESTHOLE/BORING
- BOULDER
- TREE
- PALM TREE
- CACTUS
- FENCE
- MAJOR CONTOUR
- SIGN
- BRUSH/TREE LINE
- LIGHT POLE



VICINITY MAP (NTS)

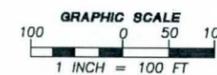


EXHIBIT "B"
SHT 2 OF 2

"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX."

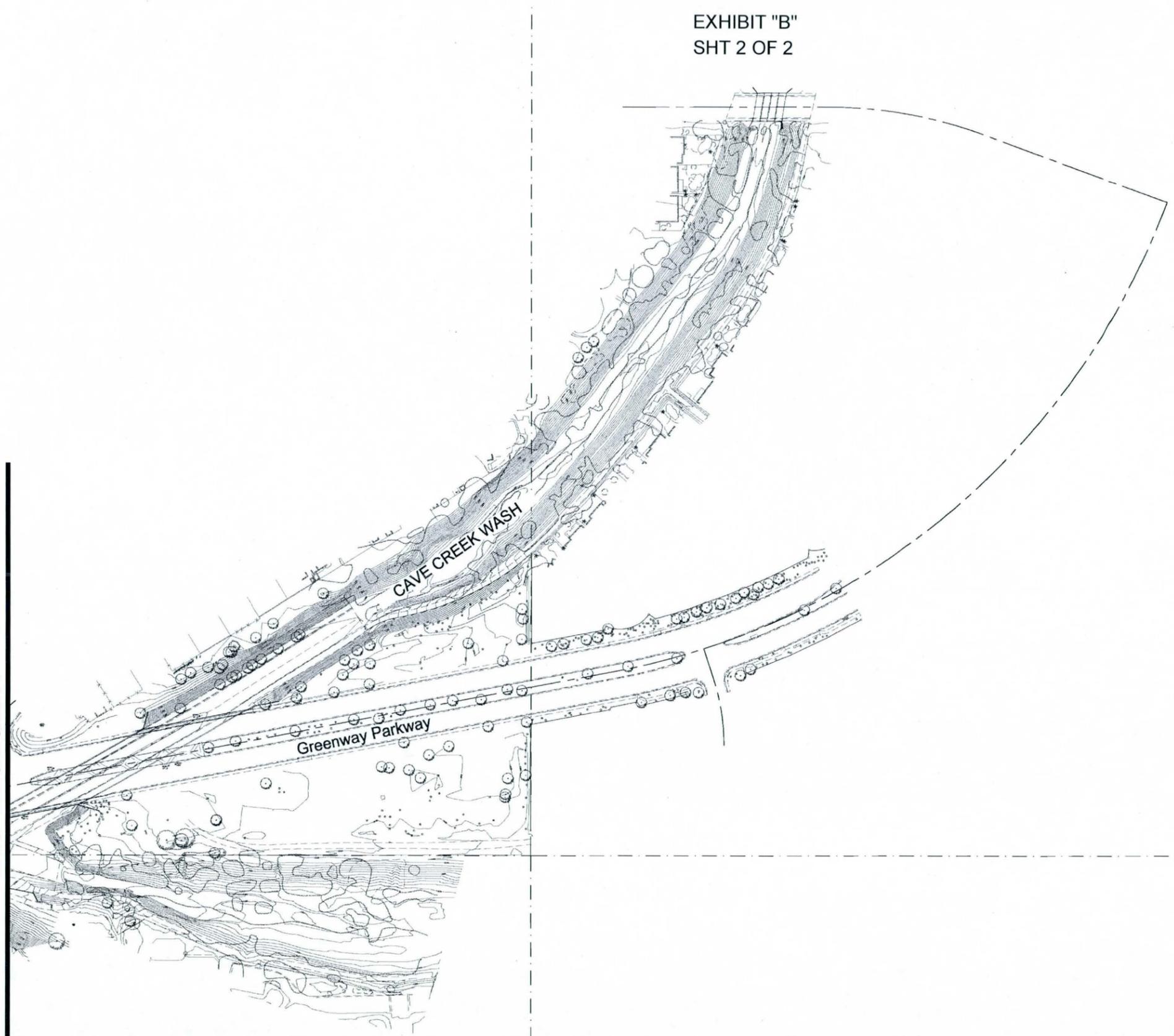
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

GREENWAY BRIDGE
AT CAVE CREEK WASH
TOPOGRAPHIC SURVEY

DR: JIB	DES: JIB	CK: RSM	SHEET	TOTAL
DATE: 02/13	DATE: 02/13	DATE: 02/13	NO:	SHEETS
SCALE: 1"=100'			2	2

REVISION BY CITY OF PHOENIX	DESCRIPTION	REV BY	CHK BY	DATE
NO.				
REVISION BY CITY OF PHOENIX	DESCRIPTION	REV BY	CHK BY	DATE
NO.				
REVISION BY CITY OF PHOENIX	DESCRIPTION	REV BY	CHK BY	DATE
NO.				

MATCH LINE SEE SHEET 1



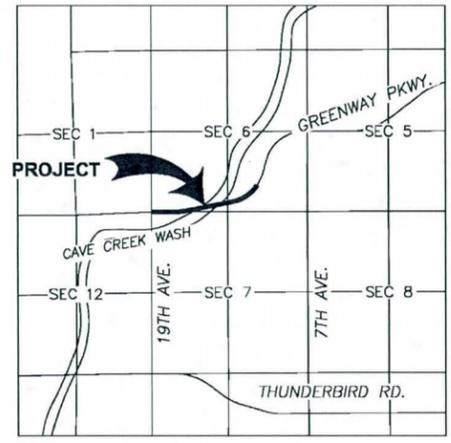
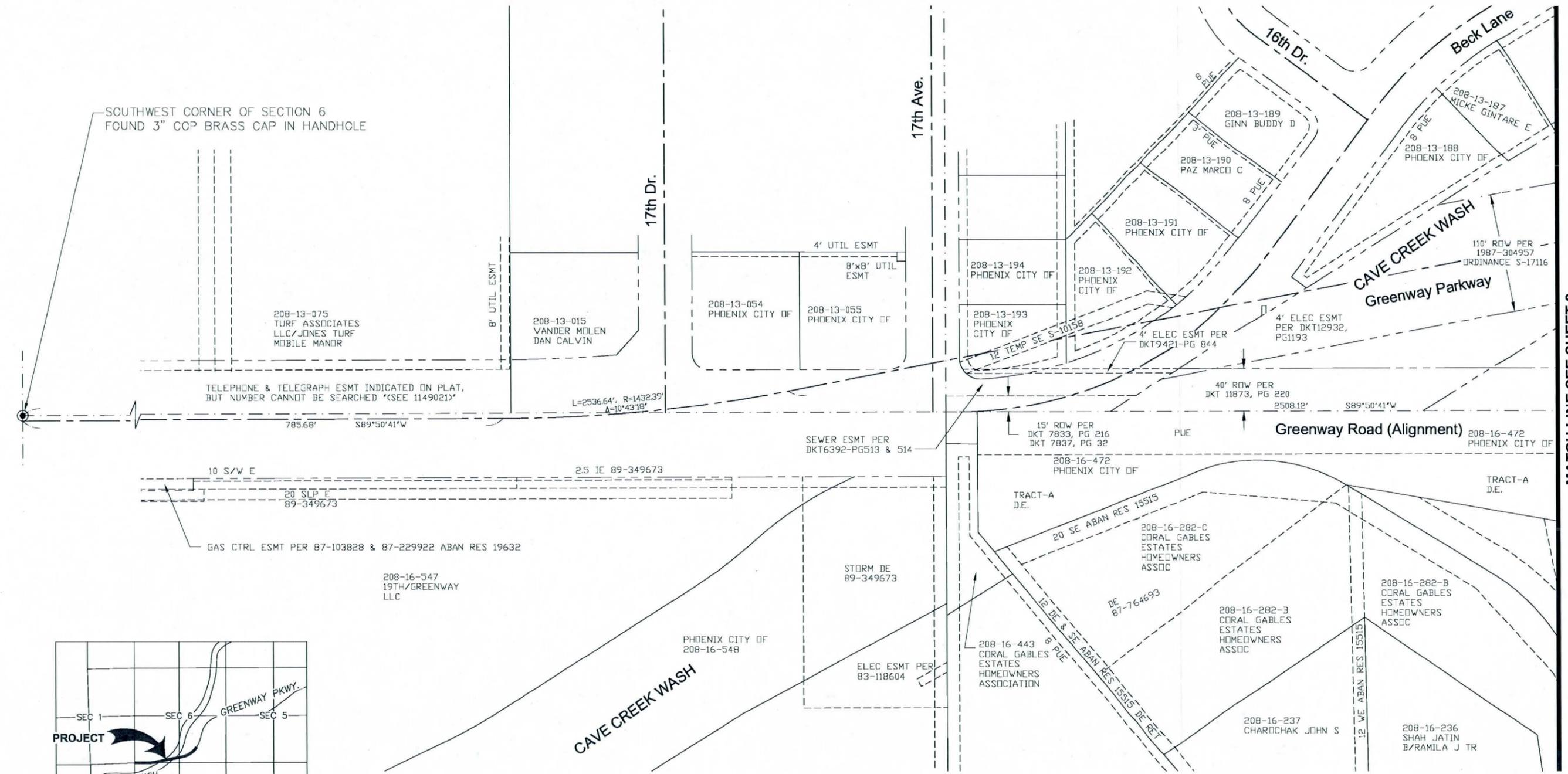
F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.	ST85110069	1	2

PREMIER
ENGINEERING CORPORATION
6437 W. CHANDLER BLVD, STE. 1
CHANDLER, AZ 85226 480-829-6000

DES: JIB DR: JIB CK: RSM DATE: 02/13

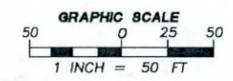
GREENWAY BRIDGE AT CAVE CREEK WASH EXISTING RIGHT-OF-WAY MAPS

Portions of Sections 6 & 7, Township 3 North, Range 3 East, G. & S. R. B. & M.



LEGEND

- CENTERLINE
- EASEMENT LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SECTION LINE/MID-SECTION LINE
- FOUND MONUMENT (AS NOTED)



"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX."

EXHIBIT "C"-SHT 1 OF 2

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

GREENWAY BRIDGE
AT CAVE CREEK WASH
EXISTING RIGHT-OF-WAY MAPS

DR: JIB	DES: JIB	CK: RSM	SHEET	TOTAL
DATE: 02/13	DATE: 02/13	DATE: 02/13	NO:	SHEETS
SCALE: 1"=50'			1	2

REVISION BY CITY OF PHOENIX	DESCRIPTION	REV BY	CHK BY	DATE
NO.				



MATCH LINE SEE SHEET 2

February 6, 2013 3:20:04 PM
Jesse Boyd
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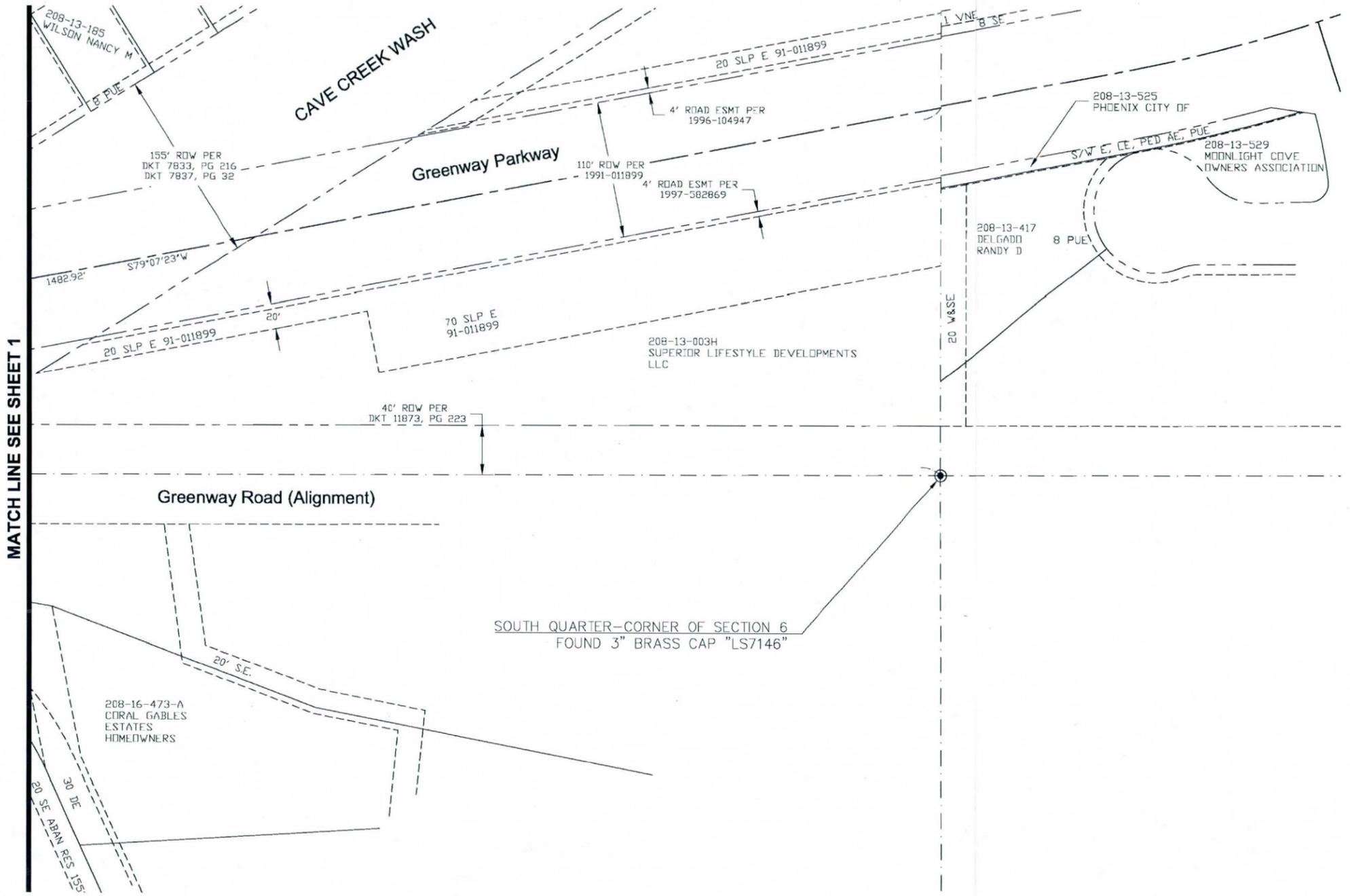
F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.	ST85110069	2	2

PREMIER
ENGINEERING CORPORATION
6437 W. CHANDLER BLVD, STE. 1
CHANDLER, AZ 85226 480-829-6000

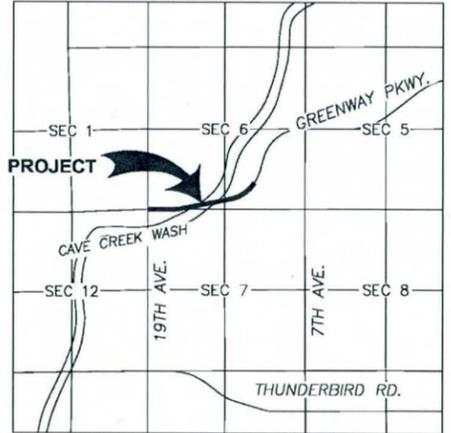
DES: JIB DR: JIB CK: RSM DATE: 02/13

GREENWAY BRIDGE AT CAVE CREEK WASH EXISTING RIGHT-OF-WAY MAPS

Portions of Sections 6 & 7, Township 3 North, Range 3 East, G.& S. R. B. & M.

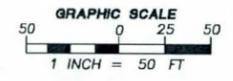


MATCH LINE SEE SHEET 1



LEGEND

- CENTERLINE
- - - EASEMENT LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SECTION LINE/MID-SECTION LINE
- FOUND MONUMENT (AS NOTED)



"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX."

EXHIBIT "C" - SHT 2 OF 2
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT
GREENWAY BRIDGE
AT CAVE CREEK WASH
EXISTING RIGHT-OF-WAY MAPS

DR: JIB	DES: JIB	CK: RSM	SHEET	TOTAL
DATE: 02/13	DATE: 02/13	DATE: 02/13	NO:	SHEETS
SCALE: 1"=50'			2	2

REVISION BY CITY OF PHOENIX	DESCRIPTION	REV BY	CHK BY	DATE
NO.				



February 6, 2013 3:19:51 PM Jesse Boyd P:\2009032\Survey\Internal\Autocad\09032_ROW.dwg

Attachment 1: SUBCONSULTANT QUALITY VERIFICATION FORM

SubConsultant must provide a signed copy of this form with each deliverable* specified in the Work Order or the deliverable will not be accepted. A true copy of SubConsultant's internal QA/QC review and approval forms related to the deliverable should be attached.

This form must be signed by SubConsultant's Quality Assurance/Quality Control Officer

Project Name: Replace Greenway Parkway Bridge at Cave Creek Wash

Gannett Fleming Project Number: 51929

Deliverable Description: *RIGHT-OF-WAY MAPS, SEALED*

I, *Jadi Jalaghi*, warrant and represent that the project deliverable described above and attached to this form was developed in accordance with the project scope of work and that all elements relating to the quality of the deliverable were verified in accordance with the requirements of my firm's internal quality management/quality assurance system. This deliverable satisfies all requirements of our Contract with Gannett Fleming.

Signature: *Jadi Jalaghi*
(by SubConsultant's QA/QC Officer)

Date: *2/6/13*

SubConsultant: *Premier Engineering Corp.*

*'Deliverable' shall mean all calculations, drawings, maps, specifications, reports, data bases, logs and other information developed from wells, borings and cores, laboratory data, materials schedules, instrument calibration data and all other items developed, prepared and delivered to Gannett Fleming as specified in the Scope of Work, in any form or media.

Attachment 1: SUBCONSULTANT QUALITY VERIFICATION FORM

SubConsultant must provide a signed copy of this form with each deliverable* specified in the Work Order or the deliverable will not be accepted. A true copy of SubConsultant's internal QA/QC review and approval forms related to the deliverable should be attached.

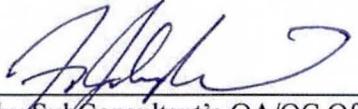
This form must be signed by SubConsultant's Quality Assurance/Quality Control Officer

Project Name: Replace Greenway Parkway Bridge at Cave Creek Wash

Gannett Fleming Project Number: 51929

Deliverable Description: TOPOGRAPHIC SURVEY, SEALED
FIELD NOTES SEALED
SURVEY POINTS, SEALED

I, Fadi Jalaghi, warrant and represent that the project deliverable described above and attached to this form was developed in accordance with the project scope of work and that all elements relating to the quality of the deliverable were verified in accordance with the requirements of my firm's internal quality management/quality assurance system. This deliverable satisfies all requirements of our Contract with Gannett Fleming.

Signature: 
(by SubConsultant's QA/QC Officer)

Date: 2/6/13

SubConsultant: Premier Engineering Corp.

*'Deliverable' shall mean all calculations, drawings, maps, specifications, reports, data bases, logs and other information developed from wells, borings and cores, laboratory data, materials schedules, instrument calibration data and all other items developed, prepared and delivered to Gannett Fleming as specified in the Scope of Work, in any form or media.

C.2: SURVEY FIELD NOTES FOR AERIAL MAPPING CONTROL

EXHIBIT "E"

Aerial Control Points

Replace Greenway Parkway Bridge at Cave Creek Wash

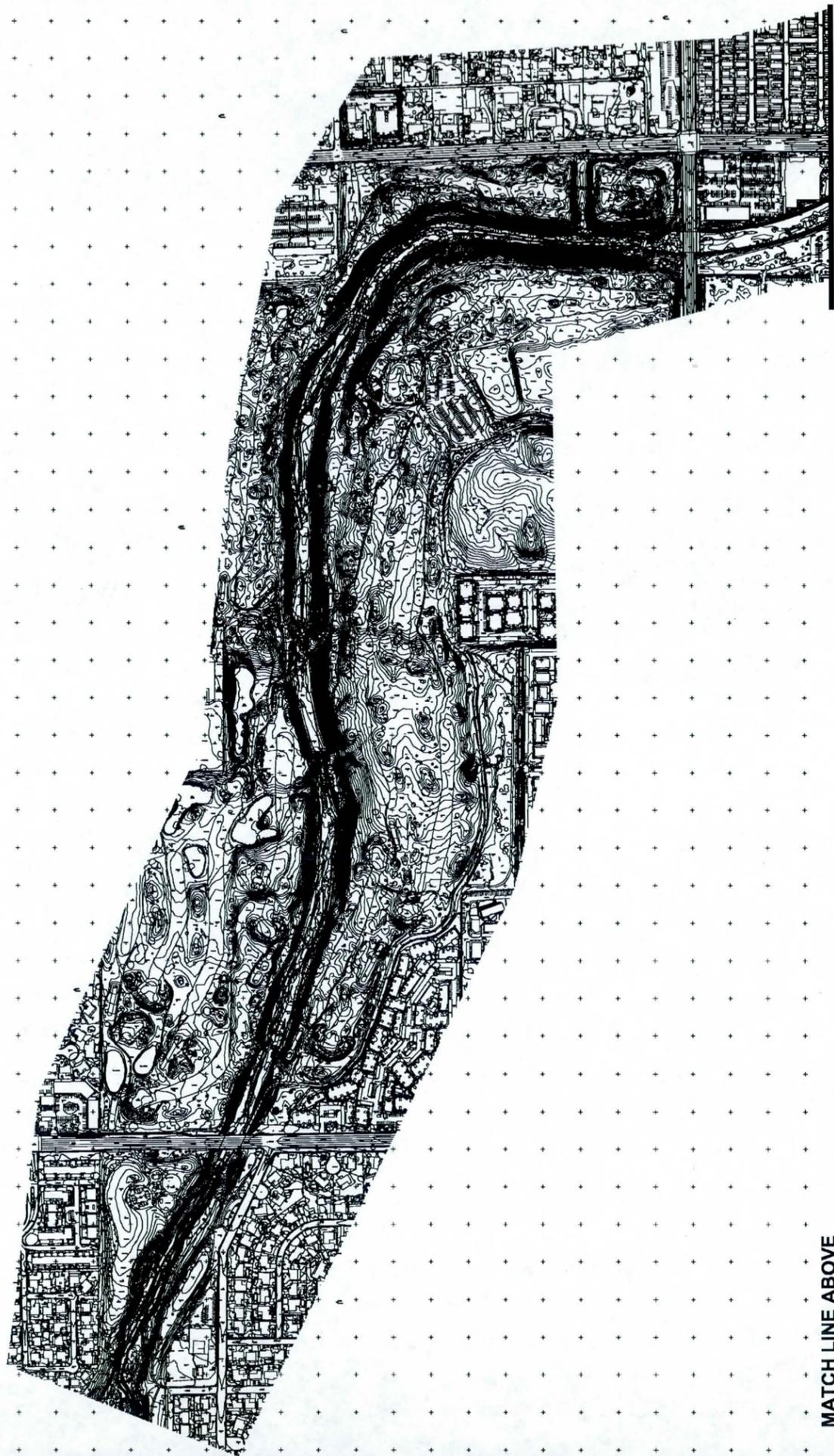
Premier Engineering Project Number 2009032

COP Project Number ST85110069

Gannett Fleming Project Number 51929

PANEL ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	955123.5727	647565.8183	1336.62	SET PANEL
2	956689.6451	647434.3933	1339.64	SET PANEL
3	956681.8055	646348.2975	1338.33	SET PANEL
4	954749.5192	645439.6821	1329.74	SET PANEL
5	954600.0066	644392.9824	1325.78	SET PANEL
6	956018.6534	644264.5258	1328.80	SET PANEL
7	955121.3132	648610.8779	1342.20	SET PANEL
8	956605.0118	648523.4515	1346.51	SET PANEL
9	957550.8417	646872.8153	1345.27	SET PANEL
10	957518.7076	649081.1283	1348.82	SET PANEL
11	958401.2763	649530.5109	1355.64	SET PANEL
12	959432.9415	648153.8838	1360.37	SET PANEL
13	955375.0568	643645.2457	1323.67	SET PANEL
14	955947.1693	642548.6356	1321.64	SET PANEL
15	955493.3323	641892.7388	1322.96	SET PANEL
16	954298.4615	643156.9909	1339.00	SET PANEL
17	953309.1063	641671.5362	1310.47	SET PANEL
18	952300.7671	643548.9168	1312.19	SET PANEL
19	952452.6741	641874.0466	1311.94	SET PANEL
20	951289.4549	643196.4603	1307.40	SET PANEL
21	950845.4404	641103.546	1302.30	SET PANEL
22	949187.2621	642499.8803	1296.73	SET PANEL
23	948354.0336	641874.9893	1291.07	SET PANEL
24	948983.2431	640444.2327	1291.70	SET PANEL





MATCH LINE BELOW



GREENWAY BRIDGE
AT CAVE CREEK WASH
AERIAL MAPPING
(NOT TO SCALE)



PANEL ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	955123.5727	647565.8183	1336.62392	SET PANEL
2	956689.6451	647434.3933	1339.638085	SET PANEL
3	956681.8055	646348.2975	1338.32956	SET PANEL
4	954749.5192	645439.6821	1329.741095	SET PANEL
5	954600.0066	644392.9824	1325.77911	SET PANEL
6	956018.6534	644264.5258	1328.79817	SET PANEL
7	955121.3132	648610.8779	1342.19726	SET PANEL
8	956605.0118	648523.4515	1346.50514	SET PANEL
9	957550.8417	646872.8153	1345.27037	SET PANEL
10	957518.7076	649081.1283	1348.81677	SET PANEL
11	958401.2763	649530.5109	1355.64415	SET PANEL
12	959432.9415	648153.8838	1360.37474	SET PANEL
13	955375.0568	643645.2457	1323.67015	SET PANEL
14	955947.1693	642548.6356	1321.64432	SET PANEL
15	955493.3323	641892.7388	1322.9554	SET PANEL
16	954298.4615	643156.9909	1338.99669	SET PANEL
17	953309.1063	641671.5362	1310.46771	SET PANEL
18	952300.7671	643548.9168	1312.19295	SET PANEL
19	952452.6741	641874.0466	1311.94307	SET PANEL
20	951289.4549	643196.4603	1307.40035	SET PANEL
21	950845.4404	641103.546	1302.30088	SET PANEL
22	949187.2621	642499.8803	1296.73401	SET PANEL
23	948354.0336	641874.9893	1291.06596	SET PANEL
24	948983.2431	640444.2327	1291.69659	SET PANEL

MATCH LINE ABOVE

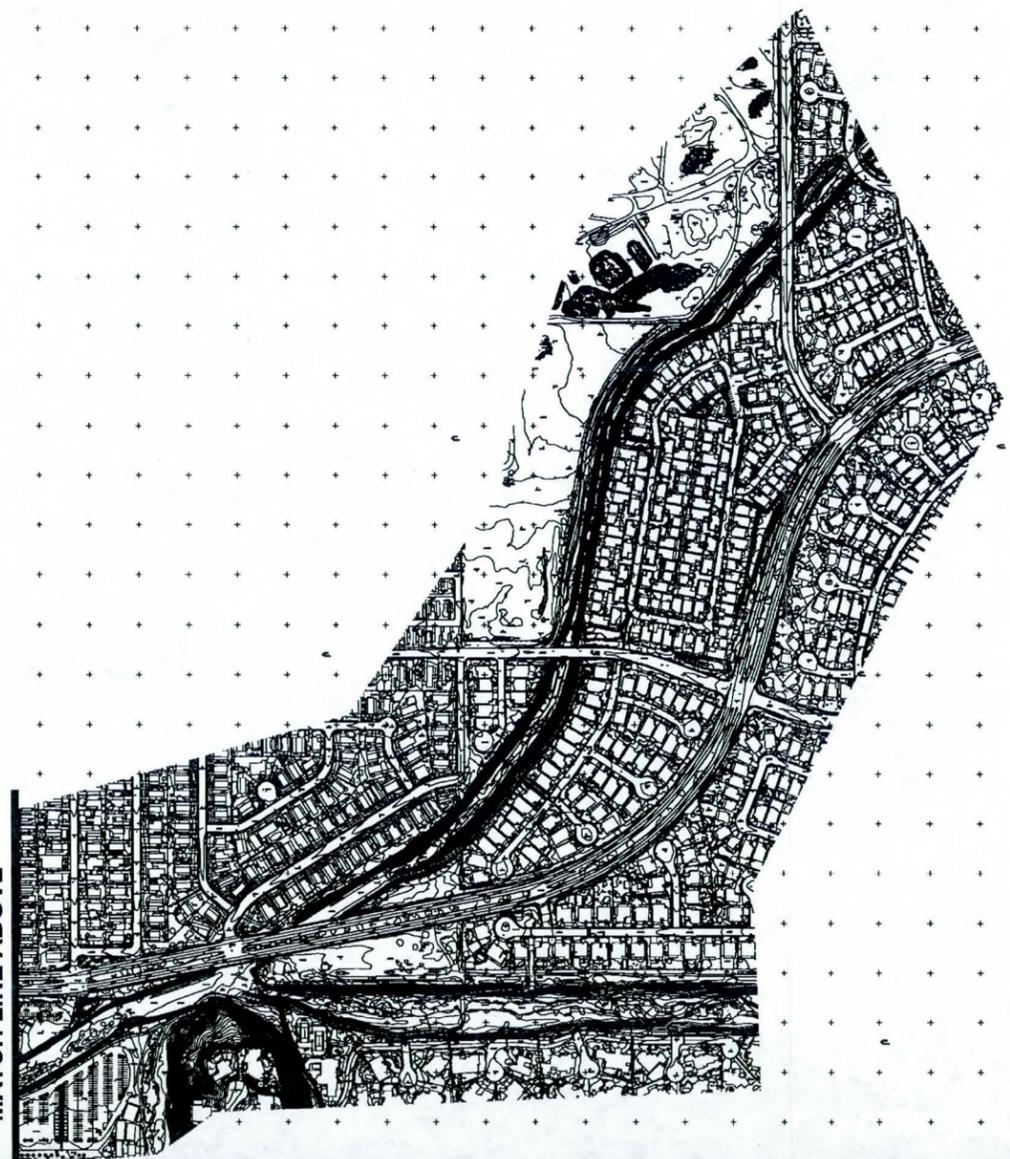


EXHIBIT "F"
AERIAL MAPPING

Attachment 1: SUBCONSULTANT QUALITY VERIFICATION FORM

SubConsultant must provide a signed copy of this form with each deliverable* specified in the Work Order or the deliverable will not be accepted. A true copy of SubConsultant's internal QA/QC review and approval forms related to the deliverable should be attached.

This form must be signed by SubConsultant's Quality Assurance/Quality Control Officer

Project Name: Replace Greenway Parkway Bridge at Cave Creek Wash

Gannett Fleming Project Number: 51929

Deliverable Description: *OVERALL HARDCOPY OF AERIAL MAPPING, SEALED*

I, Fadi Jalaghi, warrant and represent that the project deliverable described above and attached to this form was developed in accordance with the project scope of work and that all elements relating to the quality of the deliverable were verified in accordance with the requirements of my firm's internal quality management/quality assurance system. This deliverable satisfies all requirements of our Contract with Gannett Fleming.

Signature:

F. Jalaghi
(by SubConsultant's QA/QC Officer)

Date:

2/6/13

SubConsultant:

Premier Engineering Corp.

*'Deliverable' shall mean all calculations, drawings, maps, specifications, reports, data bases, logs and other information developed from wells, borings and cores, laboratory data, materials schedules, instrument calibration data and all other items developed, prepared and delivered to Gannett Fleming as specified in the Scope of Work, in any form or media.

C.3: SURVEY FIELD NOTES FOR HYDROLOGIC MODELING

No hydrologic modeling was done as a part of this study.

C.4: SURVEY FIELD NOTES FOR HYDRAULIC MAPPING

10/20/09

GL

2009032

GREENWAY PARKWAY BRIDGE

DC = RS

GPS @ 1 GE 1

HI 4.90

CHECK @ 30059

HR 7.06

ΔN 0.100

ΔE -0.087

ΔEL 0.082

CHECK OUT @ 30061

HR 7.06

ΔN 0.073

ΔE -0.023

ΔEL 0.061

EXHIBIT "A"
FIELD NOTES-
POINT LIST

POINT

DESC

30059 CHECK

TOPO SHOTS

50179

TOPO SHOTS

50180

30061 CHECK



10/21/09

GL

2009032

GREENWAY BRIDGE

BASE @ 1 GE1 HI 4.885

CHECK @ 30049 HR 7.06

ΔN 0.119

ΔE -0.044

ΔEL 0.065

CHECK OUT @ 30018

ΔN 0.002

ΔE -0.029

ΔEL 0.022

STORED

POINT

DESC.

R2

20000

20001

30049 CHECK

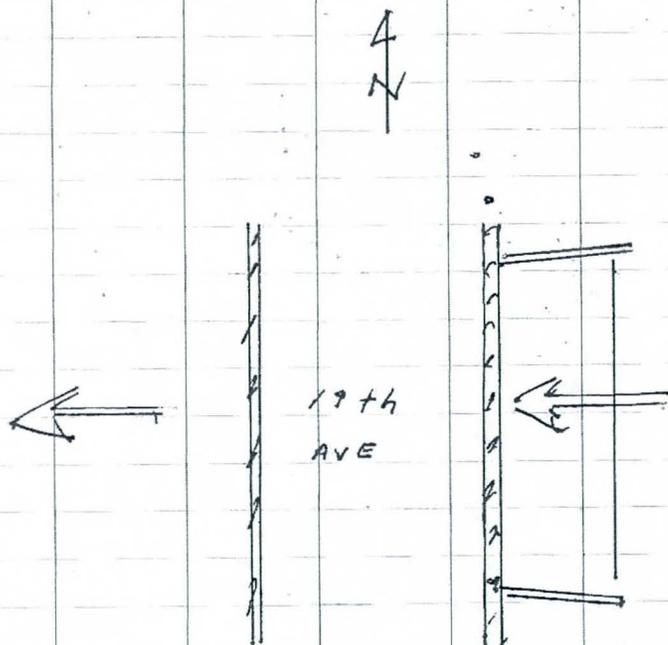
TO PO

20208

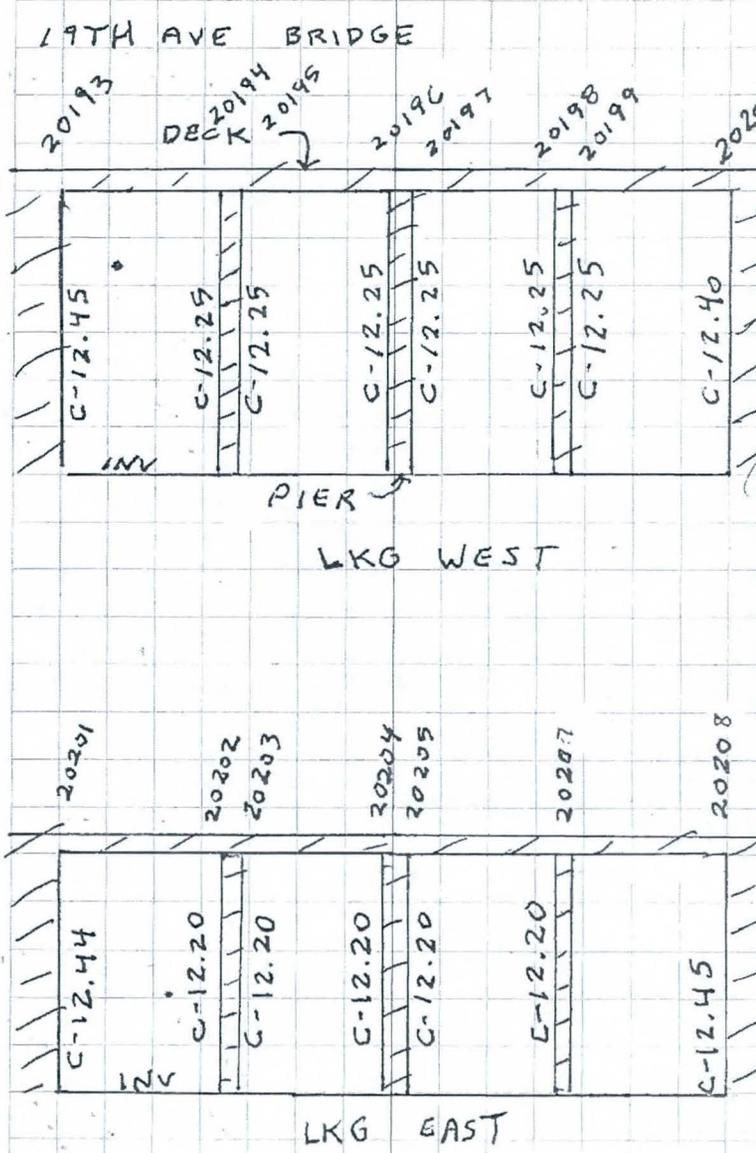
20209

TO PO

30018 CHECK



* NOTE: CUTS ARE FROM
 UNDERSIDE OF BRIDGE DECK
 DOWN TO INV



10/22/09

GL

2009032 GREENWAY BRIDGE

BASE @ 1 GE1 HI 4.805

CHECK @ 30018 HR 7.06

AN 0.003
AG -0.051
DEL 0.032

CHECK @ 30053 HR 7.00

AN 0.113
AE -0.090
AN -0.012

STORED #

20210

20211

20389

20390

DESC

30018 CHECK

TOPO

TOPO

30053 CHECK

LKG NE	C-10.00	20222	C-9.95	LKG SW	20220	TIERRA BUENA LN BRIDGE
	C-10.01	20223	C-9.98		20217	
	C-10.05	20224	C-10.10		20216	
	C-10.00	20225 20226	C-9.99		20215	
	C-10.00	20227 20228	C-10.01		20214	
		20221			20212	

10/23/09

GL, NB

2009032

K	@	30057	HI	5.91
BS	@	30059	HR	5.15
ΔN		-0.007		
ΔE		-0.023		
ΔEL		-0.018		

CHECK OUT @ 30059

ΔN	0.021
ΔE	-0.036
ΔEL	-0.005

47

STORED #

31446

31447

|

31662

31663

DESC

30059 CHECK

TOPO SHOTS

|

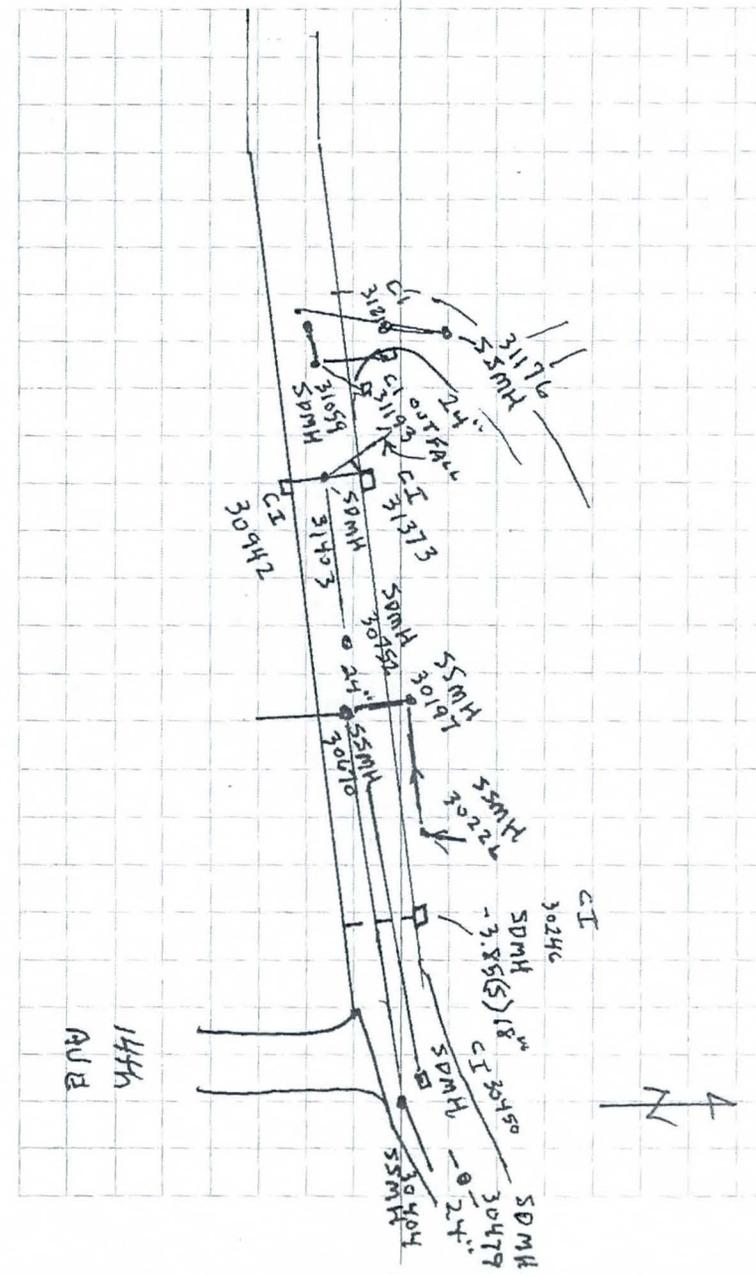
TOPO

30059 CHECK

10/23/09
 GL, NB
 2009032 GREENWAY BRIDGE

SANITARY SEWER MH'S / SD MH'S

POINT	INV		DESC.	
30246	-3.85(S)	18"	SDMH	CI
30479	-8.63W	E	SDMH	
30450	-4.45	N	SDMH	CI
30404	14.27	E ¹ / ₂ W	SSMH	
30226	-7.10	N -7.20W	SSMH	
30197	-7.28	E -7.48S	SSMH	
30670			SSMH	
30792	-9.61	E ¹ / ₂ W	SDMH	
31403	-9.76	E/S/N	SDMH	
31373	-4.02	W 18"	SDMH	CI
30942	-3.90	N 18"	SDMH	CI
30670	-11.88N	-12.00E -12.06S	SSMH	
31176	-6.61	N ¹ / ₂ S	SSMH	
31218	-3.63	SW 18"	SDMH	CI
31193	-3.27	SW 18"	SDMH	CI
31059	-5.11	N, NE, W 24"W	SDMH	



10/27/09

GL

2009032 GREENWAY BRIDGE

BASE @ 1 GE1 HI 4.35

CHECK @ 30018 HR 7.06

ΔN -0.012

ΔE -0.015

ΔEL 0.059

CHECK OUT @ 30018 HR 7.06

ΔN -0.009

ΔE -0.025

ΔEL 0.045

48

STORED #

20399

20400

20703

20704

DESC

30018 CHECK

TOPO

TOPO

30018 CHECK

10/27/09

GL

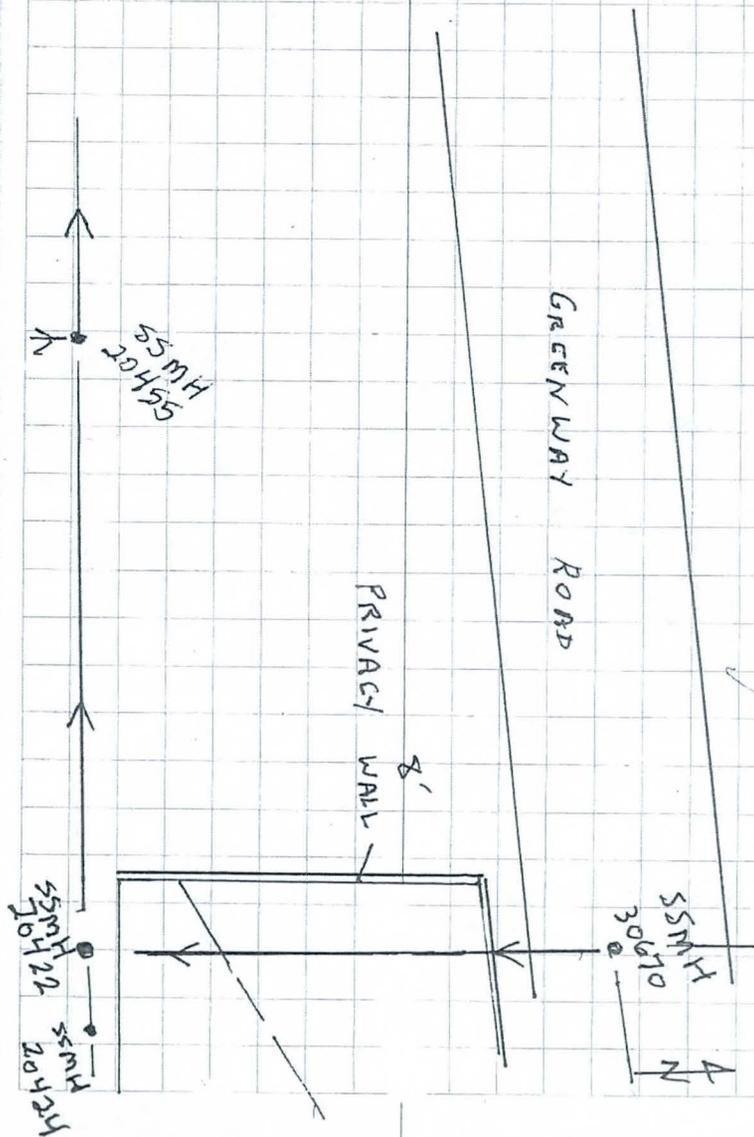
2009032

SSMH's DIPPED

#	INV	DESC
20422	15.45w / E 74.40N	SSMH
20424	15.75w 15.55E	SSMH
20455	20.65w 20.45E 19.50S	SSMH

49

SSMH 'S



10/27/09

GL

2009032 GREENWAY BRIDGE

BASE @ 1 GE1 HI 4.35

CHECK @ 30018 HR 7.06

ΔN -0.012

ΔE -0.015

ΔEL 0.059

CHECK OUT @ 30018 HR 7.06

ΔN -0.009

ΔE -0.025

ΔEL 0.045

48

STORED #

20399

20400

20703

20704

DESC

30018 CHECK

TOPO

TOPO

30018 CHECK

10/27/09

GL

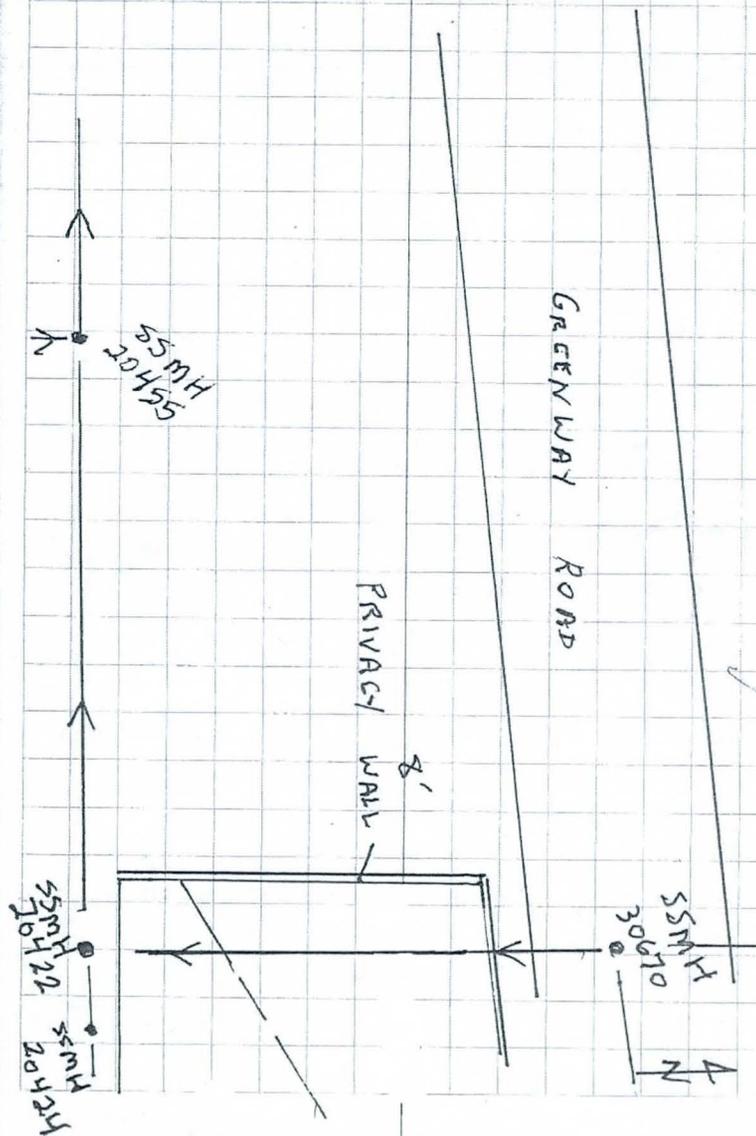
2009032

SSMH's DIPPED

#	INV	DESC
20422	15.45W/E 74.40N	SSMH
20424	15.75W 15.55E	SSMH
20455	20.65W 20.45E 19.50S	SSMH

49

SSMH 'S



CROWN
TAIN, NB

10/27/09

GREENWAY BRIDGE

2009-032

TK @	30057	HT	5.29'		
B/S @	30053	HT	4.99'		
CHECK @	30053	COD HT	4.99'	STORE PT	31788
		ΔN	0.000'		
		ΔE	-0.017'		
		ΔEL	-0.045'		
HECK OUT @	30053	ROT HT	4.99'	STORE PT	32128
		ΔN	0.003'		
		ΔE	-0.017'		
		ΔEL	-0.017'		

NOTES

↓ ROADWAY TOPO

* DIPPED SD/SS MHS THAT
WERE OUT OF TRAFFIC LANES

STORE POINTS - 31788-32128

SD/SS MH DIPS

32111 - SDMH
C- 4.04' INV (E) 18" CONC

31818 - SDMH
C- 8.38' INV (E) 24" CONC
C- 8.38' INV (N) 24" CONC

31546 - SDMH
C- 4.28' INV (S) 18" CONC

31620 - SDMH
C- 13.09' INV (W) 24" CONC
C- 13.09' INV (S) 24" CONC

31879 - SDMH
C- 3.61' INV (W) 18" CONC

31880 - SSMH
C- 19.49' INV (W) 24" CONC
C- 17.70' INV (NE) 8" CONC
C- 19.40' INV (E) 24" CONC
C- 7.38' INV (NE) 8" IRON



31983

SDMH

C-7.09' INV (S) 24" CONC

C-5.29' INV (N) 18" CONC

31900

SSMH

C-7.83' INV (NE) 18" CONC

C-7.90' INV (W) 18" CONC

31645

SDMH

C-5.66' INV (S) 18" CONC

C-5.62' INV (E) 18" CONC

C-5.60' INV (N) 12" CONC

1447

SDMH

C-3.32' INV (S) 18" CONC

10/28/09

GLNB

2009032 GREENWAY

T @ 30059

HI 5.99

BS C 30057

HR 4.25

ΔN 0.002

ΔE 0.022

ΔEL 0.056

CHECK OUT

ΔN 0.006

ΔE 0.024

ΔEL 0.022

50

STORED

10000

10001

10634

10635

DESC

30057 CHECK

TOPO

TOPO

30057 CHECK

10/29/09

GL, NB

2009032

GREENWAY BRIDGE

BASE @ 1GE1 HI 4.76

CHECK @ 30018 HR 7.06

ΔN -0.020

ΔE -0.032

ΔEL 0.037

CHECK @ 30045 HR 7.06

ΔN -0.014

ΔE -0.053

ΔEL -0.078

51

STORED

#

DESC

10636

30018 CHECK

TOPO

10679

TOPO

10680

30045 CHECK

DATA COLLECTED

- A) SSMHS / OUTFALL
- B) MONUMENTATION
- C) SET 3 CONTROL POINTS

DIPPED 8 SSMHS

DIPPED 2 SSMHS

SSMH-5

POINT	INV		DESC
# 10639	-14.81	E/W	SSMH
10641	-8.38	NE/S	SSMH
10647	-6.75	N/S	SSMH
10583	-73.87	SW/NE	SSMH
10657	-6.90	N/S	SSMH
10667	-72.89	E/W	SSMH
10676	-77.43	N/S	SSMH
10669	-12.06	E/W 48"	SSMH

10/29

52

SDMH				SDMH
31825	-3.25	N	18"	
P. LOT INLET	-3.67	E	18"	SD/ TOP OF BRIDGE

10/30/09
GL, NB
2009032
GREENWAY BRIDGE

K @	10678	HI	5.88
BS	10671	HR	5.18
ΔN	0.004		
ΔE	0.010		
ΔEL	0.029		

CHECK @	10671		
AN	0.003		
ΔE	0.008		
ΔEL	0.004		

53

POINT #	DESC
10681	10671 CHECK
10682	TOPO
10831	TOPO
10832	10671 CHECK

CREW
TAL, NB

11/2/09

GREENWAY BRIDGE
2009-032SD/SS MH DIRS(TRIG)
SET UP #1

TC	10678	HT	5.36'		
B/S	10671	HT	5.50'		
CHECK @	10671	HT	5.50'	STAKE POINT	32129

32354	SDMH	C-4.05' INV W.	18" CONC
-------	------	----------------	----------

ΔN	0.012'
ΔE	0.030'
ΔEL	0.006'

32355	SDMH	C-3.62' INV SW	18" CONC
-------	------	----------------	----------

CHECK CUT @	10671	HT	5.50'	STAKE POINT	32177
		AN	0.014'		
		ΔE	0.037'		
		ΔEL	0.005'		

32353	SDMH	C-5.20' INV S.	24" CONC
		C-5.20' INV NE	18" CONC

(TRIG)
SETUP #2

TC	10671	HT	5.37'		
B/S	10678	HT	5.26'		
CHECK @	10678	HT	5.26'	STAKE POINT	32778

ΔN	-0.012'
ΔE	-0.032'
ΔEL	0.006'

CHECK @	10678	HT	5.26'	STAKE POINT	32350
		ΔN	-0.012'		
		ΔE	-0.036'		
		ΔEL	-0.002'		

(GPS)
SET UP #3

BASE @	30057	HT	5.93'		
CHECK @	31817	RED HT	7.05'	STORE PT	32352

ΔN	-0.048'
ΔE	-0.006'
ΔEL	-0.073'

CHECK OUT @	31817	RED HT	7.05'	STORE PT	32391
-------------	-------	-----------	-------	-------------	-------

ΔN	-0.057'
ΔE	-0.015'
ΔEL	0.023'

11/3/09
TAI, NB

dia = 2.55

$$C = 2\pi r$$

$$\frac{C}{2\pi} = r$$
$$\frac{8'}{2\pi} = 1.27'$$

PIERS ARE
8' AROUND



Measured
seam to seam

← 334.71' →

← 334.70' →

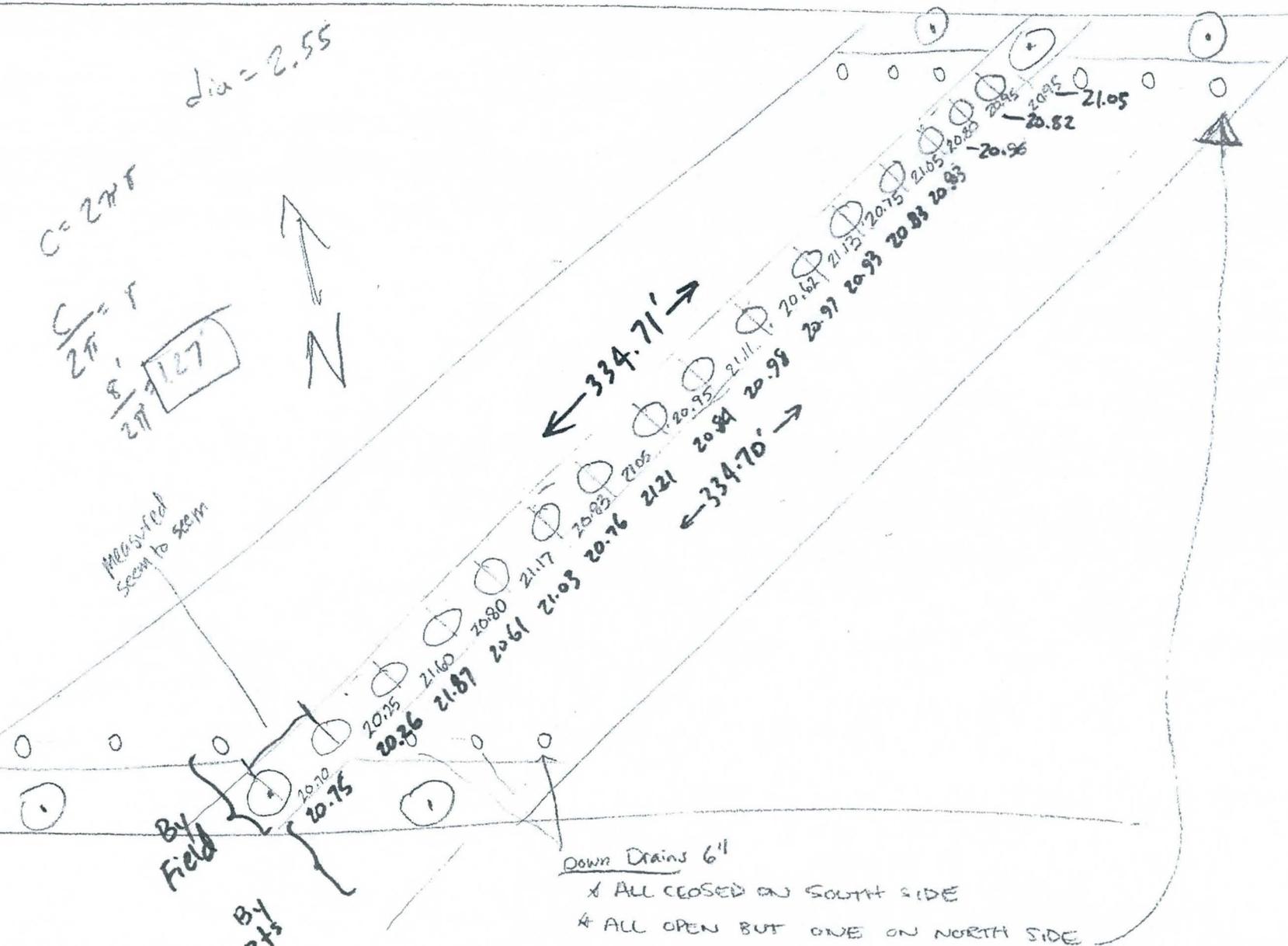
By
Field

By
P.T.S.

Down Drains 6"

* ALL CLOSED ON SOUTH SIDE

* ALL OPEN BUT ONE ON NORTH SIDE



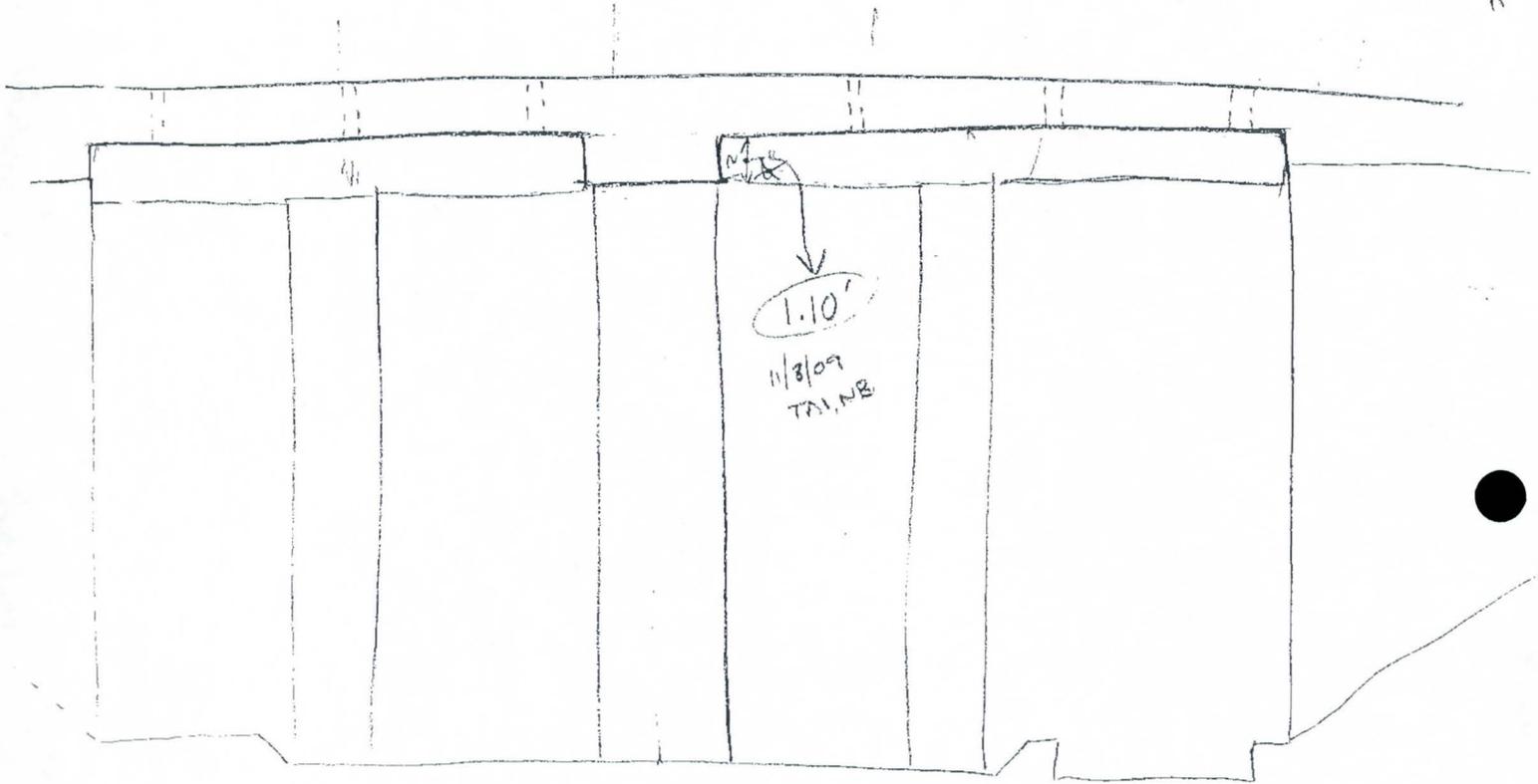
0902
Greenway Bridge

10/21/09

DC-JB

M

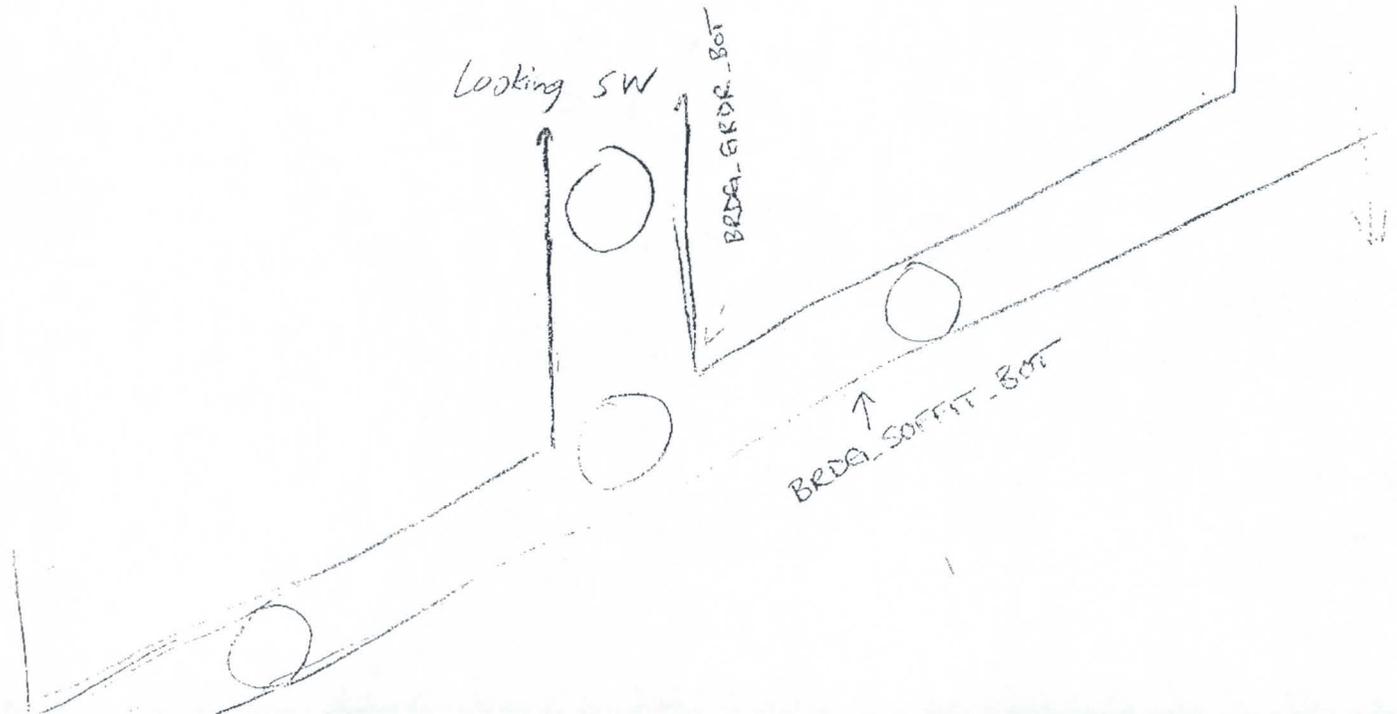
E



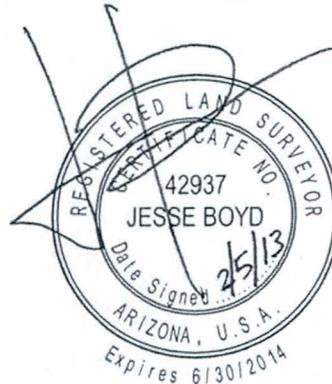
Looking SW

BRDA_GIRD._BOT

BRDA_SOFFIT._BOT



10001	955449.3191	645542.2057	1330.0026	CURB_BC CONC_EDGE AP
10002	955445.6539	645523.4227	1329.9569	CURB_BC
10003	955445.05	645523.5766	1329.5101	GUT_FL
10004	955457.0375	645522.4136	1330.8798	SW_EDGE
10005	955461.9553	645523.0602	1330.9191	SW_EDGE
10006	955458.4192	645503.1002	1330.6924	SW_EDGE
10007	955463.5047	645480.9059	1330.4028	SW_EDGE
10008	955463.3689	645475.4678	1330.4041	SW_EDGE
10009	955462.0095	645457.6304	1330.2296	SW_EDGE
10010	955457.076	645457.9872	1330.1915	SW_EDGE
10011	955454.0896	645439.3059	1330.1057	SW_EDGE
10012	955458.8654	645438.3114	1330.1462	SW_EDGE
10013	955455.3722	645423.6477	1330.0118	SW_EDGE
10014	955450.697	645425.0272	1329.9141	SW_EDGE
10015	955444.924	645405.439	1329.6751	SW_EDGE
10016	955449.6496	645403.9888	1329.6969	SW_EDGE
10017	955444.6665	645388.1597	1329.5407	SW_EDGE
10018	955439.9887	645389.5801	1329.5228	SW_EDGE
10019	955436.6234	645381.6079	1329.3968	SW_EDGE POC
10020	955430.9206	645374.0447	1329.1974	SW_EDGE POC
10021	955425.4793	645368.9129	1329.1138	SW_EDGE PT
10022	955444.6727	645385.0559	1329.5396	SW_EDGE POC
10023	955446.5774	645381.4297	1329.4668	SW_EDGE PT
10024	955434.0262	645360.3437	1329.1544	SW_EDGE
10025	955437.4007	645366.276	1329.2638	SW_EDGE POC
10026	955439.5901	645369.4065	1329.3432	SW_EDGE PCC
10027	955441.9398	645371.5762	1329.3954	SW_EDGE POC
10028	955443.3617	645372.127	1329.4515	SW_EDGE PT
10029	955420.7034	645315.8945	1328.3854	CURB_BC POC CT
10030	955417.692	645313.4337	1328.3013	CURB_BC POC CT
10031	955421.1424	645309.7753	1328.8356	HCR SW_BW
10032	955421.4835	645309.5399	1330.9057	CL WALL TOP .6 WIDE POC
10033	955415.5482	645297.1255	1331.1153	CL WALL TOP .6 WIDE PT
10034	955417.6898	645299.9455	1330.8885	WAT_FH
10035	955416.3738	645314.6416	1328.396	WAT_VRIM
10036	955416.3184	645314.5895	1326.9875	WAT_VNUT
10037	955405.4009	645315.7911	1328.5702	WAT_VRIM
10038	955402.2944	645319.1346	1328.6682	WAT_VRIM
10039	955402.3832	645319.191	1326.8951	WAT_VNUT
10040	955405.3886	645315.7592	1327.0552	WAT_VNUT
10041	955391.0652	645331.9943	1328.9925	SS_MH
10043	955418.0706	645316.3577	1328.4156	PVMT_EDGE
10044	955418.8893	645315.3439	1328.3394	GUT_FL
10045	955412.5646	645306.0753	1328.7416	CURB_BC POC CT
10046	955410.266	645297.5457	1328.6151	CURB_BC PT
10047	955409.4945	645297.6722	1328.1508	GUT_FL
10048	955408.1474	645297.7416	1328.2658	PVMT_EDGE
10049	955415.2058	645296.9088	1328.6896	SW_BW
10050	955412.8167	645265.0059	1328.6077	SW_BW
10051	955413.157	645265.2445	1331.2872	CL WALL TOP .6 WIDE
10052	955407.807	645265.2096	1328.4758	CURB_BC
10053	955404.2145	645234.8778	1328.026	PVMT_EDGE
10054	955405.6429	645234.6478	1327.9398	GUT_FL
10055	955406.3339	645234.5112	1328.3313	CURB_BC
10056	955411.3624	645234.6291	1328.4611	SW_BW
10057	955412.6907	645233.3827	1331.21	CL WALL TOP .6 WIDE
10058	955412.0119	645192.3409	1331.117	CL WALL TOP .6 WIDE END
10059	955412.1599	645194.3509	1328.4989	ELEC_PPL
10060	955412.7462	645263.5374	1328.581	CONC_EDGE WALL FACE
10061	955412.2788	645233.1882	1328.4734	CONC_EDGE WALL FACE
10062	955411.493	645194.9847	1328.4628	CONC_EDGE WALL FACE
10063	955411.6809	645192.3049	1329.3692	CONC_EDGE WALL FACE
10064	955412.2805	645192.2364	1329.53	CONC_EDGE WALL FACE
10065	955412.2176	645185.677	1329.5075	CONC_EDGE WALL FACE
10066	955412.2	645150.9687	1329.2681	CONC_EDGE END WALL FACE
10067	955412.1925	645144.8384	1329.2389	CONC_EDGE BEG WALL FACE
10068	955411.9502	645110.8062	1328.9766	CONC_EDGE END WALL FACE
10069	955411.957	645104.7249	1328.9066	CONC_EDGE BEG WALL FACE
10070	955411.9489	645102.2952	1328.8454	CONC_EDGE WALL FACE END GATE BEG
10071	955411.9192	645096.7911	1328.7643	CONC_EDGE WALL FACE BEG GATE END
10072	955412.1005	645066.2394	1328.7641	CONC_EDGE END WALL FACE
10073	955411.9187	645059.8275	1328.7657	CONC_EDGE BEG WALL FACE



10074	955411.9138	645026.4825	1328.6469	CONC_EDGE	END WALL FACE
10075	955411.8885	645020.2086	1328.663	CONC_EDGE	BEG WALL FACE
10076	955411.7508	644976.9501	1328.4614	CONC_EDGE	END WALL FACE
10077	955411.7878	644967.1524	1328.4781	CONC_EDGE	BEG WALL FACE
10078	955411.6891	644941.6005	1328.4031	CONC_EDGE	END WALL FACE
10079	955411.4648	644935.1983	1328.3387	CONC_EDGE	BEG WALL FACE
10080	955411.4923	644917.3567	1328.1189	CONC_EDGE	END WALL FACE END GATE BEG
10081	955411.4794	644912.5064	1328.0904	CONC_EDGE	BEG WALL FACE BEG GATE END
10082	955411.4884	644891.5884	1328.2003	CONC_EDGE	END WALL FACE
10083	955409.3489	644885.4507	1327.527	SW_BW	
10084	955404.3339	644884.8605	1327.4727	CURB_BC	
10085	955403.6439	644884.8743	1327.0393	GUT_FL	
10086	955402.2641	644884.8405	1327.1136	PVMT_EDGE	
10087	955403.7749	644912.9177	1326.9932	SD_INLET	
10088	955403.8142	644916.4446	1327.0291	SD_INLET	
10089	955402.5257	644916.3891	1327.1594	SD_CBTOP	
10090	955402.5138	644912.992	1327.0916	SD_CBTOP	
10091	955404.4539	644914.5814	1327.5593	CURB_BC	
10092	955409.056	644913.4145	1327.5901	SW_BW RAMP	
10093	955409.1046	644916.7796	1327.548	SW_BW RAMP	
10094	955411.5353	644914.6318	1327.8007	FNC_GATE	CL WI
10095	955405.5331	644922.9794	1327.6188	WAT_VRIM	
10096	955409.4453	644935.2283	1327.7257	SW_BW	
10097	955404.4722	644934.9353	1327.6017	CURB_BC	
10098	955403.8009	644935.02	1327.2101	GUT_FL	
10099	955402.3994	644935.1007	1327.3141	PVMT_EDGE	
10100	955410.2693	644978.7837	1327.7724	ELEC_PPL	
10101	955398.6662	644878.3282	1327.2402	BLUE_UW	
10102	955400.0149	644881.2305	1327.236	BLUE_UG	
10103	955399.1348	644949.4555	1327.4485	BLUE_UW	
10104	955398.6327	644980.9797	1327.5731	BLUE_UG	
10105	955402.5268	644987.4061	1327.3705	PVMT_EDGE	
10106	955403.9658	644987.6121	1327.3119	GUT_FL	
10107	955404.6363	644987.8231	1327.7059	CURB_BC	
10108	955409.5855	644988.1354	1327.7942	SW_BW	
10109	955410.2171	645005.141	1327.9161	CATV_RISE	
10110	955394.7721	645024.6397	1327.7398	TELE_MH	
10111	955399.7293	645023.5942	1327.6584	BLUE_UW	
10112	955409.7775	645035.5742	1327.8819	SW_BW	
10113	955404.7629	645035.351	1327.8191	CURB_BC	
10114	955404.0967	645035.341	1327.4163	GUT_FL	
10115	955402.6876	645035.2439	1327.5073	PVMT_EDGE	
10116	955399.504	645054.8845	1327.7485	BLUE_UG	
10117	955402.8532	645086.3437	1327.6299	PVMT_EDGE	
10118	955404.322	645086.3128	1327.6099	GUT_FL	
10119	955404.9853	645086.3502	1327.979	CURB_BC	
10120	955409.9297	645086.3318	1328.0961	SW_BW	
10121	955409.833	645098.0263	1328.0359	SW_BW RAMP	
10122	955409.8483	645101.3635	1328.0855	SW_BW RAMP	
10123	955411.9406	645099.4074	1328.361	FNC_GATE	CL WI
10124	955404.4044	645097.5567	1327.4802	SD_INLET	
10125	955404.3809	645101.0858	1327.4411	SD_INLET	
10126	955403.1199	645101.0932	1327.6425	SD_CBTOP	
10127	955403.0416	645097.6531	1327.6511	SD_CBTOP	
10128	955405.0071	645099.5465	1327.9634	CURB_BC	
10129	955410.0957	645134.4141	1328.2016	SW_BW	
10130	955405.112	645134.3425	1328.1306	CURB_BC	
10131	955404.4419	645134.3529	1327.6901	GUT_FL	
10132	955403.016	645134.3941	1327.7757	PVMT_EDGE	
10133	955390.5813	645180.5906	1328.3531	SS_MH	
10134	955410.8933	645191.75	1328.389	CATV_RISE	
10135	955414.9769	645284.2375	1331.0829	WALL_FACE	BEG
10136	955414.0516	645264.893	1331.0693	WALL_FACE	AP
10137	955414.0473	645191.681	1331.1303	WALL_FACE	AP
10138	955412.2179	645191.7839	1329.5565	WALL_FACE	AP
10139	955403.1731	645184.5207	1327.8823	PVMT_EDGE	
10140	955404.6481	645184.5443	1327.8039	GUT_FL	
10141	955405.2829	645184.5885	1328.2241	CURB_BC	
10142	955410.1938	645184.8184	1328.2289	SW_BW	
10143	955391.6393	645240.2844	1328.5515	SS_MH	
10144	955383.8362	645239.8125	1328.8496	SS_MH	
10145	955365.7194	645290.9303	1329.9451	CURB_BC	PC

