NEW RIVER CHANNELIZATION
GRAND AVENUE TO SKUNK CREEK

CONDITIONAL LETTER OF MAP REVISION SUBMITTAL
TECHNICAL DATA NOTEBOOK

Contract FCD 2003 C001

PCN No. 400-06-31

December 2004

Submitted to:

Federal Emergency Management Agency
Hazard Study Branch
Mr. Matthew Miller, Chief
Technical Services Division
500 C Street Southwest
Washington, D.C. 20472
Phone: (202) 646-2746

Submitted by:

J2 Engineering and Environmental Design
8222 South 48th Street
Suite 135
Phoenix, AZ 85044
Phone: (602) 438-2221

In Association With:

Wood, Patel & Associates, Inc.
2051 West Northern Avenue
Suite 100
Phoenix, AZ 85021
Phone: (602) 335-8500
Fax: (602) 335-8580

On behalf of:

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, AZ 85009
Phone: (602) 506-1501

Registered Professional Engineer (Civil) CERTIFICATE NO. 32854 SHIMIN ZOU Date Signed 12/28/04 ARIZONA, U.S.A.

Engineer

Registered Professional Engineer (Civil) CERTIFICATE NO. 10512 ASHOK C. PATEL Date Signed 12/28/04 ARIZONA, U.S.A.

Peer Reviewer

ask P.

CLOMR LETTER

Federal Emergency Management Agency

Washington, D.C. 20472

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IN REPLY REFER TO:
Case No.: 05-09-1046R

The Honorable John Keegan
Mayor, City of Peoria
City of Peoria Municipal Complex
8401 West Monroe Street
Peoria, AZ 85345

Community: City of Peoria, AZ
Community No.: 040050

104

Dear Mayor Keegan:

This responds to a request that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) comment on the effects that a proposed project would have on 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 January 20, 2006, Ms. Catherine W. Regester, P.E., CFM, Flood Control District of Maricopa County, requested that FEMA evaluate the effects along the New River that a new detailed hydraulic analysis, updated topographic information, and a proposed project from just upstream of Grand Avenue to the confluence of Skunk Creek would have on the flood hazard information shown on the effective FIRM and FIS report. The proposed project will consist of channel improvements and placement of fill from just upstream of Grand Avenue to the confluence of Skunk Creek.

All data required to complete our review of this request for a Conditional Letter of Map Revision (CLOMR) were submitted with letters from Ms. Regester.

We reviewed the submitted data and the data used to prepare the effective FIRM for your community and determined that the proposed project meets the minimum floodplain management criteria of the NFIP. The submitted existing conditions HEC-RAS hydraulic computer model, dated August 19, 2005, based on updated topographic information, was used as the base conditions model in our review of the proposed conditions model for this CLOMR request. We believe that, if the proposed project is constructed as shown on the certified topographic work map entitled "New River – Grand Avenue to Skunk Creek Project Number FCD2003C001," prepared by the Flood Control District of Maricopa County, dated January 2006, and the data listed below are received, a revision to the FIRM and FIS report would be warranted.

Our review of existing conditions revealed that the elevations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) decreased compared to the effective Base Flood Elevations (BFEs) for the reach of the New River from Grand Avenue to the confluence of Skunk Creek. The maximum decrease in BFE, 6.0 feet, occurred approximately 500 feet downstream of the confluence of Skunk Creek.

As a result of the proposed project, the BFEs will increase in some areas and decrease in other areas compared to the existing conditions BFEs for the New River from Grand Avenue to the confluence of Skunk Creek. The maximum increase in BFE, 2.0 feet, will occur approximately 200 feet upstream of Thunderbird Road. The maximum decrease in BFE, 3.0 feet, will occur approximately 2,400 feet downstream of Thunderbird Road.

As a result of the updated topographic information and proposed project, the BFEs will decrease compared to the effective BFEs for the reach of the New River from Grand Avenue to the confluence of Skunk Creek. The maximum decrease in BFE, 4.0 feet, will occur approximately 1,500 feet downstream of Thunderbird Road.

As a result of the updated topographic information and proposed project, the width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, will decrease compared to the effective SFHA width along the reach of the New River from Grand Avenue to the confluence of Skunk Creek. The maximum decrease in SFHA width, approximately 800 feet, will occur approximately 2,500 feet upstream of Grand Avenue.

As a result of the updated topographic information and proposed project, the width of the regulatory floodway will decrease compared to the effective floodway width along the New River from approximately 1,000 feet upstream to approximately 3,000 feet upstream of Grand Avenue. The maximum decrease in floodway width, approximately 500 feet, will occur approximately 1,500 feet upstream of Grand Avenue. The entire base flood and regulatory floodway will be contained within the bridge and channel for the length of the revised reach.

Upon completion of the project, your community may submit the data listed below and request that we make a final determination on revising the effective FIRM and FIS report.

- Detailed application and certification forms, which were used in processing this request, must be used for requesting final revisions to the maps. Therefore, when the map revision request for the area covered by this letter is submitted, Form 1, entitled "Overview & Concurrence Form," must be included. (A copy of this form is enclosed.)

- The detailed application and certification forms listed below may be required if as-built conditions differ from the preliminary plans. If required, please submit new forms (copies of which are enclosed) or annotated copies of the previously submitted forms showing the revised information.

  Form 2, entitled "Riverine Hydrology & Hydraulics Form"

  Form 3, entitled "Riverine Structures Form"

  Hydraulic analyses, for as-built conditions, of the base flood and the regulatory floodway, together with a topographic work map showing the revised floodplain and floodway boundaries, must be submitted with Form 2.

- Effective October 30, 2005, FEMA revised the fee schedule for reviewing and processing requests for conditional and final modifications to published flood information and maps. In accordance with this schedule, the current fee for this map revision request is $4,000 and must be received before we can begin processing the request. Please note, however, that the fee schedule is subject to change, and requesters are required to submit the fee in effect at the time of the submittal. Payment of this fee shall be made in the form of a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or by credit card. The payment must be forwarded to the following address:

  Federal Emergency Management Agency
  Fee-Charge System Administrator
  P.O. Box 22787
  Alexandria, VA 22304

- As-built plans, certified by a registered professional engineer, of all proposed project elements

- A copy of the public notice distributed by your community stating its intent to revise the regulatory floodway, or a statement by your community that it has notified all affected property owners and affected adjacent jurisdictions

After receiving appropriate documentation to show that the project has been completed, FEMA will initiate a revision to the FIRM and FIS report. Because the BFEs would change as a result of the project, a 90-day appeal period would be initiated, during which community officials and interested persons may appeal the revised BFEs based on scientific or technical data.

The basis of this CLOMR is, in whole or in part, a channel-modification/bridge project. NFIP regulations, as cited in Paragraph 60.3(b)(7), require that communities assure 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 and bridge rests with your community.

This CLOMR 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.

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please contact the Consultation Coordination Officer (CCO) for your community. Information on the CCO for your community may be obtained by calling the Director, Federal Insurance and Mitigation

Division of FEMA in Oakland, California, at (510) 627-7175. If you have any questions regarding this CLOMR, please call our Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

Sincerely,

Michael B. Godesky, CFM, Project Engineer
Hazard Identification Section
Mitigation Division

For: Doug Bellomo, P.E., Chief
Hazard Identification Section
Mitigation Division

Enclosures

cc: Mr. David A. Moody, P.E.
Public Works/Engineering Director
City of Peoria

Mr. Ted Collins, CFM
Principal Floodplain Administrator
Flood Control District of Maricopa County

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

Mr. Brian Cosson, CFM
NFIP Coordinator
Office of Dam Safety and Flood Mitigation
Arizona Department of Water Resources

Mr. Jeff Ford, P.E.
Project Engineer
J2 Engineering and Environmental Design

Mr. Ashok C. Patel, P.E.
President
Wood, Patel & Associates, Inc.

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

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January 30, 2006

Ms. Catherine W. Regester, P.E., CFM
Senior Engineer
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, AZ 85009

IN REPLY REFER TO:
Case No.: 05-09-1046R
Community: City of Peoria, AZ
Community No.: 040050

316-ACK

Dear Ms. Regester:

This responds to your submittal dated January 20, 2006, concerning a May 11, 2005, request that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a conditional revision to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona, and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	New River Channel – Grand Avenue to Skunk Creek
Flooding Source:	New River
FIRM Panels Affected:	04013C1610 H and 1630 G

We have completed an inventory of the items you submitted. Our review of the submitted data indicates we have the minimum data required to perform a detailed technical review of your request. We have also received the required review and processing fee ($4,000). If additional data are required or if delays are encountered, we will inform you within 60 days of the date of this letter.

Please direct questions concerning your request to us at the address shown at the bottom of the first page. For identification purposes, please include the case number referenced above on all correspondence.

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627). If you

3601 Eisenhower Avenue, Alexandria, VA 22304-6425 PH:1-877-FEMA MAP FX: 703.960.9125

have specific questions concerning your request, please call the Revisions Coordinator for your State, Mr. Craig Kennedy, CFM, who may be reached at (703) 960-8800, ext. 3091.

Sincerely,

Sheila M. Norlin, CFM
National LOMC Manager
Michael Baker Jr., Inc.

cc: Mr. David A. Moody, P.E.
Public Works/Engineering Director
City of Peoria

Mr. Ted Collins, CFM
Principal Floodplain Administrator
Flood Control District of Maricopa County

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

Mr. Brian Cosson, CFM
NFIP Coordinator
Arizona Department of Water Resources

Mr. Jeff Ford, P.E.
Project Engineer
J2 Engineering and Environmental Design

Mr. Ashok C. Patel, P.E.
President
Wood, Patel & Associates, Inc.

Flood Control District
of Maricopa County

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

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

January 20, 2006

Michael Baker, Jr. Inc.
3601 Eisenhower Avenue, #600
Alexandria, VA 22304-6425

ATTN: Craig Kennedy

RE: New River Channelization, Grand Avenue to Skunk Creek, Peoria, Maricopa County, AZ
Conditional Letter of Map Revision (CLOMR)
FEMA Case No.: 05-09-1046R

Dear Mr. Kennedy:

Please find attached separate work maps for the existing and proposed conditions for the subject project, both certified by a registered professional engineer, as requested in your comment letter dated October 28, 2006 (copy attached).

In preparing the separate maps, we noted several locations under the proposed conditions where the toe-of-slope elevations in the HEC-RAS model varied slightly from the toe-of-slope elevations shown on the proposed conditions map. We, therefore, revised the Post-Project (design) HEC-RAS model to reflect the grading shown on the proposed conditions maps. Upon comparing the revised model with the previously submitted model we noted the following: The maximum change in the 100-YR water surface elevation (WSEL) was a 0.27 ft decrease and occurred at cross section 358.25; The maximum increase in WSEL was 0.22 ft and occurred at cross section 395.5. A diskette containing the revised HEC-RAS model is enclosed.

The following items are included in this submittal:

- Copy of FEMA comment letter dated October 28, 2006;
- Revised HEC-RAS Modeling Results *Table 3* and *Table 3a* (9 pages);
- Revised Post-Project (design) conditions HEC-RAS Modeling Results for Appendix D (summary output, profile plot and cross section plots; total 36 sheets);
- Revised *Exhibit B, New River Study Work Map* (sheets 1 - 4 of 4 *Existing Conditions* and sheets 1 - 4 of 4 *Proposed Conditions*, 1 in = 100 ft);
- Diskette containing the revised digital input/output files for the Post-Project (design) HEC-RAS model.

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

Yours truly,

Catherine W. Regester

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

Enclosures: Listed above

cc: Mr. David A. Moody, P.E.
Public Works/Engineering Director
City of Peoria

Mr. Jeff Holzmeister, P.E.
Principal
J2 Engineering and Environmental Design

Mr. Shimin Zou, Ph.D., P.E.
Project Engineer
Wood, Patel & Associates, Inc.

Copies to (w/o enclosures):

David A. Moody, P.E.
Public Works/Engineering Director
City of Peoria
8401 W Monroe St
Peoria, AZ 85345

Jeff Holzmeister, P.E.
J2 Engineering and Environmental Design
4649 E Cotton Gin Loop, Suite B2
Phoenix, AZ 85040

Shimin Zou, Ph.D., P.E.
Wood, Patel & Associates, Inc.
2051 West Northern Avenue
Phoenix, AZ 85021

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

FLOOD CONTROL DISTRICT
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October 28, 2005

Ms. Catherine W. Regester, P.E., CFM
Senior Engineer
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, AZ 85009

IN REPLY REFER TO:
Case No.: 05-09-1046R
Community: City of Peoria, AZ
Community No.: 040050

316-AD

Dear Ms. Regester:

This is in regard to your request dated May 11, 2005, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a conditional revision to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	New River Channel – Grand Avenue to Skunk Creek
Flooding Source:	New River
FIRM Panel(s) Affected:	04013C1610 H and 1630 G

The data required to complete our review, which must be submitted within 90 days of the date of this letter, are listed on the enclosed summary.

If we do not receive the required data within 90 days, we will suspend our processing of your request. Any data submitted after 90 days will be treated as an original submittal and will be subject to all submittal/payment procedures, including the flat review and processing fee for requests of this type established by the current fee schedule. A copy of the notice summarizing the current fee schedule, which was published in the *Federal Register,* is enclosed for your information.

FEMA receives a very large volume of requests and cannot maintain inactive requests for an indefinite period of time. In addition, as a result of the aftermath of recent hurricanes, many FEMA employees have been deployed to assist in disaster relief efforts. Therefore, we are unable to grant extensions for the submission of required data for revision requests. If a requester is informed by letter that additional data are required to complete our review of a request, the data must be submitted within 90 days of the date of the letter.

We will continue to work expeditiously to review all submittals in accordance with National Flood Insurance Program (NFIP) regulations, and will aim to meet the regulatory timeframe for the review of all requests. However, requesters should be aware that delays may occur in the review process because of the current emergency situation. We appreciate the patience and cooperation of all requesters as FEMA assists in hurricane relief efforts.

3601 Eisenhower Avenue, Alexandria, VA 22304-6425 PH:1-877-FEMA MAP FX: 703.960.9125

If you have general questions about your request, FEMA policy, or the NFIP, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please call the Revisions Coordinator for your State, Mr. Craig Kennedy, CFM, who may be reached at (703) 960-8800, ext. 3091.

Sincerely,

Sheila M. Norlin, CFM
National LOMC Manager
Michael Baker Jr., Inc.

Enclosures

cc: Mr. David A. Moody, P.E.
Director
Public Works/Engineering
City of Peoria

Mr. Ted Collins, CFM
Principal Floodplain Administrator
Flood Control District of Maricopa County

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

Mr. Brian Cosson, CFM
NFIP Coordinator
Arizona Department of Water Resources

Mr. Jeff Ford, P.E.
Project Engineer
J2 Engineering and Environmental Design

Mr. Ashok C. Patel, P.E.
President
Wood, Patel & Associates, Inc.

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

Summary of Additional Data Required to Support a
Conditional Letter of Map Revision

Case No.: 05-09-1046R

Requester: Ms. Catherine W. Regester, P.E., CFM

Community: City of Peoria, AZ

Community No.: 040050

The issue listed below must be addressed before we can continue the review of your request.

The submitted topographic work map entitled "New River – Grand Avenue to Skunk Creek Project Number FCD2003C001," prepared by your agency, dated August 10, 2005, contains both existing conditions and proposed conditions floodplain boundary delineations and topography. Please provide separate work maps for existing conditions and proposed conditions, both certified by a registered professional engineer or licensed land surveyor, to clarify the topography and floodplain boundaries.

Please send the required data directly to us at the address shown at the bottom of this page. For identification purposes, please include the case number referenced above on all correspondence.

3601 Eisenhower Avenue, Alexandria, VA 22304-6425 PH:1-877-FEMA MAP FX: 703.960.9125

Federal Emergency Management Agency

Washington, D.C. 20472

FEE SCHEDULE FOR PROCESSING REQUESTS FOR MAP CHANGES

This notice contains the fee schedule for processing certain types of requests for changes to National Flood Insurance Program (NFIP) maps. The fee schedule allows FEMA to further reduce the expenses to the NFIP by more fully recovering the costs associated with processing conditional and final map change requests. The fee schedule for map changes is effective for all requests dated October 30, 2005, or later and supersedes the fee schedule that was established on September 1, 2002.

To develop the fee schedule for conditional and final map change requests, FEMA evaluated the actual costs of reviewing and processing requests for Conditional Letters of Map Amendment (CLOMAs), Conditional Letters of Map Revision – Based on Fill (CLOMR-Fs), Conditional Letters of Map Revision (CLOMRs), Letters of Map Revision – Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs), and Physical Map Revisions (PMRs).

Based on our review of actual cost data for Fiscal Years 2004 and 2005, FEMA has established the following review and processing fees, which are to be submitted with all requests that are not otherwise exempted under 44 CFR 72.5.

Fee Schedule for Requests for CLOMAs, CLOMR-Fs, and LOMR-Fs

Request for single-lot/single-structure CLOMA and CLOMR-F	$500
Request for single-lot/single structure LOMR-F	$425
Request for single-lot/single-structure LOMR-F based on as-built information (CLOMR-F previously issued by us)	$325
Request for multiple-lot/multiple-structure CLOMA	$700
Request for multiple-lot/multiple-structure CLOMR-F and LOMR-F	$800
Request for multiple-lot/multiple-structure LOMR-F based on as-built information (CLOMR-F previously issued)	$700

Fee Schedule for Requests for CLOMRs

Request based on new hydrology, bridge, culvert, channel, or combination of any of these	$4,400
Request based on levee, berm, or other structural measure	$5,000

Fee Schedule for Requests for LOMRs and PMRs

Requesters must submit the review and processing fees shown below with requests for LOMRs and PMRs that are not based on structural measures or alluvial fans.

Request based on bridge, culvert, channel, or combination thereof	$4,400
Request based on levee, berm, or other structural measure	$6,000
Request based on as-built information submitted as follow-up to CLOMR	$4,000

Fees for CLOMRs, LOMRs, and PMRs Based on Structural Measures on Alluvial Fans

FEMA has revised the initial fee for requests for CLOMRs and LOMRs based on structural measures on alluvial fans to $5,600. FEMA will also continue to recover the remainder of the review and processing costs by invoicing the requester before issuing a determination letter, consistent with current practice. The prevailing private-sector labor rate charged to FEMA ($60 per hour) will be used to calculate the total reimbursable fees.

Payment Submission Requirements

Requesters must make fee payments for non-exempt requests before we render services. This payment must be in the form of a check or money order or by credit card payment. Please make all checks and money orders in U.S. funds payable to the *National Flood Insurance Program.* We will deposit all fees collected to the National Flood Insurance Fund, which is the source of funding for providing this service.

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

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August 29, 2005

Ms. Catherine W. Regester, P.E., CFM
Senior Engineer
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, AZ 85009

IN REPLY REFER TO:
Case No.: 05-09-1046R
Community: City of Peoria, AZ
Community No.: 040050

316-ACK

Dear Ms. Regester:

This responds to your submittal dated August 19, 2005, concerning a May 11, 2005, request that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a conditional revision to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona, and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	New River Channel – Grand Avenue to Skunk Creek
Flooding Source:	New River
FIRM Panels Affected:	04013C1610 H and 1630 G

We have completed an inventory of the items you submitted. Our review of the submitted data indicates we have the minimum data required to perform a detailed technical review of your request. We have also received the required review and processing fee ($4,000). If additional data are required or if delays are encountered, we will inform you within 60 days of the date of this letter.

Please direct questions concerning your request to us at the address shown at the bottom of the first page. For identification purposes, please include the case number referenced above on all correspondence.

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

3601 Eisenhower Avenue, Alexandria, VA 22304-6425 PH:1-877-FEMA MAP FX: 703.960.9125

If you have specific questions concerning your request, please call the Revisions Coordinator for your State, Mr. Craig Kennedy, CFM, who may be reached at (703) 960-8800, ext. 3091.

Sincerely,

Sheila M. Norlin, CFM
National LOMC Manager
Michael Baker Jr., Inc.

cc: Mr. David A. Moody, P.E.
Public Works/Engineering Director
City of Peoria

Mr. Ted Collins, CFM
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Flood Control District of Maricopa County

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President
Wood, Patel & Associates, Inc.

Flood Control District
of Maricopa County

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

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Phone: 602-506-1501
Fax: 602-506-4601
TT: 602-505-5897

August 19, 2005

Michael Baker, Jr. Inc.
3601 Eisenhower Avenue, #600
Alexandria, VA 22304-6425

ATTN: Craig Kennedy

RE: New River Channelization, Grand Avenue to Skunk Creek, Peoria, Maricopa County, AZ
Conditional Letter of Map Revision (CLOMR)
FEMA Case No.: 05-09-1046R

Dear Mr. Kennedy:

We are in receipt of your comment letter dated June 3, 2005 (copy attached). The following is a response to the three comments listed in that letter:

1. The post-project (design) HEC-RAS model has been revised to include the 10-, 2-, and 0.2-percent-annual-chance floods as you requested. A diskette containing the input and output files is included in this submittal as is a summary print-out of the HEC-RAS output and draft flood profile sheets.

2. The upstream tie-in has been revised in the post-project HEC-RAS model. The model ties-in with the effective study at cross section 458.66 (post-project HEC-RAS x-section) where the water surface elevation is 1172.2 (NAVD 1988). Please note that this section is effective cross section 8.655. The effective study is on NGVD 1929 datum whereas the post-project study is on NAVD 1988 datum. The effective water surface elevation at this section is 1170.4 (NGVD 1929) or 1172.2 (NAVD 1988). The conversion between the datums is discussed in the report. The Study Work Map, sheet 4 of 4, has been revised to reflect the revised tie-in and is included in this submittal.

3. The effective FIRMs (at the official scale) have been annotated to show the revised floodplain/floodway boundary and the upstream and downstream tie-ins. These panels are included in this submittal.

Please note that a check for $4,000 was sent to FEMA on June 20, 2005 to cover the fees for processing this request.

The following items are included in this submittal:

- Copy of FEMA comment letter dated June 3, 2005;
- Revised *Section 2.2.2*, pages 13 and 14 of the previously submitted CLOMR TDN;
- Revised completed *Riverine Hydrology and Hydraulics* FEMA Forms (2 sheets)
- Revised HEC-RAS Modeling Results *Table 2*, *Table 3*, and new *Table 3a* (12 pages);
- Revised *Figure 6, Draft FEMA Flood Profiles* (3 sheets)
- Revised Corrected HEC-RAS Modeling Results for Appendix C (5 sheets);
- Revised Post-Project (design) conditions HEC-RAS Modeling Results for Appendix D (8 sheets);
- Revised *Exhibit B4, New River Study Work Map* (sheet 4 of 4, 1 in = 100 ft);
- Revise *Exhibit C, Annotated FIRM Panels* at the scale of the official FIRM Panel;
- Diskette containing the revised digital input/output files for the Corrected and Post-Project (design) HEC-RAS models.

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

Yours truly,

Catherine W. Regester

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

Enclosures: Listed above

cc: Mr. David A. Moody, P.E.
Public Works/Engineering Director
City of Peoria

Mr. Jeff Ford, P.E.
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J2 Engineering and Environmental Design

Mr. Shimin Zou, Ph.D., P.E.
Project Engineer
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Flood Control District
of Maricopa County

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June 20, 2005

Federal Emergency Management Agency
Fee-Charge System Administrator
P.O. Box 22787
Alexandria, VA 22304

RE: New River Channelization, Grand Avenue to Skunk Creek, Peoria, Maricopa County, AZ
Conditional Letter of Map Revision (CLOMR)
Case No. 05-09-1046R

Dear Sirs:

Please find enclosed a check in the amount of $4,000.00 as requested in a letter from Ms. Sheila M. Norlin of Michael Baker Jr., Inc. to Ms. Catherine W. Regester of the Flood Control District of Maricopa County (copy enclosed) for the FEMA case number referenced above.

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

Yours truly,

Catherine W. Regester

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

Enclosures: Letter from Ms. Sheila Norlin, dated June 3, 2005
Check No. 00350560647

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

FLOOD CONTROL DISTRICT
RECEIVED
JUN 06 '05

June 3, 2005

Ms. Catherine W. Regester, P.E., CFM
Senior Engineer
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, AZ 85009

IN REPLY REFER TO:
Case No.: 05-09-1046R
Community: City of Peoria, AZ
Community No.: 040050

316-AD

Dear Ms. Regester:

This responds to your request dated May 11, 2005, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a conditional revision to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	New River Channel – Grand Avenue to Skunk Creek
Flooding Source:	New River
FIRM Panel(s) Affected:	04013C1610 H and 1630 G

The data required to complete our review, which must be submitted within 90 days of the date of this letter, are listed on the enclosed summary.

If we do not receive the required data within 90 days, we will suspend our processing of your request. Any data submitted after 90 days will be treated as an original submittal and will be subject to all submittal/payment procedures, including the flat review and processing fee for requests of this type established by the current fee schedule. A copy of the notice summarizing the current fee schedule, which was published in the *Federal Register,* is enclosed for your information.

If you are unable to meet the 90-day deadline for submittal of required items, and would like us to continue processing your request, you must request an extension of the deadline. This request must be submitted to us in writing and must provide (1) the reason why the data cannot be submitted within the requested timeframe, and (2) a new date for the submittal of the data. FEMA receives a very large volume of requests and cannot maintain inactive requests for an indefinite period of time. Therefore, the fees will be forfeited for any request for which neither the requested data nor a written extension request is received within 90 days.

3601 Eisenhower Avenue, Alexandria, VA 22304-6425 PH:1-877-FEMA MAP FX: 703.960.9125

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please call the Revisions Coordinator for your State, Mr. Craig Kennedy, CFM, who may be reached at (703) 960-8800, ext. 3091.

Sincerely,

Sheila M. Norlin, CFM
National LOMC Manager
Michael Baker Jr., Inc.

Enclosures

cc: Mr. David A. Moody, P.E.
Public Works/Engineering Director
City of Peoria

Mr. Ted Collins
Principal Floodplain Administrator
Flood Control District of Maricopa County

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

Mr. Brian Cosson, CFM
NFIP Coordinator
Arizona Department of Water Resources

Mr. Jeff Ford, P.E.
J2 Engineering and Environmental Design

Mr. Ashok C. Patel, P.E., CFM
President
Wood, Patel & Associates, Inc.

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

Summary of Additional Data Required to Support a
Conditional Letter of Map Revision (CLOMR)

Case No.: 05-09-1046R

Requester: Ms. Catherine W. Regester, P.E., CFM

Community: City of Peoria, AZ

Community No.: 040050

The issues listed below must be addressed before we can continue the review of your request.

1. Our preliminary review revealed that no profiles for the floods having a 10-, 2-, and 0.2-percent chance of being equaled or exceeded in any given year were submitted for the New River. Please submit a diskette containing input and output files for a revised HEC-RAS model that includes the revised 10-, 2-, and 0.2-percent-annual-chance floods along the entire revised reach, as outlined in Paragraph 65.7(a) of the National Flood Insurance Program (NFIP) regulations.

2. Paragraph 65.6(a)(2) of the NFIP regulations states that to avoid discontinuities between revised and unrevised flood data, hydraulic analyses must have a logical transition between revised elevations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) and those developed previously for areas not affected by the revision. Our review revealed that the existing conditions and proposed conditions hydraulic analyses along the New River do not tie into the effective hydraulic analysis within 0.5 foot at the upstream end of the proposed revised reach. Please provide revised existing conditions and proposed hydraulic analyses for the New River that tie into the effective hydraulic analysis for all profiles within 0.5 foot, or within 0.0 foot, if practical. In addition, for both existing conditions and post-project conditions, the width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, does not adequately tie into the effective SFHA width at the upstream and downstream limits of the revision. Please extend the above-referenced topographic work map to show the tie-ins between the effective, existing, and proposed floodplain boundary delineations for the revised reach.

3. Please submit an annotated Flood Insurance Rate Map (FIRM) at the scale of the effective FIRM showing the revised base floodplain and floodway boundaries delineated on the submitted work map and how they tie into the base floodplain and floodway boundaries shown on the effective FIRM at the downstream and upstream ends of the revised reach.

Please send the required data directly to us at the address shown at the bottom of this page. For identification purposes, please include the case number referenced above on all correspondence.

3601 Eisenhower Avenue, Alexandria, VA 22304-6425 PH:1-877-FEMA MAP FX: 703.960.9125

Effective September 1, 2002, the Federal Emergency Management Agency revised the fee schedule for reviewing and processing requests for conditional and final modifications to published flood information and maps. A copy of the notice summarizing the current fee schedule, which was published in the *Federal Register*, is enclosed for your information. In accordance with this schedule, the fee for your request is $4,000 and must be submitted before we can continue processing your request. Payment of this fee must be made in the form of a check or money order, payable in U.S. funds to the National Flood Insurance Program, or a credit card payment. For identification purposes, the case number referenced above must be included on the check or money order. We will not perform a detailed technical review of your request until we receive this payment.

Payment must be forwarded to one of the addresses listed below.

Using U.S. Postal Service:
Federal Emergency Management Agency
Fee-Charge System Administrator
P.O. Box 22787
Alexandria, VA 22304

Using overnight service:
FEMA Fee-Charge System Administrator
c/o Michael Baker Jr., Inc.
3601 Eisenhower Avenue
Alexandria, VA 22304

Federal Emergency Management Agency

Washington, D.C. 20472

FEE SCHEDULE FOR PROCESSING REQUESTS FOR MAP CHANGES

This notice contains the fee schedule for processing certain types of requests for changes to National Flood Insurance Program (NFIP) maps. The fee schedule allows FEMA to further reduce the expenses to the NFIP by more fully recovering the costs associated with processing conditional and final map change requests. The fee schedule for map changes is effective for all requests dated September 1, 2002, or later and supersedes the fee schedule that was established on June 1, 2000.

To develop the fee schedule for conditional and final map change requests, FEMA evaluated the actual costs of reviewing and processing requests for Conditional Letters of Map Amendment (CLOMAs), Conditional Letters of Map Revision – based on Fill (CLOMR-Fs), Conditional Letters of Map Revision (CLOMRs), Letters of Map Revision – based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs), and Physical Map Revision (PMRs).

Based on our review of actual cost data for Fiscal Years 2000 and 2001, FEMA has established the following review and processing fees, which are to be submitted with all requests that are not otherwise exempted under 44 CFR 72.5.

Fee Schedule for Requests for CLOMAs, CLOMR-Fs, and LOMR-Fs

Request for single-lot/single-structure CLOMA and CLOMR-F	$500
Request for single-lot/single structure LOMR-F	$425
Request for single-lot/single-structure LOMR-F based on as-built information (CLOMR-F previously issued by us)	$325
Request for multiple-lot/multiple-structure CLOMA	$700
Request for multiple-lot/multiple-structure CLOMR-F and LOMR-F	$800
Request for multiple-lot/multiple-structure LOMR-F based on as-built information (CLOMR-F previously issued)	$700

Fee Schedule for Requests for CLOMRs

Request based on new hydrology, bridge, culvert, channel, or combination of any of these	$4,000
Request based on levee, berm, or other structural measure	$4,500

Fee Schedule for Requests for LOMRs and PMRs

Requesters must submit the review and processing fees shown below with requests for LOMRs and PMRs that are not based on structural measures or alluvial fans.

Request based on bridge, culvert, channel, or combination thereof	$4,200
Request based on levee, berm, or other structural measure	$6,000
Request based on as-built information submitted as follow-up to CLOMR	$3,800

Fees for CLOMRs, LOMRs, and PMRs Based on Structural Measures on Alluvial Fans

FEMA has maintained $5,000 as the initial fee for requests for CLOMRs and LOMRs based on structural measures on alluvial fans. FEMA will also continue to recover the remainder of the review and processing costs by invoicing the requester before issuing a determination letter, consistent with current practice. The prevailing private-sector labor rate charged to FEMA ($50 per hour) will continue to be used to calculate the total reimbursable fees.

Payment Submission Requirements

Requesters must make fee payments for non-exempt requests before we render services. This payment must be in the form of a check or money order or by credit card payment. Please make all checks and money orders in U.S. funds payable to the *National Flood Insurance Program.* We will deposit all fees collected to the National Flood Insurance Fund, which is the source of funding for providing this service.

Flood Control District
of Maricopa County

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

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

May 11, 2005

Michael Baker, Jr. Inc.
3601 Eisenhower Avenue, #600
Alexandria, VA 22304-6425

ATTN: Craig Kennedy

RE: New River Channelization, Grand Avenue to Skunk Creek, Peoria, Maricopa County, AZ
Conditional Letter of Map Revision (CLOMR)

Dear Mr. Kennedy:

Please find enclosed a CLOMR request for the subject river from just upstream of Grand Avenue to the confluence with Skunk Creek. The following items are included in this submittal:

- *New River Channelization, Grand Avenue to Skunk Creek, Conditional Letter of Map Revision Submittal, Technical Data Notebook (TDN)*, dated December 2004
- *Exhibit A, Proposed Construction Plans*, preliminary 100% plans, dated December 2004
- Completed FEMA Forms, including the Community Acknowledgement Form signed by the community of Peoria (see TDN, Section 2)
- *New River Study Work Maps* (sheets 1 – 4 of 4, 1 in = 100 ft) (see TDN, *Exhibit B*)
- Annotated FIRM Panels (see TDN, *Exhibit C*)
- New River, digital data files (HEC-2, HEC-RAS, and .dxf on CD; see sleeve in back of TDN)

The channelization project is a joint project of the City of Peoria and Flood Control District of Maricopa County. If you have any questions or require additional information, please feel free to call me at 602-506-4001 or contact me by e-mail at cwr@mail.maricopa.gov.

Yours truly,

Catherine W. Regester

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

Enclosures: Listed above

MICHAEL B GODESKY CFM PROJECT ENGINEER
HAZARDS STUDY BR MITIGATION DIRECTORATE
FEDERAL EMERGENCY MANAGEMENT AGENCY
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WASHINGTON DC 20472-0001

RAY LENABURG
DEPARTMENT OF HOMELAND SECURITY
FEMA REGION IX
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OAKLAND CA 94607

BRIAN COSSON
NFIP COORDINATOR
ARIZONA DEPT OF WATER RESOURCES
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PUBLIC WORKS/ENGINEERING DIRECTOR
CITY OF PEORIA
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PEORIA AZ 85345

JEFF FORD PE
J2 ENG AND ENVIR DESIGN
4649 E COTTON GIN LOOP STE B2
PHOENIX AZ 85040

ASHOK C PATEL PE
WOOD PATEL & ASSOC INC
2051 W NORTHERN AVE
PHOENIX AZ 85021

TABLE OF CONTENTS

1.0 INTRODUCTION 1
- 1.1 Background 1
- 1.2 Purpose of Study 1
- 1.3 Authority for Study 2
- 1.4 Methods of Analysis 3

2.0 ADWR/FEMA FORMS 9
- 2.1 Study Documentation Abstract for FEMA Submittals 9
- 2.2 FEMA Forms 11
  - 2.2.1 Form 1 – Overview and Concurrence Form 12
  - 2.2.2 Form 2 – Riverine Hydrology and Hydraulics Form 13
  - 2.2.3 Riverine Structure Form 15

3.0 SURVEY AND MAPPING INFORMATION 16
- 3.1 Field Survey Information 16
- 3.2 Mapping 16

4.0 HYDROLOGY AND HYDRAULICS 17
- 4.1 Hydrology 17
- 4.2 Hydraulic Models 17
- 4.3 Parameter Estimation 17
  - 4.3.1 Roughness Coefficients 17
  - 4.3.2 Expansion and Contraction Coefficients 18
- 4.4 Cross Section Description 18
- 4.5 Modeling Considerations 18
  - 4.5.1 Hydraulic Jump and Drop Analysis 18
  - 4.5.2 Bridges and Culverts 19
  - 4.5.3 Levees and Dikes 19
  - 4.5.4 Islands and Flow Splits 19
  - 4.5.5 Ineffective Flow Areas 19
  - 4.5.6 Supercritical Flow 19
- 4.6 Floodway Modeling 19
- 4.7 Problems Encountered During the Study 19
- 4.8 Calibration 20
- 4.9 Final Results 20

5.0 SCOUR EVALUATION AND BANK PROTECTION DESIGN 21
- 5.1 Bank Protection Toedown Depth Estimation 21
- 5.2 Bank Protection Design 21

6.0 DRAFT FIS REPORT DATA 23
- 6.1 Summary of Discharge 23
- 6.2 Annotated Flood Insurance Rate Map 23
- 6.3 Flood Profiles 23

7.0 REFERENCES 24

Registered Professional Engineer (Civil)
CERTIFICATE NO. 32854
SHIMIN ZOU
Date Signed 12/28/04
ARIZONA U.S.A.

LIST OF FIGURES

Figure 1	Project Location Map
Figure 2	Project Vicinity Map
Figure 3	Project Aerial Photo
Figure 4	FIS Panel 0413C1610H
Figure 5	FIS Panel 0413C1630G
Figure 6	Draft FEMA Flood Profiles

LIST OF TABLES

Table 1	Duplicate Effective FIS HEC-2 Modeling Results
Table 2	Corrected FIS HEC-RAS Modeling Results
Table 3	HEC-RAS Output Summary Table for Post-Project Conditions Model
Table 4	Summary of Discharge in FEMA Format

LIST OF APPENDICES

Appendix A	General Documentation and Correspondence
Appendix B	HEC-2 Output Files for Duplicate Effective FIS Model
Appendix C	HEC-RAS Output Files for Corrected Effective FIS (Pre-Project Conditions) Model
Appendix D	HEC-RAS Output Files for Post-Project Conditions Model
Appendix E	Survey Data and As-Built Plans for the Thunderbird Road Bridge

LIST OF EXHIBITS

Exhibit A	Proposed Construction Plans
Exhibit B	Study Work Maps
Exhibit C	Annotated FIRM Panels

Registered Professional Engineer (Civil)
CERTIFICATE NO.
32854
SHIMIN
ZOU
Date Signed 12/28/06
ARIZONA U.S.A.

Y:\WP\Reports\Hydrology\031923 CLOMR-TDN New River Channelization.doc

1.0 INTRODUCTION

1.1 Background

J2 Engineering and Environmental Design, LLC (J2) in association with Wood, Patel & Associates, Inc. (Wood/Patel) was contracted to perform design and analysis for New River Channelization – Grand Avenue to Skunk Creek. The project is administered by the Flood Control District of Maricopa County (FCDMC), and the local project sponsor is the City of Peoria (COP). The scope includes generating a Conditional Letter of Map Revision (CLOMR), construction plans and specifications.

The project is located in and adjacent to the New River between Grand Avenue (US 60) and the Skunk Creek confluence (a distance of approximately 1.5 miles). The project is located within City of Peoria limits, Sections 10, 15, and 16, Townships 3 North, Range 1 East relative to the Gila and Salt River Meridian. Figure 1 shows the location map and Figure 2 shows in greater detail the project vicinity. Figure 3 is an aerial perspective of the project.

The existing river corridor is composed of large amounts of river cobble, sand deposited banks and bottoms, intermittent water flows, standing water zones and a variety of habitat types. The river bottom is currently composed of both meandering and braided low flow incised channels and flat areas of river cobble and sand bars. The site has been altered by residential and commercial development along its westerly banks while the easterly banks were altered through the development of the ADOT freeway system SR-101 Loop. Large areas of undeveloped land occupy a majority of the eastern portion of the corridor between the SR-101 loop and the banks of the river along the limits of this project.

1.2 Purpose of Study

The objective of this project is to protect the reach's surrounding investments (business and residences) through control of the 100-year storm event. Hydraulic protection is defined as containment of the 100-year storm runoff plus additional freeboard within the channel section from Grand Avenue to Skunk Creek confluence. The FCDMC desires that the facilities not only fulfill their flood control function but also be aesthetically pleasing, multi-functional and match as much as is feasible, the historic ecosystem character.

The channel is approximately 350 to 400 feet wide. The banks of the New River Channel are composed of a variety of materials including rip rap, grouted rip rap, cement stabilized alluvium (CSA), gabions, fabric mesh, roller compacted concrete (RCC), and unprotected banks. Two major "hard" points (checks) exist at Grand Avenue and at the Skunk Creek confluence. At Grand Avenue, a 15-foot cutoff wall protects the roadway bridges. CSA toedown depth in this area is also 15 feet. At the Skunk Creek stepped spillway, an 18-foot toedown is provided; using Roller compacted concrete (RCC) at the drop and CSA at the banks.

Channelization of the river will revise horizontal and vertical alignment and cross section geometry, reduce horizontal slopes as well as velocities at some reaches, improve the uniformity of the river conveyance, therefore, increase the stability of the river. According to the Federal Emergency Management Agency (FEMA) floodplain management policy, these proposed modifications to the river require a Conditional Letter of Map Revision (CLOMR).