10146	955365.007	645290.9613	1329.5364	GUT_FL
10147	955363.6479	645291.1513	1329.635	PVMT_EDGE
10148	955367.0171	645294.0835	1329.5745	PVMT_EDGE
10149	955370.3945	645291.4753	1329.4886	PVMT_EDGE
10150	955369.0142	645291.3913	1329.504	GUT_FL
10151	955367.1477	645292.6635	1329.5136	GUT_FL
10152	955367.0822	645292.1434	1329.9865	CURB_BC POC
10153	955368.4312	645291.261	1329.9909	CURB_BC PT
10154	955369.8931	645279.2798	1329.9999	CURB_BC PC CONC_EDGE AP
10155	955370.5151	645279.2549	1329.4809	GUT_FL
10156	955371.9152	645279.3295	1329.3899	PVMT_EDGE
10157	955372.74	645261.5444	1329.3207	PVMT_EDGE
10158	955371.4199	645261.3673	1329.3988	GUT_FL
10159	955370.761	645261.4097	1329.907	CURB_BC POC
10160	955370.398	645240.3204	1329.7936	CURB_BC POC
10161	955370.9838	645239.9918	1329.2831	GUT_FL
10162	955372.4547	645239.962	1329.2199	PVMT_EDGE
10163	955371.807	645222.3337	1329.1074	PVMT_EDGE
10164	955370.3882	645222.3122	1329.1902	GUT_FL
10165	955369.7862	645222.1008	1329.6984	CURB_BC PRC
10166	955369.2804	645201.7183	1329.5973	CURB_BC POC
10167	955369.935	645201.5462	1329.1077	GUT_FL
10168	955371.3341	645201.5543	1329.0415	PVMT_EDGE
10169	955371.0931	645175.0391	1328.9909	PVMT_EDGE
10170	955369.6882	645174.9802	1329.0188	GUT_FL
10171	955369.1071	645174.888	1329.5246	CURB_BC PRC
10172	955368.9185	645151.6559	1329.4587	CURB_BC POC
10173	955369.493	645151.6334	1328.9794	GUT_FL
10174	955371.0174	645151.5804	1328.9266	PVMT_EDGE
10175	955370.2278	645133.2775	1328.8712	PVMT_EDGE
10176	955368.7828	645133.3569	1328.9485	GUT_FL
10177	955368.2453	645133.4404	1329.3854	CURB_BC POC
10178	955366.1291	645117.6662	1329.3719	CURB_BC PT
10179	955366.7388	645117.5807	1328.8708	GUT_FL
10180	955368.0723	645117.4554	1328.8471	PVMT_EDGE
10181	955362.3051	645098.8446	1329.2807	SD_MH
10182	955363.7652	645090.5618	1328.853	PVMT_EDGE
10183	955362.383	645090.7337	1328.9041	GUT_FL
10184	955361.8375	645090.9511	1329.3443	CURB_BC PC
10185	955359.9843	645076.4392	1329.2996	CURB_BC POC
10186	955360.5601	645076.3698	1328.8617	GUT_FL
10187	955361.932	645076.3646	1328.7811	PVMT_EDGE
10188	955361.2051	645063.6717	1328.7824	PVMT_EDGE
10189	955359.8783	645063.7615	1328.8176	GUT_FL
10190	955359.2808	645063.8895	1329.2749	CURB_BC PT
10191	955358.3039	645035.687	1329.17	CURB_BC
10192	955358.9085	645035.685	1328.7136	GUT_FL
10193	955360.2849	645035.7088	1328.6216	PVMT_EDGE
10194	955357.9922	645022.3059	1329.0558	CURB_BC PC
10195	955357.832	645000.2611	1329.0325	CURB_BC POC
10196	955357.6696	644985.641	1328.9673	CURB_BC POC
10197	955358.2204	644985.6754	1328.4775	GUT_FL
10198	955359.625	644985.5944	1328.4292	PVMT_EDGE
10199	955358.8781	644968.061	1328.3581	PVMT_EDGE
10200	955357.5128	644968.237	1328.3905	GUT_FL
10201	955356.9365	644968.282	1328.8952	CURB_BC PT
10202	955355.1561	644935.6983	1328.7077	CURB_BC
10203	955355.7379	644935.617	1328.2027	GUT_FL
10204	955357.0663	644935.5345	1328.2189	PVMT_EDGE
10205	955355.4401	644908.2802	1328.1031	PVMT_EDGE
10206	955352.1182	644904.2214	1328.1406	PVMT_EDGE
10207	955348.6016	644907.4689	1328.0672	PVMT_EDGE
10208	955349.9145	644907.7355	1328.1271	GUT_FL
10209	955352.106	644905.7698	1328.1363	GUT_FL
10210	955354.1498	644908.3248	1328.116	GUT_FL
10211	955353.5953	644908.3129	1328.5871	CURB_BC PC
10212	955352.1174	644906.3419	1328.5984	CURB_BC POC
10213	955350.451	644907.8742	1328.5696	CURB_BC PT
10214	955348.3671	644918.6265	1328.5454	CURB_BC PC
10215	955346.3252	644936.8259	1328.6079	CURB_BC POC
10216	955345.7276	644936.9721	1328.1392	GUT_FL
10217	955344.3474	644936.8758	1328.0859	PVMT_EDGE

10218	955345.631	644957.0505	1328.6103 CURB_BC
10219	955345.7034	644985.3532	1328.715 CURB_BC
10220	955345.0225	644985.3483	1328.1976 GUT_FL
10221	955343.6187	644985.2627	1328.1869 PVMT_EDGE
10222	955343.6977	645035.8931	1328.5019 PVMT_EDGE
10223	955345.0983	645036.0091	1328.4821 GUT_FL
10224	955345.7148	645036.1207	1328.9183 CURB_BC
10225	955346.0052	645085.3671	1329.0507 CURB_BC
10226	955345.3632	645085.3537	1328.5697 GUT_FL
10227	955344.0117	645085.3435	1328.6491 PVMT_EDGE
10228	955346.1341	645094.7891	1329.1087 CURB_BC AP CONC_EDGE AP
10229	955351.0458	645094.4838	1329.1183 CONC_EDGE AP
10230	955347.689	645098.3408	1329.1848 SD_MH
10231	955345.6094	645096.6968	1328.4319 SD_INLET
10232	955345.4847	645094.8746	1328.5918 GUT_FL
10233	955344.1072	645094.8895	1328.7026 PVMT_EDGE
10234	955346.7721	645107.2274	1329.2316 CURB_BC
10235	955346.791	645117.4139	1328.5862 SD_INLET
10236	955352.5354	645121.3371	1329.4297 CONC_EDGE AP
10237	955347.617	645121.7305	1329.2953 CURB_BC PC CONC_EDGE AP
10239	955347.086	645121.9133	1328.8375 GUT_FL
10240	955345.569	645122.0345	1328.8394 PVMT_EDGE
10241	955347.4277	645135.9181	1328.9644 PVMT_EDGE
10242	955348.8805	645135.6585	1328.9556 GUT_FL
10243	955349.4724	645135.537	1329.4029 CURB_BC POC
10244	955352.6532	645151.2074	1329.4437 CURB_BC POC
10245	955355.1699	645171.0865	1329.5148 CURB_BC POC
10246	955355.9479	645184.9544	1329.5661 CURB_BC PRC
10247	955355.3293	645185.0956	1329.1253 GUT_FL
10248	955353.8279	645185.203	1329.2206 PVMT_EDGE
10249	955357.7746	645219.9665	1329.7053 CURB_BC POC
10250	955358.9268	645234.4095	1329.7603 CURB_BC POC
10251	955358.329	645234.4417	1329.3142 GUT_FL
10252	955356.8795	645234.4551	1329.4088 PVMT_EDGE
10253	955360.3803	645249.5389	1329.8372 CURB_BC POC
10254	955364.037	645279.078	1329.9781 CURB_BC PT CONC_EDGE AP
10255	955366.2304	645276.9325	1329.9224 VEGE_BUSH
10256	955367.4632	645269.6315	1329.7017 VEGE_BUSH
10257	955365.8788	645260.4317	1329.8762 VEGE_BUSH
10258	955365.1416	645251.6466	1329.7306 VEGE_BUSH
10259	955364.7781	645238.3796	1329.6822 VEGE_BUSH
10260	955363.7497	645226.7776	1329.5414 VEGE_BUSH
10261	955360.9214	645217.5858	1329.7164 VEGE_BUSH
10262	955363.5476	645166.3835	1329.4015 VEGE_BUSH
10263	955351.9908	645090.0001	1328.9066 VEGE_BUSH
10264	955352.9862	644884.7536	1328.0702 PVMT_SPOT
10265	955327.4817	644884.95	1327.7365 PVMT_SPOT
10266	955386.4965	644884.407	1327.5352 PVMT_SPOT
10267	955386.463	644936.2018	1327.6865 PVMT_SPOT
10268	955327.6315	644935.3311	1328.0755 PVMT_SPOT
10269	955327.2879	644985.6048	1328.3952 PVMT_SPOT
10270	955386.687	644985.4854	1327.8346 PVMT_SPOT
10271	955386.7737	645037.3408	1327.9805 PVMT_SPOT
10272	955327.629	645035.7653	1328.6524 PVMT_SPOT
10273	955328.5878	645085.5763	1328.9908 PVMT_SPOT
10274	955387.0555	645086.0585	1328.1639 PVMT_SPOT
10275	955387.0025	645135.3309	1328.3405 PVMT_SPOT
10276	955328.5408	645136.085	1329.357 PVMT_SPOT
10277	955328.5695	645185.7944	1329.7354 PVMT_SPOT
10278	955387.353	645184.1393	1328.4855 PVMT_SPOT
10279	955388.8114	645234.3818	1328.6246 PVMT_SPOT
10280	955329.9023	645236.5936	1330.1185 PVMT_SPOT
10281	955332.4658	645287.1268	1330.442 PVMT_SPOT
10282	955391.3822	645282.0835	1328.7312 PVMT_SPOT
10283	955394.8642	645334.4778	1328.9027 PVMT_SPOT
10284	955365.991	645335.0272	1329.9017 PVMT_SPOT
10285	955337.0986	645335.9973	1330.584 PVMT_SPOT
10286	955323.151	645360.1884	1331.0741 PVMT_EDGE
10287	955321.8063	645360.3597	1331.0909 GUT_FL
10288	955321.177	645360.4563	1331.5682 CURB_BC PC
10289	955315.7045	645349.8313	1331.5277 CURB_BC POC CT
10290	955310.1164	645347.8007	1331.045 CURB_BC PT CT

10291	955305.1325	645346.5529	1331.1209	CURB_BC CT
10292	955299.0773	645345.034	1331.5603	CURB_BC CT CT SW_FW END
10293	955298.0739	645349.9795	1331.6854	SW_BW END
10294	955303.5297	645355.2924	1331.615	SW_BW AP
10295	955308.6614	645356.5378	1331.5809	SW_BW AP
10296	955311.3528	645360.5693	1331.7216	SW_BW POC
10297	955309.1584	645346.971	1331.0019	PVMT_EDGE SW_EDGE
10298	955305.1945	645345.9202	1331.1358	PVMT_EDGE SW_EDGE
10299	955310.0565	645347.3119	1331.0804	GUT_FL CONC_EDGE
10300	955310.1605	645345.711	1331.1053	CONC_EDGE AP
10301	955321.2064	645344.6347	1331.0101	CONC_APRON
10302	955319.6947	645344.7588	1330.988	VG_FL
10303	955318.3917	645344.8384	1331.0306	PVMT_EDGE
10304	955316.0126	645323.7657	1330.9625	PVMT_EDGE
10305	955319.0238	645323.4718	1330.9189	PVMT_EDGE
10306	955317.5339	645323.5316	1330.8999	VG_FL
10307	955315.8406	645305.9373	1330.9181	VG_FL
10308	955317.3925	645305.7697	1330.933	CONC_APRON
10309	955314.3293	645305.9344	1330.9573	PVMT_EDGE
10310	955308.4136	645306.2258	1330.945	CONC_EDGE AP
10311	955308.2513	645304.8843	1330.897	GUT_FL CONC_EDGE
10312	955307.4734	645305.2636	1330.9346	SW_EDGE
10313	955303.5988	645306.0798	1330.9412	SW_EDGE
10314	955303.4581	645305.4704	1330.9373	CURB_BC CT
10315	955308.1812	645304.3408	1330.9244	CURB_BC CT
10316	955312.2841	645299.9914	1331.294	CURB_BC CT POC
10317	955314.335	645291.4362	1331.3256	CURB_BC PT
10318	955314.9043	645291.4151	1330.8546	GUT_FL
10319	955316.4642	645291.293	1330.8697	PVMT_EDGE
10320	955296.6803	645300.5043	1331.4262	SW_BW END
10321	955309.026	645290.144	1331.472	SW_BW AP
10322	955305.9451	645289.3863	1331.4763	ELEC_LP
10323	955307.0916	645254.9812	1331.2767	SW_BW
10324	955312.0739	645254.8144	1331.2136	CURB_BC PC
10325	955310.3147	645204.7103	1330.721	CURB_BC PT
10326	955306.0676	645234.7618	1331.1648	SW_BW
10327	955311.0901	645234.62	1331.0522	CURB_BC POC
10328	955311.7361	645234.7636	1330.5622	GUT_FL
10329	955313.1777	645234.6663	1330.4679	PVMT_EDGE
10330	955312.1246	645184.3638	1330.0796	PVMT_EDGE
10331	955310.7327	645184.25	1330.1215	GUT_FL
10332	955310.1107	645184.0684	1330.5532	CURB_BC
10333	955305.1022	645183.9736	1330.6803	SW_BW
10334	955305.0058	645135.0095	1330.2735	SW_BW
10335	955309.9728	645135.214	1330.149	CURB_BC
10336	955310.6101	645135.2034	1329.6585	GUT_FL
10337	955312.0231	645135.2907	1329.5769	PVMT_EDGE
10338	955304.9142	645104.7478	1329.9731	SW_BW AP
10339	955304.9359	645099.6836	1329.9305	SW_BW AP
10340	955304.8942	645086.4205	1329.788	SW_BW
10341	955309.8386	645086.1978	1329.6792	CURB_BC
10342	955310.4816	645086.2302	1329.2344	GUT_FL
10343	955311.8787	645086.095	1329.1465	PVMT_EDGE
10344	955302.6004	645081.3999	1329.7091	ELEC_LP
10345	955304.6741	645036.4276	1329.3933	SW_BW
10346	955309.671	645036.4516	1329.268	CURB_BC
10347	955310.278	645036.4785	1328.8055	GUT_FL
10348	955311.6365	645036.6121	1328.7701	PVMT_EDGE
10349	955311.5969	644985.3484	1328.4614	PVMT_EDGE
10350	955310.1674	644985.3799	1328.4206	GUT_FL
10351	955309.5178	644985.4377	1328.8472	CURB_BC
10352	955304.5084	644985.3742	1328.9974	SW_BW
10353	955304.2918	644935.0676	1328.5789	SW_BW
10354	955309.3402	644935.194	1328.4621	CURB_BC
10355	955310.0292	644935.125	1328.0088	GUT_FL
10356	955311.3636	644935.1873	1328.072	PVMT_EDGE
10357	955311.2457	644905.6107	1327.7849	PVMT_EDGE
10358	955309.9132	644905.763	1327.7386	GUT_FL
10359	955309.2635	644905.7284	1328.1274	CURB_BC
10361	955304.3562	644905.4315	1328.2143	SW_BW
10362	955303.3437	644913.5576	1328.1921	ELEC_JBOX
10363	955300.9772	644911.1432	1328.1263	ELEC_LP

10364	955304.362	644898.9823	1328.3377 SW_BW
10365	955309.3633	644899.4998	1328.1622 CURB_BC PC
10366	955309.9243	644899.5145	1327.7188 GUT_FL
10368	955277.022	644911.1186	1329.0693 BLDG_COR
10369	955287.9039	644910.6148	1327.9419 TELE_RISE
10370	955287.5334	644918.718	1327.0886 NG_LOW
10371	955293.3579	644917.7874	1327.6594 VEGE_BUSH
10372	955299.1307	644917.8262	1328.1868 VEGE_BUSH
10373	955294.0236	644921.3431	1327.5217 VEGE_BUSH
10374	955295.1353	644924.2364	1327.5898 VEGE_BUSH
10375	955298.3514	644926.2703	1328.1447 VEGE_BUSH
10376	955301.0699	644925.6846	1328.3735 VEGE_BUSH
10377	955294.7436	644928.0783	1327.7416 VEGE_BUSH
10378	955297.3847	644930.7936	1328.0056 VEGE_BUSH
10379	955301.7024	644930.2568	1328.2534 VEGE_BUSH
10380	955294.4334	644934.2365	1327.7703 VEGE_BUSH
10381	955298.0455	644938.2956	1328.094 VEGE_BUSH
10382	955294.2442	644944.3012	1327.7673 VEGE_BUSH
10383	955299.1155	644948.475	1328.6075 VEGE_BUSH
10384	955293.0714	644955.342	1327.8046 VEGE_BUSH
10385	955279.9355	644954.33	1328.5627 VEGE_BUSH
10386	955280.3804	644959.1645	1328.6932 VEGE_BUSH
10387	955280.3968	644964.0277	1329.0091 VEGE_BUSH
10388	955279.3724	644966.9022	1329.1774 VEGE_BUSH
10389	955282.2515	644967.5778	1328.1946 VEGE_BUSH
10390	955282.3282	644972.958	1328.6148 VEGE_BUSH
10391	955281.7764	644978.6279	1328.6674 VEGE_BUSH
10392	955280.1519	644983.0475	1329.0696 VEGE_BUSH
10393	955280.0423	644986.8408	1329.1224 VEGE_BUSH
10394	955284.2205	644988.3832	1328.0545 VEGE_BUSH
10395	955284.1892	644994.2566	1328.3159 VEGE_BUSH
10396	955281.8327	644998.0318	1328.922 VEGE_BUSH
10397	955281.7681	645002.7552	1328.9658 VEGE_BUSH
10398	955280.3523	645009.6447	1329.3678 VEGE_BUSH
10399	955284.4259	645014.3049	1328.257 VEGE_BUSH
10400	955286.0785	645016.439	1327.7948 VEGE_BUSH
10401	955280.6828	645019.4169	1329.4763 VEGE_BUSH
10402	955284.153	645019.5927	1328.3676 VEGE_BUSH
10403	955283.4726	645022.5752	1328.8196 VEGE_BUSH
10404	955280.9973	645025.5723	1329.3742 VEGE_BUSH
10405	955285.0867	645024.7665	1328.2219 VEGE_BUSH
10406	955282.8221	645029.212	1329.057 VEGE_BUSH
10407	955279.2938	645041.4917	1329.9667 VEGE_BUSH
10408	955283.8202	645048.8887	1329.2562 VEGE_BUSH
10409	955283.9567	645052.1445	1329.2048 VEGE_BUSH
10410	955284.1142	645055.9782	1329.2149 VEGE_BUSH
10411	955283.252	645060.8294	1329.5075 VEGE_BUSH
10412	955283.5009	645065.0724	1329.5943 VEGE_BUSH
10413	955288.9755	644985.4067	1327.4461 NG_LOW
10415	955297.3835	644960.3193	1328.15 VEGE_BUSH
10416	955301.6742	644964.1779	1328.6748 VEGE_BUSH
10417	955301.1532	644969.3361	1328.5423 VEGE_BUSH
10418	955301.2477	644975.2735	1328.6023 VEGE_BUSH
10419	955301.4922	644979.0179	1328.6098 VEGE_BUSH
10420	955302.2515	644986.0643	1328.8003 VEGE_BUSH
10421	955293.6704	644986.1405	1328.1509 VEGE_BUSH
10422	955293.9005	644990.9295	1328.0792 VEGE_BUSH
10423	955298.5576	644989.6183	1328.5231 VEGE_BUSH
10424	955294.2213	644994.0673	1328.2267 VEGE_BUSH
10425	955302.1233	644993.4366	1328.9811 VEGE_BUSH
10426	955301.8717	644996.446	1328.9652 VEGE_BUSH
10427	955297.6414	644996.961	1328.5619 VEGE_BUSH
10428	955294.3561	644998.0409	1327.911 VEGE_BUSH
10429	955300.5892	645000.4766	1328.8101 VEGE_BUSH
10430	955293.9944	645002.2706	1328.1935 VEGE_BUSH
10431	955297.8147	645004.928	1328.47 VEGE_BUSH
10432	955296.4457	645010.0574	1328.3085 VEGE_BUSH
10433	955293.8658	645012.8913	1327.8828 VEGE_BUSH
10434	955298.8254	645013.7394	1328.6445 VEGE_BUSH
10435	955302.091	645013.7715	1329.0841 VEGE_BUSH
10436	955299.0382	645017.6775	1328.9467 VEGE_BUSH
10437	955293.6573	645019.1739	1327.9755 VEGE_BUSH

10438	955300.3547	645023.7284	1328.9629	VEGE_BUSH
10439	955294.9305	645023.9172	1328.1761	VEGE_BUSH
10440	955293.1205	645027.1947	1327.9429	VEGE_BUSH
10441	955292.3291	645029.6205	1327.8641	VEGE_BUSH
10442	955294.8611	645030.2901	1328.1405	VEGE_BUSH
10443	955298.5321	645031.1967	1328.8655	VEGE_BUSH
10444	955292.9338	645033.7432	1328.0682	VEGE_BUSH
10445	955297.1442	645036.1678	1328.8011	VEGE_BUSH
10446	955294.4973	645040.1688	1328.3498	VEGE_BUSH
10447	955293.714	645045.8959	1328.2413	VEGE_BUSH
10448	955296.6866	645044.3718	1328.724	VEGE_BUSH
10449	955299.0617	645048.821	1329.1463	VEGE_BUSH
10450	955295.8052	645052.5278	1328.3938	VEGE_BUSH
10451	955297.5397	645055.4807	1328.7716	VEGE_BUSH
10452	955302.1012	645050.3336	1329.345	VEGE_BUSH
10453	955301.7887	645054.1906	1329.3414	VEGE_BUSH
10454	955302.5202	645057.546	1329.3693	VEGE_BUSH
10455	955299.5614	645058.42	1329.141	VEGE_BUSH
10456	955297.619	645059.0102	1328.7888	VEGE_BUSH
10457	955300.9472	645060.9728	1329.351	VEGE_BUSH
10458	955301.8006	645068.2281	1329.5122	VEGE_BUSH
10459	955298.4117	645073.885	1329.0637	VEGE_BUSH
10460	955294.8898	645076.4702	1328.477	VEGE_BUSH
10461	955302.1007	645077.8424	1329.7273	VEGE_BUSH
10462	955296.6612	645080.6791	1328.8273	VEGE_BUSH
10463	955293.8843	645082.5484	1328.5533	VEGE_BUSH
10464	955300.4622	645081.9078	1329.557	VEGE_BUSH
10465	955303.4027	645083.3951	1329.553	VEGE_BUSH
10466	955302.9275	645085.9572	1329.6902	VEGE_BUSH
10467	955302.2335	645088.5349	1329.8053	VEGE_BUSH
10468	955301.5768	645091.3227	1329.6724	VEGE_BUSH
10469	955302.6716	645094.5138	1329.4882	VEGE_BUSH
10470	955302.5836	645097.4615	1329.7254	VEGE_BUSH
10471	955294.552	645093.1451	1329.4555	VEGE_BUSH
10472	955296.3714	645088.1686	1329.2472	VEGE_BUSH
10473	955284.2852	645090.7161	1329.7546	VEGE_BUSH
10474	955287.8169	645093.1048	1329.4925	VEGE_BUSH
10475	955287.5341	645096.3669	1329.5103	VEGE_BUSH
10476	955291.0343	645097.238	1329.6633	VEGE_BUSH
10477	955286.2366	645083.7915	1329.0522	VEGE_TREE
10478	955286.2495	645061.9638	1328.9853	VEGE_TREE
10479	955300.2477	645051.4247	1329.316	VEGE_TREE
10480	955282.8504	645038.4682	1329.2968	VEGE_TREE
10481	955300.0103	645021.4231	1328.9035	VEGE_TREE
10482	955283.7521	645008.4544	1328.5758	VEGE_TREE
10483	955299.9304	644993.8741	1328.7764	VEGE_TREE
10484	955292.7656	644966.6575	1327.6002	VEGE_TREE
10485	955302.0176	644953.943	1328.509	VEGE_TREE
10486	955294.3075	644940.1062	1327.8731	VEGE_TREE
10487	955289.4717	645035.0777	1327.7214	NG_LOW
10488	955276.6942	645045.8682	1330.099	SW_EDGE BLDG_FACE
10489	955281.7642	645046.1259	1329.8933	SW_EDGE AP
10490	955281.6023	645099.4488	1329.8595	SW_EDGE AP
10491	955276.4936	645099.4121	1329.8426	SW_EDGE AP
10492	955276.5035	645091.1805	1330.0689	BLDG_COR SW_EDGE
10493	955257.1583	645099.2969	1329.7684	SW_EDGE AP
10494	955261.8509	645104.296	1329.6368	SW_EDGE AP
10495	955274.2417	645111.3886	1329.7713	WALL_CL 8" BEG
10496	955285.2245	645111.2824	1333.6027	WALL_CL 8" AP TOP
10497	955285.1555	645156.5596	1333.628	WALL_CL 8" AP TOP
10498	955287.0309	645156.6564	1333.6287	WALL_CL 8" AP TOP
10499	955286.913	645206.6034	1333.6153	WALL_CL 8" AP TOP
10500	955285.0404	645206.7183	1333.6103	WALL_CL 8" AP TOP
10501	955284.802	645253.3916	1333.6259	WALL_CL 8" AP TOP
10502	955286.7197	645253.4995	1333.5932	WALL_CL 8" AP TOP
10503	955286.6017	645279.3906	1333.6007	WALL_CL 8" AP TOP
10504	955278.4179	645279.4034	1333.5916	WALL_CL 8" END TOP
10505	955269.9236	645281.1046	1329.7788	VEGE_BUSH
10506	955279.2788	645294.1692	1330.3966	VEGE_BUSH
10507	955282.2955	645291.1793	1330.4517	VEGE_BUSH
10508	955286.3711	645292.655	1330.7593	VEGE_BUSH
10509	955288.9806	645298.4877	1331.0165	VEGE_BUSH

10511	955293.3017	645298.0805	1331.0474	VEGE_BUSH
10512	955296.2456	645292.8887	1331.0277	VEGE_BUSH
10513	955303.3497	645289.01	1331.2905	VEGE_BUSH
10514	955293.1168	645284.7199	1330.5291	VEGE_BUSH
10515	955291.1579	645282.1741	1330.2971	VEGE_BUSH
10516	955294.8602	645279.2814	1330.553	VEGE_BUSH
10517	955307.3594	645283.4242	1331.2639	VEGE_BUSH
10518	955304.774	645279.0911	1331.1189	VEGE_BUSH
10519	955298.4726	645274.3984	1330.7735	VEGE_BUSH
10520	955298.5316	645269.4355	1330.7961	VEGE_BUSH
10521	955296.3152	645266.8378	1330.6666	VEGE_BUSH
10522	955295.9539	645262.5559	1330.6613	VEGE_BUSH
10523	955297.0791	645258.3279	1330.5842	VEGE_BUSH
10524	955305.2608	645258.2336	1330.9719	VEGE_BUSH
10525	955304.2678	645252.8769	1330.9559	VEGE_BUSH
10526	955299.6351	645251.6889	1330.7622	VEGE_BUSH
10527	955294.69	645250.31	1330.7097	VEGE_BUSH
10528	955287.2794	645244.0791	1330.3441	VEGE_BUSH
10529	955296.6829	645239.3801	1330.5278	VEGE_BUSH
10530	955302.1894	645240.3326	1330.9504	VEGE_BUSH
10531	955291.8099	645224.866	1330.0301	VEGE_BUSH
10532	955295.1297	645222.0801	1330.2375	VEGE_BUSH
10533	955295.5969	645218.7961	1330.2109	VEGE_BUSH
10534	955298.6282	645218.4605	1330.5387	VEGE_BUSH
10535	955288.9197	645221.6524	1329.974	VEGE_BUSH
10536	955300.4691	645210.6732	1330.6604	VEGE_BUSH
10537	955286.3516	645215.8491	1329.9105	VEGE_BUSH
10538	955286.2169	645210.7922	1329.9276	VEGE_BUSH
10539	955290.0791	645204.2408	1330.1863	VEGE_BUSH
10540	955298.3217	645205.1795	1330.438	VEGE_BUSH
10541	955301.7185	645204.5778	1330.4936	VEGE_BUSH
10542	955299.9647	645199.9697	1330.4033	VEGE_BUSH
10543	955295.2887	645198.1642	1330.051	VEGE_BUSH
10544	955288.4724	645194.3795	1329.7164	VEGE_BUSH
10545	955297.5186	645188.9793	1330.1652	VEGE_BUSH
10546	955299.5905	645181.5312	1330.2996	VEGE_BUSH
10547	955292.3984	645172.6597	1329.6228	VEGE_BUSH
10548	955289.051	645170.9285	1329.4928	VEGE_BUSH
10549	955300.4418	645172.9685	1330.3404	VEGE_BUSH
10550	955301.0718	645163.7167	1330.2974	VEGE_BUSH
10551	955289.404	645159.2494	1329.4875	VEGE_BUSH
10552	955298.7477	645156.1034	1329.9974	VEGE_BUSH
10553	955302.4346	645154.9088	1330.2309	VEGE_BUSH
10554	955300.2444	645149.5882	1330.1618	VEGE_BUSH
10555	955286.3432	645146.0103	1329.7486	VEGE_BUSH
10556	955298.6699	645142.1776	1329.9061	VEGE_BUSH
10557	955300.2595	645136.4452	1329.9869	VEGE_BUSH
10558	955300.3832	645132.2151	1329.9332	VEGE_BUSH
10559	955290.4089	645130.4165	1329.5538	VEGE_BUSH
10560	955286.6702	645133.8121	1329.353	VEGE_BUSH
10561	955286.3218	645123.7084	1329.5081	VEGE_BUSH
10562	955302.8516	645123.1272	1330.1396	VEGE_BUSH
10563	955296.7283	645117.8436	1329.7743	VEGE_BUSH
10564	955286.4812	645114.3638	1329.4019	VEGE_BUSH
10565	955296.5143	645110.4232	1329.8443	VEGE_BUSH
10566	955301.8028	645106.9556	1329.7936	VEGE_BUSH
10567	955296.3064	645117.8671	1329.7957	VEGE_BUSH
10568	955293.4343	645117.7329	1329.7056	VEGE_TREE
10569	955299.6393	645126.1251	1329.9748	VEGE_TREE
10570	955294.9308	645140.1476	1330.046	VEGE_TREE
10571	955295.318	645160.7641	1329.9755	VEGE_TREE
10572	955295.9941	645176.929	1330.0399	VEGE_TREE
10573	955301.676	645188.2397	1330.5706	VEGE_TREE
10574	955296.1428	645202.5427	1330.1985	VEGE_TREE
10575	955299.989	645244.9719	1330.7604	VEGE_TREE
10576	955298.6416	645284.3443	1330.7503	VEGE_TREE
10577	955283.7475	645288.7565	1330.6812	VEGE_TREE
10578	955133.0548	645249.8994	1327.9343	VEGE_TREE
10579	955152.3986	645280.4004	1327.6547	VEGE_TREE
10580	955189.2844	645325.6896	1328.1057	VEGE_TREE
10581	955208.8065	645332.2854	1327.3639	VEGE_TREE
10582	955235.1591	645339.3727	1328.284	VEGE_TREE

10583	955243.5528	645313.3836	1329.273 SS_MH
10584	955228.2196	645274.2012	1329.4304 VEGE_TREE
10585	955214.0895	645265.1244	1329.1979 VEGE_TREE
10586	955215.0936	645193.7927	1328.8196 VEGE_TREE
10587	955233.5437	645193.0884	1328.8839 VEGE_TREE
10588	955275.4518	645193.1879	1329.146 VEGE_TREE
10589	955204.2178	645161.8567	1328.8495 VEGE_TREE
10590	955251.3275	645101.8038	1330.2973 VEGE_TREE
10591	955275.2524	645113.5348	1329.9913 VEGE_TREE
10592	955253.7714	645116.6372	1329.0625 PVMT_SPOT
10593	955254.0759	645157.2952	1328.2947 PVMT_SPOT
10594	955253.8967	645193.819	1327.9937 PVMT_SPOT
10595	955254.1621	645229.3326	1327.7527 SD_CBTOP
10596	955256.695	645229.3861	1327.7385 SD_CBTOP
10597	955256.6263	645232.8623	1327.7095 SD_CBTOP
10598	955254.0391	645232.703	1327.7164 SD_CBTOP
10599	955253.4612	645268.0643	1328.6701 PVMT_SPOT
10600	955252.8403	645290.2953	1329.107 PVMT_SPOT
10601	955304.3492	645324.4297	1331.0386 PVMT_EDGE SW_EDGE
10602	955251.5549	645314.5169	1329.4394 PVMT_SPOT
10603	955212.9183	645297.5329	1328.7815 PVMT_SPOT
10604	955182.7332	645274.9752	1327.7221 PVMT_SPOT
10605	955163.2285	645255.685	1327.3445 PVMT_SPOT
10606	955168.5799	645221.9907	1327.4029 PVMT_SPOT
10607	955173.6934	645177.981	1327.8807 PVMT_SPOT
10608	955223.5706	645181.2864	1328.7804 PVMT_SPOT
10609	955223.5118	645227.6153	1328.6884 PVMT_SPOT
10610	955143.2733	645262.4294	1327.9428 ELEC_LP
10611	955217.7698	645326.3172	1328.5863 ELEC_LP
10612	955278.0341	645341.479	1330.4933 ELEC_LP
10613	955242.5233	645287.3238	1328.829 WAT_VRIM
10614	955242.4677	645287.242	1326.7934 WAT_VNUT
10615	955239.8192	645278.7086	1328.9802 WAT_FH
10616	955235.2245	645273.2999	1328.8998 ELEC_LP
10617	955221.005	645162.3088	1328.7752 ELEC_LP
10618	955232.4149	645091.1629	1329.9135 BLDG_COR
10619	955239.8473	645095.0082	1330.0126 SS_CO
10620	955239.8272	645097.0699	1330.0115 SS_CO
10621	955218.6528	645114.6973	1329.5131 BLDG_COR
10622	955236.0673	645107.047	1329.8972 NG_SPOT
10623	955285.9109	645107.4983	1329.7504 NG_SPOT
10624	955286.2932	645112.2651	1329.5365 NG_SPOT
10625	955284.2114	645111.9759	1329.6042 NG_SPOT
10626	955286.3024	645155.6875	1329.5765 NG_SPOT
10627	955285.5841	645157.7978	1329.3306 NG_SPOT
10628	955286.5933	645208.2047	1330.0273 NG_SPOT
10629	955285.04	645205.4916	1329.1071 NG_SPOT
10630	955286.5317	645252.4209	1330.323 NG_SPOT
10631	955285.5993	645254.5694	1329.5697 NG_SPOT
10632	955287.7075	645280.1022	1330.2113 NG_SPOT
10633	955285.9497	645278.4067	1329.7649 NG_SPOT
10634	955277.6856	645279.6263	1329.714 NG_SPOT
10639	955928.0869	647653.0881	1341.5094 SS_MH
10641	955840.2855	647039.8619	1338.692 SS_MH
10647	955762.5731	645331.4274	1331.2536 SS_MH
10651	955248.7975	645361.2736	1322.0833 SD_INV 18'''
10657	955763.2228	645581.5996	1332.4105 SS_MH
10663	955313.8663	644664.4262	1326.5433 SS_MH
10665	955323.6205	644664.6573	1326.7177 SS_MH
10667	955214.2619	646306.0784	1331.0421 SS_MH
10669	955324.1481	646124.9216	1318.3784 SS_MH
10676	955185.4508	645604.8189	1331.3593 SS_MH
10682	955212.4445	645547.6313	1316.4616 CONC_EDGE CONC_BL TOE
10683	955214.8855	645552.566	1317.0481 CONC_BL TOE
10684	955225.9813	645586.1474	1317.0913 CONC_BL TOE AP
10685	955225.3525	645600.5743	1317.0968 CONC_BL TOE
10686	955224.6117	645628.3453	1317.2339 CONC_BL TOE PC
10687	955225.1706	645646.0003	1317.3188 CONC_BL TOE POC
10688	955225.7347	645651.3934	1317.3158 CONC_BL TOE POC
10689	955227.2962	645660.7464	1317.2754 CONC_BL TOE PT
10690	955236.6172	645699.0669	1317.5704 CONC_BL TOE
10691	955251.8805	645750.829	1317.4505 CONC_BL TOE

10692	955267.5321	645794.9041	1317.6676	CONC_BL TOE
10693	955272.7195	645811.0262	1317.6731	CONC_BL TOE PC
10694	955272.6099	645813.3594	1317.852	CONC_BL TOE POC
10695	955272.1954	645814.6391	1318.0249	CONC_BL TOE PT WALL_FACE
10696	955269.758	645812.1464	1319.9082	MISC_MISC WALL_FACE
10697	955312.6966	645861.1693	1317.5823	CONC_SPOT WALL_FACE AP
10698	955323.3578	645888.8847	1317.6176	CONC_SPOT WALL_FACE AP
10699	955337.8986	645878.6367	1317.4368	CONC_BL TOP
10700	955321.3379	645831.1006	1317.2446	CONC_BL TOP
10701	955305.2694	645784.4608	1317.1764	CONC_BL TOP
10702	955289.1383	645737.7408	1317.0849	CONC_BL TOP
10703	955272.7379	645689.7727	1317.0241	CONC_BL TOP
10704	955256.4865	645642.2747	1316.8854	CONC_BL TOP
10705	955240.4775	645595.6675	1316.8817	CONC_BL TOP
10706	955224.8494	645550.2	1316.7308	CONC_BL TOP
10707	955222.596	645543.9883	1315.6985	CONC_EDGE TOE
10708	955226.6353	645549.4116	1316.5311	CONC_BL TOE
10709	955226.8281	645550.1219	1316.3793	CONC_BL TOE
10710	955260.5333	645536.2198	1316.4539	CONC_BL TOE
10711	955261.648	645535.7595	1316.5358	CONC_BL TOP
10712	955258.0677	645528.7973	1316.0108	CONC_EDGE TOE
10713	955278.299	645583.9508	1317.1303	CONC_BL TOP
10714	955276.621	645584.6594	1316.3972	CONC_BL TOE
10715	955293.0366	645632.0971	1316.498	CONC_BL TOE
10716	955294.6881	645631.4369	1317.19	CONC_BL TOP
10717	955311.0107	645678.269	1317.1855	CONC_BL TOP
10718	955309.0194	645678.918	1316.3744	CONC_BL TOE
10719	955325.2673	645725.6707	1316.5323	CONC_BL TOE
10720	955327.07	645725.0354	1317.1856	CONC_BL TOP
10721	955343.456	645772.3447	1317.2438	CONC_BL TOP
10722	955341.6363	645772.8849	1316.6825	CONC_BL TOE
10723	955357.4328	645819.3753	1316.7857	CONC_BL TOE
10724	955359.3518	645818.5172	1317.3396	CONC_BL TOP
10725	955367.103	645841.0298	1317.4238	CONC_BL TOP AP
10726	955365.5156	645841.595	1316.778	CONC_BL TOE
10727	955376.0723	645864.9765	1316.8472	CONC_BL TOE
10728	955377.8004	645864.291	1317.5284	CONC_BL TOP
10729	955392.2583	645858.7619	1317.5988	CONC_BL TOE
10730	955375.8924	645812.7076	1317.5802	CONC_BL TOE
10731	955359.5141	645766.6344	1317.5371	CONC_BL TOE
10732	955342.878	645719.4673	1317.4206	CONC_BL TOE
10733	955326.5625	645673.5529	1317.4001	CONC_BL TOE
10734	955328.0496	645674.3229	1317.8907	SD_INV 24'''
10735	955310.094	645626.9376	1317.7455	CONC_BL TOE
10736	955292.9129	645578.9691	1317.8243	CONC_BL TOE
10737	955276.5975	645531.1305	1317.4297	CONC_BL TOE
10738	955273.7561	645523.0071	1317.2679	CONC_BL TOE
10739	955273.3786	645521.6221	1316.4946	CONC_EDGE TOE
10740	955271.9872	645521.9156	1316.3015	CONC_EDGE TOE
10741	955268.8064	645522.6759	1315.7719	CONC_EDGE
10742	955266.7624	645531.3419	1316.6295	CONC_SPOT
10743	955267.1471	645533.9245	1316.5316	CONC_BL CHANNEL C-0.0_
10744	955272.5522	645525.0782	1317.2827	CONC_BL CHANNEL C-0.9_
10745	955274.7581	645531.7818	1317.4229	CONC_BL CHANNEL C-0.6_
10746	955268.0555	645536.8523	1316.7073	CONC_BL CHANNEL C-0.5_
10747	955291.4572	645579.4725	1317.8483	CONC_BL CHANNEL C-0.7_
10748	955284.0006	645582.2806	1316.8186	CONC_BL CHANNEL C-0.6_
10749	955300.737	645629.8061	1316.9215	CONC_BL CHANNEL C-0.65_
10750	955308.3967	645627.6561	1317.7294	CONC_BL CHANNEL C-0.7_
10751	955322.0425	645666.0824	1317.5089	CONC_BL CHANNEL C-0.7_ END
10752	955314.5151	645668.7599	1317.0002	CONC_BL CHANNEL C-0.65_ END
10753	955321.257	645688.1769	1317.0643	CONC_BL CHANNEL C-0.65_ BEG
10754	955328.8653	645685.5036	1317.3793	CONC_BL CHANNEL C-0.7_ BEG
10755	955341.0589	645719.9229	1317.445	CONC_BL CHANNEL C-0.65_
10756	955333.3629	645722.4977	1317.0825	CONC_BL CHANNEL C-0.65_
10757	955350.2529	645770.0345	1317.1757	CONC_BL CHANNEL C-0.65_
10758	955357.8223	645767.1957	1317.5292	CONC_BL CHANNEL C-0.65_
10759	955366.5328	645816.0396	1317.3007	CONC_BL CHANNEL C-0.65_
10760	955374.0241	645813.4816	1317.5865	CONC_BL CHANNEL C-0.65_
10761	955383.0961	645862.3337	1317.4088	CONC_BL CHANNEL C-0.65_
10762	955390.3716	645859.5166	1317.5978	CONC_BL CHANNEL C-0.65_
10763	955409.1334	645900.9849	1318.1937	SD_INV 18'''

10764	955407.2923	645900.4352	1317.4771	CONC_BL TOE
10765	955408.8615	645900.0102	1318.8174	CONC_BL TOP WALL_FACE
10766	955400.3969	645856.5434	1324.4382	CONC_BL TOP WALL_FACE
10767	955392.8298	645815.8581	1329.8715	CONC_BL TOP WALL_FACE
10768	955393.5111	645815.7683	1330.2576	CONC_EDGE
10769	955391.5675	645807.8723	1330.2121	CONC_EDGE
10770	955390.7574	645808.1401	1329.915	CONC_BL TOP
10771	955377.763	645760.4378	1329.8662	CONC_BL TOP
10772	955378.5738	645760.3269	1330.0044	CONC_EDGE
10773	955347.4249	645666.8811	1329.8149	CONC_EDGE
10774	955346.5898	645667.1921	1329.8332	CONC_BL TOP
10775	955330.0908	645620.6151	1329.8427	CONC_BL TOP
10776	955332.0559	645620.3165	1329.9176	CONC_EDGE
10777	955313.6149	645568.2656	1329.9106	CONC_EDGE
10778	955312.0136	645568.7107	1329.9171	CONC_BL TOP
10779	955305.7021	645550.9723	1330.137	CONC_BL TOP AP
10780	955307.1562	645550.613	1330.2367	CONC_EDGE
10781	955300.7371	645520.9641	1330.5583	CONC_EDGE
10782	955299.1177	645521.2422	1330.5411	CONC_BL TOP
10783	955297.5244	645519.3529	1329.4607	CONC_EDGE
10784	955296.1301	645519.7243	1329.051	CONC_EDGE
10785	955295.4216	645517.0845	1328.8467	CONC_EDGE
10786	955294.1185	645515.6617	1328.3138	CONC_EDGE
10787	955294.4097	645518.1155	1328.6294	CONC_BL TOP
10788	955292.2137	645515.6137	1327.8461	CONC_EDGE GABION
10789	955290.4213	645516.1392	1327.4788	CONC_EDGE GABION
10790	955289.8451	645516.1575	1326.5113	CONC_EDGE GABION
10791	955288.0869	645517.1341	1326.2345	CONC_EDGE GABION
10792	955287.3757	645517.0481	1324.889	CONC_EDGE GABION
10793	955285.7081	645518.2037	1324.7461	CONC_EDGE GABION
10794	955285.0086	645518.1492	1323.8124	CONC_EDGE GABION
10795	955283.1828	645519.6999	1323.3476	CONC_EDGE GABION
10796	955282.7156	645519.6603	1322.548	CONC_EDGE GABION
10797	955280.6552	645520.979	1321.7957	CONC_EDGE GABION
10798	955279.9529	645520.9013	1320.7585	CONC_EDGE GABION
10799	955277.972	645521.7286	1320.3053	CONC_EDGE GABION
10800	955277.3998	645521.6131	1319.3903	CONC_EDGE GABION
10801	955276.3891	645522.1161	1318.9105	CONC_EDGE GABION
10802	955275.9723	645521.874	1318.017	CONC_EDGE GABION
10803	955275.1122	645522.1126	1317.7427	CONC_EDGE GABION
10804	955274.6334	645521.5105	1316.8673	CONC_EDGE GABION
10805	955273.2715	645521.6014	1316.468	CONC_EDGE GABION
10806	955242.2986	645595.1691	1316.2978	CONC_BL TOE
10807	955258.3727	645641.809	1316.4217	CONC_BL TOE
10808	955274.6098	645689.0659	1316.5017	CONC_BL TOE
10809	955290.7875	645737.021	1316.6065	CONC_BL TOE
10810	955307.2088	645783.8572	1316.6431	CONC_BL TOE
10811	955323.1833	645830.5131	1316.7338	CONC_BL TOE
10812	955339.7012	645877.9794	1316.8784	CONC_BL TOE
10813	955359.2354	645871.3117	1316.6633	CONC_SPOT
10814	955348.2064	645847.7831	1316.548	CONC_SPOT
10815	955340.3098	645825.2339	1316.5484	CONC_SPOT
10816	955324.2963	645778.0241	1316.4178	CONC_SPOT
10817	955308.0072	645730.8591	1316.4198	CONC_SPOT
10818	955291.7894	645683.8231	1316.2791	CONC_SPOT
10819	955275.5406	645636.9932	1316.2475	CONC_SPOT
10820	955259.41	645589.6478	1316.1144	CONC_SPOT
10821	955242.9897	645542.4677	1316.1738	CONC_SPOT
10822	955288.5923	645595.7483	1316.9168	VEGE_TREE
10823	955297.0456	645611.5872	1317.3155	VEGE_PALM
10824	955312.4417	645664.3514	1317.469	VEGE_TREE
10825	955324.9633	645678.4694	1317.5747	VEGE_PALM
10826	955319.9599	645681.1704	1317.8254	VEGE_PALM
10827	955340.2729	645740.0562	1316.5813	VEGE_TREE
10828	955346.1267	645756.5077	1317.1619	VEGE_TREE
10829	955398.3969	645898.6581	1316.899	VEGE_TREE
10830	955404.5071	645898.9616	1317.5652	CONC_BL CHANNEL END C-0.65_
10831	955397.115	645901.6385	1317.6586	CONC_BL CHANNEL END C-0.65_
20001	955233.0523	646190.0028	1331.0101	NG_SPOT
20002	955241.339	646203.4744	1331.5559	NG_SPOT
20003	955252.2977	646222.4113	1329.5388	NG_SPOT
20004	955253.867	646225.0151	1329.2119	NG_SPOT

20005	955245.8043	646243.1558	1329.4266	NG_SPOT
20006	955237.6918	646261.6066	1329.8028	NG_SPOT
20007	955229.8773	646279.9166	1329.8826	NG_SPOT
20008	955222.0021	646297.9628	1330.1587	NG_SPOT
20009	955233.2422	646303.0068	1329.7208	NG_TOP
20010	955246.4189	646270.1937	1329.4856	NG_TOP
20011	955257.9103	646251.2973	1328.9494	NG_TOP
20012	955269.4759	646230.089	1327.9318	NG_TOP
20013	955289.9515	646211.2642	1323.958	NG_TOP
20014	955288.9957	646201.1099	1325.4785	NG_TOP
20015	955282.0427	646210.9782	1326.1431	POST_BOLL_Safety_Chain
20016	955289.7826	646194.86	1325.3118	POST_BOLL_Safety_Chain
20017	955293.4894	646179.871	1323.6878	POST_BOLL_Safety_Chain
20018	955295.4816	646156.414	1324.6709	POST_BOLL_Safety_Chain
20019	955298.373	646160.7579	1323.7205	NG_TOP
20020	955298.0189	646150.8826	1324.6296	NG_TOP
20021	955298.683	646138.9627	1325.2157	NG_TOP
20022	955296.8358	646121.3617	1325.2989	NG_TOP
20023	955295.7411	646103.3386	1325.8852	NG_TOP
20024	955295.9357	646091.3896	1326.0404	NG_TOP_grout_riprap
20025	955320.3706	646084.8415	1319.2017	CONC_EDGE_TOE_grout_riprap
20026	955316.5074	646099.6788	1317.035	NG_TOE
20027	955312.506	646117.7701	1317.8117	NG_TOE
20028	955307.0801	646133.8967	1318.4436	NG_TOE
20029	955306.5951	646144.8829	1318.3345	NG_TOE
20030	955306.413	646161.9281	1317.8301	NG_TOE
20031	955305.6271	646172.2235	1317.6583	CONC_EDGE_toe_grout
20032	955303.8478	646188.822	1318.2963	CONC_EDGE_toe_grout
20033	955300.7912	646197.2641	1318.4299	NG_TOE
20034	955294.2689	646210.7298	1318.5134	NG_TOE
20035	955290.1004	646236.7296	1318.1564	NG_TOE
20036	955281.8858	646186.8151	1324.5478	NG_SPOT
20037	955271.1837	646206.1058	1326.9047	NG_SPOT
20038	955262.0682	646206.5952	1329.3769	NG_SPOT
20039	955248.786	646198.9181	1330.6149	VEGE_TREE_pv_12_15_20
20040	955260.0304	646190.847	1328.617	NG_SPOT
20041	955270.2688	646193.8913	1326.4317	VEGE_TREE_pv_5_15_10
20042	955279.5806	646158.475	1325.5686	VEGE_TREE_mes_12_25_20
20043	955283.3535	646167.9859	1324.1265	NG_SPOT
20044	955284.9068	646121.2165	1326.1116	NG_SPOT
20045	955267.4607	646118.5822	1329.641	NG_SPOT
20046	955255.4244	646150.3469	1330.6897	NG_SPOT
20047	955223.6728	646149.8638	1331.5401	NG_SPOT
20048	955232.4444	646163.992	1330.9457	NG_SPOT
20049	955213.8882	646107.7186	1333.1861	NG_SPOT
20050	955269.5497	646105.6434	1329.4079	NG_SPOT
20051	955262.1904	646092.7836	1330.1511	NG_SPOT
20052	955267.1652	646039.5314	1330.7096	NG_SPOT
20053	955284.1208	645986.7826	1331.4272	NG_SPOT
20054	955300.5031	645932.6287	1331.702	NG_SPOT
20055	955301.5265	645922.1794	1331.8446	NG_TOE
20056	955291.3543	645940.3849	1332.8984	NG_TOE
20057	955281.5434	645971.5955	1332.6946	NG_TOE
20058	955266.269	646003.5807	1332.0254	NG_TOE
20059	955254.1036	646036.5991	1331.9991	NG_TOE
20060	955231.1788	646054.6798	1333.9722	NG_TOE
20061	955220.6013	646066.7634	1334.8683	NG_TOE
20062	955212.937	646068.479	1336.4099	VEGE_TREE_mes_20_20_30
20063	955198.9218	646090.0588	1336.7085	NG_TOE
20064	955242.214	646098.7111	1330.9641	NG_bould_4_dia
20065	955284.4628	646094.9395	1326.9039	FNC_METAL_pipe_3.5_
20066	955278.2683	646081.851	1329.0029	FNC_METAL_pipe_3.5_
20067	955280.8634	646034.4258	1330.3107	FNC_METAL_pipe_3.5_
20068	955282.2381	646033.8414	1329.8838	FNC_METAL_pipe_3.5_end_retwall_beg
20069	955282.4246	646033.6788	1331.6515	WALL_LT_top_0.75_w
20070	955282.7512	646033.788	1331.5793	FNC_WI_6
20071	955283.3722	646032.8189	1330.3283	NG_SPOT
20072	955295.3305	646026.1681	1330.5624	NG_SPOT
20073	955296.5985	646027.3479	1331.5132	FNC_WI
20074	955296.3177	646027.0018	1331.4986	WALL_LT
20075	955306.7171	645973.9711	1331.9388	WALL_LT
20076	955307.1088	645973.9979	1331.9493	FNC_WI

20077	955306.1576	645973.7781	1331.3301 NG_SPOT
20078	955321.0818	645889.0898	1331.764 NG_SPOT
20079	955322.8603	645888.8077	1332.7388 FNC_WI
20080	955322.601	645888.7717	1332.7374 WALL_LT
20081	955311.9649	645861.3858	1332.6287 WALL_LT
20082	955312.2789	645861.2607	1332.6734 FNC_WI
20083	955310.7022	645861.9899	1332.0953 NG_SPOT
20084	955268.7576	645813.5006	1333.3237 NG_SPOT
20085	955269.1971	645812.8464	1333.9873 WALL_LT
20086	955269.5872	645812.5518	1333.9689 FNC_WI
20087	955254.9001	645811.3515	1334.0221 FNC_WI_end
20088	955254.2517	645811.5103	1334.084 WALL_LT_end
20089	955255.6162	645812.8431	1332.5624 NG_SPOT
20090	955296.9733	645889.5597	1332.7351 NG_TOE
20091	955279.348	645850.3066	1332.648 NG_TOE
20092	955265.1702	645832.3951	1333.007 NG_TOE
20093	955246.8089	645823.6524	1333.159 NG_TOE
20094	955238.3169	645813.4872	1332.9518 NG_TOE
20095	955221.9685	645772.6733	1330.931 NG_TOE
20096	955200.7505	645736.4197	1330.1829 NG_TOE
20097	955170.7923	645715.6458	1331.0135 NG_TOE
20098	955147.4041	645702.1762	1330.6282 NG_TOE
20099	955120.3105	645703.7531	1331.7089 NG_TOE
20100	955129.1068	645777.6062	1345.0686 NG_TOP
20101	955148.3331	645798.3312	1346.4719 NG_TOP
20102	955170.6145	645820.1603	1346.9049 NG_TOP
20103	955190.9758	645836.8455	1345.4993 NG_TOP
20104	955207.2814	645878.3358	1347.394 NG_TOP
20105	955240.7951	645901.3453	1347.5044 NG_TOP
20106	955258.4236	645909.3895	1346.7899 NG_TOP
20107	955242.9073	645929.2133	1349.5561 NG_TOP
20108	955231.1507	645953.411	1352.2482 NG_TOP
20109	955222.4856	645970.2226	1353.2 NG_TOP
20110	955202.8221	645990.3537	1354.5589 NG_TOP
20111	955183.1282	646012.1821	1353.6448 NG_TOP
20112	955163.1463	646037.7514	1355.4472 NG_TOP
20113	955155.5599	646015.4626	1357.0315 NG_SPOT
20114	955184.1989	645968.1763	1356.1624 NG_SPOT
20115	955159.9536	645911.9292	1355.2396 NG_SPOT
20116	955143.5457	645840.5264	1352.3398 NG_SPOT
20117	955109.6075	645797.8621	1349.0211 NG_SPOT
20118	955245.6484	645893.516	1344.3282 LAND_BLDR_area
20119	955251.0448	645894.4135	1344.2325 LAND_BLDR_area
20120	955258.6164	645891.2628	1342.4492 LAND_BLDR_area
20121	955269.3082	645886.517	1338.8262 LAND_BLDR_area
20122	955283.158	645891.5887	1337.1457 LAND_BLDR_area
20123	955292.336	645894.0484	1335.1042 LAND_BLDR_area
20124	955291.0667	645904.1893	1335.1592 LAND_BLDR_area
20125	955280.707	645909.9552	1337.6325 LAND_BLDR_area
20126	955278.0325	645918.6424	1338.0339 LAND_BLDR_area
20127	955279.6676	645932.6405	1337.5297 LAND_BLDR_area
20128	955273.7166	645941.8076	1337.9817 LAND_BLDR_area
20129	955276.6178	645950.3952	1335.9694 LAND_BLDR_area
20130	955269.4426	645957.2126	1337.6175 LAND_BLDR_area
20131	955267.5043	645960.0938	1337.642 LAND_BLDR_area
20132	955260.0704	645972.1894	1338.1446 LAND_BLDR_area
20133	955252.2697	645982.2891	1338.6225 LAND_BLDR_area
20134	955241.8828	645991.0215	1340.3486 LAND_BLDR_area
20135	955227.389	645987.489	1346.0147 LAND_BLDR_area
20136	955222.6459	645992.7199	1345.7909 LAND_BLDR_area
20137	955227.4766	645997.5279	1343.3628 LAND_BLDR_area
20138	955229.3499	646009.9722	1340.0209 LAND_BLDR_area
20139	955219.9507	646016.5308	1341.7424 LAND_BLDR_area
20140	955207.6276	646010.3658	1347.8926 LAND_BLDR_area
20141	955199.878	646009.5114	1350.7637 LAND_BLDR_area
20142	955197.6911	645999.1882	1353.7374 LAND_BLDR_area
20143	955202.6199	645988.324	1354.6925 LAND_BLDR_area
20144	955210.8095	645977.6971	1354.5274 LAND_BLDR_area
20145	955222.9021	645965.5098	1353.2651 LAND_BLDR_area
20146	955232.011	645951.7584	1352.1697 LAND_BLDR_area
20147	955231.9085	645935.2934	1351.5308 LAND_BLDR_area
20148	955238.3756	645921.8226	1349.7336 LAND_BLDR_area

20149	955252.2104	645922.9799	1348.0925	LAND_BLDR_area
20150	955251.9731	645919.73	1348.3474	LAND_BLDR_area
20151	955257.1669	645913.7969	1347.2184	LAND_BLDR_area
20152	955254.9028	645906.0729	1346.6755	LAND_BLDR_area
20153	955245.4882	645902.997	1347.0219	LAND_BLDR_area
20154	955240.2998	645898.6902	1347.1361	LAND_BLDR_area
20155	955241.7725	645892.9867	1345.5387	LAND_BLDR_area
20156	955246.5612	645891.2353	1344.0511	LAND_BLDR_area
20158	955166.0302	645762.4459	1339.2185	NG_SPOT
20159	955193.3901	645790.0901	1338.5697	NG_SPOT
20160	955221.7691	645836.6038	1340.4806	NG_SPOT
20161	955257.3448	645861.5551	1338.3306	NG_SPOT
20162	955281.7566	645925.7276	1336.5501	VEGE_TREE_mes_10_15_15
20163	955294.0712	645914.5173	1333.0273	VEGE_TREE_pv_5_12_15
20164	955293.055	645882.2513	1332.73	VEGE_TREE_pv_8_12_15
20165	955253.5128	645810.6847	1331.5367	CONC_EDGE_top
20166	955246.1458	645792.1394	1330.64	CONC_EDGE_top
20167	955231.661	645746.4166	1329.979	CONC_EDGE_top
20168	955225.7908	645727.638	1330.3074	CONC_EDGE_top
20169	955224.4228	645727.1114	1330.4265	CONC_EDGE
20170	955211.9718	645723.3242	1330.9877	CONC_EDGE
20171	955210.8317	645719.7331	1330.0523	CONC_EDGE_toe
20172	955212.2326	645713.7522	1330.0891	CONC_EDGE_toe
20173	955213.3356	645711.2864	1330.539	CONC_EDGE
20174	955221.0371	645715.1425	1330.4471	CONC_EDGE
20175	955224.1545	645726.1653	1330.396	CONC_top
20176	955211.5486	645722.2169	1330.8859	CONC_top
20177	955214.0328	645712.2538	1330.7719	CONC_top
20178	955220.3128	645715.7211	1330.5879	CONC_top
20179	955222.4597	645717.6771	1329.6858	CONC_toe
20180	955213.5559	645714.239	1330.0856	CONC_toe
20181	955223.9208	645724.5157	1329.7275	CONC_toe
20182	955219.6985	645708.3862	1330.2389	CONC_EDGE_top
20183	955207.4809	645670.6596	1330.1989	CONC_EDGE_top
20184	955195.1627	645625.1348	1330.209	CONC_EDGE_top
20186	955182.7955	645558.2486	1329.186	NG_TOP_gabion_conc_edge
20187	955170.2649	645531.7966	1329.2167	NG_TOP_gabion
20188	955145.3686	645540.9917	1328.6898	LAND_RIP
20189	955155.0413	645525.3754	1327.3528	LAND_RIP
20190	955150.9483	645511.23	1326.3091	LAND_RIP
20191	955141.1652	645506.3509	1327.3938	LAND_RIP
20192	955134.0249	645512.537	1328.7065	LAND_RIP
20193	954771.7935	644436.5743	1324.7966	BRDG_ABUT_c-12.45_inv
20194	954795.0282	644436.591	1324.8684	BRDG_PIER_c-12.25_inv
20195	954795.9035	644436.5588	1324.8439	BRDG_PIER_c-12.25_inv
20196	954825.1232	644436.6211	1324.7421	BRDG_PIER_c-12.25_inv
20197	954825.9089	644436.6266	1324.8766	BRDG_PIER_c-12.25_inv
20198	954854.9168	644436.6553	1324.8728	BRDG_PIER_c-12.25_inv
20199	954855.7319	644436.6597	1324.8677	BRDG_PIER_c-12.25_inv
20200	954879.2645	644436.7049	1324.8529	BRDG_ABUT_c-12.40_inv
20201	954879.4619	644360.0624	1324.89	BRDG_ABUT_c-12.44_inv
20202	954856.1599	644360.2962	1324.6741	BRDG_PIER_c-12.20_inv
20203	954855.3018	644360.2903	1324.6905	BRDG_PIER_c-12.20_inv
20204	954825.9942	644360.284	1324.5068	BRDG_PIER_c-12.20_inv
20205	954825.0808	644360.3031	1324.4702	BRDG_PIER_c-12.20_inv
20207	954795.6991	644360.082	1324.571	BRDG_PIER_c-12.20_inv
20208	954771.6072	644360.0548	1324.7927	BRDG_ABUT_c-12.45_inv
20212	956714.5845	647306.808	1336.3682	BRDG_ABUT_c-10.01_inv
20213	956714.7143	647318.851	1336.3955	BRDG_PIER_c-9.99_inv
20214	956714.7205	647319.8353	1336.4151	BRDG_PIER_c-9.99_inv
20215	956714.6991	647331.8504	1336.2443	BRDG_PIER_c-10.10_inv
20216	956714.7056	647332.8351	1336.2167	BRDG_PIER_c-10.10_inv
20217	956714.7487	647345.1138	1336.3012	BRDG_PIER_c-9.98_inv
20218	956714.7419	647346.1251	1336.3123	BRDG_PIER_c-9.98_inv
20220	956714.8013	647358.6753	1336.3772	BRDG_ABUT_c-9.95_inv
20221	956663.8866	647350.3063	1336.1504	BRDG_ABUT_c-10.00_inv
20222	956663.7402	647298.2035	1336.1363	BRDG_ABUT_c-10.00_inv
20223	956663.7464	647310.5068	1336.0701	BRDG_PIER_c-10.01_inv
20224	956663.7411	647311.523	1336.0797	BRDG_PIER_c-10.01_inv
20225	956663.7766	647323.7666	1336.064	BRDG_PIER_c-10.05_inv
20226	956663.7816	647324.7798	1336.0781	BRDG_PIER_c-10.05_inv
20227	956663.8064	647336.9844	1336.1219	BRDG_PIER_c-10.00_inv

20228	956663.7861	647337.9969	1336.1022 BRDG_PIER_c-10.00_inv
20232	955090.8665	645558.1117	1329.1134 NG_SPOT
20233	955097.0127	645580.4515	1328.8618 NG_SPOT
20234	955096.6484	645617.284	1331.0026 NG_SPOT
20235	955096.6939	645617.346	1331.0015 NG_SPOT
20236	955129.46	645532.5919	1328.4843 NG_SPOT
20237	955140.863	645575.3405	1329.5982 NG_SPOT
20238	955147.4488	645620.8133	1330.8568 NG_SPOT
20239	955168.0448	645658.4738	1330.7808 NG_SPOT
20240	955174.631	645672.6075	1331.6977 NG_SPOT
20241	955180.0752	645687.453	1331.3049 NG_SPOT
20243	955179.7403	645687.407	1331.4128 NG_SPOT
20244	955176.1978	645689.71	1331.4419 NG_SPOT
20245	955156.8203	645678.2049	1331.1177 NG_SPOT
20246	955135.5479	645663.3593	1331.3456 NG_SPOT
20247	955110.653	645644.3676	1331.5434 NG_SPOT
20248	955113.0462	645640.1818	1331.4948 NG_SPOT
20249	955141.8633	645647.9057	1331.3531 NG_SPOT
20250	955167.0797	645663.2797	1331.3651 NG_SPOT
20251	955143.4178	645658.5431	1331.7188 LAND_BDR_4_dia
20252	955153.5317	645663.0158	1331.7773 VEGE_TREE_iw_6_15_20
20253	955166.7064	645674.7525	1331.3735 LAND_BDR_5dia
20254	955187.3781	645696.3834	1330.5854 DIRTRD_EDGE
20255	955172.0998	645692.6591	1330.3392 DIRTRD_EDGE
20256	955150.7153	645681.897	1330.0829 DIRTRD_EDGE
20257	955126.7055	645668.0249	1330.1692 DIRTRD_EDGE
20258	955103.6376	645658.0808	1330.0939 DIRTRD_EDGE
20259	955080.7453	645653.8627	1329.9666 DIRTRD_EDGE_cont_south
20260	955075.9262	645673.5005	1330.2641 DIRTRD_EDGE_cont_south
20261	955099.3734	645679.0153	1330.2272 DIRTRD_EDGE
20262	955122.8803	645685.2258	1330.158 DIRTRD_EDGE
20263	955147.0061	645697.7419	1330.1274 DIRTRD_EDGE
20264	955170.7949	645706.3256	1330.1683 DIRTRD_EDGE
20265	955195.7053	645717.1509	1330.1831 DIRTRD_EDGE
20266	955132.8078	645681.1837	1329.8876 NG_SPOT
20267	955094.5064	645665.8447	1329.8464 NG_SPOT
20268	955077.8472	645610.3874	1330.3006 NG_SPOT
20269	955062.1775	645566.8902	1329.6059 CURB_BC
20270	955077.6353	645559.1344	1329.4831 CURB_BC
20271	955090.8147	645547.633	1329.5302 CURB_BC
20272	955090.2802	645547.4356	1329.059 CURB_FC
20273	955077.2689	645558.7198	1329.0427 CURB_FC
20274	955062.0616	645566.3727	1329.1589 CURB_FC
20281	955080.2398	645442.5367	1328.5751 CURB_FC
20282	955080.6474	645442.2548	1329.0156 CURB_BC
20283	955080.8458	645442.1052	1328.5784 NG_SPOT
20284	955092.5318	645460.5707	1328.8484 NG_SPOT
20285	955102.7208	645482.9211	1329.0138 NG_SPOT
20286	955105.2532	645507.0098	1329.1698 NG_SPOT
20287	955099.9643	645531.9718	1329.1548 NG_SPOT
20288	955091.03	645548.0085	1329.127 NG_SPOT
20289	955077.6906	645559.357	1329.1799 NG_SPOT
20290	955062.4276	645567.1867	1329.4814 NG_SPOT
20291	955050.6227	645548.1935	1329.1766 CURB_FC
20292	955050.3324	645547.7512	1329.6581 CURB_BC
20293	955061.204	645539.3628	1329.4492 CURB_BC
20294	955061.6426	645539.6528	1328.95 CURB_FC
20295	955068.9937	645525.5355	1328.8545 CURB_FC
20296	955068.5199	645525.2829	1329.2931 CURB_BC
20297	955070.5995	645516.7762	1329.2029 CURB_BC
20298	955071.0985	645516.8209	1328.7999 CURB_FC
20299	955070.4858	645513.4683	1328.7915 CURB_FC
20300	955070.0288	645513.6707	1329.1329 CURB_BC
20301	955068.4137	645512.797	1329.1116 CURB_BC
20302	955068.3637	645512.3501	1328.5041 CURB_FC
20304	955071.1723	645488.1817	1328.5093 CURB_FC
20305	955074.6318	645486.8294	1328.6157 CURB_FC
20306	955076.3779	645483.3984	1328.6196 CURB_FC
20307	955075.0648	645479.1536	1328.5586 CURB_FC
20308	955059.1215	645453.8763	1328.1803 CURB_FC
20309	955055.6353	645451.6241	1328.1948 CURB_FC
20310	955052.5678	645452.4796	1328.1546 CURB_FC

20311	955052.858	645452.8402	1328.6662	CURB_BC
20312	955055.596	645452.1345	1328.6665	CURB_BC
20313	955058.6959	645454.1205	1328.6981	CURB_BC
20314	955074.5986	645479.328	1329.1013	CURB_BC
20315	955075.8724	645483.2646	1329.1498	CURB_BC
20316	955074.2276	645486.5861	1329.1582	CURB_BC
20317	955071.095	645487.7101	1329.0889	CURB_BC
20318	955364.6106	646151.8805	1329.1406	FNC_POST__steel_6'''x4_hi
20319	955368.1478	646871.7034	1336.9795	FNC_POST__steel_2'''x4_hi
20322	955361.0038	646907.5992	1336.8001	NG_TOP
20323	955375.7964	646907.9076	1336.1508	NG_SPOT
20324	955385.9194	646907.5964	1336.1485	DIRTRD_EDGE
20325	955396.6893	646906.9653	1336.1571	DIRTRD_EDGE
20326	955410.7384	646907.4741	1339.491	WALL_COL_dnc
20327	955410.7982	646905.3733	1339.4342	WALL_COL_dnc
20328	955412.9196	646905.47	1339.4702	WALL_COL_dnc
20329	955412.9216	646906.1851	1339.4937	WALL_LT_dnc
20330	955597.0358	646906.458	1339.666	WALL_LT_dnc
20331	955568.0673	646852.1267	1335.8239	NG_SPOT
20332	955467.973	646851.4152	1334.6961	NG_SPOT
20333	955393.8544	646851.9013	1336.2206	DIRTRD_EDGE
20334	955368.281	646851.7555	1336.9729	FNC_POST_2'''x4_hi
20335	955357.1937	646118.3479	1328.3287	NG_TOP
20336	955353.0283	646111.0223	1327.8608	NG_TOP
20337	955358.2539	646113.0774	1328.5219	CONC_EDGE_grout_riprap
20338	955365.4039	646105.4293	1328.7053	CONC_EDGE_grout_riprap
20339	955365.3768	646099.8267	1328.4429	CONC_EDGE_grout_riprap
20340	955376.5206	646086.2492	1329.0695	CONC_EDGE_grout_riprap
20341	955377.6025	646085.4151	1329.0331	CONC_EDGE
20342	955406.7535	646066.5507	1328.6053	CONC_EDGE
20343	955414.3486	646083.0088	1328.5451	CONC_EDGE
20344	955423.026	646099.2982	1328.454	CONC_EDGE
20345	955426.7815	646104.9017	1328.4851	CONC_EDGE
20346	955446.2014	646127.5732	1328.9563	CONC_EDGE_wingwall
20347	955396.5419	646120.5646	1329.5618	NG_SPOT
20348	955363.7294	646154.818	1328.851	NG_SPOT
20349	955340.6973	646148.9436	1325.4835	NG_TOP
20350	955343.4778	646150.5882	1326.1188	FNC_POST_leaning_west_2'''x4_hi
20351	955364.491	646169.8219	1328.9793	FNC_POST
20352	955364.7179	646191.9745	1329.5663	FNC_POST
20353	955360.0907	646189.2534	1328.9314	IRR_ICV
20354	955364.5251	646211.7133	1330.2378	FNC_POST
20355	955354.7986	646252.2067	1330.4423	NG_TOP
20356	955365.1861	646250.8074	1331.1846	FNC_POST
20357	955425.1338	646255.0733	1332.4163	NG_SPOT
20358	955365.2147	646271.4483	1331.808	FNC_POST
20359	955365.1624	646291.6255	1332.2477	FNC_POST
20360	955365.2026	646311.424	1332.7786	FNC_POST
20361	955365.1037	646331.6886	1333.0485	FNC_POST
20362	955364.9605	646351.5721	1333.2683	FNC_POST
20363	955355.5209	646351.1283	1332.7377	NG_TOP
20364	955444.8462	646357.0473	1333.1607	NG_SPOT
20365	955365.6996	646371.5997	1334.0211	FNC_POST
20366	955365.6574	646391.4582	1334.2105	FNC_POST
20367	955365.7839	646431.6378	1334.5445	FNC_POST
20368	955352.1948	646450.321	1333.9262	NG_TOP
20369	955365.4416	646451.3242	1334.8444	FNC_POST
20370	955448.8282	646449.5877	1333.9729	NG_SPOT
20371	955366.0403	646471.7502	1335.2479	FNC_POST
20372	955366.2291	646491.7022	1335.2825	FNC_POST
20373	955365.9844	646511.8923	1335.1074	FNC_POST
20374	955366.2985	646531.7341	1335.2659	FNC_POST
20375	955462.9834	646538.1698	1334.2444	NG_SPOT
20376	955366.4804	646551.5192	1335.2416	FNC_POST
20377	955357.0792	646551.5101	1334.7976	NG_TOP
20378	955366.0027	646571.3747	1335.7154	FNC_POST
20379	955365.9639	646591.857	1335.8605	FNC_POST
20380	955366.349	646612.0163	1335.7222	FNC_POST
20381	955366.5479	646631.8208	1335.5843	FNC_POST
20382	955357.9366	646652.6306	1335.1359	NG_TOP
20383	955366.7519	646651.7107	1335.5763	FNC_POST
20384	955467.6962	646646.3763	1335.0453	NG_SPOT

20385	955367.1475	646671.8767	1335.5981 FNC_POST
20386	955367.2887	646691.7125	1335.6123 FNC_POST
20387	955367.5037	646711.8071	1335.8599 FNC_POST
20388	955367.7276	646732.1979	1335.8085 FNC_POST
20389	955367.6174	646751.7063	1336.147 FNC_POST
20390	955360.4692	646751.2919	1336.1628 NG_TOP
20391	955478.0926	646733.705	1334.1213 NG_SPOT
20392	955367.8659	646771.6564	1336.2226 FNC_POST
20393	955367.7511	646791.4235	1336.5316 FNC_POST
20394	955368.1336	646810.4312	1336.3372 FNC_POST
20395	955368.1999	646831.9273	1336.9095 FNC_POST
20396	955356.8295	646856.5265	1336.7711 NG_TOP
20397	955354.6136	646858.4076	1336.665 WAT_VRIM
20400	955475.506	646862.3177	1335.0247 VEGE_TREE_25_o/s_mes_24_30_30
20401	955470.008	646861.4994	1334.8835 VEGE_TREE_30_o/s_mes_24_30_30
20402	955581.8166	646900.5507	1336.3876 VEGE_BUSH
20403	955565.6449	646897.5529	1335.7031 VEGE_BUSH
20404	955553.5964	646897.3683	1335.0464 VEGE_BUSH
20405	955541.9327	646896.9786	1335.9949 VEGE_BUSH
20406	955529.7496	646896.8418	1335.7488 VEGE_BUSH
20407	955518.6432	646897.2775	1335.5695 VEGE_BUSH
20408	955492.3741	646899.6153	1335.514 VEGE_BUSH
20409	955469.9576	646898.3837	1335.3655 VEGE_BUSH
20410	955453.1455	646893.5025	1335.413 VEGE_BUSH
20411	955414.2168	646898.2996	1336.2716 VEGE_BUSH
20412	955414.2013	646898.296	1336.2784 NG_TOE
20413	955414.372	646904.1182	1337.5037 NG_TOP
20414	955486.3436	646902.9172	1336.47 NG_TOP
20415	955485.9916	646897.176	1335.2624 NG_TOE
20416	955577.5202	646899.4457	1336.0578 NG_TOE
20417	955576.8466	646904.5647	1336.9069 NG_TOP
20418	955555.9362	646882.5153	1334.865 NG_LOW
20419	955521.4583	646882.9099	1334.6269 NG_LOW
20420	955481.5972	646882.2653	1334.838 NG_LOW
20421	955509.0873	646897.827	1335.1011 VEGE_TREE_pv_6_30_15_dnc
20422	955385.6927	646913.381	1336.1146 SS_MH_rim
20423	955399.7768	646940.7437	1337.2139 TELE_MH
20424	955386.6916	646957.2244	1337.0679 SS_MH_rim
20425	955398.3003	646908.0523	1336.4361 DIRTRD_EDGE
20426	955387.2205	646904.5689	1336.2121 DIRTRD_EDGE
20427	955378.4361	646877.4174	1337.1709 WAT_MH
20428	955380.8337	646849.2371	1336.3262 DIRTRD_EDGE
20429	955394.2878	646845.4369	1336.1619 DIRTRD_EDGE
20433	955390.0097	646750.0239	1335.5151 DIRTRD_EDGE
20434	955378.6598	646750.3041	1335.5381 DIRTRD_EDGE
20435	955378.9037	646649.7547	1335.0111 DIRTRD_EDGE
20436	955388.8991	646649.5679	1335.1373 DIRTRD_EDGE
20438	955388.015	646552.8826	1334.5371 DIRTRD_EDGE
20439	955378.048	646551.7684	1334.6699 DIRTRD_EDGE
20440	955376.612	646451.1082	1334.3584 DIRTRD_EDGE
20441	955384.3958	646450.2955	1334.3596 DIRTRD_EDGE
20443	955387.0853	646393.8573	1334.1785 DIRTRD_EDGE
20444	955377.5485	646388.2618	1333.6778 DIRTRD_EDGE
20445	955396.1397	646400.2062	1335.0491 VEGE_BUSH
20446	955370.1661	646364.3328	1333.2008 VEGE_BUSH
20447	955369.1244	646348.0665	1332.953 VEGE_TREE_pv_6_10_10
20448	955370.332	646337.6836	1332.657 VEGE_BUSH
20449	955395.4062	646334.4673	1333.8883 DIRTRD_EDGE
20450	955403.2394	646337.5839	1333.2242 DIRTRD_EDGE
20451	955427.9677	646301.6752	1332.5886 DIRTRD_EDGE_end
20452	955421.2325	646295.9502	1332.5013 DIRTRD_EDGE_end
20453	955368.3252	646295.4635	1332.3013 VEGE_BUSH
20454	955391.2157	646289.4374	1332.5551 VEGE_TREE_mes_24_25_30
20455	955384.2228	646285.3975	1332.979 SS_MH_rim
20456	955399.2558	646274.9729	1333.0439 TELE_MH
20457	955391.7105	646263.0096	1332.4864 VEGE_TREE_mes_12_20_20
20458	955426.9613	646264.9515	1332.7534 VEGE_BUSH
20460	955426.6432	646350.1909	1332.8582 VEGE_TREE_mes_10_15_20
20461	955403.7386	646226.8138	1332.0991 ELEC_PP
20462	955410.6385	646226.4575	1331.9399 VEGE_BUSH
20463	955438.1624	646194.5609	1331.113 VEGE_BUSH
20464	955402.983	646187.761	1330.934 VEGE_BUSH

20465	955402.1902	646183.3154	1330.6183	VEGE_BUSH
20466	955399.8136	646144.5265	1330.3838	VEGE_BUSH
20467	955427.7488	646144.3526	1330.1425	VEGE_BUSH
20468	955427.6321	646150.4179	1330.3541	VEGE_BUSH
20469	955431.9786	646148.6071	1330.1942	VEGE_BUSH
20470	955436.9938	646148.325	1330.1656	VEGE_BUSH
20471	955440.0844	646158.4704	1330.4634	VEGE_BUSH
20472	955445.3552	646162.0531	1330.746	VEGE_BUSH
20473	955453.8873	646161.2225	1331.3675	VEGE_BUSH
20474	955457.3327	646160.7507	1331.9107	VEGE_BUSH
20475	955460.2373	646156.4694	1332.4527	VEGE_BUSH
20476	955459.8292	646151.5426	1332.3972	VEGE_BUSH
20477	955457.655	646144.4329	1332.1726	VEGE_BUSH
20478	955458.0675	646137.0809	1332.3641	VEGE_BUSH
20479	955457.585	646129.6606	1332.2596	VEGE_BUSH
20480	955456.3499	646122.0978	1331.6478	VEGE_BUSH
20481	955451.0222	646138.6159	1331.1591	VEGE_BUSH
20482	955450.0177	646146.5316	1330.9654	VEGE_BUSH
20483	955449.884	646151.9748	1330.8297	VEGE_BUSH
20484	955423.5694	646140.9672	1329.8227	VEGE_BUSH
20485	955435.4915	646138.6236	1329.5482	VEGE_BUSH
20486	955434.2265	646127.8644	1329.0719	VEGE_BUSH
20487	955419.8888	646123.3502	1329.5178	VEGE_BUSH
20488	955408.0312	646127.0272	1329.6347	VEGE_BUSH
20489	955403.1329	646118.4663	1329.4209	VEGE_BUSH
20490	955415.0478	646112.4626	1329.1942	VEGE_BUSH
20491	955422.6325	646106.2871	1328.7922	VEGE_BUSH
20492	955428.9804	646109.0664	1328.7245	VEGE_BUSH
20493	955405.9005	646088.4359	1328.7541	VEGE_BUSH
20494	955398.0136	646079.5999	1328.567	VEGE_BUSH
20495	955395.1205	646075.9942	1328.4391	VEGE_BUSH
20496	955375.0817	646095.3332	1328.7352	VEGE_BUSH
20497	955370.4783	646103.4692	1328.7974	VEGE_BUSH
20498	955365.2938	646117.3229	1328.5872	VEGE_BUSH
20499	955477.4034	646461.7335	1333.6521	VEGE_BUSH
20500	955484.1879	646461.4715	1333.7223	VEGE_BUSH
20501	955445.5438	646644.0121	1334.2839	VEGE_BUSH
20502	955435.0289	646639.6527	1334.6294	VEGE_BUSH
20503	955434.5131	646648.8537	1334.5377	VEGE_BUSH
20504	955428.143	646617.0438	1334.4862	VEGE_BUSH
20505	955413.2433	646657.1674	1335.1547	VEGE_BUSH
20506	955420.0953	646657.7936	1334.6247	VEGE_BUSH
20507	955434.4785	646658.1534	1334.407	VEGE_BUSH
20508	955446.4219	646675.2729	1334.4578	VEGE_BUSH
20509	955409.0234	646685.6751	1335.6011	VEGE_BUSH
20510	955404.9794	646689.6075	1336.0659	VEGE_BUSH
20511	955402.0404	646696.0219	1336.1879	VEGE_BUSH
20512	955410.2793	646700.0352	1335.3425	VEGE_BUSH
20513	955421.419	646711.0184	1334.4502	VEGE_BUSH
20514	955404.0845	646714.7792	1335.7608	VEGE_BUSH
20515	955463.1853	646727.9964	1334.1174	VEGE_BUSH
20516	955470.4262	646729.7267	1334.0434	VEGE_BUSH
20517	955481.7644	646725.5413	1334.3486	VEGE_BUSH
20518	955476.6488	646744.6657	1334.6255	VEGE_BUSH
20519	955491.1865	646743.8914	1333.8034	VEGE_BUSH
20520	955507.5243	646742.3129	1333.9526	VEGE_BUSH
20521	955439.101	646787.0424	1334.2659	VEGE_BUSH
20522	955429.2198	646776.0549	1334.2824	VEGE_BUSH
20523	955415.5719	646772.8219	1335.2606	VEGE_BUSH
20524	955423.583	646815.7369	1334.5401	VEGE_BUSH
20525	955428.9525	646841.0778	1334.5233	VEGE_BUSH
20526	955470.8418	646834.1474	1334.9281	VEGE_BUSH
20527	955483.1983	646849.4219	1335.632	NG_SPOT
20528	955480.4971	646800.4984	1335.5008	NG_SPOT
20529	955470.6926	646751.2749	1334.9397	NG_SPOT
20531	955586.2457	646136.1108	1332.4581	NG_SPOT
20532	955612.1337	646176.9284	1333.0699	NG_SPOT
20534	955657.0982	646220.0592	1335.3496	FNC_POST_chainlink
20535	955645.2244	646229.4436	1334.6385	NG_SPOT
20536	955631.8672	646237.7469	1333.1528	NG_TOP
20537	955689.6259	646272.6754	1337.303	FNC_POST_wooden
20538	955671.5245	646283.6131	1336.8396	NG_SPOT

20539	955652.1444	646296.4498	1331.497	CONC_EDGE_top
20540	955675.5611	646288.2804	1337.4137	VEGE_TREE_pv_6_12_12
20541	955686.756	646305.0212	1337.5088	VEGE_TREE_pv_4_12_12
20542	955686.2662	646276.3345	1337.3602	VEGE_CACT
20543	955688.2022	646279.1034	1337.4231	VEGE_CACT
20544	955690.0889	646281.4509	1337.6457	VEGE_CACT
20545	955691.9699	646284.4521	1337.8826	VEGE_CACT
20546	955693.4931	646286.4637	1337.8615	VEGE_CACT
20547	955695.6039	646288.7963	1337.9218	VEGE_CACT
20548	955696.5367	646291.703	1338.1353	VEGE_CACT
20549	955697.9345	646293.8285	1338.0557	VEGE_CACT
20550	955698.3614	646295.0515	1338.1656	VEGE_CACT
20551	955699.9012	646299.0605	1338.1125	VEGE_CACT
20552	955702.3086	646301.2621	1338.2055	VEGE_CACT
20553	955703.1603	646302.5632	1338.3284	VEGE_CACT
20554	955704.3769	646305.051	1338.3079	VEGE_CACT
20555	955705.0735	646306.8838	1338.2475	VEGE_CACT
20556	955707.3488	646309.5394	1338.366	VEGE_CACT
20557	955713.2856	646315.5626	1338.2975	VEGE_CACT
20558	955715.7514	646321.8957	1338.2872	VEGE_CACT
20559	955702.0635	646345.2585	1336.9776	VEGE_CACT
20560	955705.1063	646349.8408	1337.4955	VEGE_CACT
20561	955703.285	646332.0183	1338.1061	NG_SPOT_gb
20562	955696.5447	646335.571	1336.1431	VEGE_TREE_pv_4_10_10
20563	955720.4918	646322.2255	1338.1722	FNC_WOOD_wall_corner
20564	955718.4351	646328.3066	1338.3733	ELEC_JBOX
20565	955681.5308	646347.3157	1330.9235	CONC_EDGE_top
20566	955694.741	646355.8086	1333.9742	VEGE_TREE_pv_6_15_15
20567	955701.1484	646361.3921	1334.1389	VEGE_TREE_pv_6_15_15
20568	955723.8589	646376.8665	1337.63	VEGE_TREE_pv_6_15_15
20569	955723.6553	646372.1607	1337.7043	VEGE_TREE_pv_6_15_15
20570	955733.3981	646381.4164	1335.6486	VEGE_TREE_pv_6_15_15
20571	955710.2286	646395.0355	1330.8225	CONC_EDGE_top
20572	955725.6837	646392.3292	1337.413	NG_SPOT_gb
20573	955753.3306	646376.2846	1337.7601	WALL_COL_chainlink_fnc_dnc
20574	955752.8015	646376.6363	1338.0091	NG_SPOT
20575	955749.128	646418.9117	1338.7239	VEGE_TREE_pv_10_25_30
20576	955783.5926	646425.9325	1338.3668	FNC_CH_post
20577	955785.9155	646424.5664	1338.4074	FNC_CH WALL_COL_chainlink_fnc
20578	955752.6428	646447.2127	1336.7389	NG_TOP
20579	955774.5074	646449.9023	1338.1258	VEGE_TREE_pv_5_15_15
20580	955817.2883	646475.6342	1338.3687	WALL_COL
20581	955788.0945	646490.5714	1337.6613	NG_TOP
20582	955772.7985	646497.1712	1330.3849	CONC_EDGE
20583	955848.1336	646526.0978	1338.2845	WALL_COL
20584	955827.2662	646538.988	1339.2273	VEGE_TREE_willow_18_40_40
20585	955816.2089	646544.8358	1338.278	NG_TOP
20586	955805.1099	646549.131	1330.3417	CONC_EDGE
20588	955181.9236	645162.3222	1328.3881	CURB_BC
20589	955197.8177	645171.4739	1328.2477	CURB_BC_ap
20590	955222.758	645171.347	1329.071	CURB_BC_ap
20591	955223.0758	645117.0963	1328.9917	CURB_BC_ap
20592	955238.8723	645117.1214	1329.0958	CURB_BC_pc
20593	955241.9778	645114.3985	1329.5141	CURB_BC_pt
20594	955255.678	645114.3609	1329.5268	CURB_BC_ap_ramp
20595	955256.1851	645108.4515	1329.2026	CURB_BC_end
20596	955261.9345	645108.2718	1329.3436	CURB_BC_end
20597	955261.5236	645108.3427	1329.4262	SW_EDGE
20598	955256.5365	645108.3062	1329.2961	SW_EDGE
20599	955261.0657	645114.8996	1328.9575	SW_RAMP_eop
20600	955256.1954	645114.8436	1328.972	SW_RAMP_eop
20601	955266.5607	645114.3372	1329.4588	CURB_BC_pc
20602	955269.7716	645117.5051	1329.3113	CURB_BC_pt
20603	955282.4164	645117.585	1329.6142	CURB_BC_ap
20604	955282.107	645190.3583	1328.8068	CURB_BC_ap
20605	955281.9929	645195.4735	1328.9823	CURB_BC_ap
20606	955269.135	645190.4735	1328.3815	CURB_BC_pc
20607	955266.5333	645192.2945	1328.4032	CURB_BC_pt
20608	955266.4995	645193.567	1328.5192	CURB_BC_pc
20609	955269.0976	645195.5617	1328.6168	CURB_BC_pt
20610	955281.6153	645277.3508	1329.6459	CURB_BC_ap
20611	955269.3794	645277.6758	1329.7119	CURB_BC_pc

20612	955266.5388	645279.0476	1329.6246	CURB_BC_poc
20613	955266.7304	645281.8155	1329.7199	CURB_BC_pcc
20614	955271.6375	645289.3049	1330.1002	CURB_BC_poc
20615	955278.0174	645295.7718	1330.4962	CURB_BC_poc
20616	955286.962	645301.6462	1330.9408	CURB_BC_poc
20617	955297.2933	645305.5322	1331.2792	CURB_BC_ct_sw
20618	955298.9024	645345.1002	1331.5302	CURB_BC_ct_sw
20619	955270.588	645337.9359	1330.6703	CURB_BC
20620	955239.8001	645329.99	1329.8913	CURB_BC
20621	955211.4488	645322.5122	1328.9965	CURB_BC
20622	955192.964	645317.333	1328.4454	CURB_BC_pc
20623	955181.1454	645311.6338	1328.0332	CURB_BC_poc
20624	955174.4756	645305.3946	1327.7947	CURB_BC_poc
20625	955168.4864	645298.4055	1327.5247	CURB_BC_pt_ct
20626	955168.1652	645297.9043	1327.1317	CURB_CO
20627	955167.0675	645296.1576	1327.0424	CURB_CO
20628	955166.6367	645295.615	1327.4563	CURB_BC_ct
20629	955151.052	645271.4326	1327.7165	CURB_BC
20630	955134.9381	645245.8933	1327.8658	CURB_BC
20631	955135.4671	645245.7466	1327.4426	CURB_GUTFL
20632	955151.5258	645271.1181	1327.3374	CURB_GUTFL
20633	955167.0517	645295.3035	1327.1362	CURB_GUTFL
20634	955168.9429	645297.9924	1327.212	CURB_GUTFL
20636	955174.9728	645305.0018	1327.3556	CURB_GUTFL
20637	955181.5211	645311.0874	1327.6479	CURB_GUTFL
20638	955193.1845	645316.6662	1328.0409	CURB_GUTFL
20639	955211.716	645321.9441	1328.5988	CURB_GUTFL
20640	955240.0252	645329.3466	1329.4963	CURB_GUTFL
20641	955270.82	645337.3514	1330.3163	CURB_GUTFL
20642	955299.0202	645344.3702	1331.147	CURB_GUTFL
20643	955297.4346	645306.1508	1330.88	CURB_GUTFL
20644	955286.7131	645302.3157	1330.5773	CURB_GUTFL
20645	955277.6834	645296.3022	1330.1586	CURB_GUTFL
20646	955271.1632	645289.7353	1329.741	CURB_GUTFL
20647	955266.2351	645282.1935	1329.2624	CURB_GUTFL
20648	955265.8968	645278.9664	1329.2608	CURB_GUTFL
20649	955269.2018	645276.9735	1329.2342	CURB_GUTFL
20650	955280.996	645276.7528	1329.3091	CURB_GUTFL
20651	955281.401	645195.9566	1328.3647	CURB_GUTFL
20652	955281.4443	645196.0163	1328.3258	CURB_GUTFL
20653	955269.1083	645196.0684	1328.0813	CURB_GUTFL
20654	955265.7504	645193.0877	1328.1933	CURB_GUTFL
20655	955268.9436	645189.8371	1328.2394	CURB_GUTFL
20656	955281.4819	645189.8232	1328.4785	CURB_GUTFL
20657	955281.7426	645118.1754	1329.325	CURB_GUTFL
20658	955269.7078	645118.2208	1329.0317	CURB_GUTFL
20659	955265.9908	645115.0165	1329.1576	CURB_GUTFL
20660	955242.3948	645115.0322	1329.2033	CURB_GUTFL
20661	955238.6976	645117.887	1328.8941	CURB_GUTFL
20662	955223.6139	645117.8976	1328.8141	CURB_GUTFL
20663	955223.3332	645171.8837	1328.7547	CURB_GUTFL
20664	955197.7147	645171.9968	1327.8147	CURB_GUTFL
20665	955181.5469	645162.7404	1327.9671	CURB_GUTFL
20666	955207.0594	645191.1227	1328.1041	CURB_BC_pc
20667	955204.492	645193.7371	1328.0339	CURB_BC_poc
20668	955206.9616	645196.2947	1328.0889	CURB_BC_pc
20669	955223.2012	645196.2353	1329.1574	CURB_BC hi
20670	955222.9975	645191.1695	1329.2069	CURB_BC hi
20671	955239.2566	645196.3671	1328.5976	CURB_BC_pc
20672	955241.7031	645193.7564	1328.6089	CURB_BC_poc
20673	955239.2294	645191.3722	1328.602	CURB_BC_pc
20674	955239.3032	645190.7128	1328.1922	CURB_GUTFL
20675	955242.3069	645193.735	1328.0725	CURB_GUTFL
20676	955239.2474	645196.8887	1328.2604	CURB_GUTFL
20677	955223.2941	645196.8357	1328.7682	CURB_GUTFL
20678	955222.999	645190.4811	1328.8151	CURB_GUTFL
20679	955206.9103	645190.5697	1327.7297	CURB_GUTFL
20680	955203.985	645193.6177	1327.6569	CURB_GUTFL
20681	955207.0874	645196.797	1327.8185	CURB_GUTFL
20682	955206.3336	645259.5446	1328.6057	CURB_GUTFL
20683	955203.5943	645261.2997	1328.5671	CURB_GUTFL
20684	955204.758	645264.1095	1328.545	CURB_GUTFL

20685	955216.6052	645272.1076	1328.7267	CURB_GUTFL
20686	955236.9987	645285.7228	1328.8202	CURB_GUTFL
20687	955240.4413	645285.7583	1328.8128	CURB_GUTFL
20688	955241.8617	645283.2889	1328.6253	CURB_GUTFL
20689	955241.9638	645271.9135	1328.5995	CURB_GUTFL
20690	955238.9013	645268.5199	1328.6237	CURB_GUTFL
20691	955222.9673	645268.5344	1328.6372	CURB_GUTFL
20692	955222.9198	645259.895	1328.6504	CURB_GUTFL
20693	955222.3257	645260.4342	1329.2455	CURB_BC_ap
20694	955222.46	645269.251	1329.1759	CURB_BC_ap
20695	955238.7198	645269.2219	1329.183	CURB_BC_pc
20696	955241.2732	645271.6238	1329.1222	CURB_BC_pt
20697	955241.2482	645283.2222	1329.0096	CURB_BC_pc
20698	955240.2156	645285.1908	1329.0966	CURB_BC_poc
20699	955237.2609	645285.1076	1329.2206	CURB_BC_pt
20700	955216.4535	645271.1453	1329.0409	CURB_BC
20701	955205.172	645263.5362	1329.0417	CURB_BC_pc
20702	955204.1275	645261.6033	1329.0317	CURB_BC_poc
20703	955206.4413	645260.1218	1329.0813	CURB_BC_pt
30066	955907.3917	647399.6997	1345.2548	WALL_LT_END_COL_BAD EL
30067	955906.6305	647399.6587	1344.7801	WALL_COL_COR_BAD EL
30068	955906.7427	647398.8634	1344.2512	WALL_LT_BEG_COL_COR_BAD EL
30069	955895.8598	647397.3672	1343.4143	WALL_LT_END_COL_COR_BAD EL_ELEC_CAB
30070	955896.0465	647397.9369	1343.8596	WALL_LT_COL_COR_BAD EL
30074	955899.7205	647403.8142	1339.8786	VEGE_STUMP
30075	955900.4011	647421.8913	1339.5966	VEGE_STUMP
30076	955903.3503	647425.0497	1339.1458	VEGE_BUSH
30077	955897.4205	647428.7218	1339.0643	VEGE_BUSH
30078	955896.7896	647420.8867	1339.1699	VEGE_BUSH
30079	955889.4761	647423.8162	1338.6129	VEGE_BUSH
30080	955896.0065	647414.2905	1339.0251	VEGE_BUSH
30081	955889.2035	647415.4071	1338.8366	VEGE_BUSH
30082	955886.751	647408.5742	1338.8158	VEGE_BUSH
30083	955886.442	647403.6141	1338.9511	VEGE_BUSH
30084	955884.3589	647399.0281	1338.9214	VEGE_BUSH
30085	955885.6186	647394.1839	1339.0751	VEGE_BUSH
30086	955880.5542	647393.4158	1338.9422	VEGE_BUSH
30087	955885.73	647388.6215	1339.0922	VEGE_BUSH
30088	955883.6533	647382.7054	1338.9252	VEGE_BUSH
30089	955880.4857	647378.1488	1339.0447	VEGE_BUSH
30090	955877.4444	647371.6882	1339.0074	VEGE_BUSH
30091	955865.1277	647378.4454	1338.3993	VEGE_BUSH
30092	955859.8416	647374.0735	1338.3133	VEGE_BUSH
30093	955855.5022	647364.8145	1338.2009	VEGE_BUSH
30094	955855.5381	647359.2758	1338.2838	VEGE_BUSH
30095	955865.8175	647353.749	1338.9919	VEGE_BUSH
30096	955862.3036	647350.8779	1339.0408	VEGE_BUSH
30097	955862.0196	647341.6837	1339.1232	VEGE_BUSH
30098	955857.861	647339.7047	1339.0816	VEGE_BUSH
30099	955853.342	647354.5184	1338.3352	VEGE_BUSH
30100	955850.7806	647349.8096	1338.3465	VEGE_BUSH
30101	955846.8372	647345.3372	1338.3242	VEGE_BUSH
30102	955849.0869	647340.2072	1338.4663	VEGE_BUSH
30103	955850.7774	647335.6882	1338.8527	VEGE_BUSH
30104	955849.8305	647321.4929	1339.0372	VEGE_BUSH
30105	955836.7983	647316.0414	1338.2972	VEGE_BUSH
30106	955838.6833	647309.9883	1338.6672	VEGE_BUSH
30107	955828.177	647304.3764	1338.13	VEGE_BUSH
30108	955834.0369	647297.9024	1338.5488	VEGE_BUSH
30109	955838.9785	647291.6601	1339.0173	VEGE_BUSH
30110	955825.4789	647297.0459	1338.1648	VEGE_BUSH
30111	955822.3727	647291.2044	1338.2957	VEGE_BUSH
30112	955828.3085	647288.1975	1338.322	VEGE_BUSH
30113	955821.6603	647285.1275	1338.1946	VEGE_BUSH
30114	955821.4565	647280.5007	1338.3488	VEGE_BUSH
30115	955829.0242	647275.4372	1338.9302	VEGE_BUSH
30116	955830.7446	647270.5688	1338.9277	VEGE_BUSH
30117	955829.1116	647266.3727	1338.9203	VEGE_BUSH
30118	955825.3838	647262.4852	1338.9114	VEGE_BUSH
30119	955826.1265	647256.2725	1338.8521	VEGE_BUSH
30120	955821.3674	647254.7081	1338.7979	VEGE_BUSH
30121	955813.0525	647259.4382	1337.9789	VEGE_BUSH

30122	955807.5174	647256.9549	1337.76	VEGE_BUSH
30123	955804.4402	647248.3526	1337.8229	VEGE_BUSH
30124	955810.8498	647245.4919	1338.526	VEGE_BUSH
30125	955808.4733	647236.949	1338.4182	VEGE_BUSH
30126	955804.3649	647234.2407	1338.2009	VEGE_BUSH
30127	955813.1585	647232.3397	1338.735	VEGE_BUSH
30128	955814.3614	647226.6582	1338.8643	VEGE_BUSH
30129	955810.4006	647221.7294	1339.0103	VEGE_BUSH
30130	955809.0202	647208.5895	1338.7584	VEGE_BUSH
30131	955806.9043	647205.3439	1338.6879	VEGE_BUSH
30132	955805.3755	647200.2009	1338.775	VEGE_BUSH
30133	955802.684	647206.3863	1338.6792	VEGE_BUSH
30134	955800.5817	647209.7527	1338.3106	VEGE_BUSH
30135	955797.6812	647215.332	1337.7711	VEGE_BUSH
30136	955792.5566	647210.2241	1337.5849	VEGE_BUSH
30137	955791.3849	647200.6299	1337.7824	VEGE_BUSH
30138	955794.0093	647195.053	1338.0926	VEGE_BUSH
30139	955796.6465	647191.4384	1338.2916	VEGE_BUSH
30140	955802.8263	647189.2455	1338.6562	VEGE_BUSH
30141	955801.2172	647184.3652	1338.8352	VEGE_BUSH
30142	955798.3416	647180.9805	1338.645	VEGE_BUSH
30143	955795.5721	647176.8777	1338.5382	VEGE_BUSH
30144	955792.7893	647160.2721	1338.5454	VEGE_BUSH
30145	955791.7795	647155.5047	1338.4969	VEGE_BUSH
30146	955776.6347	647154.9362	1337.4486	VEGE_BUSH
30147	955774.0549	647149.8303	1337.3759	VEGE_BUSH
30148	955782.4825	647130.5779	1338.3258	VEGE_BUSH
30149	955778.259	647131.4514	1337.9401	VEGE_BUSH
30150	955778.2004	647126.4165	1337.9717	VEGE_BUSH
30151	955777.3743	647122.1902	1337.9214	VEGE_BUSH
30152	955781.5661	647123.0944	1338.5052	VEGE_BUSH
30153	955784.0366	647121.5522	1338.8357	VEGE_BUSH
30154	955785.2572	647117.6534	1338.7978	VEGE_BUSH
30155	955768.1404	647123.5405	1337.2923	VEGE_BUSH
30156	955772.814	647125.5911	1337.5275	VEGE_BUSH
30157	955773.0161	647118.1218	1337.6618	VEGE_BUSH
30158	955777.7889	647113.7008	1338.4113	VEGE_BUSH
30159	955777.8179	647110.9866	1338.5724	VEGE_BUSH
30160	955778.2287	647104.7477	1338.5108	VEGE_BUSH
30161	955771.6499	647107.0839	1338.1821	VEGE_BUSH
30162	955761.5752	647104.0847	1337.1782	VEGE_BUSH
30163	955773.0844	647098.516	1338.3351	VEGE_BUSH
30164	955765.2521	647091.5194	1337.5889	VEGE_BUSH
30165	955765.8534	647088.0216	1337.9704	VEGE_BUSH
30166	955769.559	647086.4756	1338.1627	VEGE_BUSH
30167	955767.7614	647082.4527	1338.1256	VEGE_BUSH
30168	955767.2544	647077.9119	1338.2025	VEGE_BUSH
30169	955759.9812	647074.9329	1337.6723	VEGE_BUSH
30170	955755.6386	647078.2441	1337.0403	VEGE_BUSH
30171	955758.3156	647071.0168	1337.5568	VEGE_BUSH
30172	955759.0492	647062.816	1337.8334	VEGE_BUSH
30173	955767.5999	647050.7165	1338.4072	VEGE_BUSH
30174	955758.5713	647051.0457	1337.9316	VEGE_BUSH
30175	955755.5912	647049.2095	1337.5109	VEGE_BUSH
30176	955759.6694	647037.8792	1338.3884	VEGE_BUSH
30177	955761.4314	647032.4843	1338.6718	VEGE_BUSH
30178	955759.7832	647028.9675	1338.6467	VEGE_BUSH
30179	955760.2262	647024.9001	1338.7501	VEGE_BUSH
30180	955756.0012	647032.5696	1338.0018	VEGE_BUSH
30181	955753.4882	647019.1683	1338.1944	VEGE_BUSH
30182	955749.4527	647013.6058	1337.4219	VEGE_BUSH
30183	955746.896	647000.5149	1337.1245	VEGE_BUSH
30184	955753.8054	646995.5264	1339.4893	VEGE_BUSH
30185	955750.7118	646990.4755	1338.9315	VEGE_BUSH
30186	955751.9208	646985.6397	1339.3958	VEGE_BUSH
30187	955746.8964	646981.3559	1338.2077	VEGE_BUSH
30188	955745.6914	646973.798	1338.0229	VEGE_BUSH
30189	955741.4034	646967.8062	1337.0059	VEGE_BUSH
30190	955737.5093	646963.3321	1336.5902	VEGE_BUSH
30191	955739.8918	646960.3082	1336.9731	VEGE_BUSH
30192	955745.1589	646957.4123	1338.7078	VEGE_BUSH
30193	955740.8296	646939.1204	1338.7038	VEGE_BUSH

30194	955733.8748	646934.1635	1337.1191	VEGE_BUSH
30195	955739.2744	646926.3475	1338.5891	VEGE_BUSH
30196	955732.2204	646913.8301	1336.9478	VEGE_BUSH
30197	955723.5648	646914.0661	1336.3083	SS_MH_RIM
30198	955736.3998	646942.7448	1337.1965	VEGE_TREE
30199	955740.5757	646963.8177	1337.1387	VEGE_TREE
30200	955721.122	646961.5398	1335.9276	PVMT_EDGE
30201	955722.4776	646961.2133	1335.8583	GUT_FL
30202	955723.0467	646961.0333	1336.3123	CURB_BC
30203	955727.9603	646960.1778	1336.4163	SW_BW
30204	955735.1918	646958.726	1336.2319	NG_TOE
30205	955750.1592	646974.7113	1339.345	NG_TOP
30206	955753.33	646973.485	1342.5455	WALL_LT_BAD EL
30207	955738.4722	646977.4714	1336.2519	NG_TOE
30208	955730.8828	647011.9869	1336.0836	PVMT_EDGE
30209	955732.2486	647011.758	1335.9969	GUT_FL
30210	955732.8926	647011.6255	1336.4803	CURB_BC
30211	955737.7141	647010.7077	1336.5468	SW_BW
30212	955744.3828	647010	1336.7118	NG_TOE
30213	955756.5904	647007.6362	1339.5898	NG_TOP
30214	955759.5972	647006.9037	1341.1388	WALL_LT_BAD EL
30215	955748.1643	647004.362	1337.1584	VEGE_TREE
30216	955752.2755	647024.1176	1337.6871	VEGE_TREE
30217	955767.6665	647042.4752	1336.7642	VEGE_TREE_BAD EL
30221	955765.0619	647034.8611	1344.4116	WALL_LT_BEG_COL_COR_BAD EL
30222	955764.3066	647034.9154	1344.3411	WALL_LT_COL_COR_BAD EL
30223	955764.671	647036.9284	1344.2107	WALL_LT_COL_COR_BAD EL
30224	955766.7601	647036.6714	1343.7763	WALL_LT_COL_COR_BAD EL
30225	955766.6592	647035.9822	1343.8421	WALL_LT_END_COL_COR_BAD EL
30226	955751.7348	647058.9426	1336.804	SS_MH_RIM
30227	955740.2423	647059.9421	1336.2365	PVMT_EDGE
30228	955741.551	647059.7095	1336.151	GUT_FL
30229	955742.1397	647059.556	1336.6569	CURB_BC
30230	955747.0385	647058.3151	1336.7683	SW_BW
30231	955739.2704	647044.8817	1336.6306	CURB_BC_PC
30233	955752.9686	647077.0422	1336.7941	ELEC_LP
30234	955751.7048	647075.1094	1336.4802	ELEC_JBOX
30235	955743.1818	647092.3658	1336.5457	WAT_VRIM
30236	955743.1825	647092.3609	1333.5943	WAT_VNUT
30237	955761.0579	647105.8917	1337.0903	IRR_ICV
30238	955761.4807	647107.5031	1337.2376	IRR_ICV
30239	955761.3235	647111.4496	1337.228	WAT_WM
30240	955751.5967	647111.0258	1336.4525	PVMT_EDGE
30241	955752.9717	647110.6001	1336.3927	GUT_FL
30242	955753.4551	647110.3351	1336.8564	CURB_BC
30243	955758.356	647109.2251	1336.9817	SW_BW
30244	955760.3686	647116.7412	1337.0239	SW_BW_CONC_EDGE_AP
30245	955763.2449	647115.99	1336.9974	CONC_EDGE_AP
30246	955758.8879	647125.6982	1336.9449	SD_MH_RIM
30247	955756.5872	647124.6422	1336.2517	CURB_CO
30248	955758.9737	647133.7524	1336.2675	CURB_CO
30250	955792.9209	647114.2379	1344.532	WALL_LT_END_COL_COR_BAD EL
30251	955792.4291	647114.8233	1344.1473	WALL_LT_COL_COR_BAD EL
30252	955793.1232	647115.2022	1343.9977	WALL_LT_END_COL_COR_BAD EL
30253	955787.0931	647125.1358	1343.843	WALL_LT_BEG_COL_COR_BAD EL
30254	955786.7556	647124.7751	1343.7083	WALL_LT_COL_COR_BAD EL
30255	955784.8679	647125.3758	1342.987	WALL_LT_COL_COR_BAD EL
30256	955785.548	647127.219	1343.8993	WALL_LT_COL_COR_BAD EL
30257	955786.2378	647127.1433	1343.9036	WALL_LT_END_COL_COR_BAD EL
30258	955779.6144	647140.8387	1338.3764	VEGE_STUMP
30259	955773.7701	647154.7286	1337.205	CONC_EDGE_AP
30260	955770.871	647155.7242	1337.2423	SW_BW_CONC_EDGE_AP
30261	955765.5509	647162.5645	1336.718	PVMT_EDGE
30262	955766.8946	647162.0995	1336.5932	GUT_FL
30263	955767.5289	647162.0291	1337.1009	CURB_BC_CT
30264	955768.8243	647166.6036	1336.7702	CURB_BC_CT
30265	955774.6237	647185.5892	1336.8355	CURB_BC_CT
30266	955776.1611	647190.3655	1337.2263	CURB_BC_CT
30267	955773.6675	647182.4924	1336.7282	HCR
30268	955776.1227	647176.9924	1336.9371	HCR
30269	955774.9183	647173.0743	1336.9329	HCR
30270	955769.9064	647170.0835	1336.6903	HCR

30271	955772.304	647160.6649	1337.2435 SW_BW_AP
30272	955774.9891	647164.6878	1337.3005 SW_BW_AP
30273	955780.9237	647183.8688	1337.3885 SW_BW_AP
30274	955781.0269	647189.0929	1337.4523 SW_BW_AP
30275	955781.4186	647183.6529	1337.3813 CURB_BC_BEG
30276	955775.643	647164.5553	1337.3105 CURB_BC_END
30278	955786.0289	647164.3168	1337.5958 VEGE_TREE
30279	955788.9756	647177.5402	1337.8651 VEGE_TREE
30280	955798.5237	647199.4047	1338.2989 VEGE_TREE
30281	955805.7065	647217.735	1338.5384 VEGE_TREE
30283	955788.8751	647205.2303	1337.7366 VOID_MISC_MH_RIM
30284	955787.6622	647203.5683	1337.3823 WAT_FH
30285	955776.211	647207.8123	1337.1345 WAT_VRIM
30286	955776.1816	647207.7151	1334.7925 WAT_VNUT
30287	955780.3887	647210.0856	1337.0234 PVMT_EDGE
30288	955781.7353	647209.6141	1336.9055 GUT_FL
30289	955782.2809	647209.3646	1337.3737 CURB_BC_CT
30290	955783.9742	647214.3267	1337.0658 CURB_BC_CT
30291	955790.4798	647233.0268	1337.1069 CURB_BC_CT
30292	955792.2229	647237.7907	1337.5229 CURB_BC_CT
30293	955789.3913	647229.8112	1337.0255 HCR
30294	955791.787	647224.2758	1337.2128 HCR
30295	955790.3048	647220.4051	1337.1503 HCR
30296	955785.1257	647217.4031	1337.0135 HCR
30297	955787.0578	647207.6401	1337.5082 SW_BW_AP
30298	955789.9606	647211.7825	1337.5156 SW_BW_AP
30299	955796.9165	647236.0898	1337.6766 SW_BW_AP
30300	955796.7501	647231.1266	1337.6288 SW_BW_AP
30301	955797.2465	647230.8944	1337.655 CURB_BC_BEG
30302	955790.4899	647211.6916	1337.5399 CURB_BC_END
30303	955811.7664	647241.93	1338.7262 VEGE_TREE
30305	955805.5952	647259.3214	1337.7071 SW_BW
30306	955800.7111	647260.6867	1337.592 CURB_BC
30307	955800.2179	647260.9242	1337.08 GUT_FL
30308	955798.9631	647261.4328	1337.1726 PVMT_EDGE
30309	955822.0324	647269.1703	1338.7257 VEGE_TREE
30310	955832.4231	647283.6714	1339.1697 VEGE_TREE
30311	955828.7074	647300.5225	1337.9836 VEGE_TREE
30312	955818.2102	647283.1823	1337.7927 ELEC_LP
30313	955816.2533	647283.2451	1337.6127 ELEC_JBOX
30314	955818.6441	647309.7845	1337.3737 PVMT_EDGE
30315	955819.926	647309.285	1337.3298 GUT_FL
30316	955820.495	647309.002	1337.8055 CURB_BC
30317	955824.9001	647306.7457	1337.9143 SW_BW
30319	955841.5583	647308.3036	1338.4341 VEGE_TREE
30320	955847.641	647326.7417	1338.5566 VEGE_TREE
30321	955840.5657	647327.3873	1338.9603 ELEC_JBOX
30322	955818.1197	647321.7947	1337.709 WAT_VRIM
30323	955818.0685	647321.7457	1335.5381 WAT_VNUT
30324	955856.4976	647345.3756	1338.5577 VEGE_TREE
30326	955845.3417	647351.2686	1338.0975 SW_BW
30327	955840.857	647353.4339	1338.0055 CURB_BC
30328	955840.3166	647353.6578	1337.5292 GUT_FL
30329	955838.9351	647353.8592	1337.562 PVMT_EDGE
30330	955871.5395	647417.1275	1337.879 PVMT_EDGE
30331	955872.8162	647416.5577	1337.7872 GUT_FL
30332	955873.3135	647416.2185	1338.2887 CURB_BC
30333	955877.8277	647414.0716	1338.4266 SW_BW
30334	955804.344	647483.5709	1340.9524 PVMT_EDGE
30335	955803.2755	647484.1949	1340.9542 GUT_FL
30336	955802.664	647484.333	1341.4365 CURB_BC
30337	955800.5368	647484.9804	1341.0757 NG_SPOT
30338	955798.0218	647486.5284	1341.5132 SW_FW
30339	955793.968	647489.4479	1341.5919 SW_BW
30340	955785.5889	647494.3936	1344.4524 WALL_RT_POL_BAD EL
30341	955786.2055	647491.7371	1344.4111 WALL_RT_END_COL_COR_BAD EL
30345	955786.9624	647482.3835	1340.9941 VEGE_BUSH
30346	955789.3847	647465.9494	1340.9863 VEGE_BUSH
30347	955787.5428	647462.9058	1340.8974 VEGE_BUSH
30348	955785.9434	647459.8306	1340.7808 VEGE_BUSH
30349	955779.734	647472.6519	1340.8826 WAT_ARV
30351	955765.9801	647445.9481	1340.7439 NG_SPOT

30352	955769.2886	647444.4602	1341.317 SW_BW
30353	955773.639	647442.2207	1341.2342 SW_FW
30354	955776.0598	647440.8194	1340.8664 NG_SPOT
30355	955777.9372	647439.6959	1341.252 CURB_BC
30356	955778.483	647439.4754	1340.7462 GUT_FL
30357	955779.7425	647438.8872	1340.7455 PVMT_EDGE
30358	955766.0422	647427.9676	1341.2539 SW_FW_AP
30359	955765.9601	647416.4637	1341.1146 SW_FW_AP_CURB_BC
30360	955761.2582	647429.2011	1341.3134 SW_BW_AP
30361	955760.9309	647417.5641	1341.2433 SW_BW_AP
30362	955760.0672	647417.1323	1340.8399 ELEC_JBOX
30363	955759.3579	647418.2567	1340.5962 ELEC_LP
30364	955752.6332	647421.539	1342.4711 MISC_UTIL_BOX_18INWx18INWx2FT TALL_CL
30366	955757.4381	647429.8852	1340.4951 VEGE_BUSH
30367	955755.7301	647422.9048	1340.5208 VEGE_BUSH
30368	955753.0794	647410.5592	1340.5667 VEGE_BUSH
30369	955746.7366	647406.9954	1340.3331 VEGE_BUSH
30370	955745.0144	647399.3467	1340.4317 VEGE_BUSH
30372	955749.2717	647399.9396	1341.1546 CONC_EDGE
30373	955755.8456	647395.8677	1341.0395 CURB_BC
30374	955756.4165	647395.4834	1340.5724 GUT_FL
30375	955757.6683	647395.1024	1340.5306 PVMT_EDGE
30376	955755.4137	647413.0348	1341.1921 CONC_EDGE_AP
30377	955757.9396	647411.6526	1341.1916 CONC_EDGE_AP_SW_BW
30378	955740.8006	647375.5824	1341.0615 CONC_EDGE_AP_SW_BW
30379	955738.124	647376.903	1341.0608 CONC_EDGE_AP
30380	955738.8878	647383.779	1340.6151 VEGE_BUSH
30381	955736.7696	647375.3843	1340.9771 CONC_EDGE_AP
30382	955735.4164	647372.2796	1340.9711 CONC_EDGE_AP
30383	955739.9346	647374.0435	1340.9776 CONC_EDGE_AP
30384	955738.5141	647370.9085	1341.0166 CONC_EDGE_AP
30385	955727.0711	647366.3771	1340.3717 VEGE_BUSH
30386	955727.725	647362.2378	1340.4184 VEGE_BUSH
30387	955737.7758	647373.3008	1343.0041 ELEC_TRANS_TOP
30388	955732.321	647357.1189	1340.9712 SW_BW_AP
30389	955723.5158	647349.6477	1341.0496 SW_BW_AP
30392	955727.4782	647346.4666	1341.0294 SW_FW_AP
30393	955736.6417	647354.5599	1340.854 SW_FW_AP_CURB_BC
30394	955732.6903	647345.7269	1340.8214 CURB_BC
30395	955733.2851	647345.5813	1340.3285 GUT_FL
30396	955734.5184	647345.1308	1340.3126 PVMT_EDGE
30397	955725.8405	647335.5139	1340.4345 VEGE_BUSH
30398	955715.3493	647340.0111	1340.3033 VEGE_BUSH
30399	955708.3015	647324.2	1340.694 VEGE_BUSH
30400	955706.1398	647316.9189	1340.6987 VEGE_BUSH
30401	955717.0591	647315.7545	1340.4542 VEGE_BUSH
30402	955715.7526	647310.9779	1340.373 VEGE_BUSH
30403	955701.0079	647304.9617	1340.4541 VEGE_BUSH
30404	955725.1633	647307.6235	1339.96 SS_MH_RIM
30406	955697.4453	647295.1737	1340.3154 VEGE_TREE
30407	955700.9536	647293.9626	1340.8261 SW_BW_AP
30408	955702.1133	647283.022	1340.7011 SW_BW_AP
30409	955706.0093	647293.1921	1340.742 SW_FW_AP
30410	955707.0197	647283.1407	1340.6041 SW_FW_AP
30411	955707.5416	647283.1087	1340.5481 SW_FW_AP_CURB_BC
30412	955710.6731	647291.6125	1340.6099 CURB_BC
30413	955711.3471	647291.4596	1340.0981 GUT_FL
30414	955712.4936	647291.0483	1340.0904 PVMT_EDGE
30415	955701.4434	647281.2982	1340.6211 CURB_SC-CL_BEG
30416	955691.4134	647284.9001	1340.6221 CURB_SC-CL_END
30419	955667.683	647232.4347	1340.337 PVMT_SPOT
30421	955710.3128	647235.0579	1339.1522 PVMT_SPOT
30422	955736.5929	647224.4986	1338.4665 PVMT_SPOT
30423	955765.1417	647214.6755	1337.5329 PVMT_SPOT
30424	955745.3762	647250.8974	1339.0212 CURB_BC_PC
30425	955743.0183	647249.4508	1339.039 CURB_BC_POC
30426	955741.4188	647251.9103	1339.0359 CURB_BC_PT
30427	955755.0223	647275.3948	1339.0854 CURB_BC
30428	955756.5608	647274.9283	1338.5668 PVMT_EDGE
30429	955755.5233	647275.1673	1338.5941 GUT_FL
30430	955756.4028	647278.9286	1339.0566 CURB_BC_PC
30431	955749.9277	647277.0768	1338.9843 NG_SPOT

30432	955745.8544	647250.6285	1338.5534	GUT_FL
30433	955742.6733	647249.0429	1338.5465	GUT_FL
30434	955740.7495	647252.105	1338.5083	GUT_FL
30435	955739.4591	647252.1837	1338.5745	PVMT_EDGE
30436	955742.3885	647247.8556	1338.5803	PVMT_EDGE
30437	955747.0483	647250.212	1338.546	PVMT_EDGE
30438	955742.5027	647262.4486	1339.0393	CURB_BC_PC
30439	955743.4678	647269.6879	1339.1059	CURB_BC_POC
30440	955744.7639	647276.3669	1339.1657	CURB_BC_PCC
30441	955744.2204	647276.6351	1338.686	GUT_FL
30442	955742.1423	647277.5706	1338.8242	PVMT_EDGE
30443	955740.7448	647273.1953	1338.7956	PVMT_EDGE_AP
30444	955742.1249	647272.864	1338.6874	PVMT_EDGE_AP
30445	955728.2622	647285.9466	1339.4131	PVMT_SPOT
30446	955751.4284	647296.264	1339.297	CURB_BC_CONC_EDGE
30447	955756.219	647308.0439	1339.3042	CURB_BC_CONC_EDGE
30448	955759.8482	647306.6123	1339.4552	CONC_EDGE_AP
30449	955755.181	647294.9004	1339.3846	CONC_EDGE_AP
30450	955756.4408	647304.4158	1339.3741	SD_MH_RIM
30451	955751.4929	647298.1207	1338.7222	CURB_CO
30452	955755.0435	647306.8357	1338.6783	CURB_CO
30453	955765.6571	647330.5699	1339.4454	CURB_BC_POC
30454	955765.1016	647330.8257	1338.9805	GUT_FL
30455	955764.0319	647331.3487	1338.9927	PVMT_EDGE
30456	955771.379	647327.8247	1338.9861	NG_SPOT
30457	955777.0556	647326.1027	1339.3191	CURB_BC_POC
30458	955748.7542	647336.4569	1339.6045	PVMT_SPOT
30459	955777.5616	647325.9055	1338.8631	GUT_FL
30460	955778.8006	647325.589	1338.8245	PVMT_EDGE
30461	955801.9542	647373.8297	1338.9949	PVMT_EDGE
30462	955800.7419	647374.2309	1339.0116	GUT_FL
30463	955800.1863	647374.4654	1339.528	CURB_BC_POC
30464	955794.3945	647377.1305	1339.3582	NG_SPOT
30465	955802.0783	647390.2035	1339.7709	VEGE_TREE
30466	955772.1825	647387.0576	1339.8839	PVMT_SPOT
30467	955786.2496	647380.2671	1339.2492	PVMT_EDGE
30468	955787.442	647379.5488	1339.1651	GUT_FL
30469	955787.9349	647379.1633	1339.6465	CURB_BC_POC
30470	955813.6079	647400.7818	1339.7157	CURB_BC_PCC
30471	955824.253	647413.7782	1339.1602	PVMT_EDGE
30472	955823.0587	647414.4713	1339.1668	GUT_FL
30473	955822.4881	647414.7619	1339.6765	CURB_BC_POC
30474	955815.895	647417.6726	1339.543	NG_SPOT
30475	955809.0911	647421.2266	1339.8159	CURB_BC_POC
30476	955792.9732	647429.1747	1340.1292	PVMT_SPOT
30477	955807.421	647422.1198	1339.441	PVMT_EDGE
30478	955808.5781	647421.5325	1339.3444	GUT_FL
30479	955838.7359	647441.9235	1339.8274	SD_MH_RIM
30480	955840.3608	647446.3295	1339.87	VEGE_TREE
30481	955843.4539	647460.4918	1339.8005	NG_SPOT
30482	955833.9185	647466.0529	1340.0451	CURB_BC_POC
30483	955833.3168	647466.395	1339.5583	GUT_FL
30484	955832.3733	647467.1636	1339.6125	PVMT_EDGE
30485	955818.3472	647475.4571	1340.2649	PVMT_SPOT
30486	955853.031	647455.306	1339.8652	CURB_BC
30487	955853.5569	647454.9851	1339.3435	GUT_FL
30488	955855.3855	647454.015	1339.2714	PVMT_EDGE
30489	955851.6427	647447.5544	1339.2485	PVMT_EDGE_AP
30490	955850.5038	647448.5484	1339.2496	PVMT_EDGE_AP
30491	955869.9769	647446.6786	1338.6232	PVMT_SPOT
30492	955832.777	647412.6786	1339.1091	PVMT_BL
30493	955843.3464	647396.89	1338.352	PVMT_BL
30494	955826.6764	647363.1761	1338.1609	PVMT_SPOT
30495	955810.875	647369.6089	1338.9173	PVMT_BL
30496	955788.6207	647320.4743	1338.7481	PVMT_BL
30497	955803.0869	647315.1051	1338.065	PVMT_SPOT
30498	955783.0367	647265.6509	1337.8192	PVMT_SPOT
30499	955767.6073	647270.0993	1338.4697	PVMT_BL
30500	955747.6002	647220.7814	1338.3641	PVMT_BL
30501	955675.2748	647248.6265	1340.3471	PVMT_EDGE
30502	955675.8149	647249.8642	1340.3141	GUT_FL
30503	955675.8423	647250.4434	1340.7687	CURB_BC_PC

30504	955683.8754	647250.0242	1340.7475 CURB_BC_POC_CT
30505	955688.6368	647251.3966	1340.3348 CURB_BC_POC_CT
30506	955692.1947	647253.2371	1340.2452 CURB_BC_POC_CT
30507	955695.8808	647256.3568	1340.5718 CURB_BC_POC_CT
30508	955700.2685	647263.1254	1340.4691 CURB_BC_PRC
30509	955700.8013	647262.8838	1339.987 GUT_FL
30510	955702.0431	647262.5418	1340.0346 PVMT_EDGE
30511	955697.3386	647255.024	1340.0471 PVMT_EDGE_AP
30512	955698.9063	647253.5614	1340.0345 PVMT_EDGE_AP
30513	955691.3975	647250.3132	1340.2968 PVMT_EDGE_POC
30514	955686.7383	647255.6899	1340.4117 SW_BW_HCR
30515	955689.5564	647257.3595	1340.3633 SW_BW_HCR
30516	955695.4868	647264.836	1340.5719 SW_BW_PC
30517	955692.077	647260.3345	1340.5814 CURB_BC_BEG_PC
30518	955687.7616	647256.8554	1340.6757 CURB_BC_POC
30519	955682.9716	647254.8002	1340.7919 CURB_BC_END
30520	955677.1144	647254.1712	1340.8385 SW_BW_PT
30521	955677.3109	647255.1196	1340.5402 POST_SIGN_STOP
30522	955684.3028	647260.0513	1340.2243 VEGE_BUSH
30523	955689.3932	647269.9583	1340.417 VEGE_BUSH
30526	955686.367	647277.5365	1340.018 VEGE_TREE
30527	955690.6877	647283.7766	1340.3676 WALL_RT_COL_COR
30528	955688.8498	647284.5593	1340.2595 WALL_RT_COL_COR
30529	955689.2604	647284.6744	1340.2154 WALL_RT_COL_COR
30530	955682.7951	647285.055	1339.8452 WALL_RT_POL
30536	955677.3063	647190.7191	1339.6249 GUT_FL
30537	955676.7655	647190.9357	1340.1317 CURB_BC_PC
30538	955677.2489	647199.3923	1340.2249 CURB_BC_POC_CT
30539	955676.1149	647204.0366	1340.0099 CURB_BC_POC_CT
30540	955674.3499	647207.5511	1340.1584 CURB_BC_POC_CT
30541	955671.1009	647211.3071	1340.5761 CURB_BC_POC_CT
30542	955663.8295	647215.2916	1340.6319 CURB_BC_PT
30543	955664.0085	647215.8327	1340.1629 GUT_FL
30544	955650.3133	647219.5226	1339.6906 GUT_FL
30546	955650.627	647218.8975	1340.2182 CURB_BC
30547	955650.8056	647214.6492	1340.3616 SW_BW
30550	955657.408	647254.6963	1339.7587 GUT_FL
30551	955657.4587	647255.2846	1340.271 CURB_BC
30552	955658.3384	647259.1512	1340.3577 SW_BW
30553	955662.5588	647211.5398	1340.7538 SW_BW_PT
30554	955670.5382	647205.4065	1340.2868 SW_BW_POC_HCR
30555	955671.9091	647202.3619	1340.1727 SW_BW_POC_HCR
30556	955671.9891	647192.5494	1340.2375 SW_BW_PT
30557	955670.5058	647191.0437	1339.9028 ELEC_LP
30558	955672.1314	647198.5879	1340.343 CURB_BC_BEG_PC
30559	955670.839	647203.6937	1340.4553 CURB_BC_POC
30560	955667.6981	647207.8809	1340.6659 CURB_BC_END
30561	955658.5506	647204.0613	1339.9203 VEGE_BUSH
30562	955655.8502	647203.472	1339.638 VEGE_TREE
30563	955656.0398	647180.1722	1340.6041 VEGE_TREE
30564	955650.5783	647152.9645	1339.3869 VEGE_TREE
30565	955658.8382	647160.9921	1339.8501 VEGE_BUSH
30566	955661.4718	647166.2854	1339.8224 VEGE_BUSH
30567	955666.3674	647153.7488	1339.9733 SW_FW_AP_CURB_BC
30568	955661.9049	647156.4815	1340.1488 SW_BW_AP
30569	955662.2179	647157.849	1340.104 CURB_SC-CL_4'''_BEG
30570	955655.6767	647159.7352	1340.0054 CURB_SC-CL_4'''_END
30571	955648.1136	647161.6383	1339.4949 WALL_RT_POL_PLNTR_WALL_1.8FT_BEG
30572	955653.3601	647159.983	1339.6817 PLNTR_WALL_END_COL
30573	955653.2405	647159.3787	1339.6732 WALL_COL_COR
30574	955655.2367	647158.6247	1339.6618 WALL_COL_COR
30575	955655.8821	647160.6852	1339.6861 WALL_COL_COR
30576	955653.8319	647161.3777	1340.5427 WALL_COL_COR
30577	955653.3911	647165.0758	1340.5578 NG_SPOT
30578	955655.3001	647160.9354	1339.7452 PLNTR_WALL_BEG
30579	955657.2713	647167.1777	1339.6983 PLNTR_WALL_AP_BRICK_AP
30580	955653.4894	647168.5948	1340.2235 PLNTR_WALL_AP_BRICK_AP
30581	955658.3838	647183.9399	1340.2081 PLNTR_WALL_AP_BRICK_AP
30582	955654.2917	647185.1861	1340.2287 PLNTR_WALL_POL_BRICK_POL
30583	955654.0991	647189.3941	1339.3878 BRICK_POL
30584	955663.2699	647186.4353	1339.7515 BRICK_AP
30585	955647.2081	647183.8163	1340.4891 WALL_RT_POL

30586	955654.3256	647182.3778	1340.612	WALL_RT_COL_COR
30587	955652.313	647182.874	1340.7276	WALL_RT_COL_COR
30588	955653.1181	647180.4153	1340.6403	WALL_RT_BEG_COL
30589	955644.4513	647148.3418	1339.435	WALL_RT_AP
30590	955648.3958	647145.278	1340.1856	SW_BW_AP
30591	955652.6403	647142.4673	1340.0723	SW_FW_AP
30592	955641.5761	647127.4143	1339.0868	VEGE_BUSH
30593	955651.8246	647115.4759	1339.2269	VEGE_BUSH
30595	955661.2736	647131.8215	1339.2905	GUT_FL
30597	955660.8831	647132.551	1339.7923	CURB_BC
30599	955656.8002	647133.4761	1339.4477	NG_SPOT
30600	955650.8645	647134.8094	1340.0192	SW_FW
30601	955646.1689	647136.041	1340.1101	SW_BW
30602	955639.9225	647110.1594	1339.884	SW_BW_AP
30603	955646.9027	647093.9441	1339.4962	SW_BW_AP
30604	955652.1461	647094.5531	1339.4321	SW_FW_AP_CURB_BC
30605	955645.0984	647110.4625	1339.8068	SW_FW_AP
30606	955638.0837	647102.0401	1339.104	VEGE_TREE
30607	955633.136	647100.4006	1338.7745	WALL_RT_END_COL
30608	955633.7985	647100.2616	1338.7689	WALL_RT_COL_COR
30609	955633.4546	647098.5723	1338.8532	WALL_RT_BEG_COL_COR
30610	955638.1909	647094.9888	1339.0433	WALL_RT_END_COL_COR
30611	955640.0768	647094.474	1339.0777	WALL_RT_COL_COR
30612	955639.7195	647092.3381	1338.9573	WALL_RT_COL_COR
30613	955639.0636	647092.4706	1338.9629	WALL_RT_BEG_COL
30614	955637.1639	647083.2619	1338.78	WALL_RT
30615	955640.8509	647082.4518	1338.9916	NG_SPOT
30616	955644.6114	647081.7647	1339.4097	SW_BW
30617	955649.4985	647081.2622	1339.2651	CURB_BC
30618	955650.1812	647081.1679	1338.8201	GUT_FL
30621	955651.3001	647090.6376	1339.4175	CURB_BC_PT
30622	955630.3611	647049.0924	1338.2722	WALL_RT_END_COL
30623	955630.9718	647049.0654	1338.2706	WALL_RT_COL_COR
30624	955630.5291	647046.8877	1338.3183	WALL_RT_COL_COR
30625	955628.9315	647047.1734	1338.2756	WALL_RT_BEG_COL_COR
30626	955626.534	647046.0716	1338.2707	WALL_RT_END_COL_COR
30627	955626.04	647044.1855	1338.235	WALL_RT_COL_COR
30628	955625.1657	647044.3652	1338.2457	WALL_RT_BEG_COL
30629	955629.0897	647038.3361	1338.2833	VEGE_BUSH
30630	955630.5514	647033.7431	1338.1726	VEGE_BUSH
30631	955624.8609	647029.8318	1338.1252	VEGE_BUSH
30632	955623.0519	647032.2709	1338.1477	WALL_RT
30633	955634.5851	647029.9548	1338.7614	SW_BW
30634	955639.4955	647028.8738	1338.6215	CURB_BC
30635	955640.1614	647028.7485	1338.1558	GUT_FL
30638	955625.5552	647005.6394	1337.9881	VEGE_BUSH
30639	955617.7382	646993.7624	1337.9488	VEGE_BUSH
30640	955625.8016	646992.4121	1338.0019	ELEC_LP
30641	955625.3181	646981.9583	1338.1346	SW_BW
30642	955630.3108	646981.6215	1337.9798	CURB_BC
30643	955630.9511	646981.5329	1337.5101	GUT_FL
30646	955613.5464	646983.532	1337.7842	WALL_RT
30647	955615.0759	646976.8215	1337.6654	VEGE_BUSH
30648	955619.5026	646975.0822	1337.6801	VEGE_BUSH
30649	955618.3425	646973.1785	1337.6489	VEGE_BUSH
30650	955614.0127	646967.4661	1337.4931	VEGE_BUSH
30651	955606.0144	646932.8244	1337.3511	VEGE_BUSH
30652	955609.4134	646925.9566	1337.2044	VEGE_BUSH
30653	955606.7538	646909.0974	1336.8536	VEGE_BUSH
30654	955598.7654	646907.422	1337.0229	WALL_RT_END_COL
30655	955599.3959	646907.2107	1337.017	WALL_RT_COL_COR
30656	955598.5684	646905.3361	1337.0099	WALL_RT_COL_COR
30657	955596.8572	646905.4479	1337.2552	WALL_RT_COL_COR
30658	955597.2304	646906.4311	1337.2879	WALL_RT_BEG_COL
30659	955577.5076	646906.2636	1337.0176	WALL_RT
30660	955575.3062	646888.5513	1335.5809	NG_SPOT
30661	955602.2895	646899.3034	1336.8219	VEGE_TREE
30662	955605.9642	646882.6001	1336.9635	SW_BW
30663	955611.0443	646882.1832	1336.9172	CURB_BC
30664	955611.6493	646882.1645	1336.4483	GUT_FL
30668	955630.2625	646920.7154	1336.6738	WAT_VRIM
30669	955630.2748	646920.8139	1332.9893	WAT_VNUT

30670	955649.476	646914.3769	1336.4753 SS_MH_RIM
30672	955621.8302	646934.9559	1336.8533 GUT_FL
30673	955621.2519	646935.1045	1337.307 CURB_BC
30674	955616.4924	646936.5617	1337.4328 SW_BW
30675	955604.7147	646938.3863	1337.5267 WALL_RT
30676	955594.5377	646831.3708	1336.424 VEGE_TREE
30677	955503.3531	646866.455	1335.289 VEGE_TREE
30678	955564.5687	646837.8211	1335.8528 NG_SPOT
30679	955596.8697	646835.4396	1336.7003 SW_BW
30680	955601.8494	646834.9039	1336.6475 CURB_BC
30681	955602.5349	646834.8161	1336.2041 GUT_FL
30685	955587.8041	646788.4175	1336.4839 SW_BW
30686	955592.7636	646787.6899	1336.4393 CURB_BC
30687	955593.4083	646787.6191	1335.946 GUT_FL
30689	955584.7165	646775.8999	1336.2761 ELEC_LP
30690	955585.1367	646777.0569	1336.2736 ELEC_JBOX
30691	955549.8605	646792.6617	1335.2153 NG_SPOT
30692	955626.8294	646993.7064	1337.8388 ELEC_JBOX
30693	955559.2716	646761.4696	1335.0777 VEGE_TREE
30694	955543.9914	646726.4913	1334.8402 VEGE_TREE
30695	955545.4804	646742.2411	1335.0658 NG_SPOT
30696	955578.0191	646737.7685	1336.1839 SW_BW
30697	955583.0763	646737.5852	1336.13 CURB_BC
30698	955583.7451	646737.5522	1335.6766 GUT_FL
30703	955574.4327	646689.648	1335.4421 GUT_FL
30704	955573.8064	646689.7391	1335.8795 CURB_BC
30705	955568.8472	646690.7111	1335.8895 SW_BW
30706	955540.9857	646695.7636	1334.5368 NG_SPOT
30707	955503.4689	646711.4558	1333.6864 VEGE_TREE
30708	955517.3882	646691.1066	1334.0635 VEGE_TREE
30709	955521.0657	646655.9714	1334.473 VEGE_TREE
30710	955522.8012	646642.7545	1334.3804 VEGE_TREE
30711	955565.6476	646682.2452	1335.3526 VEGE_TREE
30712	955547.5501	646641.1742	1334.4295 NG_BL
30713	955530.7643	646642.1804	1334.4405 NG_SPOT
30714	955558.5814	646637.8163	1335.5931 SW_BW
30715	955563.538	646636.7018	1335.5915 CURB_BC
30716	955564.1895	646636.406	1335.1353 GUT_FL
30720	955597.7058	646629.2285	1335.3053 GUT_FL
30721	955598.3373	646629.0641	1335.8566 CURB_BC
30722	955620.8789	646624.9397	1335.9441 CURB_BC
30723	955621.4601	646624.813	1335.4401 GUT_FL
30725	955607.144	646637.8622	1335.5203 VEGE_TREE
30726	955616.2557	646643.4871	1335.3708 VEGE_BUSH
30727	955609.4417	646645.1167	1335.3715 VEGE_BUSH
30728	955615.608	646651.4491	1335.3724 VEGE_BUSH
30729	955611.5021	646659.4962	1335.5326 VEGE_BUSH
30730	955622.4193	646675.7203	1335.5897 VEGE_TREE
30732	955631.8487	646678.0113	1335.6371 GUT_FL
30733	955631.2485	646678.1872	1336.1694 CURB_BC
30734	955608.7577	646682.6673	1335.9989 CURB_BC
30735	955608.1516	646682.7553	1335.5198 GUT_FL
30738	955617.6062	646731.2494	1335.6459 GUT_FL
30739	955618.1271	646731.0545	1336.1452 CURB_BC
30740	955640.6527	646725.9637	1336.3468 CURB_BC
30741	955641.1351	646725.9246	1335.8362 GUT_FL
30743	955632.3449	646728.5329	1335.8544 VEGE_TREE
30744	955639.8159	646768.1474	1336.1485 VEGE_TREE
30746	955651.1611	646776.8677	1336.0599 GUT_FL
30747	955650.5477	646776.9359	1336.5528 CURB_BC
30748	955627.9012	646780.9387	1336.3215 CURB_BC
30749	955627.2995	646781.0743	1335.8451 GUT_FL
30751	955641.888	646818.6571	1336.1493 VEGE_TREE
30752	955651.0869	646809.6902	1336.6051 SD_MH_RIM
30754	955660.4426	646824.7974	1336.1756 GUT_FL
30755	955659.8742	646824.8878	1336.6885 CURB_BC
30756	955637.1071	646828.2848	1336.4977 CURB_BC
30757	955636.5521	646828.4744	1336.009 GUT_FL
30760	955645.8154	646876.1368	1336.1287 GUT_FL
30761	955646.395	646876.0023	1336.6072 CURB_BC
30762	955669.2118	646872.6043	1336.8648 CURB_BC
30763	955669.7714	646872.4205	1336.3052 GUT_FL

30765	955657.9254	646890.7345	1336.5244	VEGE_TREE
30766	955660.0877	646865.0968	1336.5343	VEGE_TREE
30767	955667.5419	646926.7571	1336.8415	NG_SPOT
30769	955679.6091	646923.7256	1336.4988	GUT_FL
30770	955679.0946	646923.7615	1336.9949	CURB_BC
30771	955656.5021	646927.3849	1336.997	CURB_BC
30772	955655.8132	646927.4368	1336.5784	GUT_FL
30775	955664.9888	646973.9544	1336.9877	GUT_FL
30776	955665.5341	646973.7828	1337.401	CURB_BC
30777	955688.1445	646970.123	1337.3262	CURB_BC
30778	955688.6968	646970.228	1336.8512	GUT_FL
30780	955681.9644	646962.3273	1336.9341	VEGE_BUSH
30781	955677.2304	646988.2574	1337.1675	VEGE_BUSH
30782	955688.4151	647006.3983	1337.3114	VEGE_TREE
30784	955697.8256	647017.1923	1337.224	GUT_FL
30785	955697.2131	647017.3338	1337.6806	CURB_BC
30786	955674.7497	647021.2806	1337.8229	CURB_BC
30787	955674.1935	647021.4808	1337.3376	GUT_FL
30789	955681.2782	647055.2946	1338.067	CURB_BC_PC
30790	955684.9116	647072.9391	1338.242	CURB_BC_POC
30791	955684.2763	647073.0212	1337.7648	GUT_FL
30794	955707.5346	647066.9207	1337.4788	GUT_FL
30795	955705.1091	647057.7299	1337.9775	CURB_BC_PC
30796	955706.9957	647067.133	1338.0693	CURB_BC_POC
30797	955701.7088	647077.744	1337.6642	VEGE_TREE
30798	955718.7423	647119.5201	1338.2624	CURB_BC_POC
30799	955720.5177	647126.4066	1338.3211	CURB_BC_PRC
30800	955719.3433	647119.3718	1337.7492	GUT_FL
30802	955706.6865	647121.6932	1338.1426	NG_SPOT
30803	955696.512	647124.5439	1338.4727	CURB_BC_POC
30804	955695.8776	647124.6255	1337.9953	GUT_FL
30808	955706.281	647159.313	1338.1248	GUT_FL
30809	955706.7885	647159.1126	1338.6392	CURB_BC_POC
30810	955716.8769	647175.8398	1338.6826	CURB_BC_PCC
30811	955716.5087	647176.1955	1338.1932	GUT_FL
30812	955722.6709	647178.3955	1338.0714	GUT_FL
30813	955722.3414	647177.8832	1338.6408	CURB_BC_POC
30814	955726.2968	647173.3365	1338.6033	CURB_BC_PCC
30815	955726.9413	647173.2976	1338.1619	GUT_FL
30819	955715.9049	647164.8714	1338.5751	VEGE_TREE
30820	955725.1942	647150.6652	1338.4599	CURB_BC_POC
30821	955725.7285	647150.5956	1337.9616	GUT_FL
30830	955740.6111	646909.0028	1338.697	WALL_LT_COL_COR
30831	955740.2683	646906.9325	1338.5418	WALL_LT_COL_COR
30832	955742.2488	646906.6742	1338.732	WALL_LT_COL_COR
30833	955741.4994	646908.9137	1338.7484	WALL_LT_8FT_END_COL
30834	955742.2883	646907.108	1338.6494	WALL_LT_7FT_BEG_COL
30835	955747.0248	646902.6066	1339.22	NG_TOP
30836	955743.7502	646895.865	1336.2487	NG_TOE
30837	955748.4785	646890.3569	1336.5007	VEGE_TREE
30838	955784.64	646892.6501	1337.3189	VEGE_TREE
30839	955801.6353	646891.0785	1337.6212	VEGE_TREE
30840	955893.5161	646907.2956	1339.448	WALL_LT_AP
30841	955744.3775	646858.6096	1335.6257	NG_SPOT
30842	955712.2539	646856.0739	1336.013	VEGE_TREE
30843	955710.4496	646857.1036	1335.9116	ELEC_LP
30844	955709.1883	646858.5239	1335.8237	ELEC_JBOX
30845	955709.4101	646864.6154	1336.0044	SW_BW
30846	955704.628	646865.8754	1336.0108	CURB_BC
30847	955703.9687	646866.1902	1335.5604	GUT_FL
30852	955694.7717	646818.4394	1335.3523	GUT_FL
30853	955695.4852	646818.4339	1335.7909	CURB_BC
30854	955700.4121	646817.3789	1335.7687	SW_BW
30855	955736.2735	646810.3422	1334.8276	NG_SPOT
30856	955740.7947	646795.5202	1335.071	VEGE_TREE
30857	955735.6174	646766.6327	1334.179	POST_SIGN_PRIV PROP
30860	955685.1876	646768.7697	1335.1861	GUT_FL
30861	955685.8381	646768.7111	1335.6129	CURB_BC
30862	955690.6634	646767.6182	1335.6079	SW_BW
30863	955720.393	646762.327	1334.2976	NG_SPOT
30864	955708.8083	646714.3149	1334.0338	NG_SPOT
30865	955707.0095	646710.3046	1333.9655	VEGE_BUSH