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels 04013C1610H and 04013C1630G dated July 19, 2001, designate this reach of the New River as a Special Flood Hazard Area, Zone AE (see Figure 4 and Figure 5).

Zone "AE" is defined as: A special flood hazard area that corresponds to the 100-year floodplains and the base flood elevations for this zone are determined in the FIS by detailed methods.

This report documents the engineering analysis and MT-2 forms necessary to meet the FEMA requirements for a CLOMR. Once the CLOMR is issued, the channel design will be finalized, the channel will be built, and a set of as-built plans will be prepared for the Letter of Map Revision (LOMR) submittal.

1.3 Authority for Study

J2 Engineering and Environmental Design, LLC (J2) in association with Wood, Patel & Associates, Inc. (Wood/Patel) performed this study under contract with the Flood Control District of Maricopa County (FCDMC). The contract number is FCD 2003C001. J2's Project Manager for this project is Jeff Holzmeister, P.E. Wood/Patel prepared this TDN as a subconsultant to J2. The Project Manager for Wood/Patel is Ashok C. Patel, P.E,

R.L.S., CFM. The FCDMC is located at 2801 West Durango Street, Phoenix, AZ, 85009, (602) 506-1501. The Project Manager for the FCDMC is Scott Vogel, P.E.

1.4 Methods of Analysis

Hydrology – The hydrologic information for this section of the New River is identified as part of the Middle New River Watercourse Master Plan, the New River Grand to Greenway project (Wood/Patel, 1994) and the USACOE Design Memo No. 2 (USACOE, 1982). The 100-year peak flow has been accepted by FEMA and applied for FIS mapping. We are utilizing this FEMA accepted hydrology; therefore, no new hydrologic data is required for this CLOMR.

Hydraulics – The proposed channelization conditions were modeled utilizing the COE's HEC-RAS, version 3.1.1, March 2003, hydraulic modeling software. The analysis followed methods and procedures as outlined in the "Drainage Design Manual for Maricopa County, Volume 2 - Hydraulics". The HEC-RAS models were prepared to aid in the design of the gabion mattress side slope protection (height and depth) and to evaluate the proposed channel cross section configurations. The base model was studied using sub-critical flow regime and was adopted by FEMA for the purpose of the regulatory FIRM. In order to match the base model and tie into the FIS floodplain and floodway at the upstream and downstream limits of the reaches, the channelized reaches were modeled using the same flow regime as the FIS model. The hydrologic and hydraulic modeling results for Effective FIS are shown in Appendix B. The estimated floodplain and floodway limits were drafted using AutoCAD Land Development Desktop Release 3. Cross section locations are shown on the study work maps (Exhibit B).

Figure 1: ***Project Location Map***

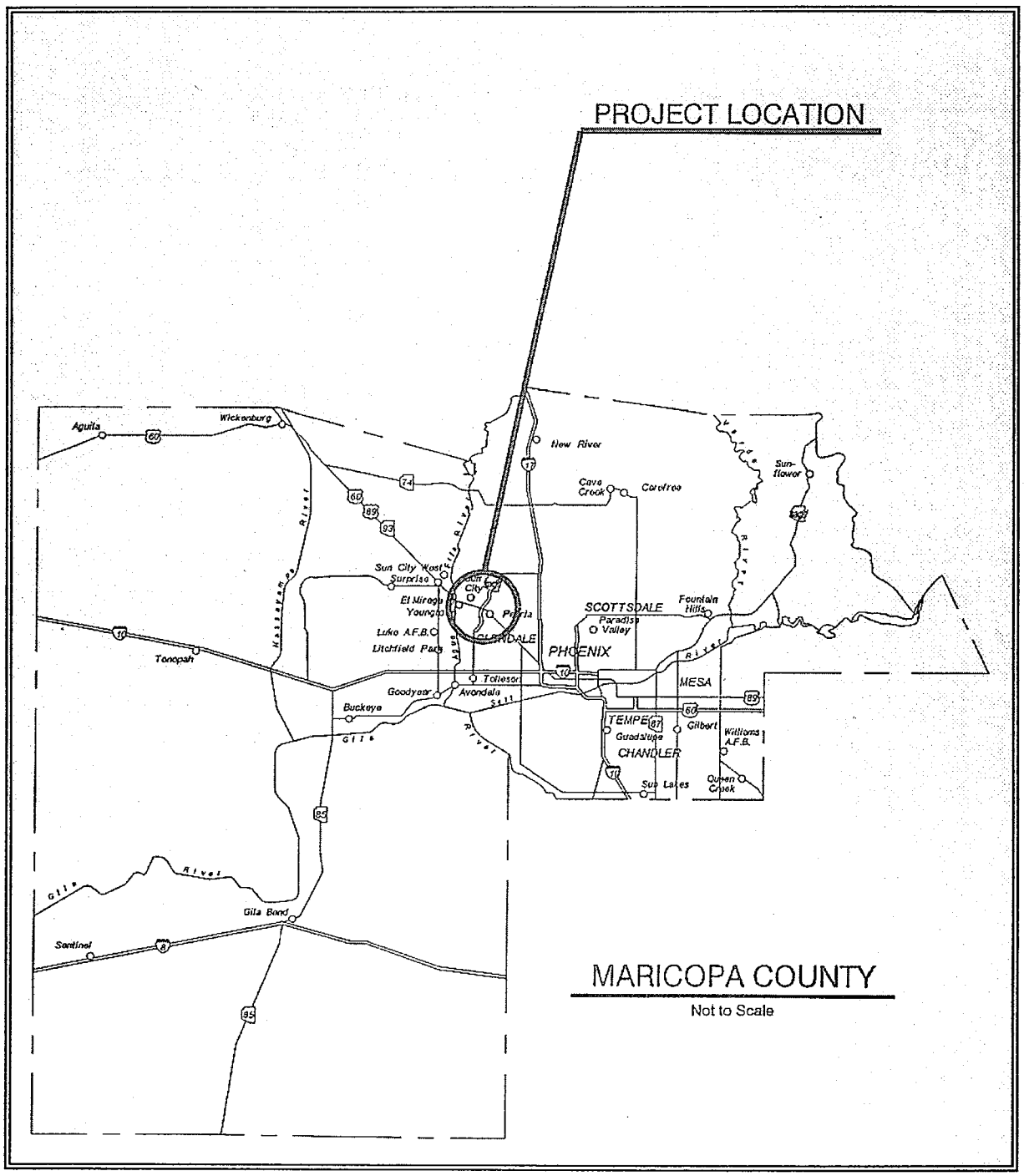


Figure 2: *Project Vicinity Map*

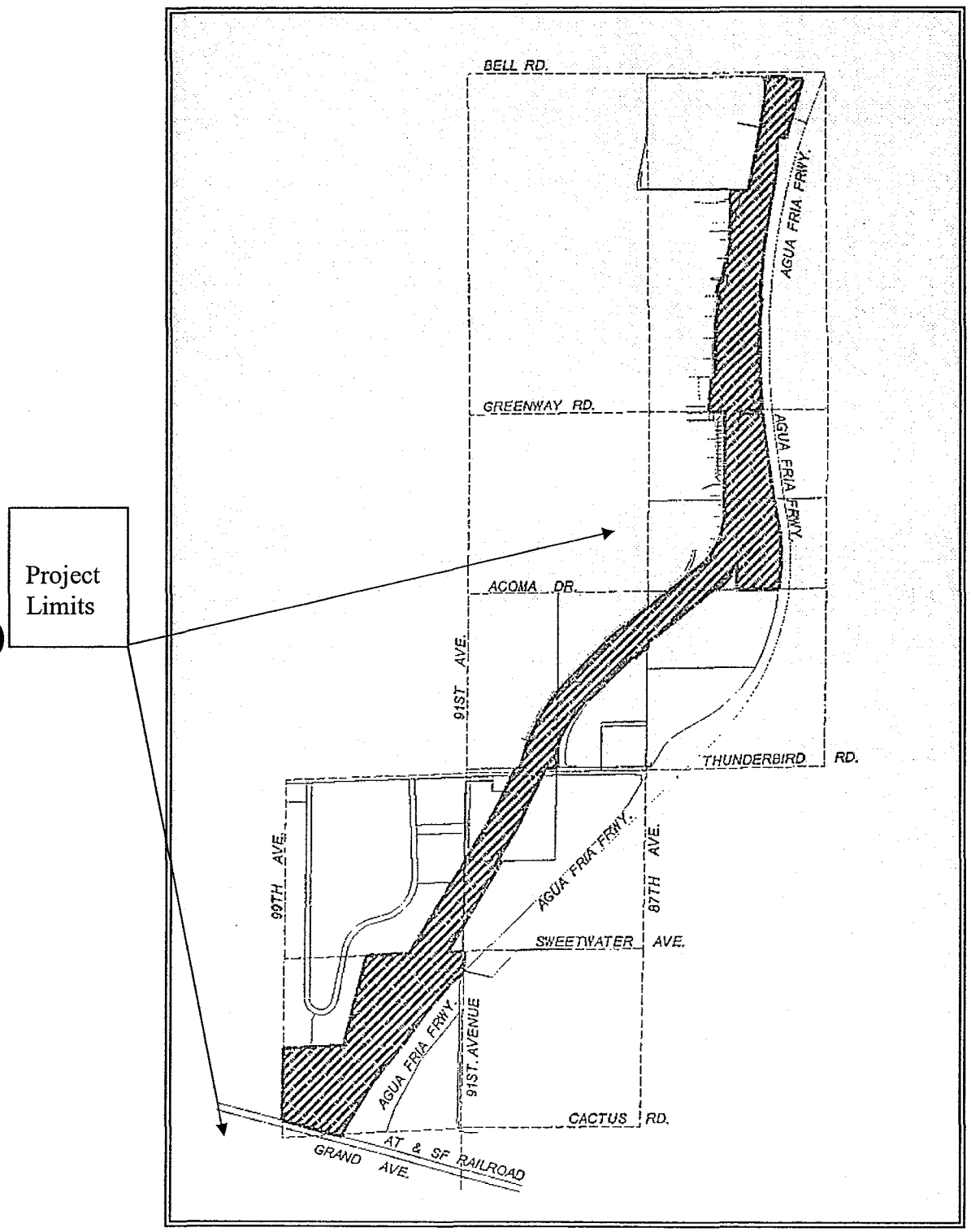


Figure 3: *Project Aerial Photo*

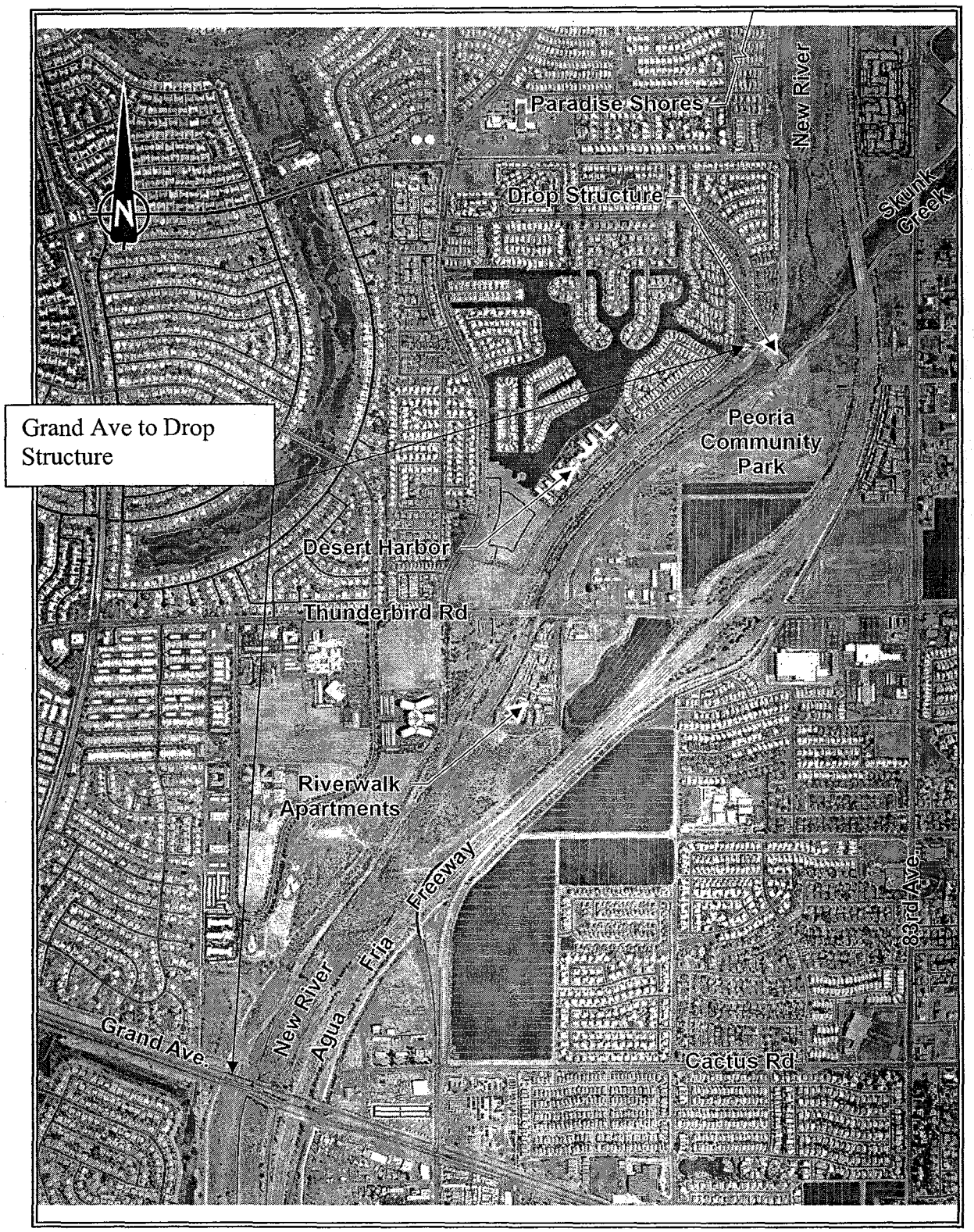


Figure 4: FIS Panel 0413C1610H

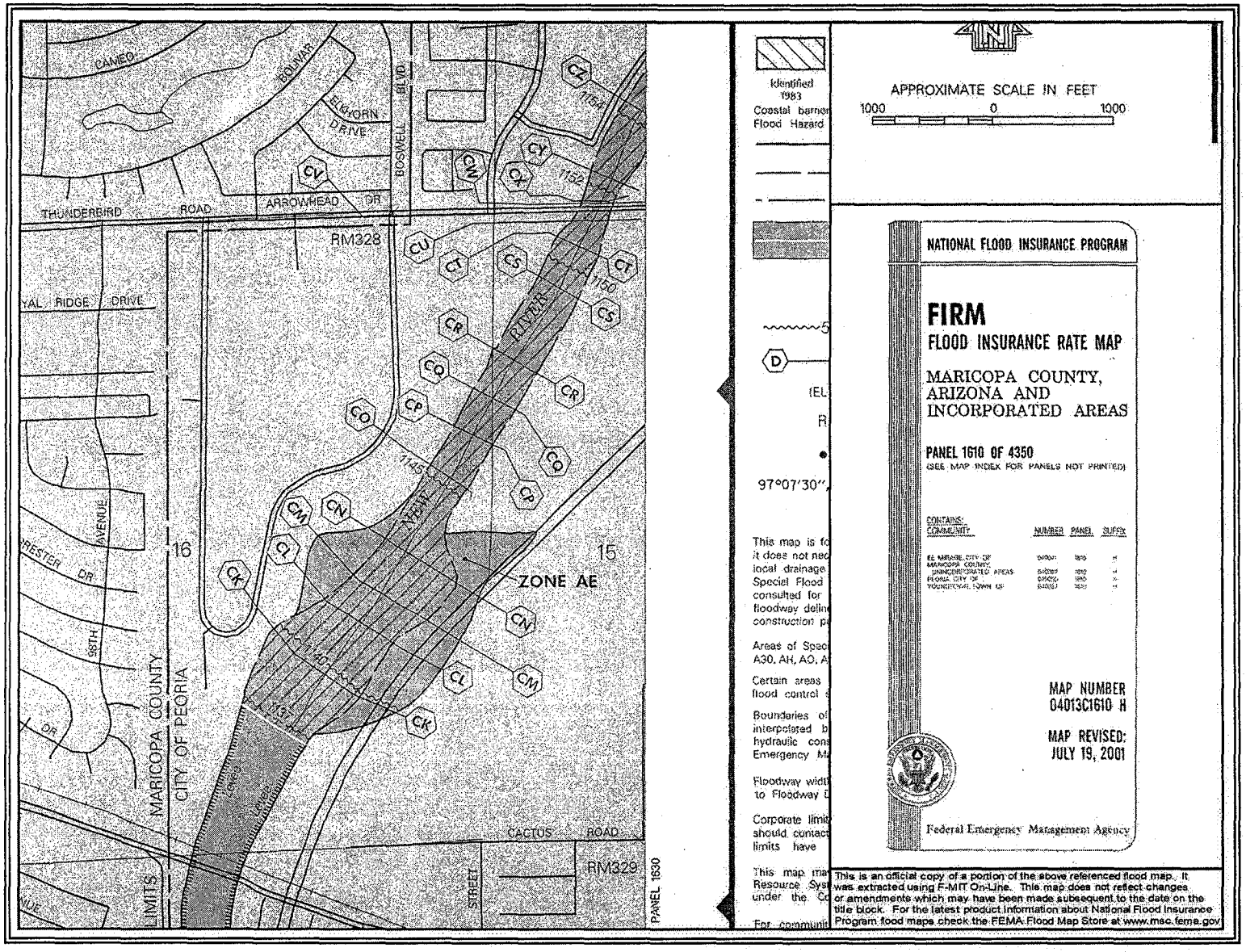
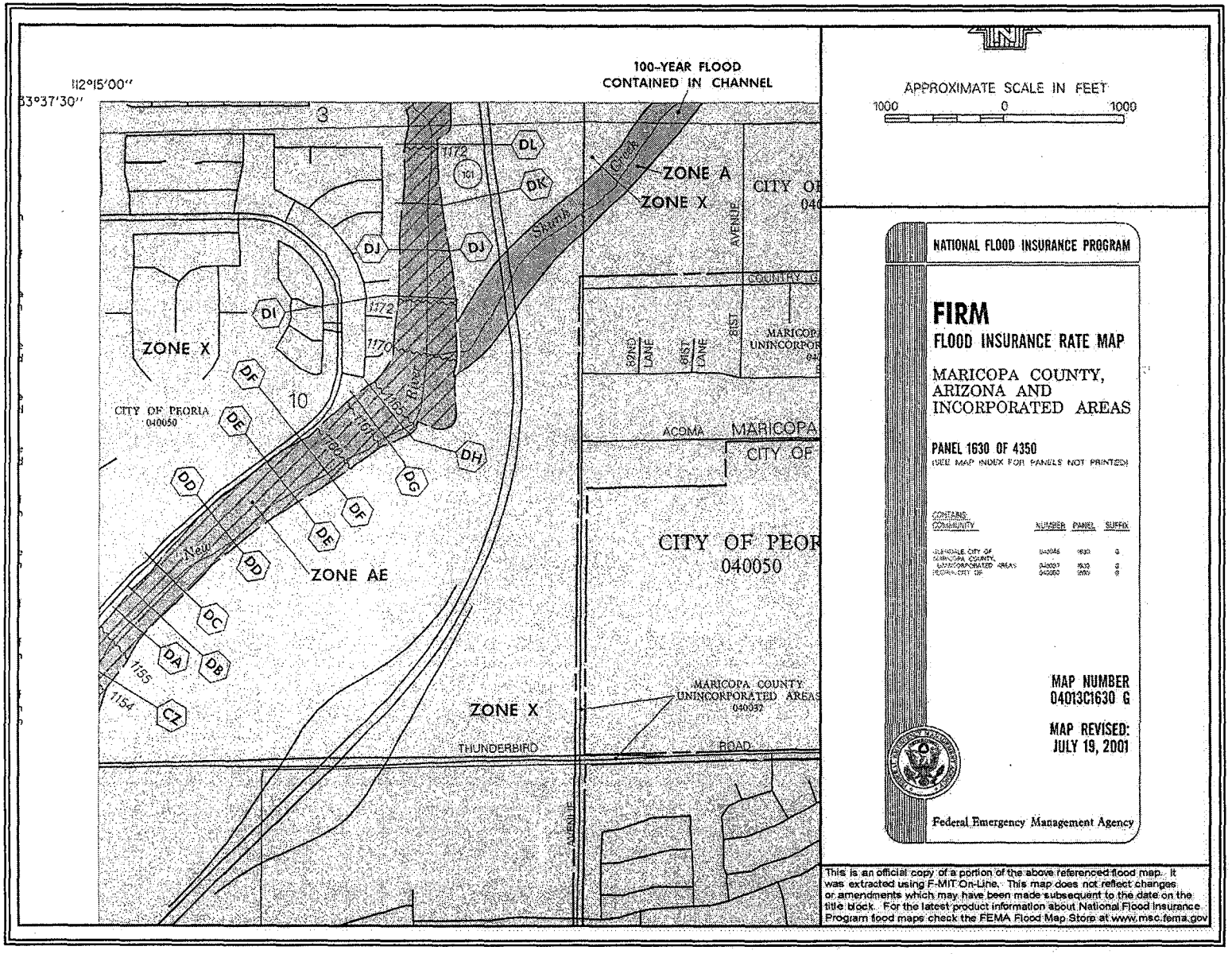


Figure 5: FIS Panel 0413C1630G



2.0 ADWR/FEMA FORMS

2.1 Study Documentation Abstract for FEMA Submittals

Study Documentation Abstract for FEMA Submittals		Initial Study		Restudy		CLOMR	X	LOMR		Other	
2.1.1	Date Study Accepted										
2.1.2	Study Prime Contractor Contact(s) Address Phone Internal Reference Number	J2 Engineering and Environmental Design Jeff Holzmeister, P.E. 8222 South 48th Street, Suite 135 Phoenix, AZ 85044 (602) 438-2221 Fax (602) 438-2225 J2 Project No. 3033									
2.1.3	Study Sub-Contractor Contact(s) Address Phone Internal Reference Number	Wood, Patel & Associates, Inc. Ash Patel, P.E., R.L.S., CFM 2051 Northern Avenue, Suite 100 Phoenix, AZ 85021 (602) 335-8500 Fax (602) 335-8580 WP# 031923									
2.1.4	FEMA Technical Review Contact(s) Address Phone Internal Reference Number	Michael Baker, Jr., Inc. Pernille Buch-Pederson 3600 Eisenhower Ave., Suite 600 (703) 317-6224									
2.1.5	FEMA Regional Reviewer Phone	Michael Baker, Jr., Inc. (703) 960-8800									

2.1.6	State Technical Reviewer Phone	Arizona Department of Water Resources (602) 417-2445
2.1.7	Local Technical Reviewer Phone	Flood Control District of Maricopa County Cathy Regester, P.E., CFM, Sr. Civil Engineer (602) 506-4001
2.1.8	Reach Description	New River Channelization, Grand Avenue to Skunk Creek
2.1.9	USGS Quad Sheet(s) with original photo date & latest photo revision date	7.5 Minute El Mirage, AZ Quad Map, 1957, photo revised 1982 7.5 Minute Glendale, AZ Quad Map, 1957, photo revised 1982
2.1.10	Unique Conditions and Problems	None
2.1.11	Coordination of Peak Discharges (Agency, Date, Comments)	100-year peak discharge = 41,000 cfs per FCDMC

2.2 FEMA Forms

The basis of this CLOMR is better scientific data, including better quality mapping and hydraulic analysis, and physical changes of the watercourse; therefore, the appropriate FEMA forms from the current FEMA MT-2 packet (expires September 30, 2005) are as follows:

Form 1 – Overview & Concurrence Form provides the basic information regarding the revision request and requires the signatures of the requester, community official, and engineer. This form is required for all revision requests.

Form 2 – Riverine Hydrology & Hydraulics Form provides the basic information on the scope and methodology of hydrologic and/or hydraulic analyses that are prepared in support of the revision request. This form should be used for revision requests that involve new or revised hydrologic and/or hydraulic analyses of rivers, streams, ponds, or small lakes.

Form 3 – Riverine Structures Form provides the basic information regarding hydraulic structures constructed in the stream channel or floodplain. This form should be used for revision requests that involve new or proposed channelization, bridges/culverts, dams, and/or levees/floodwalls.

2.2.1 Form 1 – Overview & Concurrence Form

The attached "Overview & Concurrence Form" is provided per FEMA requirements for submittals. The basis for this revision request is physical change, specifically, channelization.

It should be noted that the preparation of this CLOMR utilizes better scientific data than the regulatory FIS including one (1) foot contours, more accurate spot elevations, detailed aerial photographic mapping and a better understanding of the current site conditions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

OVERVIEW & CONCURRENCE FORM

O.M.B No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hour 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, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). 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.**

A. REQUESTED RESPONSE FROM FEMA

This request is for a (check one):

☒ CLOMR: A letter from 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 FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See Parts 60 & 65 of the NFIP Regulations.)

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
Ex: 480301	City of Katy	TX	480301	0005D	02/08/83
480287	Harris County	TX	48201C	0220G	09/28/90
[illegible]0050	City of Peoria, Maricopa County	AZ	04013C	1610H	07/19/01
[illegible]0050	City of Peoria, Maricopa County	AZ	04013C	1630G	07/19/01

2. Flooding Source: New River

3. Project Name/Identifier: New River Channel - Grand Avenue to Skunk Creek

4. FEMA zone designations affected: AE (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 ☐ 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 types of flooding and structures (check all that apply)

Types of Flooding: ☒ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH)

☐ Alluvial fan ☐ Lakes ☐ Other (Attach Description)

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

☐ Dam ☐ Fill ☐ Other, Attach Description

C. REVIEW FEE

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

☒ No, Attach Explanation

Please see the FEMA Web site at http://www.fema.gov/mit/tsd/frm_fees.htm **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: Cathy Regester, P.E.,CFM, Sr. Civil Eng.	Company: Flood Control District, Maricopa County	
Mailing Address: 2801 West Durango Street Phoenix, AZ, 85009	Daytime Telephone No.: (602) 506-4001	Fax No.: (602) 506-4601
	E-Mail Address: cwr@mail.maricopa.gov	
Signature of Requester (required): Catherine W. Regester		Date: 11/2/04

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 requirement that no fill be 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. 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: Divid A. Moody, P.E., City Engineer		Telephone No.: (623) 773 - 7367
Community Name: City of Peoria	Community Official's Signature (required): David A Moody	Date: 11/3/04

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. 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: Ashok Patel, P.E., R.L.S.	License No.: 10512	Expiration Date: 12/04
Company Name: Wood, Patel & Associates, Inc.	Telephone No.: 602-335-8500	Fax No.: 602-335-8580
Signature: Ashok C. Patel		Date: 11/1/04

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

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

Ashok C. Patel
Registered Professional Engineer (Civil)
CERTIFICATE NO. 10512
ASHOK C. PATEL
Date Signed 11/1/04
Arizona U.S.A.
Seal (Optional)

2.2.2 Form 2 – Riverine Hydrology & Hydraulics Form

The attached "Riverine Hydrology & Hydraulics Form" is provided per FEMA requirements for submittals. Responses to questions in the following sections require further explanation:

Hydrology:

The basis for this project hydrology is the FEMA effective 100-year flow. The 100-year peak flow of 41,000 cfs has been applied for this study.

Hydraulic Models Submitted:

Duplicate Effective Model

The HEC-2 model used for this regulatory FIS was provided by the FCDMC (REVSB.DAT, 1989). This model was run to create Duplicate Effective Model and the modeling results are shown in Table 1. The cross sections of the Effective Model are shown in the study work maps (Exhibit B); and the output file for this model is included in Appendix B. Note that the elevation datum used in this model is NGVD 29.

Corrected Effective FIS Model

After the FEMA FIS, the FCDMC contracted (FCD #93-02) with Wood/Patel to provide the Standard Project Flood (SPF) delineation, construction plans, and special provisions for a drop structure and other elements within New River between Grand Avenue and Greenway Road (extension) in 1994. A HEC-2 model was created by Wood/Patel for that project which reflected changes as proposed in that study and as actually constructed after the FEMA FIS. Also, new topographic map was produced for this project by Cooper Aerial. Therefore, a *Corrected Effective FIS Model* (pre-project conditions model) was created based on the new topographic map (from Grand Avenue to Skunk Creek confluence) to represent the existing conditions of the New River within the project reach from cross section 345.5 to cross section 453.23. The bridges within this reach were field surveyed in year 2004 and the information was included in the corrected effective model. The *Corrected Effective FIS Model* is a HEC-RAS model. The effective FIS HEC-2 model cross sections 334 to 344.9 were added to the downstream of the *Corrected Effective FIS Model* and the effective FIS HEC-2 model cross sections 8.655 to 8.936 were added to the upstream of the *Corrected Effective FIS Model* to tie-in to the effective FIS HEC-2 model. The GR data of these cross sections were adjusted to the same datum as the new

as the new topographic map. Note that the added upstream cross sections' names were changed to make the HEC-RAS cross sections in an increasing order such as 8.655 to 458.66, 8.731 to 458.73, and etc. The summary output of the *Corrected Effective FIS Model* is shown in Table 2. The output file is included in Appendix C. Note that the elevation datum used in this model is NAVD 88. The relationship between NGVD 29 and NAVD 88 in this project area is NGVD 29 plus 1.82 equal to NAVD 88.

The computed 100-year floodwater surface elevation from the *Corrected Effective FIS Model* at the downstream cross section 344.9 is 1128.3 ft, and at the upstream cross section 458.66 is 1172.2 ft. The computed 100-year floodwater surface elevation from the *Effective FIS Model* at the matching downstream cross section 344.9 is 1126.5 ft, and at the matching upstream cross section 8.655 (same location as 458.66) it is 1172.2 ft. Water surface elevations at both upstream and downstream tie-in locations are matching well considering the datum difference of 1.82 ft (see Table 3a for the datum adjusted water surface elevations).

Design or Post-Project Condition Model

The *Post-Project Conditions Model* was obtained by replacing the geometric data for the segments of the existing study wash geometry with the proposed channel cross section geometry data. Since flows are contained along the entire project reaches with the proposed improvements modeled, the floodway and floodplain limits were identical in these areas. The HEC-RAS output profile table for the *Post-Project Conditions Model* is shown in Table 3. The water surface profiles are shown as Figure 6, and cross sections are shown in Appendix D.

The computed 100-year floodwater surface elevation from the *Effective FIS Model* at the downstream cross section of the study reach is 1128.3 ft (Station 344.90), and at the upstream cross section it is 1172.2 ft (Station 458.66) after the datum adjustment. The computed 100-year floodwater surface elevation from the *Post-Project Conditions Model* at the matching downstream cross section is 1128.4 ft, and at the upstream cross section it is 1172.2 ft. Water surface elevations at both upstream and downstream tie-in locations are matching those from *Effective FIS Model* very well. See Table 3a for the hydraulic modeling results summary.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 3 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, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). 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.**

Flooding Source: New River
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 2) ☐ 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.)	FIS (cfs)	Revised (cfs)

Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model [TR-20, HEC-1, HEC-HMS etc.]
☐ 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. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

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

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

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	Grand Avenue	344.90	1128.3	1128.4
Upstream Limit	U/S of the Drop Structure	458.66	1172.2	1172.2

Hydraulic Method Used

Hydraulic Analysis HEC-2 & HEC-RAS [HEC-2 , HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre-Submittal Review of Hydraulic Models

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. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☒ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name: FIS_HEC2.*	Floodway File Name:
Corrected Effective Model*	Natural File Name:	Floodway File Name:
Existing or Pre-Project Conditions Model	Natural File Name: CORRECTED.*	Floodway File Name:
Revised or Post-Project Conditions Model	Natural File Name: DESIGN.*	Floodway File Name:
Other - (attach description)	Natural File Name:	Floodway File Name:

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) – for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A **certified topographic 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.).

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,** annotated 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 of revision.

D. COMMON REGULATORY REQUIREMENTS

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

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.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

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 added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

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

4.0 HYDROLOGY AND HYDRAULICS

4.1 Hydrology

As discussed above, no new hydrologic analysis was conducted for this study. The basis for this project hydrology is the FEMA effective 100-year flow. The 100-year peak flow of 41,000 cfs has been applied for this study.

4.2 Hydraulic Models

The HEC-2 model used for the regulatory FIS was provided by the FCDMC (REVSB.DAT, 1989). A pre-project conditions model was created based on the new topographic map (from Grand Avenue to Skunk Creek confluence) to represent the existing conditions of the New River within the project reach. This *Corrected Effective FIS Model* is a HEC-RAS model. The *Post-Project Conditions Model* was obtained by replacing the geometric data for the segments of the existing study wash geometry with the proposed channel cross section geometry data. Since flows are contained along the entire project reaches with the proposed improvements modeled, the floodway and floodplain limits were identical in these areas.

4.3 Parameter Estimation

4.3.1 Roughness Coefficients

A significant amount of effort was expended to arrive at a consensus for the channel's Manning's n-values. The following is a summary of the values used in the Hydraulic Analyses:

Cross Section Location	n-value
Overbanks	0.045
Gabion side slopes w/ sacrificial fill and some plants (lower Sonoran types such as Mesquite and Palo Verde)	0.035
Existing vegetated areas adjacent to low flow	0.060
Low flow channel (clean and cobbles)	0.030
Cottonwood/Willow stands (new "pole" planting types)	0.15

4.3.2 Expansion and Contraction Coefficients

The values for expansion and contraction coefficients used in this study vary from 0.10 to 0.50.

4.4 Cross Section Description

The New River channelization design criteria were formalized by the FCDMC. The finalized channelization concept for the study reach of the New River, as shown on Exhibit A, is a compound channel section with varied bottom width and side slopes (typical side slope is 3:1). The distance between cross sections varies and the longest distance is about 620 feet for the uniform reaches. The upstream drop structure and downstream bridge cross sections were taken from the *Corrected FIS Model.*

The required protection for the reach from Skunk Creek to Grand Avenue was defined as confinement of the SPF peak flow plus 1 foot of freeboard within FCDMC right-of-way and the 100-year flood discharge plus 1 foot within the (gabion) protected section. It should be noted that the 1-foot SPF freeboard is a requirement that the FCDMC has placed on the design. Under agreement with the USCOE, the District is required to contain the SPF only. Berms are used in some areas to contain the SPF plus 1 foot.

Cross section plots are provided in Appendix D. The locations of the channel banks and assigned Manning's n-values are shown on the plots. The cross sections were selected based on the following criteria.

- Representative of the local channel reach.
- Oriented perpendicular to the direction of flow with the perspective of looking downstream.
- Large enough to contain the 100-year peak discharge.

4.5 Modeling Considerations

4.5.1 Hydraulic Jump and Drop Analysis

Undular hydraulic jumps are formed at the downstream end of the existing drop structure and at the Thunderbird Bridge. These two hydraulic jumps do not have significant impact to the channel hydraulic design. Both the drop structure and the bridge were modeled with the HEC-RAS model.

4.5.2 Bridges and Culverts

The existing Thunderbird Bridge is located within the project limits; and its survey data and as-built plans are included in Appendix E. Grand Avenue Bridge and Railroad Bridge are at the downstream limit of the study reach. Each crossing is modeled utilizing HEC-RAS. Transitions are located at both bridge crossings and at the tie-in to the drop structure. A layout of the tie-in transition is shown on the plans. Transitions have been incorporated in the hydraulic model to ensure smooth hydraulic operation.

4.5.3 Levees and Dikes

As mentioned previously, berms are used in some areas to contain the SPF plus 1 foot. Berms are not needed to contain the 100-year base flood.

4.5.4 Islands and Flow Splits

There are no flow splits or islands within this study reach.

4.5.5 Ineffective Flow Areas

In general, there are no ineffective flow areas of concern for this study reach.

4.5.6 Supercritical Flow

The subcritical flow option available in HEC-RAS is utilized to analyze the flow regime of the study reach within New River. Supercritical reaches within this study area are limited to the downstream sloping drop structure and downstream of the Thunderbird Road Bridge.

4.6 Floodway Modeling

Because the 100-year flow is contained in the modified channel reach, the top widths of both floodway and floodplain are the same in the project area and the floodway and floodplain are delineated as coincidental.

4.7 Problems Encountered During the Study

No problems were encountered during the hydraulic modeling process.

4.8 Calibration

No calibration of hydraulic parameters was performed for this study reach.

4.9 Final Results

The COE HEC-RAS microcomputer software was used to simulate the riverine characteristics of the proposed New River Channel. The 100-year design discharge for this reach is 41,000 cfs. Adequate freeboard is maintained throughout the channel. The final HEC-RAS output for the proposed conditions is shown in Appendix D. The hydraulic modeling results show that the water surface elevations form post-project conditions are matching the water surface elevations of the corrected effective FIS model very well at the tie-in locations and the proposed channels contain the 100-year base flow.

5.0 SCOUR EVALUATION AND BANK PROTECTION DESIGN

5.1 Bank Protection Toedown Depth Estimation

Scour analysis was conducted to estimate the required toedown depths for the protection of the banks of New River from Grand Avenue to the existing drop structure by J2 Engineering and Environmental Design for the design of this project (2004). The degradation of the river bed is limited by "hardpoints" located at Grand Avenue (concrete bridge invert) and the roller compacted concrete drop structure. Field investigations indicate that the channel appears to be stable. The New River Channel is quite uniform throughout the project limits (does not have significant bends or contraction), so it is assumed that only minimal general scour and bend scour will occur. Results of these studies indicated that only a minimal scour potential (approximately 6 feet) exists within the project limits. Considering other uncertainty factors, 10-foot toedown depth is recommended for the design of the bank protection.

A scour analysis for the Thunderbird Bridge was performed by Michael Baker Jr., Inc. (1997 ADOT). Total scour was estimated to be 17.4 feet. The report found that the structure was stable. The existing bank protection at Thunderbird Road Bridge was not modified as part of this project.

5.2 Bank Protection Design

Gabion mattresses are selected to be the preferred bank protection material for this project. The gabion mattress will extend from the 100-year WSEL + 1 foot elevation down to a point 5 feet below the thalweg. The gabion mattress will extend horizontally 12 feet in order to allow the system to provide a total toedown depth of 10 feet below the thalweg. During the large storm event, the horizontal apron is designed to fall into the scour hole at a 2:1 slope. The mattress configuration thus provides slightly better toedown than required. One foot of native earth will be placed over the mattresses to improve aesthetic appeal. This configuration will minimize the area of disturbance and reduce excavation. This minimized excavation will reduce the overall installation costs of the gabions.

The proposed improvements will tie into the existing CSA bank protection upstream of Grand Avenue, the existing gabions at Thunderbird Road Bridge and the rip rap bank protection at the drop structure.

The proposed bank protection alignment and configuration are shown in the construction documents (Exhibit A).

6.0 DRAFT FIS REPORT DATA

6.1 Summary of Discharge

Table 4 provides a summary of discharges in FEMA format for the study area from *Flood Insurance Study, Maricopa County Arizona and Unincorporated Areas, Volume 1 of 12*, revised September 30, 1995.

Table 4

Summary of Discharges in FEMA Format

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (cfs)			
		10-year	50-year	100-year	500-year
New River above confluence with Skunk Creek	17.3	2,700	8,000	12,000	--[1]
New River below confluence with Skunk Creek	N/A	13,500	31,000	41,000	75,000

--[1] Not Computed

6.2 Annotated Flood Insurance Rate Map

The 100-year effective FIS flow is contained within the proposed study reach as documented in this report. Exhibit C contains the revisions to the effective FIRM panels 04013C1610 H and 04013C1630 G. Refer to Exhibit B for *Post-Project Conditions Model* work maps.

6.3 Flood Profiles

Figure 6 contains the 100-year peak flow flood profiles for the *Post-Project Conditions Models* for the study reach of New River.

7.0 REFERENCES

1. Arizona Department of Transportation, *Final Scour Evaluation Report for City of Peoria, Structure No. 9684 Thunderbird Road over New River*, March 1996 (Stamped February 1997).

2. Aztec Engineering, *Rio Vista Park Drainage Report for the City of Peoria,* 2003.

3. Federal Emergency Management Agency, *FIRM Flood Insurance Rate Map, Maricopa County, Arizona and Incorporated Areas*, Map Nos. 04013C1630G, 0413C1610H.

4. New River Floodway Analysis HEC-1 data Files FCDMC Base FEMA hydraulic data.

5. Earthtech for the Arizona Department of Transportation, *91st Avenue Ramps to Agua Fria Freeway (101-L),* March 2001.

6. Entellus for the Flood Control District of Maricopa County, *Glendale/Peoria Area Drainage Master Plan Update,* 2001.

7. Entranco, *West Valley Multi-Modal Transportation Corridor Master Plan*, July 30, 2001.

8. Flood Control District of Maricopa County, New *River Floodway Analysis HEC-1 data Files (revsb.dat, scfld.dat),*1989.