30866	955696.5702	646713.0146	1334.084	VEGE_BUSH
30867	955731.126	646821.0998	1335.5003	VEGE_BUSH
30868	955739.281	646863.5533	1336.0214	VEGE_BUSH
30869	955739.6122	646885.7671	1336.7436	VEGE_BUSH
30870	955681.3184	646719.0069	1335.5099	SW_BW
30871	955676.3994	646719.7477	1335.4496	CURB_BC
30872	955675.7233	646719.844	1334.9986	GUT_FL
30877	955666.3868	646671.5215	1334.8312	GUT_FL
30878	955666.9944	646671.3945	1335.2878	CURB_BC
30879	955671.8694	646670.1982	1335.2921	SW_BW
30880	955680.7059	646669.4661	1333.8636	NG_BL
30881	955701.7971	646664.7962	1333.6462	NG_SPOT
30882	955736.9249	646621.2917	1331.2962	VEGE_TREE
30883	955727.3585	646599.8244	1331.1968	VEGE_TREE
30884	955704.3438	646622.0643	1333.4386	VEGE_TREE
30885	955703.6359	646593.2041	1331.8924	VEGE_TREE
30886	955710.3852	646577.4608	1331.3543	VEGE_TREE
30887	955684.4379	646574.0535	1332.2287	VEGE_TREE
30888	955653.6433	646558.4677	1334.5678	VEGE_TREE
30889	955668.263	646620.8545	1334.7128	VEGE_TREE
30890	955685.4516	646610.2393	1333.7938	NG_SPOT
30891	955673.4979	646557.8299	1332.0534	NG_SPOT
30892	955668.6081	646643.66	1335.0438	ELEC_LP
30893	955666.9199	646641.024	1335.1626	ELEC_JBOX
30894	955672.7059	646645.8833	1335.026	GUARD_LT_2FT_BEG_PC
30895	955663.8829	646615.9024	1334.9368	GUARD_LT_POC
30896	955657.2204	646584.1618	1334.8436	GUARD_LT_PT
30897	955661.381	646615.9422	1335.1467	SW_BW
30900	955655.8514	646616.9943	1334.7285	GUT_FL
30901	955656.5546	646616.9124	1335.1207	CURB_BC
30902	955651.9645	646567.105	1335.0311	SW_BW
30903	955653.8775	646566.5447	1334.6175	GUARD_LT_POL
30904	955647.0297	646568.0571	1334.9484	CURB_BC
30907	955646.3731	646567.7294	1334.4947	GUT_FL
30908	955611.6804	646574.3643	1335.2067	GUT_FL
30910	955611.0831	646574.3881	1335.6966	CURB_BC
30911	955588.4239	646578.1071	1335.7004	CURB_BC
30912	955587.8924	646578.2749	1335.1609	GUT_FL
30914	955603.3576	646586.9876	1335.3121	VEGE_BUSH
30915	955599.3019	646606.7719	1335.3282	VEGE_BUSH
30916	955605.0871	646593.6637	1335.1306	VEGE_TREE
30919	955554.1155	646584.2147	1334.922	GUT_FL
30920	955553.4696	646584.1718	1335.326	CURB_BC
30921	955548.4441	646585.0241	1335.3777	SW_BW
30922	955539.4457	646586.8443	1334.5577	NG_BL
30923	955513.8198	646589.8865	1334.5106	NG_SPOT
30924	955405.3103	646606.8232	1336.3264	ELEC_PP_WOOD
30925	955405.5154	646791.325	1336.6488	ELEC_PP_WOOD
30926	955406.1591	646810.9951	1336.8095	ELEC_DG
30927	955406.3528	646820.4752	1336.4451	ELEC_DG
30932	955541.2893	646558.2944	1335.2672	ELEC_LP
30933	955537.5571	646551.3394	1335.0359	ELEC_LP
30936	955544.4715	646534.1848	1334.5889	GUT_FL
30937	955543.8954	646534.3533	1335.0144	CURB_BC
30938	955538.9018	646535.5932	1335.0941	SW_BW
30939	955504.8068	646540.3165	1334.2696	NG_SPOT
30940	955540.7854	646516.2217	1334.335	CURB_CO
30941	955536.9156	646495.7635	1334.3008	CURB_CO
30942	955534.4816	646498.1242	1335.0093	SD_MH_RIM
30945	955534.4387	646482.4046	1334.4821	GUT_FL
30946	955533.6831	646481.8833	1334.8857	CURB_BC
30947	955528.8698	646482.8586	1335.046	SW_BW
30948	955518.4472	646483.7991	1334.1137	NG_BL
30949	955496.4981	646488.138	1333.7626	NG_SPOT
30950	955477.5812	646469.93	1333.5909	VEGE_BUSH
30951	955484.029	646461.2522	1333.9181	VEGE_BUSH
30952	955492.5962	646437.2786	1333.8122	VEGE_TREE
30953	955475.0287	646439.9789	1333.8051	NG_SPOT
30954	955404.561	646416.8852	1335.3608	ELEC_PP
30955	955505.461	646436.2026	1333.7615	NG_BL
30956	955519.4653	646434.3277	1334.726	SW_BW
30957	955524.5361	646433.9573	1334.6301	CURB_BC

30958	955525.2248	646433.8813	1334.1767 GUT_FL
30963	955515.5154	646384.0483	1333.8643 GUT_FL
30964	955514.9858	646384.0947	1334.3809 CURB_BC
30965	955509.9131	646384.6408	1334.4558 SW_BW
30966	955475.2163	646388.8693	1333.54 NG_SPOT
30967	955465.4579	646343.5574	1332.8994 NG_SPOT
30968	955466.1132	646335.1713	1332.8447 VEGE_BUSH
30969	955427.5473	646350.8765	1332.9113 VEGE_TREE
30970	955500.8517	646345.0892	1334.2779 ELEC_LP
30971	955502.391	646348.6801	1334.1511 ELEC_JBOX
30972	955543.5152	646561.0398	1335.1536 ELEC_JBOX
30973	955500.8084	646337.4439	1334.2441 SW_BW
30974	955505.8776	646337.1797	1334.2039 CURB_BC
30975	955506.4631	646337.0672	1333.6867 GUT_FL
30980	955496.2144	646283.2399	1333.4552 GUT_FL
30981	955495.5756	646283.3939	1333.9269 CURB_BC
30982	955490.6215	646284.2944	1333.9933 SW_BW
30983	955476.5848	646286.5786	1332.9051 NG_BL
30984	955455.336	646288.9298	1332.6865 NG_SPOT
30985	955394.6446	646295.4785	1332.9434 VEGE_TREE
30986	955391.698	646262.8025	1332.5491 VEGE_TREE
30987	955428.3252	646265.756	1332.6806 VEGE_BUSH
30988	955404.0833	646225.603	1331.6352 ELEC_PP
30989	955407.2965	646225.9703	1331.6876 VEGE_BUSH
30990	955416.9371	646201.8111	1331.4211 VEGE_TREE
30991	955400.2317	646204.8036	1331.0416 ELEC_TRANS
30992	955403.0865	646204.7548	1331.0829 ELEC_TRANS
30993	955400.0984	646193.4815	1330.7815 ELEC_TRANS
30994	955403.1175	646193.3883	1331.1951 ELEC_TRANS
30995	955440.6468	646240.3581	1332.2146 NG_SPOT
30996	955468.9831	646235.916	1332.6362 NG_BL
30997	955481.0584	646234.4941	1333.7537 SW_BW
30998	955486.0809	646234.0723	1333.6848 CURB_BC
30999	955486.6691	646233.9746	1333.2088 GUT_FL
31002	955470.6468	646192.7743	1333.1924 VEGE_TREE
31003	955439.427	646194.7417	1331.1365 VEGE_BUSH
31004	955434.29	646174.8264	1330.5708 VEGE_BUSH
31005	955434.2608	646174.9443	1330.5718 VEGE_BUSH
31006	955427.3036	646187.3953	1330.8935 NG_SPOT
31007	955455.2812	646185.2984	1331.5581 NG_BL
31008	955461.9309	646190.5771	1332.033 ELEC_VLT
31009	955471.8474	646186.3544	1333.4707 SW_BW
31010	955476.6707	646185.3118	1333.3968 CURB_BC
31011	955477.2902	646185.2653	1332.8758 GUT_FL
31016	955471.9306	646160.4397	1333.0233 CURB_BC_END
31017	955467.082	646161.6505	1333.177 SW_BW_AP
31018	955466.7819	646163.0893	1333.1773 ELEC_JBOX
31019	955466.0557	646160.505	1332.9256 ELEC_LP
31020	955437.2299	646148.7888	1330.105 VEGE_BUSH
31021	955453.7181	646147.38	1331.3755 VEGE_BUSH
31022	955443.3389	646143.9202	1330.6453 FNC_CH_BEG
31024	955462.3681	646143.5518	1332.9207 SW_BW_AP
31025	955452.0421	646112.1569	1330.5857 FNC_CH_AP
31026	955454.487	646112.1039	1330.5213 FNC_CH_END
31027	955453.4385	646117.8999	1330.4242 NG_SPOT
31028	955441.5922	646142.1403	1329.5977 NG_SPOT
31029	955442.0213	646143.6374	1330.9533 BRDG_WING_AP
31030	955442.6891	646143.7789	1330.9537 BRDG_WING_AP
31031	955452.3768	646109.4333	1330.9956 BRDG_WING_AP
31032	955453.1527	646109.6594	1330.9853 BRDG_WING_AP
31033	955453.5799	646106.8883	1330.9914 BRDG_WING_AP
31034	955453.093	646105.8272	1331.0049 BRDG_WING_AP
31035	955452.6996	646105.8893	1330.9856 BRDG_WING_AP
31036	955446.69	646126.369	1328.7955 CONC_EDGE
31037	955472.0473	646160.347	1333.0705 NJBARR_TOP_AP
31038	955472.3108	646160.2535	1333.0701 NJBARR_TOP_AP
31039	955470.2597	646157.368	1333.7253 NJBARR_TOP_AP
31040	955471.1846	646157.0408	1333.8274 NJBARR_TOP_AP
31041	955469.3844	646149.3888	1335.3757 NJBARR_TOP_GB
31042	955468.899	646149.4159	1335.3768 NJBARR_TOP_GB
31043	955468.5969	646149.5275	1332.9784 SW_FW
31044	955470.1163	646157.35	1332.9715 SW_FW_AP

31048	955465.3683	646133.2386	1332.9797 SW_FW
31049	955465.5723	646132.7132	1335.3317 NJBARR_TOP
31050	955466.0675	646132.5384	1335.335 NJBARR_TOP
31054	955456.205	646082.5283	1335.0872 NJBARR_TOP
31055	955455.6633	646082.5462	1335.0908 NJBARR_TOP
31056	955455.344	646082.542	1332.7465 SW_FW
31059	955489.516	645974.5276	1332.5995 SD_MH_RIM
31064	955494.179	646021.7456	1333.112 GUT_FL
31065	955494.5382	646022.1269	1333.6432 CURB_BC_PCC_CONC_EDGE
31066	955491.4719	646023.9172	1333.6519 CURB_BC_POC
31067	955489.633	646028.2189	1333.5251 CURB_BC_PCC
31068	955488.6483	646053.7446	1333.5816 CURB_BC_POC
31069	955490.9746	646072.4346	1333.6185 CURB_BC_PT
31070	955491.8901	646077.1209	1333.6434 CURB_BC
31072	955496.2072	646022.6602	1333.5883 CURB_BC_POC
31073	955497.9398	646024.3845	1333.5346 CURB_BC_PC
31074	955498.4927	646024.1428	1333.0966 GUT_FL
31076	955503.1212	646035.1672	1333.5488 CURB_BC_PC
31077	955509.4991	646051.9847	1333.5762 CURB_BC_POC
31078	955514.3724	646073.0707	1333.5501 CURB_BC_PC
31079	955515.0371	646073.1653	1333.0376 GUT_FL
31083	955503.82	646035.0269	1333.0804 GUT_FL
31086	955523.8882	646122.2697	1333.8688 CURB_BC
31087	955501.4621	646126.115	1333.8529 CURB_BC
31090	955511.3636	646177.553	1334.0794 CURB_BC
31091	955533.7807	646173.9004	1334.1306 CURB_BC
31094	955543.2547	646223.2629	1334.375 CURB_BC
31095	955520.9517	646227.8148	1334.2827 CURB_BC
31100	955530.1022	646278.1278	1333.8813 GUT_FL
31101	955530.6562	646277.9666	1334.3141 CURB_BC
31102	955553.1375	646273.8298	1334.5758 CURB_BC
31107	955563.5351	646325.0885	1334.2294 GUT_FL
31109	955562.9821	646325.2051	1334.7338 CURB_BC_CONC_EDGE_AP
31110	955540.5569	646329.6949	1334.7736 CURB_BC_CONC_EDGE_AP
31111	955539.9558	646329.7037	1334.2563 GUT_FL
31113	955539.6046	646324.8476	1334.7445 CONC_EDGE_AP_PAVERS_EDGE_AP
31114	955538.2577	646317.84	1334.714 CONC_EDGE_AP_PAVERS_EDGE_AP
31115	955545.3295	646307.1933	1334.6825 CONC_EDGE_AP_PAVERS_EDGE_AP
31116	955550.2721	646306.3295	1334.6545 CONC_EDGE_AP_PAVERS_EDGE_AP
31117	955548.7276	646311.098	1334.8703 CONC_EDGE_AP_PAVERS_EDGE_AP
31118	955561.9867	646320.2638	1334.6484 CONC_EDGE_AP_PAVERS_EDGE_AP
31119	955560.6691	646313.3376	1334.6397 CONC_EDGE_AP_PAVERS_EDGE_AP
31120	955544.5612	646277.0402	1334.3981 CONC_EDGE_AP_PAVERS_EDGE_AP
31121	955539.6923	646277.8756	1334.3746 CONC_EDGE_AP_PAVERS_EDGE_AP
31122	955541.2572	646272.9368	1334.3922 CONC_EDGE_AP_PAVERS_EDGE_AP
31123	955551.6374	646266.5385	1334.4959 CONC_EDGE_AP_PAVERS_EDGE_AP
31124	955550.3374	646259.6926	1334.5223 CONC_EDGE_AP_PAVERS_EDGE_AP
31125	955549.0098	646252.7408	1334.4673 CONC_EDGE_AP_PAVERS_EDGE_AP
31126	955538.5	646245.4589	1334.3938 CONC_EDGE_AP_PAVERS_EDGE_AP
31127	955536.8893	646250.3998	1334.4157 CONC_EDGE_AP_PAVERS_EDGE_AP
31128	955533.5868	646246.4349	1334.2917 CONC_EDGE_AP_PAVERS_EDGE_AP
31129	955526.591	646256.7686	1334.1612 CONC_EDGE_AP_PAVERS_EDGE_AP
31130	955527.9208	646263.6403	1334.1557 CONC_EDGE_AP_PAVERS_EDGE_AP
31131	955529.2972	646270.6287	1334.1566 CONC_EDGE_AP_PAVERS_EDGE_AP
31132	955527.9942	646217.1295	1334.1781 CONC_EDGE_AP_PAVERS_EDGE_AP
31133	955532.8985	646216.2276	1334.2269 CONC_EDGE_AP_PAVERS_EDGE_AP
31134	955529.5727	646212.1429	1334.2316 CONC_EDGE_AP_PAVERS_EDGE_AP
31135	955517.5904	646210.0637	1334.1436 CONC_EDGE_AP_PAVERS_EDGE_AP
31136	955516.3257	646203.112	1334.1461 CONC_EDGE_AP_PAVERS_EDGE_AP
31137	955514.9488	646196.1704	1334.1494 CONC_EDGE_AP_PAVERS_EDGE_AP
31138	955525.2481	646189.7459	1334.0588 CONC_EDGE_AP_PAVERS_EDGE_AP
31139	955522.0261	646185.6884	1334.0538 CONC_EDGE_AP_PAVERS_EDGE_AP
31140	955526.7983	646184.7055	1334.0543 CONC_EDGE_AP_PAVERS_EDGE_AP
31141	955537.2388	646191.783	1334.1381 CONC_EDGE_AP_PAVERS_EDGE_AP
31142	955538.5643	646198.7593	1334.1352 CONC_EDGE_AP_PAVERS_EDGE_AP
31143	955539.8234	646205.5464	1334.2294 CONC_EDGE_AP_PAVERS_EDGE_AP
31144	955521.177	646155.2209	1333.9771 CONC_EDGE_AP_PAVERS_EDGE_AP
31145	955516.3232	646156.2885	1334.0102 CONC_EDGE_AP_PAVERS_EDGE_AP
31146	955517.7994	646151.065	1333.954 CONC_EDGE_AP_PAVERS_EDGE_AP
31147	955528.1117	646144.7683	1333.943 CONC_EDGE_AP_PAVERS_EDGE_AP
31148	955526.811	646137.7792	1333.7934 CONC_EDGE_AP_PAVERS_EDGE_AP
31149	955525.4359	646130.9202	1333.8634 CONC_EDGE_AP_PAVERS_EDGE_AP

31150	955515.0143	646123.7257	1333.764	CONC_EDGE_AP_PAVERS_EDGE_AP
31151	955513.4776	646128.7674	1333.8622	CONC_EDGE_AP_PAVERS_EDGE_AP
31152	955510.2657	646124.7684	1333.7573	CONC_EDGE_AP_PAVERS_EDGE_AP
31153	955503.2187	646135.2321	1333.8292	CONC_EDGE_AP_PAVERS_EDGE_AP
31154	955504.5469	646142.1394	1333.905	CONC_EDGE_AP_PAVERS_EDGE_AP
31155	955505.8976	646149.1746	1333.8775	CONC_EDGE_AP_PAVERS_EDGE_AP
31156	955504.536	646095.4258	1333.6456	CONC_EDGE_AP_PAVERS_EDGE_AP
31157	955509.528	646094.3873	1333.6981	CONC_EDGE_AP_PAVERS_EDGE_AP
31158	955506.0723	646090.3068	1333.6711	CONC_EDGE_AP_PAVERS_EDGE_AP
31159	955516.4123	646083.84	1333.5781	CONC_EDGE_AP_PAVERS_EDGE_AP
31160	955515.057	646076.7692	1333.502	CONC_EDGE_AP_PAVERS_EDGE_AP
31161	955513.7208	646069.7523	1333.487	CONC_EDGE_AP_PAVERS_EDGE_AP
31162	955501.7848	646067.6856	1333.6995	CONC_EDGE_AP_PAVERS_EDGE_AP
31163	955503.4073	646062.7564	1333.5762	CONC_EDGE_AP_PAVERS_EDGE_AP
31164	955498.486	646063.6084	1333.5858	CONC_EDGE_AP_PAVERS_EDGE_AP
31165	955491.3736	646074.5009	1333.6436	CONC_EDGE_AP_PAVERS_EDGE_AP
31166	955492.8178	646081.5815	1333.553	CONC_EDGE_AP_PAVERS_EDGE_AP
31167	955494.225	646088.4924	1333.634	CONC_EDGE_AP_PAVERS_EDGE_AP
31168	955488.6255	646035.1714	1333.5695	CONC_EDGE_AP_PAVERS_EDGE_AP
31169	955492.8619	646034.4204	1333.5652	CONC_EDGE_AP_PAVERS_EDGE_AP
31170	955497.7012	646033.5384	1333.5592	CONC_EDGE_AP_PAVERS_EDGE_AP
31171	955502.0248	646032.9794	1333.5281	CONC_EDGE_AP_PAVERS_EDGE_AP
31176	955619.7368	645999.2175	1332.0829	SS_MH_RIM
31178	955614.5667	646003.4336	1331.7866	GUT_FL
31179	955614.1404	646003.7968	1332.27	CURB_BC
31180	955611.6279	646007.0458	1332.2684	SW_BW
31181	955593.5637	645993.4594	1332.229	SW_BW_PC
31182	955586.4824	645988.6285	1331.9186	SW_BW_POC
31183	955581.2244	645986.6457	1331.7877	SW_BW_PT
31184	955564.5348	645989.6275	1331.5984	SW_BW_AP
31185	955557.5709	645992.7294	1331.7731	SW_BW_AP
31186	955545.8074	646010.3318	1332.3149	SW_BW_PC
31187	955545.6788	646014.7302	1332.447	SW_BW_POC
31188	955545.9137	646018.5115	1332.5737	SW_BW_PT
31189	955547.457	646020.0198	1332.4904	IRR_ICV
31190	955546.2733	646013.8613	1332.3575	ELEC_JBOX
31191	955548.111	646015.1032	1332.2489	ELEC_LP
31192	955549.6473	646023.7195	1332.6207	NG_SPOT
31193	955543.5416	646022.6595	1332.5419	SD_MH_RIM
31194	955544.5846	646042.0123	1331.9283	CURB_CO
31195	955540.7578	646021.5279	1331.8436	CURB_CO
31203	955596.5035	645989.8997	1331.6708	GUT_FL
31204	955581.1162	645982.0402	1331.1964	GUT_FL
31205	955563.5338	645985.1998	1330.9913	GUT_FL
31206	955540.2913	646019.6151	1331.9095	GUT_FL
31207	955541.0495	646019.3941	1332.4205	CURB_BC_PC
31208	955540.9344	646009.7486	1332.2532	CURB_BC_POC_CT
31209	955543.6977	646000.9511	1331.6424	CURB_BC_POC_CT
31210	955548.2845	645994.4918	1331.5481	CURB_BC_POC_CT
31211	955555.3146	645988.9637	1331.7174	CURB_BC_POC_CT
31212	955563.7889	645985.6814	1331.5034	CURB_BC_PT
31213	955580.1227	645982.6975	1331.6808	CURB_BC_PT
31214	955587.3008	645984.7571	1331.8407	CURB_BC_POC
31215	955596.0037	645990.3714	1332.1734	CURB_BC_PT
31216	955592.1371	645995.7451	1332.1123	NG_SPOT
31217	955564.0261	645993.3371	1331.6263	NG_SPOT
31218	955567.5288	645986.4767	1331.6489	SD_MH_RIM
31219	955565.1832	645984.7701	1330.8581	CURB_CO
31220	955578.8771	645982.1772	1330.9439	CURB_CO
31221	955556.2207	645997.2237	1331.6677	VEGE_BUSH
31222	955557.9141	645992.947	1331.8012	CURB_BC_BEG
31223	955546.352	646010.3272	1332.3612	CURB_BC_END
31224	955551.9267	645990.9963	1331.5833	HCR
31225	955550.85	645996.6905	1331.597	HCR
31226	955546.7758	646002.8979	1331.7342	HCR
31227	955541.765	646005.7463	1331.9565	HCR
31228	955575.1743	646021.0038	1336.3122	NG_TOP
31229	955573.5148	646061.6929	1335.7259	NG_TOP
31230	955571.3265	646074.995	1334.8204	VEGE_BUSH
31231	955557.5935	646067.6074	1332.9547	NG_SPOT
31232	955555.4375	646068.3249	1332.8645	SW_BW
31233	955550.4616	646069.1254	1332.7964	CURB_BC

31234	955549.8722	646069.081	1332.3351 GUT_FL
31239	955558.5939	646115.0547	1332.574 GUT_FL
31240	955559.1981	646114.9254	1333.0776 CURB_BC
31241	955564.0177	646113.6276	1333.1995 SW_BW
31242	955580.7814	646110.7845	1333.2804 NG_BL
31243	955596.9761	646104.6856	1335.5054 NG_TOP
31244	955611.5987	646100.8656	1336.2896 FNC_CH_POL
31245	955604.7579	646104.8528	1335.966 FNC_CH_AP
31246	955609.1189	646115.5828	1336.094 FNC_CH_AP
31247	955597.8666	646125.2245	1333.5504 FNC_CH_AP
31248	955594.5697	646124.8923	1333.3712 NG_BL
31249	955607.052	646140.2209	1333.5154 FNC_CH_END_BLDG_COR
31250	955605.8576	646138.3233	1333.4352 FNC_CH_GATE_CL_4FT
31251	955591.0473	646141.4156	1332.318 VEGE_BUSH
31252	955599.9305	646160.6715	1332.4118 NG_SPOT
31253	955617.5456	646157.4832	1333.93 FNC_CH_BEG_BLDG_COR
31254	955625.4983	646169.5863	1333.7963 FNC_CH_TEE
31255	955629.7467	646176.0194	1334.0342 FNC_CH_GATE_CL_4FT
31256	955648.0658	646205.2214	1334.7365 FNC_CH_POL
31257	955634.7637	646214.8846	1334.0282 NG_SPOT
31258	955622.4964	646223.5843	1333.0851 VEGE_BUSH
31259	955614.9158	646216.454	1332.9056 VEGE_TREE
31260	955622.4029	646221.2465	1333.2614 NG_TOP
31261	955617.1148	646229.0066	1330.8947 FNC_CH_BEG
31262	955616.9109	646229.6312	1330.9092 BRDG_WING_TOP_AP
31263	955616.7498	646230.1892	1330.92 BRDG_WING_TOP_AP
31264	955616.0362	646230.4725	1330.5564 CONC_EDGE
31265	955588.4415	646221.7243	1331.7263 BRDG_WING_TOP_AP
31266	955587.9249	646222.1995	1331.7404 BRDG_WING_TOP_AP
31267	955587.6405	646221.6611	1331.7376 BRDG_WING_TOP_AP
31268	955587.3408	646221.6689	1331.7424 BRDG_WING_TOP_AP
31269	955588.9182	646221.45	1331.7159 BRDG_WING_TOP_AP
31270	955586.6016	646217.7715	1331.8975 BRDG_WING_TOP_AP
31271	955589.4204	646221.8	1331.4081 FNC_CH_AP
31272	955586.8277	646217.2751	1332.0645 FNC_CH_END
31273	955576.0098	646169.3052	1332.951 ELEC_LP
31274	955574.8519	646166.7164	1333.1709 ELEC_JBOX
31275	955574.8339	646169.2069	1333.1833 SW_BW_AP
31276	955569.9434	646170.0841	1333.0445 CURB_BC_END
31281	955579.4568	646187.5855	1333.4747 SW_BW_AP
31282	955569.5864	646170.317	1333.0314 NJBARR_TOP_AP
31283	955569.9294	646170.2571	1333.0104 NJBARR_TOP_AP
31284	955571.669	646174.2344	1334.4018 NJBARR_TOP_AP
31285	955570.8529	646174.1975	1334.4035 NJBARR_TOP_AP
31286	955571.6352	646177.3962	1335.4741 NJBARR_TOP_GB
31287	955572.1857	646177.3209	1335.4779 NJBARR_TOP_GB
31289	955571.8158	646174.2296	1333.0854 SW_FW_AP
31290	955572.3644	646177.2183	1333.1012 SW_FW
31291	955580.0716	646216.8543	1333.6308 SW_FW
31292	955579.8287	646216.8579	1335.9065 NJBARR_TOP
31293	955579.269	646216.9212	1335.905 NJBARR_TOP
31300	955583.2973	646207.6345	1333.6667 SW_BW
31301	955584.8616	646215.6483	1333.6748 SW_BW
31302	955583.5034	646207.6704	1336.5913 BRDG_PARPIT_TOP_AP
31303	955584.4705	646207.515	1336.5653 BRDG_PARPIT_TOP_AP
31304	955584.1606	646210.8819	1337.3147 BRDG_PARPIT_TOP_GB
31305	955585.065	646210.7513	1337.3089 BRDG_PARPIT_TOP_GB
31306	955584.9977	646215.564	1337.3474 BRDG_PARPIT_TOP_AP
31307	955586.2924	646216.6751	1337.3452 BRDG_PARPIT_TOP_AP
31308	955585.4949	646216.4629	1337.3524 BRDG_GRDRAIL_TOP_CL_BEG
31309	955585.0535	646215.8603	1334.4583 CURB_FC_BEG
31310	955586.1513	646216.7559	1334.46 CURB_BC_BEG
31311	955595.3196	646264.5744	1334.5574 CURB_BC
31312	955594.5152	646264.7359	1334.5562 CURB_FC
31313	955594.4007	646264.7852	1333.8405 SW_BW
31314	955594.8182	646264.3494	1337.4411 BRDG_GRDRAIL_TOP_CL
31315	955589.6717	646265.5597	1333.7347 SW_FW
31316	955589.5006	646266.3978	1336.133 NJBARR_TOP
31317	955588.9191	646266.3518	1336.1226 NJBARR_TOP
31320	955598.9594	646317.8856	1336.3554 NJBARR_TOP
31321	955599.5123	646317.74	1336.3675 NJBARR_TOP
31322	955599.7986	646317.5379	1333.9361 SW_FW

31323	955604.456	646316.6749	1334.0507 SW_BW
31324	955604.5587	646316.6124	1334.7853 CURB_FC
31325	955605.3918	646316.5015	1334.7905 CURB_BC
31326	955604.9707	646316.4789	1337.5778 BRDG_GRDRAIL_TOP
31330	955608.715	646367.4974	1336.5958 NJBARR_TOP
31331	955609.2127	646367.4567	1336.5826 NJBARR_TOP
31332	955609.4894	646367.3773	1334.2191 SW_FW
31333	955614.1896	646366.1891	1334.2604 SW_BW
31334	955614.3322	646366.2407	1335.0139 CURB_FC
31335	955615.1612	646366.172	1335.0192 CURB_BC
31336	955614.816	646366.6103	1337.7427 BRDG_GRDRAIL_TOP
31337	955622.2371	646404.4274	1337.9338 BRDG_GRDRAIL_TOP_CL_END
31338	955622.9807	646405.6148	1335.2516 CURB_BC_END
31339	955622.355	646405.8419	1335.2498 CURB_FC_END
31340	955621.6777	646404.5455	1335.2095 CURB_FC_AP
31341	955621.2737	646404.4613	1334.4063 SW_BW
31342	955623.2548	646413.888	1333.96 SW_BW
31343	955625.5817	646428.6526	1334.183 SW_BW_AP
31344	955621.4053	646404.674	1337.932 BRDG_PARPIT_TOP_AP
31345	955623.0405	646407.6454	1337.9122 BRDG_PARPIT_TOP_AP
31346	955622.4841	646409.919	1337.7095 BRDG_PARPIT_TOP_GB
31347	955623.5015	646409.8996	1337.7874 BRDG_PARPIT_TOP_GB
31348	955623.1901	646413.6838	1336.9401 BRDG_PARPIT_TOP_AP
31349	955624.1863	646413.4885	1336.955 BRDG_PARPIT_TOP_AP
31350	955622.6276	646411.6372	1334.055 GRDRAIL_END
31351	955617.1191	646407.2867	1333.884 SW_FW
31352	955618.6341	646415.01	1333.6421 SW_FW_AP
31353	955617.8359	646415.2132	1333.5385 SW_FW_AP
31354	955618.5183	646414.8684	1333.5993 NJBARR_TOP_AP
31355	955617.7582	646415.0605	1333.6 NJBARR_TOP_AP
31356	955617.1023	646414.113	1333.9386 NJBARR_TOP_AP
31357	955616.71	646407.3363	1336.2869 NJBARR_TOP_GB
31358	955616.1753	646407.4633	1336.232 NJBARR_TOP_GB
31362	955617.8113	646415.4336	1333.7989 CURB_BC_BEG
31364	955633.0723	646462.1631	1333.5419 GRDRAIL_AP
31365	955632.8621	646460.9098	1334.4617 ELEC_JBOX
31366	955633.3364	646464.5949	1334.3878 IRR_ICV
31367	955632.3809	646465.0122	1334.575 SW_BW
31368	955633.3447	646458.2875	1333.0119 ELEC_LP
31369	955627.5073	646465.8242	1334.5604 CURB_BC
31370	955626.9308	646466.391	1334.0994 GUT_FL
31373	955631.7934	646479.027	1334.5897 SD_MH_RIM
31374	955629.1975	646477.7124	1333.8907 CURB_CO
31375	955633.1298	646498.5335	1334.0025 CURB_CO
31376	955643.7223	646514.7181	1334.3003 GRDRAIL
31377	955642.0255	646515.351	1334.7084 SW_BW
31378	955637.0615	646516.4599	1334.7075 CURB_BC
31379	955636.5081	646516.4255	1334.2543 GUT_FL
31382	955645.013	646514.5351	1334.1404 NG_TOP
31383	955654.6662	646496.5027	1331.2039 NG_BL
31384	955645.3712	646474.5496	1331.5711 NG_BL
31385	955662.9562	646499.964	1330.9196 VEGE_TREE
31386	955643.1666	646492.0661	1333.9216 VEGE_TREE
31387	955649.2681	646493.1341	1332.3153 VEGE_BUSH
31388	955685.3814	646535.3862	1331.3025 VEGE_BUSH
31389	955636.7491	646461.1456	1331.6235 FNC_CH_BEG
31390	955637.6329	646460.6167	1331.0141 CONC_EDGE
31391	955637.4143	646460.0518	1331.0618 BRDG_WING_TOP
31392	955636.6202	646459.899	1331.0653 BRDG_WING_TOP
31393	955631.3234	646436.0923	1331.7707 VEGE_TREE
31394	955628.7604	646417.6291	1331.8143 BRDG_WING_TOP_AP
31395	955629.1595	646417.3531	1331.8158 BRDG_WING_TOP_AP
31396	955629.5713	646417.0847	1331.7567 BRDG_WING_TOP_AP
31397	955629.9264	646416.8493	1331.7564 BRDG_WING_TOP_AP
31398	955629.8834	646417.6068	1331.7554 BRDG_WING_TOP_AP
31399	955623.937	646409.2402	1331.7475 BRDG_WING_TOP_AP
31400	955623.2688	646405.4284	1331.754 BRDG_WING_TOP_AP
31401	955624.7893	646413.1841	1331.9567 FNC_CH_END
31402	955628.3825	646418.2167	1331.8729 FNC_CH_AP
31403	955888.3131	646487.9229	1335.5172 SD_MH_RIM
31404	955601.1052	646561.3169	1335.2104 VEGE_BUSH
31405	95589.6636	646553.6064	1335.3944 VEGE_BUSH

31406	955596.0494	646535.836	1335.1356	VEGE_BUSH
31407	955584.5707	646532.3675	1334.9403	VEGE_BUSH
31408	955583.2882	646524.2604	1334.9195	VEGE_BUSH
31409	955593.6196	646524.649	1334.9813	VEGE_BUSH
31410	955592.618	646514.691	1335.0323	VEGE_BUSH
31411	955582.1986	646511.6203	1334.9587	VEGE_BUSH
31412	955584.555	646501.6814	1335.0575	VEGE_BUSH
31413	955584.569	646489.8636	1335.1498	VEGE_TREE
31415	955601.4599	646521.6498	1334.9531	GUT_FL
31416	955600.8662	646521.7971	1335.5059	CURB_BC
31417	955578.6406	646527.1485	1335.4514	CURB_BC
31418	955577.9279	646527.2766	1334.9423	GUT_FL
31421	955567.9962	646475.9216	1334.7879	GUT_FL
31422	955568.5677	646475.7928	1335.2962	CURB_BC
31423	955591.3225	646473.0468	1335.3828	CURB_BC
31424	955591.9978	646473.014	1334.8702	GUT_FL
31426	955579.6694	646453.4659	1334.782	VEGE_BUSH
31427	955576.2812	646439.6306	1334.7879	VEGE_BUSH
31428	955572.6485	646421.8208	1334.6987	VEGE_BUSH
31429	955570.0221	646406.5788	1334.3985	VEGE_BUSH
31431	955582.4122	646423.7579	1334.7178	GUT_FL
31432	955581.7836	646423.851	1335.1907	CURB_BC
31433	955559.2042	646426.9407	1335.1866	CURB_BC
31434	955558.5178	646426.8988	1334.6684	GUT_FL
31437	955549.0927	646377.7393	1334.4496	GUT_FL
31438	955549.7428	646377.5394	1334.9643	CURB_BC
31439	955572.4074	646374.2837	1335.0291	CURB_BC
31440	955573.0015	646374.217	1334.5226	GUT_FL
31442	955566.9269	646384.1508	1334.712	VEGE_TREE
31443	955555.2847	646336.7009	1334.5266	VEGE_TREE
31447	955523.2803	645917.8979	1331.9735	SD_MH
31448	955527.0523	645921.0554	1332.0763	SW_BW
31449	955522.2588	645922.0071	1332.0435	CURB_BC PC
31450	955521.5574	645922.1665	1331.4938	GUT_FL
31452	955521.2529	645920.0494	1331.3064	SD_INLET
31453	955519.4283	645910.5115	1331.2416	SD_INLET
31454	955520.8748	645915.121	1331.9804	CURB_BC
31455	955529.5661	645922.3299	1331.7262	IRR_ICV
31456	955531.1635	645921.815	1331.7577	IRR_ICV
31457	955527.3613	645917.2663	1332.0178	IRR_ICV
31458	955532.4947	645925.6079	1331.7064	WAT_BFP
31459	955533.0837	645924.1014	1332.2549	WAT_WM
31460	955533.9342	645921.3757	1331.6244	LAND_BLDR 4_D
31461	955529.3813	645911.6459	1331.6325	LAND_BLDR 4_D
31462	955526.6715	645898.2569	1331.6877	LAND_BLDR 4_D
31463	955525.2469	645877.9797	1331.9682	CATV_RISE
31464	955521.9862	645878.2417	1331.9679	VEGE_BUSH
31465	955528.3284	645876.7869	1332.2249	VEGE_BUSH
31466	955526.7622	645870.9957	1332.6186	VEGE_BUSH
31467	955531.871	645867.9746	1332.3731	VEGE_BUSH
31468	955516.4753	645865.2841	1331.8022	SW_BW
31469	955511.5386	645866.5349	1331.7723	CURB_BC
31470	955510.9769	645866.6412	1331.29	GUT_FL
31472	955528.6936	645861.8883	1332.6841	NG_SPOT
31473	955522.7078	645814.2267	1332.855	NG_SPOT
31474	955507.154	645816.9061	1331.6081	SW_BW
31475	955502.152	645817.6906	1331.58	CURB_BC
31476	955501.5434	645817.7412	1331.1663	GUT_FL
31477	955516.0095	645802.2025	1332.3439	VEGE_TREE
31478	955503.086	645779.5332	1331.6015	ELEC_LP
31479	955501.3081	645780.1794	1331.4263	ELEC_JBOX
31480	955507.7725	645766.0283	1332.2475	VEGE_TREE
31481	955514.9438	645763.3332	1332.85	NG_SPOT
31482	955497.6977	645767.8082	1331.3718	SW_BW
31483	955492.8371	645768.6456	1331.3485	CURB_BC
31484	955492.206	645768.7676	1330.906	GUT_FL
31486	955496.2097	645753.3108	1331.4857	ELEC_DG
31487	955493.5922	645739.4108	1331.4064	ELEC_DG
31488	955510.3225	645715.9845	1333.5379	ELEC_DG
31489	955502.6601	645713.8351	1333.2498	NG_SPOT
31490	955489.5554	645716.3828	1332.0814	ELEC_PP S/W
31492	955487.8916	645716.702	1331.1343	SW_BW

31493	955482.998	645717.6172	1331.0927	CURB_BC
31494	955482.3663	645717.8406	1330.6454	GUT_FL
31496	955499.4092	645709.8438	1333.2208	ELEC_VLT
31497	955499.7465	645707.567	1333.1917	ELEC_VLT
31498	955495.9376	645707.0361	1333.2555	ELEC_VLT
31499	955495.6424	645709.3792	1333.2728	ELEC_VLT
31500	955494.7794	645666.5295	1332.8679	NG_SPOT
31501	955478.7575	645669.2024	1330.9251	SW_BW
31502	955473.8767	645670.0471	1330.8529	CURB_BC
31503	955473.241	645670.1421	1330.4099	GUT_FL
31505	955479.1735	645621.057	1332.6946	ELEC_TRANS PAD
31506	955478.4525	645617.7168	1332.6793	ELEC_TRANS PAD
31507	955475.1333	645618.4329	1332.6085	ELEC_TRANS PAD
31508	955475.8239	645621.7242	1332.6521	ELEC_TRANS PAD
31509	955472.8486	645626.9093	1331.215	ELEC_JBOX
31510	955470.7556	645618.2324	1331.7454	ELEC_PPL
31511	955474.8201	645615.963	1332.4259	ELEC_TRANS PAD
31512	955473.6492	645610.7877	1332.3693	ELEC_TRANS PAD
31513	955478.8444	645609.6926	1332.3524	ELEC_TRANS PAD
31514	955480.0015	645614.8233	1332.4213	ELEC_TRANS PAD
31515	955469.1748	645619.3687	1330.5855	SW_BW
31516	955464.2507	645620.2078	1330.5244	CURB_BC
31517	955463.6218	645620.3808	1330.0776	GUT_FL
31519	955467.1549	645609.0411	1330.527	SW_BW AP
31520	955462.5763	645570.9616	1330.5975	SW_BW
31521	955455.0359	645572.2336	1330.2166	CURB_BC
31522	955454.4426	645572.4922	1329.7746	GUT_FL
31524	955460.1107	645550.3376	1330.8776	SW_BW
31525	955460.0803	645537.8817	1331.1373	SW_BW
31526	955455.0115	645537.736	1330.9478	SW_FW
31527	955452.9301	645540.7642	1330.5075	SW_FW POC
31529	955438.2672	645484.5208	1329.6865	CURB_BC SW_EDGE
31530	955448.5186	645482.8362	1329.9422	SW_EDGE
31531	955447.6947	645477.9685	1329.884	SW_EDGE
31532	955445.2532	645478.2732	1329.765	SW_EDGE AP
31533	955438.6929	645444.4193	1329.586	CONC_EDGE AP
31534	955430.8327	645445.9093	1329.406	CONC_EDGE AP CURB_BC
31535	955457.4766	645472.3649	1330.0934	NG_SPOT
31536	955436.3368	645474.7094	1329.6373	CURB_BC
31537	955435.7397	645474.7442	1329.1945	GUT_FL
31539	955426.7307	645426.8437	1328.8857	GUT_FL
31540	955427.2931	645426.7398	1329.3412	CURB_BC AP
31541	955438.7474	645424.3127	1329.5523	NG_SPOT
31542	955426.1932	645419.6335	1329.3211	CURB_BC CONC_EDGE AP
31543	955431.0875	645418.8405	1329.4453	CONC_EDGE AP
31544	955427.0291	645394.4915	1329.1803	CONC_EDGE AP
31545	955422.1208	645395.4346	1329.0637	CURB_BC CONC_EDGE AP
31546	955424.526	645398.6926	1329.1991	SD_MH
31547	955421.8465	645397.4342	1328.4356	SD_INLET
31548	955425.2161	645417.7495	1328.4953	SD_INLET
31549	955424.1355	645407.547	1329.2097	CURB_BC
31550	955427.6428	645390.9085	1329.2552	IRR_ICV
31551	955427.5403	645387.7204	1329.3024	IRR_ICV
31552	955426.9161	645384.8286	1329.1245	IRR_ICV
31553	955431.0581	645387.3463	1329.4033	WAT_WM
31554	955431.3474	645388.8641	1329.4928	WAT_BFP
31555	955426.2141	645378.4212	1329.0882	ELEC_PPL
31556	955419.6969	645379.8537	1329.0548	CURB_BC PC
31557	955419.0691	645380.0495	1328.5908	GUT_FL
31559	955420.6461	645364.889	1329.0187	CURB_BC CT HCR SW_FW
31560	955423.4617	645359.5377	1328.6296	CURB_BC CT HCR
31561	955426.4376	645356.7583	1328.6233	CURB_BC CT HCR
31562	955431.8373	645354.016	1329.0604	CURB_BC CT HCR
31563	955437.9108	645353.1729	1329.062	CURB_BC PT
31564	955437.8049	645352.4711	1328.5695	GUT_FL
31566	955424.4528	645357.4923	1328.6205	GUT_FL
31568	955423.1285	645383.0933	1329.015	VEGE_BUSH
31569	955428.068	645375.8049	1329.1345	VEGE_BUSH
31570	955432.6684	645381.5697	1329.4119	VEGE_BUSH
31571	955434.9598	645386.896	1329.1594	VEGE_BUSH
31572	955435.3022	645394.6519	1329.2879	VEGE_BUSH
31573	955448.9257	645425.1332	1329.7898	NG_SPOT

31574	955445.9362	645433.7172	1330.0098	VEGE_BUSH
31575	955448.8383	645444.9701	1330.1308	VEGE_BUSH
31576	955451.1592	645458.2562	1329.5029	VEGE_BUSH
31577	955452.8992	645486.3501	1329.7088	VEGE_BUSH
31578	955440.0872	645485.1146	1329.5228	POST_SIGN BUS
31579	955445.0211	645494.3496	1329.6067	VEGE_BUSH
31580	955452.5255	645500.2841	1330.0098	VEGE_BUSH
31581	955450.4163	645509.8158	1329.9061	VEGE_BUSH
31582	955450.3997	645522.0338	1330.0008	VEGE_BUSH
31583	955463.9269	645554.2412	1330.7064	VEGE_BUSH
31584	955375.9836	645386.4671	1330.3515	CURB_BC PC
31585	955376.5355	645386.1375	1329.8566	GUT_FL
31587	955378.988	645394.0252	1330.3708	CURB_BC CONC_EDGE AP
31588	955385.4408	645411.2174	1330.5519	CURB_BC PC
31589	955388.4967	645420.743	1330.587	CURB_BC POC
31590	955391.0854	645430.1636	1330.5864	CURB_BC PT
31591	955391.6354	645430.1153	1330.0985	GUT_FL
31594	955401.4921	645481.3453	1330.2577	GUT_FL
31595	955400.8778	645481.3883	1330.7643	CURB_BC
31596	955410.3328	645530.5301	1331.0014	CURB_BC
31597	955410.9465	645530.3729	1330.4685	GUT_FL
31599	955399.7554	645536.4963	1330.552	WAT_VRIM
31600	955399.7555	645536.4963	1328.8433	WAT_VNUT
31601	955405.8544	645539.7045	1330.4484	VEGE_TREE
31602	955396.6845	645556.5971	1331.1015	TELE_MH
31603	955405.8809	645565.9432	1330.9262	WAT_VRIM
31604	955405.7157	645565.9329	1328.7651	WAT_VNUT
31605	955400.9423	645580.2236	1331.3344	WAT_VRIM
31606	955400.9902	645580.2795	1329.4754	WAT_VNUT
31607	955399.4433	645590.9332	1331.1175	WAT_VRIM
31608	955399.5412	645591.0026	1329.0595	WAT_VNUT
31609	955401.1886	645596.8309	1329.2907	WAT_VNUT
31610	955401.1846	645596.7391	1331.0271	WAT_VRIM
31611	955410.5434	645583.9528	1331.5709	VEGE_TREE
31613	955419.7899	645579.6024	1331.1894	CURB_BC
31614	955420.3412	645579.5101	1330.6808	GUT_FL
31617	955429.7825	645628.5847	1330.8497	GUT_FL
31618	955429.2122	645628.68	1331.3677	CURB_BC
31619	955423.5339	645649.1627	1330.9391	VEGE_TREE
31620	955429.8787	645671.9119	1331.5757	SD_MH
31621	955438.5905	645677.5549	1331.5858	CURB_BC
31622	955439.2199	645677.4114	1331.0589	GUT_FL
31624	955428.8416	645689.4838	1331.1712	VEGE_TREE
31625	955448.0176	645726.5508	1331.8424	CURB_BC
31626	955448.6016	645726.3375	1331.3201	GUT_FL
31628	955442.1871	645744.6828	1331.7394	VEGE_TREE
31629	955442.9085	645776.352	1331.3308	VEGE_BUSH
31630	955449.5761	645784.2388	1331.5262	VEGE_BUSH
31631	955457.4298	645775.3917	1332.1314	CURB_BC
31632	955458.0076	645775.2686	1331.6116	GUT_FL
31635	955467.4183	645824.0998	1331.9075	GUT_FL
31636	955466.8236	645824.1612	1332.388	CURB_BC
31637	955459.1562	645823.7458	1331.8822	VEGE_BUSH
31638	955460.0875	645830.5313	1331.9068	VEGE_BUSH
31639	955464.01	645852.0415	1331.8984	VEGE_BUSH
31640	955470.6858	645876.3175	1332.3378	VEGE_BUSH
31641	955470.486	645882.8576	1332.3748	VEGE_BUSH
31642	955476.2069	645873.0436	1332.6991	CURB_BC
31643	955476.8142	645872.9669	1332.1495	GUT_FL
31645	955472.6038	645888.0389	1332.7635	SD_MH
31646	955472.4529	645896.4042	1332.4415	VEGE_BUSH
31647	955474.2517	645904.1163	1332.5754	VEGE_BUSH
31648	955476.1648	645911.4808	1332.0459	VEGE_BUSH
31649	955478.4988	645920.6141	1332.7322	VEGE_BUSH
31650	955481.3788	645899.863	1332.8453	CURB_BC PC
31651	955481.8682	645899.6789	1332.4135	GUT_FL
31653	955482.723	645910.6748	1332.9585	CURB_BC POC
31654	955483.4042	645923.2466	1333.0596	CURB_BC PT
31655	955484.0815	645923.2396	1332.6074	GUT_FL
31657	955483.5394	645928.2283	1333.0992	CURB_BC CONC_EDGE AP
31658	955483.6926	645939.9262	1333.182	CURB_BC PC
31659	955484.3362	645939.8681	1332.6659	GUT_FL

31661	955482.4815	645941.1842	1333.209	CURB_BC	MID
31666	955737.3506	646859.7567	1335.7407	NG_SPOT	
31667	955760.3746	646854.3874	1336.2452	NG_SPOT	
31668	955783.7969	646845.5674	1336.62	NG_SPOT	
31669	955799.9098	646839.0479	1336.4077	NG_TOE	
31670	955810.2332	646833.795	1338.7091	NG_TOP	
31671	955823.159	646834.0335	1339.094	NG_TOP	
31672	955839.7347	646823.4013	1332.0658	NG_TOE	
31673	955839.9036	646823.4481	1332.7785	CURB_BC	
31674	955840.2997	646823.1911	1332.779	CURB_FC	
31675	955840.3741	646823.1924	1332.1565	SW_BW	
31676	955847.3552	646819.3081	1332.0767	SW_FW	
31677	955727.17	646812.5114	1334.9216	NG_SPOT	
31678	955748.6319	646806.6474	1335.2282	NG_SPOT	
31679	955770.4256	646799.4651	1335.4723	NG_SPOT	
31680	955775.3354	646797.5691	1335.2031	NG_TOE	
31681	955783.2175	646794.6571	1336.9644	NG_TOP	
31682	955798.9971	646788.5499	1336.5449	NG_TOP	
31683	955818.3534	646779.1883	1329.4935	NG_TOE	
31684	955818.3646	646779.1915	1330.1397	CURB_BC	
31685	955818.862	646778.9819	1330.2277	CURB_FC	
31686	955818.9194	646779.0646	1329.5577	SW_BW	
31687	955826.151	646775.6957	1329.2931	SW_FW	
31688	955715.3655	646765.068	1334.2986	NG_SPOT	
31689	955738.525	646760.1085	1333.965	NG_SPOT	
31690	955757.9718	646757.1609	1333.9733	NG_TOE	
31691	955765.3399	646754.7865	1335.7844	NG_TOP	
31692	955780.9167	646750.8208	1335.4089	NG_TOP	
31693	955804.0654	646741.7498	1327.0064	NG_TOE	
31694	955804.1456	646741.6685	1327.7824	CURB_BC	
31695	955804.6299	646741.5101	1327.7968	CURB_FC	
31696	955804.7746	646741.5038	1327.1539	SW_BW	
31697	955812.3338	646739.4037	1327.1089	SW_FW	
31698	955713.203	646713.7372	1334.0685	NG_SPOT	
31699	955736.5872	646707.6146	1333.3487	NG_SPOT	
31700	955747.454	646705.1148	1332.9651	NG_TOE	
31701	955756.6665	646703.4312	1334.4217	NG_TOP	
31702	955770.519	646701.875	1334.2922	NG_TOP_VEGE_BUSH	
31703	955791.251	646696.6612	1324.7245	NG_TOE	
31704	955791.514	646696.6598	1325.1507	CURB_BC	
31705	955791.8723	646696.5756	1325.1458	CURB_FC	
31706	955792.0803	646696.5444	1324.5277	SW_BW	
31707	955799.6241	646694.8529	1324.4191	SW_FW	
31708	955757.6528	646679.6633	1334.277	VEGE_BUSH	
31709	955698.5561	646665.7283	1334.0274	NG_SPOT	
31710	955724.3794	646662.4302	1332.9126	NG_SPOT	
31711	955739.444	646659.8636	1333.1645	NG_TOP	
31712	955738.388	646648.211	1333.5437	NG_TOP	
31713	955740.8716	646640.4073	1332.8334	NG_TOP	
31714	955746.4281	646637.8223	1332.1621	NG_TOP	
31716	955744.4768	646634.2676	1331.3023	NG_TOE	
31717	955729.5676	646644.9898	1332.2088	NG_TOE	
31718	955752.5672	646648.2873	1333.0846	NG_TOP	
31719	955775.8845	646638.1992	1321.4002	NG_TOE	
31720	955775.9184	646638.2437	1321.5789	CURB_BC	
31721	955776.3327	646638.0041	1321.6473	CURB_FC	
31722	955776.374	646637.9919	1320.9879	SW_BW	
31723	955783.4716	646634.5427	1320.8087	SW_FW	
31724	955792.105	646658.685	1322.2493	SW_FW_PRC	
31725	955784.5553	646660.7169	1322.3824	SW_BW_PRC	
31726	955784.4131	646660.7022	1323.0134	CURB_FC_PRC	
31727	955784.0889	646660.833	1323.0106	CURB_BC_PRC	
31728	955772.404	646660.2429	1327.4482	VEGE_BUSH	
31729	955755.2147	646673.7137	1334.249	VEGE_BUSH	
31730	955754.7004	646711.7293	1334.2281	VEGE_BUSH	
31731	955773.3706	646717.5525	1334.805	VEGE_BUSH	
31732	955767.6174	646722.8104	1335.2614	VEGE_BUSH	
31733	955775.8907	646706.7154	1332.9137	VEGE_BUSH	
31734	955778.2237	646697.6755	1330.4154	VEGE_BUSH	
31735	955771.5652	646719.6252	1335.2087	VEGE_BUSH	
31736	955778.7937	646723.0667	1333.6289	VEGE_BUSH	
31737	955777.4266	646727.6228	1334.4764	VEGE_BUSH	

31738	955774.4402	646733.3332	1335.5743	VEGE_BUSH
31739	955762.0129	646739.3292	1335.4184	VEGE_BUSH
31740	955765.3743	646749.339	1335.5934	VEGE_BUSH
31741	955777.285	646742.1982	1335.709	VEGE_BUSH
31742	955779.9512	646743.3279	1335.2495	VEGE_BUSH
31743	955776.6497	646749.6836	1335.807	VEGE_BUSH
31744	955765.015	646759.4632	1335.6546	VEGE_BUSH
31745	955770.2931	646761.5287	1335.8492	VEGE_BUSH
31746	955785.0909	646758.7029	1335.6505	VEGE_BUSH
31747	955790.769	646784.212	1336.6919	VEGE_BUSH
31748	955797.095	646783.5974	1336.3491	VEGE_BUSH
31749	955809.174	646799.0677	1335.9071	VEGE_BUSH
31750	955811.9598	646818.6927	1338.4772	VEGE_BUSH
31751	955818.6272	646818.8722	1337.2311	VEGE_BUSH
31752	955818.3044	646827.7532	1338.971	VEGE_BUSH
31753	955830.5372	646836.8814	1338.3355	VEGE_BUSH
31754	955830.8708	646845.4244	1339.2516	VEGE_BUSH
31755	955834.2635	646866.3157	1338.4366	VEGE_BUSH
31756	955851.3637	646865.7807	1339.1483	VEGE_BUSH
31757	955841.3345	646879.8274	1338.0676	VEGE_BUSH
31758	955829.0953	646886.6367	1337.4856	VEGE_BUSH
31759	955844.8196	646887.3684	1338.1003	NG_TOE
31760	955851.9633	646885.7224	1340.2358	NG_TOP
31761	955862.8293	646880.0839	1340.2643	NG_TOP
31762	955871.1338	646888.7412	1339.8241	NG_TOP
31763	955880.4252	646893.424	1338.2884	NG_TOP_END
31764	955884.1876	646889.2888	1336.6873	NG_TOE
31765	955877.1379	646880.777	1335.7762	NG_TOE
31766	955870.4974	646872.3464	1335.2505	NG_TOE
31767	955879.3793	646883.3078	1336.602	CURB_BC
31768	955879.7303	646883.0339	1336.6016	CURB_FC
31769	955879.8355	646882.9237	1335.9774	SW_BW
31770	955885.8845	646878.1167	1335.9218	SW_FW
31771	955903.3801	646898.7516	1337.296	SW_FW_PC
31772	955897.7404	646904.1863	1337.3679	SW_BW_PC
31773	955897.6108	646904.1719	1337.3366	CURB_FC_CT_PC
31774	955897.2693	646904.5088	1337.3324	CURB_BC_CT_PC
31775	955895.5436	646902.6702	1337.815	CURB_BC_CT
31776	955895.8613	646902.3793	1337.8151	CURB_FC_CT
31777	955894.8548	646904.9151	1337.7425	NG_TOE
31778	955888.1415	646901.9087	1338.0023	NG_TOE
31779	955883.2243	646901.3246	1338.3739	NG_TOE
31780	955883.1905	646903.9449	1339.5418	NG_TOP
31781	955888.9423	646904.9496	1339.4663	NG_TOP
31782	955893.9237	646906.7488	1339.2102	NG_TOP
31783	955876.635	646901.1071	1339.564	VEGE_BUSH
31784	955730.8699	646763.9112	1334.4382	VEGE_BUSH
31785	955731.9364	646741.0047	1333.739	VEGE_BUSH
31786	955736.1348	646663.8652	1332.6425	VEGE_BUSH
31787	955731.7558	646652.3399	1332.6075	VEGE_BUSH
31789	955546.6567	645945.3163	1332.0279	CURB_BC_POC_CT
31790	955538.2378	645942.6973	1331.608	CURB_BC_POC_CT
31791	955531.4905	645938.2016	1331.6258	CURB_BC_POC_CT
31792	955525.8321	645931.2925	1332.1029	CURB_BC_POC_CT
31793	955530.018	645928.8811	1332.1761	SW_BW_AP
31794	955530.5487	645928.4542	1332.2177	CURB_BC_BEG
31795	955534.5107	645928.4855	1331.7394	VEGE_CACT
31796	955547.3312	645939.8177	1332.1529	CURB_BC_END
31797	955547.0561	645940.3294	1332.1538	SW_BW_AP
31798	955546.6822	645945.8399	1331.5745	GUT_FL
31801	955542.5603	645944.3821	1331.8877	HCR
31802	955539.8081	645939.5174	1331.8306	HCR
31803	955533.8892	645935.5779	1331.824	HCR
31804	955528.1776	645934.6001	1331.8886	HCR
31818	955415.8515	645341.3939	1328.7344	SD_MH_RIM
31823	955328.7099	645373.9602	1331.0557	SS_MH_RIM
31824	955344.1504	645371.7384	1330.568	SS_MH_RIM
31825	955367.9448	645407.6798	1330.4827	SD_MH_RIM
31826	955371.4665	645420.6092	1330.5493	CONC_EDGE_AP
31827	955371.3484	645404.0628	1330.5144	CONC_EDGE_AP
31828	955377.0966	645413.0858	1329.8582	VEGE_BUSH
31829	955378.1399	645408.4356	1329.9827	VEGE_BUSH

31830	955374.192	645404.2832	1330.1325	VEGE_BUSH
31831	955374.4987	645398.2931	1330.1542	VEGE_BUSH
31836	955366.0095	645421.5516	1330.014	GUT_FL
31837	955366.5957	645421.2636	1330.4338	CURB_BC_CONC_EDGE_AP
31838	955366.4604	645403.8832	1330.3463	CURB_BC_CONC_EDGE_AP
31839	955366.8915	645395.9753	1330.3865	CURB_BC_PC_CONC_EDGE_AP
31840	955367.9198	645388.2767	1330.3533	CURB_BC_PT
31841	955371.2259	645384.2682	1330.3939	CURB_BC_POC
31842	955371.2382	645383.6697	1329.8723	GUT_FL
31843	955367.2295	645388.3118	1329.8894	GUT_FL
31844	955365.825	645403.813	1329.8934	GUT_FL
31845	955365.6976	645405.8711	1329.6812	CURB_CO
31846	955365.8788	645419.1952	1329.775	CURB_CO
31850	955368.0049	645434.5872	1330.0513	GUT_FL
31851	955368.6098	645434.4533	1330.5082	CURB_BC_POC
31852	955370.6476	645445.5821	1330.5695	CURB_BC_PT
31853	955378.1863	645484.8834	1330.721	CURB_BC
31854	955389.0582	645483.2745	1330.2611	NG_SPOT
31855	955377.594	645485.061	1330.2881	GUT_FL
31859	955370.8759	645545.2918	1330.7591	WAT_MH_RIM
31861	955386.954	645534.0186	1330.4431	GUT_FL
31862	955387.5327	645533.8955	1330.9127	CURB_BC
31863	955397.0867	645583.6285	1331.2691	CURB_BC
31864	955396.4499	645583.7035	1330.7542	GUT_FL
31866	955391.977	645581.6379	1330.7126	SS_MH_RIM
31867	955383.3734	645599.4747	1330.7251	SS_MH_RIM
31869	955374.8124	645625.9505	1330.7562	WAT_VRIM
31870	955374.8768	645626.0775	1327.885	WAT_VNUT
31873	955405.8822	645631.9399	1330.8559	GUT_FL
31874	955406.4426	645631.7857	1331.3604	CURB_BC
31875	955415.8978	645680.8786	1331.5522	CURB_BC
31876	955415.3493	645680.9986	1331.0569	GUT_FL
31879	955377.9386	645682.3517	1331.0345	SD_MH_RIM
31880	955385.1408	645701.5797	1330.6006	SS_MH_RIM
31883	955424.4018	645728.1662	1331.2869	GUT_FL
31884	955424.9063	645728.1046	1331.7841	CURB_BC
31885	955428.0683	645744.4173	1331.8685	CURB_BC_PC
31886	955436.7801	645779.2444	1332.1164	CURB_BC_POC
31887	955436.2414	645779.3346	1331.6202	GUT_FL
31893	955452.669	645826.5647	1331.8746	GUT_FL
31894	955453.1849	645826.3493	1332.4024	CURB_BC_POC
31895	955441.1955	645791.7097	1332.1927	CURB_BC_PRC
31896	955461.36	645863.669	1332.62	CURB_BC_PRC
31897	955463.6953	645874.5612	1332.7172	CURB_BC_POC
31898	955463.0863	645874.6431	1332.2247	GUT_FL
31900	955457.4316	645876.3419	1332.2337	SS_MH_RIM
31906	955474.8008	645922.2228	1332.5606	GUT_FL
31907	955475.4011	645922.076	1333.0522	CURB_BC_POC
31908	955477.4364	645929.2232	1333.0897	CURB_BC_PT_CONC_EDGE_AP
31909	955480.7807	645940.471	1333.1395	CURB_BC_PC
31910	955482.5372	645941.1626	1333.2306	CURB_BC_POC
31911	955483.704	645939.982	1333.2249	CURB_BC_PT
31912	955484.3492	645939.8952	1332.6906	GUT_FL
31913	955482.5576	645941.727	1332.6919	GUT_FL
31914	955480.1984	645940.5282	1332.6938	GUT_FL
31918	955457.6219	646120.6102	1335.9323	BRDG_PARPIT_TOP_AP
31919	955456.6038	646120.778	1335.9323	BRDG_PARPIT_TOP_AP
31920	955456.9821	646117.6082	1336.5321	BRDG_PARPIT_TOP_GB
31921	955455.9663	646117.6779	1336.5357	BRDG_PARPIT_TOP_GB
31922	955456.0082	646112.8328	1336.5638	BRDG_PARPIT_TOP_AP
31923	955454.7094	646111.4485	1336.4617	BRDG_PARPIT_TOP_AP
31924	955419.4629	646105.6293	1329.1265	ELEC_DG
31925	955404.1025	646099.1951	1329.0835	ELEC_PP
31926	955401.3111	646093.5506	1329.0286	ELEC_VLT_3FTx5FT
31927	955454.8692	646111.4881	1333.6662	CURB_BC_BEG
31928	955456.1443	646112.7649	1333.6751	CURB_FC_BEG
31929	955465.2196	646132.4149	1333.0241	SW_FW
31930	955460.3852	646133.3707	1333.0247	SW_BW
31931	955457.8507	646120.5733	1332.9932	SW_BW
31932	955455.0837	646110.9433	1336.4306	BRDG_GRDRAIL_TOP_BEG
31933	955450.294	646086.3938	1336.3047	BRDG_GRDRAIL_TOP
31934	955455.9224	646085.7887	1332.8792	SW_FW

31935	955451.1535	646087.0335	1332.8829 SW_BW
31936	955450.9371	646087.0631	1333.5422 CURB_FC
31937	955450.1919	646087.4661	1333.546 CURB_BC
31938	955439.4172	646032.9457	1333.5522 CURB_BC
31939	955440.2047	646032.9637	1333.5501 CURB_FC
31940	955440.3776	646032.9945	1332.833 SW_BW
31941	955445.2186	646032.0186	1332.7376 SW_FW
31942	955439.8679	646033.3589	1336.2331 BRDG_GRDRAIL_TOP
31943	955445.3357	646031.8185	1335.0059 NJBARR_TOP
31944	955445.9484	646031.7517	1335.01 NJBARR_TOP
31947	955435.784	645980.4362	1334.7437 NJBARR_TOP
31948	955435.2609	645980.5778	1334.7502 NJBARR_TOP
31949	955435.0353	645980.8321	1332.4878 SW_FW
31950	955430.1439	645981.6242	1332.528 SW_BW
31951	955430.0294	645981.5926	1333.2905 CURB_FC
31952	955429.2102	645981.8247	1333.2951 CURB_BC
31953	955429.6053	645981.8987	1336.0333 BRDG_GRDRAIL_TOP
31954	955417.8145	645922.8048	1335.8456 BRDG_GRDRAIL_TOP_END
31955	955417.0899	645921.5387	1332.9833 CURB_BC_END
31956	955417.8104	645921.3989	1332.9844 CURB_FC_END
31957	955418.2383	645922.3112	1333.0564 CURB_FC_AP
31958	955418.5199	645922.1839	1332.3055 SW_BW
31959	955420.6645	645934.1856	1332.4319 SW_BW
31960	955420.5644	645934.2403	1333.1457 CURB_FC
31961	955419.756	645934.5572	1333.1004 CURB_BC
31962	955425.7123	645933.7554	1332.4151 SW_FW
31963	955426.0905	645933.5393	1334.4196 NJBARR_TOP
31964	955426.6491	645933.4767	1334.4178 NJBARR_TOP
31967	955422.7068	645911.8963	1331.5969 CURB_BC_BEG
31968	955421.6695	645912.1644	1331.5041 NJBARR_TOP_AP
31969	955422.9125	645911.9828	1331.5098 NJBARR_TOP_AP
31970	955423.0478	645914.864	1332.4372 NJBARR_TOP_AP
31971	955423.3756	645919.5863	1334.0375 NJBARR_TOP_GB
31972	955423.8853	645919.448	1333.9712 NJBARR_TOP_GB
31973	955418.4971	645921.9853	1335.9608 BRDG_PARPIT_TOP_AP
31974	955416.7774	645919.0066	1335.923 BRDG_PARPIT_TOP_AP
31975	955417.4394	645916.7085	1335.7442 BRDG_PARPIT_TOP_GB
31976	955416.3556	645916.9801	1335.8567 BRDG_PARPIT_TOP_GB
31977	955416.4682	645913.076	1334.9254 BRDG_PARPIT_TOP_AP
31978	955415.4835	645913.3028	1335.0447 BRDG_PARPIT_TOP_AP
31979	955417.2443	645915.4289	1331.971 GRDRAIL_BEG
31980	955416.4515	645912.881	1331.8366 SW_BW_AP
31981	955416.5344	645902.6331	1332.0267 SW_BW_AP
31982	955421.2827	645901.667	1331.8633 CURB_BC_AP
31983	955419.5734	645898.2835	1331.9606 SD_MH_RIM
31984	955421.6236	645899.7931	1331.372 CURB_CO
31985	955417.734	645879.2996	1331.2841 CURB_CO
31987	955417.5874	645881.6852	1331.9057 CURB_BC
31988	955412.6456	645882.8741	1331.9588 SW_BW
31989	955412.0145	645883.4507	1331.9598 ELEC_JBOX
31990	955410.9499	645883.3742	1331.4545 GRDRAIL
31991	955410.0164	645884.4995	1331.4513 VEGE_TREE
31992	955409.427	645885.2593	1331.0867 ELEC_LP
31993	955407.2061	645883.9655	1330.8678 FNC_CH_POL
31994	955405.7968	645883.4986	1331.0131 BRDG_WING_TOP_POL
31995	955406.3889	645883.4971	1331.0141 BRDG_WING_TOP_POL
31998	955411.8977	645910.1337	1330.6468 FNC_CH_AP
31999	955414.744	645913.4778	1330.4254 FNC_CH_END
32000	955415.9586	645916.9473	1331.0086 BRDG_WING_TOP_AP
32001	955416.7011	645920.6998	1331.0389 BRDG_WING_TOP_AP
32002	955416.4718	645920.7573	1330.9958 BRDG_WING_TOP_AP
32003	955416.6978	645919.4734	1332.1865 BRDG_WING_TOP_AP
32004	955416.9189	645921.2058	1332.1187 BRDG_WING_TOP_AP
32005	955417.4607	645921.215	1332.182 BRDG_WING_TOP_AP
32006	955412.0168	645910.4416	1331.0263 BRDG_WING_TOP_AP
32007	955411.6478	645910.7521	1331.0286 BRDG_WING_TOP_AP
32008	955410.8979	645911.1188	1330.9895 BRDG_WING_TOP_AP
32009	955397.4302	645839.4449	1331.0274 BRDG_WING_TOP_POL
32010	955398.0273	645839.3247	1331.0267 BRDG_WING_TOP_POL
32011	955398.805	645839.5408	1330.8547 FNC_CH_POL
32012	955402.5799	645839.0263	1331.341 GRDRAIL
32013	955404.2772	645838.6691	1331.7912 SW_BW

32014	955409.0431	645836.7088	1331.7033 CURB_BC
32015	955409.701	645836.6964	1331.2437 GUT_FL
32017	955394.2872	645820.5786	1331.4921 VEGE_TREE
32018	955394.0106	645815.6937	1330.2557 FNC_CH_END
32019	955393.1265	645816.2544	1330.9746 BRDG_WING_TOP_AP
32020	955393.64	645816.1194	1330.977 BRDG_WING_TOP_AP
32021	955388.559	645790.0726	1330.4839 VEGE_BUSH
32022	955392.8615	645788.9589	1331.212 GRDRAIL
32023	955394.7353	645788.6483	1331.4856 SW_BW
32024	955399.6976	645787.8709	1331.4152 CURB_BC
32025	955400.3342	645787.7819	1330.9861 GUT_FL
32027	955388.5973	645776.6876	1331.0186 VEGE_TREE
32028	955383.0297	645750.315	1330.6949 VEGE_BUSH
32029	955381.2896	645744.3131	1330.8465 VEGE_BUSH
32030	955374.0258	645737.9251	1330.4544 VEGE_BUSH
32031	955366.5403	645712.0746	1330.588 VEGE_BUSH
32032	955378.219	645717.5405	1330.724 ELEC_PP
32033	955382.5614	645733.8947	1330.9098 GRDRAIL
32034	955384.1122	645733.7061	1331.1851 SW_BW
32035	955389.0259	645732.8621	1331.1512 CURB_BC
32036	955389.7474	645732.863	1330.6831 GUT_FL
32038	955382.1767	645693.7754	1330.2447 CURB_CO
32039	955379.5503	645680.5138	1330.2631 CURB_CO
32040	955374.1498	645683.0672	1330.9283 ELEC_DG
32041	955374.8577	645691.1025	1330.9292 ELEC_DG
32042	955375.3759	645687.9417	1331.1161 SW_BW
32043	955380.3326	645687.1066	1330.9433 CURB_BC
32045	955373.9377	645688.3879	1330.8239 GRDRAIL
32046	955374.7513	645700.4742	1330.5941 VEGE_TREE
32047	955360.7605	645697.2404	1330.6688 VEGE_TREE
32048	955368.2152	645667.6457	1330.7534 ELEC_LP
32049	955370.3093	645665.1767	1331.0062 ELEC_JBOX
32050	955366.4202	645665.5256	1331.1456 WAT_VRIM
32051	955366.581	645665.5555	1327.1169 WAT_VNUT
32052	955349.121	645640.2006	1330.6714 NG_SPOT
32053	955333.1624	645616.5871	1330.217 VEGE_BUSH
32054	955364.1804	645638.6479	1330.9394 GRDRAIL
32055	955365.787	645638.1509	1331.1562 GRDRAIL
32056	955370.6612	645637.0982	1331.0441 CURB_BC
32057	955371.2997	645637.0744	1330.6049 GUT_FL
32059	955356.7297	645602.5533	1331.039 VEGE_TREE
32060	955352.8258	645591.586	1330.708 VEGE_TREE
32061	955355.1246	645591.3031	1330.716 GRDRAIL
32062	955356.6813	645590.8259	1331.0856 SW_BW
32063	955361.7235	645590.1232	1331.0146 CURB_BC
32064	955362.2343	645589.93	1330.5504 GUT_FL
32066	955343.0752	645568.8646	1330.9891 VEGE_TREE
32067	955345.3281	645548.6228	1331.2002 VEGE_BUSH
32068	955345.8471	645541.428	1331.1819 GRDRAIL
32069	955347.2677	645541.3756	1331.2924 SW_BW
32070	955352.2017	645540.6605	1331.2433 CURB_BC
32071	955352.8477	645540.6984	1330.8224 GUT_FL
32073	955336.148	645502.0863	1330.974 VEGE_TREE
32074	955336.5487	645494.0066	1331.3654 GRDRAIL
32075	955338.3743	645495.2266	1331.4686 SW_BW
32076	955342.8242	645492.4148	1331.3869 CURB_BC
32077	955343.5313	645492.2425	1330.9917 GUT_FL
32079	955339.5895	645474.5535	1331.416 CURB_BC_PC
32080	955335.2058	645482.9727	1331.2984 ELEC_JBOX
32081	955332.1372	645482.0702	1331.2937 ELEC_LP
32082	955314.1699	645499.8424	1331.0641 VEGE_BUSH
32083	955326.9179	645466.511	1331.3814 VEGE_TREE
32084	955334.6531	645475.4811	1331.4736 SW_BW_PC
32085	955325.2318	645435.3115	1331.5176 GRDRAIL
32086	955328.1239	645440.9494	1331.6239 SW_BW_POC
32087	955333.0223	645440.0671	1331.5742 CURB_BC_POC
32088	955333.6811	645440.0634	1331.075 GUT_FL
32090	955309.5609	645442.3359	1331.1145 NG_SPOT
32091	955318.9048	645402.9962	1331.6544 VEGE_TREE
32092	955318.9168	645397.3012	1331.6513 GRDRAIL_END
32093	955318.2745	645395.7144	1331.6513 POST_SIGN_CHEVRON
32095	955325.7074	645390.0312	1331.1582 GUT_FL

32096	955325.0665	645390.0929	1331.6211	CURB_BC_POC
32097	955323.8142	645381.5177	1331.7125	CURB_BC_CT
32098	955323.0555	645375.5181	1331.1805	CURB_BC_CT
32099	955322.4443	645370.6873	1331.1685	CURB_BC_CT
32100	955321.6059	645364.7782	1331.6236	CURB_BC_CT_PC
32101	955322.2717	645364.6604	1331.091	GUT_FL
32103	955312.5223	645365.809	1331.7276	SW_BW_PC
32104	955309.783	645366.5884	1331.5555	IRR_ICV
32105	955312.1616	645365.8267	1331.8314	CURB_BC_BEG
32106	955314.4711	645382.9537	1331.8638	CURB_BC_END
32107	955314.9727	645382.8889	1331.7779	SW_BW_AP
32108	955320.8074	645396.1222	1331.7842	SW_BW_AP
32109	955316.8603	645376.1168	1331.5086	HCR
32110	955316.3006	645371.2491	1331.5026	HCR
32111	955441.5032	645318.2711	1329.2513	SD_MH_RIM
32112	955439.581	645320.6301	1328.4668	CURB_CO
32113	955460.5232	645320.5621	1328.8121	CURB_CO
32115	955464.3291	645320.4516	1329.2535	GUT_FL
32116	955464.1545	645319.9306	1329.6025	CURB_BC
32117	955464.2309	645316.2793	1329.6377	SW_BW
32118	955437.8373	645316.1348	1329.1538	SW_BW_PC
32119	955437.8004	645320.0747	1329.1232	CURB_BC_PC
32120	955437.7972	645320.6506	1328.6605	GUT_FL
32122	955428.9895	645319.1516	1329.0403	CURB_BC_POC_CT
32123	955427.4117	645310.819	1330.8292	VEGE_BUSH
32124	955432.3236	645312.493	1330.8694	VEGE_PALM
32125	955441.3145	645311.6284	1331.0723	VEGE_PALM
32126	955437.7984	645315.6292	1331.0625	WALL_CL_6FT W
32127	955433.9942	645316.1274	1329.1497	POST_SIGN_STOP
32130	955222.0785	645581.4481	1318.2799	LAND_BLDR/STR
32131	955219.366	645581.9197	1319.3374	LAND_BLDR/STR
32132	955217.3109	645581.8977	1319.8337	LAND_BLDR/STR
32133	955215.1152	645582.8501	1320.7816	LAND_BLDR/STR
32134	955213.1379	645583.0014	1321.4874	LAND_BLDR/STR
32135	955210.4422	645583.7732	1322.4157	LAND_BLDR/STR
32136	955207.7837	645585.0128	1323.4914	LAND_BLDR/STR
32137	955205.4106	645585.5587	1324.198	LAND_BLDR/STR
32138	955202.9569	645586.3708	1325.1492	LAND_BLDR/STR
32139	955200.4261	645587.0503	1326.2508	LAND_BLDR/STR
32140	955197.212	645587.4897	1327.2326	LAND_BLDR/STR
32141	955194.4168	645588.2205	1328.3219	LAND_BLDR/STR
32142	955190.9349	645589.3263	1329.086	LAND_BLDR/STR
32143	955182.8377	645558.3807	1329.1522	CONC_EDGE_GABION_BASKET
32144	955184.72	645557.3754	1328.9638	CONC_EDGE_GABION_BASKET
32145	955185.016	645557.0466	1328.1456	CONC_EDGE_GABION_BASKET
32146	955187.2611	645556.5981	1327.6106	CONC_EDGE_GABION_BASKET
32147	955187.639	645556.4623	1327.0249	CONC_EDGE_GABION_BASKET
32148	955190.3422	645555.7347	1326.3231	CONC_EDGE_GABION_BASKET
32149	955190.4707	645555.1156	1325.6335	CONC_EDGE_GABION_BASKET
32150	955192.9721	645554.8611	1325.4663	CONC_EDGE_GABION_BASKET
32151	955193.15	645554.4013	1324.546	CONC_EDGE_GABION_BASKET
32152	955195.657	645553.9137	1324.306	CONC_EDGE_GABION_BASKET
32153	955195.7449	645553.0485	1323.4524	CONC_EDGE_GABION_BASKET
32154	955198.1532	645552.747	1323.1857	CONC_EDGE_GABION_BASKET
32155	955198.3028	645552.1454	1322.3607	CONC_EDGE_GABION_BASKET
32156	955201.0921	645552.018	1322.0678	CONC_EDGE_GABION_BASKET
32157	955201.3031	645551.4294	1321.3997	CONC_EDGE_GABION_BASKET
32158	955203.7859	645550.6437	1320.8755	CONC_EDGE_GABION_BASKET
32159	955203.9653	645550.3041	1320.0986	CONC_EDGE_GABION_BASKET
32160	955206.5234	645550.6007	1319.7829	CONC_EDGE_GABION_BASKET
32161	955206.6296	645549.929	1318.8216	CONC_EDGE_GABION_BASKET
32162	955207.8425	645549.5246	1318.2887	CONC_EDGE_GABION_BASKET
32163	955208.2688	645549.1292	1317.5234	CONC_EDGE_GABION_BASKET
32164	955179.9919	645562.8775	1329.7434	CONC_BL_TOP
32165	955192.155	645604.6634	1330.1685	CONC_BL_TOP
32166	955203.2846	645657.4849	1330.1693	CONC_BL_TOP
32167	955219.4104	645707.3244	1330.2109	CONC_BL_TOP
32168	955234.788	645756.4706	1330.0391	CONC_BL_TOP
32169	955249.6104	645800.5352	1330.9672	CONC_BL_TOP
32170	955254.2179	645810.9451	1331.4637	CONC_BL_TOP
32171	955316.7899	645651.7775	1317.5555	LAND_RRTIE_6FT W_CL
32172	955309.6603	645654.4014	1316.8956	LAND_RRTIE_6FT W_CL

32173	955295.6039	645614.7481	1317.748	LAND_RRTIE_.6FT W_CL
32174	955302.385	645611.8569	1317.884	LAND_RRTIE_.6FT W_CL
32175	955288.348	645571.2588	1317.7292	LAND_RRTIE_.6FT W_CL
32176	955281.12	645573.6612	1316.7529	LAND_RRTIE_.6FT W_CL
32179	955353.7104	645924.7153	1317.9945	CONC_BL_TOP_AP
32180	955354.9304	645923.9187	1317.4915	CONC_BL_TOE_AP
32181	955365.9681	645936.4578	1317.4409	CONC_BL_TOE
32182	955365.2012	645937.049	1317.5199	CONC_BL_TOP_END
32183	955351.8954	645932.2959	1318.1183	CONC_SPOT
32184	955349.2402	645941.5011	1318.2937	CONC_BL_TOP
32185	955351.4203	645942.4864	1317.8901	CONC_BL_TOE_BEG
32186	955340.3881	645982.8075	1318.3051	CONC_BL_TOE
32187	955338.5776	645982.3636	1318.8369	CONC_BL_TOP
32188	955326.3657	645979.5541	1319.3074	CONC_SPOT
32189	955307.1301	645975.3175	1319.4779	CONC_EDGE_WALL_FACE_AP
32190	955297.3411	646026.9564	1323.1547	CONC_EDGE_WALL_FACE
32191	955299.0442	646027.4338	1323.0924	CONC_BL_TOE
32192	955294.5249	646045.092	1324.9809	CONC_BL_TOE
32193	955292.6432	646041.1361	1326.3989	LAND_BLD/STR
32194	955289.2002	646041.1912	1327.732	LAND_BLD/STR
32195	955286.2721	646041.0396	1328.6184	LAND_BLD/STR
32196	955283.6202	646041.1048	1329.7087	LAND_BLD/STR
32197	955281.8949	646044.0291	1329.8717	CONC_BL_TOP
32198	955281.4746	646035.3676	1330.2402	CONC_BL_TOP
32199	955297.0027	646027.611	1323.6937	CONC_EDGE_WALL_FACE_AP
32200	955304.8665	646046.7579	1324.5195	CONC_BL_TOP
32201	955307.1609	646035.3261	1323.5624	CONC_BL_TOP_PC
32202	955310.4826	646026.6277	1322.663	CONC_BL_TOP_POC
32203	955314.6323	646019.8152	1321.6577	CONC_BL_TOP_PRC
32204	955318.8788	646012.3459	1320.7218	CONC_BL_TOP_POC
32205	955321.9165	646003.0513	1319.913	CONC_BL_TOP_PT_END
32206	955332.6272	646005.0974	1319.1744	CONC_BL_TOP
32207	955334.5311	646005.5972	1318.5407	CONC_BL_TOE
32208	955329.7197	646022.699	1318.8859	CONC_BL_TOE
32209	955322.1612	646050.5636	1319.278	CONC_BL_TOE
32210	955338.207	646055.1529	1319.0561	CONC_SPOT
32211	955353.2851	646074.3928	1319.2828	CONC_BL_TOP_-.65FT TOE_CONC_EDGE
32212	955357.6376	646062.8817	1319.1922	CONC_BL_TOP_-.65FT TOE
32213	955373.7385	646018.5141	1318.4551	CONC_BL_TOP_-.65FT TOE
32214	955385.4159	645986.1709	1317.9026	CONC_BL_TOP_-.65FT TOE_AP
32215	955390.5775	645995.2249	1317.9524	CONC_BL_TOP_-.65FT TOE_AP
32216	955381.2984	646021.2896	1318.388	CONC_BL_TOP_-.65FT TOE
32217	955365.4529	646064.8969	1319.1638	CONC_BL_TOP_-.65FT TOE
32218	955352.1552	646010.884	1318.4234	CONC_SPOT
32219	955382.4993	645994.4675	1317.944	LAND_RRTIE_.6FTW_CL
32220	955389.8416	645997.0995	1317.8991	LAND_RRTIE_.6FTW_CL
32221	955399.2216	646027.0855	1318.2055	CONC_SPOT
32222	955372.4469	646068.2477	1319.0952	CONC_BL_TOE
32223	955398.5655	646051.2152	1318.2942	CONC_BL_TOE_PC
32224	955407.7196	646047.688	1318.1463	CONC_BL_TOE_POC
32225	955415.1735	646050.6098	1318.2362	CONC_BL_TOE_PT
32226	955432.63	646079.0041	1318.5402	CONC_BL_TOE_PC
32227	955441.571	646097.0654	1318.6827	CONC_BL_TOE_POC
32228	955452.2251	646106.138	1318.3375	CONC_BL_TOE_PT_END
32229	955453.0166	646105.8068	1318.8283	CONC_EDGE_BRDG_WING_AP_CONC_BL_BEG
32230	955452.5411	646105.7332	1318.6838	CONC_EDGE_BRDG_WING_AP
32231	955461.6523	646100.9542	1318.4692	CONC_BL_TOP
32232	955463.6412	646099.9957	1317.9028	CONC_BL_TOE
32233	955478.1446	646089.4972	1317.1846	CONC_SPOT
32234	955494.6669	646082.3	1317.1764	CONC_BL_TOE
32235	955496.319	646081.7173	1317.9275	CONC_BL_TOP
32236	955497.1007	646081.3683	1317.927	CONC_BL_TOP_-.65FT TOE
32237	955504.2329	646077.2042	1318.0582	CONC_BL_TOP_-.65FT TOE
32238	955505.0683	646076.7075	1318.1062	CONC_EDGE_WALL_FACE
32239	955480.5296	646033.3242	1317.9461	CONC_EDGE_WALL_FACE
32240	955479.8134	646033.8664	1317.9264	CONC_BL_TOP_-.65FT TOE
32241	955472.047	646036.9475	1317.8784	CONC_BL_TOP_-.65FT TOE
32242	955469.9147	646033.0938	1317.8435	CONC_BL_TOP_-.65FT TOE
32243	955469.1824	646033.5236	1317.846	CONC_BL_TOP
32244	955467.6775	646034.3316	1317.1718	CONC_BL_TOE
32245	955481.8109	646037.8355	1317.8718	LAND_RRTIE_.6FT W_CL
32246	955454.291	646047.322	1317.058	CONC_SPOT

32247	955438.7719	646054.9534	1317.7383	CONC_BL_TOE
32248	955436.5716	646056.053	1318.3844	CONC_BL_TOP
32249	955443.7527	646089.697	1319.4106	CONC_BL
32250	955428.4275	646062.2367	1318.6864	CONC_BL
32251	955416.7695	646041.6609	1318.334	CONC_BL_END
32252	955412.8876	646014.546	1317.8067	CONC_BL_TOP
32253	955414.6081	646013.5029	1317.2876	CONC_BL_TOE
32254	955429.878	646003.8471	1317.0218	CONC_SPOT
32255	955445.5806	645995.2279	1317.1494	CONC_BL_TOE
32256	955447.0603	645994.5921	1317.7407	CONC_BL_TOP
32257	955447.8587	645994.2717	1317.7855	CONC_BL_TOP_-.65FT TOE
32258	955455.179	645990.5426	1317.8134	CONC_BL_TOP_-.65FT TOE
32259	955455.8588	645989.993	1317.834	CONC_EDGE_WALL_FACE
32260	955462.6204	646003.8317	1317.8332	LAND_RRTIE_.6FT W_CL
32261	955455.7578	646007.8077	1317.8349	LAND_RRTIE_.6FT W_CL
32262	955432.6458	645967.2358	1317.6559	LAND_RRTIE_.6FT W_CL
32263	955439.6512	645963.4476	1317.6979	LAND_RRTIE_.6FT W_CL
32264	955420.1093	645929.2533	1317.4588	LAND_RRTIE_.6FT W_CL
32265	955413.3246	645933.3781	1317.6025	LAND_RRTIE_.6FT W_CL
32266	955430.2236	645945.136	1317.6103	CONC_EDGE_WALL_FACE
32267	955429.3923	645945.3904	1317.6215	CONC_BL_TOP_-.65FT TOE
32268	955422.3663	645949.1317	1317.5793	CONC_BL_TOP_-.65FT TOE
32269	955421.4776	645949.5133	1317.5573	CONC_BL_TOP
32270	955420.1232	645950.3968	1317.0715	CONC_BL_TOE
32271	955404.9303	645960.4613	1316.9441	CONC_SPOT
32272	955389.4307	645969.3573	1317.3586	CONC_BL_TOE
32273	955387.684	645970.291	1317.697	CONC_BL_TOP
32274	955376.8661	645951.8754	1317.4862	CONC_BL_TOP_END
32275	955377.7616	645951.5274	1317.4091	CONC_BL_TOE_END
32276	955380.5274	645916.9432	1316.8952	CONC_SPOT
32277	955396.7937	645909.1915	1317.1152	CONC_BL_TOE
32278	955398.0448	645908.4777	1317.5439	CONC_BL_TOP
32279	955402.7988	645914.9053	1317.56	CONC_BL_TOP_-.65FT TOE_AP
32280	955409.9824	645911.3783	1317.5966	CONC_BL_TOP_-.65FT TOE_AP
32281	955410.7709	645910.9053	1317.6522	CONC_EDGE_WALL_FACE_AP
32282	955416.7167	645921.7164	1328.5269	BRDG_SOFFIT_BOT_BEG
32283	955421.5832	645930.2543	1328.5482	BRDG_SOFFIT_BOT_BEG
32284	955425.3791	645949.6964	1328.6592	BRDG_SOFFIT_BOT
32285	955422.4357	645950.087	1328.6052	BRDG_SOFFIT_BOT
32286	955426.253	645969.104	1328.6868	BRDG_SOFFIT_BOT
32287	955429.1509	645968.0524	1328.678	BRDG_SOFFIT_BOT
32288	955434.5197	645994.7004	1328.8596	BRDG_SOFFIT_BOT
32289	955431.6196	645995.7464	1328.9128	BRDG_SOFFIT_BOT
32290	955435.6959	646016.5316	1329.0739	BRDG_SOFFIT_BOT
32291	955438.7021	646015.7209	1329.0737	BRDG_SOFFIT_BOT
32292	955444.0709	646043.0569	1329.0197	BRDG_SOFFIT_BOT
32293	955441.209	646044.1384	1329.0335	BRDG_SOFFIT_BOT
32294	955445.0659	646064.2711	1329.0284	BRDG_SOFFIT_BOT
32295	955448.036	646063.6312	1329.0303	BRDG_SOFFIT_BOT
32296	955452.8868	646088.2621	1329.0663	BRDG_SOFFIT_BOT
32297	955450.2773	646090.0378	1329.0692	BRDG_SOFFIT_BOT
32298	955453.8167	646106.8434	1329.1637	BRDG_SOFFIT_BOT_END
32299	955458.6274	646115.3031	1329.2537	BRDG_SOFFIT_BOT_END
32300	955441.1236	646027.6629	1329.0549	BRDG_GRDR_BOT_BEG
32301	955443.5465	646026.0353	1329.0974	BRDG_GRDR_BOT
32302	955455.2837	646046.4964	1329.3296	BRDG_GRDR_BOT
32303	955452.8987	646047.968	1329.3189	BRDG_GRDR_BOT
32304	955479.9535	646089.7716	1329.8984	BRDG_GRDR_BOT
32305	955477.3905	646091.0284	1329.9105	BRDG_GRDR_BOT
32306	955526.834	646178.7692	1330.6328	BRDG_GRDR_BOT
32307	955551.2825	646221.9557	1330.6739	BRDG_GRDR_BOT
32308	955576.1569	646265.8279	1330.5418	BRDG_GRDR_BOT
32309	955601.1991	646309.6695	1330.3937	BRDG_GRDR_BOT_END
32310	955601.6697	646308.1228	1317.8992	CONC_SPOT
32311	955585.8144	646316.5104	1317.9861	CONC_BL_TOE
32312	955584.5227	646317.3995	1318.5085	CONC_BL_TOP
32313	955560.5001	646275.6347	1318.4647	CONC_BL_TOP
32314	955562.1057	646274.9481	1317.9436	CONC_BL_TOE
32315	955577.185	646265.2499	1317.8211	CONC_SPOT
32316	955551.846	646222.1778	1317.6211	CONC_SPOT
32317	955537.0885	646231.3125	1317.8215	CONC_BL_TOE
32318	955535.8654	646232.164	1318.3419	CONC_BL_TOP

32319	955510.8414	646188.2083	1318.1274 CONC_BL_TOP
32320	955512.3236	646187.5526	1317.6475 CONC_BL_TOE
32321	955528.256	646178.1494	1317.425 CONC_SPOT
32322	955503.4427	646134.2736	1317.2918 CONC_SPOT
32323	955497.5194	646126.7349	1330.29 BRDG_GRDR_BOT
32324	955500.0472	646125.3084	1330.3062 BRDG_GRDR_BOT
32325	955487.4016	646143.2318	1317.6473 CONC_BL_TOE
32326	955486.0665	646144.0089	1318.1124 CONC_BL_TOP
32327	955515.1961	646118.1556	1317.3454 CONC_BL_TOE
32328	955516.5087	646117.4346	1318.0704 CONC_BL_TOP
32329	955517.3957	646117.0169	1318.0688 CONC_BL_TOP_-.65 TOE
32330	955524.2853	646112.4632	1318.2019 CONC_BL_TOP_-.65 TOE
32331	955525.0816	646112.1831	1318.2032 CONC_EDGE_WALL_FACE
32332	955446.8167	646125.3383	1328.6693 CONC_BL_TOP
32333	955434.4835	646111.2216	1328.0897 CONC_BL_TOP
32334	955418.4896	646087.3354	1328.5591 CONC_BL_TOP
32335	955407.901	646065.1283	1328.7062 CONC_BL_TOP_AP
32336	955376.0894	646084.9458	1328.9938 CONC_BL_TOP_END
32337	955397.8025	646009.2771	1318.0254 BLUE_FO
32338	955397.3442	645993.0578	1317.7838 BLUE_FO
32339	955396.495	645974.1478	1317.1099 BLUE_FO
32340	955427.928	646009.1329	1317.1281 BLUE_UE
32341	955428.5566	645971.25	1317.1439 BRDG_PIER_CL
32342	955437.635	646018.4541	1316.9905 BRDG_PIER_CL
32343	955447.8906	646036.4909	1316.9959 BRDG_PIER_CL
32344	955458.0857	646053.9997	1317.037 BRDG_PIER_CL
32345	955446.8867	646065.7036	1317.8652 BRDG_PIER_CL
32346	955468.7392	646073.102	1317.2442 BRDG_PIER_CL
32347	955478.9787	646090.9899	1317.1677 BRDG_PIER_CL
32348	955489.2472	646109.3475	1317.2458 BRDG_PIER_CL
32349	955499.5471	646127.3668	1317.2875 BRDG_PIER_CL
32353	955534.4674	645341.3851	1330.4732 SD_MH
32354	955465.1373	645376.4259	1329.1709 SD_MH
32355	955442.0505	645354.59	1329.1306 SD_MH
32356	955437.8423	645353.09	1329.1012 CURB_BC PC CONC_EDGE AP
32357	955437.7535	645352.5482	1328.6241 GUT_FL
32358	955437.629	645351.2021	1328.6808 PVMT_EDGE
32359	955448.5832	645351.0713	1328.7766 PVMT_EDGE
32360	955448.664	645352.4616	1328.7178 GUT_FL
32361	955448.5588	645353.0348	1329.161 CURB_BC PC CONC_EDGE AP
32362	955446.6516	645352.3995	1328.5686 SD_INLET
32363	955439.8311	645352.501	1328.4964 SD_INLET
32364	955438.2686	645357.0595	1329.1768 CONC_EDGE AP
32365	955448.3605	645357.0754	1329.3027 CONC_EDGE AP
32366	955456.1236	645354.4615	1329.1709 CURB_BC POC CT SW_EDGE
32367	955460.9812	645357.8245	1328.746 CURB_BC POC CT
32368	955463.5665	645360.9772	1328.7255 CURB_BC POC CT
32369	955465.8742	645366.5573	1329.0727 CURB_BC POC CT SW_EDGE
32370	955459.6434	645369.1465	1329.2191 SW_EDGE POC
32371	955448.2984	645378.7766	1329.4435 SW_EDGE POC
32372	955450.4497	645369.0244	1329.2875 SW_EDGE
32373	955453.556	645361.545	1329.2554 SW_EDGE
32374	955455.0233	645363.2688	1329.1816 HCR
32375	955457.0037	645365.6421	1329.1241 HCR
32376	955463.6499	645357.8457	1328.6433 PVMT_EDGE POC
32377	955468.6611	645372.3146	1328.5456 PVMT_EDGE
32378	955467.4683	645372.2655	1328.5329 GUT_FL
32379	955466.8583	645372.3515	1328.9932 CURB_BC PT CONC_EDGE AP
32380	955467.4606	645374.2263	1328.3795 SD_INLET
32381	955467.4785	645388.2787	1328.4252 SD_INLET
32382	955468.7672	645390.2447	1328.8917 PVMT_EDGE
32383	955467.4609	645390.3195	1328.7541 GUT_FL
32384	955466.8107	645390.2213	1329.1636 CURB_BC CONC_EDGE AP
32385	955462.902	645390.2868	1329.3234 CONC_EDGE AP
32386	955462.858	645372.5905	1329.1711 CONC_EDGE AP
32387	955361.8517	644786.9785	1328.0176 SD_MH
32388	955357.0924	644543.3551	1326.8776 WAT_MH
32389	955383.9402	644471.856	1326.5111 SS_MH
32390	955364.3531	644476.255	1326.8474 SD_MH
32393	955495.8544	646325.7007	1334.0604 BLUE_FO
32394	955490.1659	646296.4388	1333.8716 BLUE_FO
32395	955484.4164	646264.5116	1333.7186 BLUE_FO

32396	955478.2088	646233.7865	1333.364	BLUE_FO
32397	955487.551	646236.2934	1333.3037	BLUE_UG
32398	955488.1484	646239.7697	1333.2893	BLUE_FO
32399	955523.19	646266.501	1333.8211	MISC_BORE_GF3
32400	955525.8061	646278.6033	1333.9707	MISC_BORE
32401	955522.219	646266.3668	1333.8575	BLUE_UE
32402	955514.2628	646066.6304	1333.1202	BLUE_UE
32403	955517.5945	646062.6175	1333.1063	MISC_BORE_GF2
32407	955629.976	646417.1876	1319.7342	CONC_EDGE_BRDG_WING_AP
32408	955635.2491	646447.8128	1325.2407	SD_INV_24""CONC
32409	955639.1631	646461.661	1330.9415	CONC_BL_TOP
32410	955653.9723	646479.4931	1330.8411	CONC_BL_TOP_AP
32411	955668.4815	646502.755	1330.9087	CONC_BL_TOP
32412	955697.7533	646549.2838	1331.0852	CONC_BL_TOP
32413	955725.1318	646592.9134	1331.2404	CONC_BL_TOP
32414	955745.4498	646625.839	1330.9597	CONC_BL_TOP_CONC_EDGE
32415	955790.3932	646652.4538	1321.8008	SW_FW_POC
32416	955782.8383	646654.8153	1322.0106	SW_BW_POC
32417	955782.2658	646655.1072	1322.609	CURB_BC_POC
32418	955771.384	646630.0931	1321.1094	CURB_BC_PT
32419	955771.8948	646629.9295	1320.5135	SW_BW_PT
32420	955778.7546	646625.6875	1320.299	SW_FW_PT
32421	955762.8178	646616.5236	1320.5287	CURB_BC_END
32422	955763.0341	646615.8446	1320.0424	SW_BW_END
32423	955762.3065	646615.144	1320.0357	CONC_BL_TOE
32424	955760.8801	646617.5778	1320.5293	CONC_BL_TOE_CONC_EDGE
32425	955769.5699	646611.4191	1320.1345	SW_FW_END_CONC_BL_TOP_BEG
32426	955770.5457	646612.7419	1319.9884	CONC_EDGE
32427	955771.4627	646609.8019	1319.0658	CONC_BL_TOE_CONC_EDGE_AP
32428	955792.0472	646651.6603	1321.7267	POST_SIGN_NOENTERWHENFLOODED
32429	955785.1111	646601.6459	1318.9739	CONC_SPOT
32430	955801.2967	646591.3781	1319.3801	CONC_BL_TOE_CONC_EDGE
32431	955802.6581	646590.6723	1319.9469	CONC_BL_TOP_CONC_EDGE
32432	955803.4154	646590.0063	1320.0081	CONC_BL_TOP_-.65FT TOE_CONC_EDGE
32433	955810.4432	646585.587	1320.1247	CONC_BL_TOP_-.65FT TOE_CONC_EDGE
32434	955811.0958	646584.8192	1320.1248	CONC_BL_TOE_CONC_EDGE
32435	955791.1336	646553.0583	1319.7976	CONC_BL_TOE
32436	955790.4198	646553.7587	1319.8768	CONC_BL_TOP_-.65FT TOE
32437	955783.2427	646558.0369	1319.7236	CONC_BL_TOP_-.65FT TOE
32438	955782.322	646558.3416	1319.6675	CONC_BL_TOP
32439	955781.1344	646559.1347	1319.0803	CONC_BL_TOE
32440	955764.4866	646568.9696	1318.7375	CONC_SPOT
32441	955750.5395	646577.462	1319.0062	CONC_BL_TOE
32442	955748.8727	646578.5695	1319.6666	CONC_BL_TOP
32443	955740.3248	646583.8205	1319.5251	CONC_BL_TOE
32444	955712.733	646540.2069	1319.0931	CONC_BL_TOE
32445	955721.6525	646535.1433	1319.3512	CONC_BL_TOP
32446	955722.8329	646534.6013	1318.7677	CONC_BL_TOE
32447	955737.3182	646525.2916	1318.6414	CONC_SPOT
32448	955753.2697	646515.1778	1318.8261	CONC_BL_TOE
32449	955754.6502	646514.4471	1319.515	CONC_BL_TOP
32450	955755.4592	646514.0294	1319.5861	CONC_BL_TOP_-.65FT TOE
32451	955762.9455	646510.2667	1319.6536	CONC_BL_TOP_-.65FT TOE
32452	955763.9503	646509.8421	1319.6557	CONC_BL_TOE
32453	955734.5002	646463.4348	1319.5623	CONC_BL_TOE
32454	955733.8179	646464.1458	1319.5934	CONC_BL_TOP_-.65FT TOE
32455	955726.9101	646468.6568	1319.3999	CONC_BL_TOP_-.65FT TOE
32456	955726.0171	646469.0333	1319.3973	CONC_BL_TOP
32457	955724.8143	646469.8437	1318.7263	CONC_BL_TOE
32458	955729.5964	646458.7751	1319.8572	VEGE_TREE
32459	955718.181	646454.734	1319.3664	LAND_RRTIE_.6FT W_CL
32460	955725.141	646450.438	1319.5895	LAND_RRTIE_.6FT W_CL
32461	955760.6351	646522.306	1319.582	LAND_RRTIE_.6FT W_CL
32462	955767.6927	646518.1676	1319.6255	LAND_RRTIE_.6FT W_CL
32463	955754.8157	646497.4759	1319.5989	VEGE_TREE
32464	955750.735	646491.6685	1319.3806	VEGE_TREE
32465	955707.6393	646478.2443	1318.4255	CONC_SPOT
32466	955693.4957	646487.4742	1318.6816	CONC_BL_TOE
32467	955692.2645	646488.2454	1319.2384	CONC_BL_TOP
32468	955684.0242	646494.2805	1319.4379	CONC_BL_TOE
32469	955661.4148	646458.252	1319.3573	CONC_BL_TOE
32470	955656.0133	646449.6422	1319.3331	CONC_BL_TOE

32471	955634.3193	646415.2818	1319.8034 CONC_BL_TOE_END
32472	955663.231	646457.1375	1319.115 CONC_BL_BEG
32473	955657.8413	646448.507	1319.1117 CONC_BL
32474	955636.1879	646414.1593	1319.2722 CONC_BL_AP
32475	955628.9498	646406.0544	1319.3593 CONC_BL_END
32476	955664.8383	646444.8666	1319.2652 CONC_BL_TOP
32477	955666.1765	646444.2032	1318.779 CONC_BL_TOE
32478	955680.9813	646435.0497	1318.2956 CONC_SPOT
32479	955696.4209	646425.1111	1318.6212 CONC_BL_TOE
32480	955697.7645	646424.3878	1319.2849 CONC_BL_TOP
32481	955698.5644	646423.9745	1319.2883 CONC_BL_TOP_-.65FT TOE
32482	955705.9022	646420.0727	1319.4821 CONC_BL_TOP_-.65FT TOE
32483	955706.7853	646419.5318	1319.4855 CONC_BL_TOE
32484	955703.6141	646417.0852	1319.4637 LAND_RRTIE_.6FT W_CL
32485	955696.9835	646421.166	1319.2898 LAND_RRTIE_.6FT W_CL
32486	955711.3683	646428.8842	1319.5746 VEGE_TREE
32487	955700.7798	646412.4577	1319.2685 VEGE_TREE
32488	955695.5919	646404.7654	1319.5853 VEGE_TREE
32489	955682.258	646384.9605	1318.1771 VEGE_TREE
32490	955679.4116	646378.4197	1319.2032 VEGE_TREE
32491	955666.5624	646356.8043	1319.1217 VEGE_TREE
32492	955679.2916	646376.0709	1319.1726 CONC_BL_TOE
32493	955678.2719	646376.38	1319.1989 CONC_BL_TOP_-.65FT TOE
32494	955671.4211	646380.7391	1319.079 CONC_BL_TOP_-.65FT TOE
32495	955670.6597	646381.0722	1319.0952 CONC_BL_TOP
32496	955669.2864	646381.8593	1318.3171 CONC_BL_TOE
32497	955682.1963	646382.9165	1319.2951 LAND_RRTIE_.6FT W_CL
32498	955675.5253	646386.9316	1319.2392 LAND_RRTIE_.6FT W_CL
32499	955653.9924	646393.0355	1318.2794 CONC_SPOT
32500	955639.5238	646402.7047	1318.7024 CONC_TOE
32501	955638.4447	646403.557	1319.4437 CONC_TOP
32502	955625.1857	646408.5872	1319.5432 CONC_EDGE_WALL_FACE
32503	955600.6514	646365.6352	1319.0411 CONC_EDGE_WALL_FACE
32504	955609.1132	646360.873	1318.8398 CONC_BL_TOP
32505	955642.9908	646410.1531	1319.4258 CONC_BL_TOP_AP
32506	955611.6281	646365.2139	1318.8755 CONC_BL_TOP_AP
32507	955612.7117	646364.6734	1318.2345 CONC_BL_TOE_AP
32508	955628.4295	646354.5482	1318.0783 CONC_SPOT
32509	955645.2117	646343.6126	1318.1621 CONC_BL_TOE
32510	955646.5686	646342.624	1318.8047 CONC_BL_TOP
32511	955647.2869	646342.2046	1318.8161 CONC_BL_TOP_-.65FT TOE
32512	955654.3506	646337.7382	1318.9908 CONC_BL_TOP_-.65FT TOE
32513	955655.2398	646337.1724	1318.9441 CONC_BL_TOE
32514	955640.2372	646315.2854	1318.7174 LAND_RRTIE_.6FT W_CL
32515	955633.2091	646319.3245	1318.8774 LAND_RRTIE_.6FT W_CL
32516	955612.8968	646285.1625	1318.6636 LAND_RRTIE_.6FT W_CL
32517	955620.0762	646281.2799	1318.8169 LAND_RRTIE_.6FT W_CL
32518	955623.5816	646286.9933	1318.8998 VEGE_TREE
32519	955610.3422	646319.2227	1317.9775 BLUE_UE
32520	955610.3346	646320.6962	1317.9902 MISC_BORE_GF4
32521	955628.7969	646293.8546	1318.9194 CONC_BL_TOE
32522	955627.5539	646294.3335	1318.8508 CONC_BL_TOP_-.65FT TOE
32523	955620.4423	646298.2212	1318.6383 CONC_BL_TOP_-.65FT TOE
32524	955619.7196	646298.5947	1318.6381 CONC_BL_TOP
32525	955618.3218	646299.2879	1318.146 CONC_BL_TOE
32526	955603.6578	646307.1958	1317.8839 CONC_SPOT
32527	955585.8361	646316.6302	1317.9747 CONC_BL_TOE
32528	955584.4768	646317.2753	1318.4898 CONC_BL_TOP
32529	955575.4983	646321.7846	1318.8574 CONC_EDGE_WALL_FACE
32530	955551.1007	646278.9631	1318.5919 CONC_EDGE_WALL_FACE
32531	955526.4609	646235.7226	1318.4755 CONC_EDGE_WALL_FACE
32532	955501.6352	646192.3464	1318.322 CONC_EDGE_WALL_FACE
32533	955477.0925	646148.4383	1318.2877 CONC_EDGE_WALL_FACE
32534	955474.9177	646041.7506	1317.7172 LAND_RRTIE_.6FT W_CL
32535	955439.3765	646018.6105	1329.079 BRDG_GRDR_BOT_BEG
32536	955455.48	646046.8168	1329.3347 BRDG_GRDR_BOT
32537	955479.9687	646089.7311	1329.885 BRDG_GRDR_BOT
32538	955505.1164	646134.0971	1330.3908 BRDG_GRDR_BOT
32539	955529.6509	646177.4847	1330.6412 BRDG_GRDR_BOT
32540	955553.9007	646220.5217	1330.6593 BRDG_GRDR_BOT
32541	955578.6658	646264.0108	1330.6141 BRDG_GRDR_BOT
32542	955599.4845	646300.5954	1330.287 BRDG_GRDR_BOT_END

32543	955582.5357	646213.7292	1330.0376 BRDG_SOFFIT_BOT_BEG
32544	955587.1165	646221.7343	1329.9501 BRDG_SOFFIT_BOT_BEG
32545	955591.5193	646243.6951	1330.0431 BRDG_SOFFIT_BOT
32546	955588.6449	646243.7654	1330.0789 BRDG_SOFFIT_BOT
32547	955592.4132	646263.7031	1330.065 BRDG_SOFFIT_BOT
32548	955595.1918	646262.8916	1330.0668 BRDG_SOFFIT_BOT
32549	955599.7399	646286.0865	1330.2533 BRDG_SOFFIT_BOT
32550	955596.7916	646286.1652	1330.2686 BRDG_SOFFIT_BOT
32551	955603.9596	646308.1805	1330.3602 BRDG_SOFFIT_BOT
32552	955609.0811	646334.2573	1330.4264 BRDG_SOFFIT_BOT
32553	955606.1168	646334.3241	1330.4339 BRDG_SOFFIT_BOT
32554	955610.0026	646354.6401	1330.6205 BRDG_SOFFIT_BOT
32555	955612.8609	646354.0538	1330.6698 BRDG_SOFFIT_BOT
32556	955617.3805	646376.4916	1330.6378 BRDG_SOFFIT_BOT
32557	955614.5067	646377.0593	1330.6347 BRDG_SOFFIT_BOT
32558	955618.4554	646396.651	1330.7262 BRDG_SOFFIT_BOT_END
32559	955623.0455	646404.611	1330.7782 BRDG_SOFFIT_BOT_END
32560	955611.7527	646356.5969	1318.2379 BRDG_PIER_CL
32561	955603.1735	646309.3555	1317.9351 BRDG_PIER_CL
32562	955593.4237	646262.0259	1317.9836 BRDG_PIER_CL
32563	955593.0843	646250.2743	1318.6936 LAND_RRTIE_.6FT W_CL
32564	955600.1661	646246.2698	1318.9067 LAND_RRTIE_.6FT W_CL
32565	955617.3044	646292.8765	1318.68 CONC_BL_TOP_-.65FT TOE_PC
32566	955624.0995	646288.523	1318.8195 CONC_BL_TOP_-.65FT TOE_PC
32567	955595.3622	646254.3673	1318.6581 CONC_BL_TOP_-.65FT TOE
32568	955602.4488	646250.3508	1318.8653 CONC_BL_TOP_-.65FT TOE
32569	955603.2849	646249.7399	1318.866 CONC_BL_TOE
32570	955593.1559	646255.4088	1318.0298 CONC_BL_TOE
32571	955594.5028	646254.7303	1318.634 CONC_BL_TOP
32572	955587.5224	646222.4404	1318.913 CONC_BL_TOE_WALL_FACE_AP
32573	955580.2794	646211.797	1318.6497 LAND_RRTIE_.6FT W_CL
32574	955577.8073	646206.9517	1318.7142 CONC_BL_TOP_-.65FT TOE
32575	955578.5943	646206.3599	1318.717 CONC_EDGE_WALL_FACE
32576	955560.673	646177.133	1318.4854 LAND_RRTIE_.6FT W_CL
32577	955553.7099	646180.8492	1318.2757 LAND_RRTIE_.6FT W_CL
32578	955543.8708	646168.7052	1317.6083 CONC_BL_TOE
32579	955545.0719	646168.0471	1318.2672 CONC_BL_TOP
32580	955545.9859	646167.4845	1318.2671 CONC_BL_TOP_-.65FT TOE
32581	955534.0529	646146.1199	1318.167 LAND_RRTIE_.6FT W_CL
32582	955440.8199	645996.0669	1329.9511 BRDG_DECK_BOT
32583	955466.373	646041.2514	1330.5209 BRDG_DECK_BOT
32584	955490.0646	646083.145	1331.0616 BRDG_DECK_BOT
32585	955464.3878	646100.8272	1330.3916 BRDG_DECK_BOT
32586	955488.3131	646142.9393	1331.0165 BRDG_DECK_BOT
32587	955515.8559	646128.3308	1331.4496 BRDG_DECK_BOT
32588	955540.0523	646170.7683	1331.3962 BRDG_DECK_BOT
32589	955513.1098	646186.8711	1331.4926 BRDG_DECK_BOT
32590	955537.5164	646229.8265	1331.9468 BRDG_DECK_BOT
32591	955565.0998	646214.9437	1331.3725 BRDG_DECK_BOT
32592	955583.9314	646260.0251	1331.3776 BRDG_DECK_BOT
32593	955562.0737	646273.4987	1331.8243 BRDG_DECK_BOT
32594	955586.9753	646316.8891	1331.644 BRDG_DECK_BOT
32595	955606.1996	646365.8631	1331.7841 BRDG_DECK_BOT
32596	955615.841	646230.5676	1330.6287 CONC_BL_TOP
32597	955620.7311	646239.2712	1330.7874 CONC_BL_TOP
32598	955668.5903	646325.1841	1330.9414 CONC_BL_TOP
32599	955659.1785	646309.0317	1331.2453 CONC_BL_TOP
32600	955683.5073	646350.4652	1330.9318 CONC_BL_TOP
32601	955700.6554	646379.8155	1330.9505 CONC_BL_TOP
32602	955730.3755	646429.1523	1330.6486 CONC_BL_TOP
32603	955745.8126	646453.6399	1330.524 CONC_BL_TOP
32604	955761.2434	646478.7202	1330.5721 CONC_BL_TOP
32605	955774.6564	646500.3719	1330.4168 CONC_BL_TOP
32606	955794.7781	646532.5121	1330.4272 CONC_BL_TOP
32607	955821.2497	646575.1808	1330.3488 CONC_BL_TOP CONC_EDGE
32610	955429.9865	646006.6754	1317.105 MISC_BORE_GF1
32611	955432.075	645956.3095	1329.812 SD_DD
32612	955437.068	645981.1774	1329.9725 SD_DD
32613	955444.0672	646016.9991	1330.1685 SD_DD
32614	955451.0795	646051.6753	1330.3496 SD_DD
32615	955458.1037	646087.3472	1330.3288 SD_DD
32616	955462.8942	646112.3056	1330.4036 SD_DD

32617	955510.024	646145.8131	1317.426 BRDG_PIER_CL
32618	955520.2513	646163.9721	1317.4867 BRDG_PIER_CL
32619	955530.3614	646182.3512	1317.6145 BRDG_PIER_CL
32620	955540.7124	646200.5916	1317.655 BRDG_PIER_CL
32621	955551.1119	646218.7588	1317.6106 BRDG_PIER_CL
32622	955561.3328	646236.9134	1317.7338 BRDG_PIER_CL
32623	955571.7859	646254.9284	1317.8377 BRDG_PIER_CL
32624	955582.1316	646273.155	1317.8537 BRDG_PIER_CL
32625	955592.4856	646291.221	1317.8352 BRDG_PIER_CL
32626	955607.4693	646369.3259	1331.7973 SD_DD
32627	955588.639	646273.714	1331.5169 SD_DD
32628	955581.9357	646238.6754	1331.3286 SD_DD
32629	955577.2578	646214.8594	1331.2097 SD_DD
32630	955573.453	646215.5464	1318.5341 LAND_RRTIE_.6FT W_CL
32631	955568.639	646212.2313	1317.945 CONC_BL_TOE
32632	955570.0227	646211.6299	1318.6016 CONC_BL_TOP
32633	955570.8683	646211.1384	1318.6026 CONC_BL_TOP_-.65FT TOE
32634	955553.1988	646163.5859	1318.4332 CONC_BL_TOP_-.65FT TOE
32635	955553.848	646163.2399	1318.413 CONC_EDGE_WALL_FACE
32636	955540.9551	646142.4096	1318.3732 LAND_RRTIE_.6FT W_CL
50001	955099.7108	645531.5487	1329.4042 CURB_BC
50002	955099.3231	645531.3641	1329.057 CURB_FC
50003	955104.4968	645506.8762	1328.8867 CURB_FC
50004	955101.9852	645483.1096	1328.9097 CURB_FC
50005	955099.6938	645475.8199	1328.9064 CURB_FC
50006	955095.9867	645468.3875	1328.8807 CURB_FC
50007	955091.8137	645461.0458	1328.7592 CURB_FC
50008	955092.2127	645460.7849	1329.2177 CURB_TBC
50009	955096.3887	645468.0819	1329.3028 CURB_TBC
50010	955100.1915	645475.6711	1329.3757 CURB_TBC
50011	955102.48	645482.8762	1329.3942 CURB_TBC
50012	955105.0378	645507.0408	1329.3768 CURB_TBC
50013	955094.1093	645459.6402	1328.8368 PVMT_EDGE_PATH
50014	955101.4532	645454.791	1328.5621 PVMT_EDGE_PATH
50015	955122.221	645491.4712	1329.0858 PVMT_EDGE_PATH
50016	955114.6495	645495.5496	1329.221 PVMT_EDGE_PATH
50017	955133.6696	645513.7954	1328.8042 PVMT_EDGE_PATH_CONC
50018	955124.5839	645517.712	1328.9837 PVMT_EDGE_PATH_CONC
50019	955130.4453	645531.7415	1328.6952 PVMT_EDGE_PATH_CONC_FL
50020	955139.5096	645527.8044	1328.4702 PVMT_EDGE_PATH_CONC_FL
50021	955145.085	645541.4331	1328.9019 PVMT_EDGE_PATH_CONC
50022	955136.0406	645545.1568	1329.1129 PVMT_EDGE_PATH_CONC
50023	955142.9457	645575.3288	1329.6861 PVMT_EDGE_PATH
50024	955151.6251	645573.871	1329.6102 PVMT_EDGE_PATH
50025	955158.6195	645619.3607	1330.8601 PVMT_EDGE_PATH
50026	955150.3294	645621.1504	1330.9327 PVMT_EDGE_PATH
50027	955154.3046	645629.8317	1330.9714 PVMT_EDGE_PATH
50028	955161.6826	645625.5577	1330.825 PVMT_EDGE_PATH
50029	955181.8652	645658.3229	1330.4954 PVMT_EDGE_PATH
50030	955174.2656	645662.3917	1330.5737 PVMT_EDGE_PATH
50031	955188.3243	645698.2965	1330.6075 PVMT_EDGE_PATH
50032	955197.3654	645696.792	1330.4798 PVMT_EDGE_PATH
50033	955201.2178	645726.6377	1330.328 PVMT_EDGE_PATH
50034	955208.6272	645722.4035	1330.3717 PVMT_EDGE_PATH
50035	955224.6008	645749.4977	1330.4724 PVMT_EDGE_PATH
50036	955216.9271	645752.9893	1330.5199 PVMT_EDGE_PATH
50037	955229.4337	645781.5174	1330.9944 PVMT_EDGE_PATH
50038	955237.2951	645778.9843	1330.7549 PVMT_EDGE_PATH
50039	955248.9942	645809.9634	1332.3644 PVMT_EDGE_PATH
50040	955240.9553	645812.7859	1332.6884 PVMT_EDGE_PATH
50041	955254.8139	645824.7331	1333.0784 PVMT_EDGE_PATH
50042	955270.0079	645831.2242	1333.1254 PVMT_EDGE_PATH
50043	955280.3071	645841.5915	1332.9801 PVMT_EDGE_PATH
50047	955258.6148	645816.6672	1333.0096 PVMT_EDGE_PATH
50048	955274.5073	645823.6314	1333.1096 PVMT_EDGE_PATH
50049	955287.2424	645835.8385	1332.9 PVMT_EDGE_PATH
50050	955301.3494	645854.9567	1332.413 PVMT_EDGE_PATH
50051	955293.8786	645859.7807	1332.5789 PVMT_EDGE_PATH
50052	955304.1177	645882.5293	1332.4629 PVMT_EDGE_PATH
50053	955312.5453	645881.0266	1332.174 PVMT_EDGE_PATH
50054	955314.668	645907.8384	1332.0388 PVMT_EDGE_PATH
50055	955305.9857	645907.304	1332.061 PVMT_EDGE_PATH

50056	955302.1893	645932.7908	1331.9921	PVMT_EDGE_PATH
50057	955310.5946	645935.4359	1331.8017	PVMT_EDGE_PATH
50058	955304.2026	645960.4705	1331.7771	PVMT_EDGE_PATH
50059	955295.7282	645957.9099	1331.8899	PVMT_EDGE_PATH
50060	955294.4273	645990.815	1331.2581	PVMT_EDGE_PATH
50061	955286.4581	645987.4188	1331.397	PVMT_EDGE_PATH
50062	955274.6184	646020.9896	1330.8214	PVMT_EDGE_PATH
50063	955283.0929	646023.637	1330.9146	PVMT_EDGE_PATH
50064	955269.6517	646039.9601	1330.6597	PVMT_EDGE_PATH
50065	955278.2159	646041.7338	1330.5	PVMT_EDGE_PATH
50066	955275.977	646064.2207	1329.8599	PVMT_EDGE_PATH
50067	955266.7539	646063.3928	1329.8452	PVMT_EDGE_PATH
50068	955267.4224	646078.069	1329.2626	PVMT_EDGE_PATH
50069	955271.0941	646090.9105	1328.1656	PVMT_EDGE_PATH
50070	955278.6805	646104.5517	1326.8291	PVMT_EDGE_PATH
50071	955284.2731	646096.4421	1326.677	PVMT_EDGE_PATH
50072	955278.9654	646087.236	1327.9892	PVMT_EDGE_PATH
50073	955276.2401	646076.4987	1329.0995	PVMT_EDGE_PATH
50074	955284.669	646113.3448	1326.0752	PVMT_EDGE_PATH
50075	955286.068	646113.4627	1325.9787	PVMT_EDGE_PATH_CONC
50076	955286.3531	646097.5985	1326.3763	PVMT_EDGE_PATH_CONC
50077	955298.9916	646064.2982	1325.7253	CONC_EDGE_PATH_GROUT_RIPRAP
50078	955294.9755	646086.9588	1326.534	CONC_EDGE_PATH_GROUT_RIPRAP
50079	955294.695	646090.8691	1326.3842	CONC_EDGE_PATH_GROUT_RIPRAP
50080	955300.9812	646064.5858	1325.5654	CONC_EDGE_PATH_TOP_GROUT_RIPRAP
50081	955317.2661	646067.535	1319.6847	CONC_EDGE_TOE_GROUT_RIPRAP
50082	955333.751	646070.6128	1319.1905	CONC_EDGE_GROUT_RIPRAP
50083	955291.2001	646062.8852	1326.0343	CONC_EDGE_PATH_CONC_TOE
50084	955287.647	646082.7218	1326.5013	CONC_EDGE_PATH_CONC_TOE
50085	955279.2797	646081.7606	1329.3037	CONC_EDGE_TOP
50086	955282.2071	646061.8714	1329.5425	CONC_EDGE_TOP
50087	955281.3852	646034.59	1330.2906	CONC_EDGE_TOP
50088	955287.0332	646086.0102	1326.6392	CONC_EDGE_PATH
50089	955286.3639	646132.347	1325.7006	CONC_EDGE_PATH
50090	955294.2237	646132.1693	1325.5899	CONC_EDGE_PATH
50091	955294.3293	646149.9671	1324.9474	CONC_EDGE_PATH
50092	955286.3864	646149.4698	1325.3901	CONC_EDGE_PATH
50093	955284.8574	646169.7747	1323.7848	CONC_EDGE_PATH_GROUT_RIPRAP
50094	955283.2522	646186.239	1324.4176	CONC_EDGE_PATH_GROUT_RIPRAP
50095	955284.0343	646177.0694	1323.7535	CONC_EDGE_PATH_GROUT_RIPRAP_FL
50096	955294.4964	646134.0274	1325.6158	CONC_EDGE_TOE
50097	955294.7073	646149.818	1324.9591	CONC_EDGE_TOE
50098	955294.3654	646155.1295	1324.5866	CONC_EDGE_TOE
50099	955295.1937	646134.4902	1325.7052	CONC_EDGE_TOP
50100	955295.9127	646149.9282	1325.1494	CONC_EDGE_TOP
50101	955295.6494	646153.6156	1325.3079	CONC_EDGE_TOP
50102	955293.8485	646156.7607	1324.3932	CONC_PATH
50103	955291.9854	646177.1319	1323.6941	CONC_PATH_FL
50104	955291.0978	646187.0068	1324.2154	CONC_PATH
50105	955288.6775	646196.6278	1325.4217	CONC_PATH_TOP
50106	955284.0828	646205.5049	1326.2202	CONC_EDGE_PATH
50107	955278.1788	646212.4919	1326.8873	CONC_EDGE_PATH
50108	955271.0088	646220.5392	1327.8157	CONC_EDGE_PATH
50109	955264.728	646230.2927	1328.6556	CONC_EDGE_PATH
50110	955251.421	646256.3376	1329.6381	CONC_EDGE_PATH
50111	955232.3747	646302.5559	1329.7907	CONC_EDGE_PATH
50112	955225.1702	646299.3763	1330.0509	CONC_EDGE_PATH
50113	955244.3163	646252.9987	1329.687	CONC_EDGE_PATH
50114	955257.7304	646226.8951	1328.9443	CONC_EDGE_PATH
50115	955265.0585	646215.5501	1328.0703	CONC_EDGE_PATH
50116	955272.3641	646207.1824	1327.0244	CONC_EDGE_PATH
50117	955277.6117	646200.9925	1326.3764	CONC_EDGE_PATH
50118	955281.7771	646193.714	1325.4126	CONC_EDGE_PATH
50119	955291.016	646189.7656	1324.6412	CONC_EDGE_GROUT
50120	955292.2323	646191.5235	1324.5937	CONC_EDGE_GROUT_TOP
50121	955294.8814	646187.2525	1323.7117	CONC_GROUT_TOP
50122	955296.0573	646181.0527	1323.527	CONC_GROUT_TOP
50123	955297.7599	646170.3101	1323.6198	CONC_GROUT_TOP
50124	955298.1957	646162.953	1323.8487	CONC_GROUT_TOP
50125	955296.1343	646156.8886	1324.2386	CONC_GROUT_TOP
50126	955251.1878	646184.6529	1329.3789	CONC_EDGE_GROUT_RIPRAP
50127	955251.5216	646173.9158	1328.1879	CONC_EDGE_GROUT_RIPRAP_FL

50128	955252.4746	646168.2309	1328.2755 CONC_EDGE_GROUT_RIPRAP
50129	955220.1425	646298.151	1330.1 FNC_POST_16""X16""_CL
50130	955228.0029	646279.8967	1329.8201 FNC_POST_16""X16""_CL
50131	955235.7939	646261.3415	1329.7532 FNC_POST_16""X16""_CL
50132	955244.04	646242.8105	1329.7141 FNC_POST_16""X16""_CL
50133	955220.9646	646296.6771	1330.3595 FNC_WI_6_
50134	955228.8226	646278.3683	1330.2695 FNC_WI_6_
50135	955236.6695	646259.9106	1329.6797 FNC_WI_6_
50136	955244.8526	646241.2995	1329.3204 FNC_WI_6_
50137	955251.984	646224.7997	1329.5065 FNC_WI_6_END
50138	955252.0693	646223.7187	1329.5205 FNC_POST_COL_16""X16""_CL
50141	955240.6991	646205.143	1331.3768 FNC_POST_16""X16""_CL
50144	955229.5767	646185.9921	1330.958 FNC_POST_16""X16""_CL
50145	955232.1121	646189.0779	1331.0709 CONC_EDGE_GROUT
50146	955239.0631	646180.8754	1329.4569 CONC_EDGE_GROUT
50147	955236.6806	646173.3644	1328.6561 CONC_EDGE_GROUT_FL
50148	955224.8587	646177.3793	1329.0777 CONC_EDGE_GROUT_FL
50149	955220.6553	646168.7711	1331.2189 CONC_EDGE_GROUT
50150	955219.9476	646166.6682	1331.432 CONC_EDGE_GROUT
50151	955230.3016	646165.068	1330.7874 CONC_EDGE_GROUT
50152	955212.856	646089.5494	1333.8141 NG_SPOT
50153	955190.658	645990.279	1355.0803 NG_SPOT
50154	955170.9822	645891.8744	1352.6445 NG_SPOT
50155	955151.6514	645793.5264	1344.3486 NG_SPOT
50156	955132.5805	645695.3166	1330.6715 NG_SPOT
50157	955112.6301	645597.0777	1330.1308 NG_SPOT
50158	955104.3469	645455.4406	1328.8761 FNC_METAL_PIPE_3.5_
50159	955116.5373	645475.9763	1329.0422 FNC_METAL_PIPE_3.5_
50160	955127.7464	645497.1506	1329.0926 FNC_METAL_PIPE_3.5_
50161	955138.0288	645519.176	1328.3899 FNC_METAL_PIPE_3.5_
50162	955146.8198	645541.0798	1328.9384 FNC_METAL_PIPE_3.5_
50163	955152.1275	645564.1496	1329.4037 FNC_METAL_PIPE_3.5_
50164	955155.4218	645587.9158	1329.8932 FNC_METAL_PIPE_3.5_
50165	955158.8525	645611.5357	1330.7906 FNC_METAL_PIPE_3.5_
50166	955160.8789	645619.6449	1330.7077 FNC_METAL_PIPE_3.5_
50167	955164.357	645626.6675	1330.8743 FNC_METAL_PIPE_3.5_
50168	955177.3739	645646.7967	1330.7096 FNC_METAL_PIPE_3.5_
50169	955188.8927	645667.82	1330.5326 FNC_METAL_PIPE_3.5_
50170	955197.3047	645689.9751	1330.4833 FNC_METAL_PIPE_3.5_
50171	955205.4779	645712.487	1330.3592 FNC_METAL_PIPE_3.5_
50172	955213.2429	645726.1611	1330.5834 FNC_METAL_PIPE_3.5_
50173	955225.6181	645746.7407	1330.5216 FNC_METAL_PIPE_3.5_
50174	955235.3832	645769.1466	1330.5893 FNC_METAL_PIPE_3.5_
50175	955243.8731	645791.5037	1331.0235 FNC_METAL_PIPE_3.5_
50176	955249.2504	645805.9354	1331.8063 FNC_METAL_PIPE_3.5_
50177	955252.8372	645811.1556	1331.7887 FNC_METAL_PIPE_3.5_
50178	955254.1665	645811.3263	1331.6407 FNC_METAL_PIPE_3.5__END_RETWALL_BEG



APPENDIX D: HYDROLOGIC ANALYSIS SUPPORTING DOCUMENTATION

There is no additional hydrologic analysis supporting documentation.



APPENDIX E: HYDRAULIC ANALYSIS SUPPORTING DOCUMENTATION

- E.1 Roughness Coefficients Estimation**
- E.2 Cross Section**
 - E.2.1 Duplicate Effective Model
 - E.2.2 Corrected Effective Model
 - E.2.3 Post-Project Model
- E.3 Expansion and Contraction Coefficients**
- E.4 Analysis of Structures**
- E.5 Hydraulic Calculations**
 - E.5.1 Duplicate Effective Model
 - E.5.2 Corrected Effective Model
 - E.5.3 Post-Project Model
 - E.5.4 cHECK-RAS Reports
- E.6 Design Plans**

E.1: ROUGHNESS COEFFICIENTS ESTIMATION

Project Name: GREENWAY PARKWAY BRIDGE ACROSS CAVE CREEK

Date: 09/13/2013

Prepared by: Mark Peterson

Checked by: Andy Lynch

KEY:

LB = LEFT BANK

RB = RIGHT BANK

C = CHANNEL

XS = CROSS SECTION

US = UPSTREAM

DS = DOWNSTREAM

Note: Photos for XS 19.418 - 20.049 were taken on 04-28-10 and 04-29-10

Estimate of Manning's Roughness 'n' Values											
Cross		Components of Manning's Roughness 'n'					Total 'n'	Meandering	Final 'n'	Comments	
Section ID	XS Location	Base	Irregularity	Variation in Section	Obstruction	Vegetation		Factor 'MF'	'n' x MF		
Cave Creek											
19.418	Channel								0.035	Value taken from FEMA HEC-2 model	
	Overbanks	0.025	0.003	0.000	0.003	0.004	0.035	1	0.035	Base is firm soil; Irregularity is minor; Obstructions are negligible; Vegetation is small	
19.56	Channel	0.015	0.000	0.000	0.000	0.000	0.015	1	0.015	See Photos 50-55; Base is concrete	
	Overbanks	0.025	0.003	0.000	0.003	0.005	0.036	1	0.036	Base is firm soil; Irregularity is minor; Obstructions are negligible; Vegetation is small	
19.597	Channel	0.015	0.000	0.000	0.000	0.000	0.015	1	0.015	See Photos 56-58; Base is concrete	
	Overbanks	0.025	0.003	0.000	0.003	0.005	0.036	1	0.036	Base is firm soil; Irregularity is minor; Obstructions are negligible; Vegetation is small	
19.625	Channel	0.015	0.000	0.000	0.000	0.000	0.015	1	0.015	See Photos 56-58; Base is concrete	
	Overbanks	0.025	0.003	0.000	0.003	0.005	0.036	1	0.036	Base is firm soil; Irregularity is minor; Obstructions are negligible; Vegetation is small	
19.691	Channel	0.015	0.000	0.000	0.000	0.000	0.015	1	0.015	See Photos 73-75; Base is concrete	
	Overbanks	0.025	0.003	0.000	0.003	0.005	0.036	1	0.036	Base is firm soil; Irregularity is minor; Obstructions are negligible; Vegetation is small	
19.742	Channel	0.015	0.000	0.000	0.000	0.000	0.015	1	0.015	See Photos 76-77, 92; Base is concrete	
	Overbanks	0.025	0.003	0.000	0.003	0.005	0.036	1	0.036	Base is firm soil; Irregularity is minor; Obstructions are negligible; Vegetation is small	
19.847	Channel	0.030	0.001	0.000	0.002	0.002	0.035	1	0.035	See Photos 78-79; Base is gravel, 3" to 6"; Irregularity is minor for erosion; Variation is gradual; Obstructions are negligible; Vegetation is small, minimal within channel	
	Overbanks								0.035	Value taken from FEMA HEC-2 model	
19.96	Channel	0.030	0.001	0.000	0.002	0.002	0.035	1	0.035	See Photos 80-81; Base is gravel, 4" to 10"; Irregularity is minor for erosion; Variation is gradual; Obstructions are negligible; Vegetation is small, minimal within channel	
	Overbanks								0.035	Value taken from FEMA HEC-2 model	
19.974	Channel	0.030	0.001	0.000	0.002	0.002	0.035	1	0.035	See Photos 82-86; Base is gravel, 4" to 10"; Irregularity is minor for erosion; Variation is gradual; Obstructions are negligible; Vegetation is small, minimal within channel	
	Overbanks								0.040	Value taken from FEMA HEC-2 model	
19.986	Channel	0.030	0.001	0.000	0.002	0.002	0.035	1	0.035	See Photos 82-86; Base is gravel, 4" to 10"; Irregularity is minor for erosion; Variation is gradual; Obstructions are negligible; Vegetation is small, minimal within channel	
	Overbanks								0.040	Value taken from FEMA HEC-2 model	
20.049	Channel	0.030	0.001	0.000	0.002	0.002	0.035	1	0.035	See Photos 87-91; Base is gravel, 4" to 10"; Irregularity is minor for erosion; Variation is gradual; Obstructions are negligible; Vegetation is small, minimal within channel	
	Overbanks								0.040	Value taken from FEMA HEC-2 model	
0.029	Channel	0.015	0.000	0.000	0.000	0.000	0.015	1	0.015	See Photos 56-58; Base is concrete	
	Overbanks	0.025	0.003	0.000	0.003	0.005	0.036	1	0.036	Base is firm soil; Irregularity is minor; Obstructions are negligible; Vegetation is small	
0.112	Channel	0.026	0.002	0.000	0.001	0.001	0.030	1	0.030	See Photos 59-61; Base is sand; Irregularity is minor for erosion; Variation is gradual; Obstructions are negligible; Vegetation is small, minimal within channel	
	Overbanks								0.035	Value taken from FEMA HEC-2 model	
0.198	Channel	0.026	0.001	0.001	0.001	0.001	0.030	1	0.030	See Photos 62-70; Base is sand; Irregularity is minor for erosion; Variation is alternating occasionally with flow shifting; Obstructions are negligible; Vegetation is small, minimal within channel	
	Overbanks								0.035	Value taken from FEMA HEC-2 model	
0.288	Channel	0.026	0.001	0.001	0.001	0.001	0.030	1	0.030	See Photos 71-72; Base is sand; Irregularity is minor for erosion; Variation is alternating occasionally with flow shifting; Obstructions are negligible; Vegetation is small, minimal within channel	
	Overbanks								0.035	Value taken from FEMA HEC-2 model	

CAVE CREEK PHOTOS



Photo 46: C US
XS 19.418



Photo 47: RB US
XS 19.418



Photo 48: C DS
XS 19.418



Photo 49: RB DS
XS 19.418

KEY:
LB = LEFT BANK
RB = RIGHT BANK
C = CHANNEL
XS = CROSS SECTION
US = UPSTREAM
DS = DOWNSTREAM

CAVE CREEK PHOTOS



Photo 50: C DS
XS 19.418 - 19.560



Photo 51: LB US
XS 19.418 - 19.560



Photo 52: C US
XS 19.418 - 19.560



Photo 53: RB US
XS 19.418 - 19.560



Photo 54: RB
XS 19.418 - 19.560



Photo 55: LB
XS 19.418 - 19.560

KEY:
LB = LEFT BANK
RB = RIGHT BANK
C = CHANNEL
XS = CROSS SECTION
US = UPSTREAM
DS = DOWNSTREAM

CAVE CREEK AND EAST FORK PHOTOS



Photo 56: C US
XS 19.597, 19.625 & 0.029



Photo 57: C US
XS 19.597, 19.625 & 0.029



Photo 58: C US
XS 19.597, 19.625 & 0.029



Photo 73: C DS
XS 19.691



Photo 74: C DS
XS 19.691



Photo 75: C DS
XS 19.691

KEY:
 LB = LEFT BANK
 RB = RIGHT BANK
 C = CHANNEL
 XS = CROSS SECTION
 US = UPSTREAM
 DS = DOWNSTREAM

CAVE CREEK PHOTOS



Photo 76: C US
XS 19.742



Photo 77: C US
XS 19.742



Photo 92: C DS
XS 19.742



Photo 78: C US
XS 19.847



Photo 79: C DS
XS 19.847



Photo 80: C US
XS 19.960



Photo 81: C DS
XS 19.960

KEY:
LB = LEFT BANK
RB = RIGHT BANK
C = CHANNEL
XS = CROSS SECTION
US = UPSTREAM
DS = DOWNSTREAM

CAVE CREEK PHOTOS



Photo 82: C US
XS 19.974 - 19.986



Photo 83: C US
XS 19.974 - 19.986



Photo 84: C US
XS 19.974 - 19.986



Photo 85: C US
XS 19.974 - 19.986



Photo 86: C DS
XS 19.974 - 19.986

KEY:
LB = LEFT BANK
RB = RIGHT BANK
C = CHANNEL
XS = CROSS SECTION
US = UPSTREAM
DS = DOWNSTREAM

CAVE CREEK PHOTOS



Photo 87: C US
XS 20.049



Photo 88: C DS
XS 20.049



Photo 89: LB
XS 20.049



Photo 90: RB US
XS 20.049



Photo 91: RB DS
XS 20.049

KEY:

LB = LEFT BANK
RB = RIGHT BANK
C = CHANNEL

XS = CROSS SECTION
US = UPSTREAM
DS = DOWNSTREAM

CAVE CREEK AND EAST FORK PHOTOS



Photo 56: C US
XS 19.597, 19.625 & 0.029



Photo 57: C US
XS 19.597, 19.625 & 0.029



Photo 58: C US
XS 19.597, 19.625 & 0.029



Photo 59: C US
XS 0.112



Photo 60: RB US
XS 0.112



Photo 61: LB US
XS 0.112

KEY:
LB = LEFT BANK
RB = RIGHT BANK
C = CHANNEL
XS = CROSS SECTION
US = UPSTREAM
DS = DOWNSTREAM

EAST FORK PHOTOS



Photo 62: C US
XS 0.198



Photo 63: RB US
XS 0.198



Photo 64: LB US
XS 0.198



Photo 65: C DS
XS 0.198



Photo 66: C US
XS 0.198



Photo 67: RB US
XS 0.198



Photo 68: RB DS
XS 0.198



Photo 69: LB US
XS 0.198



Photo 70: LB DS
XS 0.198

KEY:
LB = LEFT BANK
RB = RIGHT BANK
C = CHANNEL

XS = CROSS SECTION
US = UPSTREAM
DS = DOWNSTREAM

EAST FORK PHOTOS



Photo 71: C DS
XS 0.288



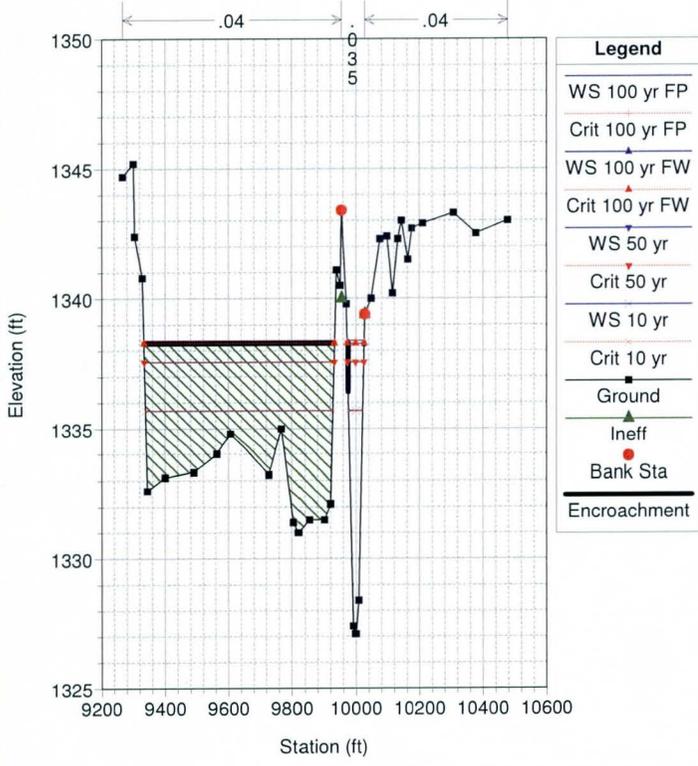
Photo 72: C US
XS 0.288

KEY:
LB = LEFT BANK
RB = RIGHT BANK
C = CHANNEL
XS = CROSS SECTION
US = UPSTREAM
DS = DOWNSTREAM

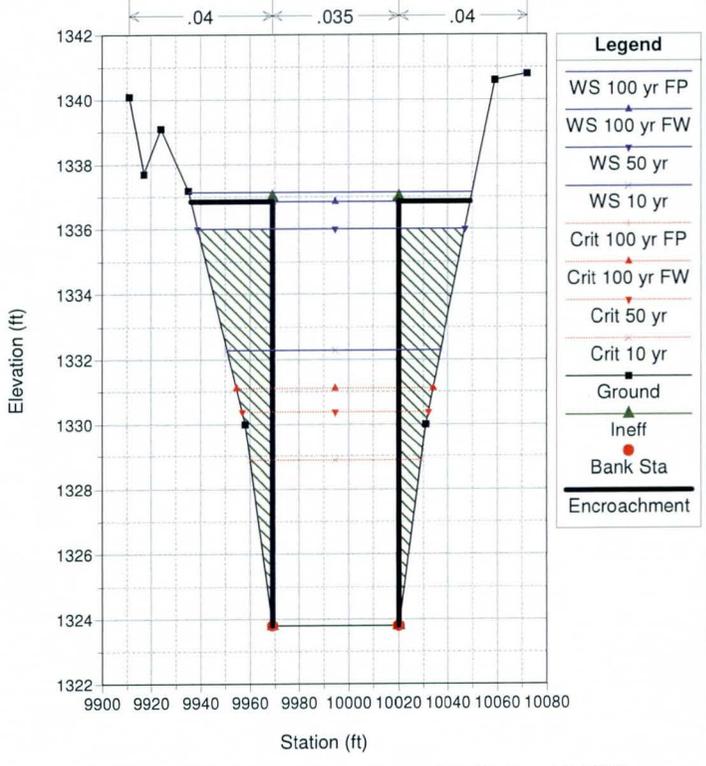
E.2: CROSS SECTIONS

E.2.1: Duplicate Effective Model

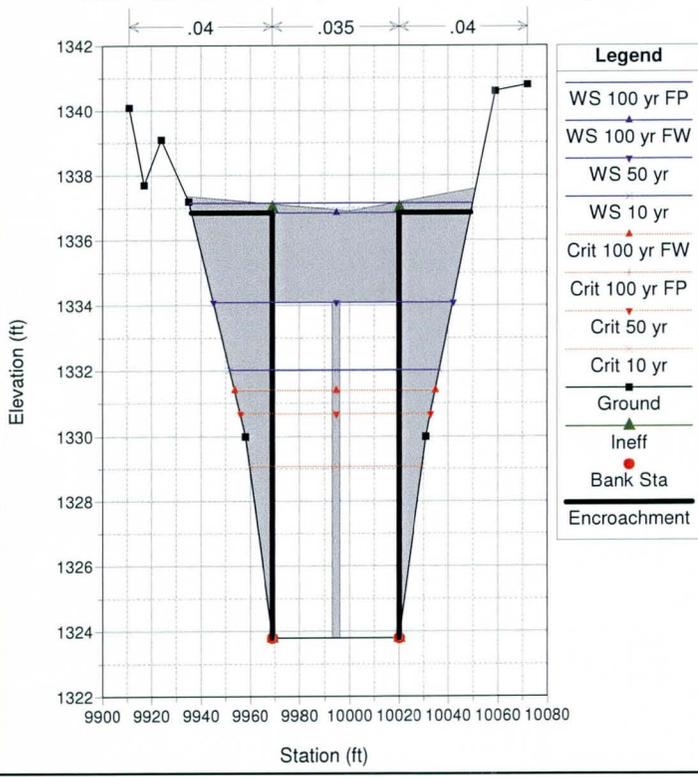
Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013
 Geom: Duplicate Effective Flow: Duplicate Effective Flows
 River = Cave Creek Reach = Upstream RS = 20.049 FEMA XS: X WORK MAP XS ID: BQ



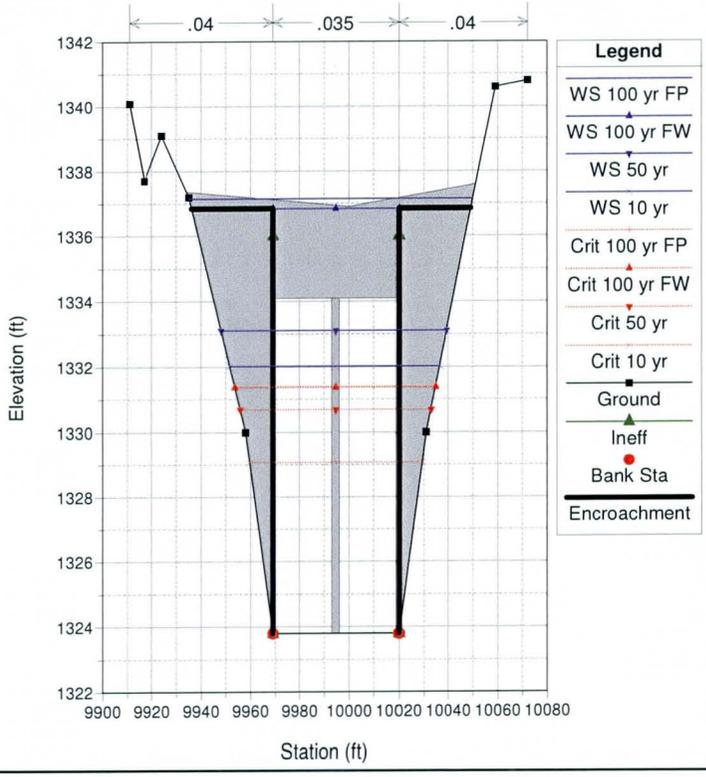
Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013
 Geom: Duplicate Effective Flow: Duplicate Effective Flows
 River = Cave Creek Reach = Upstream RS = 19.986 NEW SECTION ADDED SINCE FIS



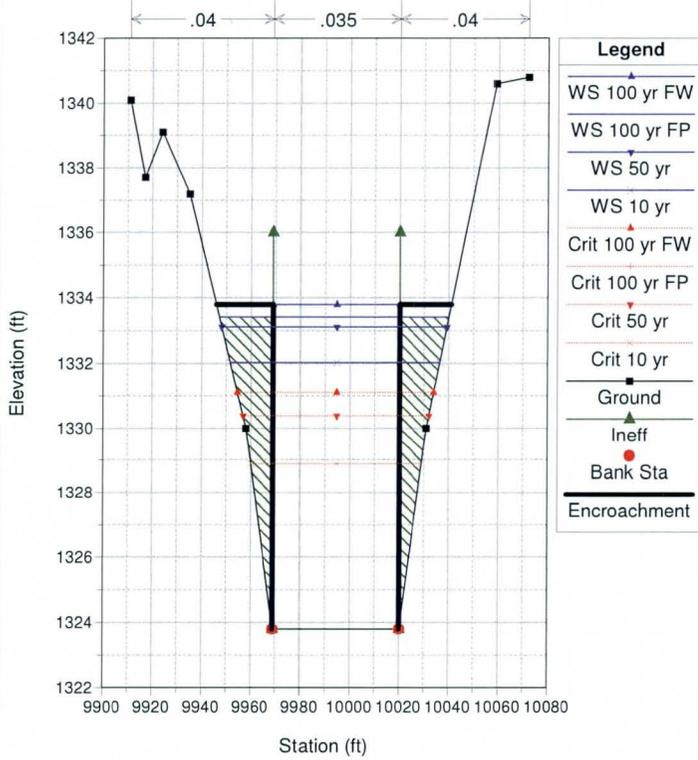
Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013
 Geom: Duplicate Effective Flow: Duplicate Effective Flows
 River = Cave Creek Reach = Upstream RS = 19.980 BR Bridge #6