9. Kirkham Michael for Plaza Del Rio, *Plaza Del Rio On-Site Drainage Report*, Jan 1996, revised Feb & Mar 1996, revised May 1990.

10. Michael Baker Jr., Inc. for Arizona Dept. of Transportation-ADOT, *Local Government Bridge Scour Evaluation Study, Final Scour Evaluation Report for City of Peoria, Structure No. 9684 Thunderbird Road Over New River,* 1996.

11. Michael Baker Jr., Inc. for Arizona Dept. of Transportation-ADOT, *Local Government Bridge Scour Evaluation Study, Summary Report for City of Peoria*, 1997.

12. Rick Engineering, *Desert Harbor Master Development Drainage Report*, March 1994.

13. Stantec Consulting, Inc., *Paradise Shores – New River Bank Protection Project, Candidate Assessment Report,* February 2000.

14. Stantec Consulting, Inc., *Middle New River Watercourse Master Plan,* revised May 2000.

15. Thomas-Hartig & Associates, Inc., *Report for Geotechnical Engineering Services – New River Channelization – Grand Avenue to Greenway Road, Peoria, Arizona,* July 1993.

16. U. S. Corps of Engineers, *Phoenix, Arizona and Vicinity (Including New River) Hydrology Part 2, Design Memorandum No. 2*, 1982.

17. Willdan Consultants, *New River Channel Improvement, Grand Avenue to Skunk Creek, Candidate Assessment Report,* June 2000 (including Addendum #1).

18. Wood, Patel & Associates, Inc. for the Flood Control District of Maricopa County, *New River from Grand Avenue to Greenway Road Design Report,* 1984.

19. Wood, Patel & Associates, Inc. for the Flood Control District of Maricopa County, *New River from Grand Avenue to Greenway Road Design Report,* February 23, 1994 (including Addendum #1).

20. U.S. Army Corps of Engineers, Hydrologic Modeling Center, *HEC-2 Water Surface Profiles User's Manual*, 1991.

21. ADWR, *Design Manual for Engineering Analysis of Fluvial Systems*, 1985.

22. Pemberton, E. and J. Lara, *Computing Degradation and Local Scour, Technical Guideline for Bureau of Reclamation*, 1984.

23. FEMA, *Flood Insurance Study, Maricopa County and Incorporated Areas, Arizona*, 2001.

24. J2 Engineering and Environmental Design for the Flood Control District of Maricopa County, *New River Channel Channelization Design Report,* October 2004.

Table 1 Duplicate Effective FIS HEC-2 Modeling Results

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	337.000	41000.00	1124.05	.00	.81	.00	351.71	300.00
	337.000	41000.00	1124.08	.03	.79	.03	351.76	300.00
	340.500	41000.00	1125.11	.00	1.06	.00	351.42	350.00
	340.500	41000.00	1125.13	.02	1.05	.02	351.45	350.00
	342.000	41000.00	1125.58	.00	.47	.00	351.36	150.00
	342.000	41000.00	1125.60	.01	.47	.01	351.39	150.00
	343.000	41000.00	1125.92	.00	.33	.00	351.42	100.00
	343.000	41000.00	1125.93	.01	.33	.01	351.45	100.00
	344.900	41000.00	1126.51	.00	.59	.00	346.27	190.00
	344.900	41000.00	1126.52	.01	.59	.01	346.28	190.00
	345.200	41000.00	1126.79	.00	.28	.00	346.71	30.00
	345.200	41000.00	1126.80	.01	.28	.01	346.72	30.00
*	346.200	41000.00	1128.30	.00	1.51	.00	348.83	100.00
*	346.200	41000.00	1128.30	.00	1.50	.00	348.83	100.00
	346.620	41000.00	1128.38	.00	.08	.00	350.57	42.00
	346.620	41000.00	1128.38	.00	.08	.00	350.57	42.00
	346.720	41000.00	1128.34	.00	-.04	.00	332.20	10.00
	346.720	41000.00	1128.34	.00	-.04	.00	332.20	10.00
	346.900	41000.00	1128.40	.00	.06	.00	326.33	18.00
	346.900	41000.00	1128.40	.00	.06	.00	326.33	18.00
*	347.000	41000.00	1129.25	.00	.85	.00	346.85	10.00
*	347.000	41000.00	1129.25	.00	.85	.00	346.85	10.00
	349.000	41000.00	1129.95	.00	.70	.00	451.91	275.00
	349.000	41000.00	1129.93	-.02	.68	-.02	381.06	275.00
	352.000	41000.00	1130.55	.00	.60	.00	411.99	300.00
	352.000	41000.00	1130.54	-.02	.61	-.02	364.24	300.00
*	358.000	41000.00	1136.11	.00	5.56	.00	1294.80	600.00
*	358.000	41000.00	1135.48	-.63	4.94	-.63	566.95	600.00
	365.000	41000.00	1139.97	.00	3.86	.00	1408.98	700.00
*	365.000	41000.00	1140.65	.68	5.17	.68	950.00	700.00
	370.000	41000.00	1141.61	.00	1.64	.00	1462.13	500.00
	370.000	41000.00	1141.78	.16	1.13	.16	676.66	500.00
	373.000	41000.00	1142.33	.00	.71	.00	1931.14	330.00
	373.000	41000.00	1142.69	.37	.92	.37	681.77	330.00
	377.000	41000.00	1143.14	.00	.81	.00	1259.52	400.00
	377.000	41000.00	1143.74	.60	1.04	.60	686.14	400.00
	384.000	41000.00	1145.12	.00	1.99	.00	339.20	700.00
	384.000	41000.00	1146.13	1.01	2.39	1.01	356.14	700.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	388.000	41000.00	1146.55	.00	1.43	.00	344.96	400.00
	388.000	41000.00	1147.20	.65	1.07	.65	351.69	400.00
	391.500	41000.00	1147.26	.00	.71	.00	380.74	350.00
	391.500	41000.00	1147.82	.56	.62	.56	397.09	350.00
	395.000	41000.00	1148.27	.00	1.01	.00	369.13	350.00
	395.000	41000.00	1148.69	.42	.88	.42	386.37	350.00
	402.000	41000.00	1149.67	.00	1.40	.00	381.38	700.00
	402.000	41000.00	1149.97	.30	1.28	.30	384.70	700.00
	406.000	41000.00	1150.33	.00	.66	.00	386.62	400.00
	406.000	41000.00	1150.58	.25	.61	.25	378.91	400.00
	409.000	41000.00	1150.53	.00	.20	.00	250.62	300.00
	409.000	41000.00	1150.75	.22	.17	.22	251.51	300.00
	409.010	41000.00	1150.42	.00	-.11	.00	232.37	1.00
	409.010	41000.00	1150.65	.22	-.10	.22	233.02	1.00
	409.820	41000.00	1151.54	.00	1.11	.00	231.73	81.00
	409.820	41000.00	1151.68	.14	1.04	.14	232.21	81.00
	410.000	41000.00	1151.80	.00	.26	.00	243.21	18.00
	410.000	41000.00	1151.93	.13	.25	.13	243.76	18.00
	412.000	41000.00	1152.65	.00	.85	.00	280.95	200.00
	412.000	41000.00	1152.75	.11	.82	.11	281.68	200.00
	418.000	41000.00	1154.48	.00	1.83	.00	335.36	600.00
	418.000	41000.00	1154.54	.06	1.79	.06	336.09	600.00
	423.000	41000.00	1155.61	.00	1.13	.00	325.58	500.00
	423.000	41000.00	1155.65	.04	1.11	.04	326.02	500.00
	425.000	41000.00	1156.37	.00	.76	.00	341.15	200.00
	425.000	41000.00	1156.40	.03	.75	.03	341.60	200.00
	428.000	41000.00	1157.09	.00	.73	.00	352.94	300.00
	428.000	41000.00	1157.12	.03	.72	.03	353.14	300.00
	434.000	41000.00	1158.13	.00	1.04	.00	384.77	600.00
	434.000	41000.00	1158.15	.02	1.03	.02	384.94	600.00
	440.000	41000.00	1159.24	.00	1.10	.00	385.60	600.00
	440.000	41000.00	1159.25	.01	1.10	.01	385.69	600.00
	443.200	41000.00	1159.61	.00	.38	.00	397.38	320.00
	443.200	41000.00	1159.62	.01	.37	.01	397.46	320.00
*	449.100	41000.00	1161.22	.00	1.61	.00	389.94	590.00
*	449.100	41000.00	1161.22	.00	1.60	.00	389.94	590.00
*	451.000	41000.00	1165.56	.00	4.34	.00	397.81	190.00
*	451.000	41000.00	1165.56	.00	4.34	.00	397.81	190.00
	8.655	41000.00	1170.38	0.00	4.82	0.00	400.54	690.00
	8.655	41000.00	1170.38	0.00	4.82	0.00	400.54	690.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	8.731	12000.00	1171.50	0.00	1.12	0.00	433.92	400.00
	8.731	12000.00	1171.50	0.00	1.12	0.00	433.92	400.00
	8.807	12000.00	1171.53	0.00	0.03	0.00	422.53	400.00
	8.807	12000.00	1171.53	0.00	0.03	0.00	422.53	400.00
	8.883	12000.00	1171.50	0.00	-0.03	0.00	344.04	400.00
	8.883	12000.00	1171.50	0.00	-0.03	0.00	344.04	400.00
	8.936	12000.00	1171.70	0.00	0.20	0.00	362.48	290.00
	8.936	12000.00	1171.70	0.00	0.20	0.00	362.48	290.00
	8.977	12000.00	1171.77	0.00	0.07	0.00	285.65	210.00
	8.977	12000.00	1171.77	0.00	0.07	0.00	285.65	210.00
	9.009	12000.00	1172.33	0.00	0.56	0.00	371.89	180.00
	9.009	12000.00	1172.33	0.00	0.56	0.00	371.89	180.00
	9.047	12000.00	1172.56	0.00	0.22	0.00	393.29	200.00
	9.047	12000.00	1172.56	0.00	0.22	0.00	393.29	200.00
	9.129	12000.00	1172.72	0.00	0.16	0.00	406.92	420.00
	9.129	12000.00	1172.72	0.00	0.16	0.00	406.92	420.00
*	9.318	12000.00	1180.55	0.00	7.83	0.00	314.99	1000.00
*	9.318	12000.00	1180.55	0.00	7.83	0.00	314.99	1000.00
	9.492	11450.00	1187.16	0.00	6.61	0.00	380.99	920.00
	9.492	11450.00	1187.16	-0.00	6.61	-0.00	381.14	920.00
	9.692	11450.00	1191.36	0.00	4.20	0.00	188.27	1056.00
	9.692	11450.00	1191.35	-0.00	4.20	-0.00	188.23	1056.00

Table 2 Corrected FIS HEC-RAS Modeling Results

HEC-RAS Plan: Corrected Ef River: New River Reach: Grand Ave to S.C

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave to S.C	334	Floodplain	41000.00	1113.92	1125.17	1121.69	1126.94	0.002701	10.68	3837.17	352.49	0.57
Grand Ave to S.C	334	Floodway	41000.00	1113.92	1125.17	1121.69	1126.94	0.002701	10.68	3837.17	352.49	0.57
Grand Ave to S.C	337	Floodplain	41000.00	1115.02	1125.94	1122.81	1127.83	0.002994	11.01	3723.81	351.85	0.60
Grand Ave to S.C	337	Floodway	41000.00	1115.02	1125.94	1122.81	1127.83	0.002994	11.01	3723.81	351.85	0.60
Grand Ave to S.C	340.5	Floodplain	41000.00	1116.22	1126.92	1124.02	1128.95	0.003189	11.42	3589.43	351.41	0.62
Grand Ave to S.C	340.5	Floodway	41000.00	1116.22	1126.92	1124.02	1128.95	0.003189	11.42	3589.43	351.41	0.62
Grand Ave to S.C	342	Floodplain	41000.00	1116.72	1127.50	1124.51	1129.43	0.003120	11.17	3671.73	351.55	0.61
Grand Ave to S.C	342	Floodway	41000.00	1116.72	1127.50	1124.51	1129.43	0.003120	11.17	3671.73	351.55	0.61
Grand Ave to S.C	343	Floodplain	41000.00	1117.02	1127.65	1124.96	1129.83	0.003468	11.85	3458.87	351.26	0.65
Grand Ave to S.C	343	Floodway	41000.00	1117.02	1127.65	1124.96	1129.83	0.003468	11.85	3458.87	351.26	0.65
Grand Ave to S.C	344.9	Floodplain	41000.00	1118.12	1128.34	1125.92	1130.53	0.003775	11.87	3455.16	346.27	0.66
Grand Ave to S.C	344.9	Floodway	41000.00	1118.12	1128.34	1125.92	1130.53	0.003775	11.87	3455.16	346.27	0.66
Grand Ave to S.C	345.5	Floodplain	41000.00	1119.40	1127.63	1127.63	1131.59	0.006408	16.16	2641.41	342.16	0.99
Grand Ave to S.C	345.5	Floodway	41000.00	1119.40	1127.61	1127.61	1131.59	0.006464	16.20	2634.15	342.05	1.00
Grand Ave to S.C	345.95		Bridge									
Grand Ave to S.C	346.4	Floodplain	41000.00	1119.80	1131.38	1128.00	1133.31	0.001997	11.33	3825.46	356.97	0.59
Grand Ave to S.C	346.4	Floodway	41000.00	1119.80	1131.38	1128.00	1133.31	0.001997	11.33	3825.46	356.97	0.59
Grand Ave to S.C	346.8	Floodplain	41000.00	1119.92	1131.51		1133.36	0.002089	10.92	3753.61	348.36	0.59
Grand Ave to S.C	346.8	Floodway	41000.00	1119.92	1131.51		1133.36	0.002089	10.92	3753.61	348.36	0.59
Grand Ave to S.C	347.1	Floodplain	41000.00	1120.40	1131.41		1133.49	0.002296	11.74	3668.82	360.11	0.62
Grand Ave to S.C	347.1	Floodway	41000.00	1120.40	1131.41		1133.49	0.002296	11.74	3668.82	360.11	0.62
Grand Ave to S.C	347.255		Bridge									
Grand Ave to S.C	347.4	Floodplain	41000.00	1120.50	1132.05	1128.59	1133.93	0.001949	11.17	3866.59	363.00	0.58
Grand Ave to S.C	347.4	Floodway	41000.00	1120.50	1132.05	1128.59	1133.93	0.001949	11.17	3866.59	363.00	0.58
Grand Ave to S.C	352.4	Floodplain	41000.00	1122.00	1132.74	1131.84	1135.69	0.004736	13.79	2982.80	371.43	0.85
Grand Ave to S.C	352.4	Floodway	41000.00	1122.00	1132.74	1131.84	1135.69	0.004736	13.79	2982.80	371.43	0.85
Grand Ave to S.C	358.25	Floodplain	41000.00	1123.00	1135.53	1134.31	1138.33	0.004163	13.42	3060.26	495.91	0.80
Grand Ave to S.C	358.25	Floodway	41000.00	1123.00	1135.53	1134.31	1138.33	0.004163	13.42	3060.26	495.91	0.80

HEC-RAS Plan: Corrected Ef River: New River Reach: Grand Ave to S.C (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave to S.C	365.4	Floodplain	41000.00	1127.00	1139.56	1139.56	1142.73	0.004491	14.61	3279.82	735.48	0.84
Grand Ave to S.C	365.4	Floodway	41000.00	1127.00	1139.56	1139.56	1142.73	0.004491	14.61	3279.82	735.48	0.84
Grand Ave to S.C	370.65	Floodplain	41000.00	1127.00	1143.13		1144.29	0.001625	9.20	5891.54	1125.90	0.51
Grand Ave to S.C	370.65	Floodway	41000.00	1127.00	1143.13		1144.29	0.001625	9.20	5891.54	1125.90	0.51
Grand Ave to S.C	373.75	Floodplain	41000.00	1127.00	1143.08	1141.33	1145.30	0.003157	12.55	4362.99	1183.45	0.71
Grand Ave to S.C	373.75	Floodway	41000.00	1127.00	1143.08	1141.33	1145.30	0.003157	12.55	4362.99	1183.45	0.71
Grand Ave to S.C	376.75	Floodplain	41000.00	1128.00	1144.57		1146.01	0.001499	9.81	4873.43	939.33	0.51
Grand Ave to S.C	376.75	Floodway	41000.00	1128.00	1144.57		1146.01	0.001499	9.81	4873.43	939.33	0.51
Grand Ave to S.C	379.75	Floodplain	41000.00	1129.00	1143.71	1142.60	1147.39	0.004294	15.49	2863.47	542.28	0.84
Grand Ave to S.C	379.75	Floodway	41000.00	1129.00	1143.71	1142.60	1147.39	0.004294	15.49	2863.47	542.28	0.84
Grand Ave to S.C	384.5	Floodplain	41000.00	1131.00	1146.95		1148.78	0.001694	10.88	3808.95	338.96	0.54
Grand Ave to S.C	384.5	Floodway	41000.00	1131.00	1146.95		1148.78	0.001694	10.88	3808.95	338.96	0.54
Grand Ave to S.C	388.5	Floodplain	41000.00	1131.00	1147.85	1142.83	1149.44	0.001460	10.14	4060.28	392.94	0.50
Grand Ave to S.C	388.5	Floodway	41000.00	1131.00	1147.85	1142.83	1149.44	0.001460	10.14	4060.28	392.94	0.50
Grand Ave to S.C	392	Floodplain	41000.00	1131.00	1148.33	1143.81	1150.01	0.001658	10.39	3956.85	429.82	0.53
Grand Ave to S.C	392	Floodway	41000.00	1131.00	1148.33	1143.81	1150.01	0.001658	10.39	3956.85	429.82	0.53
Grand Ave to S.C	395.5	Floodplain	41000.00	1133.00	1149.01	1144.56	1150.59	0.001638	10.27	4194.27	427.25	0.53
Grand Ave to S.C	395.5	Floodway	41000.00	1133.00	1149.01	1144.56	1150.59	0.001638	10.27	4194.27	427.25	0.53
Grand Ave to S.C	402.5	Floodplain	41000.00	1136.00	1150.18		1151.78	0.001681	10.16	4037.33	359.05	0.53
Grand Ave to S.C	402.5	Floodway	41000.00	1136.00	1150.18		1151.78	0.001681	10.16	4037.33	359.05	0.53
Grand Ave to S.C	406.5	Floodplain	41000.00	1136.00	1150.61		1152.78	0.002627	11.83	3466.68	342.30	0.65
Grand Ave to S.C	406.5	Floodway	41000.00	1136.00	1150.61		1152.78	0.002627	11.83	3466.68	342.30	0.65
Grand Ave to S.C	409.5	Floodplain	41000.00	1136.97	1151.20		1154.17	0.004005	13.82	2967.46	249.08	0.71
Grand Ave to S.C	409.5	Floodway	41000.00	1136.97	1151.20		1154.17	0.004005	13.82	2967.46	249.08	0.71
Grand Ave to S.C	410.02		Bridge									
Grand Ave to S.C	410.54	Floodplain	41000.00	1137.30	1152.23	1148.86	1154.88	0.003391	13.07	3136.60	251.93	0.65
Grand Ave to S.C	410.54	Floodway	41000.00	1137.30	1152.23	1148.86	1154.88	0.003391	13.07	3136.60	251.93	0.65

HEC-RAS Plan: Corrected Ef River: New River Reach: Grand Ave to S.C (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave to S.C	412.76	Floodplain	41000.00	1137.00	1153.19		1155.54	0.002414	12.28	3337.99	290.63	0.64
Grand Ave to S.C	412.76	Floodway	41000.00	1137.00	1153.19		1155.54	0.002414	12.28	3337.99	290.63	0.64
Grand Ave to S.C	418.97	Floodplain	41000.00	1138.00	1155.01		1156.99	0.002105	11.30	3628.48	323.72	0.59
Grand Ave to S.C	418.97	Floodway	41000.00	1138.00	1155.01		1156.99	0.002105	11.30	3628.48	323.72	0.59
Grand Ave to S.C	424.17	Floodplain	41000.00	1138.00	1156.12		1158.07	0.002030	11.19	3664.30	323.26	0.59
Grand Ave to S.C	424.17	Floodway	41000.00	1138.00	1156.12		1158.07	0.002030	11.19	3664.30	323.26	0.59
Grand Ave to S.C	429.37	Floodplain	41000.00	1139.00	1157.18		1159.10	0.001920	11.12	3686.18	314.97	0.57
Grand Ave to S.C	429.37	Floodway	41000.00	1139.00	1157.18		1159.10	0.001920	11.12	3686.18	314.97	0.57
Grand Ave to S.C	435.37	Floodplain	41000.00	1138.00	1158.41		1160.18	0.001653	10.68	3850.32	320.14	0.53
Grand Ave to S.C	435.37	Floodway	41000.00	1138.00	1158.41		1160.18	0.001653	10.68	3850.32	320.14	0.53
Grand Ave to S.C	441.6	Floodplain	41000.00	1142.00	1159.36	1155.38	1161.41	0.002089	11.50	3565.40	330.24	0.60
Grand Ave to S.C	441.6	Floodway	41000.00	1142.00	1159.36	1155.38	1161.41	0.002089	11.50	3565.40	330.24	0.60
Grand Ave to S.C	446.87	Floodplain	41000.00	1142.00	1160.58		1162.42	0.001678	10.87	3773.30	301.15	0.54
Grand Ave to S.C	446.87	Floodway	41000.00	1142.00	1160.58		1162.42	0.001678	10.87	3773.30	301.15	0.54
Grand Ave to S.C	449.05	Floodplain	41000.00	1143.00	1161.03		1162.80	0.001560	10.67	3843.95	298.46	0.52
Grand Ave to S.C	449.05	Floodway	41000.00	1143.00	1161.03		1162.80	0.001560	10.67	3843.95	298.46	0.52
Grand Ave to S.C	450.23	Floodplain	41000.00	1143.00	1161.88		1162.97	0.000808	8.39	4885.05	330.88	0.38
Grand Ave to S.C	450.23	Floodway	41000.00	1143.00	1161.88		1162.97	0.000808	8.39	4885.05	330.88	0.38
Grand Ave to S.C	451.05	Floodplain	41000.00	1144.00	1161.91		1163.05	0.000767	8.58	4776.77	293.33	0.37
Grand Ave to S.C	451.05	Floodway	41000.00	1144.00	1161.91		1163.05	0.000767	8.58	4776.77	293.33	0.37
Grand Ave to S.C	451.23	Floodplain	41000.00	1144.00	1161.86		1163.09	0.000838	8.91	4602.92	283.89	0.39
Grand Ave to S.C	451.23	Floodway	41000.00	1144.00	1161.86		1163.09	0.000838	8.91	4602.92	283.89	0.39
Grand Ave to S.C	452.23	Floodplain	41000.00	1144.00	1161.94		1163.18	0.000865	8.96	4577.84	287.02	0.40
Grand Ave to S.C	452.23	Floodway	41000.00	1144.00	1161.94		1163.18	0.000865	8.96	4577.84	287.02	0.40
Grand Ave to S.C	452.5	Floodplain	41000.00	1153.00	1161.81	1161.81	1166.06	0.006628	16.55	2477.02	291.30	1.00
Grand Ave to S.C	452.5	Floodway	41000.00	1153.00	1161.81	1161.81	1166.06	0.006628	16.55	2477.02	291.30	1.00
Grand Ave to S.C	452.65	Floodplain	41000.00	1155.00	1163.68	1163.68	1167.89	0.006700	16.47	2488.75	297.82	1.00
Grand Ave to S.C	452.65	Floodway	41000.00	1155.00	1163.68	1163.68	1167.89	0.006700	16.47	2488.75	297.82	1.00

HEC-RAS Plan: Corrected Ef River: New River Reach: Grand Ave to S.C (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave to S.C	452.73	Floodplain	41000.00	1154.00	1165.51		1168.09	0.003062	12.90	3177.98	303.96	0.70
Grand Ave to S.C	452.73	Floodway	41000.00	1154.00	1165.51		1168.09	0.003062	12.90	3177.98	303.96	0.70
Grand Ave to S.C	453.23	Floodplain	41000.00	1154.00	1165.91		1168.26	0.002650	12.30	3332.69	308.23	0.66
Grand Ave to S.C	453.23	Floodway	41000.00	1154.00	1165.91		1168.26	0.002650	12.30	3332.69	308.23	0.66
Grand Ave to S.C	458.66	Floodplain	41000.00	1157.12	1172.19		1173.11	0.001109	7.71	5314.66	400.51	0.37
Grand Ave to S.C	458.66	Floodway	41000.00	1157.12	1172.19		1173.11	0.001109	7.71	5314.66	400.51	0.37
Grand Ave to S.C	458.73	Floodplain	12000.00	1157.92	1173.31	1162.29	1173.39	0.000097	2.23	5383.27	433.80	0.11
Grand Ave to S.C	458.73	Floodway	12000.00	1157.92	1173.31	1162.29	1173.39	0.000097	2.23	5383.27	433.80	0.11
Grand Ave to S.C	458.81	Floodplain	12000.00	1160.12	1173.34	1163.97	1173.44	0.000145	2.54	4718.82	422.41	0.13
Grand Ave to S.C	458.81	Floodway	12000.00	1160.12	1173.34	1163.97	1173.44	0.000145	2.54	4718.82	422.41	0.13
Grand Ave to S.C	458.88	Floodplain	12000.00	1161.92	1173.31	1167.83	1173.61	0.000680	4.39	2734.01	343.92	0.27
Grand Ave to S.C	458.88	Floodway	12000.00	1161.92	1173.31	1167.83	1173.61	0.000680	4.39	2734.01	343.92	0.27
Grand Ave to S.C	458.94	Floodplain	12000.00	1163.62	1173.51	1169.61	1173.85	0.000944	4.74	2533.63	362.43	0.32
Grand Ave to S.C	458.94	Floodway	12000.00	1163.62	1173.51	1169.61	1173.85	0.000944	4.74	2533.63	362.43	0.32

Table 3 HEC-RAS Output Summary Table for Post-Project Conditions Model

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	334	100 Year FP	41000.00	1113.92	1125.17	1121.69	1126.94	0.002701	10.68	3837.21	352.49	0.57
Grand Ave - Drop	334	100 Year FW	41000.00	1113.92	1125.17	1121.69	1126.94	0.002701	10.68	3837.21	352.49	0.57
Grand Ave - Drop	334	10 Year Flow	13500.00	1113.92	1119.70	1117.65	1120.45	0.002702	6.96	1939.74	341.55	0.51
Grand Ave - Drop	334	50 Year Flow	31000.00	1113.92	1123.44	1120.38	1124.87	0.002700	9.59	3233.60	349.05	0.56
Grand Ave - Drop	334	500 Year Flow	75000.00	1113.92	1129.89	1125.50	1132.66	0.002703	13.44	5978.57	836.58	0.60
Grand Ave - Drop	337	100 Year FP	41000.00	1115.02	1125.94	1122.79	1127.83	0.002994	11.01	3723.85	351.85	0.60
Grand Ave - Drop	337	100 Year FW	41000.00	1115.02	1125.94	1122.79	1127.83	0.002994	11.01	3723.85	351.85	0.60
Grand Ave - Drop	337	10 Year Flow	13500.00	1115.02	1120.52	1118.73	1121.35	0.003182	7.32	1845.17	341.00	0.55
Grand Ave - Drop	337	50 Year Flow	31000.00	1115.02	1124.23	1121.46	1125.76	0.003020	9.92	3123.56	348.42	0.58
Grand Ave - Drop	337	500 Year Flow	75000.00	1115.02	1130.58	1126.61	1133.60	0.003079	13.95	5396.05	441.46	0.64
Grand Ave - Drop	340.5	100 Year FP	41000.00	1116.22	1126.98		1128.92	0.003152	11.19	3664.91	351.51	0.61
Grand Ave - Drop	340.5	100 Year FW	41000.00	1116.22	1126.98		1128.92	0.003152	11.19	3664.91	351.51	0.61
Grand Ave - Drop	340.5	10 Year Flow	13500.00	1116.22	1121.64		1122.50	0.003335	7.42	1818.95	340.85	0.57
Grand Ave - Drop	340.5	50 Year Flow	31000.00	1116.22	1125.28		1126.86	0.003190	10.09	3071.14	348.12	0.60
Grand Ave - Drop	340.5	500 Year Flow	75000.00	1116.22	1131.65		1134.69	0.003135	14.02	5478.27	531.37	0.64
Grand Ave - Drop	342	100 Year FP	41000.00	1116.72	1127.44		1129.40	0.003185	11.22	3653.11	351.44	0.61
Grand Ave - Drop	342	100 Year FW	41000.00	1116.72	1127.44		1129.40	0.003185	11.22	3653.11	351.44	0.61
Grand Ave - Drop	342	10 Year Flow	13500.00	1116.72	1122.14		1123.00	0.003334	7.42	1819.03	340.85	0.57
Grand Ave - Drop	342	50 Year Flow	31000.00	1116.72	1125.75		1127.35	0.003219	10.12	3062.81	348.07	0.60
Grand Ave - Drop	342	500 Year Flow	75000.00	1116.72	1132.11		1135.17	0.003169	14.07	5449.24	554.33	0.65
Grand Ave - Drop	343	100 Year FP	41000.00	1117.02	1127.77		1129.71	0.003161	11.20	3661.73	351.49	0.61
Grand Ave - Drop	343	100 Year FW	41000.00	1117.02	1127.77		1129.71	0.003161	11.20	3661.73	351.49	0.61
Grand Ave - Drop	343	10 Year Flow	13500.00	1117.02	1122.49		1123.33	0.003251	7.36	1833.22	340.93	0.56
Grand Ave - Drop	343	50 Year Flow	31000.00	1117.02	1126.08		1127.66	0.003185	10.09	3072.80	348.13	0.60
Grand Ave - Drop	343	500 Year Flow	75000.00	1117.02	1132.67		1135.50	0.002895	13.62	6087.73	925.24	0.62
Grand Ave - Drop	344.9	100 Year FP	41000.00	1118.12	1128.35	1125.92	1130.53	0.003761	11.85	3459.13	346.29	0.66
Grand Ave - Drop	344.9	100 Year FW	41000.00	1118.12	1128.35	1125.92	1130.53	0.003761	11.85	3459.13	346.29	0.66
Grand Ave - Drop	344.9	10 Year Flow	13500.00	1118.12	1123.14	1121.82	1124.15	0.004321	8.04	1678.12	338.00	0.64
Grand Ave - Drop	344.9	50 Year Flow	31000.00	1118.12	1126.69	1124.60	1128.48	0.003876	10.75	2884.80	343.64	0.65
Grand Ave - Drop	344.9	500 Year Flow	75000.00	1118.12	1133.13	1129.71	1136.45	0.003534	14.61	5132.56	353.90	0.68
Grand Ave - Drop	345.5	100 Year FP	41000.00	1119.40	1127.63	1127.63	1131.59	0.006408	16.16	2641.41	342.16	0.99
Grand Ave - Drop	345.5	100 Year FW	41000.00	1119.40	1127.61	1127.61	1131.59	0.006464	16.20	2634.15	342.05	1.00

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	345.5	10 Year Flow	13500.00	1119.40	1123.34	1123.34	1125.29	0.008324	11.27	1221.52	320.19	1.00
Grand Ave - Drop	345.5	50 Year Flow	31000.00	1119.40	1126.24	1126.24	1129.56	0.006846	14.76	2171.41	335.04	0.99
Grand Ave - Drop	345.5	500 Year Flow	75000.00	1119.40	1132.36	1131.62	1137.46	0.004552	18.44	4310.93	357.09	0.90
Grand Ave - Drop	345.95		Bridge									
Grand Ave - Drop	346.4	100 Year FP	41000.00	1119.80	1131.53	1127.92	1133.27	0.001918	10.57	3879.88	356.98	0.56
Grand Ave - Drop	346.4	100 Year FW	41000.00	1119.80	1131.53	1127.92	1133.27	0.001918	10.57	3879.88	356.98	0.56
Grand Ave - Drop	346.4	10 Year Flow	13500.00	1119.80	1125.85	1123.72	1126.63	0.001987	7.06	1911.49	331.87	0.52
Grand Ave - Drop	346.4	50 Year Flow	31000.00	1119.80	1129.72	1126.56	1131.15	0.001972	9.58	3235.68	352.25	0.56
Grand Ave - Drop	346.4	500 Year Flow	75000.00	1119.80	1136.56	1131.77	1139.27	0.001808	13.22	5675.40	357.54	0.58
Grand Ave - Drop	346.8	100 Year FP	41000.00	1119.92	1131.50		1133.35	0.002097	10.94	3749.19	348.31	0.59
Grand Ave - Drop	346.8	100 Year FW	41000.00	1119.92	1131.50		1133.35	0.002097	10.94	3749.19	348.31	0.59
Grand Ave - Drop	346.8	10 Year Flow	13500.00	1119.92	1125.86		1126.69	0.002199	7.31	1845.97	327.43	0.54
Grand Ave - Drop	346.8	50 Year Flow	31000.00	1119.92	1129.71		1131.23	0.002123	9.90	3131.22	341.67	0.58
Grand Ave - Drop	346.8	500 Year Flow	75000.00	1119.92	1136.51		1139.36	0.002042	13.56	5533.01	360.30	0.61
Grand Ave - Drop	347.1	100 Year FP	41000.00	1120.40	1131.39		1133.48	0.002305	11.76	3664.12	360.05	0.62
Grand Ave - Drop	347.1	100 Year FW	41000.00	1120.40	1131.39		1133.48	0.002305	11.76	3664.12	360.05	0.62
Grand Ave - Drop	347.1	10 Year Flow	13500.00	1120.40	1125.82		1126.80	0.002726	7.98	1734.14	332.97	0.60
Grand Ave - Drop	347.1	50 Year Flow	31000.00	1120.40	1129.63		1131.34	0.002390	10.65	3035.09	351.45	0.62
Grand Ave - Drop	347.1	500 Year Flow	75000.00	1120.40	1136.33		1139.52	0.002176	14.63	5454.59	363.38	0.65
Grand Ave - Drop	347.255		Bridge									
Grand Ave - Drop	347.4	100 Year FP	41000.00	1120.50	1132.04	1128.59	1133.92	0.001954	11.18	3863.40	363.00	0.58
Grand Ave - Drop	347.4	100 Year FW	41000.00	1120.50	1132.04	1128.59	1133.92	0.001954	11.18	3863.40	363.00	0.58
Grand Ave - Drop	347.4	10 Year Flow	13500.00	1120.50	1126.24	1124.38	1127.11	0.002252	7.53	1840.43	334.75	0.55
Grand Ave - Drop	347.4	50 Year Flow	31000.00	1120.50	1130.20	1127.24	1131.75	0.002015	10.11	3204.60	354.17	0.57
Grand Ave - Drop	347.4	500 Year Flow	75000.00	1120.50	1137.11	1132.60	1140.03	0.001886	14.00	5705.21	363.45	0.61
Grand Ave - Drop	352.4	100 Year FP	41000.00	1122.00	1133.17		1135.35	0.003698	11.85	3459.81	363.31	0.68
Grand Ave - Drop	352.4	100 Year FW	41000.00	1122.00	1133.17		1135.35	0.003698	11.85	3459.81	363.31	0.68
Grand Ave - Drop	352.4	10 Year Flow	13500.00	1122.00	1127.72		1128.96	0.005758	8.91	1514.46	351.90	0.76
Grand Ave - Drop	352.4	50 Year Flow	31000.00	1122.00	1131.39		1133.27	0.004095	11.00	2817.22	359.32	0.69
Grand Ave - Drop	352.4	500 Year Flow	75000.00	1122.00	1138.27		1141.22	0.002918	13.88	5666.38	512.43	0.64

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	358.25	100 Year FP	41000.00	1123.00	1135.26	1133.04	1137.53	0.003737	12.07	3397.30	356.31	0.68
Grand Ave - Drop	358.25	100 Year FW	41000.00	1123.00	1135.26	1133.04	1137.53	0.003737	12.07	3397.30	356.31	0.68
Grand Ave - Drop	358.25	10 Year Flow	13500.00	1123.00	1130.55	1128.96	1131.45	0.003261	7.61	1774.27	339.01	0.59
Grand Ave - Drop	358.25	50 Year Flow	31000.00	1123.00	1133.71	1131.73	1135.54	0.003731	10.86	2855.11	345.98	0.67
Grand Ave - Drop	358.25	500 Year Flow	75000.00	1123.00	1139.81	1137.02	1143.18	0.003424	14.83	5261.57	449.35	0.69
Grand Ave - Drop	365.4	100 Year FP	41000.00	1125.50	1138.30		1140.12	0.003539	10.81	3791.64	415.23	0.63
Grand Ave - Drop	365.4	100 Year FW	41000.00	1125.50	1138.30		1140.12	0.003539	10.81	3791.64	415.23	0.63
Grand Ave - Drop	365.4	10 Year Flow	13500.00	1125.50	1133.15		1134.12	0.004448	7.91	1706.43	394.60	0.67
Grand Ave - Drop	365.4	50 Year Flow	31000.00	1125.50	1136.64		1138.19	0.003756	9.97	3108.69	408.57	0.64
Grand Ave - Drop	365.4	500 Year Flow	75000.00	1125.50	1142.98		1145.54	0.003096	12.87	5909.75	482.81	0.62
Grand Ave - Drop	370.65	100 Year FP	41000.00	1126.50	1140.39		1141.40	0.001569	8.05	5091.36	495.35	0.44
Grand Ave - Drop	370.65	100 Year FW	41000.00	1126.50	1140.39		1141.40	0.001569	8.05	5091.36	495.35	0.44
Grand Ave - Drop	370.65	10 Year Flow	13500.00	1126.50	1135.05		1135.50	0.001598	5.39	2502.40	473.99	0.41
Grand Ave - Drop	370.65	50 Year Flow	31000.00	1126.50	1138.67		1139.50	0.001595	7.30	4245.76	488.48	0.44
Grand Ave - Drop	370.65	500 Year Flow	75000.00	1126.50	1145.24		1146.73	0.001450	9.86	7901.81	655.60	0.45
Grand Ave - Drop	373.75	100 Year FP	41000.00	1127.00	1140.92		1141.88	0.001518	7.88	5204.35	487.91	0.43
Grand Ave - Drop	373.75	100 Year FW	41000.00	1127.00	1140.92		1141.88	0.001518	7.88	5204.35	487.91	0.43
Grand Ave - Drop	373.75	10 Year Flow	13500.00	1127.00	1135.57		1135.97	0.001384	5.06	2665.60	461.33	0.37
Grand Ave - Drop	373.75	50 Year Flow	31000.00	1127.00	1139.20		1139.98	0.001504	7.08	4376.34	479.52	0.41
Grand Ave - Drop	373.75	500 Year Flow	75000.00	1127.00	1145.70		1147.18	0.001483	9.81	7881.48	644.43	0.44
Grand Ave - Drop	376.75	100 Year FP	41000.00	1128.00	1141.14		1142.70	0.003231	10.03	4086.35	416.58	0.56
Grand Ave - Drop	376.75	100 Year FW	41000.00	1128.00	1141.14		1142.70	0.003231	10.03	4086.35	416.58	0.56
Grand Ave - Drop	376.75	10 Year Flow	13500.00	1128.00	1135.98		1136.67	0.003385	6.70	2014.15	386.88	0.52
Grand Ave - Drop	376.75	50 Year Flow	31000.00	1128.00	1139.49		1140.78	0.003286	9.09	3408.80	406.95	0.55
Grand Ave - Drop	376.75	500 Year Flow	75000.00	1128.00	1145.68		1148.08	0.003087	12.44	6087.78	528.57	0.59
Grand Ave - Drop	379.75	100 Year FP	41000.00	1129.00	1142.01		1143.59	0.002705	10.07	4070.28	398.55	0.56
Grand Ave - Drop	379.75	100 Year FW	41000.00	1129.00	1142.01		1143.59	0.002705	10.07	4070.28	398.55	0.56
Grand Ave - Drop	379.75	10 Year Flow	13500.00	1129.00	1136.89		1137.54	0.002457	6.48	2083.13	376.39	0.49
Grand Ave - Drop	379.75	50 Year Flow	31000.00	1129.00	1140.39		1141.66	0.002657	9.04	3430.50	391.55	0.54
Grand Ave - Drop	379.75	500 Year Flow	75000.00	1129.00	1146.49		1148.99	0.002783	12.70	5952.27	441.16	0.59
Grand Ave - Drop	384.5	100 Year FP	41000.00	1130.50	1143.30	1140.05	1144.97	0.003061	10.34	3963.48	392.20	0.57
Grand Ave - Drop	384.5	100 Year FW	41000.00	1130.50	1143.30	1140.05	1144.97	0.003061	10.34	3963.48	392.20	0.57