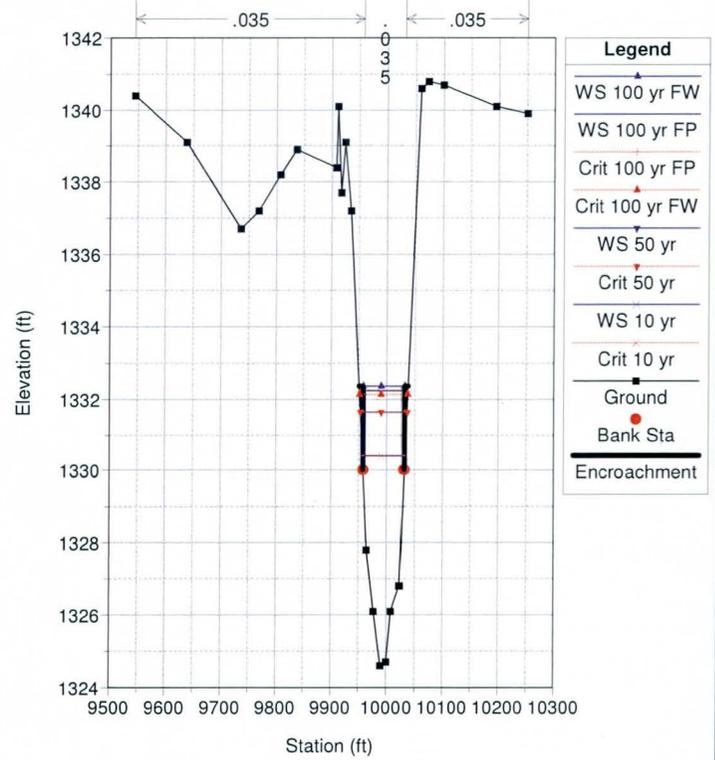
Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013
 Geom: Duplicate Effective Flow: Duplicate Effective Flows
 River = Cave Creek Reach = Upstream RS = 19.980 BR Bridge #6



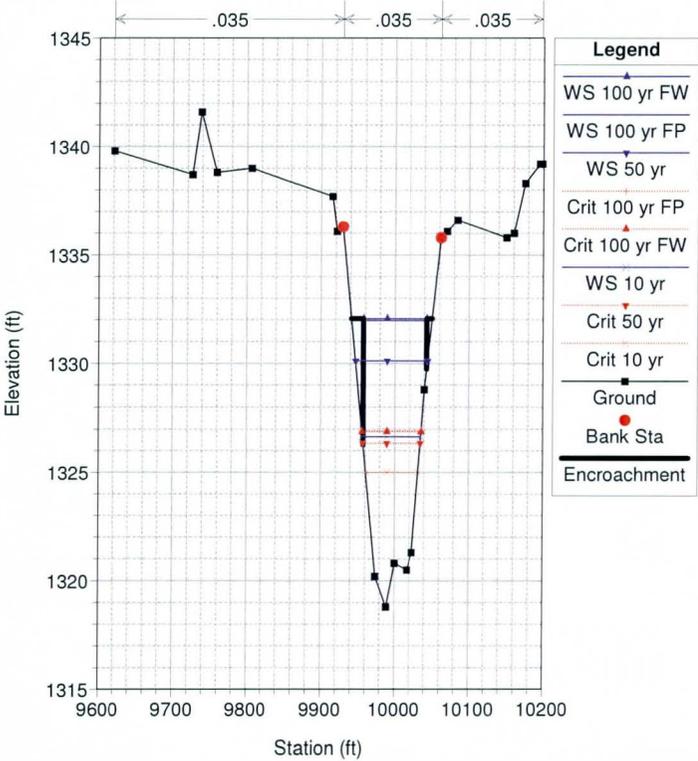
Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013
 Geom: Duplicate Effective Flow: Duplicate Effective Flows
 River = Cave Creek Reach = Upstream RS = 19.974 NEW SECTION ADDED SINCE FIS



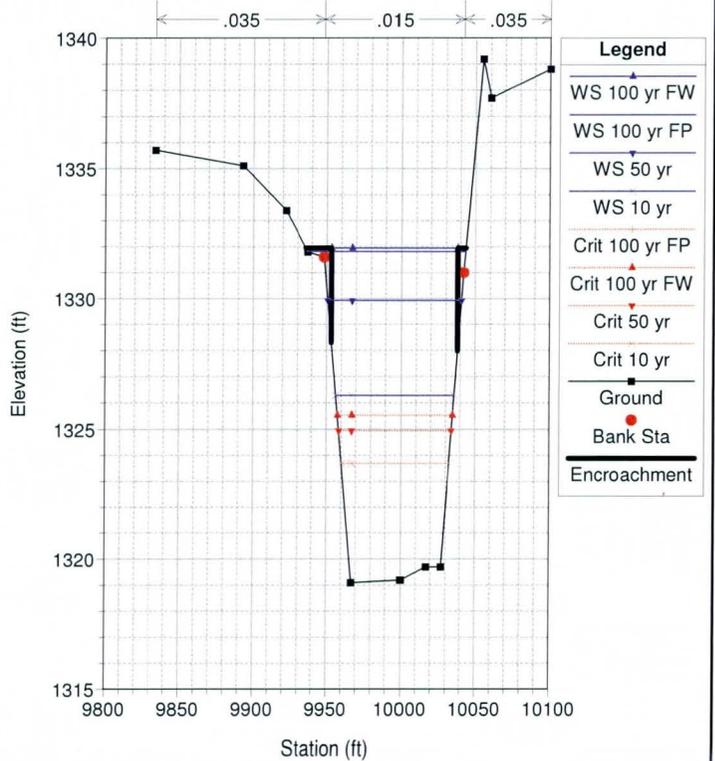
Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013
 Geom: Duplicate Effective Flow: Duplicate Effective Flows
 River = Cave Creek Reach = Upstream RS = 19.960 FEMA XS: W WORK MAP XS ID: BP

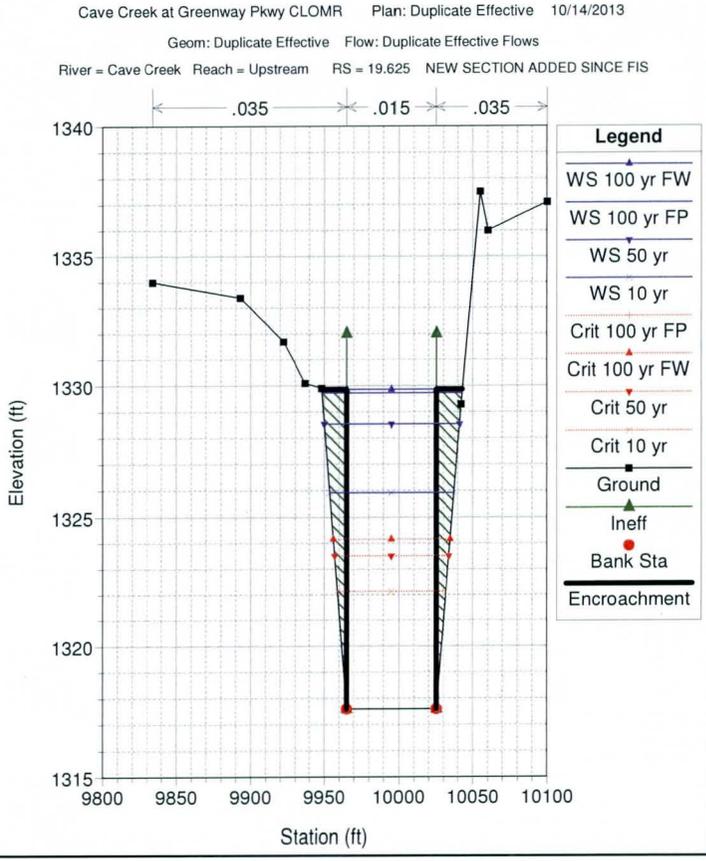
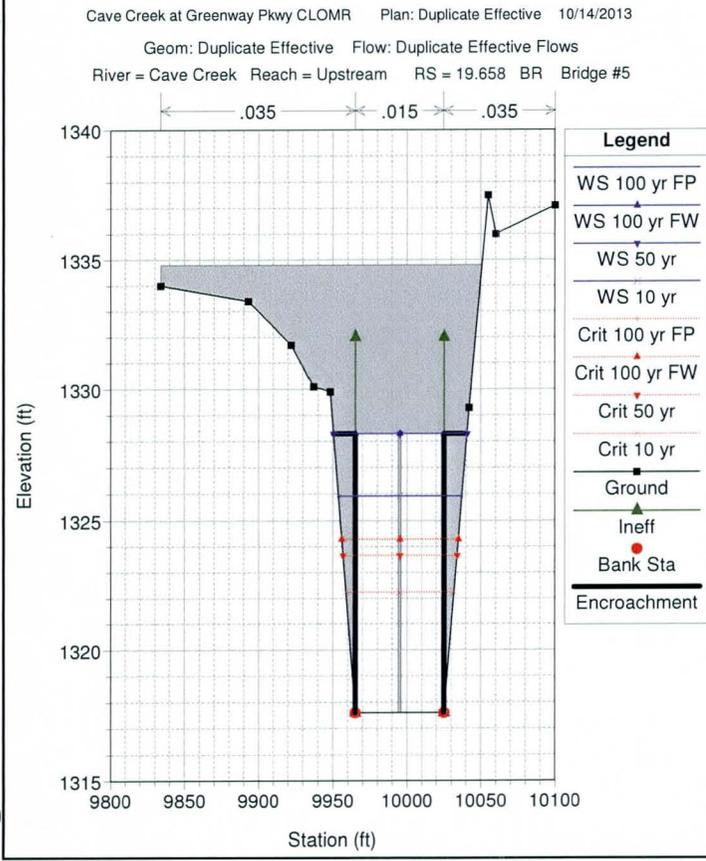
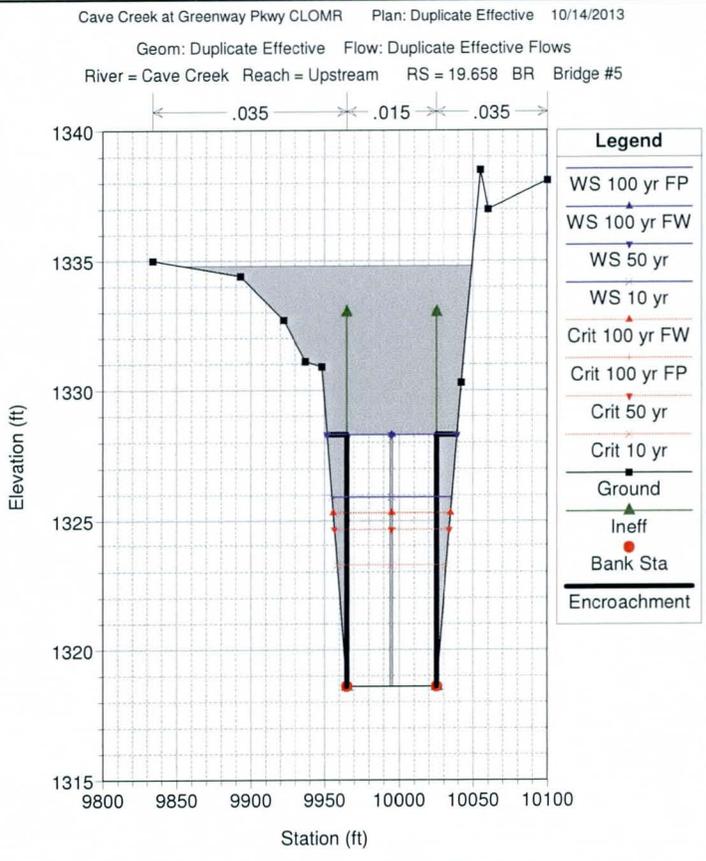
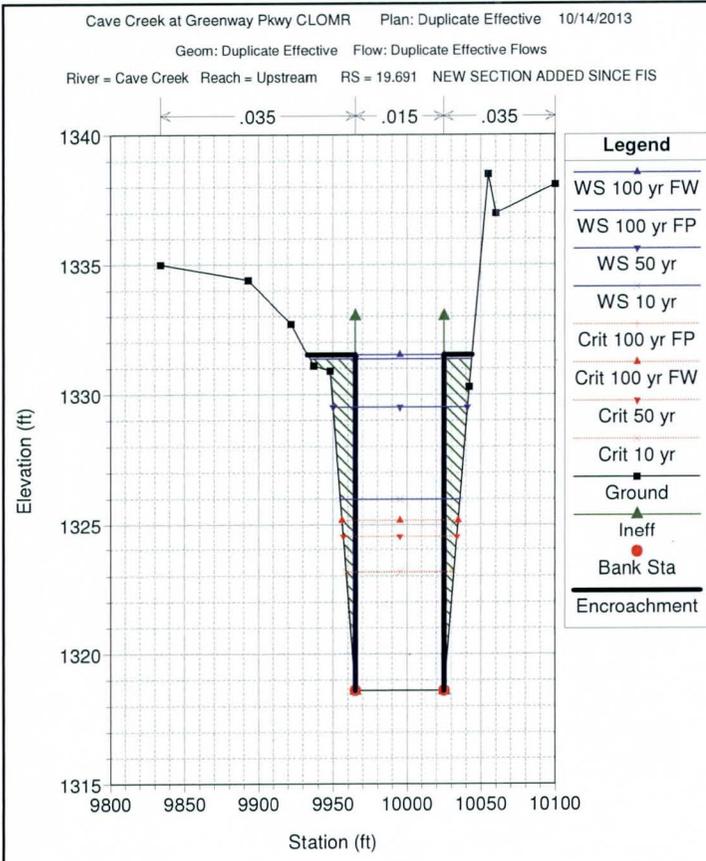


Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013
 Geom: Duplicate Effective Flow: Duplicate Effective Flows
 River = Cave Creek Reach = Upstream RS = 19.847 FEMA XS: V WORK MAP XS ID: BO



Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013
 Geom: Duplicate Effective Flow: Duplicate Effective Flows
 River = Cave Creek Reach = Upstream RS = 19.742 FEMA XS: U WORK MAP XS ID: BN

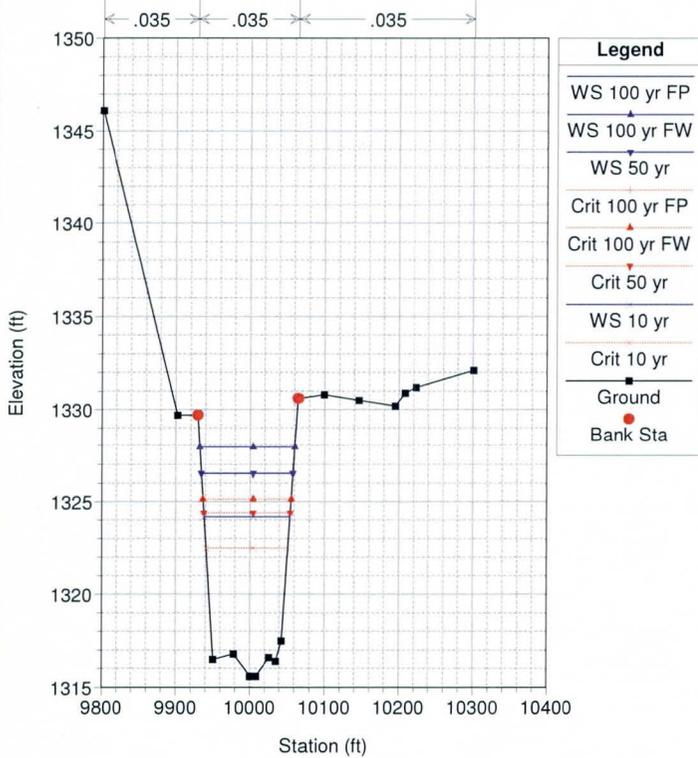




Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013

Geom: Duplicate Effective Flow: Duplicate Effective Flows

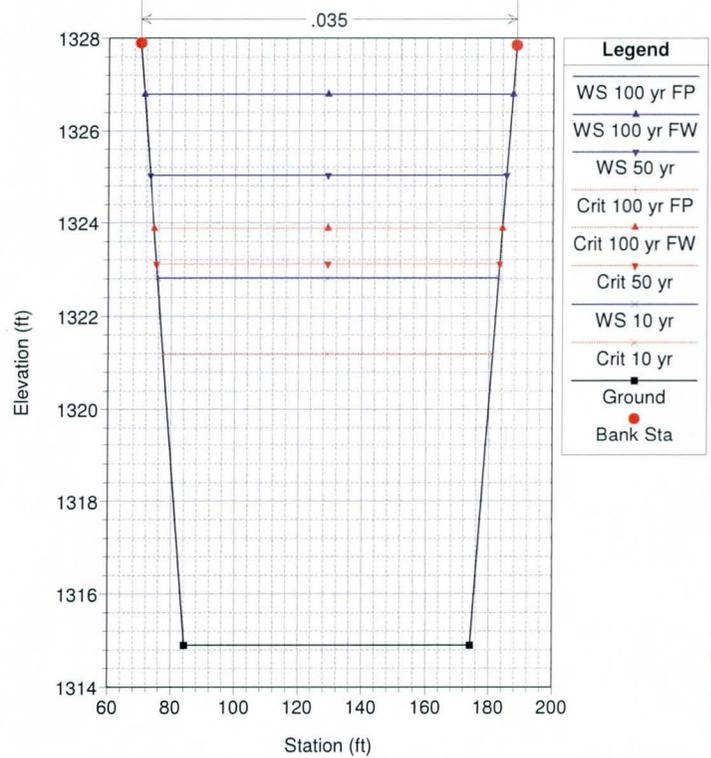
River = Cave Creek Reach = Downstream RS = 19.560 FEMA XS: T WORK MAP XS ID: BM



Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013

Geom: Duplicate Effective Flow: Duplicate Effective Flows

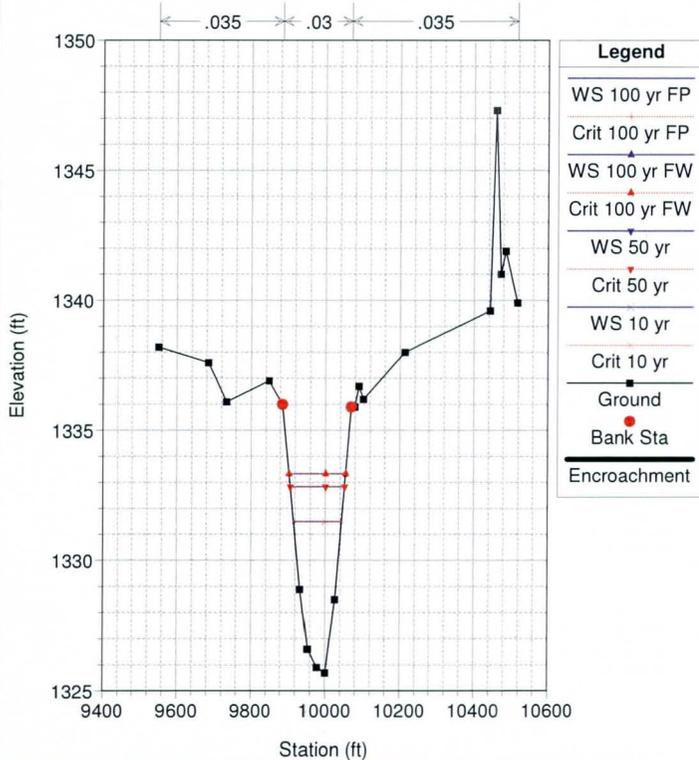
River = Cave Creek Reach = Downstream RS = 19.505 WORK MAP XS ID: 19.505 (D/S of BM or XS 19.556) from LOMR 01-09-



Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013

Geom: Duplicate Effective Flow: Duplicate Effective Flows

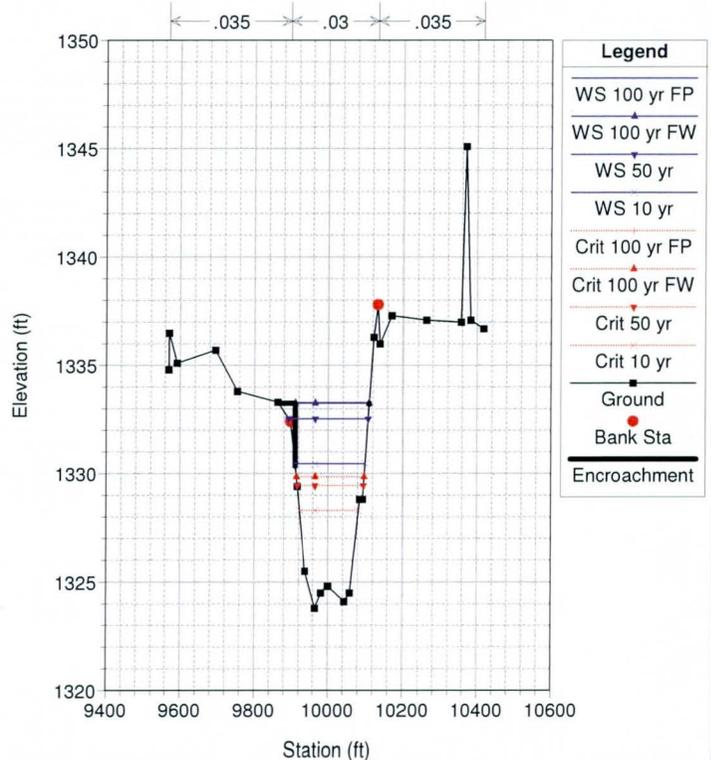
River = East Fork Reach = Upstream RS = 0.288 FEMA XS: D WORK MAP XS ID: D



Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013

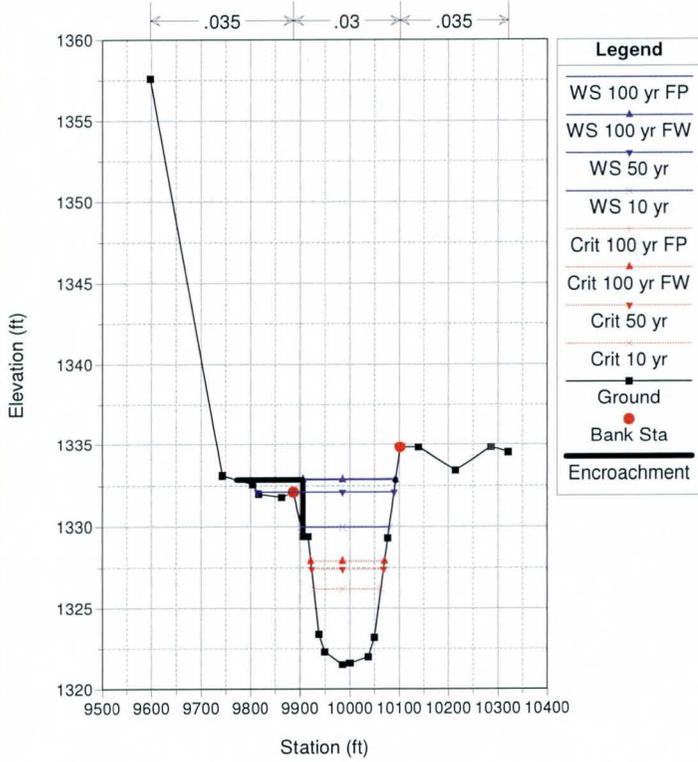
Geom: Duplicate Effective Flow: Duplicate Effective Flows

River = East Fork Reach = Upstream RS = 0.198 FEMA XS: C WORK MAP XS ID: C



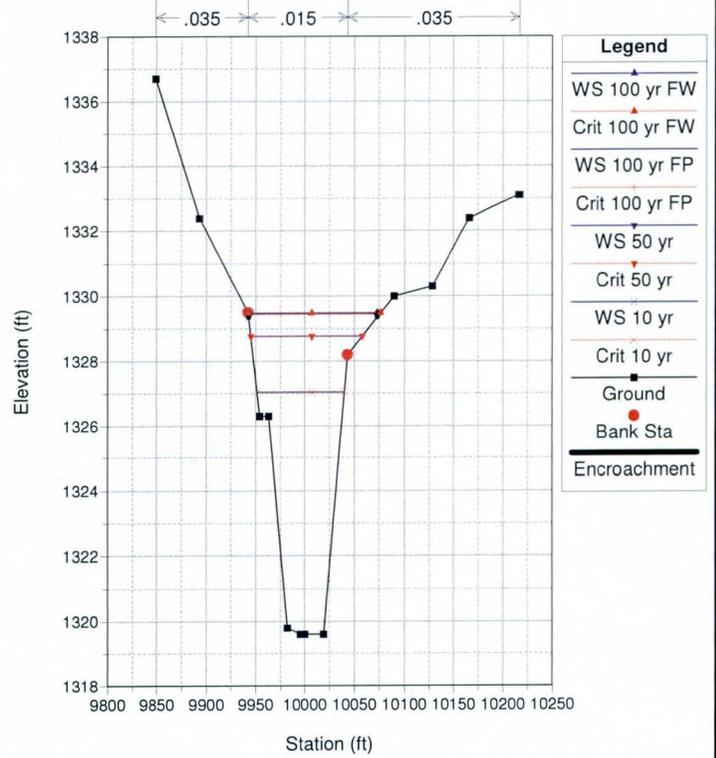
Geom: Duplicate Effective Flow: Duplicate Effective Flows

River = East Fork Reach = Upstream RS = 0.112 FEMA XS: B WORK MAP XS ID: B



Geom: Duplicate Effective Flow: Duplicate Effective Flows

River = East Fork Reach = Upstream RS = 0.029 FEMA XS: A WORK MAP XS ID: A

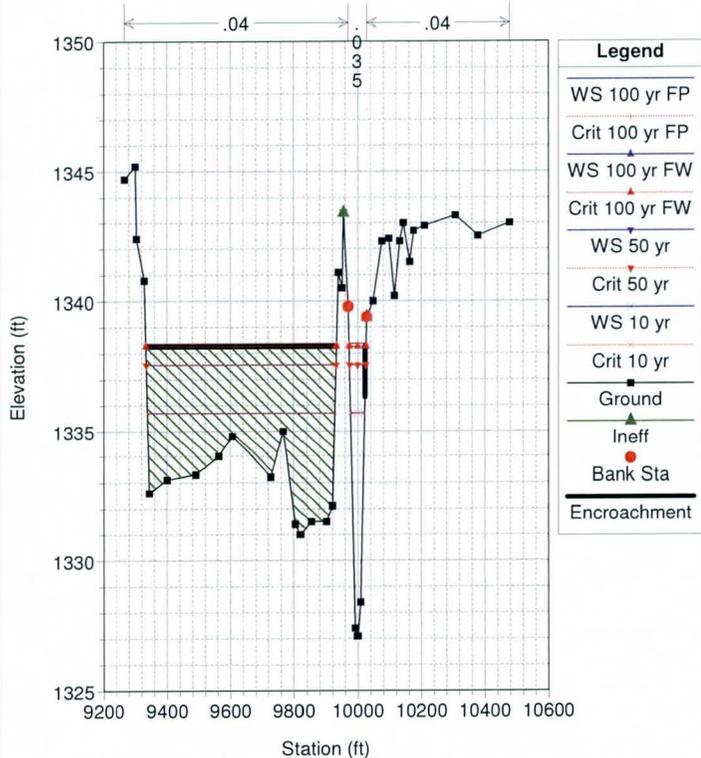


E.2.2: Corrected Effective Model

Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

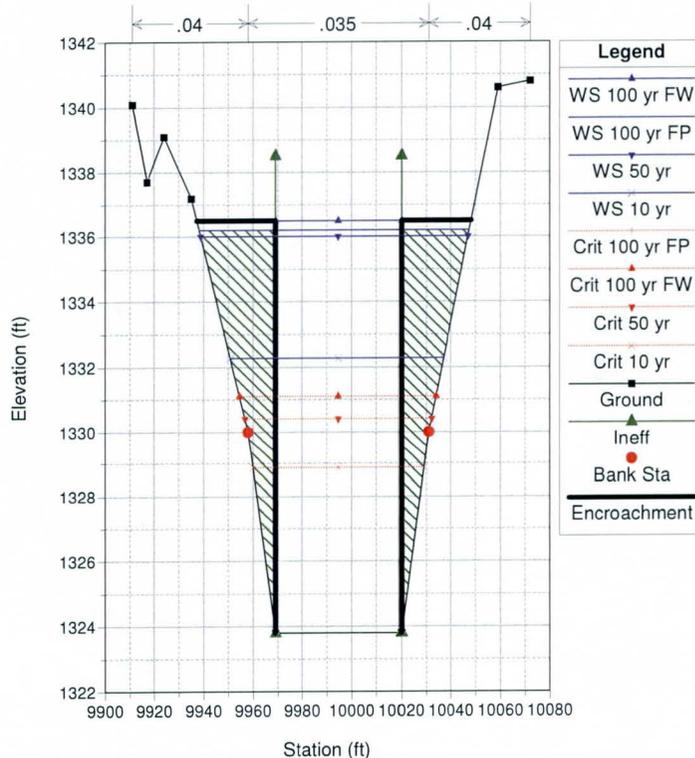
River = Cave Creek Reach = Upstream RS = 20.049 FEMA XS: X WORK MAP XS ID: BQ



Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

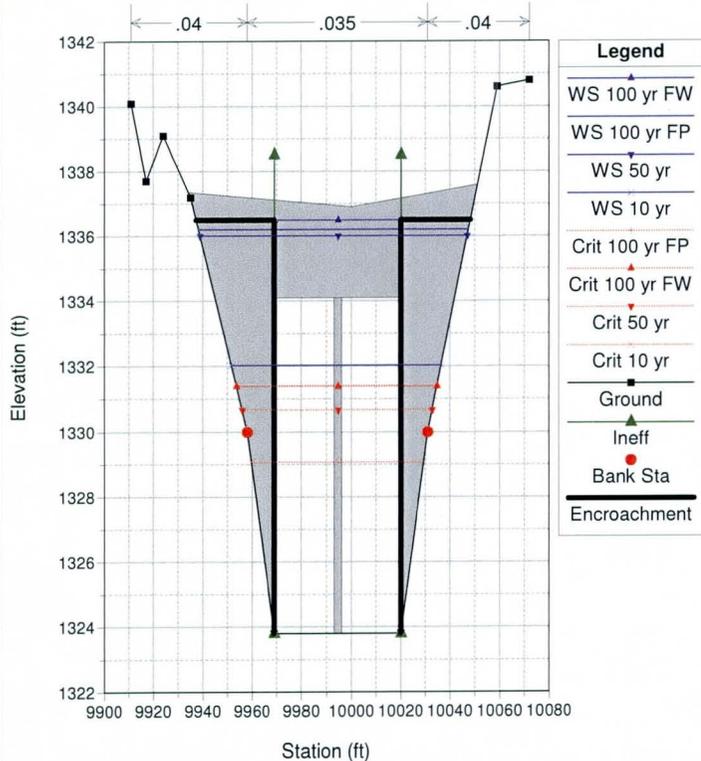
River = Cave Creek Reach = Upstream RS = 19.986 NEW SECTION ADDED SINCE FIS



Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

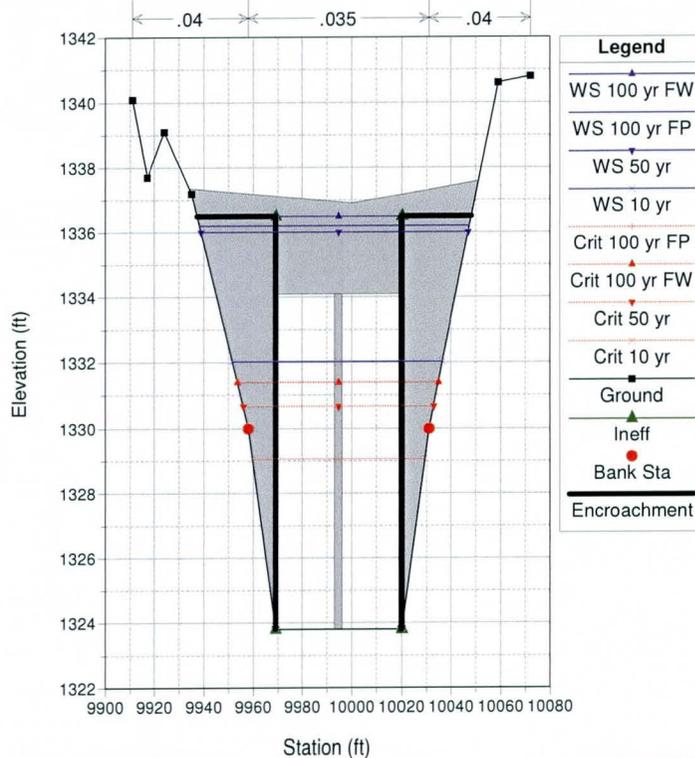
River = Cave Creek Reach = Upstream RS = 19.980 BR Bridge #6

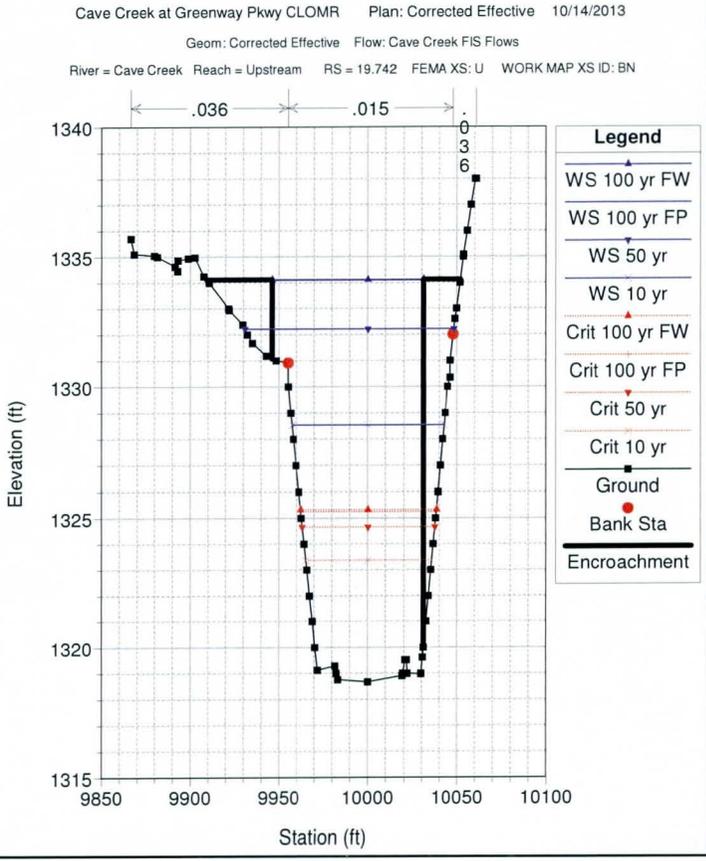
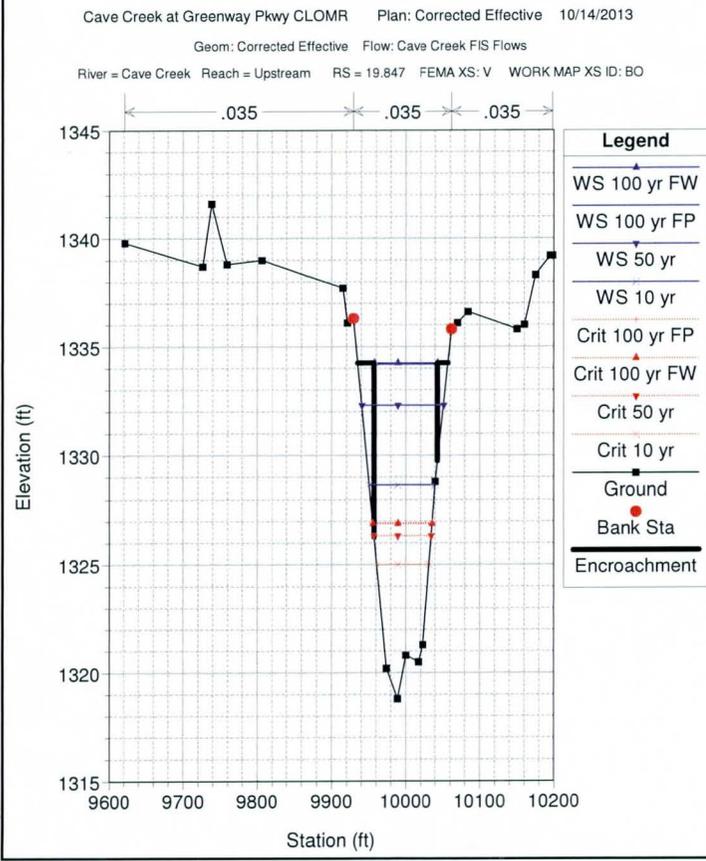
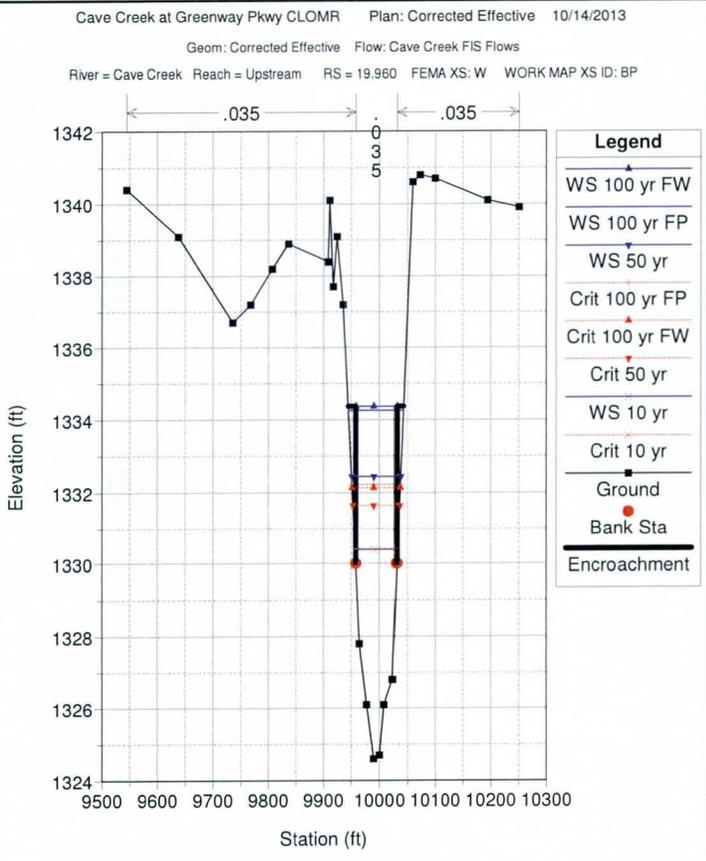
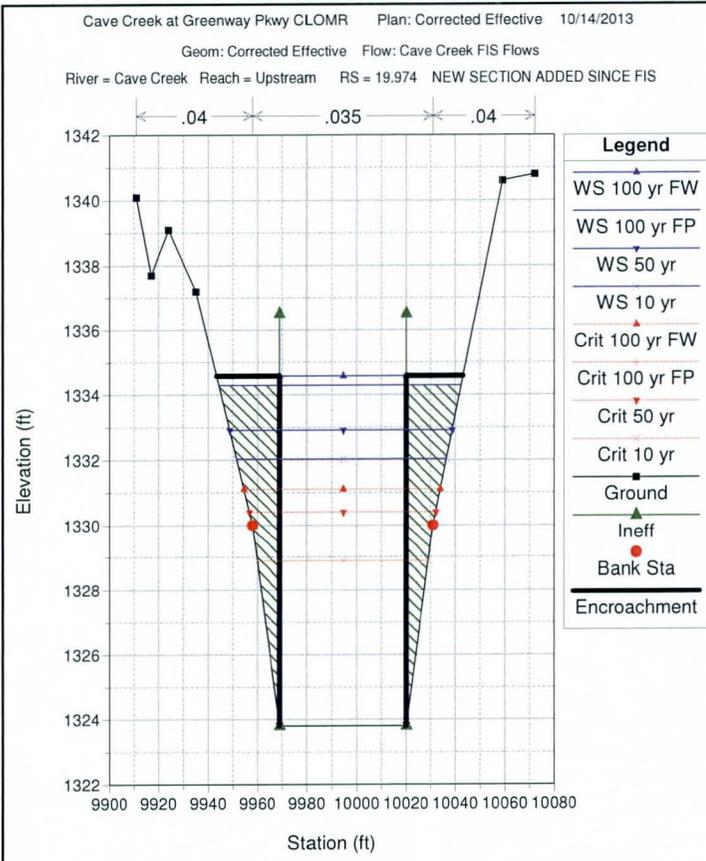


Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

River = Cave Creek Reach = Upstream RS = 19.980 BR Bridge #6

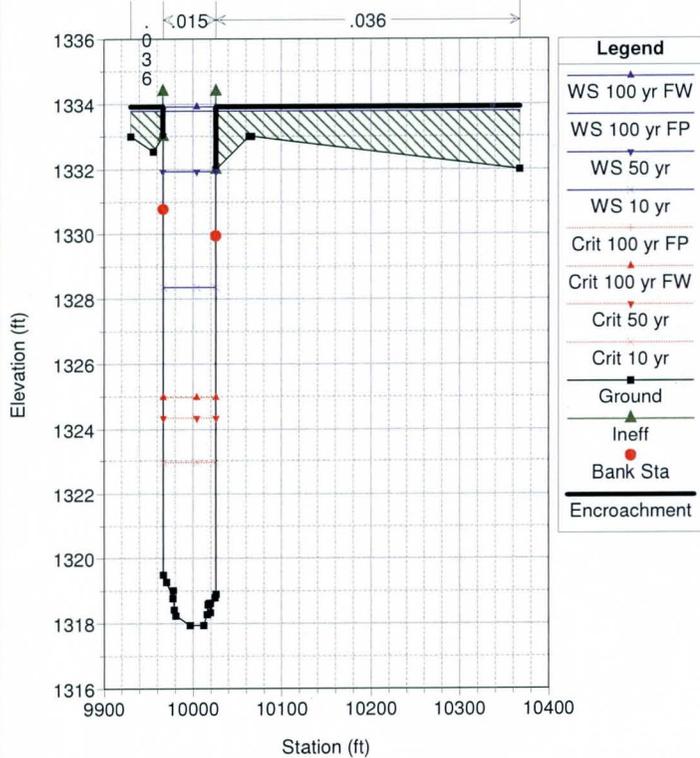




Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

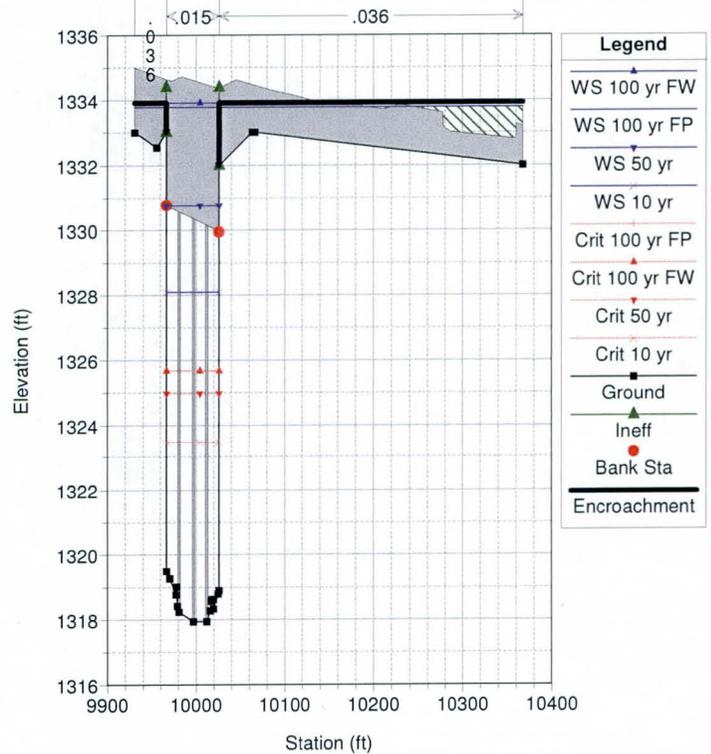
River = Cave Creek Reach = Upstream RS = 19.691 NEW SECTION ADDED SINCE FIS



Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

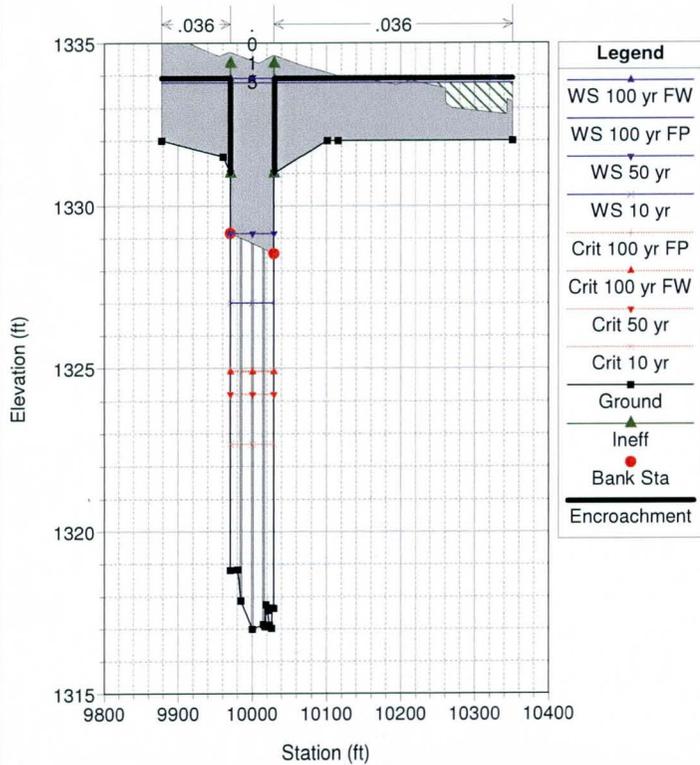
River = Cave Creek Reach = Upstream RS = 19.658 BR Existing Greenway Bridge across Cave Creek. Bridge geometry is



Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

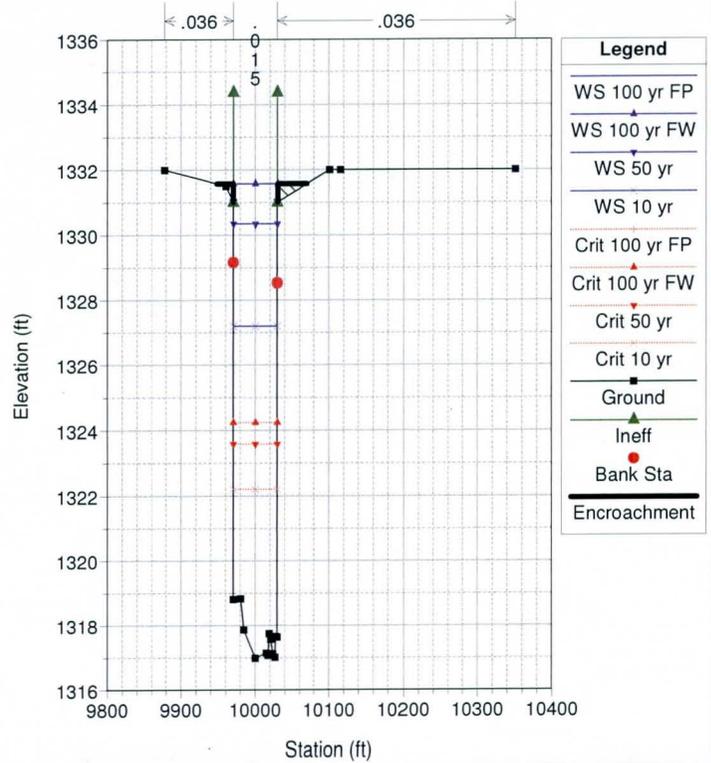
River = Cave Creek Reach = Upstream RS = 19.658 BR Existing Greenway Bridge across Cave Creek. Bridge geometry is

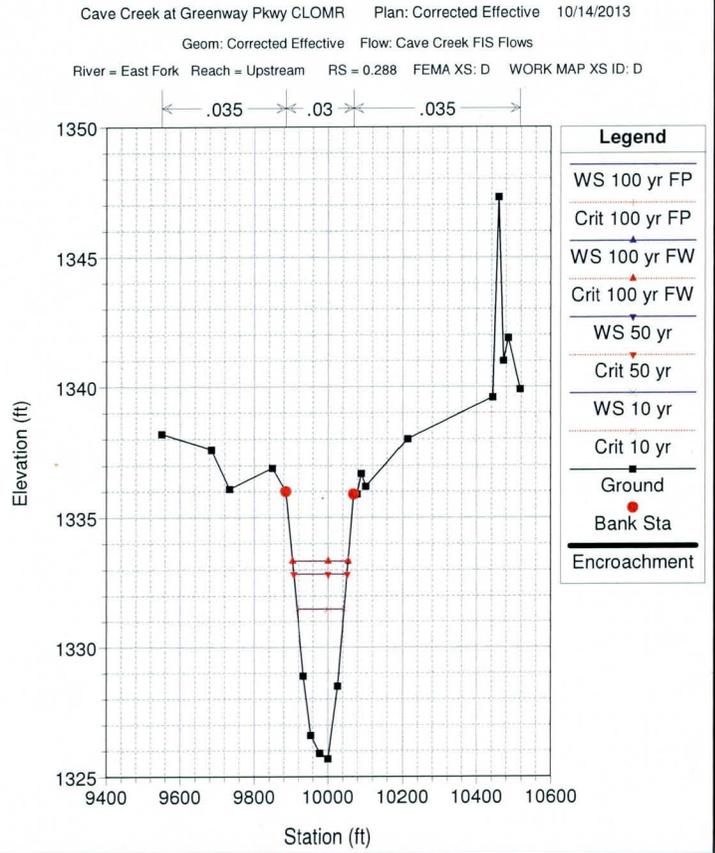
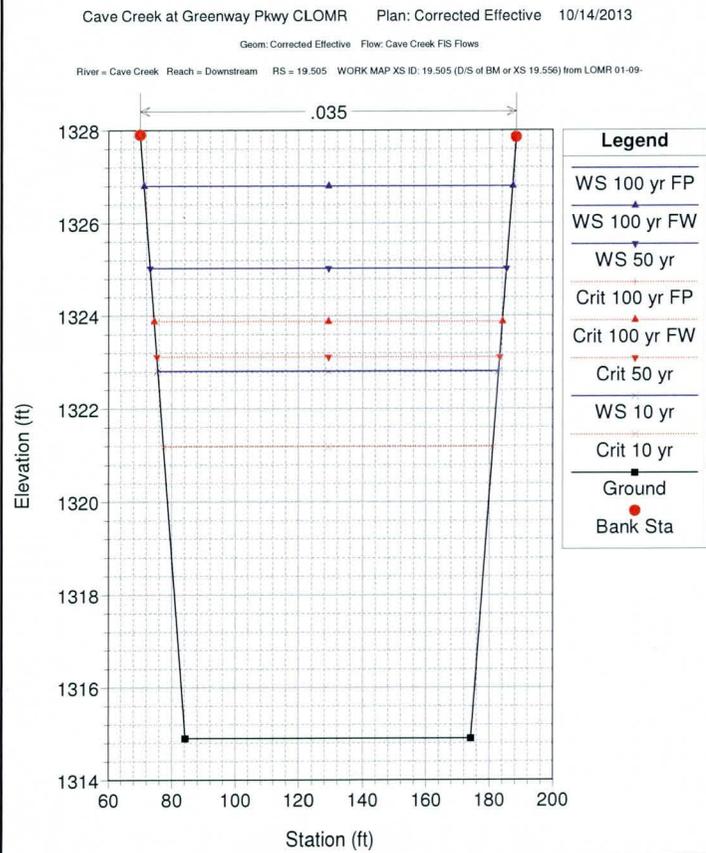
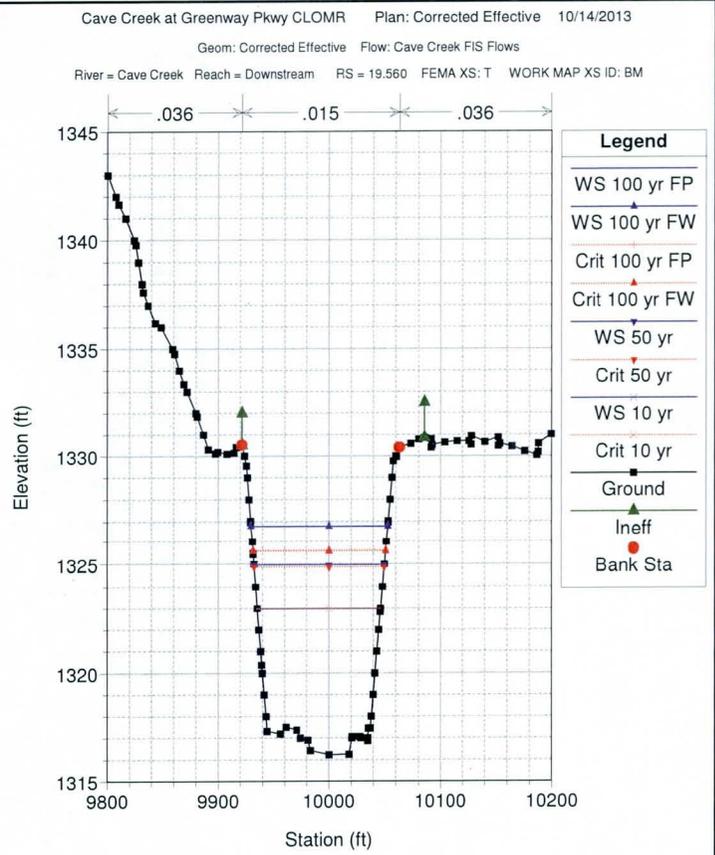
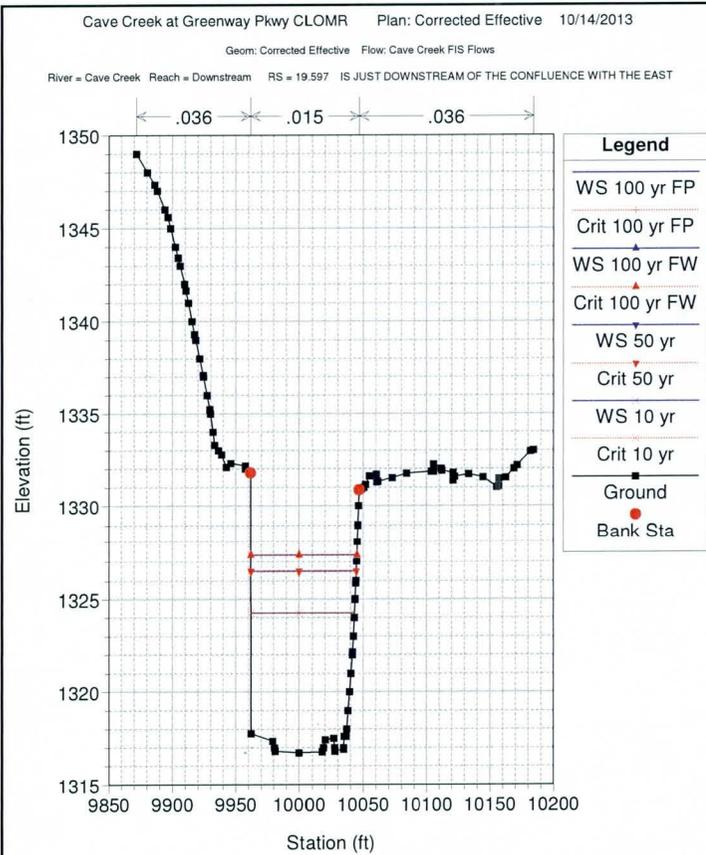


Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

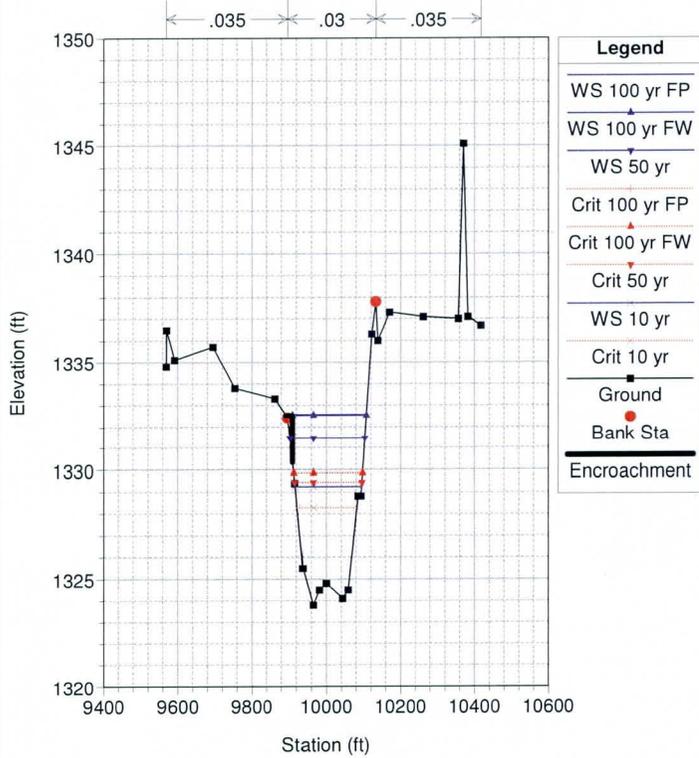
River = Cave Creek Reach = Upstream RS = 19.625 NEW SECTION ADDED SINCE FIS





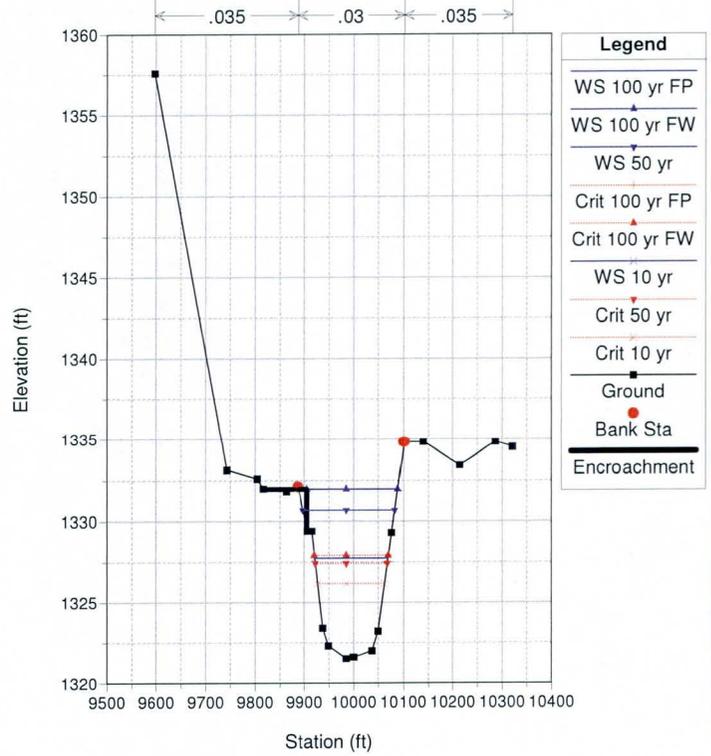
Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows
 River = East Fork Reach = Upstream RS = 0.198 FEMA XS: C WORK MAP XS ID: C



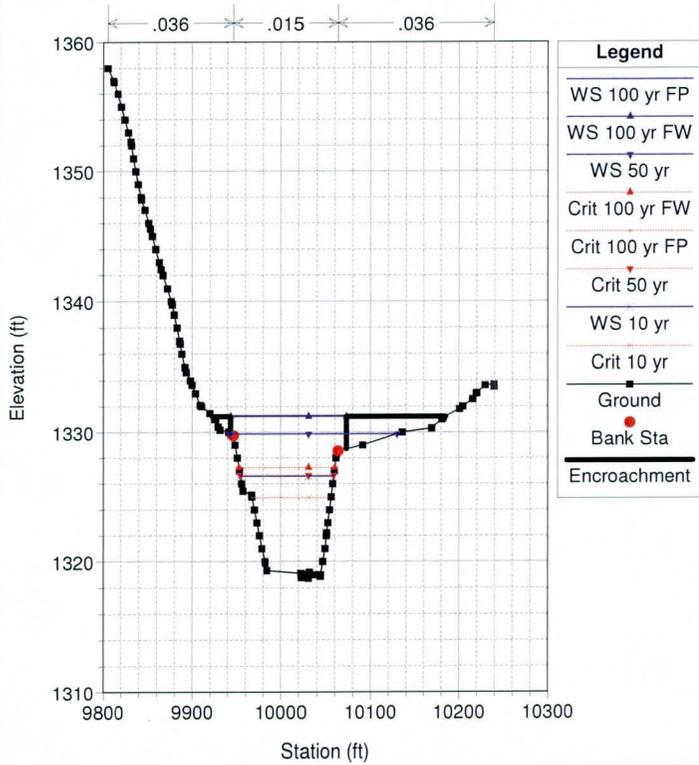
Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows
 River = East Fork Reach = Upstream RS = 0.112 FEMA XS: B WORK MAP XS ID: B



Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows
 River = East Fork Reach = Upstream RS = 0.029 FEMA XS: A WORK MAP XS ID: A

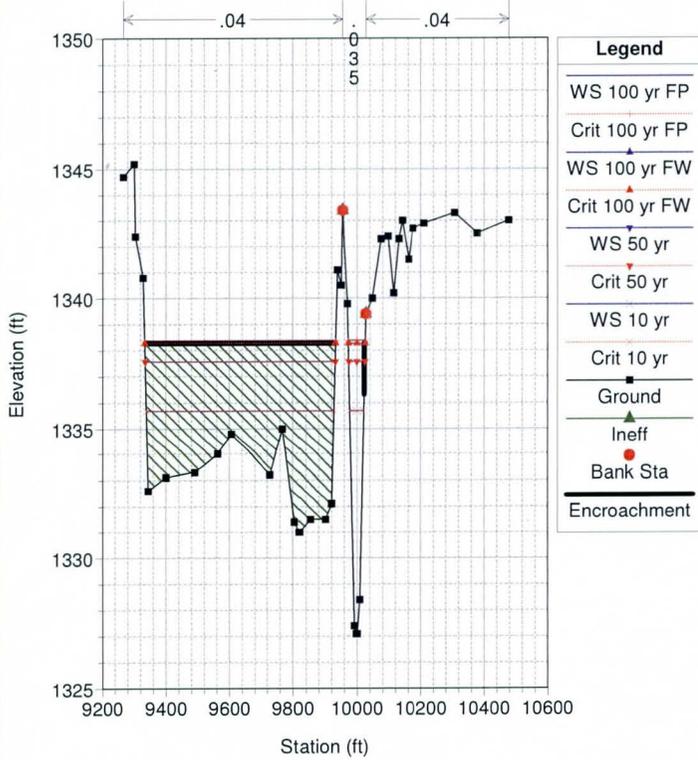


E.2.3: Post-Project Model

Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

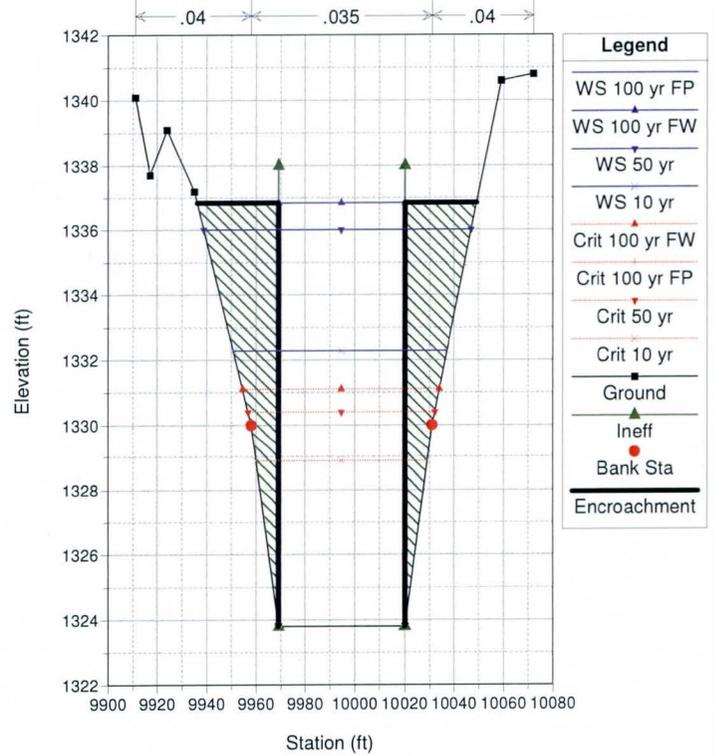
River = Cave Creek Reach = Upstream RS = 20.049 FEMA XS: X WORK MAP XS ID: BQ



Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

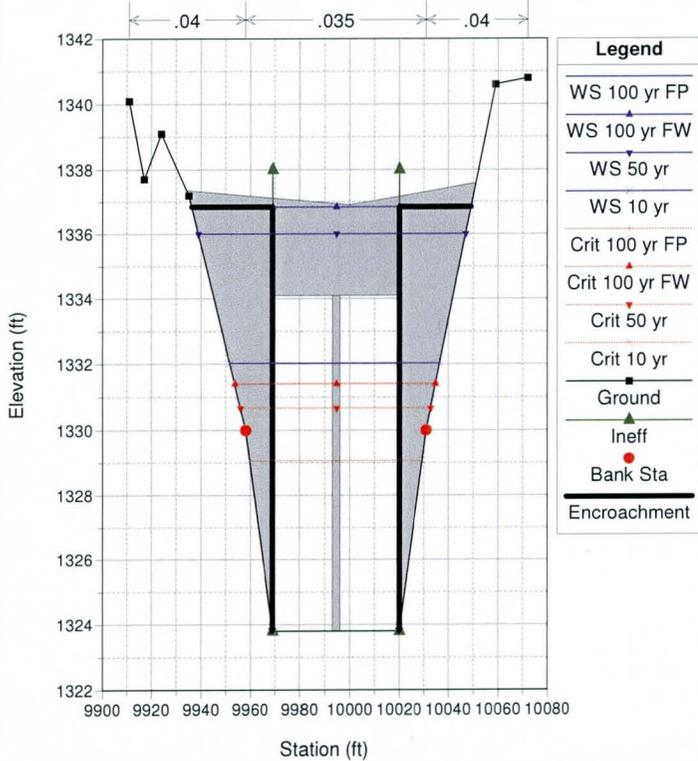
River = Cave Creek Reach = Upstream RS = 19.986 NEW SECTION ADDED SINCE FIS



Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

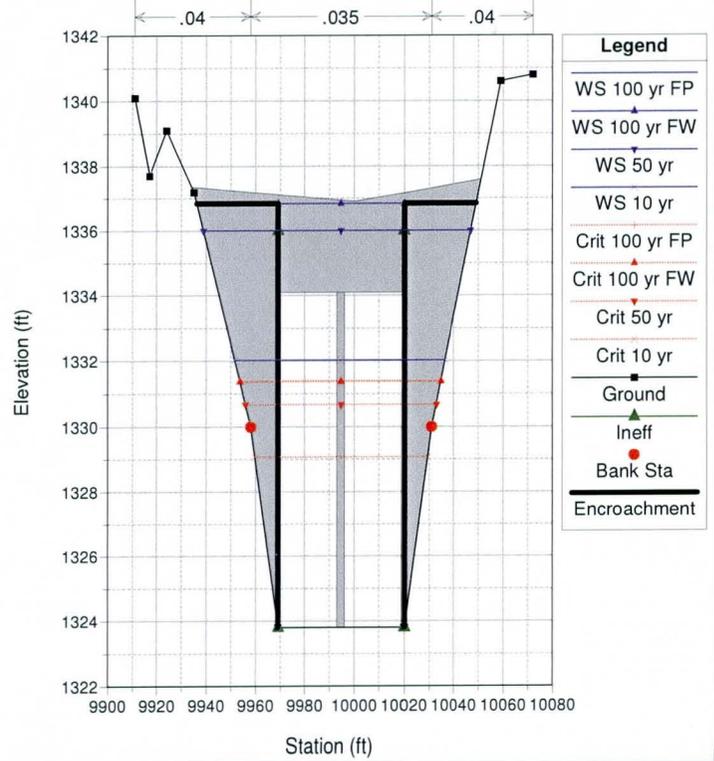
River = Cave Creek Reach = Upstream RS = 19.980 BR Bridge #6

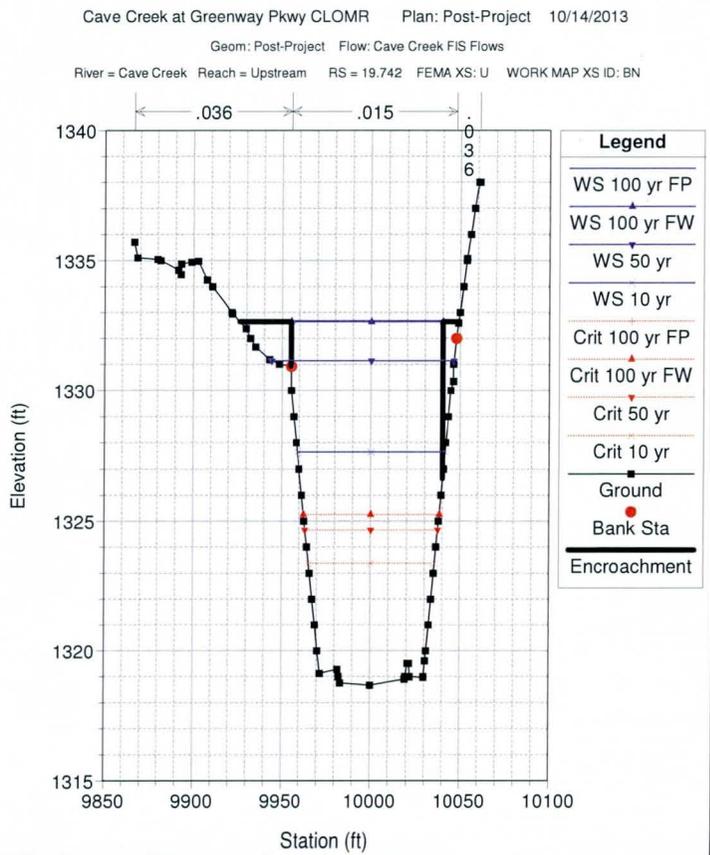
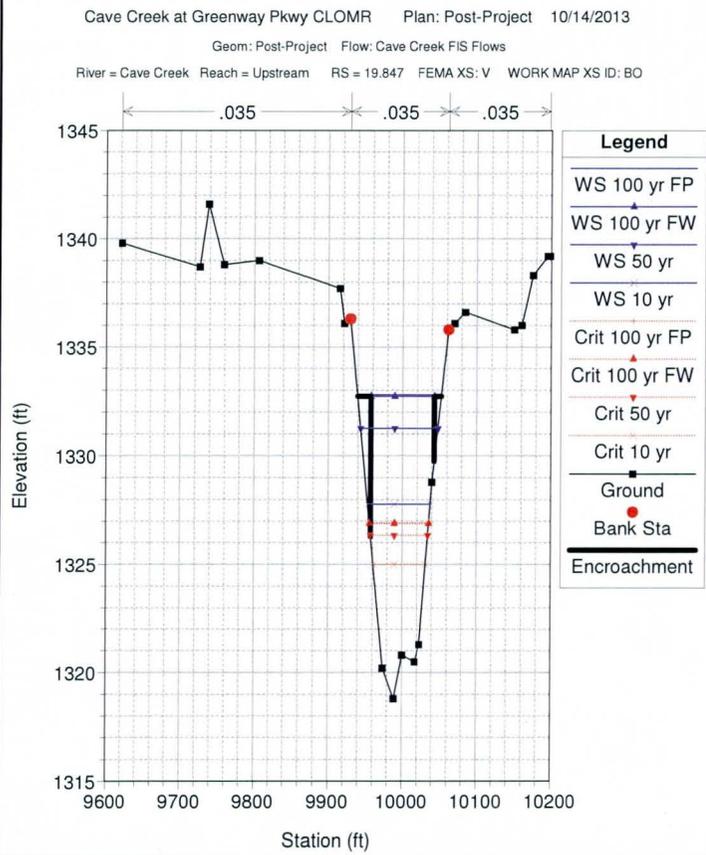
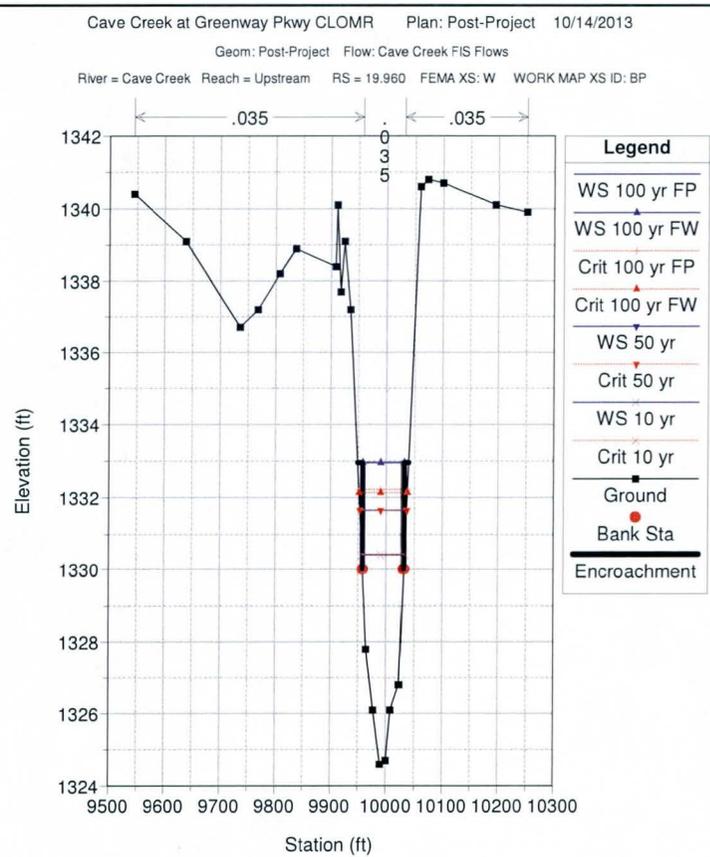
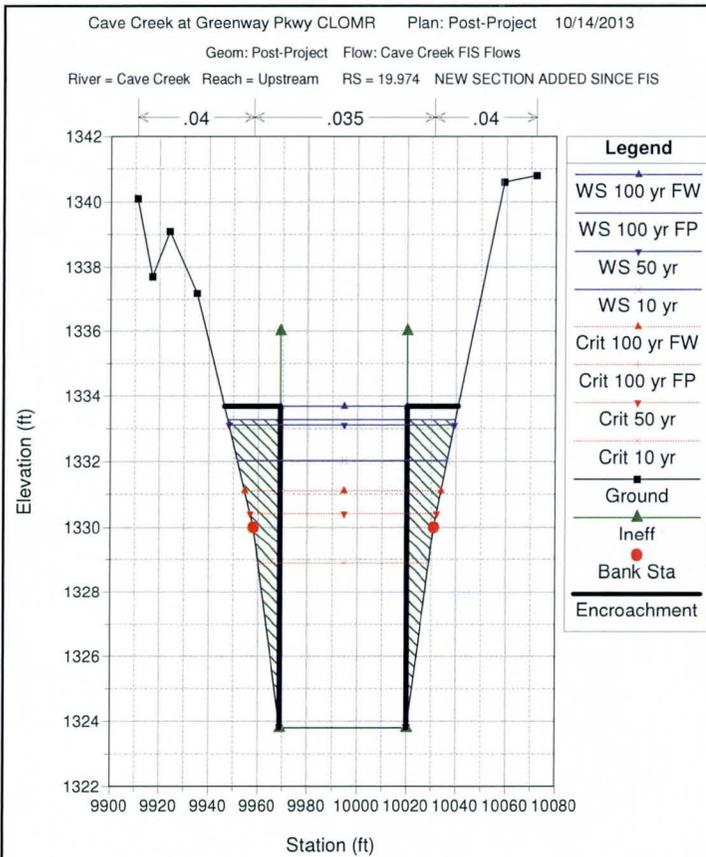


Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

River = Cave Creek Reach = Upstream RS = 19.980 BR Bridge #6

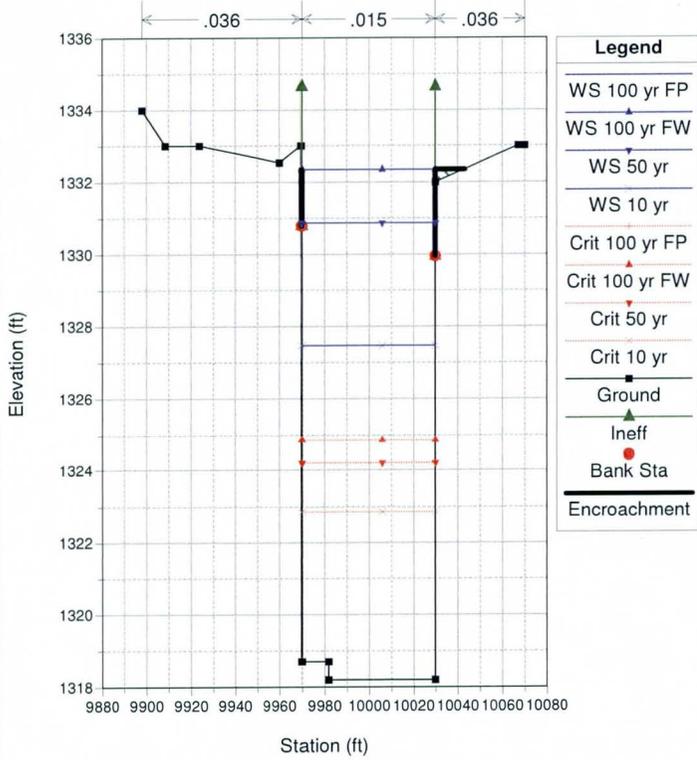




Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

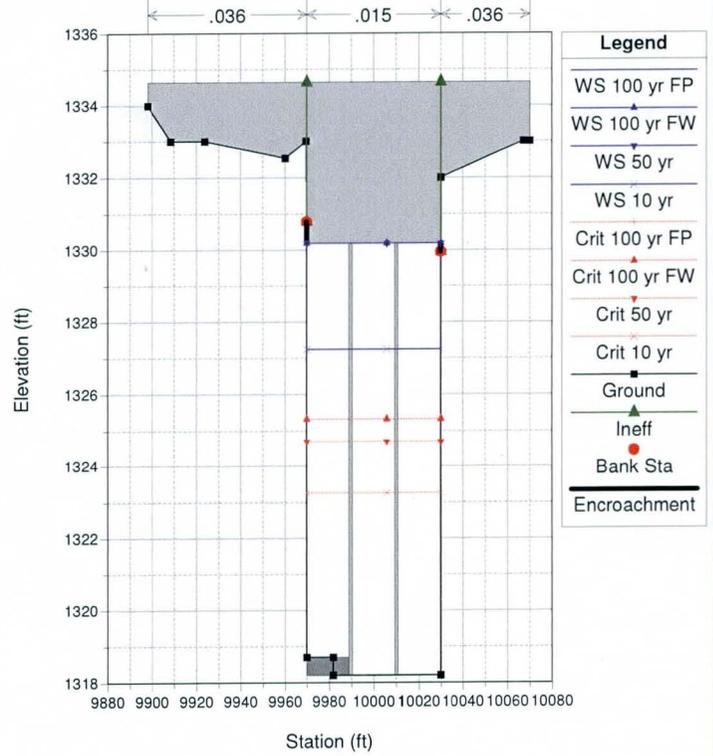
River = Cave Creek Reach = Upstream RS = 19.691 NEW SECTION ADDED SINCE FIS



Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

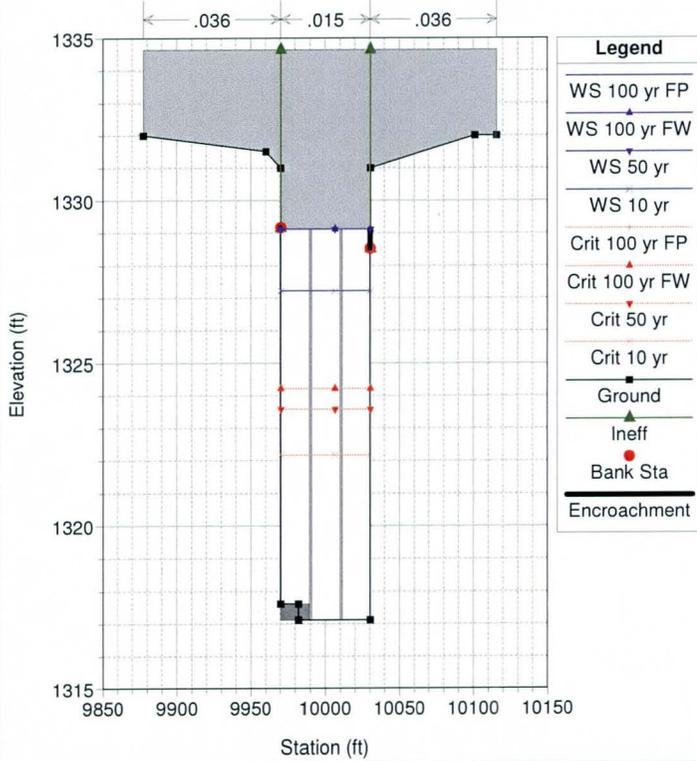
River = Cave Creek Reach = Upstream RS = 19.658 Culv



Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

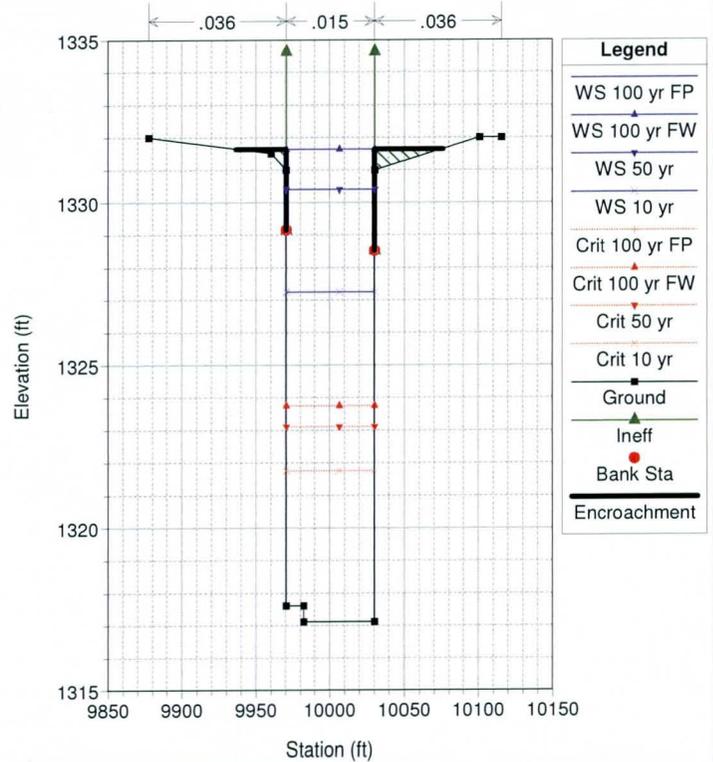
River = Cave Creek Reach = Upstream RS = 19.658 Culv

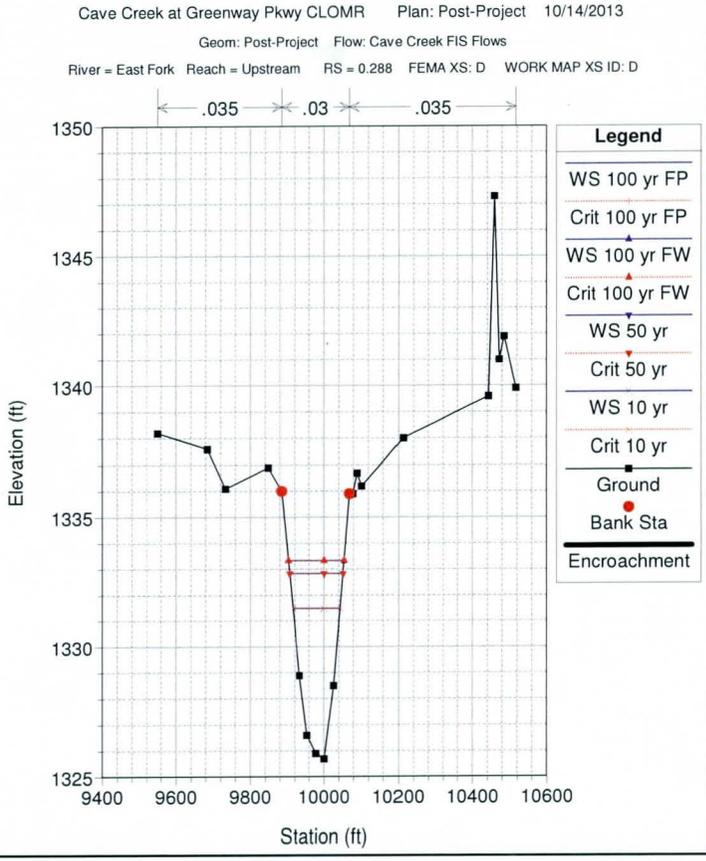
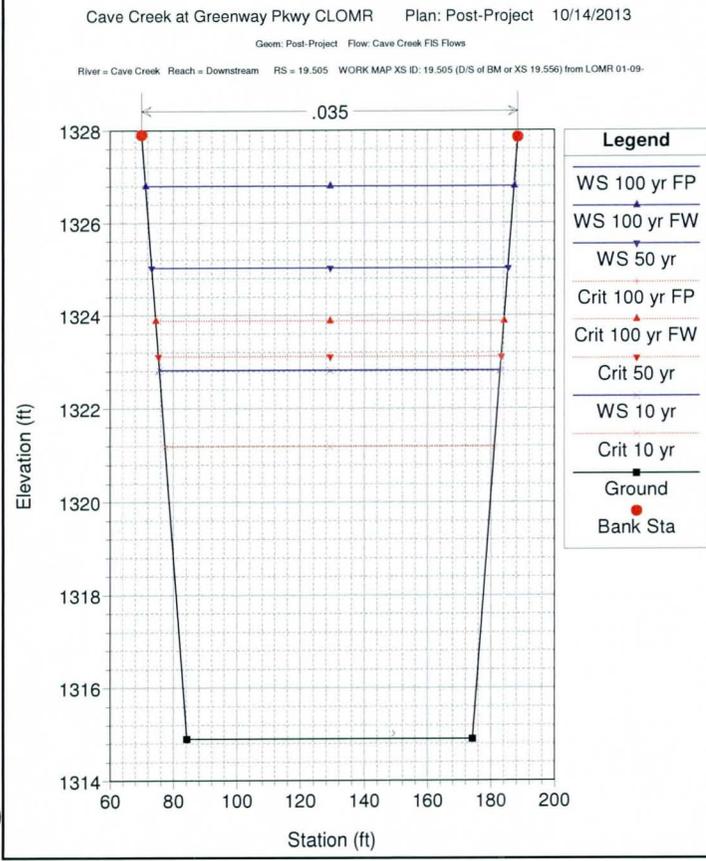
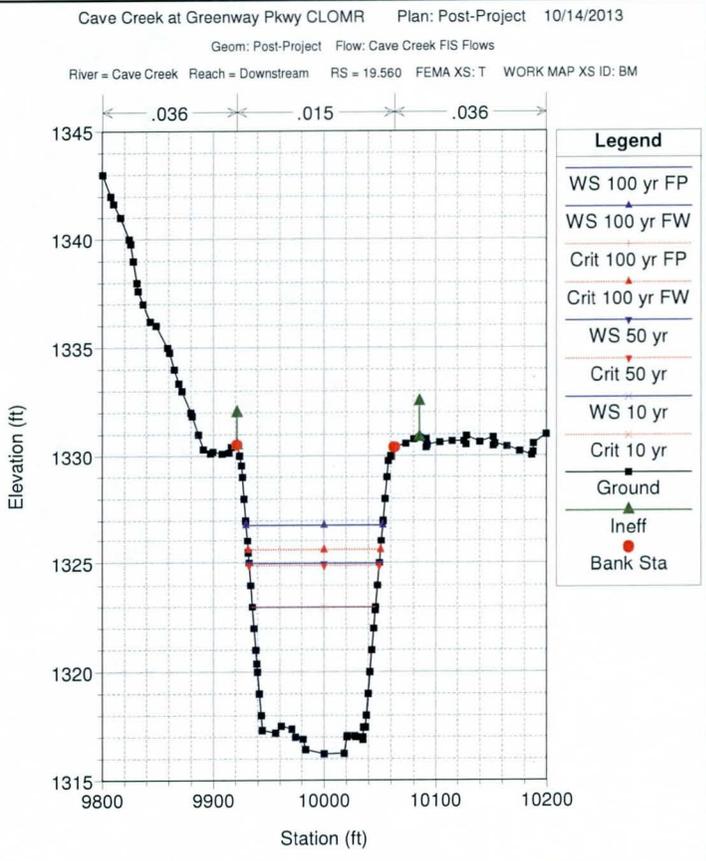
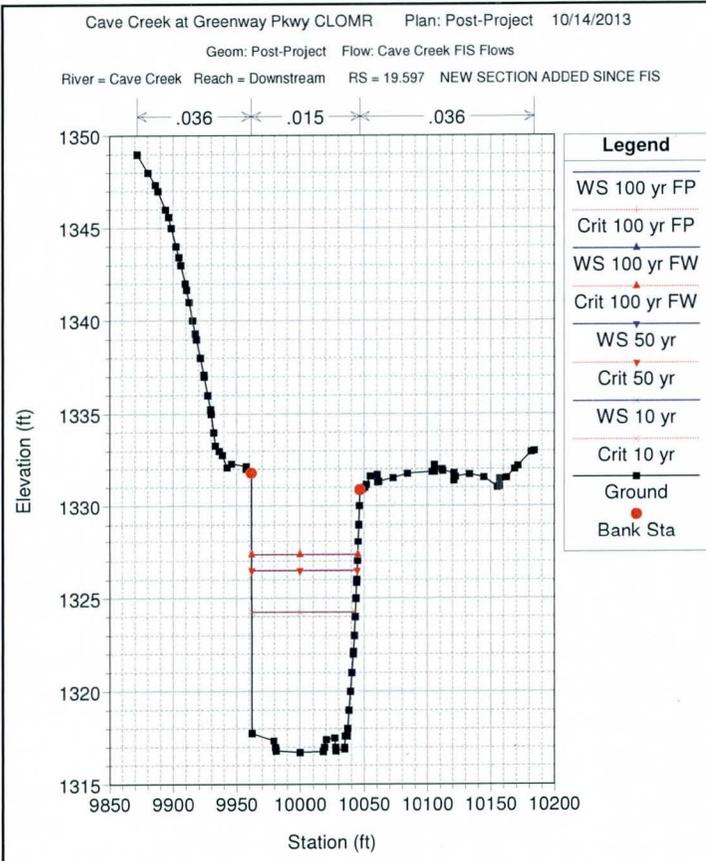


Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

River = Cave Creek Reach = Upstream RS = 19.625 NEW SECTION ADDED SINCE FIS

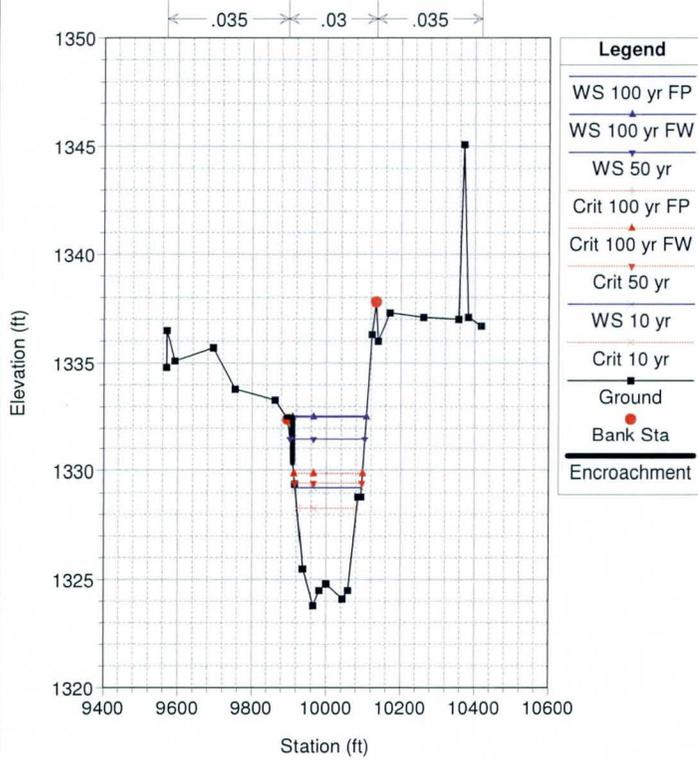




Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

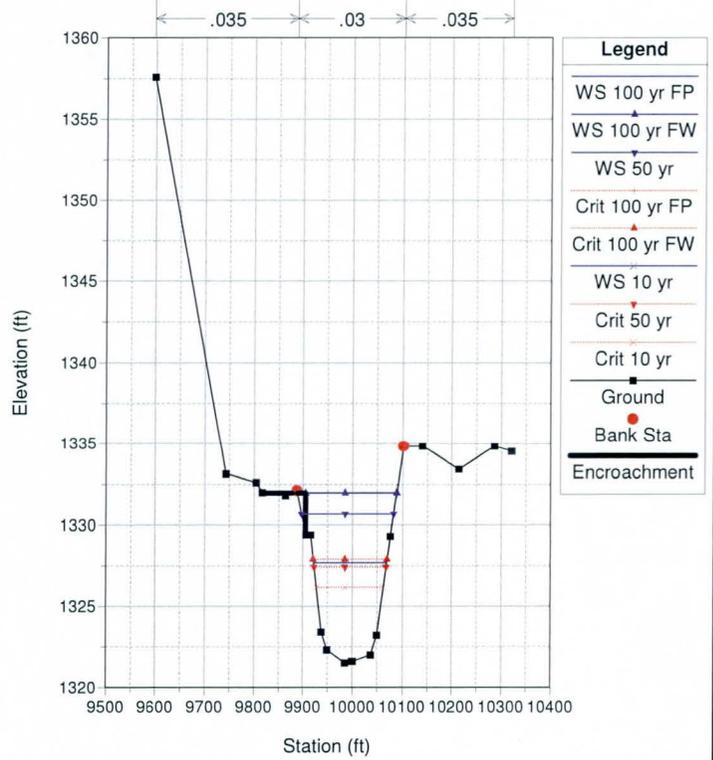
River = East Fork Reach = Upstream RS = 0.198 FEMA XS: C WORK MAP XS ID: C



Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

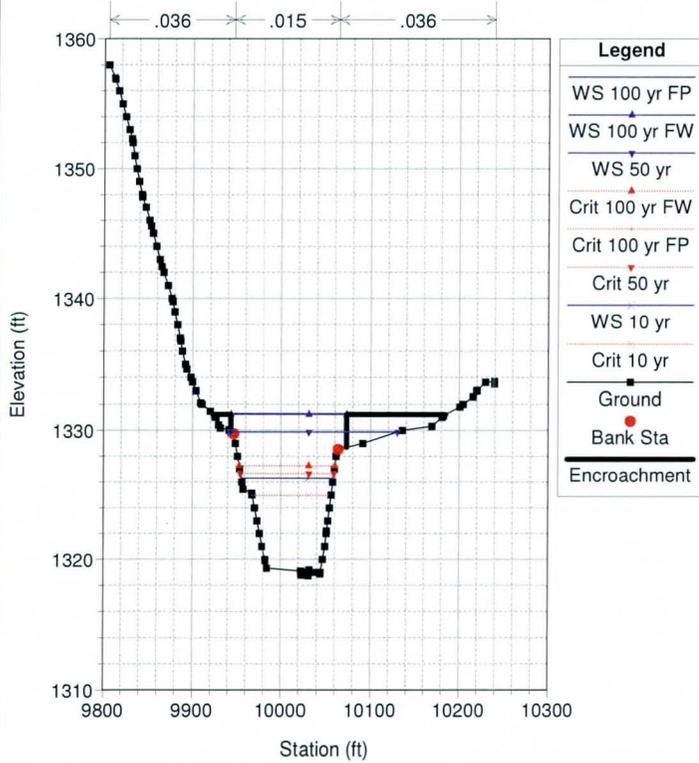
River = East Fork Reach = Upstream RS = 0.112 FEMA XS: B WORK MAP XS ID: B



Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

River = East Fork Reach = Upstream RS = 0.029 FEMA XS: A WORK MAP XS ID: A



E.3: EXPANSION AND CONTRACTION COEFFICIENTS

There were no special data or calibration efforts made for estimation of expansion and contraction coefficients.

E.4: ANALYSIS OF STRUCTURES

There was no separate hydraulic modeling of structures used to estimate control data for floodplain delineation calculations.

E.5: HYDRAULIC CALCULATIONS

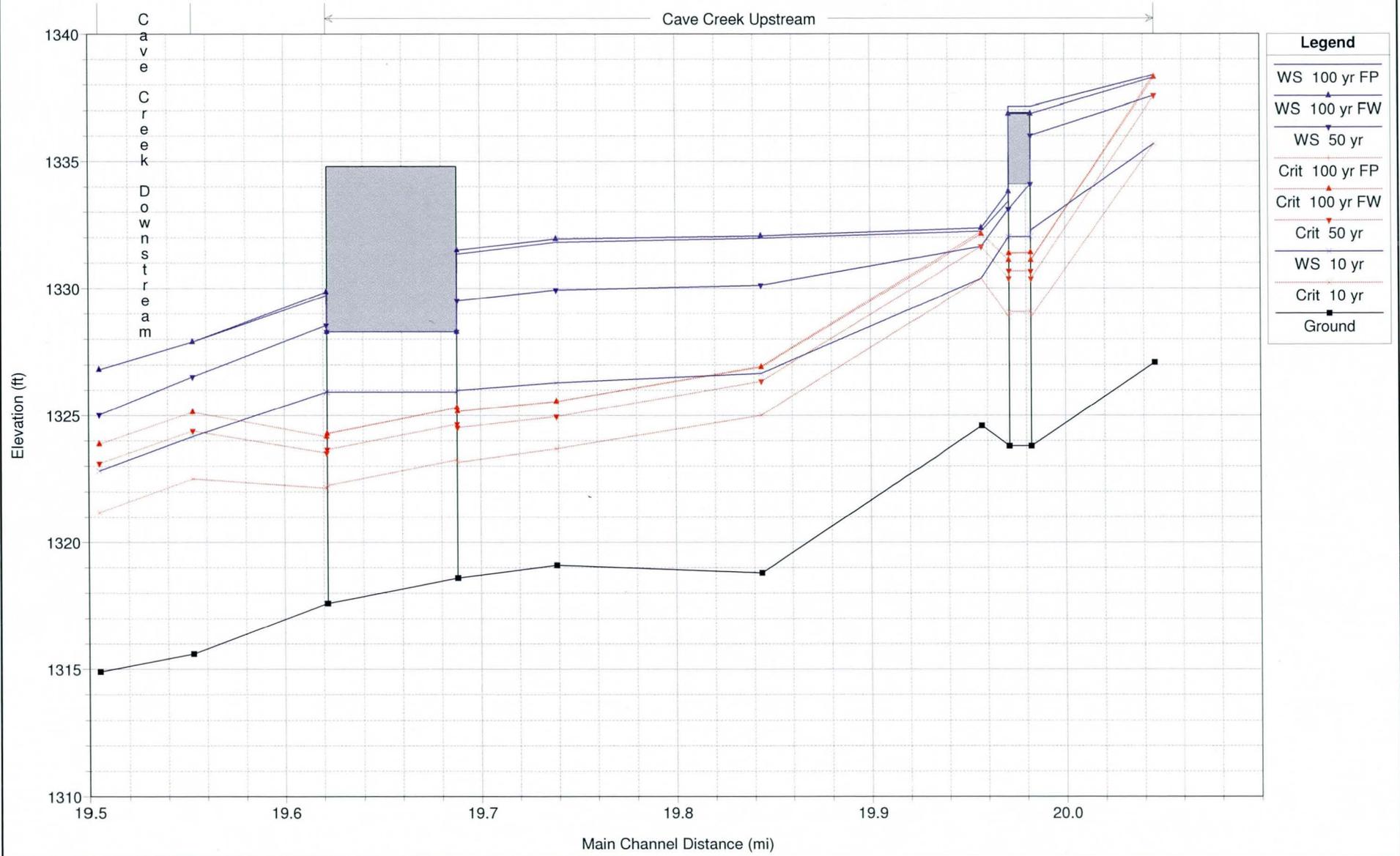
E.5.1: Duplicate Effective Model

The Duplicate Effective HEC-RAS model is based on the following HEC-2 models obtained from FEMA on October 8, 2013 (see Appendix A and DVD):

1. Cavefema.dat - This is the overall HEC-2 model for Cave Creek which was updated on 1/26/90 by Burgess & Niple for the FCDMC.
2. Rdesign.dat – This HEC-2 model for Cave Creek is for the reach between 19th Avenue and Greenway Parkway. This HEC-2 model was based on the Cavefema.dat model. The cross-sections were updated for channelization of Greenway Parkway into a trapezoidal channel. This HEC-2 model was prepared in November 16, 2001 by Michael Baker Jr. Only a hardcopy pdf file was provided by FEMA for this HEC-2 model.

Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013

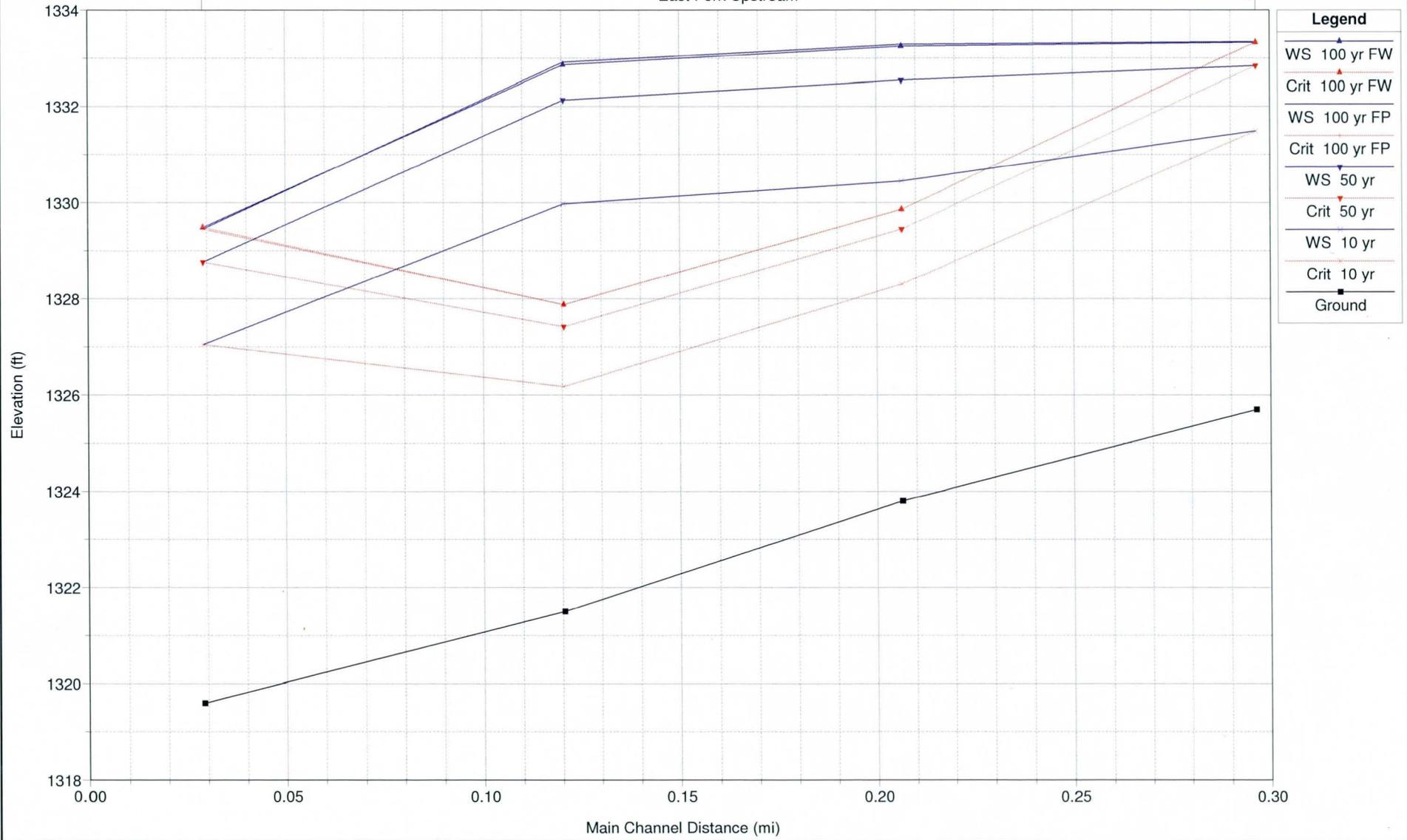
Geom: Duplicate Effective Flow: Duplicate Effective Flows



Cave Creek at Greenway Pkwy CLOMR Plan: Duplicate Effective 10/14/2013

Geom: Duplicate Effective Flow: Duplicate Effective Flows

East Fork Upstream



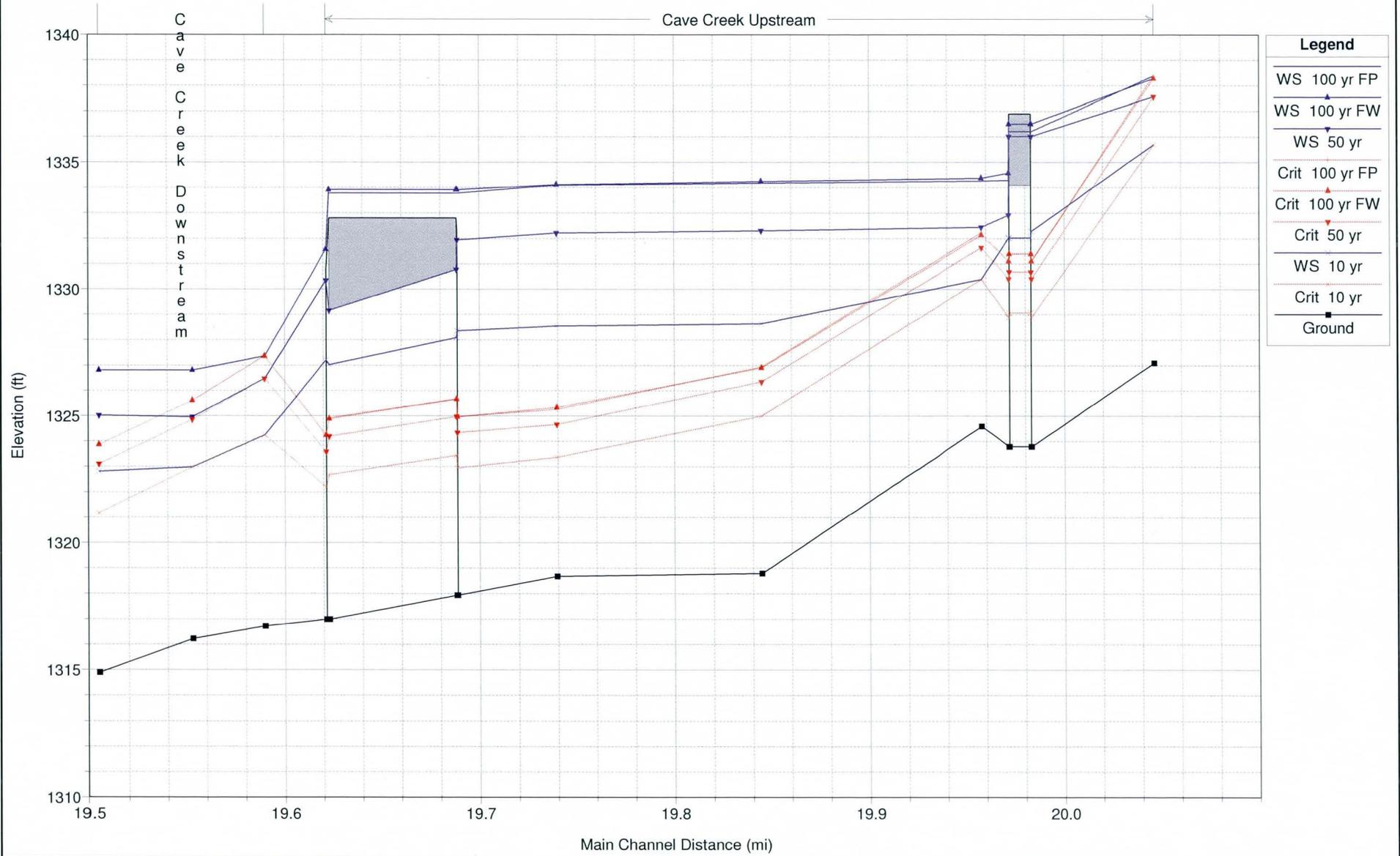
HEC-RAS Plan: DupEffective

River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
East Fork	Upstream	0.288	100 yr FP	9500.00	1325.70	1333.34	1333.34	1335.83	0.007771	12.65	750.84	151.18	1.00
East Fork	Upstream	0.288	100 yr FW	9500.00	1325.70	1333.33	1333.33	1335.83	0.007812	12.68	749.26	150.97	1.00
East Fork	Upstream	0.288	50 yr	8300.00	1325.70	1332.84	1332.84	1335.18	0.007931	12.27	676.47	144.86	1.00
East Fork	Upstream	0.288	10 yr	5500.00	1325.70	1331.50	1331.50	1333.43	0.008464	11.16	492.99	127.96	1.00
East Fork	Upstream	0.198	100 yr FP	9500.00	1323.80	1333.29	1329.86	1333.92	0.001252	6.37	1504.42	247.02	0.42
East Fork	Upstream	0.198	100 yr FW	9500.00	1323.80	1333.25	1329.86	1333.91	0.001264	6.52	1456.67	200.00	0.43
East Fork	Upstream	0.198	50 yr	8300.00	1323.80	1332.55	1329.45	1333.15	0.001367	6.23	1331.79	215.97	0.44
East Fork	Upstream	0.198	10 yr	5500.00	1323.80	1330.45	1328.31	1331.02	0.001849	6.03	911.52	190.06	0.49
East Fork	Upstream	0.112	100 yr FP	9500.00	1321.50	1332.92	1327.89	1333.42	0.000838	5.71	1734.32	327.44	0.36
East Fork	Upstream	0.112	100 yr FW	9500.00	1321.50	1332.87	1327.89	1333.41	0.000850	5.93	1601.65	187.00	0.36
East Fork	Upstream	0.112	50 yr	8300.00	1321.50	1332.14	1327.43	1332.62	0.000891	5.57	1505.55	275.60	0.36
East Fork	Upstream	0.112	10 yr	5500.00	1321.50	1329.98	1326.19	1330.38	0.000959	5.09	1080.79	177.16	0.36
East Fork	Upstream	0.029	100 yr FP	9500.00	1319.60	1329.45	1329.45	1332.59	0.001739	14.25	685.38	133.47	0.98
East Fork	Upstream	0.029	100 yr FW	9500.00	1319.60	1329.49	1329.49	1332.59	0.001701	14.17	689.87	130.54	0.97
East Fork	Upstream	0.029	50 yr	8300.00	1319.60	1328.77	1328.77	1331.77	0.001844	13.89	601.33	113.11	0.99
East Fork	Upstream	0.029	10 yr	5500.00	1319.60	1327.05	1327.05	1329.53	0.002012	12.62	435.91	88.83	1.00
Cave Creek	Upstream	20.049	100 yr FP	5700.00	1327.10	1338.39	1338.39	1341.90	0.010596	15.03	379.17	653.63	1.00
Cave Creek	Upstream	20.049	100 yr FW	5700.00	1327.10	1338.28	1338.28	1341.96	0.010841	15.39	370.42	50.00	1.00
Cave Creek	Upstream	20.049	50 yr	4900.00	1327.10	1337.57	1337.57	1340.87	0.010817	14.57	336.38	647.54	1.00
Cave Creek	Upstream	20.049	10 yr	3300.00	1327.10	1335.70	1335.70	1338.47	0.011314	13.36	247.07	633.56	1.00
Cave Creek	Upstream	19.986	100 yr FP	5700.00	1323.80	1337.14	1331.11	1337.72	0.000771	6.63	1054.62	114.68	0.32
Cave Creek	Upstream	19.986	100 yr FW	5700.00	1323.80	1336.86	1331.11	1337.99	0.002295	8.56	665.83	51.00	0.42
Cave Creek	Upstream	19.986	50 yr	4900.00	1323.80	1336.01	1330.38	1336.97	0.001221	7.87	622.80	108.08	0.40
Cave Creek	Upstream	19.986	10 yr	3300.00	1323.80	1332.29	1328.88	1333.19	0.001865	7.63	432.72	86.33	0.46
Cave Creek	Upstream	19.980		Bridge									
Cave Creek	Upstream	19.974	100 yr FP	5700.00	1323.80	1333.41	1331.11	1335.51	0.003671	11.63	490.18	92.91	0.66
Cave Creek	Upstream	19.974	100 yr FW	5700.00	1323.80	1333.80	1331.11	1335.74	0.005001	11.18	509.98	51.00	0.62
Cave Creek	Upstream	19.974	50 yr	4900.00	1323.80	1333.11	1330.39	1334.76	0.003018	10.32	474.78	91.15	0.60
Cave Creek	Upstream	19.974	10 yr	3300.00	1323.80	1332.03	1328.88	1332.99	0.002066	7.86	419.59	84.83	0.48
Cave Creek	Upstream	19.960	100 yr FP	5700.00	1324.60	1332.25	1332.23	1334.93	0.009403	13.20	441.67	86.10	0.96
Cave Creek	Upstream	19.960	100 yr FW	5700.00	1324.60	1332.37	1332.14	1335.02	0.009733	13.07	436.04	73.00	0.94
Cave Creek	Upstream	19.960	50 yr	4900.00	1324.60	1331.65	1331.65	1334.14	0.010049	12.70	391.37	82.62	0.98
Cave Creek	Upstream	19.960	10 yr	3300.00	1324.60	1330.39	1330.39	1332.38	0.011481	11.31	292.06	75.28	1.00
Cave Creek	Upstream	19.847	100 yr FP	5700.00	1318.80	1331.98	1326.94	1332.59	0.001364	6.28	908.10	108.93	0.38
Cave Creek	Upstream	19.847	100 yr FW	5700.00	1318.80	1332.07	1326.91	1332.74	0.001321	6.61	862.06	86.00	0.37
Cave Creek	Upstream	19.847	50 yr	4900.00	1318.80	1330.13	1326.35	1330.86	0.001921	6.84	716.70	97.94	0.45
Cave Creek	Upstream	19.847	10 yr	3300.00	1318.80	1326.65	1325.01	1327.66	0.004185	8.05	409.99	79.17	0.62
Cave Creek	Upstream	19.742	100 yr FP	5700.00	1319.10	1331.83	1325.55	1332.36	0.000173	5.87	972.10	106.55	0.32
Cave Creek	Upstream	19.742	100 yr FW	5700.00	1319.10	1331.95	1325.55	1332.50	0.000170	5.92	962.37	85.00	0.31
Cave Creek	Upstream	19.742	50 yr	4900.00	1319.10	1329.94	1324.96	1330.53	0.000232	6.16	796.08	90.08	0.36
Cave Creek	Upstream	19.742	10 yr	3300.00	1319.10	1326.29	1323.70	1327.00	0.000453	6.79	485.71	79.67	0.48
Cave Creek	Upstream	19.691	100 yr FP	5700.00	1318.60	1331.35	1325.17	1332.22	0.000190	7.45	765.16	109.04	0.37
Cave Creek	Upstream	19.691	100 yr FW	5700.00	1318.60	1331.51	1325.17	1332.35	0.000294	7.36	774.62	60.00	0.36
Cave Creek	Upstream	19.691	50 yr	4900.00	1318.60	1329.52	1324.52	1330.39	0.000236	7.48	654.98	90.95	0.40
Cave Creek	Upstream	19.691	10 yr	3300.00	1318.60	1325.99	1323.15	1326.85	0.000393	7.45	443.17	80.94	0.48
Cave Creek	Upstream	19.658		Bridge									
Cave Creek	Upstream	19.625	100 yr FP	5700.00	1317.60	1329.73	1324.17	1330.68	0.000224	7.83	727.71	94.44	0.40
Cave Creek	Upstream	19.625	100 yr FW	5700.00	1317.60	1329.87	1324.17	1330.80	0.000341	7.75	735.92	60.00	0.39
Cave Creek	Upstream	19.625	50 yr	4900.00	1317.60	1328.55	1323.52	1329.41	0.000233	7.46	656.93	91.04	0.40
Cave Creek	Upstream	19.625	10 yr	3300.00	1317.60	1325.93	1322.15	1326.60	0.000263	6.61	499.58	83.61	0.40
Cave Creek	Downstream	19.560	100 yr FP	14600.00	1315.60	1327.90	1325.14	1329.96	0.003714	11.52	1267.30	128.59	0.65
Cave Creek	Downstream	19.560	100 yr FW	14600.00	1315.60	1327.90	1325.14	1329.96	0.003714	11.52	1267.30	128.59	0.65
Cave Creek	Downstream	19.560	50 yr	12700.00	1315.60	1326.52	1324.39	1328.62	0.004357	11.61	1093.52	124.10	0.69
Cave Creek	Downstream	19.560	10 yr	8400.00	1315.60	1324.17	1322.51	1325.84	0.004691	10.36	810.91	116.41	0.69
Cave Creek	Downstream	19.505	100 yr FP	14600.00	1314.90	1326.80	1323.88	1329.00	0.003759	11.91	1225.98	116.05	0.65
Cave Creek	Downstream	19.505	100 yr FW	14600.00	1314.90	1326.80	1323.88	1329.00	0.003759	11.91	1225.98	116.05	0.65
Cave Creek	Downstream	19.505	50 yr	12700.00	1314.90	1325.03	1323.11	1327.42	0.004901	12.41	1023.65	112.17	0.72
Cave Creek	Downstream	19.505	10 yr	8400.00	1314.90	1322.82	1321.18	1324.61	0.004901	10.75	781.05	107.33	0.70

E.5.2: Corrected Effective Model

Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

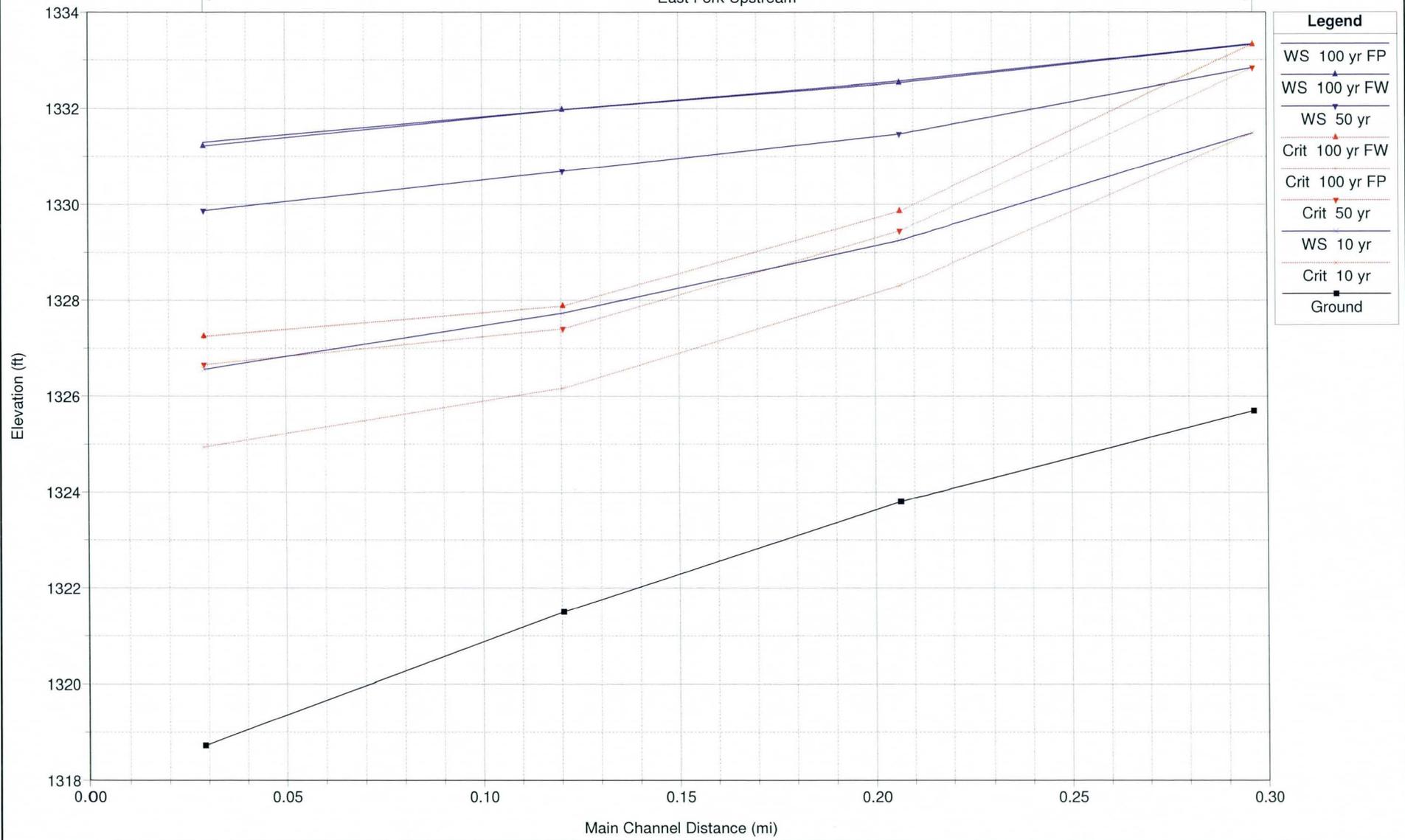
Geom: Corrected Effective Flow: Cave Creek FIS Flows



Cave Creek at Greenway Pkwy CLOMR Plan: Corrected Effective 10/14/2013

Geom: Corrected Effective Flow: Cave Creek FIS Flows

East Fork Upstream



HEC-RAS Plan: CorEffective

River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
East Fork	Upstream	0.288	100 yr FP	9500.00	1325.70	1333.34	1333.34	1335.83	0.007771	12.65	750.84	151.18	1.00
East Fork	Upstream	0.288	100 yr FW	9500.00	1325.70	1333.33	1333.33	1335.83	0.007812	12.68	749.24	150.97	1.00
East Fork	Upstream	0.288	50 yr	8300.00	1325.70	1332.84	1332.84	1335.18	0.007932	12.27	676.42	144.86	1.00
East Fork	Upstream	0.288	10 yr	5500.00	1325.70	1331.50	1331.50	1333.43	0.008466	11.16	492.96	127.95	1.00
East Fork	Upstream	0.198	100 yr FP	9500.00	1323.80	1332.56	1329.86	1333.35	0.001775	7.12	1335.51	216.69	0.50
East Fork	Upstream	0.198	100 yr FW	9500.00	1323.80	1332.53	1329.86	1333.34	0.001747	7.24	1312.88	197.42	0.49
East Fork	Upstream	0.198	50 yr	8300.00	1323.80	1331.47	1329.45	1332.34	0.002346	7.48	1110.01	200.43	0.56
East Fork	Upstream	0.198	10 yr	5500.00	1323.80	1329.25	1328.31	1330.24	0.004264	7.96	690.66	177.96	0.71
East Fork	Upstream	0.112	100 yr FP	9500.00	1321.50	1331.98	1327.89	1332.64	0.001240	6.51	1464.69	258.43	0.43
East Fork	Upstream	0.112	100 yr FW	9500.00	1321.50	1331.98	1327.89	1332.66	0.001179	6.61	1437.15	183.17	0.42
East Fork	Upstream	0.112	50 yr	8300.00	1321.50	1330.70	1327.41	1331.43	0.001588	6.85	1211.43	185.50	0.47
East Fork	Upstream	0.112	10 yr	5500.00	1321.50	1327.74	1326.17	1328.64	0.002874	7.60	723.24	148.00	0.61
East Fork	Upstream	0.029	100 yr FP	9500.00	1318.73	1331.30	1327.25	1332.32	0.000349	8.19	1353.13	265.11	0.46
East Fork	Upstream	0.029	100 yr FW	9500.00	1318.73	1331.22	1327.26	1332.32	0.000373	8.43	1152.63	130.00	0.48
East Fork	Upstream	0.029	50 yr	8300.00	1318.73	1329.87	1326.66	1331.01	0.000472	8.57	1012.54	186.70	0.53
East Fork	Upstream	0.029	10 yr	5500.00	1318.73	1326.57	1324.94	1327.89	0.000885	9.22	596.46	104.43	0.68
Cave Creek	Upstream	20.049	100 yr FP	5700.00	1327.10	1338.39	1338.39	1341.90	0.010596	15.03	379.17	653.63	1.00
Cave Creek	Upstream	20.049	100 yr FW	5700.00	1327.10	1338.29	1338.29	1341.97	0.010857	15.39	370.34	50.00	1.00
Cave Creek	Upstream	20.049	50 yr	4900.00	1327.10	1337.57	1337.57	1340.87	0.010817	14.57	336.38	647.54	1.00
Cave Creek	Upstream	20.049	10 yr	3300.00	1327.10	1335.70	1335.70	1338.47	0.011314	13.36	247.07	633.56	1.00
Cave Creek	Upstream	19.986	100 yr FP	5700.00	1323.80	1336.21	1331.11	1337.47	0.001566	9.01	632.92	109.24	0.45
Cave Creek	Upstream	19.986	100 yr FW	5700.00	1323.80	1336.50	1331.11	1337.70	0.002486	8.80	647.66	51.00	0.44
Cave Creek	Upstream	19.986	50 yr	4900.00	1323.80	1336.02	1330.41	1336.98	0.001220	7.87	622.99	108.11	0.40
Cave Creek	Upstream	19.986	10 yr	3300.00	1323.80	1332.28	1328.88	1333.19	0.001865	7.63	432.70	86.33	0.46
Cave Creek	Upstream	19.980		Bridge									
Cave Creek	Upstream	19.974	100 yr FP	5700.00	1323.80	1334.30	1331.11	1336.06	0.002735	10.65	535.46	98.09	0.58
Cave Creek	Upstream	19.974	100 yr FW	5700.00	1323.80	1334.58	1331.11	1336.25	0.004008	10.37	549.75	51.00	0.56
Cave Creek	Upstream	19.974	50 yr	4900.00	1323.80	1332.92	1330.41	1334.64	0.003230	10.53	465.21	90.05	0.61
Cave Creek	Upstream	19.974	10 yr	3300.00	1323.80	1332.03	1328.88	1332.99	0.002067	7.87	419.57	84.83	0.48
Cave Creek	Upstream	19.960	100 yr FP	5700.00	1324.60	1334.27	1332.23	1335.64	0.003316	9.56	627.80	97.91	0.60
Cave Creek	Upstream	19.960	100 yr FW	5700.00	1324.60	1334.38	1332.14	1335.86	0.003960	9.79	582.49	73.00	0.61
Cave Creek	Upstream	19.960	50 yr	4900.00	1324.60	1332.45	1331.65	1334.29	0.006172	10.94	459.36	87.29	0.78
Cave Creek	Upstream	19.960	10 yr	3300.00	1324.60	1330.39	1330.39	1332.38	0.011481	11.31	292.06	75.28	1.00
Cave Creek	Upstream	19.847	100 yr FP	5700.00	1318.80	1334.19	1326.95	1334.56	0.000697	4.90	1162.73	122.02	0.28
Cave Creek	Upstream	19.847	100 yr FW	5700.00	1318.80	1334.25	1326.91	1334.70	0.000727	5.43	1049.58	86.00	0.27
Cave Creek	Upstream	19.847	50 yr	4900.00	1318.80	1332.31	1326.36	1332.73	0.000906	5.19	944.38	110.89	0.31
Cave Creek	Upstream	19.847	10 yr	3300.00	1318.80	1328.65	1325.01	1329.16	0.001573	5.71	578.02	89.27	0.40
Cave Creek	Upstream	19.742	100 yr FP	5700.00	1318.68	1334.10	1325.26	1334.45	0.000086	4.73	1285.21	142.41	0.23
Cave Creek	Upstream	19.742	100 yr FW	5700.00	1318.68	1334.12	1325.34	1334.57	0.000117	5.35	1089.10	85.00	0.25
Cave Creek	Upstream	19.742	50 yr	4900.00	1318.68	1332.22	1324.67	1332.58	0.000109	4.80	1040.61	117.48	0.26
Cave Creek	Upstream	19.742	10 yr	3300.00	1318.68	1328.55	1323.38	1328.91	0.000159	4.79	688.67	85.29	0.30
Cave Creek	Upstream	19.691	100 yr FP	5700.00	1317.94	1333.78	1324.97	1334.39	0.000161	6.26	911.12	436.98	0.28
Cave Creek	Upstream	19.691	100 yr FW	5700.00	1317.94	1333.92	1324.97	1334.52	0.000156	6.21	919.18	59.40	0.28
Cave Creek	Upstream	19.691	50 yr	4900.00	1317.94	1331.94	1324.35	1332.52	0.000182	6.11	801.68	59.30	0.29
Cave Creek	Upstream	19.691	10 yr	3300.00	1317.94	1328.36	1322.96	1328.84	0.000214	5.59	590.26	59.00	0.31
Cave Creek	Upstream	19.658		Bridge									
Cave Creek	Upstream	19.625	100 yr FP	5700.00	1316.99	1331.57	1324.25	1332.32	0.000221	6.92	823.81	122.43	0.33
Cave Creek	Upstream	19.625	100 yr FW	5700.00	1316.99	1331.57	1324.25	1332.32	0.000221	6.92	823.81	60.00	0.33
Cave Creek	Upstream	19.625	50 yr	4900.00	1316.99	1330.34	1323.60	1331.01	0.000222	6.52	751.21	59.03	0.32
Cave Creek	Upstream	19.625	10 yr	3300.00	1316.99	1327.21	1322.21	1327.73	0.000244	5.83	566.02	59.00	0.33
Cave Creek	Downstream	19.597	100 yr FP	14600.00	1316.72	1327.36	1327.36	1332.32	0.001922	17.86	817.33	83.30	1.01
Cave Creek	Downstream	19.597	100 yr FW	14600.00	1316.72	1327.36	1327.36	1332.32	0.001922	17.86	817.32	83.30	1.01
Cave Creek	Downstream	19.597	50 yr	12700.00	1316.72	1326.47	1326.47	1331.01	0.001946	17.09	743.15	82.79	1.01
Cave Creek	Downstream	19.597	10 yr	8400.00	1316.72	1324.25	1324.25	1327.73	0.002029	14.97	561.03	81.40	1.01
Cave Creek	Downstream	19.560	100 yr FP	14600.00	1316.23	1326.80	1325.61	1329.68	0.001126	13.62	1071.97	123.41	0.81
Cave Creek	Downstream	19.560	100 yr FW	14600.00	1316.23	1326.80	1325.61	1329.68	0.001126	13.62	1071.97	123.41	0.81
Cave Creek	Downstream	19.560	50 yr	12700.00	1316.23	1324.97	1324.86	1328.43	0.001710	14.93	850.75	117.53	0.98
Cave Creek	Downstream	19.560	10 yr	8400.00	1316.23	1322.99	1322.99	1325.80	0.001923	13.44	624.96	111.16	1.00
Cave Creek	Downstream	19.505	100 yr FP	14600.00	1314.90	1326.80	1323.88	1329.00	0.003759	11.91	1225.98	116.05	0.65

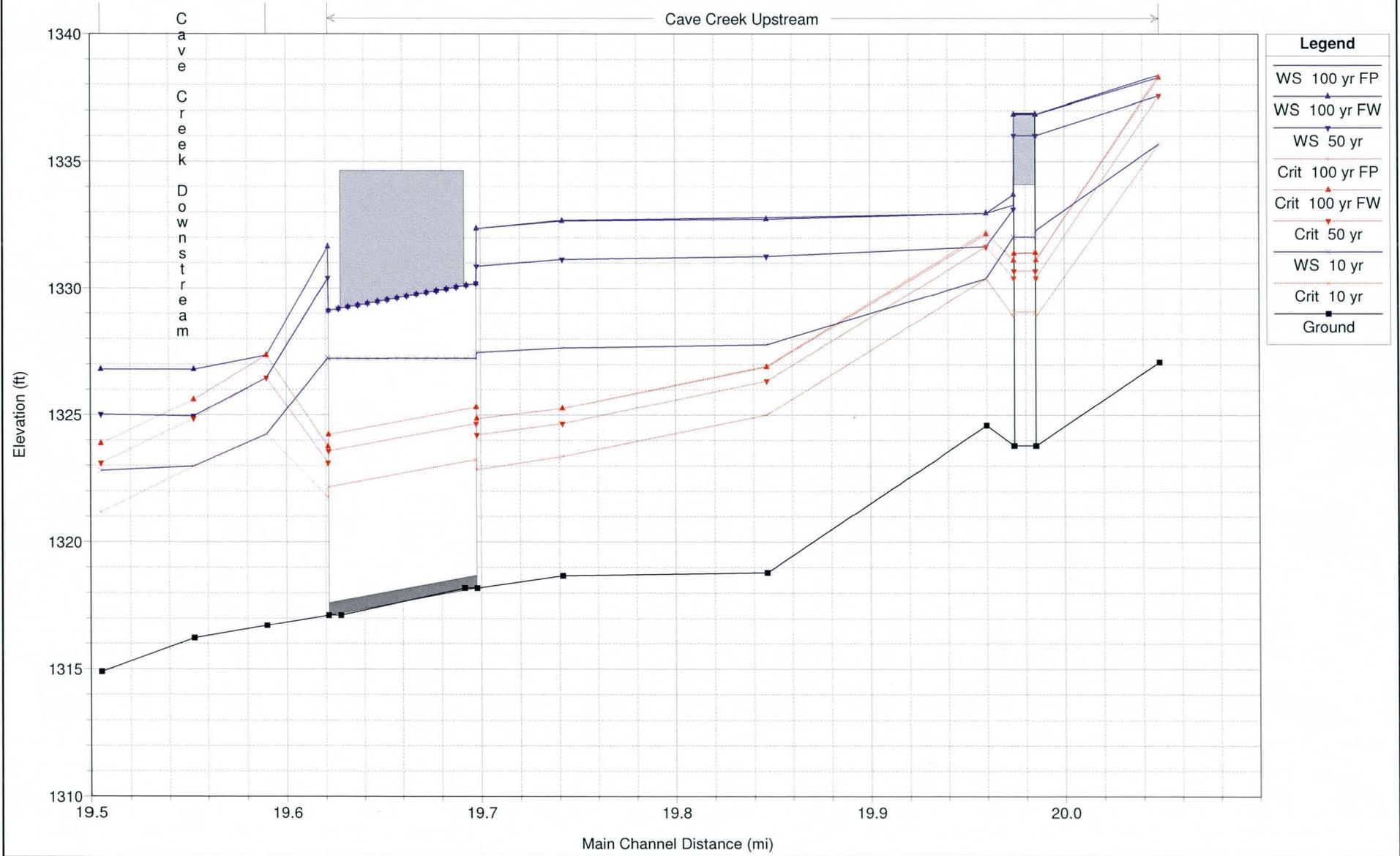
HEC-RAS Plan: CorrEffective (Continued)

River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Cave Creek	Downstream	19.505	100 yr FW	14600.00	1314.90	1326.80	1323.88	1329.00	0.003759	11.91	1225.98	116.05	0.65
Cave Creek	Downstream	19.505	50 yr	12700.00	1314.90	1325.03	1323.11	1327.42	0.004901	12.41	1023.65	112.17	0.72
Cave Creek	Downstream	19.505	10 yr	8400.00	1314.90	1322.82	1321.18	1324.61	0.004901	10.75	781.05	107.33	0.70

E.5.3: Post-Project Model

Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

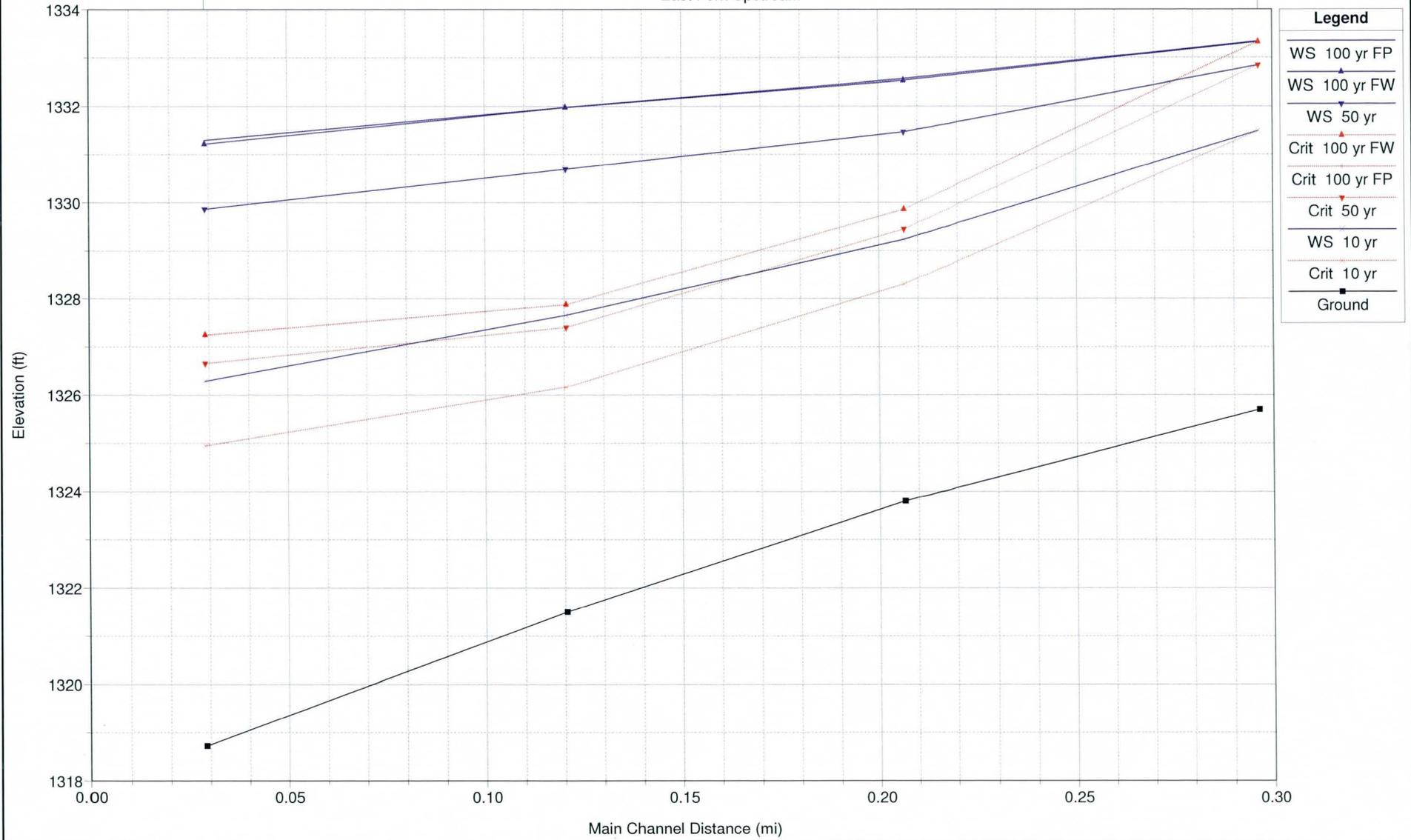
Geom: Post-Project Flow: Cave Creek FIS Flows



Cave Creek at Greenway Pkwy CLOMR Plan: Post-Project 10/14/2013

Geom: Post-Project Flow: Cave Creek FIS Flows

East Fork Upstream



HEC-RAS Plan: Post-Proj

River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
East Fork	Upstream	0.288	100 yr FP	9500.00	1325.70	1333.34	1333.34	1335.83	0.007771	12.65	750.84	151.18	1.00
East Fork	Upstream	0.288	100 yr FW	9500.00	1325.70	1333.33	1333.33	1335.83	0.007812	12.68	749.24	150.97	1.00
East Fork	Upstream	0.288	50 yr	8300.00	1325.70	1332.84	1332.84	1335.18	0.007932	12.27	676.42	144.86	1.00
East Fork	Upstream	0.288	10 yr	5500.00	1325.70	1331.50	1331.50	1333.43	0.008466	11.16	492.96	127.95	1.00
East Fork	Upstream	0.198	100 yr FP	9500.00	1323.80	1332.56	1329.86	1333.35	0.001775	7.12	1335.51	216.69	0.50
East Fork	Upstream	0.198	100 yr FW	9500.00	1323.80	1332.53	1329.86	1333.34	0.001747	7.24	1312.86	197.42	0.49
East Fork	Upstream	0.198	50 yr	8300.00	1323.80	1331.47	1329.45	1332.34	0.002346	7.48	1110.01	200.43	0.56
East Fork	Upstream	0.198	10 yr	5500.00	1323.80	1329.24	1328.31	1330.23	0.004306	7.99	688.48	177.84	0.72
East Fork	Upstream	0.112	100 yr FP	9500.00	1321.50	1331.98	1327.89	1332.64	0.001240	6.51	1464.66	258.38	0.43
East Fork	Upstream	0.112	100 yr FW	9500.00	1321.50	1331.98	1327.89	1332.66	0.001179	6.61	1437.09	183.17	0.42
East Fork	Upstream	0.112	50 yr	8300.00	1321.50	1330.70	1327.41	1331.43	0.001589	6.85	1211.40	185.50	0.47
East Fork	Upstream	0.112	10 yr	5500.00	1321.50	1327.67	1326.17	1328.59	0.003004	7.72	712.54	147.42	0.62
East Fork	Upstream	0.029	100 yr FP	9500.00	1318.73	1331.30	1327.25	1332.32	0.000349	8.19	1353.06	265.10	0.46
East Fork	Upstream	0.029	100 yr FW	9500.00	1318.73	1331.22	1327.26	1332.32	0.000373	8.43	1152.60	130.00	0.48
East Fork	Upstream	0.029	50 yr	8300.00	1318.73	1329.87	1326.66	1331.01	0.000472	8.57	1012.50	186.68	0.53
East Fork	Upstream	0.029	10 yr	5500.00	1318.73	1326.30	1324.96	1327.75	0.001024	9.68	568.31	103.29	0.73
Cave Creek	Upstream	20.049	100 yr FP	5700.00	1327.10	1338.39	1338.39	1341.90	0.010596	15.03	379.17	653.63	1.00
Cave Creek	Upstream	20.049	100 yr FW	5700.00	1327.10	1338.29	1338.29	1341.97	0.010857	15.39	370.34	50.00	1.00
Cave Creek	Upstream	20.049	50 yr	4900.00	1327.10	1337.57	1337.57	1340.87	0.010817	14.57	336.38	647.54	1.00
Cave Creek	Upstream	20.049	10 yr	3300.00	1327.10	1335.70	1335.70	1338.47	0.011314	13.36	247.07	633.56	1.00
Cave Creek	Upstream	19.986	100 yr FP	5700.00	1323.80	1336.85	1331.11	1337.99	0.001325	8.57	665.46	112.97	0.42
Cave Creek	Upstream	19.986	100 yr FW	5700.00	1323.80	1336.84	1331.11	1337.98	0.002301	8.57	665.27	51.00	0.42
Cave Creek	Upstream	19.986	50 yr	4900.00	1323.80	1336.02	1330.41	1336.98	0.001220	7.87	622.94	108.10	0.40
Cave Creek	Upstream	19.986	10 yr	3300.00	1323.80	1332.29	1328.88	1333.19	0.001865	7.63	432.72	86.33	0.46
Cave Creek	Upstream	19.980		Bridge									
Cave Creek	Upstream	19.974	100 yr FP	5700.00	1323.80	1333.28	1331.11	1335.44	0.003841	11.79	483.56	92.15	0.67
Cave Creek	Upstream	19.974	100 yr FW	5700.00	1323.80	1333.69	1331.11	1335.67	0.005170	11.30	504.30	51.00	0.63
Cave Creek	Upstream	19.974	50 yr	4900.00	1323.80	1333.12	1330.41	1334.77	0.003012	10.31	475.04	91.18	0.60
Cave Creek	Upstream	19.974	10 yr	3300.00	1323.80	1332.03	1328.88	1332.99	0.002066	7.87	419.58	84.83	0.48
Cave Creek	Upstream	19.960	100 yr FP	5700.00	1324.60	1332.96	1332.23	1335.04	0.006296	11.67	504.85	90.28	0.80
Cave Creek	Upstream	19.960	100 yr FW	5700.00	1324.60	1332.96	1332.14	1335.16	0.007265	11.90	478.83	73.00	0.82
Cave Creek	Upstream	19.960	50 yr	4900.00	1324.60	1331.65	1331.65	1334.14	0.010049	12.70	391.37	82.62	0.98
Cave Creek	Upstream	19.960	10 yr	3300.00	1324.60	1330.39	1330.39	1332.38	0.011481	11.31	292.06	75.28	1.00
Cave Creek	Upstream	19.847	100 yr FP	5700.00	1318.80	1332.80	1326.95	1333.30	0.001053	5.71	998.72	113.76	0.34
Cave Creek	Upstream	19.847	100 yr FW	5700.00	1318.80	1332.73	1326.91	1333.33	0.001086	6.20	919.12	86.00	0.33
Cave Creek	Upstream	19.847	50 yr	4900.00	1318.80	1331.27	1326.36	1331.81	0.001280	5.89	831.58	104.68	0.37
Cave Creek	Upstream	19.847	10 yr	3300.00	1318.80	1327.79	1325.01	1328.46	0.002333	6.56	502.98	84.91	0.48
Cave Creek	Upstream	19.742	100 yr FP	5700.00	1318.68	1332.68	1325.27	1333.13	0.000128	5.35	1096.07	123.43	0.28
Cave Creek	Upstream	19.742	100 yr FW	5700.00	1318.68	1332.65	1325.27	1333.13	0.000134	5.52	1032.89	85.00	0.28
Cave Creek	Upstream	19.742	50 yr	4900.00	1318.68	1331.15	1324.67	1331.59	0.000151	5.33	921.30	102.45	0.30
Cave Creek	Upstream	19.742	10 yr	3300.00	1318.68	1327.65	1323.38	1328.10	0.000224	5.38	613.19	82.70	0.35
Cave Creek	Upstream	19.691	100 yr FP	5700.00	1318.20	1332.35	1324.86	1333.06	0.000216	6.76	843.11	73.41	0.32
Cave Creek	Upstream	19.691	100 yr FW	5700.00	1318.20	1332.35	1324.86	1333.06	0.000230	6.76	843.11	60.00	0.32
Cave Creek	Upstream	19.691	50 yr	4900.00	1318.20	1330.87	1324.22	1331.53	0.000232	6.50	754.20	60.09	0.32
Cave Creek	Upstream	19.691	10 yr	3300.00	1318.20	1327.47	1322.86	1328.03	0.000273	6.00	550.44	60.00	0.35
Cave Creek	Upstream	19.658		Culvert									
Cave Creek	Upstream	19.625	100 yr FP	5700.00	1317.12	1331.64	1323.76	1332.32	0.000195	6.59	865.46	139.43	0.31
Cave Creek	Upstream	19.625	100 yr FW	5700.00	1317.12	1331.64	1323.76	1332.32	0.000213	6.59	865.46	60.00	0.31
Cave Creek	Upstream	19.625	50 yr	4900.00	1317.12	1330.41	1323.13	1331.01	0.000195	6.19	791.39	60.04	0.30
Cave Creek	Upstream	19.625	10 yr	3300.00	1317.12	1327.27	1321.77	1327.73	0.000208	5.47	602.91	60.00	0.30
Cave Creek	Downstream	19.597	100 yr FP	14600.00	1316.72	1327.36	1327.36	1332.32	0.001922	17.86	817.33	83.30	1.01
Cave Creek	Downstream	19.597	100 yr FW	14600.00	1316.72	1327.36	1327.36	1332.32	0.001922	17.86	817.32	83.30	1.01
Cave Creek	Downstream	19.597	50 yr	12700.00	1316.72	1326.47	1326.47	1331.01	0.001946	17.09	743.15	82.79	1.01
Cave Creek	Downstream	19.597	10 yr	8400.00	1316.72	1324.25	1324.25	1327.73	0.002029	14.97	561.03	81.40	1.01
Cave Creek	Downstream	19.560	100 yr FP	14600.00	1316.23	1326.80	1325.61	1329.68	0.001126	13.62	1071.97	123.41	0.81
Cave Creek	Downstream	19.560	100 yr FW	14600.00	1316.23	1326.80	1325.61	1329.68	0.001126	13.62	1071.97	123.41	0.81
Cave Creek	Downstream	19.560	50 yr	12700.00	1316.23	1324.97	1324.86	1328.43	0.001710	14.93	850.75	117.53	0.98
Cave Creek	Downstream	19.560	10 yr	8400.00	1316.23	1322.99	1322.99	1325.80	0.001923	13.44	624.96	111.16	1.00
Cave Creek	Downstream	19.505	100 yr FP	14600.00	1314.90	1326.80	1323.88	1329.00	0.003759	11.91	1225.98	116.05	0.65

HEC-RAS Plan: Post-Proj (Continued)

River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Cave Creek	Downstream	19.505	100 yr FW	14600.00	1314.90	1326.80	1323.88	1329.00	0.003759	11.91	1225.98	116.05	0.65
Cave Creek	Downstream	19.505	50 yr	12700.00	1314.90	1325.03	1323.11	1327.42	0.004901	12.41	1023.65	112.17	0.72
Cave Creek	Downstream	19.505	10 yr	8400.00	1314.90	1322.82	1321.18	1324.61	0.004901	10.75	781.05	107.33	0.70

E.5.4: cHECK-RAS Reports

DUPLICATE EFFECTIVE MODEL

cHECK-RAS Report

HEC-RAS Project: *cavecrgreenwayclomr.prj*
 Plan File: *cavecrgreenwayclomr.p01*
 Geometry File: *cavecrgreenwayclomr.g01*
 Flow File: *cavecrgreenwayclomr.f01*
 Report Date: *10/16/2013*

Message ID	Message	Cross sections affected	Comments
BR LF 01	This is (\$strucname\$). The selected profile is \$profilename\$. Type of flow is low flow because, 1. EGEL 3 of \$egel3\$ is less than or equal to MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is less than MxLoCdU of \$mxlocdu\$.	19.658(Bridge-UP); 19.98(Bridge-UP)	For information.
BR PF 02	This is a Bridge Section. The selected profile is \$profilename\$. Type of flow is submerged pressure flow because, 1. EGEL 3 of \$egel3\$ is less than or equal to MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is equal to or greater than MxLoCdU of \$mxlocdu\$. 3. WSEL 2 of \$wsel2\$ is equal to or greater than MxLoCdD of \$mxlocdd\$.	19.658(Bridge-UP)	For information.
BR PF 08	This is a Bridge Section. Computed BrSelMthd is Press Only. The selected profile is \$profilename\$. Type of flow is submerged pressure flow. The computed Submerged Cd is different then the user input Cd of \$submergedcd\$ and will cause the EGEL at Section 3 to be changed by more than 0.5 foot. Submerged Cd should be computed based on entrance (Ken), friction (Kf), and exit (Kex) loss coefficients. Assumed Ken is 0.5, and Kex is 1.0. Bridge Open Area is \$bropenarea\$, Conv Total is \$convtotal\$, Bridge Width is \$deckwidth\$. Bridge Open Vel is \$bropenvel\$, and WSEL 2 is \$wsel2\$. Computed Submerged Cd is \$compsubmergedcd\$. The Submerged Cd should be revised as \$compsubmergedcd\$, or provide an explanation why Computed Submerged Cd is incorrect.	19.658(Bridge-UP)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
BR PW 01	This is a Bridge Section. The selected profile is \$profilename\$. Type of flow is sluice gate pressure and weir flow because, 1. EGEL 3 of \$egel3\$ is greater than MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is equal to or greater than MxLoCdU of \$mxlocdu\$. 3. WSEL 2 of \$wsel2\$ is less than MxLoCdD of \$mxlocdd\$.	19.98(Bridge-UP)	For information.
BR PW 06	This is \$strucname\$. The selected profile is \$profilename\$. EGEL of \$egel3\$ at Section 3 is higher than the MinTopRd of \$minelweirflow\$. However the WSEL of \$wsel\$ at BRU is less than MinTopRd. Please investigate the problem.	19.98(Bridge-UP)	For information.