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	384.5	10 Year Flow	13500.00	1130.50	1138.10	1136.17	1138.82	0.002947	6.82	1979.44	369.97	0.52
Grand Ave - Drop	384.5	50 Year Flow	31000.00	1130.50	1141.67	1138.77	1143.02	0.003030	9.31	3328.45	385.22	0.56
Grand Ave - Drop	384.5	500 Year Flow	75000.00	1130.50	1147.79	1143.64	1150.40	0.003093	12.98	5836.99	437.53	0.61
Grand Ave - Drop	388.5	100 Year FP	41000.00	1131.00	1144.64		1146.04	0.002260	9.50	4315.03	396.72	0.51
Grand Ave - Drop	388.5	100 Year FW	41000.00	1131.00	1144.64		1146.04	0.002260	9.50	4315.03	396.72	0.51
Grand Ave - Drop	388.5	10 Year Flow	13500.00	1131.00	1139.24		1139.81	0.002027	6.04	2234.23	374.22	0.44
Grand Ave - Drop	388.5	50 Year Flow	31000.00	1131.00	1142.95		1144.07	0.002200	8.49	3650.84	389.68	0.49
Grand Ave - Drop	388.5	500 Year Flow	75000.00	1131.00	1149.25		1151.51	0.002359	12.09	6275.63	460.96	0.55
Grand Ave - Drop	392	100 Year FP	41000.00	1131.00	1145.41		1146.78	0.001948	9.37	4377.09	387.48	0.49
Grand Ave - Drop	392	100 Year FW	41000.00	1131.00	1145.41		1146.78	0.001948	9.37	4377.09	387.48	0.49
Grand Ave - Drop	392	10 Year Flow	13500.00	1131.00	1139.90		1140.44	0.001596	5.85	2306.86	364.09	0.41
Grand Ave - Drop	392	50 Year Flow	31000.00	1131.00	1143.70		1144.78	0.001859	8.34	3718.86	380.20	0.47
Grand Ave - Drop	392	500 Year Flow	75000.00	1131.00	1150.06		1152.30	0.002122	12.02	6302.74	438.66	0.54
Grand Ave - Drop	395.5	100 Year FP	41000.00	1133.00	1145.87		1147.66	0.002578	10.74	3817.54	354.31	0.58
Grand Ave - Drop	395.5	100 Year FW	41000.00	1133.00	1145.87		1147.66	0.002578	10.74	3817.54	354.31	0.58
Grand Ave - Drop	395.5	10 Year Flow	13500.00	1133.00	1140.41		1141.16	0.002386	6.95	1942.34	331.19	0.51
Grand Ave - Drop	395.5	50 Year Flow	31000.00	1133.00	1144.18		1145.62	0.002514	9.62	3223.92	347.77	0.56
Grand Ave - Drop	395.5	500 Year Flow	75000.00	1133.00	1150.40		1153.32	0.002781	13.72	5494.42	392.63	0.63
Grand Ave - Drop	402.5	100 Year FP	41000.00	1136.00	1147.58		1150.35	0.004594	13.35	3071.82	318.97	0.76
Grand Ave - Drop	402.5	100 Year FW	41000.00	1136.00	1147.58		1150.35	0.004594	13.35	3071.82	318.97	0.76
Grand Ave - Drop	402.5	10 Year Flow	13500.00	1136.00	1142.41		1143.70	0.005063	9.14	1476.82	297.50	0.72
Grand Ave - Drop	402.5	50 Year Flow	31000.00	1136.00	1145.96		1148.24	0.004651	12.10	2561.38	312.26	0.74
Grand Ave - Drop	402.5	500 Year Flow	75000.00	1136.00	1151.94		1156.23	0.004568	16.63	4559.43	361.65	0.80
Grand Ave - Drop	406.5	100 Year FP	41000.00	1136.00	1149.89		1151.84	0.002784	11.21	3659.02	345.71	0.61
Grand Ave - Drop	406.5	100 Year FW	41000.00	1136.00	1149.89		1151.84	0.002784	11.21	3659.02	345.71	0.61
Grand Ave - Drop	406.5	10 Year Flow	13500.00	1136.00	1144.30		1145.14	0.002519	7.36	1835.04	306.57	0.53
Grand Ave - Drop	406.5	50 Year Flow	31000.00	1136.00	1148.11		1149.71	0.002745	10.14	3056.85	333.30	0.59
Grand Ave - Drop	406.5	500 Year Flow	75000.00	1136.00	1154.80		1157.75	0.002725	13.79	5497.37	418.49	0.63
Grand Ave - Drop	409.5	100 Year FP	41000.00	1136.97	1150.22		1153.73	0.004784	15.06	2723.34	244.41	0.79
Grand Ave - Drop	409.5	100 Year FW	41000.00	1136.97	1150.22		1153.73	0.004784	15.06	2723.34	244.41	0.79
Grand Ave - Drop	409.5	10 Year Flow	13500.00	1136.97	1144.97		1146.22	0.003207	8.97	1505.83	219.99	0.60
Grand Ave - Drop	409.5	50 Year Flow	31000.00	1136.97	1148.60		1151.34	0.004361	13.27	2335.69	236.79	0.74

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	409.5	500 Year Flow	75000.00	1136.97	1154.45	1153.53	1160.50	0.005899	19.74	3799.50	264.43	0.92
Grand Ave - Drop	410.02		Bridge									
Grand Ave - Drop	410.54	100 Year FP	41000.00	1137.30	1152.79	1148.85	1155.22	0.002808	12.50	3279.73	254.37	0.61
Grand Ave - Drop	410.54	100 Year FW	41000.00	1137.30	1152.79	1148.85	1155.22	0.002808	12.50	3279.73	254.37	0.61
Grand Ave - Drop	410.54	10 Year Flow	13500.00	1137.30	1145.33	1143.26	1146.58	0.003314	8.98	1503.29	220.63	0.61
Grand Ave - Drop	410.54	50 Year Flow	31000.00	1137.30	1149.66	1147.05	1152.04	0.003630	12.38	2505.02	240.76	0.68
Grand Ave - Drop	410.54	500 Year Flow	75000.00	1137.30	1160.36	1153.86	1163.41	0.002210	14.02	5372.18	301.27	0.57
Grand Ave - Drop	412.76	100 Year FP	41000.00	1137.00	1154.71		1155.87	0.001945	8.64	4743.20	342.43	0.41
Grand Ave - Drop	412.76	100 Year FW	41000.00	1137.00	1154.71		1155.87	0.001945	8.64	4743.20	342.43	0.41
Grand Ave - Drop	412.76	10 Year Flow	13500.00	1137.00	1146.69		1147.32	0.002752	6.35	2127.39	310.37	0.43
Grand Ave - Drop	412.76	50 Year Flow	31000.00	1137.00	1151.76		1152.82	0.002341	8.26	3751.51	330.64	0.43
Grand Ave - Drop	412.76	500 Year Flow	75000.00	1137.00	1162.45		1163.96	0.001475	9.91	7847.21	535.10	0.38
Grand Ave - Drop	418.97	100 Year FP	41000.00	1138.00	1155.94		1157.26	0.002340	9.22	4447.08	311.54	0.43
Grand Ave - Drop	418.97	100 Year FW	41000.00	1138.00	1155.94		1157.26	0.002340	9.22	4447.08	311.54	0.43
Grand Ave - Drop	418.97	10 Year Flow	13500.00	1138.00	1148.35		1148.94	0.002397	6.14	2199.68	281.21	0.39
Grand Ave - Drop	418.97	50 Year Flow	31000.00	1138.00	1153.25		1154.38	0.002556	8.55	3623.81	300.79	0.43
Grand Ave - Drop	418.97	500 Year Flow	75000.00	1138.00	1163.32		1165.07	0.001834	10.75	7518.60	567.27	0.41
Grand Ave - Drop	424.17	100 Year FP	41000.00	1138.00	1157.20	1148.77	1158.27	0.001608	8.30	4940.70	312.57	0.37
Grand Ave - Drop	424.17	100 Year FW	41000.00	1138.00	1157.20	1148.77	1158.27	0.001608	8.30	4940.70	312.57	0.37
Grand Ave - Drop	424.17	10 Year Flow	13500.00	1138.00	1149.43	1143.92	1149.84	0.001285	5.13	2629.77	281.78	0.30
Grand Ave - Drop	424.17	50 Year Flow	31000.00	1138.00	1154.57	1147.22	1155.44	0.001614	7.51	4130.50	302.33	0.36
Grand Ave - Drop	424.17	500 Year Flow	75000.00	1138.00	1164.37	1153.13	1165.93	0.001462	10.13	7908.12	541.81	0.37
Grand Ave - Drop	429.37	100 Year FP	41000.00	1139.00	1157.92	1149.79	1159.03	0.001306	8.45	4849.93	310.50	0.38
Grand Ave - Drop	429.37	100 Year FW	41000.00	1139.00	1157.92	1149.79	1159.03	0.001306	8.45	4849.93	310.50	0.38
Grand Ave - Drop	429.37	10 Year Flow	13500.00	1139.00	1150.01	1144.94	1150.46	0.001099	5.38	2509.98	280.25	0.32
Grand Ave - Drop	429.37	50 Year Flow	31000.00	1139.00	1155.29	1148.20	1156.20	0.001311	7.67	4044.28	301.35	0.37
Grand Ave - Drop	429.37	500 Year Flow	75000.00	1139.00	1164.98	1154.27	1166.64	0.001213	10.43	7501.53	557.39	0.39
Grand Ave - Drop	435.37	100 Year FP	41000.00	1138.00	1158.70		1159.84	0.001410	8.57	4785.76	301.82	0.38
Grand Ave - Drop	435.37	100 Year FW	41000.00	1138.00	1158.70		1159.84	0.001410	8.57	4785.76	301.82	0.38
Grand Ave - Drop	435.37	10 Year Flow	13500.00	1138.00	1150.68		1151.14	0.001178	5.41	2493.90	269.74	0.31
Grand Ave - Drop	435.37	50 Year Flow	31000.00	1138.00	1156.08		1157.01	0.001397	7.73	4007.99	291.33	0.37

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	435.37	500 Year Flow	75000.00	1138.00	1165.71		1167.41	0.001328	10.57	7653.25	564.20	0.39
Grand Ave - Drop	441.6	100 Year FP	41000.00	1142.00	1159.45		1161.34	0.003220	11.03	3716.23	310.06	0.54
Grand Ave - Drop	441.6	100 Year FW	41000.00	1142.00	1159.45		1161.34	0.003220	11.03	3716.23	310.06	0.54
Grand Ave - Drop	441.6	10 Year Flow	13500.00	1142.00	1151.54		1152.60	0.004505	8.28	1630.40	240.02	0.56
Grand Ave - Drop	441.6	50 Year Flow	31000.00	1142.00	1156.88		1158.54	0.003552	10.34	2998.10	272.07	0.55
Grand Ave - Drop	441.6	500 Year Flow	75000.00	1142.00	1166.25		1168.76	0.002510	12.85	6100.87	449.91	0.51
Grand Ave - Drop	446.87	100 Year FP	41000.00	1142.00	1161.48		1162.68	0.001903	8.80	4660.96	303.52	0.40
Grand Ave - Drop	446.87	100 Year FW	41000.00	1142.00	1161.48		1162.68	0.001903	8.80	4660.96	303.52	0.40
Grand Ave - Drop	446.87	10 Year Flow	13500.00	1142.00	1153.55		1154.05	0.001740	5.67	2379.28	271.79	0.34
Grand Ave - Drop	446.87	50 Year Flow	31000.00	1142.00	1158.96		1159.93	0.001892	7.93	3908.07	293.43	0.38
Grand Ave - Drop	446.87	500 Year Flow	75000.00	1142.00	1168.09		1169.97	0.001936	11.06	6907.59	413.62	0.42
Grand Ave - Drop	449.05	100 Year FP	41000.00	1143.00	1161.84		1163.24	0.002633	9.51	4313.14	276.92	0.42
Grand Ave - Drop	449.05	100 Year FW	41000.00	1143.00	1161.84		1163.24	0.002633	9.51	4313.14	276.92	0.42
Grand Ave - Drop	449.05	10 Year Flow	13500.00	1143.00	1153.95		1154.51	0.002242	5.99	2253.02	245.36	0.35
Grand Ave - Drop	449.05	50 Year Flow	31000.00	1143.00	1159.35		1160.47	0.002579	8.53	3634.88	266.94	0.41
Grand Ave - Drop	449.05	500 Year Flow	75000.00	1143.00	1168.41		1170.57	0.002761	11.83	6423.87	395.73	0.47
Grand Ave - Drop	450.23	100 Year FP	41000.00	1143.00	1162.39		1163.49	0.001760	8.40	4878.86	299.66	0.37
Grand Ave - Drop	450.23	100 Year FW	41000.00	1143.00	1162.39		1163.49	0.001760	8.40	4878.86	299.66	0.37
Grand Ave - Drop	450.23	10 Year Flow	13500.00	1143.00	1154.27		1154.70	0.001455	5.25	2572.26	268.60	0.30
Grand Ave - Drop	450.23	50 Year Flow	31000.00	1143.00	1159.83		1160.71	0.001707	7.52	4124.39	289.87	0.35
Grand Ave - Drop	450.23	500 Year Flow	75000.00	1143.00	1169.04		1170.84	0.001945	10.78	6983.52	372.49	0.41
Grand Ave - Drop	451.05	100 Year FP	41000.00	1144.00	1162.54		1163.66	0.002331	8.51	4818.35	295.13	0.37
Grand Ave - Drop	451.05	100 Year FW	41000.00	1144.00	1162.54		1163.66	0.002331	8.51	4818.35	295.13	0.37
Grand Ave - Drop	451.05	10 Year Flow	13500.00	1144.00	1154.40		1154.85	0.002105	5.39	2503.11	274.62	0.31
Grand Ave - Drop	451.05	50 Year Flow	31000.00	1144.00	1159.98		1160.88	0.002286	7.61	4072.18	287.84	0.36
Grand Ave - Drop	451.05	500 Year Flow	75000.00	1144.00	1169.18		1171.04	0.002562	10.94	6854.18	325.94	0.42
Grand Ave - Drop	451.23	100 Year FP	41000.00	1144.00	1162.56		1163.69	0.000736	8.54	4800.03	285.37	0.37
Grand Ave - Drop	451.23	100 Year FW	41000.00	1144.00	1162.56		1163.69	0.000736	8.54	4800.03	285.37	0.37
Grand Ave - Drop	451.23	10 Year Flow	13500.00	1144.00	1154.44		1154.87	0.000586	5.29	2553.26	268.19	0.30
Grand Ave - Drop	451.23	50 Year Flow	31000.00	1144.00	1160.00		1160.90	0.000700	7.60	4079.03	279.95	0.35
Grand Ave - Drop	451.23	500 Year Flow	75000.00	1144.00	1169.16		1171.09	0.000881	11.14	6731.10	299.35	0.41

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

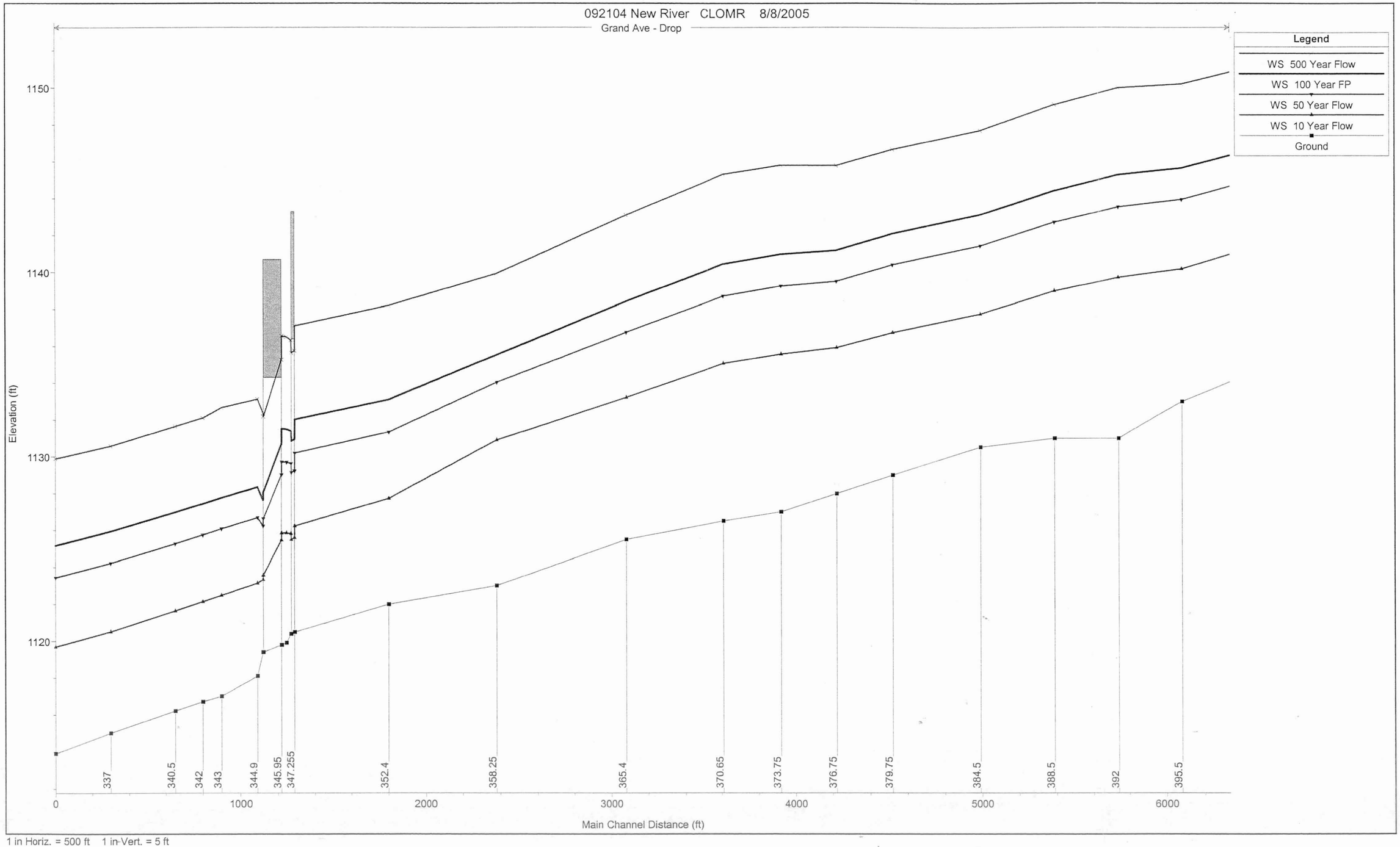
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	452.23	100 Year FP	41000.00	1144.00	1162.62		1163.77	0.000758	8.59	4774.26	288.48	0.37
Grand Ave - Drop	452.23	100 Year FW	41000.00	1144.00	1162.62		1163.77	0.000758	8.59	4774.26	288.48	0.37
Grand Ave - Drop	452.23	10 Year Flow	13500.00	1144.00	1154.48		1154.94	0.000639	5.41	2497.65	271.08	0.31
Grand Ave - Drop	452.23	50 Year Flow	31000.00	1144.00	1160.06		1160.98	0.000729	7.67	4043.73	283.04	0.36
Grand Ave - Drop	452.23	500 Year Flow	75000.00	1144.00	1169.25		1171.18	0.000875	11.14	6733.95	306.45	0.42
Grand Ave - Drop	452.5	100 Year FP	41000.00	1153.00	1161.80	1161.80	1166.06	0.006638	16.56	2475.88	291.29	1.00
Grand Ave - Drop	452.5	100 Year FW	41000.00	1153.00	1161.80	1161.80	1166.06	0.006638	16.56	2475.88	291.29	1.00
Grand Ave - Drop	452.5	10 Year Flow	13500.00	1153.00	1157.22	1157.22	1159.31	0.008348	11.59	1164.55	280.99	1.00
Grand Ave - Drop	452.5	50 Year Flow	31000.00	1153.00	1160.33	1160.33	1163.88	0.007000	15.14	2048.18	288.02	1.00
Grand Ave - Drop	452.5	500 Year Flow	75000.00	1153.00	1166.67	1166.08	1172.35	0.005119	19.13	3921.51	302.58	0.94
Grand Ave - Drop	452.65	100 Year FP	41000.00	1155.00	1163.68	1163.68	1167.89	0.006703	16.48	2488.35	297.82	1.00
Grand Ave - Drop	452.65	100 Year FW	41000.00	1155.00	1163.68	1163.68	1167.89	0.006703	16.48	2488.35	297.82	1.00
Grand Ave - Drop	452.65	10 Year Flow	13500.00	1155.00	1159.17	1159.17	1161.23	0.008372	11.52	1172.18	286.46	1.00
Grand Ave - Drop	452.65	50 Year Flow	31000.00	1155.00	1162.22	1162.22	1165.74	0.007085	15.07	2056.55	294.15	1.00
Grand Ave - Drop	452.65	500 Year Flow	75000.00	1155.00	1167.93	1167.93	1174.04	0.006029	19.83	3781.91	310.26	1.00
Grand Ave - Drop	452.73	100 Year FP	41000.00	1154.00	1165.51		1168.09	0.003062	12.90	3178.06	303.96	0.70
Grand Ave - Drop	452.73	100 Year FW	41000.00	1154.00	1165.51		1168.09	0.003062	12.90	3178.06	303.96	0.70
Grand Ave - Drop	452.73	10 Year Flow	13500.00	1154.00	1160.31		1161.37	0.002795	8.24	1637.99	289.45	0.61
Grand Ave - Drop	452.73	50 Year Flow	31000.00	1154.00	1163.84		1165.93	0.003020	11.58	2677.07	298.85	0.68
Grand Ave - Drop	452.73	500 Year Flow	75000.00	1154.00	1170.30	1167.48	1174.28	0.003015	16.03	4704.06	351.44	0.74
Grand Ave - Drop	453.23	100 Year FP	41000.00	1154.00	1165.91		1168.26	0.002650	12.30	3332.76	308.23	0.66
Grand Ave - Drop	453.23	100 Year FW	41000.00	1154.00	1165.91		1168.26	0.002650	12.30	3332.76	308.23	0.66
Grand Ave - Drop	453.23	10 Year Flow	13500.00	1154.00	1160.57		1161.50	0.002262	7.75	1742.82	288.92	0.56
Grand Ave - Drop	453.23	50 Year Flow	31000.00	1154.00	1164.20		1166.08	0.002577	11.02	2812.74	301.07	0.64
Grand Ave - Drop	453.23	500 Year Flow	75000.00	1154.00	1170.84		1174.46	0.002585	15.29	4982.07	407.90	0.69
Grand Ave - Drop	458.66	100 Year FP	41000.00	1157.12	1172.19		1173.11	0.001109	7.71	5314.66	400.51	0.37
Grand Ave - Drop	458.66	100 Year FW	41000.00	1157.12	1172.19		1173.11	0.001109	7.71	5314.66	400.51	0.37
Grand Ave - Drop	458.66	10 Year Flow	13500.00	1157.12	1162.37	1161.40	1163.48	0.005423	8.43	1601.44	356.20	0.70
Grand Ave - Drop	458.66	50 Year Flow	31000.00	1157.12	1166.25	1164.09	1167.89	0.003747	10.28	3015.18	373.38	0.64
Grand Ave - Drop	458.66	500 Year Flow	75000.00	1157.12	1174.50	1169.03	1176.50	0.003531	11.47	7195.98	1587.07	0.64
Grand Ave - Drop	458.73	100 Year FP	12000.00	1157.92	1173.31	1162.29	1173.39	0.000097	2.23	5383.27	433.80	0.11
Grand Ave - Drop	458.73	100 Year FW	12000.00	1157.92	1173.31	1162.29	1173.39	0.000097	2.23	5383.27	433.80	0.11

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	458.73	10 Year Flow	2700.00	1157.92	1164.18	1160.04	1164.21	0.000144	1.50	1796.14	352.51	0.12
Grand Ave - Drop	458.73	50 Year Flow	8000.00	1157.92	1168.45	1161.46	1168.54	0.000175	2.36	3383.79	389.97	0.14
Grand Ave - Drop	458.73	500 Year Flow	22000.00	1157.92	1176.92	1164.03	1177.06	0.000134	3.04	8641.65	1776.00	0.14
Grand Ave - Drop	458.81	100 Year FP	12000.00	1160.12	1173.34	1163.97	1173.44	0.000145	2.54	4718.82	422.41	0.13
Grand Ave - Drop	458.81	100 Year FW	12000.00	1160.12	1173.34	1163.97	1173.44	0.000145	2.54	4718.82	422.41	0.13
Grand Ave - Drop	458.81	10 Year Flow	2700.00	1160.12	1164.24	1161.72	1164.32	0.000471	2.18	1240.44	340.70	0.20
Grand Ave - Drop	458.81	50 Year Flow	8000.00	1160.12	1168.52	1163.13	1168.64	0.000325	2.88	2781.34	380.30	0.19
Grand Ave - Drop	458.81	500 Year Flow	22000.00	1160.12	1176.96	1165.71	1177.14	0.000202	3.47	6694.12	1721.94	0.16
Grand Ave - Drop	458.88	100 Year FP	12000.00	1161.92	1173.31	1167.83	1173.61	0.000680	4.39	2734.01	343.92	0.27
Grand Ave - Drop	458.88	100 Year FW	12000.00	1161.92	1173.31	1167.83	1173.61	0.000680	4.39	2734.01	343.92	0.27
Grand Ave - Drop	458.88	10 Year Flow	2700.00	1161.92	1164.45	1164.45	1165.52	0.014519	8.29	325.69	156.95	1.01
Grand Ave - Drop	458.88	50 Year Flow	8000.00	1161.92	1168.43	1166.72	1169.11	0.003315	6.61	1210.15	270.46	0.55
Grand Ave - Drop	458.88	500 Year Flow	22000.00	1161.92	1176.90	1169.99	1177.36	0.000721	5.43	4130.03	1415.51	0.30
Grand Ave - Drop	458.94	100 Year FP	12000.00	1163.62	1173.51	1169.61	1173.85	0.000944	4.74	2533.63	362.43	0.32
Grand Ave - Drop	458.94	100 Year FW	12000.00	1163.62	1173.51	1169.61	1173.85	0.000944	4.74	2533.63	362.43	0.32
Grand Ave - Drop	458.94	10 Year Flow	2700.00	1163.62	1167.11	1166.13	1167.59	0.004086	5.59	483.39	162.48	0.57
Grand Ave - Drop	458.94	50 Year Flow	8000.00	1163.62	1169.59	1168.67	1170.34	0.005370	6.95	1151.28	343.18	0.67
Grand Ave - Drop	458.94	500 Year Flow	22000.00	1163.62	1177.10	1171.31	1177.60	0.000834	5.69	3867.48	381.26	0.31

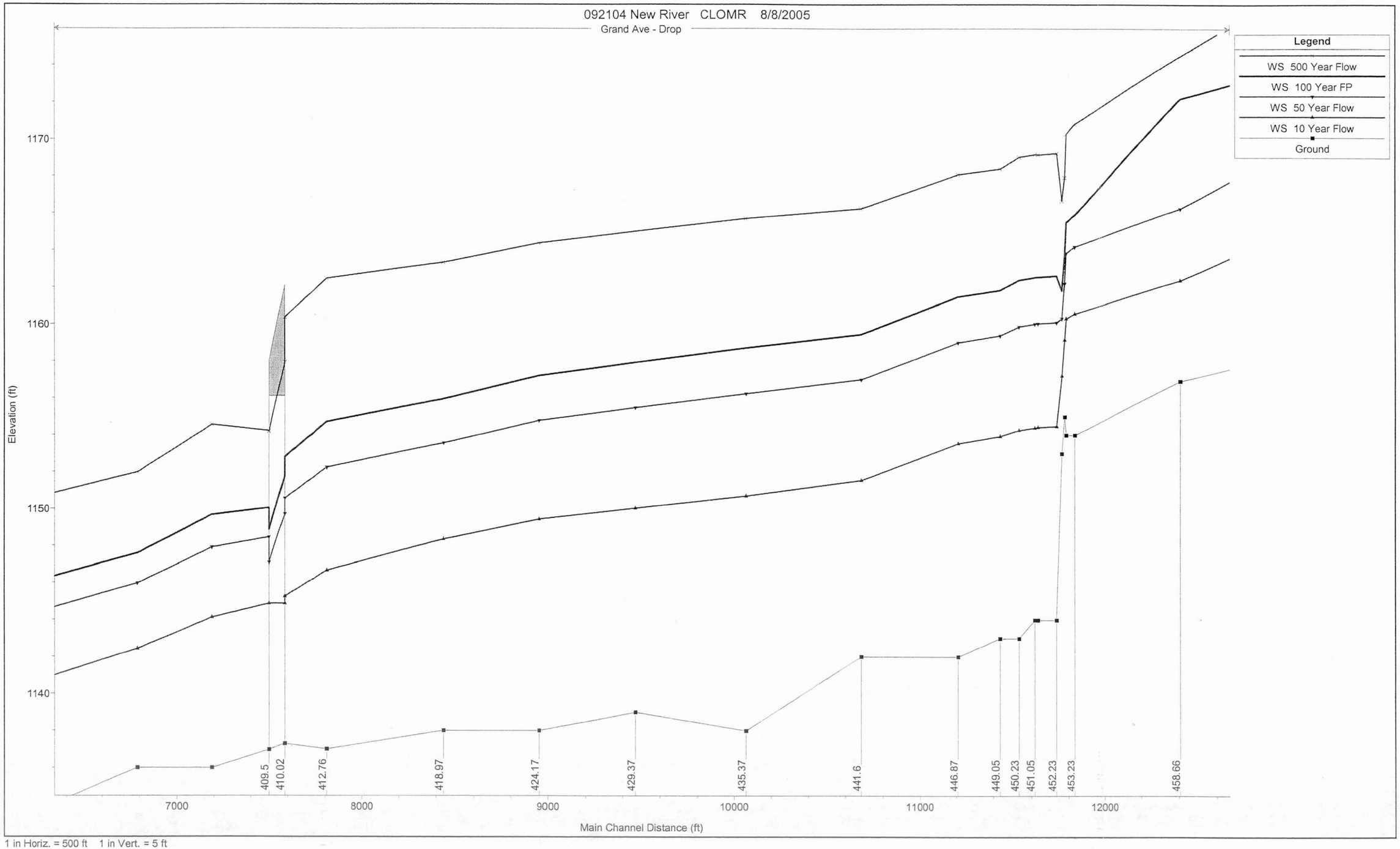
Table 3a Hydraulic Modeling Summary

Effective	Effective FIS WSEL		Corrected FIS Model		Design FIS
FIS HEC-2	NGVD29	NAVD88	Cross	WSEL	WSEL
Cross Section			Section	NAVD88	NAVD88
	(ft)	(ft)		(ft)	(ft)
330.00	1122.3	1124.1			
334.00	1123.2	1125.0	334.00	1125.2	1125.2
337.00	1124.1	1125.9	337.00	1125.9	1125.9
340.50	1125.1	1126.9	340.50	1127.0	1127.0
342.00	1125.6	1127.4	342.00	1127.4	1127.4
343.00	1125.9	1127.7	343.00	1127.8	1127.8
344.90	**1126.5**	**1128.3**	**344.90**	**1128.4**	**1128.4**
345.20	1126.8	1128.6	345.50	1127.6	1127.6
346.20	1128.3	1130.1	346.40	1131.4	1131.5
346.62	1128.4	1130.2	346.80	1131.5	1131.5
346.72	1128.3	1130.1	347.10	1131.4	1131.4
346.90	1128.4	1130.2	347.40	1132.1	1132.0
347.00	1129.3	1131.1	352.40	1132.7	1133.2
349.00	1130.0	1131.8	358.25	1135.5	1135.3
352.00	1130.6	1132.4	365.40	1139.6	1138.3
358.00	1136.1	1137.9	370.65	1143.1	1140.4
365.00	1140.0	1141.8	373.75	1143.1	1141.0
370.00	1141.6	1143.4	376.75	1144.6	1141.1
373.00	1142.3	1144.1	379.75	1143.7	1142.0
377.00	1143.1	1144.9	384.50	1147.0	1143.3
384.00	1145.1	1146.9	388.50	1147.9	1144.6
388.00	1146.5	1148.3	392.00	1148.3	1145.4
391.50	1147.3	1149.1	395.50	1149.0	1145.9
395.00	1148.3	1150.1	402.50	1150.2	1147.6
402.00	1149.7	1151.5	406.50	1150.6	1149.9
406.00	1150.3	1152.1	409.50	1151.2	1150.2
409.00	1150.5	1152.3	410.54	1152.2	1152.8
409.01	1150.4	1152.2	412.76	1153.2	1154.7
409.82	1151.5	1153.3	418.97	1155.0	1155.9
410.00	1151.8	1153.6	424.17	1156.1	1157.2
412.00	1152.6	1154.4	429.37	1157.2	1157.9
418.00	1154.5	1156.3	435.37	1158.4	1158.7
423.00	1155.6	1157.4	441.60	1159.4	1159.5
425.00	1156.4	1158.2	446.87	1160.6	1161.5
428.00	1157.1	1158.9	449.05	1161.0	1161.8
434.00	1158.1	1159.9	450.23	1161.9	1162.4
440.00	1159.2	1161.0	451.05	1161.9	1162.5
443.20	1159.6	1161.4	451.23	1161.9	1162.6
449.10	1161.2	1163.0	452.23	1161.9	1162.6
451.00	1165.6	1167.4	452.50	1161.8	1161.8
8.655	**1170.4**	**1172.2**	452.65	1163.7	1163.7
8.731	1171.5	1173.3	452.73	1165.5	1165.5
8.807	1171.5	1173.3	453.23	1165.9	1165.9
8.883	1171.5	1173.3	**458.66**	**1172.2**	**1172.2**
8.936	1171.7	1173.5	458.73	1173.3	1173.3
8.977	1171.8	1173.6	458.81	1173.3	1173.3
9.009	1172.3	1174.1	458.88	1173.3	1173.3
9.047	1172.6	1174.4	458.94	1173.5	1173.5
9.129	1172.7	1174.5			
9.318	1180.5	1182.3			
9.492	1187.2	1189.0			
9.692	1191.4	1193.2			
"8.655" is located at "458.66"					



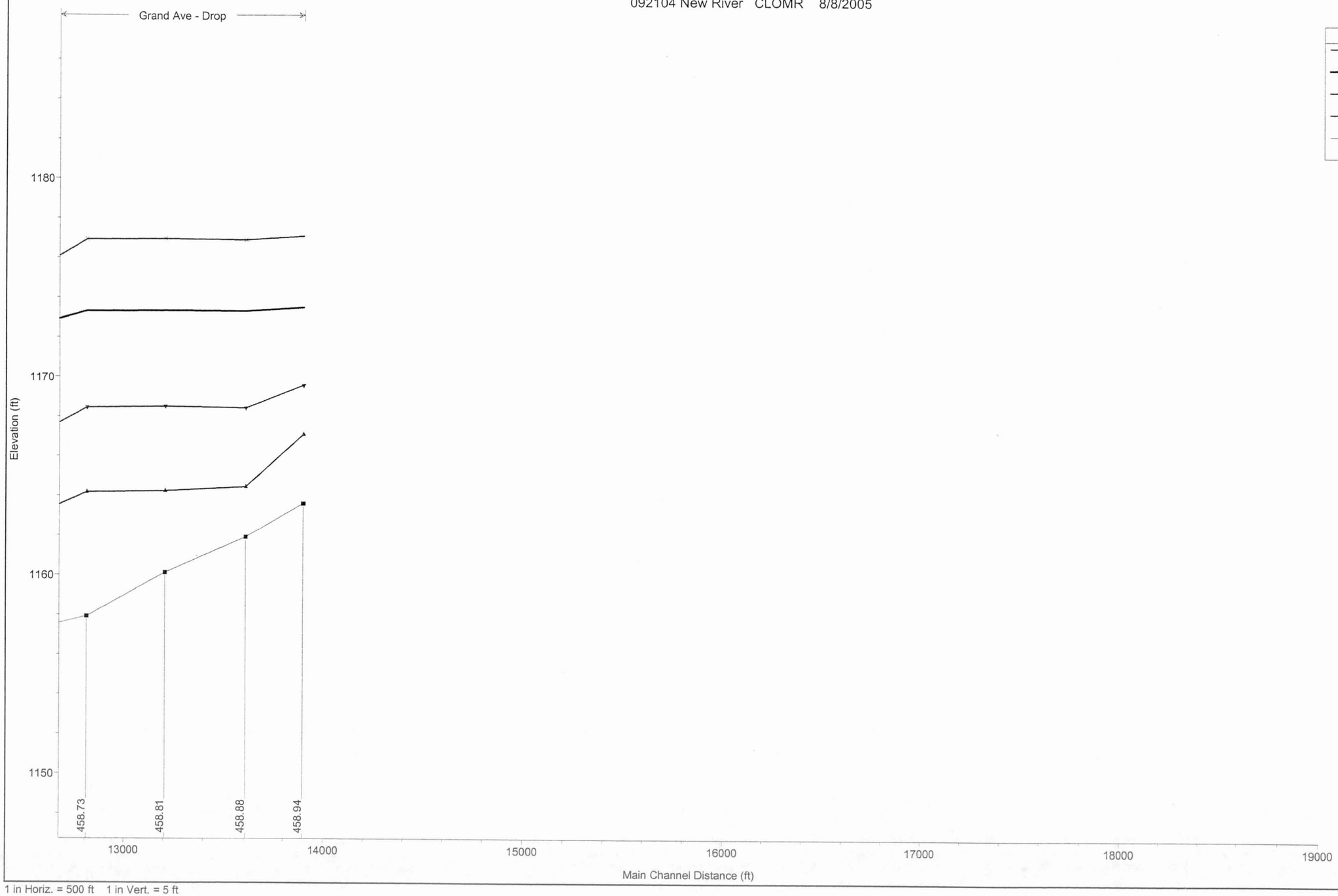
1 in Horiz. = 500 ft 1 in Vert. = 5 ft

Figure 6 Draft FEMA Flood Profiles



1 in Horiz. = 500 ft 1 in Vert. = 5 ft

092104 New River CLOMR 8/8/2005



1 in Horiz. = 500 ft 1 in Vert. = 5 ft

2.2.3 Riverine Structure Form

The attached "Riverine Structure Form" is provided per FEMA requirements for submittals and construction plans are included in Exhibit A.

The constraint for the *Post-Project Conditions Model* is to match or be similar to the pre-development wash condition at the upstream and downstream limits of the project reaches. The finalized channelization concept is a compound channel section with varied bottom width and side slopes.

The project limits include the crossing of two major transportation corridor bridges: one at Grand Avenue, and the other at Thunderbird Road. These bridges were developed with bank protection for their piers and abutments. The Grand Avenue Bridge that is part of the ADOT highway system (US 60) has significant bank and river corridor stabilizations. As far as scour is concerned, lining under the bridge, upstream and downstream have been provided to meet long term degradation requirements. Bridge abutment and pier scour, in this situation, is not an issue.

As part of the friendly, kinder and gentler flood control improvement approach, it was decided that gabion lining was used for the bank protection. Traditional "hard" bank – Cement Stabilized Alluvium (CSA) or concrete lined channels were ruled as undesirable early on in the scoping of the project.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

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, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). 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.**

Flooding Source: New River
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 Structure

1. **Name of Structure: New River Channel**

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

   Location of Structure: Entire project reach

   Downstream Limit/Cross Section: 347.4

   Upstream Limit/Cross Section: 452.65

2. **Name of Structure: Thunderbird Road Bridge**

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

   Location of Structure: Thunderbird Road

   Downstream Limit/Cross Section: 409.5

   Upstream Limit/Cross Section: 410.54

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: New River

Name of Structure: New River Channel

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☐ Other (Describe):
- ☐ Drop structures
- ☒ Transitions in cross sectional geometry
- ☐ Energy dissipator

2. Drawing Checklist

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

3. Hydraulic Considerations

The channel was designed to carry 41,000 (cfs) and/or the 100-year flood.

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

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

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

☐ Inlet to channel ☐ Outlet of channel ☒ At Drop Structures ☒ At Transitions
☐ Other locations (specify):

4. 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.

C. BRIDGE/CULVERT

Flooding Source: New River

Name of Structure: Thunderbird Road Bridge

1. This revision reflects (check one):

- ☐ New 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 than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

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

- ☒ Dimensions (height, width, span, radius, length)
- ☐ Shape (culverts only)
- ☒ Material
- ☒ Beveling or Rounding
- ☐ Wing Wall Angle
- ☒ Skew Angle
- ☒ Distances Between Cross Sections
- ☒ Erosion Protection
- ☒ Low Chord Elevations – Upstream and Downstream
- ☒ Top of Road Elevations – Upstream and Downstream
- ☒ Structure Invert Elevations – Upstream and Downstream
- ☒ Stream Invert Elevations – Upstream and Downstream
- ☒ Cross-Section Locations

4. Sediment Transport Considerations

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.