FW FW 01L	The Left encroachment station is within the channel. The Left encroachment station \$encrstal\$ is more than left channel bank station \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.505; 19.742; 19.847; 20.049; 0.029; 0.112; 0.198; 0.288	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
FW FW 01R	The Right encroachment station is within the channel. The Right encroachment station \$encrstar\$ is less than right channel bank station \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.505; 19.742; 19.847; 20.049; 0.112; 0.198; 0.288	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
FW FW 03L	The left channel bank elevation of \$lobelev\$ is higher than the 1-percent-annual-chance WSEL of \$wsel\$. Relocate the left channel bank station at or below the 1-percent-annual-chance WSEL. Do not place the bank stations at the bottom of the channel. Do not place the bank stations at the low flow channel. Use the Horizontal Variation in "n" Values option in HEC-RAS to assign different "n" values to the left bank slope, low flow channel, and the right bank slope. Let HEC-RAS compute the composite "n" value based on the depth of flow.	19.505; 19.56; 19.847; 20.049; 0.029; 0.288	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
FW FW 03R	The right channel bank elevation of \$robelev\$ is higher than the 1-percent annual chance WSEL of \$wsel\$. Relocate the right channel bank station at or below the 1-percent annual chance WSEL. Do not place the bank stations at the bottom of the channel. Do not place the bank stations at the low flow channel. Use the Horizontal Variation in "n" Values option in HEC-RAS to assign different "n" values to the left bank slope, low flow channel, and the right bank slope. Let HEC-RAS compute the composite "n" value based on the depth of flow.	19.505; 19.56; 19.847; 20.049; 0.112; 0.198; 0.288	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
FW SC 01	The surcharge value is negative. Use the suggestions from the Help section such that the negative surcharge value will not be less than (-0.09) foot.	20.049	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
FW ST 06BD	This is the Downstream Bridge Internal Section. Negative surcharge value of \$negsurchrq\$ occurs at this section. Use the suggestions from the Help section such that the negative surcharge value will not be less than (-0.09) foot.	19.98 (Bridge-DN)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
FW ST 06BU	This is the Upstream Bridge Internal Section. Negative surcharge value of \$negsurchrq\$ occurs at this section. Use the suggestions from the Help section such that negative surcharge value will not be less than (-0.09) foot.	19.98 (Bridge-UP)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.

FW ST 06S3	This is Section 3 of a hydraulic structure. Negative surcharge value of \$negsurchrq\$ occurs at this section. Use the suggestions from the Help section such that negative surcharge value will not be less than (-0.09) foot.	19.986	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
FW SW 04M1	The name of the stream is (\$streamname\$). Encroachment Method 1 is used. The total conveyance for the 1%-annual-chance flood profile is \$convtotalna\$. The total conveyance for the floodway profile is \$convtotalfw\$. The difference in conveyance between the floodway profile and the 1%-annual-chance flood profile is more than 1%. The Normal Depth option with the same energy slope as the 1%-annual-chance flood profile must be used for both the 1%-annual-chance flood profile and the floodway profile and the plan should be rerun. This message may not be applicable when revising only a portion of a hydraulic model.	0.029	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
NT RC 05	The left overbank n-value of \$nlob\$ and the right overbank n-value of \$nrob\$ are less than or equal to the channel n-value of \$nch\$. Follow the procedure in (FHWA, 1984) to compute the n-value for the natural floodplain and the channel. Or follow the procedure in (USGS, 1977) to compute the n-value for urban development. Please submit supporting information on the evaluation of n-values.	19.56; 19.847; 19.96	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
NT RS 02BDC	This is the Downstream Bridge Section (BRD). The channel n value of \$chldn\$ for the downstream internal bridge opening section is equal to or larger than the channel n value of \$chl2\$ at Section 2. Usually, the channel "n" value of the bridge opening section represents the area below the bridge deck and is less than the channel "n" value of Section 2. The "n" value for Section 2 represents the natural valley channel section roughness for the reach between Section 3 and Section 4. Please change the "n" value of the internal bridge opening section or provide supporting information for the use of the higher "n" value.	19.98 (Bridge-DN)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.

NT RS 02BUC	<p>This is the Upstream Bridge Section (BRU). The channel n value of \$chlup\$ for the upstream internal bridge opening section is equal to or larger than the channel n value of \$chl3\$ at Section 3. Usually, the channel "n" value of the bridge opening section represents the area below the bridge deck and is less than the channel "n" value of Section 3.</p> <p>The "n" value for Section 3 represents the natural valley channel section roughness for the reach between Section 3 and Section 4. Please change the "n" value of the internal bridge opening section or provide supporting information for the use of a higher "n" value.</p>	19.658 (Bridge-UP); 19.98 (Bridge-UP)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
NT TL 02	<p>Contraction and expansion loss coefficients are \$cc\$ and \$ce\$, respectively. However, this cross section is not at a hydraulic structure. They should be equal to 0.1 and 0.3 according to page 5-8 of the HEC-RAS Hydraulic Reference Manual (HEC, 2010).</p>	19.625	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
ST DT 01B	<p>This is (\$strucname\$). 'Upstream Dist' of \$distup\$ in "Bridge Width Table" is less than the height of the bridge opening of \$height\$. This indicates that Section 3 may not be placed at the foot of the road embankment or wing walls and may not represent the natural valley cross section.</p> <p>Section 3 should be relocated or provide a statement that it represents the natural valley cross section.</p> <p>The HEC-RAS geometry file may need to be recreated using a GIS program.</p> <p>Lengths at Sections 4, 3 and 2 and 'Upstream Dist' should be adjusted.</p>	19.658 (Bridge-UP); 19.98 (Bridge-UP)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
ST DT 02B	<p>This is (\$strucname\$). 'Downstream Dist' of \$distdn\$ in 'Bridge Width Table' is less than the height of the bridge opening of \$height\$. This indicates that Section 2 may not be placed at the foot of the road embankment or wing walls and may not represent the natural valley cross section.</p> <p>Section 2 should be relocated or provide a statement that it represents the natural valley cross section.</p> <p>A HEC-RAS geometry file may need to be recreated using a GIS program.</p> <p>Lengths at Sections 3 and 2 should be adjusted.</p>	19.658 (Bridge-DN); 19.98 (Bridge-DN)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
ST DT 03	<p>This is (\$Structure\$) section. The Contraction Length is longer than the Expansion Length. Section 4 channel distance of \$Length_Chnl4\$ is longer than Section 2 channel distance of \$Length_Chnl2\$.</p> <p>Section 4 and Section 1 should be relocated.</p> <p>The HEC-RAS geometry file may need to be recreated using a GIS program.</p>	19.98 (Bridge-UP)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.

ST GD 01RDD	This is (\$strucname\$) Section. A value of \$minlocord\$ is specified in the MinWeirFlowEl box under Deck/Roadway Data window. It is higher than the computed MnTpRd of \$mntprd\$ from the ground and road data. Please delete this value and rerun the plan, unless there is a reason to specify this value.	19.98 (Bridge)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
ST GD 01RDU	This is (\$strucname\$) Section. A value of \$minlocord\$ is specified in the MinWeirFlowEl box under Deck/Roadway Data window. It is higher than the computed MnTpRd of \$mntprd\$ from the ground and road data. Please delete this value and rerun the plan, unless there is a reason to specify this value.	19.98 (Bridge)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
ST IF 03S2L	This is Section 2. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the left ineffective flow elevation of \$ineffl\$ at the left ineffective flow station \$ineffstal\$ is equal to or higher than the WSEL of \$wsel2\$. The ineffective flow elevation should be lower than the WSEL at Section 2.	19.974 (Bridge)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
ST IF 03S2R	This is Section 2. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the right ineffective flow elevation of \$ineffr\$ at the right ineffective flow station \$ineffstar\$ is equal to or higher than the WSEL of \$wsel2\$. The ineffective flow elevation should be lower than the WSEL at Section 2.	19.974 (Bridge)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
ST IF 03S3L	This is Section 3. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the left ineffective flow elevation of \$ineffl\$ at the left ineffective flow station \$ineffstal\$ is equal to or higher than the WSEL of \$wsel3\$. The computed upstream LMnTpRd is \$lmntprdu\$. The ineffective flow elevation should be equal to or lower than the computed LMnTpRd. It should also be lower than the WSEL at Section 3.	19.986 (Bridge)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.

ST IF 03S3R	<p>This is Section 3. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the right ineffective flow elevation of \$ineffell\$ at the right ineffective flow station \$ineffstar\$ is equal to or higher than the WSEL of \$wsel3\$. The computed upstream RMnTpRd is \$rmntprdu\$. The ineffective flow elevation should be equal to or lower than the computed RMnTpRdU. It should also be lower than the WSEL at Section 3.</p>	19.986(Bridge)	<p>As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.</p>
ST IF 06S2L	<p>This is Section 2. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Dn_Dist of \$dndist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed left ineffective flow station of \$compineffstal\$ is less than the input left ineffective flow station of \$ineffstal\$. The left ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.625(Bridge); 19.974(Bridge)	<p>As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.</p>
ST IF 06S2R	<p>This is Section 2. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Dn_Dist of \$dndist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed right ineffective flow station of \$compineffstar\$ is greater than the input right ineffective flow station of \$ineffstar\$. The right ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.625(Bridge); 19.974(Bridge)	<p>As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.</p>
ST IF 06S3L	<p>This is Section 3. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Up_Dist of \$updist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed left ineffective flow station of \$compineffstal\$ is less than the input left ineffective flow station of \$ineffstal\$. The left ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.691(Bridge); 19.986(Bridge)	<p>As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.</p>

ST IF 06S3R	<p>This is Section 3. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Up_Dist of \$updist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed right ineffective flow station of \$compineffstar\$ is greater than the input right ineffective flow station of \$ineffstar\$. The right ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.691 (Bridge); 19.986 (Bridge)	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
XS CD 01	<p>Critical Depth occurs at \$assignedname\$ flood. Flow Code will be "C". The Ineffective flow option is used. The Ineffective Flow elevation is equal to or higher than the Critical WSEL. Please investigate whether this selection is appropriate.</p>	20.049	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
XS DC 01	<p>Discharge decreases in the downstream direction for \$assignedname\$ flood. There are no lateral structures. Documentation of hydrologic analysis is required or provide explanation.</p>	0.288	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
XS DC 04R	<p>There is no flow on the right overbank at the downstream cross section \$presecno\$. There is no flow on the left overbank at this Section \$secno\$ for the 1%-annual-chance flood. Consider placing a cross section in between these sections. The HEC-RAS geometry file may need to be recreated using a GIS program.</p>	0.112	As this is the Duplicate Effective model, no changes will be made to maintain consistency with the Effective model.
XS JT 01	<p>The Junction option is used. For Flood Insurance Studies, this option should be used if the tributary and main stream can have coincident peaks. It is appropriate to use for approximate-studied streams; if the discharges at different time periods are known from the rainfall-runoff model; for loop analysis; and for unsteady flow analysis. The Junction should be removed if the above conditions are not satisfied. Refer to the Help section for information on how to remove a Junction. Sample XS JT 01 HEC-RAS files can be downloaded from http://www.fema.gov/library/viewRecord.do?id=2300 under the Cross Section Check Data Sets section.</p>		The junction is appropriate in this location.
XS JT 02	<p>The name of the junction is \$junctionname\$. The length from the \$riverreach1\$ to the \$riverreach2\$ is equal to zero. Please insert the length across the junction in the Junction Data window in HEC-RAS if the junction can be considered.</p>		The lengths have been entered into the Junction Data window, but this message is still appearing. This has been resolved.

CORRECTED EFFECTIVE MODEL

cHECK-RAS Report

HEC-RAS Project: *cavecrgreenwayclomr.prj*
 Plan File: *cavecrgreenwayclomr.p02*
 Geometry File: *cavecrgreenwayclomr.g02*
 Flow File: *cavecrgreenwayclomr.f02*
 Report Date: *10/16/2013*

Message ID	Message	Cross sections affected	Comments
BR LF 01	This is (\$strucname\$). The selected profile is \$profilename\$. Type of flow is low flow because, 1. EGEL 3 of \$egel3\$ is less than or equal to MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is less than MxLoCdU of \$mxlocdu\$.	19.658 (Bridge-UP); 19.98 (Bridge-UP)	For information.
BR PF 02	This is a Bridge Section. The selected profile is \$profilename\$. Type of flow is submerged pressure flow because, 1. EGEL 3 of \$egel3\$ is less than or equal to MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is equal to or great than MxLoCdU of \$mxlocdu\$. 3. WSEL 2 of \$wsel2\$ is equal to or greater than MxLoCdD of \$mxlocdd\$.	19.658 (Bridge-UP)	For information.
BR PW 01	This is a Bridge Section. The selected profile is \$profilename\$. Type of flow is sluice gate pressure and weir flow because, 1. EGEL 3 of \$egel3\$ is greater than MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is equal to or greater than MxLoCdU of \$mxlocdu\$. 3. WSEL 2 of \$wsel2\$ is less than MxLoCdD of \$mxlocdd\$.	19.98 (Bridge-UP)	For information.
BR PW 02	This is a Bridge Section. The selected profile is \$profilename\$. Type of flow is submerged pressure and weir flow because, 1. EGEL 3 of \$egel3\$ is greater than MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is equal to or greater than MxLoCdU of \$mxlocdu\$. 3. WSEL 2 of \$wsel2\$ is equal to or greater than MxLoCdD of \$mxlocdd\$.	19.658 (Bridge-UP); 19.98 (Bridge-UP)	For information.
BR PW 06	This is \$strucname\$. The selected profile is \$profilename\$. EGEL of \$egel3\$ at Section 3 is higher than the MinTopRd of \$minelweirflow\$. However the WSEL of \$wsel\$ at BRU is less than MinTopRd. Please investigate the problem.	19.658 (Bridge-UP); 19.98 (Bridge-UP)	This bridge is experiencing only pressure flow at this location. The EGL is above the roadway and the HGL is above the soffit, but the water surface is forced below the bridge.
FW FW 01L	The Left encroachment station is within the channel. The Left encroachment station \$encrstal\$ is more than left channel bank station \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.505; 19.56; 19.847; 20.049; 0.112; 0.198; 0.288	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW FW 01R	The Right encroachment station is within the channel. The Right encroachment station \$encrstar\$ is less than right channel bank station \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.505; 19.56; 19.597; 19.742; 19.847; 20.049; 0.112; 0.198; 0.288	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.

FW FW 03L	The left channel bank elevation of \$lobelev\$ is higher than the 1-percent-annual-chance WSEL of \$wsel\$. Relocate the left channel bank station at or below the 1-percent-annual-chance WSEL. Do not place the bank stations at the bottom of the channel. Do not place the bank stations at the low flow channel. Use the Horizontal Variation in "n" Values option in HEC-RAS to assign different "n" values to the left bank slope, low flow channel, and the right bank slope. Let HEC-RAS compute the composite "n" value based on the depth of flow.	19.505; 19.56; 19.597; 19.847; 20.049; 0.112; 0.288	The channel bank stations are from the Effective model or were placed to be consistent with the local conditions and the upstream and downstream sections. The encroachment stations were placed to be consistent with the effective floodway from the FIRM.
FW FW 03R	The right channel bank elevation of \$robelev\$ is higher than the 1-percent annual chance WSEL of \$wsel\$. Relocate the right channel bank station at or below the 1-percent annual chance WSEL. Do not place the bank stations at the bottom of the channel. Do not place the bank stations at the low flow channel. Use the Horizontal Variation in "n" Values option in HEC-RAS to assign different "n" values to the left bank slope, low flow channel, and the right bank slope. Let HEC-RAS compute the composite "n" value based on the depth of flow.	19.505; 19.56; 19.597; 19.847; 20.049; 0.112; 0.198; 0.288	The channel bank stations are from the Effective model or were placed to be consistent with the local conditions and the upstream and downstream sections. The encroachment stations were placed to be consistent with the effective floodway from the FIRM.
FW FW 05L	The 1-percent annual chance flood is contained within the channel. The Left encroachment station \$encstal\$ is outside the channel. The Left channel bank station is \$stalob\$. Adjust the left encroachment station so that it is the same as the left channel bank station.	19.597	The encroachment and channel bank stations are appropriate.
FW FW 06L	The left side of the floodway boundary is within the channel. The left station effective of \$ineffstal\$ for the floodway profile is more than the left channel bank station of \$stalob\$. The left encroachment station of \$encstal\$ is less than the left channel bank station. Adjust the left encroachment station so that it is the same as the left channel bank station.	19.597	The encroachment and channel bank stations are appropriate.
FW SC 01	The surcharge value is negative. Use the suggestions from the Help section such that the negative surcharge value will not be less than (-0.09) foot.	20.049	The surcharge value is -0.10 ft. The encroachment width was set in order to be consistent with the published FIS data. The encroachment stations will not be modified in order to be consistent with previous modeling.
FW ST 04BDL	This is (\$strucname\$) downstream internal section. The left encroachment station is within the channel. The left encroachment station of \$encstal\$ is greater than the left bank station of \$stalob\$. The leftencroachment station should be the same as the left channel bank station.	19.98 (Bridge-DN)	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.

FW ST 04BDR	This is (\$strucname\$) downstream internal section. The right encroachment station is within the channel. The right encroachment station of \$encstar\$ is less than the right bank station of \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.98 (Bridge-DN)	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW ST 04BUL	This is (\$strucname\$) upstream internal section. The left encroachment station is within the channel. The left encroachment station of \$encstal\$ is greater than the left bank station of \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.98 (Bridge-UP)	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW ST 04BUR	This is (\$strucname\$) upstream internal section. The right encroachment station is within the channel. The right encroachment station of \$encstar\$ is less than the right bank station of \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.98 (Bridge-UP)	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW ST 04S2L	This is Section 2 of a hydraulic structure. The left encroachment station is within the channel. The left encroachment station of \$encstal\$ is greater than the left bank station of \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.974	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW ST 04S2R	This is Section 2 of a hydraulic structure. The right encroachment station is within the channel. The right encroachment station of \$encstar\$ is less than the right bank station of \$starob\$. The right encroachment station should be the same as right channel bank station.	19.974	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW ST 04S3L	This is Section 3 of a hydraulic structure. The Left Channel Bank station is outside the Left Abutment station. The left encroachment station is within the channel. The left encroachment station of \$encstal\$ is greater than the left bank station of \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.986	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW ST 04S3R	This is Section 3 of a hydraulic structure. The right encroachment station is within the channel. The right encroachment station of \$encstar\$ is less than the right bank station of \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.986	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.

FW ST 08S2L	<p>This is Section 2 of a hydraulic structure. The left encroachment station is outside the 1%-annual-chance floodplain. The left station effective of \$ineffstal\$ for the 1%-annual-chance profile is less than the left channel bank station of \$stalob\$. The 1%-annual-chance floodplain is outside the channel. The left encroachment station of \$encstal\$ is less than the left station effective of \$ineffstal\$ for the 1%-annual-chance profile. The Enc_Sta_L must be within the 1%-annual-chance floodplain.</p>	19.625	The encroachment stations were set at the edge of the bridge openings and are located appropriately.
FW ST 08S2R	<p>This is Section 2 of a hydraulic structure. The right encroachment station is outside the 1%-annual-chance floodplain. The right station effective of \$ineffstar\$ for the 1%-annual-chance profile is greater than the right channel bank station of \$starob\$. The 1%-annual-chance floodplain is outside the channel. The right encroachment station of \$encstar\$ is greater than the right station effective of \$ineffstar\$ for the 1%-annual-chance profile. The Enc_Sta_R must be within the 1%-annual-chance floodplain.</p>	19.625	The encroachment stations were set at the edge of the bridge openings and are located appropriately.
FW SW 04M1	<p>The name of the stream is (\$streamname\$). Encroachment Method 1 is used. The total conveyance for the 1%-annual-chance flood profile is \$convtotalna\$. The total conveyance for the floodway profile is \$convtotalfw\$. The difference in conveyance between the floodway profile and the 1%-annual-chance flood profile is more than 1%. The Normal Depth option with the same energy slope as the 1%-annual-chance flood profile must be used for both the 1%-annual-chance flood profile and the floodway profile and the plan should be rerun. This message may not be applicable when revising only a portion of a hydraulic model.</p>	0.029	The encroachment stations were set at the edge of the bridge openings and are located appropriately.
NT RC 01L	<p>All of the left overbank Manning's "n" values are less than 0.030. The "n" values for the overbank areas are usually larger than 0.030 (Chow, 1959, page 113). The "n" value(s) should be re-evaluated. Follow the procedure outlined to compute the overbank "n" value(s) for a natural floodplain (FHWA, 1984). Or follow the procedure outlined to compute the "n" values for urban development (USGS, 1977). Please submit supporting information on the evaluation of the "n" values.</p>	19.658 (Bridge-DN)	The channel bank points and roughness values have been reviewed and are correct.

NT RC 05	<p>The left overbank n-value of \$nlob\$ and the right overbank n-value of \$nrob\$ are less than or equal to the channel n-value of \$nch\$.</p> <p>Follow the procedure in (FHWA, 1984) to compute the n-value for the natural floodplain and the channel.</p> <p>Or follow the procedure in (USGS, 1977) to compute the n-value for urban development.</p> <p>Please submit supporting information on the evaluation of n-values.</p>	19.847; 19.96	<p>The Mannings n values have been reviewed and are correct.</p> <p>Supporting data is included within the CLOMR appendix.</p>
NT RS 02BDC	<p>This is the Downstream Bridge Section (BRD). The channel n value of \$chldn\$ for the downstream internal bridge opening section is equal to or larger than the channel n value of \$chl2\$ at Section 2. Usually, the channel "n" value of the bridge opening section represents the area below the bridge deck and is less than the channel "n" value of Section 2. The "n" value for Section 2 represents the natural valley channel section roughness for the reach between Section 3 and Section 4. Please change the "n" value of the internal bridge opening section or provide supporting information for the use of the higher "n" value.</p>	19.98 (Bridge-DN)	<p>The Mannings n values have been reviewed and are correct.</p> <p>Supporting data is included within the CLOMR appendix.</p>
NT RS 02BUC	<p>This is the Upstream Bridge Section (BRU). The channel n value of \$chlup\$ for the upstream internal bridge opening section is equal to or larger than the channel n value of \$chl3\$ at Section 3. Usually, the channel "n" value of the bridge opening section represents the area below the bridge deck and is less than the channel "n" value of Section 3.</p> <p>The "n" value for Section 3 represents the natural valley channel section roughness for the reach between Section 3 and Section 4. Please change the "n" value of the internal bridge opening section or provide supporting information for the use of a higher "n" value.</p>	19.658 (Bridge-UP); 19.98 (Bridge-UP)	<p>The Mannings n values have been reviewed and are correct.</p> <p>Supporting data is included within the CLOMR appendix.</p>
NT TL 01S4	<p>This is Section 4 of a hydraulic structure. The contraction and expansion loss coefficients are \$cc\$ and \$ce\$. They should be equal to 0.3 and 0.5, respectively according to page 5-8 of the HEC-RAS Hydraulic Reference Manual (HEC, 2010)..</p>	19.742	<p>The contraction and expansion coefficients have been reviewed and are appropriate. The change in geometry is not significantly abrupt at this section for greater coefficients.</p>
NT TL 02	<p>Contraction and expansion loss coefficients are \$cc\$ and \$ce\$, respectively. However, this cross section is not at a hydraulic structure. They should be equal to 0.1 and 0.3 according to page 5-8 of the HEC-RAS Hydraulic Reference Manual (HEC, 2010).</p>	19.597; 0.029; 19.625	<p>For all cross sections immediately upstream and downstream of the junction, 0.2/0.4 were applied to account for additional losses due to the junction.</p>

ST DT 01B	<p>This is (\$strucname\$). 'Upstream Dist' of \$distup\$ in "Bridge Width Table" is less than the height of the bridge opening of \$height\$. This indicates that Section 3 may not be placed at the foot of the road embankment or wing walls and may not represent the natural valley cross section. Section 3 should be relocated or provide a statement that it represents the natural valley cross section. The HEC-RAS geometry file may need to be recreated using a GIS program. Lengths at Sections 4, 3 and 2 and 'Upstream Dist' should be adjusted.</p>	19.658 (Bridge-UP); 19.98 (Bridge-UP)	<p>The cross section locations relative to the bridge have been kept from the Effective model. The cross sections represent the open channel conditions upstream of the bridges.</p>
ST DT 02B	<p>This is (\$strucname\$). 'Downstream Dist' of \$distdn\$ in 'Bridge Width Table' is less than the height of the bridge opening of \$height\$. This indicates that Section 2 may not be placed at the foot of the road embankment or wing walls and may not represent the natural valley cross section. Section 2 should be relocated or provide a statement that it represents the natural valley cross section. A HEC-RAS geometry file may need to be recreated using a GIS program. Lengths at Sections 3 and 2 should be adjusted.</p>	19.658 (Bridge-DN); 19.98 (Bridge-DN)	<p>The cross section locations relative to the bridge have been kept from the Effective model. The cross sections represent the open channel conditions upstream of the bridges.</p>
ST DT 03	<p>This is (\$Structure\$) section. The Contraction Length is longer than the Expansion Length. Section 4 channel distance of \$Length_Chnl4\$ is longer than Section 2 channel distance of \$Length_Chnl2\$. Section 4 and Section 1 should be relocated. The HEC-RAS geometry file may need to be recreated using a GIS program.</p>	19.658 (Bridge-UP); 19.98 (Bridge-UP)	<p>The cross section locations relative to the bridge have been kept from the Effective model. The cross sections represent the open channel conditions upstream of the bridges.</p>
ST IF 03S2L	<p>This is Section 2. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the left ineffective flow elevation of \$ineffell\$ at the left ineffective flow station \$ineffstal\$ is equal to or higher than the WSEL of \$wsel2\$. The ineffective flow elevation should be lower than the WSEL at Section 2.</p>	19.625 (Bridge); 19.974 (Bridge)	<p>The ineffective flow areas have been reviewed and are appropriate.</p>
ST IF 03S2R	<p>This is Section 2. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the right ineffective flow elevation of \$ineffell\$ at the right ineffective flow station \$ineffstar\$ is equal to or higher than the WSEL of \$wsel2\$. The ineffective flow elevation should be lower than the WSEL at Section 2.</p>	19.974 (Bridge)	<p>The ineffective flow areas have been reviewed and are appropriate.</p>

ST IF 03S3L	<p>This is Section 3. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the left ineffective flow elevation of \$ineffellr\$ at the left ineffective flow station \$ineffstal\$ is equal to or higher than the WSEL of \$wsel3\$. The computed upstream LMnTpRd is \$lmtprdu\$. The ineffective flow elevation should be equal to or lower than the computed LMnTpRdU. It should also be lower than the WSEL at Section 3.</p>	19.691(Bridge); 19.986(Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 03S3R	<p>This is Section 3. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the right ineffective flow elevation of \$ineffellr\$ at the right ineffective flow station \$ineffstar\$ is equal to or higher than the WSEL of \$wsel3\$. The computed upstream RMnTpRd is \$rmtprdu\$. The ineffective flow elevation should be equal to or lower than the computed RMnTpRdU. It should also be lower than the WSEL at Section 3.</p>	19.986(Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 06S2L	<p>This is Section 2. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Dn_Dist of \$dndist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed left ineffective flow station of \$compineffstal\$ is less than the input left ineffective flow station of \$ineffstal\$. The left ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.625(Bridge); 19.974(Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 06S2R	<p>This is Section 2. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Dn_Dist of \$dndist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed right ineffective flow station of \$compineffstar\$ is greater than the input right ineffective flow station of \$ineffstar\$. The right ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.625(Bridge); 19.974(Bridge)	The ineffective flow areas have been reviewed and are appropriate.

ST IF 06S3L	<p>This is Section 3. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Up Dist of \$updist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed left ineffective flow station of \$compineffstal\$ is less than the input left ineffective flow station of \$ineffstal\$. The left ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.691(Bridge); 19.986(Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 06S3R	<p>This is Section 3. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Up Dist of \$updist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed right ineffective flow station of \$compineffstar\$ is greater than the input right ineffective flow station of \$ineffstar\$. The right ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.691(Bridge); 19.986(Bridge)	The ineffective flow areas have been reviewed and are appropriate.
XS CD 01	<p>Critical Depth occurs at \$assignedname\$ flood. Flow Code will be "C". The Ineffective flow option is used. The Ineffective Flow elevation is equal to or higher than the Critical WSEL. Please investigate whether this selection is appropriate.</p>	20.049	The ineffective flow areas have been reviewed and are appropriate.
XS DC 01	<p>Discharge decreases in the downstream direction for \$assignedname\$ flood. There are no lateral structures. Documentation of hydrologic analysis is required or provide explanation.</p>	0.288	The flow values have been reviewed and are correct. The peak flows in each of the reaches do not occur at the same time, and therefore the cumulative peak is less than the sum of the peaks.
XS IF 03L	<p>The Left Ineffective Flow Station is within the channel. The Left Ineffective Flow Station of \$ineffstal\$ is greater than the LeftBankSta of \$bankstal\$. The Left Ineffective Flow Station or the LeftBankSta should be adjusted.</p>	19.974; 19.986	The ineffective flow locations are from the Effective model and were not modified to be consistent with previous modeling.
XS IF 03R	<p>The Right Ineffective Flow Station is within the channel. The Right Ineffective Flow Station of \$ineffstar\$ is less than the RightBankSta of \$bankstar\$. The Right Ineffective Flow Station or the RightBankSta should be adjusted.</p>	19.974; 19.986	The ineffective flow locations are from the Effective model and were not modified to be consistent with previous modeling.

XS JT 01	<p>The Junction option is used. For Flood Insurance Studies, this option should be used if the tributary and main stream can have coincident peaks. It is appropriate to use for approximate-studied streams; if the discharges at different time periods are known from the rainfall-runoff model; for loop analysis; and for unsteady flow analysis.</p> <p>The Junction should be removed if the above conditions are not satisfied.</p> <p>Refer to the Help section for information on how to remove a Junction.</p> <p>Sample XS JT 01 HEC-RAS files can be downloaded from http://www.fema.gov/library/viewRecord.do?id=2300 under the Cross Section Check Data Sets section.</p>		The junction is appropriate in this location.
XS JT 02	<p>The name of the junction is \$junctionname\$. The length from the \$riverreach1\$ to the \$riverreach2\$ is equal to zero. Please insert the length across the junction in the Junction Data window in HEC-RAS if the junction can be considered.</p>		The junction lengths have been entered into the Junction Data window, but this message is still appearing. This has been resolved.

POST PROJECT MODEL

cHECK-RAS Report

HEC-RAS Project: *cavecrgreenwayclomr.prj*
 Plan File: *cavecrgreenwayclomr.p03*
 Geometry File: *cavecrgreenwayclomr.g03*
 Flow File: *cavecrgreenwayclomr.f02*
 Report Date: *10/16/2013*

Message ID	Message	Cross sections affected	Comments
BR LF 01	This is (\$strucname\$). The selected profile is \$profilename\$. Type of flow is low flow because, 1. EGEL 3 of \$egel3\$ is less than or equal to MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is less than MxLoCdU of \$mxlocdu\$.	19.98 (Bridge-UP)	For information.
BR PW 01	This is a Bridge Section. The selected profile is \$profilename\$. Type of flow is sluice gate pressure and weir flow because, 1. EGEL 3 of \$egel3\$ is greater than MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is equal to or greater than MxLoCdU of \$mxlocdu\$. 3. WSEL 2 of \$wsel2\$ is less than MxLoCdD of \$mxlocdd\$.	19.98 (Bridge-UP)	For information.
BR PW 06	This is \$strucname\$. The selected profile is \$profilename\$. EGEL of \$egel3\$ at Section 3 is higher than the MinTopRd of \$minelweirflow\$. However the WSEL of \$wsel\$ at BRU is less than MinTopRd. Please investigate the problem.	19.98 (Bridge-UP)	The bridge is experiencing only pressure flow at this location. The EGL is above the roadway and the HGL is above the soffit, but the water surface is forced below the bridge.
CV CF 01	This is (\$strucname\$). Culvert Chart # is \$chart\$ and Scale # is \$scale\$. Culvert entrance shape is \$shape\$. Culvert entrance loss coefficient is \$inputentlosscoef\$. It should be equal to \$entlosscoef\$. Please refer to Table 6-3 and Table 6-4 on Page 6-26 of HEC-RAS Hydraulic Reference Manual	19.658	The entrance to the culvert is a gradual change from a channelized section to the culverts. The configuration doesn't correspond precisely to a Chart and Scale #. The entrance loss is correct.
CV CF 02	This is (\$strucname\$). Culvert exit loss coefficient is \$extlosscoef\$. It should be equal to 1.0, unless there is supporting evidence to use this value.	19.658	The exit loss coefficient is actually 0.3, not 0.2. The exit from the culverts is not an abrupt change in cross section and as such, the loss coefficient was reduced per HEC-RAS Hydraulic Reference Manual Chapter 6 (pg. 6-27).
CV LF 01	This is (\$strucname\$). The selected profile is \$profilename\$. Type of flow is low flow because, 1. EGEL 3 of \$egel3\$ is less than or equal to MinTopRd of \$minelweirflow\$. 2. EGEL 3 of \$egel3\$ is less than MxLoCdU of \$mxlocdu\$.	19.658	For information.
CV PF 01	This is (\$strucname\$). The selected profile is \$profilename\$. Type of flow is pressure flow because, 1. EGEL 3 of \$egel3\$ is less than or equal to MinTopRd of \$minelweirflow\$. 2. CulvWSIn of \$Culv_WS_Inlet\$ is equal to or greater than MxLoCdU of \$mxlocdu\$. 3. CulvWSOut of \$culvwsoutlet\$ is equal to or greater than MxLoCdD of \$mxlocdd\$.	19.658	For information.

FW FW 01L	The Left encroachment station is within the channel. The Left encroachment station \$encrstal\$ is more than left channel bank station \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.505; 19.56; 19.847; 20.049; 0.112; 0.198; 0.288	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW FW 01R	The Right encroachment station is within the channel. The Right encroachment station \$encrstar\$ is less than right channel bank station \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.505; 19.56; 19.597; 19.742; 19.847; 20.049; 0.112; 0.198; 0.288	The encroachment and channel bank stations are from the Effective model and will not be modified in order to be consistent with the previous modeling.
FW FW 03L	The left channel bank elevation of \$lobelev\$ is higher than the 1-percent-annual-chance WSEL of \$wsel\$. Relocate the left channel bank station at or below the 1-percent-annual-chance WSEL. Do not place the bank stations at the bottom of the channel. Do not place the bank stations at the low flow channel. Use the Horizontal Variation in "n" Values option in HEC-RAS to assign different "n" values to the left bank slope, low flow channel, and the right bank slope. Let HEC-RAS compute the composite "n" value based on the depth of flow.	19.505; 19.56; 19.597; 19.847; 20.049; 0.112; 0.288	The channel bank stations have been reviewed and are consistent with local conditions and effective modeling.
FW FW 03R	The right channel bank elevation of \$robelev\$ is higher than the 1-percent annual chance WSEL of \$wsel\$. Relocate the right channel bank station at or below the 1-percent annual chance WSEL. Do not place the bank stations at the bottom of the channel. Do not place the bank stations at the low flow channel. Use the Horizontal Variation in "n" Values option in HEC-RAS to assign different "n" values to the left bank slope, low flow channel, and the right bank slope. Let HEC-RAS compute the composite "n" value based on the depth of flow.	19.505; 19.56; 19.597; 19.847; 20.049; 0.112; 0.198; 0.288	The channel bank stations have been reviewed and are consistent with local conditions and effective modeling.
FW FW 05L	The 1-percent annual chance flood is contained within the channel. The Left encroachment station \$encstal\$ is outside the channel. The Left channel bank station is \$stalob\$. Adjust the left encroachment station so that it is the same as the left channel bank station.	19.597	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW FW 06L	The left side of the floodway boundary is within the channel. The left station effective of \$ineffstal\$ for the floodway profile is more than the left channel bank station of \$stalob\$. The left encroachment station of \$encstal\$ is less than the left channel bank station. Adjust the left encroachment station so that it is the same as the left channel bank station.	19.597	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW SC 01	The surcharge value is negative. Use the suggestions from the Help section such that the negative surcharge value will not be less than (-0.09) foot.	20.049	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.

FW ST 04BDL	This is (\$strucname\$) downstream internal section. The left encroachment station is within the channel. The left encroachment station of \$encstal\$ is greater than the left bank station of \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.98 (Bridge-DN)	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW ST 04BDR	This is (\$strucname\$) downstream internal section. The right encroachment station is within the channel. The right encroachment station of \$encstar\$ is less than the right bank station of \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.98 (Bridge-DN)	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW ST 04BUL	This is (\$strucname\$) upstream internal section. The left encroachment station is within the channel. The left encroachment station of \$encstal\$ is greater than the left bank station of \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.98 (Bridge-UP)	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW ST 04BUR	This is (\$strucname\$) upstream internal section. The right encroachment station is within the channel. The right encroachment station of \$encstar\$ is less than the right bank station of \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.98 (Bridge-UP)	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW ST 04S2L	This is Section 2 of a hydraulic structure. The left encroachment station is within the channel. The left encroachment station of \$encstal\$ is greater than the left bank station of \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.974	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW ST 04S2R	This is Section 2 of a hydraulic structure. The right encroachment station is within the channel. The right encroachment station of \$encstar\$ is less than the right bank station of \$starob\$. The right encroachment station should be the same as right channel bank station.	19.974	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW ST 04S3L	This is Section 3 of a hydraulic structure. The Left Channel Bank station is outside the Left Abutment station. The left encroachment station is within the channel. The left encroachment station of \$encstal\$ is greater than the left bank station of \$stalob\$. The left encroachment station should be the same as the left channel bank station.	19.986	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.
FW ST 04S3R	This is Section 3 of a hydraulic structure. The right encroachment station is within the channel. The right encroachment station of \$encstar\$ is less than the right bank station of \$starob\$. The right encroachment station should be the same as the right channel bank station.	19.986	The encroachment widths were taken from the Effective model and were not modified in order to provide consistent results.

FW SW 04M1	<p>The name of the stream is (\$streamname\$). Encroachment Method 1 is used. The total conveyance for the 1%-annual-chance flood profile is \$convtotalna\$. The total conveyance for the floodway profile is \$convtotalfw\$. The difference in conveyance between the floodway profile and the 1%-annual-chance flood profile is more than 1%. The Normal Depth option with the same energy slope as the 1%-annual-chance flood profile must be used for both the 1%-annual-chance flood profile and the floodway profile and the plan should be rerun. This message may not be applicable when revising only a portion of a hydraulic model.</p>	0.029	The encroachment width was set to be consistent with the effective FIS data.
NT RC 01L	<p>All of the left overbank Manning's "n" values are less than 0.030. The "n" values for the overbank areas are usually larger than 0.030 (Chow, 1959, page 113). The "n" value(s) should be re-evaluated. Follow the procedure outlined to compute the overbank "n" value(s) for a natural floodplain (FHWA, 1984). Or follow the procedure outlined to compute the "n" values for urban development (USGS, 1977). Please submit supporting information on the evaluation of the "n" values.</p>	19.658 (Culvert-DN)	The channel bank points and roughness values have been reviewed and are correct.
NT RC 05	<p>The left overbank n-value of \$nlob\$ and the right overbank n-value of \$nrob\$ are less than or equal to the channel n-value of \$nch\$. Follow the procedure in (FHWA, 1984) to compute the n-value for the natural floodplain and the channel. Or follow the procedure in (USGS, 1977) to compute the n-value for urban development. Please submit supporting information on the evaluation of n-values.</p>	19.847; 19.96	The channel bank points and roughness values have been reviewed and are correct.
NT RS 02BDC	<p>This is the Downstream Bridge Section (BRD). The channel n value of \$chldn\$ for the downstream internal bridge opening section is equal to or larger than the channel n value of \$chl2\$ at Section 2. Usually, the channel "n" value of the bridge opening section represents the area below the bridge deck and is less than the channel "n" value of Section 2. The "n" value for Section 2 represents the natural valley channel section roughness for the reach between Section 3 and Section 4. Please change the "n" value of the internal bridge opening section or provide supporting information for the use of the higher "n" value.</p>	19.98 (Bridge-DN)	The channel bank points and roughness values have been reviewed and are correct.

NT RS 02BUC	This is the Upstream Bridge Section (BRU). The channel n value of \$chlup\$ for the upstream internal bridge opening section is equal to or larger than the channel n value of \$chl3\$ at Section 3. Usually, the channel "n" value of the bridge opening section represents the area below the bridge deck and is less than the channel "n" value of Section 3. The "n" value for Section 3 represents the natural valley channel section roughness for the reach between Section 3 and Section 4. Please change the "n" value of the internal bridge opening section or provide supporting information for the use of a higher "n" value.	19.98 (Bridge-UP)	The channel bank points and roughness values have been reviewed and are correct.
NT TL 01S3	This is Section3 of a hydraulic structure. The contraction and expansion loss coefficients are \$cc\$ and \$ce\$. They should be equal to 0.3 and 0.5, respectively, for typical structure sections according to page 5-8 of the HEC-RAS Hydraulic Reference Manual (HEC, 2010).	19.691	The contraction and expansion coefficients have been reviewed and are appropriate. The change in geometry is not significantly abrupt at this section for greater coefficients.
NT TL 01S4	This is Section 4 of a hydraulic structure. The contraction and expansion loss coefficients are \$cc\$ and \$ce\$. They should be equal to 0.3 and 0.5, respectively according to page 5-8 of the HEC-RAS Hydraulic Reference Manual (HEC, 2010)..	19.742	The contraction and expansion coefficients have been reviewed and are appropriate. The change in geometry is not significantly abrupt at this section for greater coefficients.
NT TL 02	Contraction and expansion loss coefficients are \$cc\$ and \$ce\$, respectively. However, this cross section is not at a hydraulic structure. They should be equal to 0.1 and 0.3 according to page 5-8 of the HEC-RAS Hydraulic Reference Manual (HEC, 2010).	19.597; 0.029; 19.625	For all cross sections immediately upstream and downstream of the junction, 0.2/0.4 were applied to account for th additional losses due to the junction.
ST DT 01B	This is (\$strucname\$). 'Upstream Dist' of \$distup\$ in "Bridge Width Table" is less than the height of the bridge opening of \$height\$. This indicates that Section 3 may not be placed at the foot of the road embankment or wing walls and may not represent the natural valley cross section. Section 3 should be relocated or provide a statement that it represents the natural valley cross section. The HEC-RAS geometry file may need to be recreated using a GIS program. Lengths at Sections 4, 3 and 2 and 'Upstream Dist' should be adjusted.	19.98 (Bridge-UP)	The cross section locations relative to the bridge have been kept from the Effective model. The cross sections represent the open channel conditions upstream of the bridges.

ST DT 01C	This is (\$strucname\$). 'Distance to Upstrm XS' of \$distup\$ in 'Culvert Data Editor' window is less than the height of the culvert opening of \$height\$. This indicates that Section 3 may not be placed at the foot of the road embankment or wing walls and may not represent the natural valley cross section. Section 3 should be relocated or provide a statement that it represents the natural valley cross section. A HEC-RAS geometry file may need to be recreated using a GIS program. Lengths at Sections 4, 3 and 2 and 'Distance to Upstrm XS' should be adjusted.	19.658 (Culvert-UP)	The cross section locations relative to the bridge have been kept from the Effective model. The cross sections represent the open channel conditions upstream of the bridges.
ST DT 02B	This is (\$strucname\$). 'Downstream Dist' of \$distdn\$ in 'Bridge Width Table' is less than the height of the bridge opening of \$height\$. This indicates that Section 2 may not be placed at the foot of the road embankment or wing walls and may not represent the natural valley cross section. Section 2 should be relocated or provide a statement that it represents the natural valley cross section. A HEC-RAS geometry file may need to be recreated using a GIS program. Lengths at Sections 3 and 2 should be adjusted.	19.98 (Bridge-DN)	The cross section locations relative to the bridge have been kept from the Effective model. The cross sections represent the open channel conditions upstream of the bridges.
ST DT 02C	This is (\$strucname\$). The culvert downstream distance, \$distdn\$ is equal to Length_Chnl at Section 3 minus (DistanceUp + CulvertLength). The culvert downstream distance of \$distdn\$ is less than the height of the culvert opening of \$height\$. This indicates that Section 2 may not be placed at the foot of the road embankment or wing walls and may not represent the natural valley cross section. Section 2 should be relocated or provide a statement that it represents the natural valley cross section. The HEC-RAS geometry file may need to be recreated using a GIS program. Lengths at Sections 3 & 2 should be adjusted.	19.658 (Culvert-DN)	The cross section locations relative to the bridge have been kept from the Effective model. The cross sections represent the open channel conditions upstream of the bridge.
ST DT 03	This is (\$Structure\$) section. The Contraction Length is longer than the Expansion Length. Section 4 channel distance of \$Length_Chnl4\$ is longer than Section 2 channel distance of \$Length_Chnl2\$. Section 4 and Section 1 should be relocated. The HEC-RAS geometry file may need to be recreated using a GIS program.	19.658 (Culvert-UP); 19.98 (Bridge-UP)	The cross section locations relative to the bridge have been kept from the Effective model. The cross sections represent the open channel conditions upstream of the bridges.
ST IF 03S2L	This is Section 2. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the left ineffective flow elevation of \$inefflwr\$ at the left ineffective flow station \$ineffstal\$ is equal to or higher than the WSEL of \$wsel2\$. The ineffective flow elevation should be lower than the WSEL at Section 2.	19.974 (Bridge)	The ineffective flow areas have been reviewed and are appropriate.

ST IF 03S2R	<p>This is Section 2. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the right ineffective flow elevation of \$ineffell\$ at the right ineffective flow station \$ineffstar\$ is equal to or higher than the WSEL of \$wsel2\$. The ineffective flow elevation should be lower than the WSEL at Section 2.</p>	19.974 (Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 03S3L	<p>This is Section 3. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the left ineffective flow elevation of \$ineffellr\$ at the left ineffective flow station \$ineffstal\$ is equal to or higher than the WSEL of \$wsel3\$. The computed upstream LMnTpRd is \$lmntprdu\$. The ineffective flow elevation should be equal to or lower than the computed LMnTpRdU. It should also be lower than the WSEL at Section 3.</p>	19.986 (Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 03S3R	<p>This is Section 3. The selected profile is \$profilename\$. Weir flow occurs at (\$strucname\$). However, the right ineffective flow elevation of \$ineffell\$ at the right ineffective flow station \$ineffstar\$ is equal to or higher than the WSEL of \$wsel3\$. The computed upstream RMnTpRd is \$rmntprdu\$. The ineffective flow elevation should be equal to or lower than the computed RMnTpRdU. It should also be lower than the WSEL at Section 3.</p>	19.986 (Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 06S2L	<p>This is Section 2. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Dn_Dist of \$dndist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed left ineffective flow station of \$compineffstal\$ is less than the input left ineffective flow station of \$ineffstal\$. The left ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.974 (Bridge)	The ineffective flow areas have been reviewed and are appropriate.

ST IF 06S2R	<p>This is Section 2. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Dn_Dist of \$dndist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed right ineffective flow station of \$compineffstar\$ is greater than the input right ineffective flow station of \$ineffstar\$. The right ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.974 (Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 06S3L	<p>This is Section 3. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Up_Dist of \$updist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed left ineffective flow station of \$compineffstal\$ is less than the input left ineffective flow station of \$ineffstal\$. The left ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.986 (Bridge)	The ineffective flow areas have been reviewed and are appropriate.
ST IF 06S3R	<p>This is Section 3. The selected profile is \$profilename\$. Low or pressure flow occurs at (\$strucname\$). The Up_Dist of \$updist\$ at the structure is less than the opening height of \$openheight\$ of the structure. The cHECK-RAS computed right ineffective flow station of \$compineffstar\$ is greater than the input right ineffective flow station of \$ineffstar\$. The right ineffective flow station should be adjusted per the help instructions and the HEC-RAS manual.</p>	19.986 (Bridge)	The ineffective flow areas have been reviewed and are appropriate.
XS CD 01	<p>Critical Depth occurs at \$assignedname\$ flood. Flow Code will be "C". The Ineffective flow option is used. The Ineffective Flow elevation is equal to or higher than the Critical WSEL. Please investigate whether this selection is appropriate.</p>	20.049	The ineffective flow areas have been reviewed and are appropriate.
XS DC 01	<p>Discharge decreases in the downstream direction for \$assignedname\$ flood. There are no lateral structures. Documentation of hydrologic analysis is required or provide explanation.</p>	0.288	The ineffective flow areas have been reviewed and are appropriate.
XS IF 03L	<p>The Left Ineffective Flow Station is within the channel. The Left Ineffective Flow Station of \$ineffstal\$ is greater than the LeftBankSta of \$bankstal\$. The Left Ineffective Flow Station or the LeftBankSta should be adjusted.</p>	19.974; 19.986	The ineffective flow locations are from the Effective model and were not modified to be consistent with previous modeling.

XS IF 03R	The Right Ineffective Flow Station is within the channel. The Right Ineffective Flow Station of \$ineffstar\$ is less than the RightBankSta of \$bankstar\$. The Right Ineffective Flow Station or the RightBankSta should be adjusted.	19.974; 19.986	The ineffective flow locations are from the Effective model and were not modified to be consistent with previous modeling.
XS JT 01	The Junction option is used. For Flood Insurance Studies, this option should be used if the tributary and main stream can have coincident peaks. It is appropriate to use for approximate-studied streams; if the discharges at different time periods are known from the rainfall-runoff model; for loop analysis; and for unsteady flow analysis. The Junction should be removed if the above conditions are not satisfied. Refer to the Help section for information on how to remove a Junction. Sample XS JT 01 HEC-RAS files can be downloaded from http://www.fema.gov/library/viewRecord.do?id=2300 under the Cross Section Check Data Sets section.		The junction option is appropriate in this location.
XS JT 02	The name of the junction is \$junctionname\$. The length from the \$riverreach1\$ to the \$riverreach2\$ is equal to zero. Please insert the length across the junction in the Junction Data window in HEC-RAS if the junction can be considered.		The junction lengths have been entered in the Junction Data window, but the message is still appearing. This has been resolved.

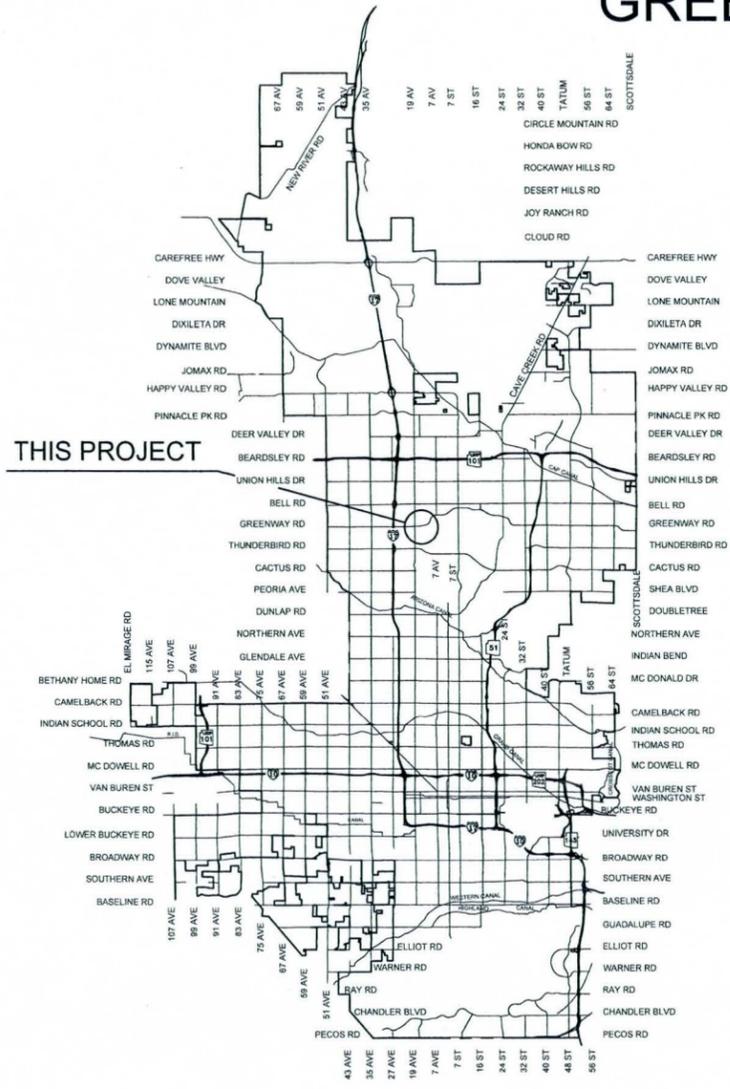
E.6: DESIGN PLANS

CITY OF PHOENIX
STREET TRANSPORTATION DEPARTMENT
DESIGN & CONSTRUCTION MANAGEMENT DIVISION
GREENWAY PARKWAY BRIDGE AT CAVE CREEK
GMP-2 CONSTRUCTION PLANS
ST85110069

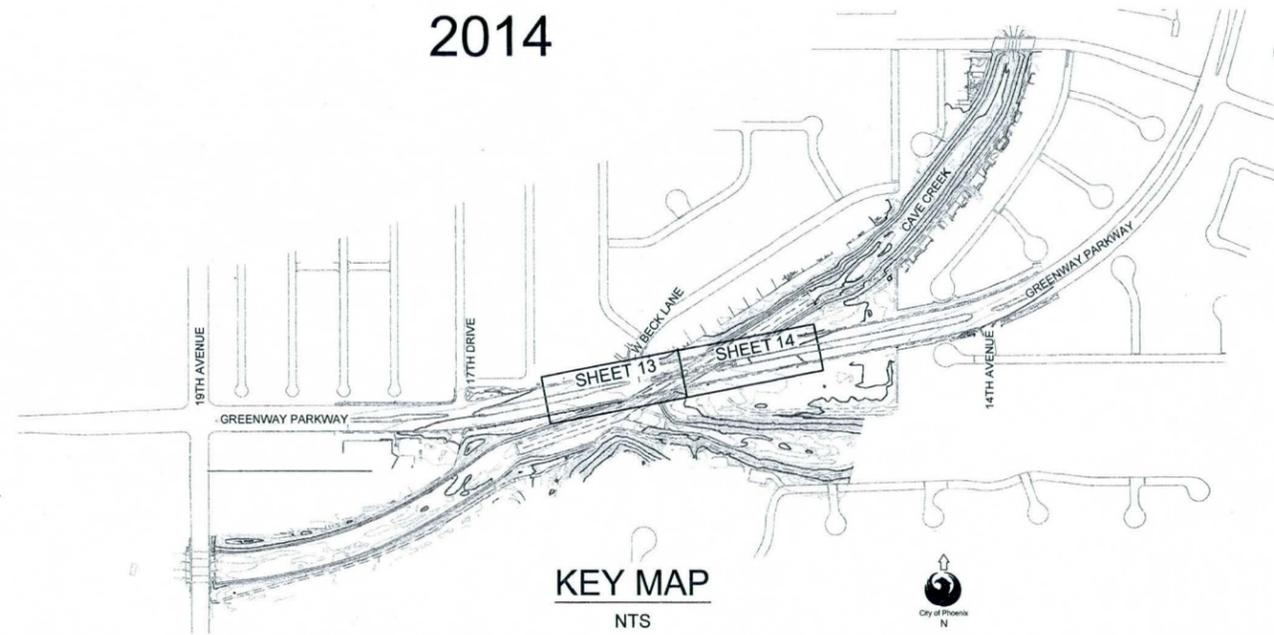


2014

Plans Used For Preparation of GMP No. 2	
CMAR	Date
Design Professional	Date
Project Manager	Date



VICINITY MAP
NTS



KEY MAP
NTS

	F.H.W.A. REGION	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
	9	ARIZ.	ST85110069	1	37
CONSULTING ENGINEER DES. M. PETERSON DR. E. HYNICK CK. B. DIXON DATE: SEP 2013					

MAYOR
GREG STANTON
CITY MANAGER
DAVID CAVAZOS
CITY COUNCIL

- DISTRICT NO 1. THELDA WILLIAMS
- DISTRICT NO 2. JIM WARING
- DISTRICT NO 3. BILL GATES
- DISTRICT NO 4. TOM SIMPLOT
- DISTRICT NO 5. DANIEL VALENZUELA
- DISTRICT NO 6. SAL DICICCIO
- DISTRICT NO 7. MICHAEL NOWAKOWSKI
- DISTRICT NO 8. MICHAEL JOHNSON

INDEX OF SHEETS

- 1 COVER SHEET
- 2 LEGEND & NOTES
- 3 SUMMARY OF QUANTITIES
- 4 CENTERLINE GEOMETRY AND SURVEY CONTROL
- 5 TYPICAL SECTIONS
- 6-12 DETAIL SHEETS
- 13-14 PAVING PLAN & PROFILE
- 15 CULVERT PLAN & PROFILE
- 16 CULVERT STAKING PLAN
- 17 CULVERT ELEVATION & SECTION
- 18 CULVERT REINFORCING DETAILS
- 19 CORNER DETAILS
- 20-21 CULVERT REINFORCING PLAN
- 22-23 CULVERT REINFORCING DETAILS
- 24 CULVERT BACKFILL PLAN
- 25 RETAINING WALL ELEVATIONS
- 26 RETAINING WALL DETAILS
- 27-28 STORM DRAIN PLAN & PROFILES
- 29-32 LANDSCAPE PLAN
- 33 LANDSCAPE DETAILS
- 34 CONCRETE BOX CULVERT AESTHETICS
- 35 ELECTRICAL PLAN
- 36-37 SOIL BORING LOGS



"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX."

APPROVED _____ DATE _____
ASSISTANT STREET TRANSPORTATION DIRECTOR

APPROVED _____ DATE _____
DEPUTY STREET TRANSPORTATION DIRECTOR

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ST851100690
QS 34-25, 35-25
GREENWAY PARKWAY BRIDGE AT CAVE CREEK

GREENWAY PARKWAY BRIDGE
AT CAVE CREEK
PHOENIX STREET - MARICOPA CO.



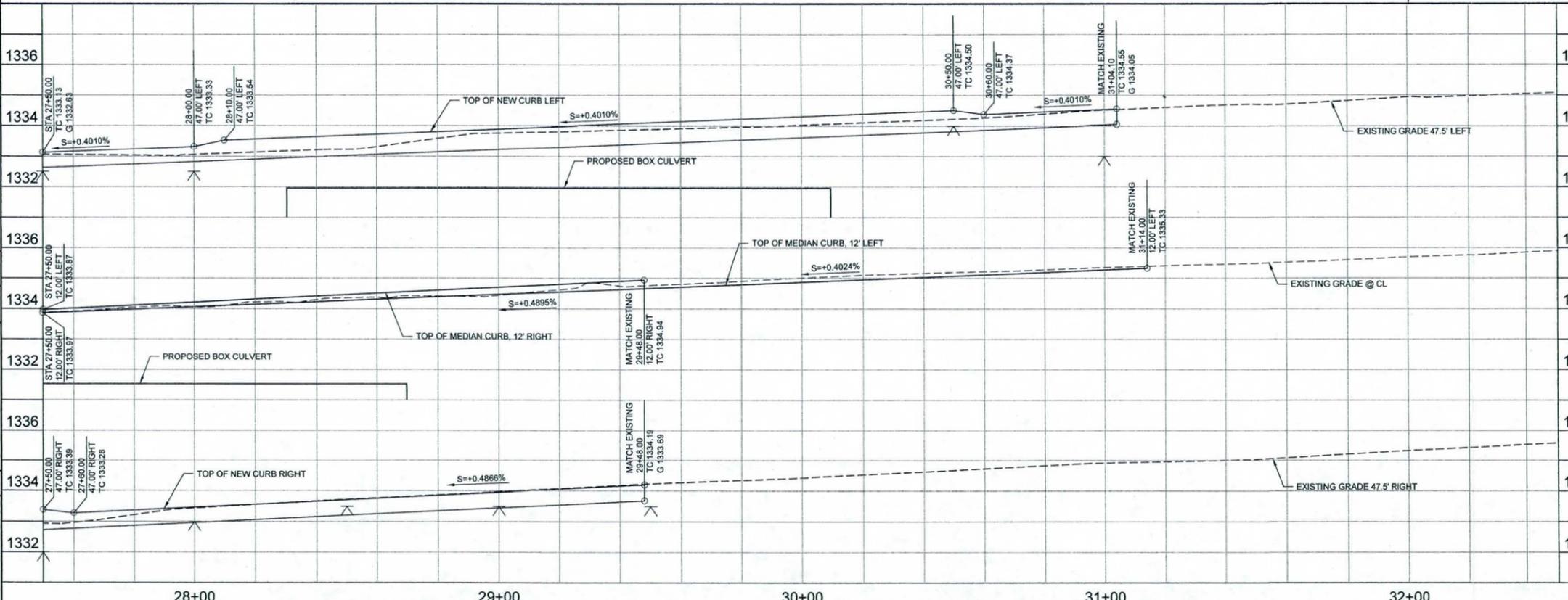
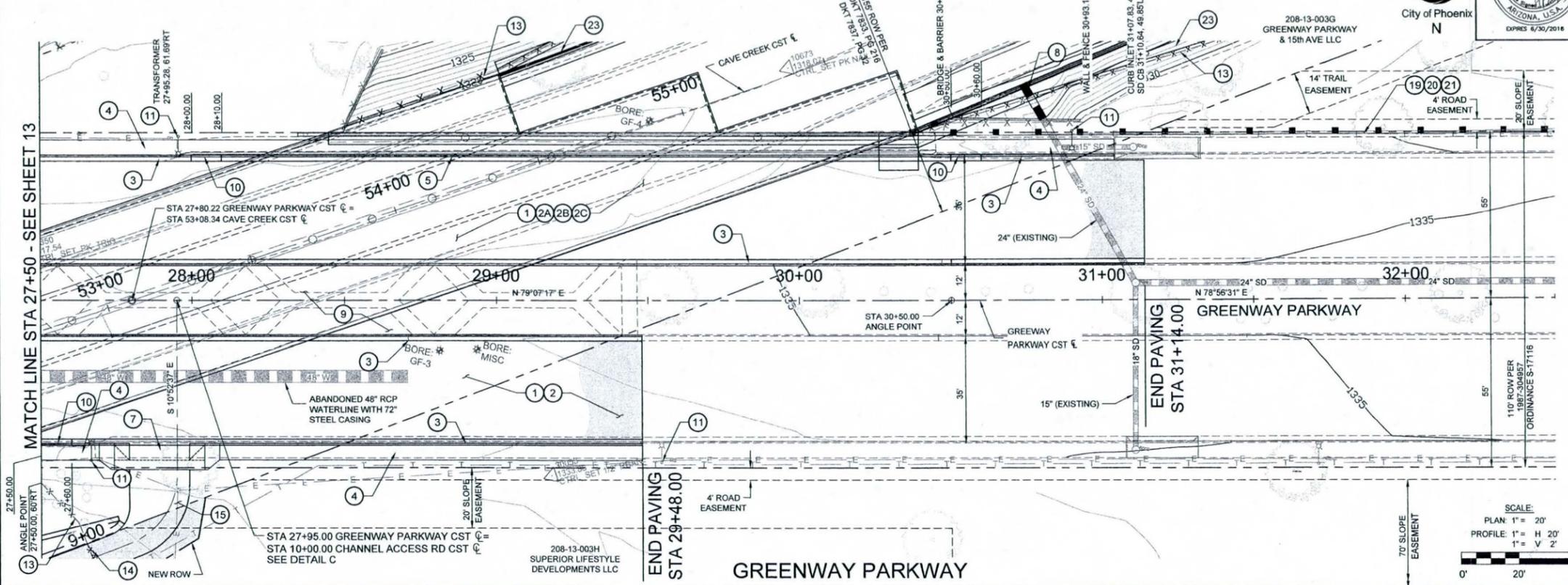
F.H.W.A. REGION	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
9	AZ	ST85110069	14	37

Gannett Fleming
CONSULTING ENGINEER
DR. E. HYNICK | DES. D. KELLY | CK. B. DIXON | DATE: SEP 2013

CONSTRUCTION NOTES

1	SUBGRADE PREPARATION	SY	2573
2A	ASPHALTIC CONCRETE (D 1/2)	TON	223
2B	ASPHALTIC CONCRETE (A 1 1/2)	TON	669
2C	TACK COAT	TON	2
3	VERTICAL CURB & GUTTER PER MAG STD DETAIL 220, TYPE "A", H=6"	LF	844
4	CONCRETE SIDEWALK PER COP STD DETAIL P1230	SF	2550
5	VERTICAL CURB & GUTTER PER MAG STD DETAIL 220, TYPE "A", H=8"	LF	240
7	CONCRETE COMMERCIAL DRIVEWAY PER COP STD DETAIL P1255-1, WIDTH=20"	SF	307
8	STORM DRAIN, MANHOLE OR CATCH BASIN MODIFICATION/REPLACEMENT SEE STORM DRAIN PLAN SHEETS		
9	DECORATIVE CONCRETE MEDIAN SEE LANDSCAPE PLANS		
10	CURB AND GUTTER TRANSITION SEE DETAIL F	LF	30
11	EXISTING STREET LIGHT, SEE GMP1		
13	CHAIN LINK FENCE PER ADOT STD DETAIL C-12.20, TYPE 1; H=72"	LF	391
14	6" CHAIN LINK GATE PER ADOT STD DETAIL C-12.20, L=14'	EA	1
15	CHANNEL ACCESS ROAD SEE SHEET 7 THIS SET.		
19	STA 30+36 TO STA 33+27, 54.00' LT GUARDRAIL PER ADOT STD DETAIL C-10.03	LF	291
20	STA 30+36, 54.00' LT THRIE BEAM TRANSITION PER ADOT STD DETAIL SD-1.03	EA	1
21	STA 33+27, 54.00' LT GUARDRAIL END TREATMENT PER DETAIL A	EA	1
23	SHOTCRETE SLOPE PROTECTION SEE SHEET 15 THIS SET		

NO.	DESCRIPTION	REV BY	CHK BY	DATE



- SHEET NOTES:**
- FOR BOX CULVERT PLAN & PROFILE, SEE SHEET 15, THIS SET.
 - ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
 - ALL STATIONS AND OFFSETS REFERENCE GREENWAY PARKWAY CST C UNLESS NOTED OTHERWISE.
 - FOR TEMPORARY BENCHMARK SEE SHEET 4.



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PAVING PLAN & PROFILE
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT
**GREENWAY PARKWAY BRIDGE
AT CAVE CREEK - GMP-2
ST85110069**

DR. E. HYNICK	DES. D. KELLY	CK. B. DIXON	SHEET NO.	TOTAL SHEETS
DATE: SEP 2013	DATE: SEP 2013	DATE: SEP 2013	14	37

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GREENWAY PARKWAY BRIDGE AT CAVE CREEK ST85110069

GREENWAY PARKWAY BRIDGE
AT CAVE CREEK
PHOENIX STREET - MARICOPA CO.

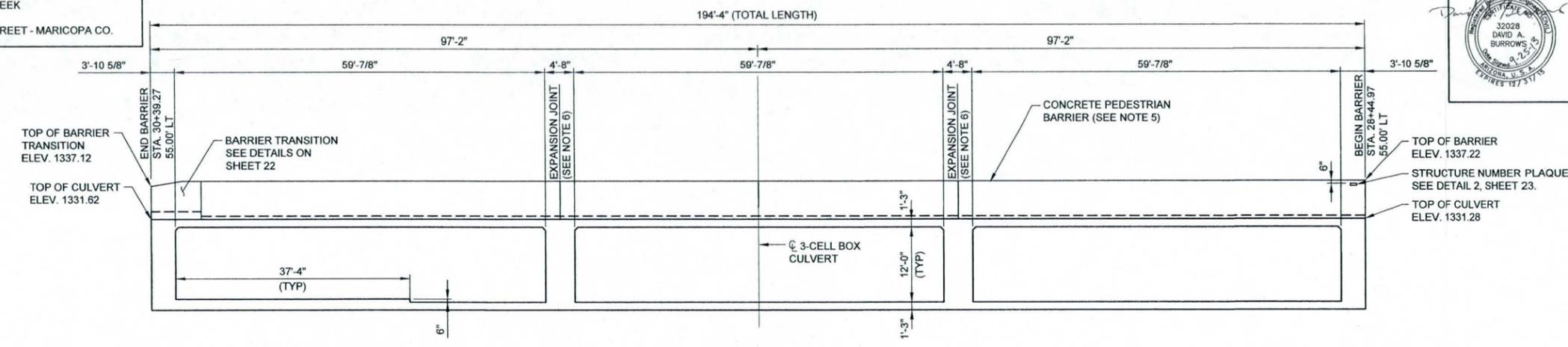


F.H.W.A. REGION	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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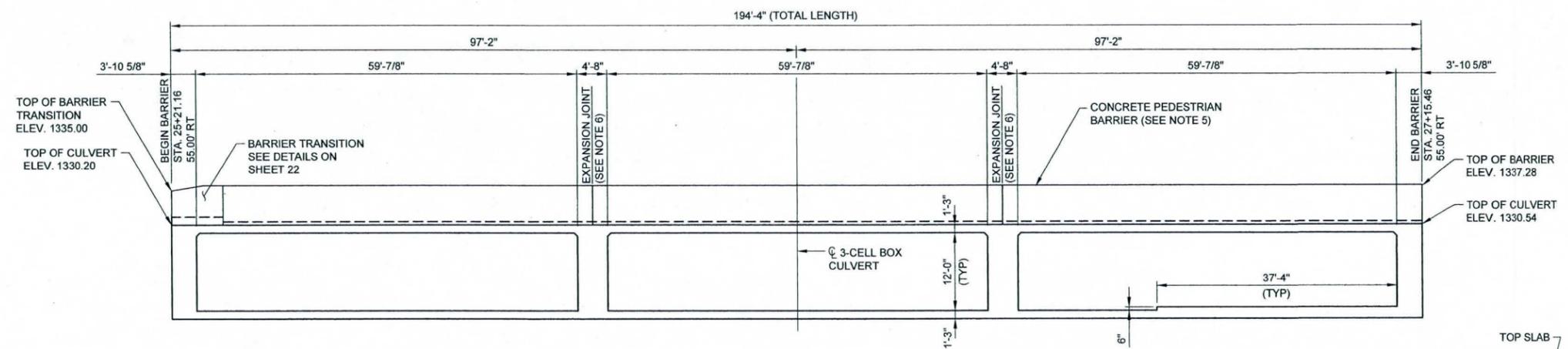
Gannett Fleming
4722 N. 24th Street, Suite 250 Phoenix, AZ 85016-4862
Phone (602) 953-8817 Fax (602) 953-8817 Web www.gannett.com

CONSULTING ENGINEER
DR. E. HYNICK | DES: D. BURROWS | CK: S. SHERRILL | DATE: SEP 2013

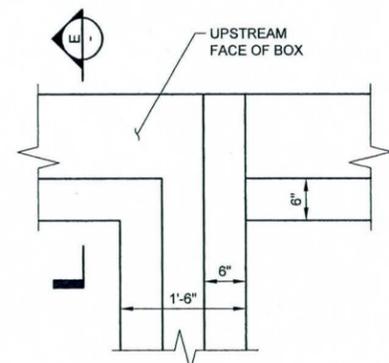
REVISION BY CITY OF PHOENIX	NO.	DESCRIPTION	REV BY	CHK BY	DATE
REVISION BY CITY OF PHOENIX	NO.	DESCRIPTION	REV BY	CHK BY	DATE
REVISION BY CITY OF PHOENIX	NO.	DESCRIPTION	REV BY	CHK BY	DATE



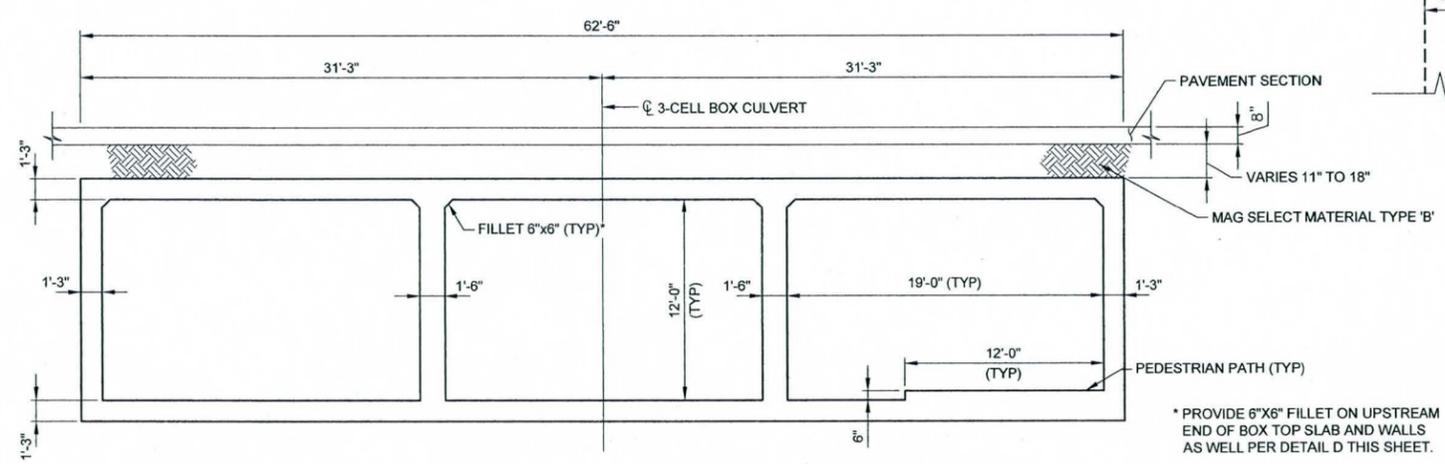
A SECTION
SCALE: 1"=10'



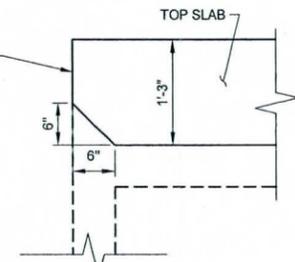
B SECTION
SCALE: 1"=10'



D FILLET DETAIL
(UPSTREAM END ONLY)
SCALE: 1"=1'-0"



C TYPICAL SECTION
3-CELL BOX CULVERT
SCALE: 1"=5'



E SECTION
SCALE: 1"=1'-0"

- NOTES:**
1. RETAINING WALLS NOT SHOWN FOR CLARITY.
 2. FOR CULVERT REINFORCING SEE SHEET 18.
 3. FOR RETAINING WALL DIMENSIONS AND ELEVATIONS SEE SHEET 25.
 4. FOR RETAINING WALL DETAILS AND REINFORCING SEE SHEET 26.
 5. MINIMUM 42" PEDESTRIAN BARRIER HEIGHT MEASURED FROM THE TOP OF SIDEWALK.
 6. CONCRETE PEDESTRIAN BARRIER SHALL HAVE 1/2" BITUMINOUS JOINT FILLER IN OPEN JOINTS CENTERED OVER INTERIOR CULVERT WALLS.



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CULVERT ELEVATION & SECTION
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT
**GREENWAY PARKWAY BRIDGE
AT CAVE CREEK - GMP-2
ST85110069**

DR. E. HYNICK	DES: D. BURROWS	CK: S. SHERRILL	SHEET NO.	TOTAL SHEETS
DATE: SEP 2013	DATE: SEP 2013	DATE: SEP 2013	17	37

SCALE: AS NOTED

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GREENWAY PARKWAY BRIDGE AT CAVE CREEK ST85110069

APPENDIX F: EROSION, SEDIMENT TRANSPORT AND GEOMORPHIC ANALYSIS SUPPORTING DOCUMENTATION

No erosion, sediment transport or geomorphic analyses were conducted as part of this study.