D. DAM

Flooding Source:

Name of Structure:

1. This request is for (check one): ☐ Existing dam ☐ New dam ☐ Modification of existing dam
2. The dam was designed by (check one): ☐ Federal agency ☐ State agency ☐ Local government agency

   ☐ Private organization Name of the agency or organization:
3. Does the project involve revised hydrology? ☐ Yes ☐ No

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2).
4. 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.
5. Does the Base Flood Elevation behind the dam or downstream of the dam change?

   ☐ Yes ☐ No If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.

Stillwater Elevation Behind the Dam

FREQUENCY (% annual chance)	FIS	REVISED
10-year (10%)		
50-year (2%)		
100-year (1%)		
500-year (0.2%)		
Normal Pool Elevation		

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

E. LEVEE/FLOODWALL

1. System Elements

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

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

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

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

c. Structural Type (check one):

☐ monolithic cast-in place reinforced concrete
☐ reinforced concrete masonry block
☐ sheet piling
☐ Other (describe):

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

☐ Yes ☐ No

If Yes, by which agency?

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

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

2. Freeboard

a. The minimum freeboard provided above the BFE is:

Riverine

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

Coastal

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

2. Freeboard (continued)

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

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

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

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

3. Closures

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

If opening exists, list all closures:

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

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

Note: Geotechnical and geologic data

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

4. Embankment Protection

a. The maximum levee slope landside is:

b. The maximum levee slope floodside is:

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

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

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

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

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

4. Embankment Protection (continued)

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:

Sta. , depth to

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)

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.

E. LEVEE/FLOODWALL (CONTINUED)

6. Floodwall And Foundation Stability

a. Describe analysis submittal based on Code (check one):

☐ UBC (1988) or ☐ Other (specify):

b. Stability analysis submitted provides for:

☐ Overturning ☐ Sliding If not, explain:

c. Loading included in the analyses were:

☐ Lateral earth @ P_A = psf; P_p = psf

☐ Surcharge-Slope @ , ☐ surface psf

☐ Wind @ P_w = psf

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

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

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

d. Summary of Stability Analysis Results: Factors of Safety.

Itemize for each range in site layout dimension and loading condition limitation for each respective reach.

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

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)

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

e. Foundation bearing strength for each soil type:

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

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

Attach engineering analysis to support construction plans.

7. Settlement

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

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

c. Settlement of the levee crest is determined to be primarily from :

☐ Foundation consolidation
☐ Embankment compression
☐ Other (Describe):

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

Attach engineering analysis to support construction plans.

8. Interior Drainage

a. Specify size of each interior watershed:

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

b. Relationships Established

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

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

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

e. Which flooding conditions were analyzed?

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

If No for any of the above, attach explanation.

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.

8. Interior Drainage (continued)

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

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

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

Will the operation be automatic? ☐ Yes ☐ No

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

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

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

9. Other Design Criteria

a. The following items have been addressed as stated:

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

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

Attach supporting documentation

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

Attach supporting documentation

d. Sediment Transport Considerations:

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

E. LEVEE/FLOODWALL (CONTINUED)

10. Operational Plan And Criteria

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

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

    c. Does the operation plan incorporate all the provisions for interior drainage as required in Paragraph 65.10(c)(2) of the NFIP regulations?
    ☐ Yes ☐ No

    If the answer is No to any of the above, please attach supporting documentation.

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.

F. SEDIMENT TRANSPORT

Flooding Source:

Name of Structure:

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

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

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

Sediment transport rate (percent concentration by volume)

Method used to estimate sediment transport:

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

Method used to estimate scour and/or deposition:

Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport:
Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

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

3.0 SURVEY AND MAPPING INFORMATION

3.1 Field Survey Information

A field survey was conducted to supplement information on the aerial topographic mapping. Wood/Patel provided supplemental surveying services, in addition to providing ground control for the aerial survey. Wood Patel provided hard surveying data for several of the structures within the project limits, including Thunderbird Road Bridge and Grand Avenue Bridge. Updated topographic mapping was used to digitalize new hydraulic model cross sections. The vertical datum used is NAVD 88. The elevation reference marks are shown on the work maps (Exhibit B). The survey data and as-built plans for the Thunderbird Road Bridge are included in Appendix E.

3.2 Mapping

Detailed mapping exceeding FEMA 37 standards for Flood Insurance Study (FIS) mapping requirements was developed for this study area. Cooper Aerial provided aerial mapping services for the project. The flight date is September 4, 2003, and Cooper Aerial's internal project number is 7096-090103. The survey used on this project generated 1-foot contours. Aerial photogrammetry was used in addition to ground survey. In addition to the contour file, Cooper provided a Digital Terrain Model (DTM) which was utilized as the base surface to determine earthwork quantities by comparing the design surface with the existing terrain. Right-of-way maps were prepared by Wood/Patel. FCDMC provided base R/W mapping for the project corridor. The 1-foot contour maps at a scale of 1 inch = 100 feet were produced as work maps and are shown on Exhibit B.

APPENDIX A

General Documentation and Correspondence

F0026

FLOOD INSURANCE STUDY

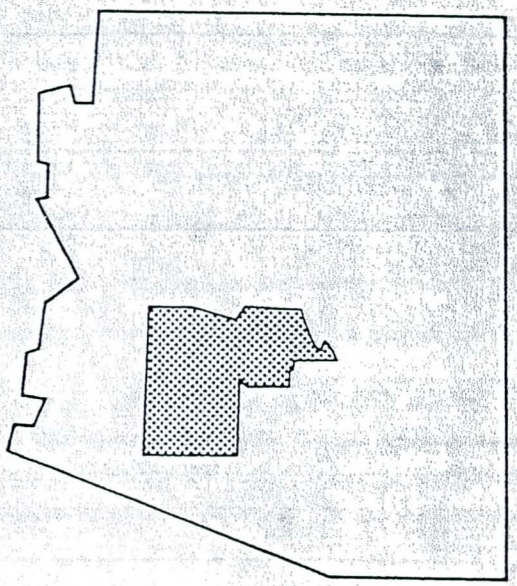
MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

VOLUME 1 OF 16

04013CV001

COMMUNITY NAME	COMMUNITY NUMBER
AVONDALE, CITY OF	040038
BUCKEYE, 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
SCOTTS DALE, CITY OF	045012
SURPRISE, CITY OF	045053
TEMPE, CITY OF	040054
TOLLESON, CITY OF	040055
WICKENBURG, TOWN OF	040056
YOUNGTOWN, TOWN OF	040057



REVISED: JULY 19, 2001

Federal Emergency Management Agency

Table 3. Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Centennial Wash					
At confluence with the Gila River	1,870	N/A	N/A	67,300	N/A
At Southern Pacific Railroad Near Arlington	1,825	N/A	N/A	67,300	N/A
Near Baseline Road	1,398	N/A	N/A	58,100	N/A
At Gin Road	1,110	N/A	N/A	52,200	N/A
At Eagle Eye Road	1,031	N/A	N/A	52,200	N/A
At Maricopa/La Paz County Boundary	451.5	4,880	16,400	21,700	--[1]
At S.W. corner of Section 4, T7N, R9W	41.1	1,990	5,410	6,960	--[1]
Waterman Wash					
At confluence with the Gila River	422	N/A	N/A	33,600	N/A
About 9,000 feet upstream of Rainbow Valley Road	337	N/A	N/A	27,300	N/A
At confluence with the West Prong of Waterman Wash	246	N/A	N/A	22,850	N/A
Gila River					
Below confluence with Salt River	--[2]	57,000	185,000	227,000	285,000
Below confluence with Waterman Wash	--[2]	46,000	160,000	210,000	270,000
Below confluence with Hassayampa River	--[2]	82,000	190,000	240,000	340,000
At Gillespie Dam	--[2]	78,000	186,000	235,000	335,000
At Gila Bend Indian Reservation	--[2]	--[1]	--[1]	230,000	--[1]
Agua Fria River					
At confluence with Gila River	--[2]	22,000	68,000	94,000	183,000
Above downstream end of COE levee (0.7) mile below Lower Buckeye Road	--[2]	22,000	69,000	95,000	184,000
New River					
Near Rock Springs	--[2]	--[1]	--[1]	34,500	--[1]
At New River Road	--[2]	--[1]	--[1]	32,000	--[1]
At Interstate 17	--[2]	--[1]	--[1]	33,400	--[1]
Above confluence with Sweat Canyon Wash	--[2]	--[1]	--[1]	33,000	--[1]
At Carefree Highway	--[2]	--[1]	--[1]	35,800	--[1]
Upstream of New River Dam	--[2]	--[1]	--[1]	49,300	--[1]
At Outflow of New River Dam	0	1,700	2,200	2,350	--[1]
Above Beardsley Road	10.3	2,400	6,500	9,800	--[1]
Above confluence with Skunk Creek	17.3	2,700	8,000	12,000	--[1]
Below Confluence with Skunk Creek	--[2]	13,500	31,000	41,000	75,000

[1]Not computed
[2]Not available

F0026

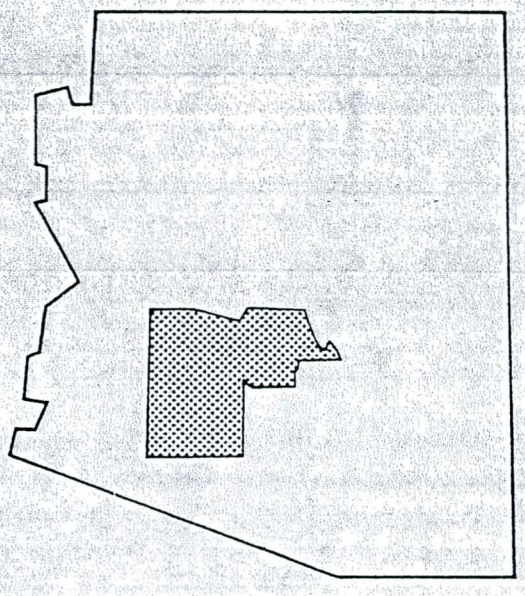
FLOOD INSURANCE STUDY

MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

VOLUME 3 OF 16

04013CV003



COMMUNITY NAME	COMMUNITY NUMBER
AVONDALE, CITY OF	040038
BUCKEYE, 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
SCOTTS DALE, CITY OF	045012
SURPRISE, CITY OF	045053
TEMPE, CITY OF	040054
TOLLESON, CITY OF	040055
WICKENBURG, TOWN OF	040056
YOUNGTOWN, TOWN OF	040057

REVISED: JULY 19, 2001

Federal Emergency Management Agency

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
New River								
A	0.29	1,204	7,061	5.5	1,031.1	1,031.1	1,031.1	0.0
B	0.43	979	5,935	6.6	1,032.9	1,032.9	1,032.9	0.0
C	0.56	1,023	6,287	6.2	1,034.3	1,034.3	1,034.3	0.0
D	0.64	920	5,599	7.0	1,035.1	1,035.1	1,035.1	0.0
E	0.72	901	5,590	7.0	1,036.1	1,036.1	1,036.1	0.0
F	0.87	896	5,431	7.2	1,038.1	1,038.1	1,038.1	0.0
G	0.90	904	5,047	7.7	1,038.6	1,038.6	1,038.6	0.0
H	1.06	878	6,304	6.5	1,040.1	1,040.1	1,040.1	0.0
I	1.12	743	4,924	8.3	1,040.5	1,040.5	1,040.5	0.0
J	1.27	469	4,106	10.0	1,043.0	1,043.0	1,043.0	0.0
K	1.40	397	4,319	9.5	1,044.9	1,044.9	1,044.9	0.0
L-CJ[2]								
CK	6.91	950	5,511	7.4	1,140.0	1,140.0	1,140.7	0.7
CL	7.01	677	4,292	9.6	1,141.6	1,141.6	1,141.8	0.2
CM	7.06	700	4,267	9.6	1,142.3	1,142.3	1,142.7	0.4

[1]Miles Above Confluence With Agua Fria River [2]Floodway Contained Within Channel

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOODWAY DATA

NEW RIVER

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)			
New River (Cont'd)								
CN	7.14	690	3,937	10.4	1,143.1	1,143.1	1,143.7	0.6
CO	7.27	356	4,012	10.2	1,145.1	1,145.1	1,146.1	1.0
CP	7.35	352	4,372	9.4	1,146.5	1,146.5	1,147.1	0.6
CQ	7.40	397	4,225	9.7	1,147.3	1,147.3	1,147.9	0.6
CR	7.48	386	4,473	9.2	1,148.3	1,148.3	1,148.7	0.4
CS	7.61	385	4,644	8.8	1,149.7	1,149.7	1,150.0	0.3
CT	7.69	379	4,384	9.4	1,150.3	1,150.3	1,150.6	0.3
CU	7.75	252	3,304	12.4	1,150.5	1,150.5	1,150.7	0.2
CV	7.75	233	3,166	13.0	1,150.4	1,150.4	1,150.6	0.2
CW	7.76	232	3,258	12.6	1,151.5	1,151.5	1,151.6	0.1
CX	7.77	244	3,368	12.2	1,151.8	1,151.8	1,151.9	0.1
CY	7.80	282	3,601	11.4	1,152.6	1,152.6	1,152.7	0.1
CZ	7.92	336	3,946	10.4	1,154.5	1,154.5	1,154.6	0.1
DA	8.01	326	3,838	10.7	1,155.6	1,155.6	1,155.6	0.0
DB	8.05	342	4,196	9.8	1,156.4	1,156.4	1,156.4	0.0
DC	8.11	353	4,481	9.2	1,157.1	1,157.1	1,157.1	0.0
DD	8.22	385	4,558	9.0	1,158.1	1,158.1	1,158.1	0.0
DE	8.33	386	4,983	8.2	1,159.2	1,159.2	1,159.2	0.0
DF	8.39	397	4,757	8.6	1,159.6	1,159.6	1,159.6	0.0
DG	8.51	466	2,729	15.0	1,161.2	1,161.2	1,161.2	0.0
DH	8.54	487	2,726	15.0	1,165.6	1,165.6	1,165.6	0.0
DI	8.73	434	5,389	2.2	1,171.5	1,171.5	1,171.5	0.0
DJ	8.81	423	4,724	2.5	1,171.5	1,171.5	1,171.5	0.0
DK	8.88	344	2,738	4.4	1,171.5	1,171.5	1,171.5	0.0
DL	8.98	286	1,884	6.4	1,171.8	1,171.8	1,171.8	0.0

[1]Miles Above Confluence With Agua Fria River

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOODWAY DATA

NEW RIVER

F0026

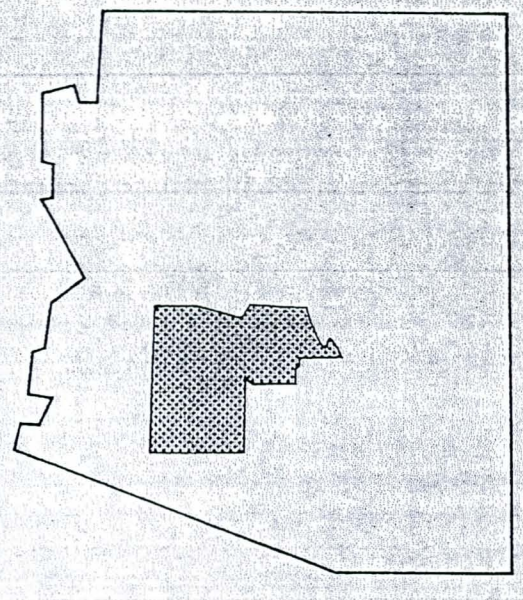
FLOOD INSURANCE STUDY

MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

VOLUME 7 OF 16

04013CV007



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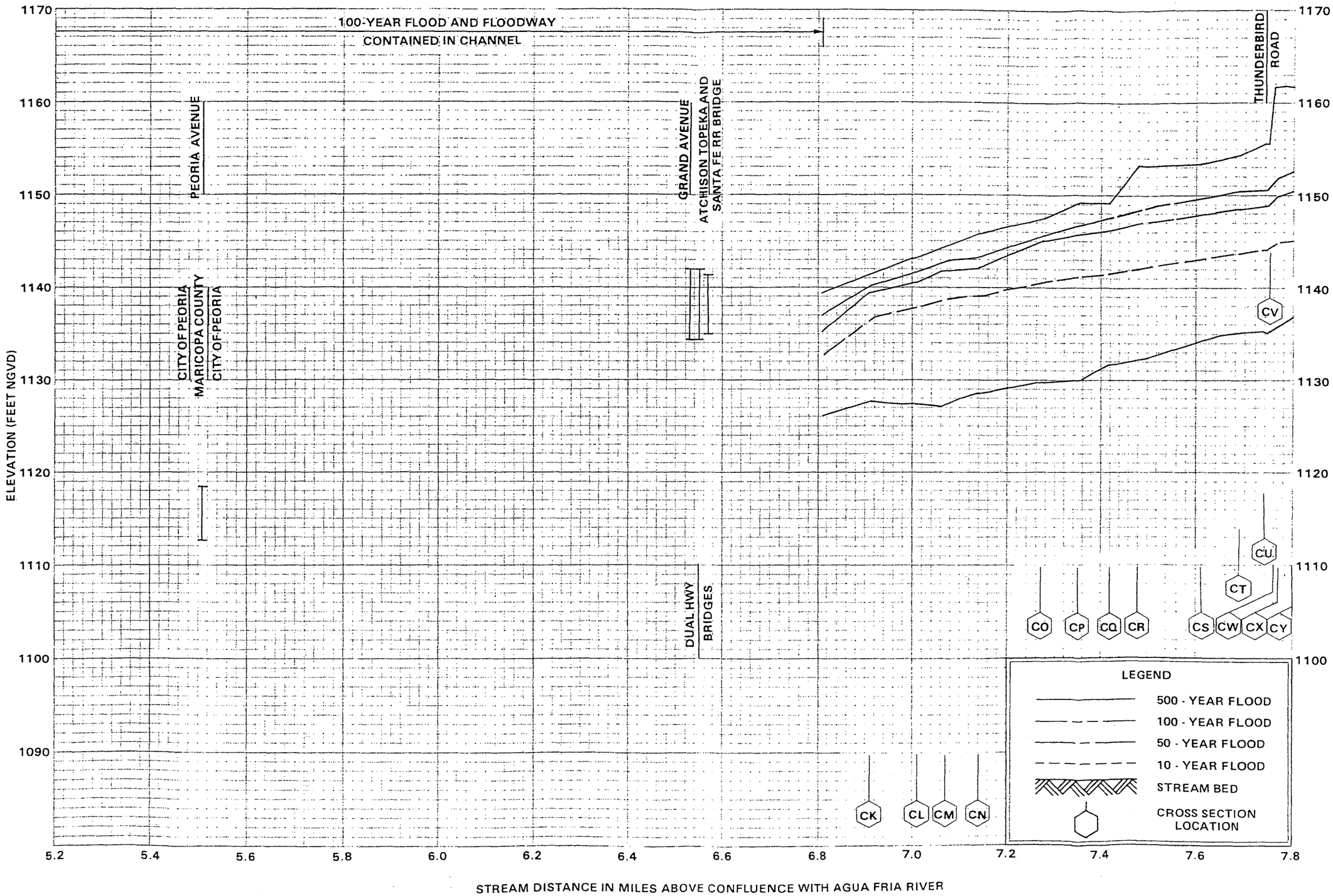
YOUNGTOWN, TOWN OF	040057

REVISED: JULY 19, 2001

Federal Emergency Management Agency

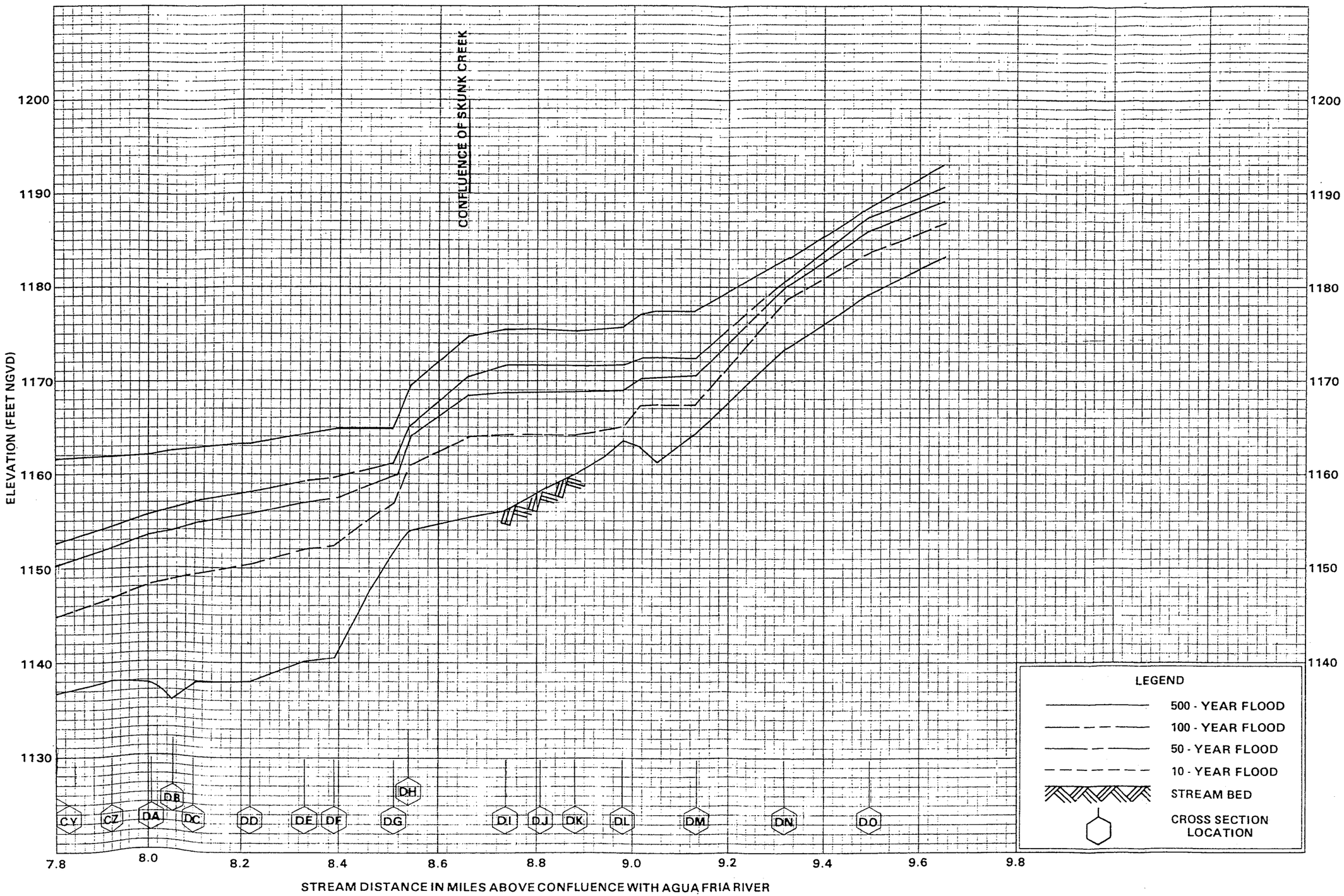


FLOOD PROFILES

NEW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



FLOOD PROFILES

NEW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

240P

APPENDIX B

HEC-2 Output Files for Duplicate Effective FIS Model

```
1*****************************************
 HEC-2 WATER SURFACE PROFILES            *
                                         *
 Version   4.6.2;  May 1991              *
*                                        *
* RUN DATE    05MAY04    TIME   16:11:44 *
*****************************************
```

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

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

1
05MAY04 16:11:44 PAGE 1

THIS RUN EXECUTED 05MAY04 16:11:44

```
*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
*************************************
```

```
T1      FCDMC NEW RIVER FLOODWAY ANALYSIS
T2      100-YEAR FLOWS
T3      NEW RIVER-A.F.R. TO S.C.

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

     0        4                 0      .001                                1027.5

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     1        0        -1       10     67.67                -1                         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38       43       1        8        3        26       12       53       4        54
    150      105      200

NC     .045     .045     .035     0.1      0.3
QT        5    12500    29000    39000    39000    70000
ET   501.45                                9.1      9.1                      9300     12150
        LAST AGUA FRIA X-SECT.  USED AS STARTING WSEL FOR NEW RIVER W/O
        PHASING AS REQUESTED PER DAVE JOHNSON OF MCFCD ON 10/20/86 FOR THEIR
        FIS STUDY.  FILE LNRSPFQS CONVERTED TO LNRMCFCD ON 10/21/86 FOR
        NEW RIVER FIS BASE.
X1   501.45       74     9150    11440
GR     1034     5420     1032     5520     1030     6550   1029.3     7130   1028.5     8140
GR     1028     8260     1027     8530     1027     9080   1027.7     9150     1026     9220
GR   1025.3     9240     1026     9260     1027     9300     1026     9315     1020     9335
GR     1020     9445     1022     9450     1022     9560     1020     9615   1019.2     9640
GR     1020     9650     1022     9665     1023     9675     1022     9685   1021.7     9860
GR   1020.9    10000   1020.5    10050     1022    10200   1022.3    10300     1022    10390
GR     1022    10480     1026    10520     1026    10600   1027.5    10720     1026    10965
GR     1024    10975     1026    11000   1026.3    11130     1026    11260     1026    11370
GR     1028    11440   1029.2    11470     1028    11500     1026    11750     1024    11800
GR     1024    11830     1026    11920     1026    11950   1025.6    12070     1024    12140
GR   1024.5    12210     1024    12270     1022    12280   1020.4    12320     1022    12360
GR     1024    12435     1026    12480     1026    12565     1024    12600     1024    12650
GR     1026    12720     1025    12820     1026    12900     1024    12960     1026    13000
GR     1027    13070     1026    13135     1026    13580   1025.8    14080     1026    14550
GR   1026.5    15000   1027.3    15150     1030    15250   1030.5    15270
```

1
05MAY04 16:11:44 PAGE 2

```
        10                        7.1      9.1      9.1     8600    11510     9050    10370
X1      10       24     9730    10260      700     1700     1000
GR    1035     6900     1024     6950   1024.7     7370   1024.8     8000   1025.2     8430
GR    1026     8470   1027.1     8700   1026.3     9070     1028     9660   1028.3     9730
GR    1028     9800   1027.7     9890     1026     9940     1024     9960     1024    10050
GR    1026    10230     1028    10260     1028    10380   1029.8    10570   1028.5    10750
```

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GR     1030      11000       1030      11500       1032      11510     1033.5      11630

         13                            7.1         9.1        9.1       8600      11720       9050      10374
         AP PLAN STA. 15+30  CROSS SECTIONS 13.0 THRU 70.5 HAVE BEEN UPDATED
         PER GLENDALE AIRPORT CHANNEL PLANS AND HAVE BEEN ADJUSTED TO COE
         DATUM.  COE B.M.=1074.25  A.P. B.M.=1074.71.  A.P. CROSS SECTION
         DATA ADJUSTED -0.46 FT(USED -0.50).
X1       13          34       9846      10374         100        300       300
GR     1034        5200       1032       5345        1030       5430    1028.7       5460       1026       5770
GR   1024.9        6360     1025.4       6405      1025.3       7135    1025.5       8210       1027       8260
GR   1025.5        8290       1027       8580        1026       8605      1026       9115       1028       9360
GR   1030.0        9827     1030.0       9846      1029.0       9849    1029.0       9872     1029.8       9900
GR   1029.0        9914       1024       9930        1023       9955    1022.2       9960     1022.4      10000
GR   1022.5       10014     1022.8      10060      1023.4      10150    1024.9      10369     1027.5      10374
GR   1029.5       10414     1030.7      10800        1032      11300    1033.5      11720

ET       20                            7.1         9.1        9.1       8800      11360       9100      10445
                AP PLAN STA. 22+30
X1       20          35       9630      10445         960        700       700
GR   1034.3        5570       1034       5730      1032.3       5765      1032       5880       1030       6095
GR     1028        6170       1026       6460      1025.7       7160    1027.2       7220     1027.4       7530
GR     1027        7610     1027.2       7630        1028       7870    1028.3       8750       1030       9460
GR   1031.3        9500       1032       9600        1033       9630      1032       9645       1030       9750
GR   1029.3        9890       1028       9905        1026       9910      1024       9960     1023.6      10025
GR   1024.5       10165     1025.5      10310      1025.5      10378    1024.5      10429     1028.5      10445
GR   1029.5       10457       1030      10690      1031.2      10900      1032      11060       1034      11360

ET     26.8                            7.1         9.1        9.1       8000      11740       9150      10400
                AP PLAN STA. 29+10
X1     26.8          37       9793      10400        1000        680       680
GR     1036        5980     1035.7       6080      1035.2       6235      1034       6400       1033       6480
GR     1032        6530       1030       6640      1030.2       6750      1030       7200       1030       7830
GR     1031        8160       1032       8660      1033.2       8700      1032       8740       1032       9520
GR     1033        9793     1032.5       9809      1031.5       9825    1030.5       9845     1029.5       9866
GR   1028.5        9886     1027.5       9908      1025.5       9946    1024.9       9957       1026      10044
GR   1026.5       10193     1027.5      10342      1027.6      10362    1029.5      10366     1030.5      10381
GR   1031.5       10400     1033.2      10540      1033.4      10710    1033.6      10895     1033.8      11090
GR     1034       11260     1035.3      11740

ET     32.6                            7.1         9.1        9.1       8500      10233       9000      10233
                AP PLAN STA. 35+40
       32.6          48       9565      10233        660        580       580
       1038        6020     1037.8       6155       1036       6300      1035       6650       1034       6760
GR   1032.3        6930       1032       7035       1032       7190      1032       7800       1033       7830
GR     1034        7860     1034.2       8080       1035       8500      1035       8670     1035.7       8695
GR     1035        8730       1034       8970       1034       9480    1035.1       9532     1035.3       9547
GR   1034.5        9550     1034.5       9558      1034.5       9565    1033.5       9644     1032.5       9670
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GR   1031.5        9691     1030.5       9711      1029.5       9722    1028.5       9747     1027.5       9774
GR   1026.5        9794     1026.2       9800      1026.5       9847    1027.5       9997     1028.5      10147
GR   1027.5       10207     1028.5      10209      1032.5      10217    1036.5      10225     1040.5      10233
GR   1041.2       10320     1041.8      10520      1042.3      10670    1043.2      10975     1043.8      11160
GR   1044.0       11480     1044.5      11750      1045.0      11920

ET       38                            7.1         9.1        9.1       8900      10073       8900      10073
                AP PLAN STA. 40+30
X1       38          40       9420    10072.6        440        500       540
GR   1040.6        5895       1040       6065       1040       6067    1039.7       6275       1038       6368
GR     1038        6370       1036       6635       1034       6920    1033.8       7280       1034       7365
GR   1032.9        7385     1034.3       7660      1034.5       7940    1035.3       8245       1036       8640
GR   1035.5        9365     1035.6       9420      1034.5       9492    1033.5       9512     1032.5       9532
GR   1031.5        9552     1030.5       9572      1029.5       9592    1028.5       9612     1027.5       9632
GR   1027.2        9646       1028       9698        1029       9846      1030       9997     1030.4    10051.4
GR   1041.0       10072.6     1041.4      10160      1041.5      10165    1041.6      10190     1041.6      10200
GR   1041.7       10250       1044.2      10880      1044.4      10920    1045.7      11500     1045.9      11630

ET       45                            7.1         9.1        9.1       9150      10136       9150      10136
                AP PLAN STA. 45+80
X1       45          44       9375    10135.8        440        680       700
GR     1042        5925     1043.2       6000      1042.3       6220      1042       6395       1042       6397
GR     1040        6425     1039.3       6530       1038       6575    1037.7       6730     1037.3       6925
GR     1036        6975     1035.7       7225      1034.6       7570    1034.7       8000     1035.5       8350
GR     1036        8510     1036.3       8850      1036.5       9060    1036.3       9255       1038       9368
GR   1038.7        9375       1038       9395      1036.8       9460      1036       9525     1036.3       9538
GR   1035.5        9558     1034.5       9578      1033.5       9598    1032.5       9618     1031.5       9638
GR   1030.5        9658     1029.5       9678      1028.5       9698    1028.3       9710     1028.5       9748
     1029.5        9888     1030.5      10047      1031.0    10115.4    1041.2    10135.8     1041.4      10252
     1041.5       10390     1041.9      10590      1042.2      10710    1043.1      11000

ET     51.7                            7.1         9.1        9.1       9799      10599       9799      10599
                AP PLAN STA. 53+70
X1     51.7          43       9800    10598.2        600        510       670
GR     1042        7015       1040       7060      1039.7       7175    1038.5       7270       1038       7320
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GR	1037.7	7470	1036	7545	1035.2	7800	1035	8110	1034.8	8265
	1034.7	8480	1036	8820	1036.5	8860	1037.4	9090	1037.8	9510
	1038	9660	1039.1	9680	1038	9695	1038	9755	1040	9760
	1041	9765	1041	9770	1041	9780	1041	9790	1041	9800
GR	1040	9820	1044.5	9832	1044.5	9840	1034.5	9875	1030	9910
GR	1028.0	9915	1027.4	9970	1027.5	10000	1029.5	10090	1029.8	10172
GR	1030.5	10271	1031.5	10420	1032.5	10570	1032.6	10577.4	1043.0	10598.2
GR	1043.5	10675	1043.8	10685	1044.5	10705				
ET	54			7.1	9.1	9.1	9854	10696	9854	10696
		AP PLAN STA. 55+65								
X1	54	55	9855	10695	270	200	230			
GR	1045	5965	1045.6	6005	1045.7	6090	1045	6360	1044	6775
GR	1042	6900	1041	7020	1040	7125	1038.7	7230	1038	7385
GR	1036.8	7475	1037.3	7825	1036.3	8165	1036.4	8460	1036.4	8635
GR	1036.5	8790	1037	9055	1037.7	9260	1038	9540	1039.2	9635
GR	1038	9705	1034	9712	1033.3	9750	1034	9780	1036	9785
GR	1038	9800	1040	9810	1042	9815	1042.5	9835	1042.5	9855
GR	1036	9862	1034	9868	1032	9875	1030	9890	1028	9915

GR	1029	10000	1030	10035	1030	10115	1032	10140	1034	10160
GR	1033.5	10180	1032.5	10219	1031.5	10242	1030.5	10263	1030.2	10269
GR	1030.5	10311	1031.5	10459	1032.5	10610	1032.9	10674.4	1043.2	10695
GR	1044.1	11215	1044.2	11525	1044.5	11780	1045	11840	1046	13150
ET	59			7.1	9.1	9.1	9744	10701	9744	10701
		AP PLAN STA. 60+00								
X1	59	43	9745	10700.2	760	490	500			
GR	1046	6900	1045.5	7000	1045	7100	1044	7305	1042.7	7410
GR	1042	7525	1041.7	7640	1041.5	7875	1041	8170	1041.5	8560
GR	1040	8720	1040	8800	1040.8	9085	1041	9500	1042	9585
GR	1044	9600	1042	9615	1040.3	9630	1044	9700	1044	9720
GR	1044	9745	1042	9765	1040	9770	1038	9800	1036	9805
GR	1034	9815	1032	9865	1030.7	9880	1032	9890	1034	9915
GR	1032	9945	1031.6	10000	1035	10204	1034	10224	1033	10245
GR	1032	10266	1031.1	10274	1031.5	10335	1032.5	10484	1033.5	10632
GR	1033.8	10679.4	1044.2	10700.2	1046	12750				
	63			7.1	9.1	9.1	9669	10572	9669	10572
		AP PLAN STA. 63+00								
X1	63	37	9670	10571.6	460	380	400			
GR	1050	6725	1049	6950	1048	7040	1047.2	7190	1046	7330
GR	1044	7710	1043.4	8020	1043.2	8470	1043.1	8630	1043.1	8865
GR	1043.3	9315	1043.3	9490	1042	9535	1042	9655	1043.5	9670
GR	1042	9685	1040	9715	1038	9760	1036	9780	1034	9845
GR	1034	9890	1033.7	9960	1032.9	10000	1032	10020	1032.3	10100
GR	1032	10120	1031.8	10130	1032	10140	1031.7	10145	1032.5	10266
GR	1033.5	10415	1034.4	10550.4	1045.0	10571.6	1045.5	11090	1046	11350
GR	1047.7	11390	1048	12390						
ET	70.5			7.1	9.1	9.1	9579	10271	9579	10271
		AP PLAN STA. 70+50								
X1	70.5	40	9580	10270	710	700	750			
GR	1049.8	7020	1048	7215	1047.7	7255	1046	7310	1045.8	7420
GR	1045	7825	1045.1	7985	1044.3	8190	1045	8520	1044.7	8790
GR	1045.2	9075	1044.6	9360	1044	9460	1043	9485	1042	9505
GR	1042	9550	1044	9565	1044	9570	1044	9580	1042	9595
GR	1040.7	9625	1041.8	9720	1040	9825	1038	9840	1035.5	9922
GR	1035.5	9994	1036.4	10000	1034.5	10055	1033.5	10122	1035.5	10147
GR	1033.5	10165	1034.5	10240	1046.5	10262	1047.5	10270	1046	10390
GR	1046	10490	1046.5	10560	1046	10600	1046	11300	1048	11700
ET	77			7.1	9.1	9.1	9775	10250	9775	10250
		AP PLAN STA. 74+16, END CHANNEL AT 107TH AVE.								
		NORTH PROJECT X-77.0 USED AS NATURAL RIVER BED								
X1	77	33	9776	10148	480	660	650			
GR	1052	7105	1050	7110	1048.4	7205	1048	7500	1047	8115
GR	1047.3	8410	1047.2	8760	1046	9080	1045.7	9225	1045.5	9390
GR	1044.2	9548	1044	9648	1043.7	9748	1051	9776	1044.6	9807
GR	1042.3	9858	1042.2	9875	1043.4	9884	1042.3	9891	1042.8	9900
GR	1035.6	9921	1036.3	9956	1036.2	10000	1035.5	10048	1034.6	10078
GR	1035.7	10104	1044.7	10148	1044.5	10165	1048.2	10192	1046.1	10214
GR	1046.7	10236	1048.1	10248	1050.9	10285				

	84			7.1	9.1	9.1	9844	10790	9844	10401
X1	84	40	9845	10400	620	700	700			
X3	10									
GR	1054	7475	1052	7490	1052	7520	1052	7545	1051	7570
GR	1050	7795	1048.5	7970	1048.4	8210	1048.2	8500	1048.2	8820
GR	1050	8950	1048.7	9320	1048	9480	1047.5	9630	1046	9740

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GR     1046       9815       1052       9840     1053.5       9845       1052       9855     1046.1       9875
      1044.1       9880     1042.1       9905     1036.1       9915     1035.8       9970     1036.1       9990
      1038.1      10025     1038.1      10045     1040.1      10115     1042.1      10160     1042.1      10215
      1040.1      10230     1040.1      10360     1042.1      10370     1044.4      10400       1042      10415
GR     1042      10490       1044      10570       1048      10610       1050      10615     1050.0      10790

ET     88.7                             7.1        9.1        9.1       9729      10980       9729      10301
                GRAVEL PIT, LOB BREAKOUT TO X95.5. D/S B.O. LIMITED IN Q TO X77
X1     88.7         47       9730      10300        520        430        470
X3
GR     1054       6520       1052       6550       1052       6580       1052       7170       1052       7440
GR     1052       8650     1050.4       8770     1050.2       8910     1050.2       9080     1050.1       9250
GR     1050       9630       1050       9725       1052       9730       1050       9735     1036.2       9760
GR   1035.9       9765     1036.2       9770     1042.2       9810     1042.2       9910     1034.2       9930
GR   1036.2       9990     1038.2      10000     1036.2      10030     1034.2      10100     1034.2      10170
GR   1044.1      10220     1044.1      10220     1045.6      10300       1046      10310       1046      10360
GR     1048      10430       1050      10455       1052      10500       1052      10530       1050      10560
GR     1050      10610       1052      10615       1052      10650       1050      10700       1052      10710
GR     1052      10760       1050      10765       1050      10830     1050.9      10850     1051.1      10950
GR     1052      10980       1058      11030

ET     95.5                                        9.1        9.1                             9499      10306
                GRAVEL PIT, LOB BREAKOUT TO X88.7.
X1     95.5         40       9500      10305        400        680        680
X3       10
GR     1056       6420     1055.8       6575       1055       7030     1053.3       7530     1053.3       7540
GR     1052       7550       1052       7610       1052       7615     1052.0       8270     1052.0       8610
GR     1052       8855       1052       9140     1053.6       9340       1052       9470       1052       9500
GR     1050       9535       1050       9840     1048.1       9845     1046.1       9850     1044.2       9890
GR   1042.2       9905     1040.2       9915     1037.5       9960     1036.2      10000     1036.2      10085
GR   1034.2      10120     1034.2      10240     1036.2      10250     1038.2      10260     1038.2      10280
GR     1052      10305       1050      10310       1050      10330       1052      10420     1050.7      10580
GR     1051      10880       1052      10975     1052.1      11070       1054      11280       1064      11400

ET    100.7                                        9.1        9.1                             9629      10191
X1    100.7         48       9630      10190        550        620        520
GR     1056       7400     1055.1       7450       1070       7451       1070       7600       1056       7601
GR     1055       7730       1070       7731       1070       8019     1054.5       8020     1054.3       8110
GR     1070       8111       1070       8139     1054.2       8140     1054.2       8210     1054.1       8450
GR   1054.2       8600     1054.1       8740     1053.6       9180       1054       9300     1054.5       9450
       1054       9570       1054       9600       1055       9630       1054       9645       1052       9670
       1051       9720       1052       9820       1052       9865       1050       9890     1042.3       9900
     1042.3       9960     1040.3       9970     1036.3       9980     1036.3      10070       1035      10100
GR   1036.3      10120     1038.3      10130     1040.3      10155       1052      10190       1052      10240
GR     1053      10270       1052      10300       1052      10380     1052.2      10430     1053.3      10570
GR   1053.7      10880       1054      11140       1062      11200
1
   05MAY04      16:11:44                                                                          PAGE     6


ET      107                                        9.1        9.1                             9709      10256
X1      107         48       9710      10255        300        640        630
GR   1058.9       7275     1058.7       7480     1058.2       7715       1058       7750       1056       7810
GR     1070       7811       1070       7920     1055.3       7921     1055.1       8025       1055       8120
GR     1070       8121       1070       8194     1055.5       8195     1055.2       8330       1070       8331
GR     1070       8389     1055.3       8390     1055.1       8580     1054.2       8630     1054.4       8835
GR   1054.5       9105     1054.8       9370       1056       9490       1056       9620       1056       9710
GR     1052       9735     1040.1       9750     1039.6       9755     1040.1       9770     1040.1       9830
GR   1038.1       9835     1038.1       9960     1040.1       9985     1040.1      10110     1042.1      10130
GR   1042.1      10180     1045.1      10190     1045.1      10240       1054      10255       1055      10365
GR   1055.7      10460     1055.7      10550       1056      10735       1057      10740     1056.1      10755
GR   1056.2      10870       1056      10980       1060      11010

NC     .045       .045       .035         .3         .5
ET    110.7                                        9.1        9.1                             9734      10236

X1    110.7         42       9735      10235        600        300        370
GR     1060       7845       1060       7846       1058       7852       1058       7854     1057.7       8000
GR     1058       8145       1058       8150       1058       8200     1057.1       8540     1057.4       8810
GR   1056.6       8950     1056.1       9075       1056       9100     1055.6       9320     1055.4       9430
GR     1056       9495     1056.7       9525       1056       9540       1054       9545       1054       9690
GR   1055.6       9735       1054       9770     1042.2       9790     1041.5       9820     1042.2       9870
GR   1046.2       9880     1048.2       9910     1049.2      10000     1049.2      10120     1048.2      10160
GR     1047      10190     1048.2      10215       1056      10235       1054      10250       1054      10340
GR     1056      10345     1056.7      10500       1056      10590     1055.8      10670       1056      10770
GR     1058      10810       1060      10830

ET    117.2                                        9.1        9.1                             9844      10196
          DOWNSTREAM SIDE GLENDALE AVE BRIDGE
      117.2         33       9845      10195        800        400        650
         10                                                                 1061       1061
GR     1066       7075       1064       7120       1062       8020       1060       8035       1060       8037
GR   1059.8       8280       1060       8340       1060       8360       1060       8380     1058.5       8500
GR   1058.7       8630     1057.9       8780     1057.9       9100     1058.4       9330       1058       9550
GR     1058       9730       1056       9845     1054.1       9855     1052.2       9885     1050.2       9910
GR   1048.2       9970     1046.4      10030     1046.4      10120     1048.2      10165       1056      10195
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GR     1057     10260     1057.5     10460      1056      10550      1056      10940      1056      11415
       1058     11555       1060     11620      1062      11685
        .9       1.56        2.9         0       352       19.8      5503          0    1046.5     1046.2
ET      118                             9.11      9.11                                   9844      10196
          UPSTREAM SIDE GLENDALE AVE BRIDGE-PERCHED. 2FT DEBRIS PER PIER.
          1983 TOPO WITHIN 0.3FT OF BRIDGE PLAN DECK.USED PLANS MINUS 0.3FT
X1      118        33       9845     10195       80        80        80                                00
X2                            1    1063.1     1063
X3       10                                                                   1063.5      1063
BT      -18      8080     1064.5         0     8140    1063.9         0      8420    1063.6         0
BT               8720     1063.5         0     9000    1063.5         0      9230    1063.6         0
BT               9650       1064         0     9700    1064.5         0      9844    1066.1         0
BT               9845     1068.6    1063.1    10195    1068.6    1063.1     10196    1066.1         0
BT              10370       1064         0    10600    1063.3         0     11150      1063         0
BT              11195     1063.4         0    11480    1063.6         0     11515      1064         0
GR     1066      7865       1066      7866      1065      8030      1065      8031      1065      8032
GR     1064      8190     1062.9      8250      1062      8320    1060.1      8515      1060      9170
1
   05MAY04      16:11:44                                                                          PAGE     7

GR     1059      9290       1060      9710      1060      9835      1058      9845      1056      9860
GR   1049.9      9895     1047.9      9920    1047.4     10020    1047.9     10130    1049.9     10160
GR   1051.9     10175       1058     10195      1058     10210      1060     10220      1058     10730
GR   1057.4     11030     1057.4     11190      1058     11330      1060     11400      1062     11403
GR     1064     11415       1064     11450      1066     11485

ET      120                            7.1       9.1       9.1      9550     10400      9799     10206
X1      120        40       9800     10205       200       130       200
X3       10
GR   1066.8      7690     1066.2      7795      1066      7840    1064.4      8070      1064      8160
GR     1062      8255     1060.3      8300    1060.3      8480    1060.2      8715    1069.9      8950
GR   1061.4      9100     1060.4      9200      1060      9220    1059.4      9260    1059.5      9360
GR   1058.4      9430     1059.8      9530      1058      9630      1058      9660    1058.6      9725
GR     1058      9760       1058      9780    1058.2      9800    1057.9      9820    1055.9      9825
GR   1051.9      9850     1049.9      9870    1045.9      9880    1045.9     10180      1058     10205
GR   1058.5     10270     1058.5     10330    1059.6     10350    1059.2     10400    1058.4     10700
GR     1058     11000     1056.7     11185    1056.7     11275      1060     11345      1066     11370

       .045      .045       .035        .1        .3
       125                            7.1       9.1       9.1      8950     10800      9789     10241
       125        36       9790     10240       500       480       500
X3      10
GR     1069      7190       1070      7240      1070      7360      1068      7410      1066      7660
GR     1064      7920       1062      8170    1061.4      8210    1061.5      8425      1061      8630
GR   1062.4      8720       1062      8770      1060      8800      1060      8850    1064.9      8890
GR     1060      8950       1060      8980      1060      9520      1060      9730    1059.8      9790
GR   1057.9      9810     1050.9      9835    1050.4      9900    1049.9      9965    1045.9      9970
GR   1046.2     10180     1047.9     10185      1060     10240    1060.9     10380    1060.1     10520
GR     1060     10570     1059.6     10730      1060     10850      1062     10900      1064     10920
GR     1070     11130

ET    131.0                            7.1       9.1       9.1      8500     10365      9744     10251
          GRAVEL MINE CODED AS 1062 FILLED. UPSTREAM SIDE.
X1    131.0        31       9745     10250       500       650       600
X3       10
GR     1068      7370     1067.4      7440      1066      7570      1065      7685      1064      7770
GR     1064      7880     1063.6      8005    1062.7      8430    1062.6      8580      1062      8660
GR     1062      9500       1062      9520      1064      9525      1064      9540      1062      9630
GR     1061      9745     1059.9      9760    1051.9      9790      1050      9830    1051.9      9890
GR   1053.9      9925     1055.9     10015      1058     10055    1058.7     10160    1057.9     10205
GR   1057.9     10230       1062     10235    1062.7     10250      1062     10300      1064     10335
GR   1071.5     10365

ET    135.0                            7.1       9.1       9.1      8400     10315      9799     10156
X1    135.0        34       9800     10155       380       430       400
X3       10
GR     1068      7340       1066      7460    1065.4      7660      1065      7865      1075      7866
GR     1075      8264     1064.4      8265    1063.8      8420      1063      8780    1063.2      8940
GR   1063.2      9170     1063.4      9400      1075      9401      1075      9584      1064      9585
GR     1064      9690     1063.5      9800    1061.9      9810    1051.9      9830    1051.8      9850
GR   1053.9      9880     1055.9      9920    1056.7      9940    1055.9      9960    1053.9     10000
GR   1054.7     10075     1055.9     10100    1055.9     10130    1057.9     10135    1059.9     10140
GR     1061     10155     1060.5     10230      1062     10280      1070     10315
1
   05MAY04      16:11:44                                                                          PAGE     8

       140                                          9.1       9.1                                9744     10261
       140        37       9745     10260       430       520       500

X3       10
X4        5      1100       7901      1100      8299    1064.5      8300      1100      9201      1100
X4     9499
GR     1070      7050       1070      7070      1070      7095    1069.2      7190    1069.2      7305
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GR     1068       7405       1066       7585     1065.2       7695     1065.5       7900       1065       8480
       1064       8700     1064.2       8875       1065       9000       1065       9200     1064.5       9500
     1065.3       9620     1065.7       9745     1063.9       9755     1057.9       9790     1057.9       9960
     1055.9      10000     1053.9      10005     1053.9      10035     1055.9      10050     1057.5      10110
GR   1055.9      10185     1053.9      10210     1055.9      10230     1061.9      10255     1062.5      10260
GR     1062      10280       1062      10340       1064      10360       1066      10415       1066      10580
GR     1070      10595       1076      10630

ET      143                                        9.1        9.1                                9600      10401
X1      143         32       9790      10400        300        300        300
X4        6     1069.1      10380     1068.5       9770       1100       8201       1100       8524       1100
X4     9471       1100       9629
GR   1071.4       7285       1070       7325       1070       7340     1069.2       7410     1069.2       7530
GR     1068       7650     1067.8       7675       1066       7870     1065.5       7955     1065.4       8200
GR   1065.1       8525       1066       8730     1064.8       8780     1065.1       9230     1065.9       9470
GR   1065.1       9630       1068       9740       1068       9790     1059.9       9810     1059.9      10015
GR   1057.9      10070     1057.9      10190     1063.9      10225     1059.9      10240     1059.9      10330
GR   1061.9      10370     1063.9      10379     1063.9      10381       1066      10390       1068      10400
GR     1068      10480       1070      10720

ET      146                                        9.1        9.1                                9000      10201
          LOB POULTRY BLDGS CODED AS SINGLE BLOCK.
X1      146         45       9800      10200        310        290        300
GR   1074.7       6940     1075.4       7135     1074.1       7310     1074.1       7312       1074       7409
GR     1072       7410       1070       7420       1070       7430       1072       7470       1070       7500
GR     1070       7510     1069.3       7735     1067.2       8000     1066.6       8350       1077       8351
GR     1077       8699     1066.5       8700     1066.5       8701     1066.5       8702     1066.5       8703
GR   1066.5       8805     1066.4       9525       1075       9526       1075       9699     1066.2       9700
GR     1068       9705       1070       9720     1070.8       9800       1070       9810     1059.9       9830
GR   1060.7       9890     1059.9       9970     1057.9       9990     1057.9      10050     1059.9      10065
GR   1063.9      10080       1066      10175       1068      10185     1069.7      10200     1068.5      10230
GR     1069      10500       1069      10640       1070      10790       1072      10830       1074      10840

QT       5      13000      30000      40000      40000      72500
ET     149.6                                        9.1        9.1                                8850      10206
          LOB ON TOP OF SERVICE RD. POULTRY BLDGS CODED AS ONE SOLID BLOCK.
X1     149.6         44       9735      10205        370        375        360
X3
X4        4     1068.4       8570       1100       8571       1100       8799     1068.4       8800
GR     1075       7530       1074       7605       1072       7635       1070       7640       1070       7650
       1072       7655       1072       7720       1070       7730       1070       7850     1070.0       8050
       1069       8200     1068.6       8390     1100.0       8695     1068.4       8930     1068.2       9215
     1068.1       9285       1069       9365     1069.1       9500     1067.2       9640       1068       9725
GR   1069.3       9735     1067.9       9745     1065.9       9765     1063.9       9780     1061.9       9805
GR   1059.9       9815     1059.9       9840     1060.8       9860     1059.9       9930     1059.9      10050
GR   1061.9      10060     1065.9      10075     1065.9      10100     1063.9      10180     1065.9      10190
GR     1070      10195     1070.8      10205       1070      10215       1070      10415     1070.1      10605
1
   05MAY04      16:11:44                                                                                    PAGE     9

GR   1070.2      10830       1070      10935       1072      10980       1078      11000

ET      158                                        9.1        9.1                                8950      10250
          CHANNEL GRAVEL MINE BOTTOM AT 1064 DOWNSTREAM OUTLET.
          LEFT BANK CHANNELIZED.
X1      158         37       9730      10215        850        840        840
X3
GR     1076       7620     1075.4       7760     1075.4       7950       1074       8150       1072       8155
GR     1070       8160       1070       8170       1072       8175     1073.2       8205       1072       8240
GR     1072       8335       1070       8355       1070       8750     1069.8       9140       1070       9540
GR   1069.8       9620       1070       9720     1071.7       9730     1069.9       9740     1059.9       9770
GR   1059.5       9800     1059.9       9830     1063.9       9850     1063.9      10070     1067.9      10075
GR   1069.9      10150     1069.9      10175       1072      10190       1073      10215       1073      10260
GR   1072.2      10390     1072.4      10590     1072.9      10810     1073.3      11040     1073.8      11250
GR     1074      11270       1076      11310

ET      167                                        7.1        9.1        9.1                11200       9000      10250
          250 FT UPSTREAM IN CHANNEL GRAVEL MINE.  INVERT CUT TO OCT. 83
          EXCAVATION 1059.0.
X1      167         33       9880      10120       1000        800        900
GR     1076       8695       1074       8800     1073.4       8950     1072.1       9240     1072.1       9340
GR     1085       9341       1085       9439     1072.1       9440     1072.4       9620       1072       9785
GR   1071.7       9880     1069.9       9885     1059.9       9910     1059.9       9930     1059.7       9960
GR   1058.9      10000     1058.9      10020     1059.3      10050     1058.9      10090     1069.9      10105
GR   1071.9      10115     1073.7      10120       1072      10160     1070.6      10270       1072      10425
GR     1074      10470       1074      10640       1075      10800     1075.4      11350     1076.3      11450
GR   1076.2      11570       1078      11610       1080      11625

       170                                        7.1        9.1        9.1                11200       9030      10136
          OCT 83 EXCAVATION INVERT 1059.3
       170         44       9900      10135        300        270        300
X3      10
GR   1080.5       7765       1080       7820     1079.7       7880     1078.9       8050     1078.6       8200
GR     1078       8310     1076.7       8490       1076       8735     1075.7       8810       1074       9030
GR     1072       9060       1072       9085     1074.3       9105       1074       9160     1072.1       9290
GR   1072.8       9380       1080       9385       1080       9430     1072.8       9435     1073.4       9590
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GR   1072.4      9770      1072      9850    1071.9      9900    1072.4      9915    1071.9      9920
     1059.9      9935    1059.9      9945    1059.2      9980    1059.2     10030    1059.2     10045
     1059.2     10065    1059.2     10075    1059.2     10080    1059.9     10095      1074     10130
       1076     10135      1074     10160      1074     10450    1075.8     10680      1076     10900
GR   1076.6     11250    1076.4     11600      1078     11640      1080     11645

ET    174.2                          7.1       9.1       9.1      7800     10800      8850     10300
          OCT 83 EXCAVATION INVERT 1059.6
X1    174.2        40      9920     10095       440       430       420
GR     1080      8000    1079.4      8240      1078      8450    1077.7      8510    1076.5      8830
GR   1076.1      8920      1076      9085      1074      9140      1072      9150      1072      9160
GR   1075.3      9200      1072      9220      1072      9230      1074      9250      1076      9255
GR   1074.7      9390    1074.4      9635      1074      9810    1073.6      9840      1074      9870
GR   1074.7      9890      1074      9905      1076      9920      1074      9930    1059.8      9945
GR   1059.4      9960    1059.4     10020    1059.8     10070      1076     10085    1076.5     10095
GR     1076     10140    1075.7     10420    1076.4     10630    1076.4     10700      1077     11000
GR   1077.5     11300    1077.5     11580      1078     11600      1080     11610      1082     11630
1
   05MAY04      16:11:44                                                                          PAGE   10


NC     .045      .045      .035        .5        .7
ET      178                          7.1       9.1       9.1      8400     10600      8750     10400
          NEW X-SECTION D.S. NORTHERN AVE DROP STRUCTURE DEFINITION.
          INVERT 1060.0.
X1      178        27      9860     10170       390       300       380
X4        1      1082      8200
GR     1084      7950      1080      8600      1078      8880    1077.4      8960    1076.4      9150
GR   1076.2      9280    1075.8      9400      1076      9650      1078      9710      1080      9850
GR   1080.7      9860    1069.9      9890    1059.9      9900    1059.9     10110    1069.9     10125

GR     1080     10170      1078     10180    1077.3     10400    1076.2     10600    1076.8     10770
GR   1077.2     11020    1077.5     11345    1077.7     11600      1078     11640      1080     11650
GR     1082     11670      1084     11780

ET    178.5                          7.1       9.1       9.1      8400     10550      8750     10415
          NORTHERN AVE. DIP-CROSSING CROWN.
X1    178.5        35      9710     10290        50        50        50
X3       10
GR   1085.3      7300    1084.2      7600    1084.1      7900    1084.1      7940      1084      8000
     1082        8160    1081.7      8195      1080      8400    1078.6      8500      1078      8705
     1077.8      8810      1077      9155    1076.3      9300    1076.6      9630      1076      9710
GR     1074      9750      1072      9820      1070      9860      1068      9970    1067.7      9980
GR     1068     10000      1070     10100      1072     10160      1074     10210      1076     10290
GR   1076.6     10315    1078.1     10415      1078     10430    1079.2     10659    1079.9     10940
GR     1080     11010    1080.1     11195      1082     11500    1082.2     11545      1084     11730

NC     .045      .045      .035        .1        .3
ET    181.5                                    9.1       9.1                                9100     10325
X1    181.5        50      9830     10150       310       320       310
X3       10
GR   1084.4      7590    1084.3      7870      1084      8005    1082.7      8050      1082      8100
GR   1081.6      8175    1080.8      8345    1080.3      8470    1080.2      8630      1080      8795
GR   1078.9      9000      1078      9095    1077.8      9205      1078      9290      1078      9299
GR     1076      9305    1076.2      9340    1077.7      9480    1077.6      9530      1090      9531
GR     1090      9604    1077.4      9605    1077.2      9720    1077.1      9830    1076.2      9840
GR   1074.2      9850    1072.3      9895    1070.3      9910    1066.5      9915    1068.3      9940
GR   1066.9      9950    1068.3      9990    1068.9     10000    1068.3     10020    1067.5     10050
GR   1068.3     10075    1070.3     10100    1072.3     10120    1076.1     10150      1077     10300
GR     1078     10400      1080     10410      1082     10415      1083     10425      1082     10435
GR   1081.6     10540      1080     10645      1081     11060      1082     11215    1083.1     11505

ET    185.3                                    9.1       9.1                                9500     10211
X1    185.3        55      9850     10210       390       375       380
X3       10
GR     1086      7615    1085.4      7805      1084      7930      1084      7940      1083      7970
GR     1082      8160    1081.2      8410    1080.2      8655    1080.1      8855      1080      8970
GR   1079.3      9065    1078.4      9210      1078      9320      1078      9330      1078      9340
GR   1077.7      9370      1078      9405    1078.3      9420      1100      9421      1100      9559
GR   1078.4      9560    1078.9      9660      1079      9780    1078.8      9850    1078.1      9865
GR   1072.2      9895    1070.2      9925    1068.2      9930    1067.9      9990    1068.2     10020
GR   1069.8     10090    1070.2     10140    1076.2     10170    1078.1     10200    1078.7     10210
GR     1080     10250    1084.7     10290      1080     10360      1078     10410      1078     10425
GR     1080     10440      1082     10455      1083     10460      1082     10470      1080     10475
GR   1080.6     10570      1082     10690    1081.5     10755    1081.4     10905    1081.7     11090
1
   05MAY04      16:11:44                                                                          PAGE   11


     1082      11175    1082.2     11290      1084     11525    1084.4     11785    1085.5     11950

ET     190                                    9.1       9.1                                9804     10401
X1     190         47      9805     10400       480       450       470
X3      10
GR     1086      7950      1084      8010    1082.2      8090    1082.2      8350    1082.1      8595
GR   1082.5      8810    1082.2      8965    1082.1      9180    1082.1      9270    1082.1      9290
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GR     1082       9320     1081.5      9420       1100       9421       1100       9649       1081       9650
GR   1080.7       9805     1080.1      9815     1078.1       9845     1076.1       9865     1074.2       9870
GR   1072.2       9895     1072.2      9910     1070.2       9925     1068.2       9935     1068.8       9965
GR   1068.2       9990     1067.8     10010     1068.2      10035     1070.2      10045     1071.7      10050
GR   1072.2      10150     1072.2     10165     1074.2      10195     1076.1      10205     1078.1      10260
GR   1080.1      10325     1080.1     10360     1082.6      10400       1082      10480     1082.9      10620
GR     1082      10805     1082.5     11040     1083.4      11245       1084      11420     1084.1      11490
GR   1085.1      11740       1086     11840

ET    193.6                                        9.1        9.1                                9744      10211
X1    193.6         41       9760     10210        380        360        360
X3       10
X4       20       1084       9745      1089       7500       1088       7740     1086.6       7820     1084.6
X4     7850     1084.3       7960      1084       8050     1083.1       8320     1083.1       8500     1082.9
X4     8700     1082.8       8900    1083.5       9130       1084       9200     1083.7       9220     1083.7
X4     9290       1100       9291      1100       9349     1083.7       9350     1082.5       9600       1084
X4     9740
GR     1089       7360       1084      9760     1082.1       9792     1080.1       9808     1078.2       9820
GR   1076.2       9835     1074.2      9855     1072.2       9870     1070.2       9880     1070.2       9890
GR   1070.3       9935     1072.2      9975       1073      10000     1074.2      10040     1074.2      10055
GR   1076.2      10065     1076.2     10090     1079.2      10105     1076.2      10110     1072.2      10115
GR   1070.2      10120     1070.2     10130     1072.2      10135     1074.2      10150     1076.2      10165
GR   1078.2      10170     1080.1     10185     1082.1      10192     1082.7      10210     1082.3      10235
GR     1082      10260       1082     10320     1082.4      10405     1083.3      10630     1083.2      10790
GR     1084      10900       1084     11140       1084      11170     1085.3      11320     1086.0      11610
GR     1088      11860

ET    198.4                                        9.1        9.1                                9749      10201
X1    198.4         49       9750     10200        460        490        480
X3       10
X4        4       1085       9230      1100       9231       1100       9279       1085       9280
GR     1090       7150     1089.7      7290     1088.8       7500     1088.8       7580       1088       7715
GR     1086       7760     1085.2      7900     1084.6       8095     1084.2       8255       1084       8305
GR     1084       8640     1084.2      8835     1084.8       8990       1084       9075       1082       9085
GR     1082       9095     1085.5      9125     1084.9       9165       1085       9350       1085       9535
GR     1086       9665       1088      9685       1086       9710       1086       9711       1086       9712
GR   1085.2       9750     1084.1      9762     1082.1       9773     1080.2       9790     1078.2       9800
GR   1076.2       9810     1074.2      9825     1072.2       9862       1071       9915     1072.2      10000
GR   1074.2      10035     1074.7     10075     1076.2      10110     1078.2      10150     1080.2      10162
GR   1082.1      10172     1084.1     10180       1086      10190       1086      10200       1086      10250
GR   1086.5      10450       1088     10890       1089      11265       1090      11520
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ET    202.4                                        9.1        9.1                                9789      10181
         LOB MOVED TO TOP OF IRRIGATION ROAD TO DETERMINE FLOW SPLIT
         <ROAD INTACT>
X1    202.4         36       9790     10180        400        400        400
X3       10

X4        4     1086.3       9330      1100       9331       1100       9389     1086.1       9390
GR   1089.4       7250     1090.0      7500     1090.0       7710       1089       7970     1088.6       8390
GR   1088.4       8880       1088      9065     1086.4       9090     1086.6       9125     1086.1       9400
GR     1086       9595       1086      9596       1086       9700       1086       9720       1086       9725
GR   1085.5       9790       1084      9805     1082.2       9820     1080.2       9832     1078.2       9837
GR   1076.3       9845     1074.3      9860     1073.3       9900     1072.5      10000     1074.3      10055
GR   1076.3      10070     1078.2     10088     1080.2      10105     1082.2      10112       1084      10140
GR     1086      10170     1087.3     10180       1088      10330     1088.5      10490     1089.5      10675
GR     1090      10740

ET      206                                        9.1        9.1                                9721      10171
X1      206         42       9740     10170        360        380        360
X3       10
X4        5     1087.3       9720    1087.7       9250       1100       9251       1100       9319     1087.6
X4     9320
GR     1091       7140     1090.7      7370       1090       7625     1088.6       7730     1088.3       7890
GR     1089       8112     1088.5      8260     1088.3       8570     1088.3       8780       1088       8920
GR   1087.5       9090     1087.9      9140     1087.4       9410       1087       9665       1086       9740
GR   1084.2       9750     1082.2      9765     1082.2       9790     1082.2       9791     1082.2       9792
GR   1083.1       9805     1084.2      9830       1086       9850       1086       9875     1084.2       9880
GR   1082.2       9885     1080.2      9890     1076.3       9900     1074.3       9920     1073.5      10000
GR   1074.3      10090     1078.3     10100     1080.2      10108     1082.2      10113     1084.2      10120
GR     1086      10130       1088     10140       1090      10170       1090      10290     1090.1      10395
GR   1091.8      10650       1092     10685

ET    210.5                                        7.1        9.1        9.1       8550      10620       9814      10181
X1    210.5         45       9815     10180        440        440        450
         10
GR   1092.3       7150       1092      7200     1091.2       7400       1090       7700     1089.6       7760
GR   1089.8       7930       1090      8150     1090.3       8300       1090       8440     1089.4       8600
GR   1089.8       8730     1088.8      8850     1088.8       9030       1090       9040       1092       9050
GR     1090       9060       1089      9100     1089.2       9270       1100       9271       1100       9379
GR     1088       9380     1087.5      9490     1087.6       9525       1100       9526       1100       9629
GR   1087.8       9630       1088      9670       1086       9720       1082       9735       1082       9800
GR   1087.2       9815     1086.1      9820     1078.2       9835     1076.2       9845     1076.2       9870
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GR   1074.2      9915    1072.2      9970    1071.2      9990    1072.2     10015    1074.2     10110
     1076.2     10130    1078.2     10145      1092     10180      1092     10410      1094     10620

ET      216                         7.1       9.1       9.1      8900     10480      9769     10241
X1      216        35      9770    10240       400       650       550
X3       10
GR   1092.5      7200      1092     7450      1092      7580    1091.6      7760    1090.3      7800
GR   1090.4      8000    1090.2     8300      1090      8540    1089.8      8830      1090      8970
GR   1090.1      9050      1092     9200      1094      9240      1092      9275      1090      9277
GR   1089.5      9310      1088     9620      1086      9700    1085.6      9770    1084.2      9790
GR   1078.2      9825    1076.2     9830    1074.2      9855    1072.2      9870    1074.2      9935
GR   1074.2      9990    1076.2    10020    1076.2     10110    1078.2     10130    1078.2     10175
GR     1092     10230    1093.5    10240      1094     10270    1094.2     10350    1094.4     10480
1
   05MAY04      16:11:44                                                                          PAGE   13


ET      218                         7.1       9.1       9.1      9000     10660      9699     10256
X1      218        38      9700    10255       200       200       200
X3       10
GR     1094      7000    1093.2     7120    1092.4      7530      1092      7700    1090.9      7750
GR     1091      8100    1090.1     8430      1090      8700    1090.1      9000    1089.7      9300
GR     1090      9400    1090.1     9450      1090      9480      1088      9520      1086      9550
GR     1086      9640    1086.2     9700    1086.1      9710    1080.1      9720    1078.1      9750
GR   1076.1      9805    1074.1     9850    1072.1      9870    1072.1      9890    1074.1      9915
GR   1076.1     10000    1074.1    10040    1076.1     10070    1076.8     10100    1078.1     10135
GR   1080.1     10145    1080.1    10200      1094     10245      1094     10255      1094     10270
GR     1094     10315      1095    10460      1096     10660

ET    220.8                                    9.1       9.1                          9749     10256
X1    220.8        32      9750    10255       270       260       280
X3       10
GR     1094      7440    1093.3     7730      1093      7950    1092.4      8300    1092.2      8620
GR     1092      8720      1092     8930    1091.4      9230      1090      9280      1088      9360
GR     1088      9465    1088.6     9600    1088.4      9665      1088      9680      1086      9700
GR   1086.1      9750    1080.1     9765    1078.2      9780    1076.2      9785    1075.9      9825
GR   1076.2      9875    1076.2     9925    1074.2     10000    1073.2     10030    1074.2     10060
GR   1076.2     10100    1078.2    10130    1080.1     10170    1082.1     10205      1094     10240
GR   1094.4     10255      1096    10420

     223                                      9.1       9.1                          9749     10271
     223        30      9750    10270       220       230       220
GR     1095      7350      1094     7600      1094      8000    1093.6      8030      1093      8350
GR   1092.5      8650      1092     9050    1090.9      9240      1090      9300    1088.7      9430
GR   1088.5      9580    1088.4     9695      1090      9705    1090.7      9750      1090      9760
GR   1076.2      9775    1076.2     9805    1078.2      9870    1079.9      9980    1078.2     10020
GR   1078.2     10075    1076.2    10095    1074.2     10115    1074.2     10140    1076.2     10145
GR   1078.2     10185    1080.2    10190      1094     10260    1095.1     10270    1095.8     10430


NC     .045      .045      .035       .3        .5
ET     229                         7.1       9.1       9.1      8000     10380      9659     10296
X1     229        25      9660    10295       600       600       600
GR     1100      7650    1097.7     7800      1096      7850      1096      8180      1095      8330
GR     1094      8750      1093     9170      1092      9285    1091.1      9300    1092.2      9460
GR     1092      9470      1090     9471    1089.8      9590      1088      9660    1082.1      9685
GR   1081.8      9765    1081.6     9860    1080.5      9950    1080.1      9970    1079.9     10100
GR   1080.1     10200    1082.1    10230      1094     10295      1096     10370      1098     10500

ET    231.5                         7.1       9.1       9.1      8600     10270      9600     10146
          DOWNSTREAM SIDE OLIVE AVE BRIDGE
X1    231.5        19      9850    10145       280       200       250
X3       10                                                          1089      1092
GR     1097      8130      1096     8300    1095.8      8350      1094      8650      1094      9540
GR     1092      9550      1090     9600      1088      9640      1086      9650      1084      9670
GR     1082      9740    1082.1     9850    1080.3      9851    1080.3     10010    1080.3     10085
GR   1080.3     10125      1090    10145      1094     10170      1096     10270
1
   05MAY04      16:11:44                                                                          PAGE   14


SB     1.05      1.56       2.9        0       244      12.9      2400         2      1080      1080
ET    232.6                        7.11      9.11      9.11      8600     10270      9550     10146
          UPSTREAM SIDE OLIVE AVE BRIDGE WITH 2 FT DEBRIS PER PIER.
X1    232.6        21      9850    10145       110       110       110
X2                            1   1089.6      1094
X3       10                                                       1094.2      1096
       -16      8100    1099.6         0      8290      1098         0      8350    1097.1         0
                8610      1096         0      8970    1094.8         0      9280    1094.2         0
                9740      1094         0      9849    1094.6         0      9850      1097    1088.3
BT              10145    1098.5    1089.6     10146    1095.9         0     10175      1096         0
BT              10325    1097.3         0     10450      1098         0     10700    1098.9         0
BT              10800      1099         0
GR     1098      7500    1096.9     7901    1094.8      8550    1094.3      8800      1095      9050
GR     1092      9230      1092     9400      1096      9420      1096      9500      1094      9530
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GR	1092	9550	1092	9850	1080.1	9880	1080.1	9970	1080.4	10045
	1080.1	10100	1080.1	10135	1094	10145	1096	10700	1098	10705
	1100	10780								
NC	.045	.045	.035	.1	.3					
ET	235			7.1	9.1	9.1	8650	10500	9620	10176
X1	235	23	9810	10175	130	350	240			
GR	1094.8	8600	1095.1	9040	1094.5	9280	1092	9320	1092	9480
GR	1094	9500	1096.3	9580	1094	9630	1092	9650	1092	9780
GR	1092.6	9810	1092	9815	1080.1	9860	1081	10000	1082.1	10070
GR	1084.1	10120	1086.1	10140	1088	10150	1096	10170	1097.5	10175
GR	1097.8	10250	1098	10410	1099	10500				
ET	238.8			7.1	9.1	9.1	8700	11200	9700	10241
X1	238.8	37	9785	10240	400	350	380			
GR	1098	8200	1096	8595	1095.6	8690	1094.8	8870	1094.4	9000
GR	1094.5	9180	1094	9195	1092	9200	1091.5	9325	1092	9500
GR	1094	9505	1094	9540	1092	9560	1092	9660	1090	9730
GR	1092	9750	1090	9775	1092	9780	1093	9785	1092	9790
GR	1090	9830	1088	9850	1086.1	9875	1084.1	9900	1082.1	9935
GR	1080.7	10000	1082.1	10095	1084.1	10110	1086.1	10140	1088	10170
GR	1090	10195	1098	10230	1098.5	10240	1098.8	10450	1099.8	10650
GR	1100	10760	1100.5	10770						
ET	240.8			7.1	9.1	9.1	8700	11200	9630	10266
X1	240.8	29	9850	10265	200	175	200			
X3	10									
GR	1097.6	8320	1096.8	8570	1096	8750	1095.7	8870	1095.2	8950
GR	1094.3	9140	1092.8	9220	1094	9360	1094	9580	1097	9600
GR	1096	9620	1090	9645	1090	9800	1091.7	9850	1090	9870
GR	1088	9905	1086.2	9940	1084.2	9955	1082.2	9985	1080.8	10040
GR	1082.2	10090	1084.2	10100	1096	10150	1096	10245	1098	10260
GR	1099	10265	1100	10330	1099.9	10580	1101	10800		

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ET	245.8				9.1	9.1			9620	10211
X1	245.8	21	9765	10210	520	490	500			
	10									
	1100	8400	1099.4	8550	1098	8930	1097.2	9095	1095.9	9450
	1096	9750	1096.6	9765	1095.8	9775	1093.8	9820	1091.8	9845
GR	1089.9	9880	1083.9	9940	1081.9	9960	1082	10000	1081.9	10045
GR	1083.9	10075	1085.9	10085	1098	10155	1100	10200	1101.5	10210
GR	1102	10300								
ET	251				9.1	9.1			9704	10241
X1	251	27	9705	10240	560	500	520			
X3	10									
GR	1102	9035	1101.6	9135	1101.2	9415	1101.1	9540	1100.9	9650
GR	1102	9680	1103.1	9705	1102	9715	1100	9720	1098	9740
GR	1096	9790	1094	9830	1092	9855	1090.1	9890	1088.1	9915
GR	1086.1	9950	1084.1	9975	1082.1	9982	1082.1	10035	1084.1	10105
GR	1090.1	10154	1100	10210	1102	10220	1103	10240	1102	10300
GR	1102	10650	1102.7	10700						
ET	256				9.1	9.1			9814	10151
X1	256	25	9815	10150	500	500	500			
GR	1104	8500	1120	8501	1120	9039	1103	9040	1103	9160
GR	1103.3	9240	1102.4	9550	1102.1	9700	1102	9815	1100	9835
GR	1092.1	9875	1090.1	9880	1088.1	9950	1086.1	9980	1084.1	10025
GR	1082.8	10070	1084.1	10084	1086.1	10095	1088.1	10105	1090.1	10115
GR	1105.2	10150	1104	10220	1104	10370	1105.1	10420	1106	10500
ET	258.8				9.1	9.1			9789	10175
X1	258.8	20	9790	10175	250	270	280			
X3	10									
X4	3	1120	9271	1120	9384	1102.8	9385			
GR	1104.0	9020	1103.5	9125	1103.3	9270	1103.1	9565	1103.3	9790
GR	1102	9805	1100	9812	1092.1	9820	1090.1	9885	1090.1	9930
GR	1088.1	9968	1086.1	9977	1085.6	10000	1086.1	10020	1086.1	10125
GR	1090.1	10135	1100	10155	1102	10158	1104	10162	1104.2	10175
ET	262				9.1	9.1			9799	10190
X1	262	25	9800	10190	290	340	320			
X3	10									
X4	5	1104	9115	1104	8850	1103.4	9090	1120	9261	1103.8
X4	9440									
	1104.6	8500	1104.2	9260	1120	9439	1103.7	9490	1104	9570
	1104.4	9735	1104.4	9770	1104	9775	1104.5	9800	1104	9812
	1102	9828	1100	9842	1098	9847	1096	9855	1094	9860
GR	1092.1	9877	1090.1	9920	1088.1	9930	1086.6	10000	1088.1	10120
GR	1090.1	10155	1100	10165	1102	10172	1104	10176	1105.2	10190
ET	265				9.1	9.1			9599	10220

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          LOB HOUSES CODED BLOCK BY BLOCK.
X1      265        23      9600     10220       310       350       300
X3       10
X4       14      1105      9600    1105.9      8620      1120      8621      1120      9129    1105.2
X4     9130    1104.4      9160    1105.2      9190      1120      9191      1120      9434    1105.2
X4     9435    1105.2      9500      1120      9501      1120      9569    1105.1      9570
GR     1106      8500    1105.0      9600      1104      9610      1102      9650      1100      9655
GR     1098      9670      1094      9688    1092.1      9735    1092.1      9845    1092.4      9870
GR   1092.1      9890    1090.1      9940    1088.1      9970    1086.6     10000    1088.1     10045
GR   1090.1     10075    1090.4     10115    1090.1     10155    1090.1     10180    1092.1     10187
GR     1100     10205      1106     10212    1106.4     10220

ET    270.5                                     9.1       9.1                                9774     10211
          LOB BLDGS CODED AS SOLID BLOCK. LOB FENCE NOT CONSIDERED
X1    270.5        21      9775     10200       540       550       550
X3       10
X4       17      1120      8816      1120      9304    1106.2      9305      1106      9360    1106.3
X4     9400      1120      9401      1120      9559    1106.2      9560    1105.8      9610    1105.7
X4     9640      1120      9641      1120      9714    1105.6      9715    1107.2     10210    1107.1
X4    10235      1120     10236      1120     10469
GR   1108.2      8815    1105.6      9775      1104      9790      1102      9800      1100      9805
GR   1092.1      9825    1092.1      9860    1092.1      9875    1092.1      9885    1094.1      9888
GR   1096.1      9890    1090.1      9905    1088.1      9915    1088.1      9970    1089.5     10000
GR   1090.1     10015    1090.1     10110    1092.1     10160      1100     10185      1106     10200
GR   1108.0     10470

ET    273.5                                     9.1       9.1                                9699     10156
          LOB AND ROB HOUSES CODED AS SOLID BLOCKS.
          LOB AND ROB FENCE NOT CONSIDERED.
X1    273.5        18      9705     10135       300       300       300
X3       10
X4       19    1106.1      9700      1120      9011      1120      9239    1107.8      9240    1107.1
X4     9270    1107.5      9315      1120      9316      1120    9489.7    1107.1    9490.1    1106.7
X4     9520    1106.1      9560      1120      9561      1120      9609      1106      9610    1107.7
X4    10155    1107.6     10190      1108     10200      1120     10201      1120     10269
GR   1108.3      9010      1106      9665      1104      9705      1100      9712      1096      9725
GR   1090.1      9735    1090.1      9835    1092.1      9855    1092.1      9870    1090.6      9930
GR   1090.1      9980    1090.4     10000    1091.1     10050    1092.1     10105      1100     10135
GR     1106     10135    1108.0     10270    1109.6     10340

ET      277                                     9.1       9.1                                9804     10151
          HOUSES CODED AS BLOCKS. LOB-ROB FENCE NOT CONSIDERED.
X1      277        22      9805     10150       350       330       350
X3       10
X4       19    1108.5      9120    1109.3      9170      1120      9171      1120      9329      1109
X4     9330    1108.1      9380      1109      9400      1120      9401      1120      9459      1109
X4     9460      1108      9500    1107.2      9510    1107.9     10170      1108     10185      1110
X4    10195      1120     10196      1120     10429      1110     10430      1110     10480
GR   1109.3      9070    1106.7      9700      1106      9725      1104      9730      1104      9785

GR     1106      9805      1104      9850      1102      9855      1100      9865      1098      9870
GR   1096.1      9880    1094.1      9894    1092.1      9920    1090.8      9970    1091.1     10000
GR   1092.1     10100      1100     10120      1104     10130      1108     10138    1108.5     10150
GR     1110     10192      1110     10500
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ET    281.8                                     9.1       9.1                                9849     10126
          LOB-ROB HOUSED CODED AND FENCES NOT CONSIDERED
X1    281.8        18      9850     10125       480       480       480
X3       10
X4       13      1120      9131      1120      9279    1110.7      9280    1110.2      9320    1110.9
X4     9365      1120      9366      1120      9419    1110.6      9420      1110      9420      1110
X4    10180      1120     10181      1120     10499    1113.2     10500
GR   1110.3      9130    1108.5      9770      1109      9850      1108      9870      1100      9890
GR   1098.1      9895    1096.2      9898    1094.2      9900    1092.2      9910    1092.2      9920
GR   1093.3     10000    1094.2     10070    1096.2     10080    1098.1     10090      1100     10095
GR     1100     10105      1111     10125      1113     10501

NC     .045      .045      .035        .3        .5
ET      288                                     9.1       9.1                                9844     10246
          LOB-ROB ENCROACHED FOR EFFECTIVE FLOW THRU PEORIA AVE BRIDGE.
X1      288        23      9845     10230       620       620       620
X3       10
X4        3      1112      9630      1114      9550    1114.5     10245
GR   1114.3      9520    1110.6      9710      1112      9790      1114      9835      1114      9845
GR     1114      9857      1112      9863      1110      9880    1100.1      9895    1098.1      9905
GR   1096.1      9930    1094.1      9940    1094.1     10000    1094.1     10045    1096.1     10070
GR   1098.1     10080    1098.1     10110    1100.1     10155      1102     10195      1110     10212
GR     1112     10220      1114     10230    1116.0     10400

QT        5     13500     31000     41000     41000     75000
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ET      290                                     9.1         9.1                                 9851       10149
          DOWNSTREAM SIDE PEORIA AVE BRIDGE
        290        20      9852     10148       220         160        200
         10                                                                   1113.5       1115
X4        1      1114      9665
GR   1114.9      9350      1113      9852      1112        9855       1110       9860     1099.3       9865
GR   1097.3      9880    1095.3      9905    1093.3        9935     1093.3      10000     1093.3      10060
GR   1095.3     10070    1097.3     10090    1099.3       10130     1099.3      10135       1110      10140
GR     1110     10148      1110     10220      1112       10250       1114      10300       1116      10450

SB      0.9      1.56       2.9         0     222.2        10.9       3937       1.36       1096     1095.8
ET      291                                     9.11        9.11                                 9851      10149
          UPSTREAM SIDE PEORIA AVE BRIDGE.   BRIDGE PLANS 1 FOOT HIGHER THAN
          81 TOPO,  PLANS LOWERED 1 FOOT, 2 FOOT DEBRIS
X1      291        18      9852     10148       100         100        100      .906
X2                            1    1112.8    1114.0                                           .906
X3       10                                                                    1114       1117
X4        6    1093.6      9950    1115.6      9800      1114.3       9440    1114.1       9530     1114.3
X4     9590    1115.8      9750
BT      -13      9400    1115.3         0      9505      1114.1          0      9665       1114          0
BT        0      9666    1114.0         0      9667      1114.0          0      9852     1117.8          0
BT        0      9852    1118.1    1112.8     10148      1118.1     1112.8     10148     1117.8          0
BT        0     10200    1117.9         0     10220      1117.9          0     10460     1117.5          0
BT        0     10730      1117         0
GR   1115.6      9400      1114      9830      1112       9835       1110      9852     1099.3       9867
GR   1097.3      9882    1095.3      9910    1095.3       9990     1095.4     10000     1097.3      10110
GR   1099.6     10148      1100     10195      1102      10200       1104     10205       1112      10220
GR     1110     10240      1114     10255      1116      10350
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   05MAY04      16:11:44                                                                                PAGE   18


ET      293                                     7.1         9.1         9.1      9700     10450       9844      10216
X1      293        23      9862     10215       170         220        200
X3       10
X4       11    1115.6      9845    1115.2      9435       1130       9436       1130       9519     1114.5
X4     9520    1114.2      9600    1114.4      9650     1115.9       9790       1130       9791       1130
X4     9839    1115.8      9840
GR   1115.8      9265      1114      9862      1112       9870       1110      9875     1099.1       9897
GR   1097.1      9922    1095.1      9970    1095.1      10000     1097.1     10040     1097.1      10080
GR   1099.1     10110      1108     10125      1108      10150       1110     10200     1110.2      10215
GR     1110     10220      1110     10295      1112      10300       1114     10380     1115.3      10500
GR     1116     10630    1116.5     10700    1117.7      10900

NC     .045      .045      .035       0.1       0.3
ET      297                                     9.1         9.1                                 9844      10226
X1      297        16      9845     10225       400         400        400
X4       15    1115.6      9806    1115.9      9100       1130       9101       1130       9449     1115.6
X4     9450    1115.2      9580    1114.8      9690     1114.2       9710     1115.7       9750       1130
X4     9751      1130      9805    1115.6     10440       1116      10580     1116.8      10680     1117.1
X4    10730
GR     1116      9030    1115.5      9845      1114       9855       1112      9858       1110       9863
GR   1103.4      9880    1101.3      9900    1099.3       9940     1098.9     10000     1099.3      10080
GR   1101.3     10130      1110     10155      1112      10188       1114     10205     1115.3      10225
GR   1118.0     10755

ET      302                                     9.1         9.1                                 9874      10121
          1.3FT ADDED TO 1981 LOB TO MATCH 1983 TOPO.
X1      302        39      9875     10120       480         510        500

GR   1119.3      9070    1117.3      9100    1116.3       9180     1117.3      9260       1130       9261
GR     1130      9409    1117.9      9410    1117.9       9520       1130      9521       1130       9579
GR   1117.3      9580      1116      9640    1116.7       9650     1116.7      9700     1117.5       9730
GR     1130      9731      1130      9844      1116       9845     1114.7      9875       1114       9892
GR     1103      9922      1101      9930      1101      10050       1099     10060       1099      10082
GR     1118     10115    1119.1     10120      1118      10130       1116     10150       1116      10260
GR   1116.5     10320      1130     10321      1130      10389     1116.7     10390     1117.1      10420
GR     1117     10580    1117.5     10800      1118      11070     1119.6     11170

ET      305                                     9.1         9.1                                 9879      10111
          NEW X-SECTION.FOR DEFINITION OF TRANSITION TO HIGH VELOCITY X302
          2.4FT ADDED TO 1981 LOB TO MATCH 1983 TOPO.
X1      305        32      9880     10110       260         320        300
GR   1119.9      9160    1118.4      9180    1118.4       9310     1118.7      9460       1118       9530
GR     1118      9580    1118.7      9635      1130       9636       1130      9789     1118.4       9790
GR   1118.5      9880      1118      9885    1109.3       9890       1103      9930       1101       9960
GR   1100.6     10000      1101     10015    1101.1      10035       1103     10082       1105      10083
GR     1118     10105    1118.5     10110    1118.5      10160     1119.8     10210     1118.8      10310
GR   1119.8     10380    1119.8     10540      1119      10800     1119.1     10960       1120      11200
GR   1120.7     11450      1122     11530
   05MAY04      16:11:44                                                                                PAGE   19


ET      307                                     9.1         9.1                                 9889      10136
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          2.0FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
      307        33      9890     10135       200       160       200
       10
GR  1119.7      9150      1123      9290      1120      9310      1120      9400    1119.6      9490
GR    1118      9670      1116      9730      1116      9795    1115.7      9845    1114.8      9890
GR  1113.7      9895    1107.1      9915    1105.1      9925    1103.1      9945    1101.1      9955
GR  1101.1      9980    1101.7     10020    1101.1     10040    1101.1     10060    1101.5     10080
GR  1103.1     10095      1118     10125      1119     10135    1119.4     10200      1120     10260
GR  1120.2     10330      1120     10480      1120     10570    1112.1     10750    1121.7     10950
GR    1122     11000    1122.6     11150      1124     11700

ET   311.5                                     9.1       9.1                          9844     10271
          2.6FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
X1   311.5        36      9845     10270       430       430       450
X3      10
GR  1126.8      8200    1124.6      8500      1123      8530    1122.8      8650    1122.6      8700
GR  1119.2      9100      1121      9380      1120      9440      1118      9490    1116.7      9590
GR    1116      9690      1118      9755      1120      9760      1122      9775      1120      9845
GR  1111.1      9855    1107.1      9860    1107.1      9965    1106.2     10000    1105.1     10015
GR  1103.1     10035    1103.1     10200    1105.1     10210    1107.1     10235    1109.1     10240
GR  1105.1     10260    1116.4     10270    1117.2     10320      1116     10420      1118     10440
GR  1119.6     10490      1120     10510    1120.7     10660    1120.2     10900      1122     11000
GR  1122.8     11060

ET     314                                     9.1       9.1                          9694     10351
          1.7FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
X1     314        39      9695     10350       250       240       250
X3      10
GR  1125.9      8500    1123.7      8700    1122.4      8900    1121.7      9020    1121.4      9100
GR    1121      9300    1121.7      9380      1120      9460      1118      9490      1116      9505
GR    1114      9530    1113.5      9600      1112      9675    1111.4      9695    1110.7      9701
GR  1106.7      9735    1106.2      9780    1106.7      9840    1108.7      9900    1106.7      9920
GR  1104.7      9940    1106.7      9950    1108.7      9985    1110.7     10040    1111.7     10070
GR  1110.7     10085    1108.7     10150    1108.7     10220    1110.7     10270    1112.5     10300
GR  1110.7     10310    1110.7     10320    1116.6     10340    1117.3     10350      1118     10360
GR    1120     10410    1121.2     10580      1122     10720      1128     10750

ET     318                                     9.1       9.1                          9619     10411
X1     318        21      9620     10410       450       420       400
X3      10
      1124      9540      1124      9550      1122      9605      1120      9620    1118.5      9623
    1116.5      9640    1106.6      9660    1108.6      9700    1110.6      9725    1112.6      9800
    1113.6      9830    1112.6      9885    1112.6     10090    1110.6     10150    1110.4     10180
GR  1110.6     10210    1112.6     10250    1113.8     10300    1114.6     10360      1122     10410
GR    1124     10435

ET     323                                     9.1       9.1                          9429     10401
X1     323        32      9430     10400       500       400       500
X3      10
GR    1126      9420      1126      9430      1124      9460      1122      9480    1120.2      9500
GR  1118.4      9505    1116.6      9510    1114.6      9530    1114.6      9590    1116.6      9620
GR  1116.6      9670    1114.6      9695    1110.6      9696    1109.3      9720    1110.6      9740
1
   05MAY04      16:11:44                                                                          PAGE   20


GR  1112.6      9770    1113.5      9800    1114.6      9835    1116.1      9890    1114.6     10020
GR  1116.6     10120    1116.6     10160    1114.6     10200    1112.6     10230    1114.6     10255
GR  1112.6     10265    1112.6     10340    1114.6     10345      1126     10390    1126.2     10400
GR    1126     10440      1124     10460

ET     328                                     9.1       9.1                          9729     10270
          FIRST CHIMP X-SECT FAIRED INTO NATURAL RIVERBED AT X323.
          NEW X-SECTION TO DEFINE LOB DUMP FILL INSIDE CITY SERVICE AREA.

          PUSHING DS.
X1     328        37      9730     10265       600       460       500
CI   10000    1111.6   500.035         1         1      -440
X3      10   1111.56
X4       3      1126      9761      1126      9770      1126     10230
GR    1126      9110    1125.7      9225      1140      9226      1140      9309    1125.6      9310
GR    1126      9340      1132      9345    1133.2      9355      1132      9360      1130      9365
GR    1128      9390    1127.3      9420    1126.3      9480      1126      9520      1124      9535
GR    1120      9550      1120      9575      1122      9635      1126      9730      1122      9760
GR    1120      9785      1114      9835      1112      9865      1112      9895      1114      9925
GR    1116      9945    1116.6      9980    1117.6     10050      1116     10070      1116     10130
GR    1114     10165      1114     10210      1116     10225      1126     10255    1127.1     10265
GR    1126     10300      1126     10350

      330                                     9.1       9.1                          9820     10260
      330        25      9830     10200       200       200       200
CI   10038    1110.9   175.035         1         1      -340
X3      10
X4       2      1126      9850      1126      9864
GR    1132      9360      1130      9375      1128      9400    1127.5      9420      1126      9540
GR    1125      9625      1124      9640      1124      9750      1122      9830      1120      9865
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GR      1114       9895       1112       9900       1112       9925       1114       9945       1116       9970
        1118      10025       1118      10060       1116      10080       1116      10120       1114      10145
        1114      10165       1120      10185       1126      10192     1127.5      10200       1126      10289

ET       334                                         9.1        9.1                                 9840      10210
           330FT BOTTOM WIDTH CHANNEL TO D.S. GRAND AVE BRIDGE X345.
           LOB HOUSES NOT CODED.  ALONG SOUTH BORDER ROAD.  ROB ENCR AT GOLF BLK
           WALL END OF SMALL CHANNEL TO GRAND AVE BRIDGES.  LOB ENCR AT BRIDGE
           EXPANSION.
X1       334         32       9850      10170        400        400        400
CI     10025     1112.1    400.035          1          1       -330
X3        10     1112.1
GR    1135.9       7150     1135.4       7320       1134       7450       1132       7590     1130.8       7620
GR      1131       7970     1130.5       8300     1130.2       8510       1130       8660     1129.5       8730
GR      1129       9000       1129       9130     1128.5       9400       1128       9500     1128.2       9655
GR      1128       9770     1128.5       9850       1128       9855       1120       9865     1113.2       9880
GR      1114       9915       1116       9940     1116.6       9970       1118      10070     1117.5      10100
GR      1118      10120       1120      10135       1128      10170     1127.5      10240     1126.4      10410
GR      1126      10520     1127.4      10565
1
   05MAY04      16:11:44                                                                                PAGE   21


ET       337                                         9.1        9.1                                 9855      10225
X1       337         64       9860      10130        300        300        300
CI     10040     1113.2    300.035          1          1       -330
X3        10
GR    1135.7       7540       1134       7650       1132       7650       1132       7680     1132.4       7750
GR      1150       7751       1150       7819     1132.8       7820       1132       7880     1131.9       8010
GR      1150       8011       1150       8499     1130.3       8500     1130.2       8660       1150       8661
GR      1150       8749       1130       8750     1129.7       8835       1150       8836       1150       8999
GR    1129.6       9000     1129.4       9085       1150       9086       1150       9169       1129       9170
GR    1129.6       9190       1150       9191       1150       9259       1129       9260     1128.5       9310
GR    1128.3       9350       1150       9351       1150       9429     1128.9       9430     1128.7       9455
GR      1150       9456       1150       9559     1127.7       9560     1127.9       9580     1127.6       9650
GR      1150       9651       1150       9679     1127.7       9680     1127.7       9760     1127.7       9790
GR      1150       9791       1150       9829     1127.9       9830       1128       9855     1129.2       9860
GR      1128       9870       1116       9900     1114.3       9905       1116       9920     1116.6       9980
GR      1118      10085       1120      10095       1132      10125     1132.6      10130       1132      10135
        1130      10160       1128      10285       1130      10298       1130      10360

      340.5                                         9.1        9.1                                 9860      10230
X1    340.5         41       9880      10115        350        350        350
CI    10045     1114.4    350.035          1          1       -330
X3       10
GR    1135.7       7430       1134       7540       1132       7570       1132       7600     1132.4       7660
GR      1150       7661       1150       7749     1132.8       7750       1132       7930       1150       7931
GR      1150       8649     1130.2       8650     1130.2       8720       1150       8721       1150       9589
GR    1128.8       9590     1128.8       9690       1150       9691       1150       9779     1128.5       9780
GR    1128.4       9830     1129.7       9880       1128       9885       1118       9910       1118       9925
GR      1119       9950       1118       9960     1117.3       9990       1116      10015       1115      10025
GR      1116      10040       1118      10065       1120      10080       1130      10105     1131.5      10115
GR      1130      10120     1129.2      10180     1129.3      10300       1130      10315       1132      10325
GR    1130.5      10510

ET       342                                         9.1        9.1                                 9870      10235
X1       342         50       9875      10135        150        150        150
CI     10050     1114.9    150.035          1          1       -330
X3       10
GR    1135.7       7450       1134       7560       1132       7580     1132.4       7650       1150       7651
GR      1150       7779     1132.8       7780     1132.5       7879       1150       7880       1150       8049
GR    1131.8       8050     1131.7       8110       1150       8111       1150       8409     1131.5       8410
GR    1131.6       8540       1150       8541       1150       8649     1131.1       8650     1131.1       8860
GR      1150       8861       1150       8979     1130.8       8980     1130.5       9100       1150       9101
GR      1150       9249     1130.5       9250     1130.2       9550       1150       9551       1150       9599
GR    1130.1       9600     1128.8       9650       1129       9700       1150       9701       1150       9779
GR    1128.6       9780     1129.7       9875       1128       9885       1120       9915       1120       9950
GR    1119.1       9960       1118      10040       1116      10065     1115.2      10075       1116      10090
GR      1130      10130     1131.5      10135       1130      10145       1130      10330       1132      10360

ET       343                                         9.1        9.1                                 9840      10220
1
   05MAY04      16:11:44                                                                                PAGE   22


           LOB     CODED AS LT BNK ON DIKE TOP.
X1       343         29       9870      10155        100        100        100
CI     10025     1115.2    100.035          1          1       -330
         10
      1135.7       7450       1134       7560     1132.6       7600     1132.5       7900     1131.9       8300
      1131.7       8650     1131.6       9000     1130.8       9300       1129       9670       1129       9860
GR      1132       9861     1135.2       9870       1132       9880       1122       9905       1120       9915
GR      1120       9950     1119.1       9975       1120       9985       1120      10015       1118      10070
GR      1116      10090     1115.7      10100       1116      10110       1118      10122       1132      10147
GR    1132.5      10155       1132      10160       1132      10345       1134      10365
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NC    0.045     0.045     0.035       0.5       0.7
      344.9                             9.1       9.1                                   9822      10179
          DROP STRUCTURE DELETED-CONCRETE INVERT UNDER BRIDGES
      344.9         4      9823     10178       110       260       190
CI                                                        .01
X3       10
GR     1132      9823    1116.3      9835    1116.3     10165      1132     10178

ET     345.2                             9.1       9.1                                   9822      10179
          DOWNSTREAM GRAND AVE DUAL HIGHWAY BRIDGE
X1     345.2         4      9823     10178        30        30        30
X3       10                                                                   1138.3    1138.3
GR     1132      9823    1116.3      9835    1116.3     10165      1132     10178

SB      1.1      1.56       2.9         0       330      36.5      5319       .72      1117    1116.3
ET     346.2                            9.11      9.11                                   9822     10179
          UPSTREAM DUAL HIGHWAY BRIDGE AT GRAND AVE.CODED AS SINGLE BRIDGE WITH
          2FT DEBRIS.1983 TOPO 1.5FT LOWER FOR DECK WAS USED
          THAN 1981 TOPO DECK-PLANS LOWERED TO FIT TOPO.RR WEIR FLOW CONTROLS.
          GRAND AVE & RR BRIDGE HAVE  1:1 SIDES, GROUTED INVERT.
X1     346.2         4      9823     10178       100       100       100                                0
X2                             1    1134.3    1141.9
X3       10                                                                   1138.3    1138.3
BT       -2      9823    1141.9    1134.3     10178    1141.9    1134.3
GR     1132      9823     1117.      9835      1117     10165      1132     10178

ET    346.62                            9.1       9.1                                   9822     10188
          DOWNSTREAM SIDE SANTA FE RR BRIDGE.NO FLOW PERMITTED BETWEEN BRIDGES
X1    346.62         4      9823     10187        42        42        42                                0
X3       10                                                                   1140.5    1140.5
GR     1136      9823    1117.5      9840    1117.5     10170      1135     10187

ET    346.72                            9.1       9.1                                   9822     10188
          JUST INSIDE DOWNSTREAM SIDE OF SANTA FE RR BRIDGE. NO DEBRIS APPLIES.
X1    346.72        21      9823    100187        10        10        10                                0
BT       -4      9823    1141.4    1135.8      9942    1141.4    1135.8      9947    1141.4    1134.9
BT             10187    1141.4    1134.9                                                                0
GR     1136      9823    1117.5      9840    1117.5      9885    1135.8      9885    1135.8      9886
GR   1117.5      9886    1117.5      9941    1135.8      9942    1134.9      9947    1117.5      9948
GR   1117.5     10061    1134.9     10062    1134.9     10067    1117.5     10068    1117.5     10121
GR   1134.9     10122    1134.9     10127    1117.5     10128    1117.5     10170      1135     10187
       1141     10187
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ET     346.9                            9.1       9.1                                   9822     10188
          JUST INSIDE UPSTREAM SIDE OF SANTA FE RR BRIDGE.4FT DEBRIS EACH PIER.
X1     346.9        22      9823     10187        18        18        18                                0
BT       -4      9823    1141.4    1135.8      9942    1141.4    1135.8      9947    1141.4    1134.9
BT             10187    1141.4    1134.9
GR     1141      9823      1136      9823    1117.7      9840    1117.7      9884    1135.8      9884
GR   1135.8      9889    1117.7      9889    1117.7      9939    1135.8      9942    1134.9      9947
GR   1117.7      9950    1117.7     10059    1134.9     10060    1134.9     10069    1117.7     10070
GR   1117.7     10119    1134.9     10122    1134.9     10129    1117.7     10130    1117.7     10170
GR   1117.5     10187      1141     10187

ET      347                            9.1       9.1                                   9822     10188
          UPSTREAM SANTA FE RR BRIDGE.  NORMAL BRIDGE ROUTINE USED TO BETTER
          MODEL DUAL ELLC.  4 FEET DEBRIS.
          NEW TWO SPAN REPLACES WOOD TRESTLE
X1      347        10      9823     10187        10        10        10                                0
X3       10                                                                   1138.6    1141.4
GR     1140      5500      1138      5600    1137.7      6000    1137.7      8300    1139.8      9814
GR     1141      9823    1117.7      9840    1117.7     10170      1141     10187      1141     11188

NC     .045      .045      .035        .1        .3
ET      349                            9.1       9.1                                   9809     10214
          PILOT CHANNEL TO X-358; BW=330FT, SS=1:1
X1      349        45      9810     10170       180       220       200
CI    10000    1119.1   275.035         1         1      -330
X3       10
X4        2      1135      9810      1124     10170
GR     1140      5470    1139.8      5600    1138.8      5800    1139.2      6070    1139.2      6300
GR   1139.1      6530      1138      6760    1137.2      7350    1137.1      7600    1136.7      7750
GR     1136      7800    1135.2      7900    1135.3      8130    1134.8      8420      1134      8500
GR     1134      8540    1133.7      8580    1133.5      8930      1134      9100    1134.3      9250
GR   1131.8      9380      1132      9450      1132      9525    1131.5      9550      1132      9575
GR   1131.3      9690      1132      9900      1134      9925      1138      9935      1136      9950
       1134      9970      1132      9980      1124     10005      1122     10025    1121.1     10065
       1122     10115      1124     10200      1141     10215      1128     10260      1128     10290
GR     1130     10325      1134     10345    1133.8     10380    1133.5     10540      1140     10550

ET      352                            9.1       9.1                                   9809     10180
          LOB ENCR FOR NO WEIR FLOW. ROB TERMINATED AT SUN CITY BLOCK FENCE.
X1      352        48      9810     10160       230       400       300
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CI      9990     1121.3    300.035        1          1       -330
          10
          2       1132       9810       1124      10160
        1142       5360     1141.2       5900     1141.4       6100       1141       6350     1140.3       6580
GR      1140       6750     1139.8       6800     1139.4       7100     1138.7       7400       1138       7730
GR      1138       7750       1150       7751       1150       7809     1137.7       7810     1136.8       7880
GR    1136.1       7950       1150       7951       1150       8129       1136       8130       1136       8250
GR    1135.6       8660     1134.8       8850     1135.2       9000     1135.5       9200     1135.4       9400
GR    1133.9       9420     1133.3       9640       1132       9715       1132       9925     1132.2       9960
GR      1132       9965       1122       9980     1121.3      10000       1122      10025       1124      10115
GR      1124      10170       1126      10180       1141      10190       1141      10200       1128      10395
GR      1136      10415     1137.4      10425       1136      10440       1134      10530       1134      10600
GR      1132      10730       1132      10750       1140      10770
1
   05MAY04      16:11:44                                                                                  PAGE   24


ET       358                            7.1        9.1        9.1       9250      10720       9770      10400
           UPSTREAM END OF PILOT CHANNEL
X1       358         43       9875      10160        400        650        600
CI                                                              .01
GR      1142       6850     1141.2       7000     1140.6       7230     1140.2       7500       1140       7630
GR    1139.7       7700     1138.8       8100       1138       8150     1136.8       8300     1137.8       8550
GR      1150       8551       1150       8879     1137.3       8880       1136       8900     1136.8       9100
GR    1135.7       9570     1135.3       9790       1135       9875       1134       9895       1132       9920
GR      1130       9935       1128       9950       1126       9970       1126      10085     1125.6      10100
GR      1126      10135       1136      10155     1137.5      10160       1128      10180       1128      10265
GR      1130      10270       1132      10290     1136.6      10330       1134      10430     1134.4      10470
GR    1134.4      10620       1136      10840     1136.6      10840     1136.6      10950       1137      11200
GR    1137.6      11370       1139      11400       1142      11480

ET       365                            7.1        9.1        9.1       8500      10770       9650      10600
X1       365         45       9880      10200        700        700        700
GR      1144       6900     1143.7       7040     1143.5       7210       1143       7280     1142.4       7550
GR      1142       7760     1141.6       7850     1141.3       8100       1140       8540       1140       8650
GR      1140       8900       1140       9030       1140       9360       1138       9450       1138       9680
GR    1137.3       9740       1138       9770       1138       9830     1137.3       9855       1137       9880
GR      1136       9885     1134.1       9890     1134.1       9960     1132.1       9980     1130.1      10005
GR    1128.1      10010     1127.5      10040     1128.1      10085     1128.1      10155     1130.1      10165
        1136      10200       1136      10300     1137.3      10360     1136.3      10420     1136.6      10530
        1138      10680     1138.7      10840     1139.8      11050     1139.4      11270     1139.3      11390
        1140      11410     1141.2      11430     1140.2      11550     1140.4      11970       1142      12100

ET       370                            7.1        9.1        9.1       8530      10800       9640      10350
X1       370         45       9855      10260        430        500        500
GR      1144       7550     1143.4       7770     1142.5       8130       1142       8420     1141.8       8530
GR      1142       8780       1142       9100     1141.4       9400       1140       9515       1138       9540
GR      1136       9545       1134       9555       1134       9565       1136       9575       1138       9610
GR      1140       9620     1144.1       9640       1142       9670       1140       9700       1140       9750
GR      1140       9845     1140.5       9855       1140       9870       1138       9875       1136       9885
GR    1134.1       9940     1132.1       9970     1130.1      10000     1128.1      10005     1127.4      10025
GR    1128.1      10045     1129.1      10120     1130.1      10165     1132.1      10170     1134.1      10185
GR      1136      10205       1138      10245       1139      10260     1139.2      10350       1138      10410
GR      1138      10550       1140      10600     1141.1      10900       1142      11100       1143      11300

ET       373                            7.1        9.1        9.1       8550      10700       9550      10250
X1       373         43       9855      10190        420        300        330
GR      1146       7620     1144.5       7670       1144       7800     1143.9       7900     1143.6       8160
GR    1143.2       8350     1142.1       8760       1142       8950     1142.2       9000     1142.1       9200
GR      1142       9350       1142       9400       1140       9420       1138       9450       1138       9468
GR      1136       9470       1134       9495       1134       9505       1136       9515       1138       9518
GR      1140       9545       1142       9550     1142.9       9610       1142       9630     1140.2       9710
GR      1140       9760       1140       9855     1134.1       9865       1133       9925     1132.1       9965
GR    1130.1       9975     1128.1       9985     1127.2      10000     1128.1      10025     1130.1      10080
GR    1132.1      10140       1140      10180       1141      10190       1140      10240       1140      10540
GR      1140      10640       1142      10660     1144.4      10670
1
   05MAY04      16:11:44                                                                                  PAGE   25


ET       377                            7.1        9.1        9.1       9300      10700       9500      10230
           DOWNSTREAM END OF CHANNELIZATION FROM T-BIRD ROAD.
           DS BREAKOUT ENCR HERE.
X1       377         35       9850      10190        400        310        400
GR    1146.7       7850     1144.8       7900       1144       8150     1143.4       8480     1142.8       8720
GR    1142.3       8930     1142.2       9150       1142       9210       1143       9280       1142       9310
GR      1140       9320       1138       9330       1138       9400       1140       9450     1141.8       9520
        1142       9521     1142.5       9565       1142       9650     1141.5       9710       1142       9755
        1143.8     9850       1142       9855       1140       9860     1132.1       9930     1130.1       9960
        1128.5     10000     1130.1      10070       1142      10185     1143.9      10190       1144      10270
GR      1142      10320     1141.1      10420       1142      10600       1144      10930       1146      11330

ET       384                            7.1        9.1        9.1       9340      10240       9829      10240
X1       384         22       9830      10195        750        730        700
X3        10
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GR   1148.2      8240      1146      8285    1144.7      8660    1144.6      8850      1144      9020
       1146      9060      1147      9080      1146      9120      1142      9175    1140.9      9230
       1142      9260      1144      9270    1145.4      9340      1146      9680    1147.0      9830
     1146.0      9845    1131.8      9945    1129.8     10030    1129.8     10045    1130.4     10113
GR   1146.0     10195    1147.4     10240

ET      388                                     9.1       9.1                          9819     10201
X1      388        33      9820     10200       400       400       400
X3       10
GR     1149      8440    1148.2      8490      1148      8520    1146.4      8750    1146.3      9100
GR     1146      9130      1146      9165      1148      9190      1150      9200      1155      9210
GR     1150      9220      1142      9235    1141.2      9260      1144      9290      1146      9320
GR   1147.7      9390    1147.2      9550      1146      9685      1144      9690    1143.5      9735
GR     1143      9755      1154      9790      1152      9800    1150.0      9810      1148      9820
GR   1140.0      9875    1132.0      9930    1130.3     10000    1130.0     10105    1140.0     10152
GR     1148     10180      1148     10200    1148.1     10260

ET    391.5                                     9.1       9.1                          9719     10191
X1    391.5        30      9720     10190       350       350       350
X3       10
GR   1149.9      8660      1148      8680    1149.2      8700      1148      8900    1147.1      9210
GR     1148      9220      1148      9240      1147      9270      1150      9310      1154      9320
GR     1150      9330      1146      9335    1144.5      9400      1146      9450      1148      9470
GR   1148.3      9510      1146      9570      1144      9580      1146      9655      1156      9680
GR     1156      9720      1140      9855    1133.0      9920    1132.2      9950    1131.7     10000
GR   1131.8     10075    1140.0     10130      1146     10148    1148.0     10190      1148     10240

ET      395                                     9.1       9.1                          9734     10191
          LOB SPLIT FLOW OF 800 CFS ONLY OK TO X-384
          DOWNSTREAM END OF DEVELOPERS CHANNEL THRU T BIRD BRIDGE
X1      395        40      9735     10190       325       375       350
X3       10
GR     1154      7900      1152      8350    1151.3      8770      1150      8825      1149      8950
GR   1148.1      9120      1148      9140      1148      9300    1149.7      9340      1150      9355
GR   1157.6      9390      1156      9400      1150      9420      1146      9430    1145.6      9490
GR     1146      9510      1146      9540      1148      9640      1150      9715    1151.3      9735
GR     1150      9750      1148      9777      1144      9795      1140      9822      1136      9855
GR   1133.5      9890    1132.2     10000    1134.1     10065    1138.1     10092    1140.0     10112
1
   05MAY04      16:11:44                                                                          PAGE   26

     1148.0     10135      1150     10190      1152     10210    1153.4     10220      1152     10240
GR     1150     10250      1148     10285    1147.5     10310      1148     10530    1150.3     10550

ET      402                          7.1       9.1       9.1      9150     10351      9804     10191
X1      402        18      9805     10190       670       710       700
GR     1152      9150      1150      9180      1150      9210    1150.1      9600    1150.7      9790
GR     1150      9805    1140.0      9865    1134.4      9905    1134.2     10000    1134.7     10115
GR   1136.0     10120    1140.0     10140    1150.0     10190    1151.4     10265    1151.8     10300
GR     1152     10310      1154     10350      1154     10360

NC     .045      .045      .035        .3        .5
ET      406                          7.1       9.1       9.1      9500     10300      9804     10191
X1      406        22      9805     10190       390       410       400
GR     1154      8975      1154      9000      1152      9040      1150      9055      1150      9300
GR   1151.3      9350      1152      9480      1152      9600    1152.0      9805      1150      9815
GR   1135.1      9900    1135.5     10000    1135.1     10080    1140.0     10125    1150.0     10190
GR   1152.0     10250    1152.2     10310    1152.8     10340    1152.4     10370    1152.2     10390
GR     1152     10440    1152.4     10470

ET      409                          7.1       9.1       9.1    9716.7   10006.0    9716.7   10006.0
          D.S. SIDE THUNDERBIRD RD.BRIDGE.
X1      409        21      9830     10155       550       150       300       .89
GR     1156      8800      1152      9150      1152      9420      1154      9520      1154      9775
GR     1160      9830    1138.1      9880    1136.1      9900    1135.3     10000    1136.1     10100
GR     1160     10155      1150     10240      1144     10380      1144     10410      1152     10500
GR   1152.5     10800      1152     10870    1151.4     11070    1151.5     11320    1150.8     11570
GR   1150.7     11700

ET   409.01                                     9.1       9.1                          9747.2   10010.8
          JUST INSIDE DOWNSTREAM SIDE OF T BIRD NORMAL BRIDGE. NO PIER DEBRIS
          BRIDGE PLANS 0.8 TO 1.0 FT HIGHER THAN 1981 TOPO.
          PLAN ELEVATION ADJUSTMENT TO TOPO.
X1   409.01        32      9852     10148         1         1         1       .89                        0
X3       10
GR   1157.2      8900    1156.5      9130    1156.7      9370      1158      9500      1160      9600
GR   1161.5      9852      1138      9885      1136      9900    1135.9      9923    1135.9      9924
GR   1135.9      9925    1135.9      9927    1135.2      9998    1135.2      9999    1135.3     10000
GR   1135.4     10002    1135.4     10073    1135.4     10074    1135.3     10076    1135.2     10077
       1136     10100      1138     10105    1160.6     10148      1160     10230      1158     10350
       1156     10440      1154     10530      1152     10660    1150.4     10840    1151.4     11070
GR   1151.7     11340    1151.9     11700

ET   409.82                                     9.1       9.1                          9750.5   10014.0
SB     1.05      1.56       2.9         0    167.33        18   3913.31      2.44    1135.6     1135.2
          NORMAL BRIDGE.  JUST INSIDE UPSTREAM SIDE THUNDERBIRD BRIDGE.
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          2 FEET DEBRIS.  DECK SLOPES 0.8 FEET TOWARDS D.S. SIDE-INCLUDED.
          TOPO ELEV USED.  BT FOR BRIDGE.
     409.82        30      9852     10148        81        81        81       .89
          0         0         1    1155.4    1163.5         0         0         0       .89         0
X3       10
BT       -5      9852    1163.7    1155.3      9922    1163.5    1155.6      9997    1163.3    1155.6
BT            10072    1163.1    1155.4     10148    1163.0    1154.6
GR   1157.2      8930    1156.5      9140    1156.7      9370      1158      9500      1160      9600
GR   1161.5      9852      1138      9890      1136      9900    1135.9      9922    1135.9      9923
1
   05MAY04      16:11:44                                                                          PAGE   27

GR   1135.9      9927    1135.9      9928    1135.8      9997    1135.7      9998    1135.7     10002
GR   1135.6     10003    1135.8     10072    1135.7     10073    1135.7     10077    1135.6     10078
GR     1136     10095    1160.6     10148      1160     10260      1158     10380      1156     10470
GR     1154     10570      1152     10700    1150.4     10880    1151.7     11380    1151.9     11730

ET      410                                     9.1       9.1                         9659.2    9922.8
          JUST UPSTREAM OF THUNDERBIRD BRIDGE.  ROB MAY BLOCK RT APPR.
          WEIR FLOW
X1      410        26      9852     10148       18        18        18       .89

X3       10
GR   1161.7      8100    1160.2      8300      1159      8500    1157.8      8720    1157.2      8920
GR   1156.5      9150    1156.7      9400      1158      9500      1160      9600      1160      9700
GR     1160      9750      1160      9830    1155.3      9852    1138.1      9890    1136.1      9905
GR   1135.7     10040    1136.1     10095    1158.0     10148      1160     10200      1154     10570
GR     1152     10600    1153.8     10680    1152.2     11000    1152.3     11250    1152.5     11520
GR   1152.2     11750

NC     .045      .045      .035        .1        .3
ET      412                                     9.1       9.1                          9824     10166
X1      412        28      9825     10165       100       260       200
X3       10
GR   1161.7      8200    1160.2      8400      1159      8600    1157.8      8800    1157.2      9000
GR   1156.5      9200    1156.7      9450      1158      9580      1160      9590      1160      9595
GR     1160      9600    1159.7      9825      1158      9845    1137.1      9910    1136.8     10020
GR   1137.1     10085      1156     10155    1156.1     10165      1156     10190      1154     10650
GR     1154     10655    1154.9     10740    1155.4     10980      1156     11140    1156.5     11210
       1158     11370      1160     11530      1162     11600

       418                            7.1       9.1       9.1      9800     10190      9804     10206
X1      418        29      9805     10205       550       700       600
GR     1161      8400    1160.2      8550      1159      8630      1158      8770    1158.8      8800
GR     1158      8900      1158      9140    1157.2      9170      1158      9580      1158      9762
GR     1160      9770      1160      9805    1138.1      9930    1138.1      9970    1138.4     10000
GR   1138.1     10070    1140.1     10085      1146     10126      1148     10135      1150     10145
GR     1160     10205      1157     10360      1157     10375      1157     10435      1157     10455
GR   1157.3     10540      1158     10770      1160     10960      1162     11250

ET      423                                     9.1       9.1                          9789     10211
          UPSTREAM START OF CHANNEL TO X377-370
X1      423        25      9790     10210       460       600       500
GR   1161.9      8300      1161      8620      1160      8670    1158.2      8850    1157.8      9000
GR   1159.0      9300    1159.3      9500    1159.6      9700      1160      9760      1162      9770
GR   1161.4      9790      1160      9810      1138      9950    1137.6     10000      1138     10072
GR     1152     10085      1144     10110      1150     10142      1156     10165      1160     10195
GR   1162.0     10210    1159.7     10480    1160.0     10520      1162     10580      1170     10630

ET      425                                     9.1       9.1                          9799     10211
          DOWNSTREAM END OF NATURAL STREAMBED TO SKUNK CREEK CHANNELIZATION.
          16FPS ERODES RIVER BED TO MODIFIED GR DIMENSIONS-TIED TO X423 INVERT.
X1      425        14      9800     10210       130       170       200
X4        3    1161.4      8700    1160.8      8250    1160.2      8650
GR   1162.5      8170      1160      8810    1158.6      8850    1158.0      9100    1158.0      9150
GR   1158.8      9630    1159.4      9800      1158      9825      1136      9970      1138     10060
GR     1160     10200    1162.0     10210      1162     10420      1170     10440
1
   05MAY04      16:11:44                                                                          PAGE   28

ET      428                            7.1       9.1       9.1      8000     10500      9809     10229
          ASSUMED 2FT ERODES FROM BOTTOM DUE TO X423 ORIGINAL DROP INLET.
X1      428        33      9810     10228       300       300       300
GR     1163      8000      1162      8030    1161.3      8050    1161.3      8300    1161.5      8520
GR   1161.3      8730    1161.5      8930    1161.8      8950    1159.1      9000    1159.2      9150
GR     1160      9300    1160.3      9550    1161.8      9730    1161.4      9810      1160      9828
       1152      9842      1150      9886      1140      9948      1138      9980    1137.9     10000
       1138     10038      1140     10092      1150     10142      1156     10180      1160     10202
       1164     10228    1161.3     10350      1162     10460      1180     10500      1180     10590
GR     1170     10680      1162     10690      1162     11040

ET      434                            7.1       9.1       9.1      8150     10600      9901     10326
X1      434        38      9902     10325       600       600       600
GR   1163.8      7750    1162.5      7770    1162.8      7900      1163      8060    1162.8      8260
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GR    1163.2      8460     1163.4      8650     1163.3      8880     1162.9      9090     1163.2      9250
        1162      9700       1163      9800       1162      9890       1160      9902       1150      9930
        1148      9940       1148      9980       1148     10012       1140     10150       1138     10158
        1140     10170       1142     10205       1160     10302       1164     10325       1164     10515
GR      1172     10535       1172     10620       1164     10640       1162     10670       1160     10700
GR      1160     10740       1164     10770       1162     10810       1162     11480     1163.2     11530
GR      1164     11615       1166     11620     1167.7     11850

ET       440                           7.1         9.1         9.1      8600     11200      9919     10359
X1       440        40      9920     10358         600         600       600
GR      1166      6700       1165      7220     1164.8      7320       1164      7350     1163.6      7380
GR      1164      7700     1164.6      8000     1164.8      8200       1165      8380       1165      8600
GR    1164.8      8960     1166.4      9000     1164.7      9030     1164.8      9300     1164.2      9420
GR    1165.1      9600       1165      9810     1165.8      9845       1166      9920       1160      9935
GR      1150      9945     1149.8      9960       1150      9975       1152     10016       1152     10025
GR      1140     10095       1140     10190       1142     10228       1166     10358       1166     10365
GR      1164     10412       1164     10422       1166     10442       1166     10452     1165.3     10650
GR      1166     10700     1166.9     10980       1168     11030       1168     11220     1168.3     11250

ET     443.2                           7.1         9.1         9.1      8900     11200      9939     10386
X1     443.2        49      9940     10385         330         330       320
GR      1169      6800       1168      6840       1166      7050     1165.5      7320     1165.8      7520
GR    1165.7      7780     1165.4      8000     1165.6      8210     1165.8      8450     1165.7      8610
GR    1167.7      8650       1167      8700     1166.4      9030     1166.4      9200       1166      9430
GR    1166.3      9600     1166.7      9830       1166      9850       1166      9860       1166      9940
GR      1160      9950       1152      9960     1150.1      9968       1152      9985       1154     10050
GR      1152     10062       1150     10070       1144     10110     1140.9     10118     1140.5     10180
GR    1141.5     10235       1150     10295       1160     10350       1170     10385       1170     10395
GR      1169     10400       1168     10432       1171     10520       1164     10560       1164     10690
GR      1166     10710       1166     10760     1166.6     10840       1168     11180       1168     11380
GR      1168     11450       1170     11800       1172     12200     1172.4     12600

ET     449.1                           7.1         9.1         9.1      9500     11200      9937     10501
X1     449.1        36      9938     10500         600         580       590
GR      1170      8920     1169.5      8950     1169.5      9200     1169.1      9380     1168.8      9580
GR    1168.5      9780       1168      9880     1168.2      9895       1168      9925       1168      9930
GR      1169      9938       1168      9945     1153.4      9988     1153.4     10005       1166     10038
GR    1167.9     10055       1166     10074       1154     10142     1152.6     10150     1152.3     10220
GR      1154     10260       1152     10310       1153     10390       1160     10425       1170     10470
1
   05MAY04      16:11:44                                                                                PAGE   29

GR    1170.8     10500       1170     10620       1168     10628       1168     11080     1168.4     11300
GR      1168     11510       1167     11580       1168     11680       1170     11810       1172     12200
GR    1172.4     12350

ET     451.0                           7.1         9.1         9.1                11200      9909     10460
X1     451.0        39      9910     10460         200         120       190
GR    1172.5      8450       1172      8470     1171.7      8700     1171.5      9000     1170.6      9200
GR      1170      9470     1169.6      9620       1169      9800       1170      9830       1170      9910
GR    1167.9      9925     1163.9      9935     1163.9      9960     1161.9      9970     1153.9     10000
GR    1153.9     10015     1155.9     10030     1157.9     10070     1167.9     10100     1167.9     10180
GR    1157.9     10190     1155.9     10260     1154.4     10290     1155.9     10325     1159.9     10340
GR    1161.9     10370     1168.0     10450       1170     10460     1170.5     10550       1170     10680
GR      1168     10760       1168     11070     1168.4     11330       1168     11510       1167     11580
GR      1168     11680       1170     11810       1172     12200     1172.4     12350

NC     0.045     0.045     0.035        .2         .4
ET     8.655                           9.1         9.1         9.1                           9820     10225
          CONFLUENCE OF SKUNK CREEK AND NEW RIVER EQUALS NEW RIVER X-SECTION
          451.00 LO-FLOW
X1     8.655        36     9581.4   10224.3         950         375       690         0         0         0
X3        10
GR    1173.9    8649.5     1172.8    8725.6     1173.6    8761.4     1172.8    8805.7     1171.9    8882.4
GR    1171.9    8973.3     1171.7    9029.3     1170.9    9157.1     1170.5    9250.0     1170.8    9322.0
GR    1170.3    9369.5     1169.5    9443.6     1169.3    9488.5     1171.5    9503.3     1167.1    9548.1
GR    1171.6    9581.4     1166.9    9605.5     1161.4    9624.0     1157.9    9660.0     1156.6    9716.3
GR    1155.1    9744.7     1156.1    9761.1     1155.3    9864.2     1155.3    9905.7     1156.2    9954.8
GR    1156.3   10000.0     1156.3   10071.0     1156.7   10091.4     1155.7   10121.5     1155.7   10154.7
GR    1164.5   10193.7     1171.2   10224.3     1172.3   10244.2     1171.2   10247.0     1171.1   10299.3
GR    1170.6   10403.3

NC                              .1         .3
QT         5      2700       8000      12000      12000      32000
ET                                        9.1                           9762.5    10213.5
X1     8.731        45     9762.5   10213.5         400         400       400
X3        10
GR    1174.8    8627.0     1174.1    8663.6     1172.6    8666.7     1174.4    8670.4     1172.1    8683.8
GR    1170.8    8831.8     1170.4    9040.0     1170.0    9196.9     1168.3    9265.9     1167.0    9305.7
GR    1166.8    9321.0     1173.5    9346.0     1167.4    9377.8     1160.3    9401.7     1156.9    9425.5
GR    1157.6    9463.0     1156.3    9473.2     1158.8    9489.1     1166.0    9510.2     1169.2    9519.8
GR    1168.9    9553.9     1169.2    9595.9     1168.6    9640.2     1168.3    9678.4     1173.6    9692.1
GR    1171.9    9727.6     1171.4    9748.3     1172.8    9762.5     1172.6    9771.0     1167.8    9795.5
GR    1160.0    9831.2     1157.1    9844.0     1156.1    9894.9     1156.9   10000.0     1157.8   10055.6
GR    1157.3   10089.1     1156.7   10123.2     1157.3   10151.0     1164.7   10183.1     1170.6   10206.7
GR    1172.2   10213.5     1173.3   10246.5     1172.0   10250.5     1171.9   10342.2     1171.3   10403.0
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					9.1				9771.5	10219.2
	8.807	58	9771.3	10219.2	400	390	400			
X3	10									
GR	1174.2	8591.0	1174.2	8613.7	1174.8	8626.5	1174.6	8637.8	1173.1	8640.4
GR	1174.2	8644.4	1172.8	8658.6	1172.4	8867.9	1172.0	9015.9	1171.9	9044.3
GR	1172.4	9063.6	1170.8	9080.6	1170.8	9093.1	1174.4	9117.5	1175.0	9131.2
GR	1172.2	9150.5	1164.2	9172.6	1160.1	9193.9	1158.6	9221.8	1157.7	9249.9
GR	1159.2	9261.8	1157.9	9281.7	1159.2	9293.1	1164.6	9312.1	1171.3	9327.1
GR	1170.8	9359.0	1170.5	9382.8	1171.1	9406.1	1170.6	9448.1	1170.9	9478.8

1

GR	1171.6	9539.0	1171.9	9588.1	1172.4	9618.2	1172.2	9646.1	1172.1	9673.9
GR	1178.4	9688.1	1187.7	9701.7	1193.4	9715.9	1194.1	9729.6	1186.6	9749.4
GR	1174.7	9771.3	1169.2	9792.0	1162.1	9826.7	1158.7	9848.0	1158.4	9918.7
GR	1158.3	9957.1	1158.8	10000.0	1158.6	10069.8	1158.4	10113.6	1158.5	10146.5
GR	1163.7	10172.1	1170.8	10201.6	1173.9	10219.2	1174.4	10248.2	1173.2	10258.1
GR	1173.9	10328.3	1173.6	10380.5	1173.0	10402.7				
ET					9.1				9824.7	10216.9
X1	8.883	55	9824.7	10216.9	280	400	400			
X3	10									
GR	1176.2	8580.8	1175.3	8595.6	1173.7	8597.9	1174.9	8600.1	1173.5	8625.1
GR	1174.4	8705.8	1174.1	8768.8	1175.2	8824.2	1179.5	8846.4	1180.4	8864.3
GR	1177.5	8878.5	1167.9	8905.2	1162.9	8926.2	1159.6	8943.8	1159.9	8977.9
GR	1158.5	8985.3	1161.3	9000.6	1158.4	9027.9	1158.8	9040.4	1162.1	9058.5
GR	1169.4	9075.9	1173.3	9086.9	1174.0	9126.4	1173.0	9140.3	1173.0	9167.6
GR	1172.7	9204.5	1174.4	9252.2	1173.6	9288.3	1173.9	9325.0	1173.7	9357.3
GR	1174.3	9422.7	1174.7	9473.8	1173.9	9529.7	1173.9	9563.4	1175.1	9610.3
GR	1174.9	9680.1	1175.9	9745.5	1174.9	9824.7	1169.4	9860.8	1166.1	9911.3
GR	1163.8	9955.6	1163.1	9984.3	1163.1	10000.0	1160.2	10004.5	1160.9	10056.5
GR	1160.1	10106.7	1160.4	10145.4	1163.8	10164.1	1171.6	10191.4	1176.3	10216.9
GR	1177.0	10247.6	1175.5	10249.9	1176.3	10292.2	1176.1	10347.6	1175.3	10404.7
ET					9.1				9809.4	10213.2
X1	8.936	60	9809.4	10213.2	300	300	290			
X3	10									
GR	1180.0	8590.6	1174.5	8616.4	1165.7	8644.6	1162.8	8656.8	1162.9	8675.8
GR	1163.3	8691.1	1163.0	8713.3	1162.3	8740.0	1166.9	8754.2	1173.7	8779.8
GR	1179.0	8797.9	1177.6	8810.7	1177.4	8832.3	1175.7	8843.9	1174.6	8913.5
GR	1175.6	8920.6	1174.6	8947.9	1175.5	9022.3	1175.5	9091.0	1175.9	9152.4
GR	1176.4	9222.8	1177.0	9261.2	1177.8	9274.0	1177.1	9322.0	1177.8	9335.9
GR	1178.2	9360.6	1175.8	9370.5	1176.9	9389.9	1177.8	9408.3	1175.5	9452.4
GR	1177.0	9483.3	1176.2	9535.9	1175.6	9543.2	1176.6	9575.3	1176.0	9615.4
GR	1177.8	9634.7	1176.7	9680.7	1177.8	9708.0	1176.9	9754.0	1176.0	9785.5
GR	1176.1	9797.7	1177.3	9809.4	1176.0	9817.0	1167.6	9825.6	1166.8	9859.6
GR	1166.7	9894.0	1165.7	9939.7	1165.3	9959.9	1165.7	9994.3	1162.2	10000.0
GR	1162.3	10069.8	1161.8	10110.7	1162.1	10143.1	1167.9	10169.2	1174.0	10192.8
GR	1178.2	10213.2	1178.2	10244.2	1177.7	10247.6	1177.1	10309.8	1176.6	10402.1
ET					9.1				9886.1	10212.7
X1	8.977	58	9886.1	10212.7	220	200	210			
X3	10									
GR	1177.7	8605.6	1175.6	8628.1	1174.7	8658.4	1174.4	8712.7	1174.6	8744.5
GR	1175.6	8767.2	1174.1	8802.4	1175.6	8841.6	1174.9	8864.9	1175.0	8878.6
GR	1174.7	8934.8	1174.7	8953.5	1175.5	8991.6	1175.7	9030.5	1176.4	9064.0
GR	1178.2	9075.1	1176.8	9084.2	1176.6	9130.2	1176.8	9179.1	1177.1	9252.3
GR	1176.0	9330.2	1176.4	9370.6	1177.8	9377.4	1176.8	9385.9	1176.8	9448.7
GR	1177.3	9491.0	1176.4	9537.0	1176.4	9556.3	1176.9	9609.7	1176.8	9662.3
GR	1176.3	9713.1	1177.2	9747.2	1178.5	9765.9	1178.8	9792.0	1179.6	9802.3
GR	1178.3	9821.0	1180.8	9828.4	1176.5	9836.1	1176.5	9867.6	1177.2	9886.1
GR	1168.4	9900.0	1167.1	9909.3	1165.7	9938.0	1164.9	9976.1	1165.5	10000.0
GR	1163.6	10007.3	1163.7	10066.4	1164.0	10103.3	1163.5	10128.9	1163.5	10137.4
GR	1168.4	10163.5	1173.3	10188.0	1178.5	10209.0	1179.3	10212.7	1180.9	10243.9
GR	1180.1	10248.2	1179.7	10281.7	1179.8	10401.6				

1

ET					9.1				9764.5	10207.0
X1	9.009	34	9764.5	10207.0	330	180	180			
X3	10									
GR	1177.0	8740.0	1176.9	8817.3	1177.0	8883.2	1177.1	8937.1	1177.2	9008.7
GR	1177.5	9075.7	1177.5	9150.2	1177.5	9213.2	1177.7	9285.6	1177.7	9368.3
GR	1177.9	9462.0	1178.2	9547.2	1178.2	9614.3	1178.3	9675.6	1178.3	9725.9
GR	1178.0	9764.5	1174.2	9786.1	1167.1	9821.6	1164.9	9852.3	1166.0	9886.3
GR	1164.6	9921.0	1163.6	9960.8	1162.9	10000.0	1164.1	10055.9	1164.8	10109.6
GR	1164.8	10149.3	1169.2	10162.4	1178.6	10177.2	1179.9	10207.0	1180.3	10253.3
GR	1179.5	10304.1	1180.2	10353.8	1179.8	10424.8	1179.3	10475.4		
ET					9.1				9689.8	10113.8
X1	9.047	44	9689.8	10113.8	280	160	200			
X3	10									

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GR   1179.8     8601.2     1179.8     8619.0     1180.6     8633.0     1179.4     8721.9     1179.5     8798.8
GR   1179.2     8858.5     1178.9     8933.2     1178.7     9004.2     1178.2     9070.4     1178.8     9154.1
GR   1178.8     9233.1     1178.8     9306.9     1179.0     9377.9     1179.1     9475.6     1178.6     9532.5
GR   1178.7     9570.5     1180.6     9579.9     1180.0     9593.2     1181.6     9616.5     1180.5     9660.0
GR   1177.5     9689.8     1171.4     9715.9     1166.4     9742.1     1166.2     9751.1     1166.9     9756.8
GR   1162.3     9762.5     1162.0     9781.0     1163.2     9794.9     1163.3     9845.4     1164.0     9880.4
GR   1162.9     9904.5     1161.7     9907.9     1161.2     9937.7     1161.9     9971.5     1162.6    10000.0
GR   1165.0    10050.5     1165.7    10084.6     1171.0    10101.3     1177.6    10113.8     1178.2    10168.4
GR   1178.2    10218.1     1178.1    10298.2     1178.7    10354.4     1178.2    10401.6

NC                .06
ET                                                 9.1                                          9641.2    10090.0
X1    9.129        51      9641.2    10090.0      290         460         420
X3       10
GR   1182.2     8558.3     1182.2     8569.9     1183.0     8580.4     1181.8     8652.3     1181.8     8719.9
GR   1182.2     8785.2     1181.7     8844.6     1181.3     8932.3     1180.6     8995.9     1180.5     9075.5
GR   1181.0     9134.0     1181.0     9205.5     1181.5     9271.4     1181.2     9370.8     1180.3     9477.1
GR   1180.3     9499.5     1180.1     9524.8     1180.8     9562.3     1180.3     9599.2     1180.9     9629.9
GR   1180.6     9641.2     1176.6     9662.3     1173.0     9666.8     1173.4     9673.0     1164.9     9688.4
GR   1165.5     9712.2     1166.2     9768.2     1166.3     9795.2     1167.5     9799.7     1164.8     9814.5
GR   1164.2     9836.1     1165.2     9889.5     1165.1     9919.9     1166.3     9971.3     1167.1     9982.6
GR   1168.1     9987.7     1167.9    10000.0     1168.9    10061.6     1171.8    10079.8     1178.7    10090.0
GR   1179.0    10117.8     1179.0    10195.1     1178.6    10241.7     1178.5    10245.1     1179.4    10304.1
GR   1179.2    10370.6     1179.6    10407.5     1179.9    10429.4     1178.7    10432.2     1180.1    10433.6
GR   1179.5    10439.6

NC      .05       .06       .035        .1         .3
ET                                     9.1         9.1                                          19660     20015
X1    9.318        39      19660     20015        1000        1000        1000
X3       10
GR     1192     16150       1170     16210        1170       16310      1194.6     16420       1186     16465
GR   1186.6     16560       1184     16830      1185.2       16920        1184     17065       1184     17120
GR     1186     17130       1186     17150        1184       17160      1183.7     17360       1184     17470
GR     1185     17855     1185.2     18380      1185.3       18430        1185     18460     1185.1     19440
GR     1186     19660       1184     19685        1178       19710        1178     19865       1176     19945
GR     1174     19985     1173.2     20000        1174       20010      1181.5     20015     1181.3     20105
GR     1182     20360       1184     20370        1186       21110        1186     21150       1184     21595
GR     1182     22220       1180     22940        1180       23725      1181.2     23740
1
   05MAY04      16:11:44                                                                                PAGE   32


QT        5      2625       7625     11450       11450       30250
ET                                                 9.1                                          19770     20235
X1    9.492        40      19770     20235        910         890         920
X3       10
GR   1197.2     16090       1178     16135        1178       16185      1193.2     16240       1192     16250
GR     1190     16470       1188     17185        1187       17360        1188     17710     1188.6     17900
GR   1189.3     18260       1189     18870      1188.8       18885        1190     18900       1190     18920
GR   1189.2     19030     1189.5     19300        1188       19610        1185     19635       1186     19650
GR     1188     19700       1188     19770        1186       19905        1184     19930       1184     19950
GR     1180     19970       1179     20000        1180       20055        1182     20160       1184     20195
GR   1193.9     20235       1186     20255      1185.4       20310        1186     20785       1188     20800
GR   1188.8     21100       1190     21450        1190       22860        1188     23130       1188     24240

NC      .04       .06       .035
ET                                                 9.1                                          19840     20060
X1    9.692        31      19840     20060        1050        1040        1056
X3       10
GR     1194     15930       1192     16660        1190       17050      1189.8     17130       1190     17448
GR     1192     18040       1194     18880        1195       19040      1194.4     19150       1194     19280
GR     1194     19680       1192     19790        1192       19830        1195     19840       1186     19880
GR   1184.1     20000       1186     20015        1188       20020        1190     20040     1196.1     20060
GR     1194     20060     1193.2     20090        1194       20195        1194     21315       1196     21690
GR     1196     21725       1194     22305        1192       24380        1190     24790       1190     25100
GR     1192     25440
1
   05MAY04      16:11:44                                                                                PAGE   33


    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

TICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

V=      .100 CEHV=      .300
*SECNO 501.450

3265 DIVIDED FLOW

        LAST AGUA FRIA X-SECT.  USED AS STARTING WSEL FOR NEW RIVER W/O
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        PHASING AS REQUESTED PER DAVE JOHNSON OF MCFCD ON 10/20/86 FOR THEIR
        FIS STUDY.  FILE LNRSPFQS CONVERTED TO LNRMCFCD ON 10/21/86 FOR
        NEW RIVER FIS BASE.
   501.450      8.30   1027.50   1024.62   1027.50   1027.62       .12       .00       .00   1027.70
   39000.0     199.2   26795.3   12005.5     321.3    8381.7    6637.8        .0        .0   1028.00
       .00       .62      3.20      1.81      .045      .035      .045      .000   1019.20   8395.00
   .000991        0.        0.        0.         0        13         0       .00   6594.18  15157.41


*SECNO 10.000

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED


3470 ENCROACHMENT STATIONS=     8600.0   11510.0  TYPE=      1  TARGET=     2910.000
    10.000      5.45   1029.45   1029.45       .00   1030.66      1.21      2.52       .33   1028.30
   39000.0   18099.5   19449.0    1451.5    2726.3    1819.9     423.6     279.4     128.2   1028.00
       .03      6.64     10.69      3.43      .045      .035      .045      .000   1024.00   8600.00
   .012236      700.     1000.     1700.         0        19         0       .00   2223.60  10908.61


*SECNO 13.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.69

1
   05MAY04      16:11:44                                                                          PAGE   34

    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=     8600.0   11720.0  TYPE=      1  TARGET=     3120.000
        AP PLAN STA. 15+30  CROSS SECTIONS 13.0 THRU 70.5 HAVE BEEN UPDATED
        PER GLENDALE AIRPORT CHANNEL PLANS AND HAVE BEEN ADJUSTED TO COE
        DATUM.  COE B.M.=1074.25  A.P. B.M.=1074.71.  A.P. CROSS SECTION
        DATA ADJUSTED -0.46 FT(USED -0.50).
    13.000      8.88   1031.08   1029.07       .00   1031.50       .42       .76       .08   1030.00
   39000.0   16149.6   22061.8     788.7    4613.1    3550.9     512.0     309.5     138.5   1027.50
       .05      3.50      6.21      1.54      .045      .035      .045      .000   1022.20   8600.00
   .001694      100.      300.      300.         3        12         0       .00   2347.98  10947.98


*SECNO 20.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     8800.0   11360.0  TYPE=      1  TARGET=     2560.000
                AP PLAN STA. 22+30
    20.000      8.86   1032.46   1030.69       .00   1032.92       .46      1.40       .01   1033.00
   39000.0    7026.1   29027.0    2947.0    2298.2    4773.5    1214.2     466.4     182.0   1028.50
       .09      3.06      6.08      2.43      .045      .035      .045      .000   1023.60   8800.00
   .001920      960.      700.      700.         4        15         0       .00   2303.88  11128.37


*SECNO 26.800

3470 ENCROACHMENT STATIONS=     8000.0   11740.0  TYPE=      1  TARGET=     3740.000
                AP PLAN STA. 29+10
    26.800      9.03   1033.93   1032.93       .00   1034.54       .61      1.58       .04   1033.00
   39000.0    9897.7   28400.5     701.8    3724.7    3976.7     459.8     616.9     234.6   1031.50
       .12      2.66      7.14      1.53      .045      .035      .045      .000   1024.90   8000.00
   .002311     1000.      680.      680.         2        15         0       .00   3200.43  11200.43


*SECNO 32.600

3265 DIVIDED FLOW


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


3470 ENCROACHMENT STATIONS=     8500.0   10233.0  TYPE=      1  TARGET=     1733.000
                AP PLAN STA. 35+40
   32.600      9.05   1035.25   1033.34       .00   1036.42      1.17      1.71       .17   1034.50
 39000.0    1906.7   37093.3        .0     912.6    4177.3        .0     709.4     269.6 100000.00
     .14      2.09      8.88       .00      .045      .035      .000      .000   1026.20   8500.00
 .003732      660.      580.      580.         2        13         0       .00   1680.05  10222.50


*SECNO 38.000

3470 ENCROACHMENT STATIONS=     8900.0   10073.0  TYPE=      1  TARGET=     1173.000
                AP PLAN STA. 40+30
   38.000      9.96   1037.16   1034.82       .00   1038.17      1.01      1.74       .02   1035.60
 39000.0    1798.1   37201.9        .0     780.1    4504.3        .0     771.8     285.5   1041.00
     .16      2.30      8.26       .00      .045      .035      .000      .000   1027.20   8900.00
 .002845      440.      540.      500.         2         8         0       .00   1164.90  10064.90


*SECNO 45.000

3470 ENCROACHMENT STATIONS=     9150.0   10136.0  TYPE=      1  TARGET=      986.000
                AP PLAN STA. 45+80
   45.000     10.78   1039.08   1035.48       .00   1039.81       .73      1.61       .03   1038.70
 39000.0    1302.1   37697.9        .0     509.4    5414.8        .0     858.0     300.5   1041.20
     .19      2.56      6.96       .00      .045      .035      .000      .000   1028.30   9150.00
 .001957      440.      700.      680.         2        15         0       .00    981.56  10131.56


*SECNO 51.700

55 DIVIDED FLOW


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


3470 ENCROACHMENT STATIONS=     9799.0   10599.0  TYPE=      1  TARGET=      800.000
                AP PLAN STA. 53+70
   51.700     12.78   1040.18   1034.80       .00   1040.66       .47       .82       .03   1041.00
 39000.0        .0   39000.0        .0        .0    7077.6        .0     957.6     313.6   1043.00
     .22       .00      5.51       .00      .000      .035      .000      .000   1027.40   9816.33
 .000837      600.      670.      510.         2        19         0       .00    741.62  10592.57


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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


*SECNO 54.000

3470 ENCROACHMENT STATIONS=     9854.0   10696.0  TYPE=      1  TARGET=      842.000
                AP PLAN STA. 55+65
   54.000     12.44   1040.44   1035.22       .00   1040.84       .40       .18       .01   1042.50
 39000.0        .0   39000.0        .0        .0    7670.4        .0     996.5     317.7   1043.20
     .23       .00      5.08       .00      .000      .035      .000      .000   1028.00   9857.22
 .000748      270.      230.      200.         2        11         0       .00    832.27  10689.49


*SECNO 59.000

3470 ENCROACHMENT STATIONS=     9744.0   10701.0  TYPE=      1  TARGET=      957.000
                AP PLAN STA. 60+00
   59.000     10.15   1040.85   1036.70       .00   1041.30       .45       .44       .02   1044.00
 39000.0        .0   39000.0        .0        .0    7215.3        .0    1081.9     327.8   1044.20
     .26       .00      5.41       .00      .000      .035      .000      .000   1030.70   9767.88
 .001053      760.      500.      490.         2        11         0       .00    925.61  10693.49


*SECNO 63.000
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3470 ENCROACHMENT STATIONS=     9669.0   10572.0  TYPE=      1  TARGET=      903.000
                AP PLAN STA. 63+00
   63.000      9.55   1041.25   1037.49       .00   1041.82       .57       .48       .03   1043.50
  39000.0        .0   39000.0        .0        .0    6458.0        .0    1144.7     336.1   1045.00
      .28       .00      6.04       .00      .000      .035      .000      .000   1031.70   9696.25
  .001396      460.      400.      380.         2        11         0       .00    867.85  10564.10


*SECNO 70.500

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .38


3470 ENCROACHMENT STATIONS=     9579.0   10271.0  TYPE=      1  TARGET=      692.000
                AP PLAN STA. 70+50
   70.500      8.77   1042.27   1042.08       .00   1044.53      2.25      2.20       .51   1044.00
  39000.0        .0   39000.0        .0        .0    3238.3        .0    1228.2     349.2   1047.50
      .30       .00     12.04       .00      .000      .035      .000      .000   1033.50   9592.93
  .009725      710.      750.      700.         2        15         0       .00    661.32  10254.25
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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 77.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS


70 ENCROACHMENT STATIONS=     9775.0   10250.0  TYPE=      1  TARGET=      475.000
                AP PLAN STA. 74+16, END CHANNEL AT 107TH AVE.
                NORTH PROJECT X-77.0 USED AS NATURAL RIVER BED
   77.000     12.28   1046.88   1045.95       .00   1049.71      2.82      5.01       .17   1051.00

  39000.0        .0   38743.0     257.0        .0    2864.8      73.3    1274.3     357.3   1044.70
      .31       .00     13.52      3.51      .000      .035      .045      .000   1034.60   9795.96
  .006259      480.      650.      660.         2        11         0       .00    418.12  10237.54


*SECNO 84.000
3280 CROSS SECTION     84.00 EXTENDED       .69 FEET


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.80


3470 ENCROACHMENT STATIONS=     9844.0   10790.0  TYPE=      1  TARGET=      946.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1053.50 ELREA=      1044.40

   84.000     14.89   1050.69   1045.17       .00   1051.15       .47      1.21       .24   1053.50
  39000.0        .0   33223.7    5776.3        .0    5754.9    1694.5    1357.7     368.1   1044.40
      .35       .00      5.77      3.41      .000      .035      .045      .000   1035.80   9859.46
  .000796      620.      700.      700.         3        19         0       .00    930.54  10790.00


*SECNO 88.700

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     9729.0   10980.0  TYPE=      1  TARGET=     1251.000
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                GRAVEL PIT, LOB BREAKOUT TO X95.5. D/S B.O. LIMITED IN Q TO X77
   88.700     16.83   1051.03   1043.63       .00   1051.48       .45       .32       .00   1052.00
  39000.0        .0   37488.5    1511.5        .0    6842.3     811.3    1438.1     378.2   1045.60
      .37       .00      5.48      1.86      .000      .035      .045      .000   1034.20   9732.41
  .000612      520.      470.      430.         2        17         0       .00    999.80  10917.22
```

NO 95.500

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1052.00 ELREA= 1052.00

GRAVEL PIT, LOB BREAKOUT TO X88.7.

95.500	17.32	1051.52	1043.03	.00	1052.03	.50	.53	.02	1052.00
39000.0	.0	39000.0	.0	.0	6845.2	.0	1551.2	392.2	1052.00
.40	.00	5.70	.00	.000	.035	.000	.000	1034.20	9508.36
.001030	400.	680.	680.	2	11	0	.00	795.78	10304.13

*SECNO 100.700

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .56

100.700	16.54	1051.54	1047.09	.00	1053.28	1.74	.88	.37	1055.00
39000.0	.0	39000.0	.0	.0	3683.8	.0	1614.1	399.3	1052.00
.42	.00	10.59	.00	.000	.035	.000	.000	1035.00	9692.93
.003274	550.	520.	620.	2	19	0	.00	399.10	10188.63

*SECNO 107.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.25

107.000	15.56	1053.66	1046.14	.00	1054.18	.53	.78	.12	1056.00
39000.0	.0	39000.0	.0	.0	6705.7	.0	1689.2	406.0	1054.00
.45	.00	5.82	.00	.000	.035	.000	.000	1038.10	9724.66
.000648	300.	630.	640.	2	11	0	.00	529.75	10254.42

V= .300 CEHV= .500

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	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 110.700

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

110.700	11.73	1053.23	1053.23	.00	1056.47	3.24	.62	1.36	1055.60
39000.0	.0	39000.0	.0	.0	2699.3	.0	1729.1	410.2	1056.00
.45	.00	14.45	.00	.000	.035	.000	.000	1041.50	9771.30
.010987	600.	370.	300.	0	13	0	.00	456.59	10227.90

*SECNO 117.200

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.76

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1061.00 ELREA= 1061.00

DOWNSTREAM SIDE GLENDALE AVE BRIDGE

117.200	12.13	1058.53	1056.04	.00	1060.57	2.04	3.74	.36	1056.00
39000.0	.0	39000.0	.0	.0	3403.3	.0	1774.7	416.2	1056.00
.47	.00	11.46	.00	.000	.035	.000	.000	1046.40	9845.00
.003529	800.	650.	400.	3	15	0	.00	350.00	10195.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	2.90	.00	352.00	19.80	5503.00	.00	1046.50	1046.20

CNO 118.000
SS A LOW FLOW

3420 BRIDGE W.S.= 1058.48 BRIDGE VELOCITY= 9.68 CALCULATED CHANNEL AREA= 3979.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	1061.03	.40	0.	39000.	5503.	5515.	1063.10	1063.00	0.

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	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1063.50 ELREA= 1063.00

UPSTREAM SIDE GLENDALE AVE BRIDGE-PERCHED. 2FT DEBRIS PER PIER.
1983 TOPO WITHIN 0.3FT OF BRIDGE PLAN DECK.USED PLANS MINUS 0.3FT

118.000	11.53	1058.93	.00	.00	1061.03	2.09	.46	.00	1058.00
39000.0	.0	39000.0	.0	.0	3360.5	.0	1780.9	416.9	1058.00
.47	.00	11.61	.00	.000	.035	.000	.000	1047.40	9845.00
.003687	80.	80.	80.	0	0	0	.00	350.00	10195.00

*SECNO 120.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.08

0 ENCROACHMENT STATIONS= 9550.0 10400.0 TYPE= 1 TARGET= 850.000

120.000	15.15	1061.05	1053.79	.00	1061.75	.70	.31	.42	1058.20
39000.0	1258.4	36947.8	793.7	673.5	5367.5	458.0	1803.2	419.5	1058.00
.48	1.87	6.88	1.73	.045	.035	.045	.000	1045.90	9550.00
.000850	200.	200.	130.	3	14	0	.00	850.00	10400.00

CCHV= .100 CEHV= .300
*SECNO 125.000

3470 ENCROACHMENT STATIONS= 8950.0 10800.0 TYPE= 1 TARGET= 1850.000

125.000	15.66	1061.56	1054.85	.00	1062.19	.63	.43	.01	1059.80
39000.0	1736.1	36263.7	1000.2	1322.4	5503.7	793.9	1883.9	434.8	1060.00
.50	1.31	6.59	1.26	.045	.035	.045	.000	1045.90	8950.00
.000865	500.	500.	480.	2	14	0	.00	1850.00	10800.00

*SECNO 131.000

3265 DIVIDED FLOW

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	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 8500.0 10365.0 TYPE= 1 TARGET= 1865.000

5 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1061.00 ELREA= 1062.70

GRAVEL MINE CODED AS 1062 FILLED. UPSTREAM SIDE.

131.000	12.12	1062.12	1062.12	.00	1064.40	2.28	1.13	.50	1061.00
39000.0	210.2	38789.8	.0	175.6	3192.1	.0	1958.3	456.0	1062.70
.52	1.20	12.15	.00	.045	.035	.000	.000	1050.00	8644.03
.006830	500.	600.	650.	0	12	0	.00	1489.22	10237.57

CNO 135.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.60

3470 ENCROACHMENT STATIONS= 8400.0 10315.0 TYPE= 1 TARGET= 1915.000

135.000	13.04	1064.84	1063.95	.00	1066.12	1.28	1.62	.10	1063.50
39000.0	3904.1	32996.9	2099.0	1755.8	3368.8	503.8	1999.3	470.2	1061.00
.53	2.22	9.79	4.17	.045	.035	.045	.000	1051.80	8400.00
.002684	380.	400.	430.	2	5	0	.00	1707.62	10292.42

*SECNO 140.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

140.000	12.57	1066.47	1062.97	.00	1067.14	.67	.95	.06	1065.70
39000.0	4144.7	33272.8	1582.6	2324.3	4707.9	579.5	2072.3	491.4	1062.50
.55	1.78	7.07	2.73	.045	.035	.045	.000	1053.90	7543.08
.001458	430.	500.	520.	3	16	0	.00	2338.85	10581.75

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 143.000

3265 DIVIDED FLOW

143.000	8.99	1066.89	1064.91	.00	1067.79	.89	.58	.07	1068.00
39000.0	4921.7	34078.3	.0	2118.5	4225.6	.0	2120.4	506.5	1068.00
.56	2.32	8.06	.00	.045	.035	.000	.000	1057.90	7772.90
.002725	300.	300.	300.	2	11	0	.00	2041.33	10394.48

*SECNO 146.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
LOB POULTRY BLDGS CODED AS SINGLE BLOCK.

146.000	10.74	1068.64	1068.64	.00	1070.12	1.48	1.08	.18	1070.80
39000.0	9322.2	29675.7	2.1	2549.0	2697.7	5.4	2160.8	520.1	1069.70
.57	3.66	11.00	.39	.045	.035	.045	.000	1057.90	7818.53
.004938	310.	300.	290.	0	8	0	.00	1823.13	10304.55

*SECNO 149.600

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.43

LOB ON TOP OF SERVICE RD. POULTRY BLDGS CODED AS ONE SOLID BLOCK.

149.600	10.59	1070.49	1069.43	.00	1071.42	.93	1.25	.06	1069.30
40000.0	7750.1	31965.1	284.8	2993.3	3735.5	303.9	2212.3	540.5	1070.80
.58	2.59	8.56	.94	.045	.035	.045	.000	1059.90	7638.77
.002555	370.	360.	375.	2	11	0	.00	2993.35	10946.04

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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 158.000

3265 DIVIDED FLOW

        CHANNEL GRAVEL MINE BOTTOM AT 1064 DOWNSTREAM OUTLET.
        LEFT BANK CHANNELIZED.
 158.000     13.26   1072.76   1071.56       .00   1073.43       .66      1.98       .03   1071.70
 40000.0   12267.0   27616.1     116.9    4058.5    3636.9     147.8    2356.5     593.7   1073.00
     .62      3.02      7.59       .79      .045      .035      .045      .000   1059.50   8153.09
.002166      850.      840.      840.         3         9         0       .00   2484.14  10750.11

*SECNO 167.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

        250 FT UPSTREAM IN CHANNEL GRAVEL MINE.  INVERT CUT TO OCT. 83
        EXCAVATION 1059.0.
 167.000     15.25   1074.15   1073.10       .00   1075.73      1.58      2.03       .28   1071.70
 40000.0    3562.5   33863.2    2574.4    1557.7    3100.5     884.1    2500.1     639.4   1073.70
     .65      2.29     10.92      2.91      .045      .035      .045      .000   1058.90   8792.33

.002260     1000.      900.      800.         3         8         0       .00   1771.34  10663.36

*SECNO 170.000

3265 DIVIDED FLOW

1 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1071.90 ELREA=      1076.00

        OCT 83 EXCAVATION INVERT 1059.3
 170.000     15.25   1074.45   1074.03       .00   1076.76      2.31       .81       .22   1071.90
 40000.0    3599.0   36401.0        .0    1320.1    2853.2        .0    2533.2     649.1   1076.00
     .66      2.73     12.76       .00      .045      .035      .000      .000   1059.20   8971.37
.003294      300.      300.      270.         2         8         0       .00   1107.05  10131.13
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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

*SECNO 174.200

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     7800.0   10800.0  TYPE=      1  TARGET=     3000.000
        OCT 83 EXCAVATION INVERT 1059.6
 174.200     17.81   1077.21   1077.21       .00   1078.90      1.69      1.19       .06   1076.00
 40000.0    8354.8   30210.3    1434.9    2679.9    2538.6     792.7    2583.3     665.5   1076.50
     .67      3.12     11.90      1.81      .045      .035      .045      .000   1059.40   8641.65
.002442      440.      420.      430.         0         9         0       .00   2158.35  10800.00

CCHV=     .500 CEHV=     .700
SECNO 178.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS
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2 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.74

3470 ENCROACHMENT STATIONS= 8400.0 10600.0 TYPE= 1 TARGET= 2200.000
NEW X-SECTION D.S. NORTHERN AVE DROP STRUCTURE DEFINITION.
INVERT 1060.0.

178.000	19.24	1079.14	1070.10	.00	1079.87	.73	.49	.48	1080.70
40000.0	4214.0	34592.5	1193.5	2360.6	4704.9	808.6	2643.0	681.9	1080.00
.68	1.79	7.35	1.48	.045	.035	.045	.000	1059.90	8720.54
.000804	390.	380.	300.	3	11	0	.00	1796.72	10600.00

*SECNO 178.500

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

3470 ENCROACHMENT STATIONS= 8400.0 10550.0 TYPE= 1 TARGET= 2150.000
NORTHERN AVE. DIP-CROSSING CROWN.

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
178.500	11.60	1079.30	1077.15	.00	1079.97	.66	.06	.03	1076.00
40000.0	6314.0	32850.8	835.2	2592.3	4609.7	407.5	2651.9	684.2	1076.00
.69	2.44	7.13	2.05	.045	.035	.045	.000	1067.70	8449.86
.001777	50.	50.	50.	2	11	0	.00	2100.14	10550.00

CCHV= .100 CEHV= .300
*SECNO 181.500

3265 DIVIDED FLOW

1 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

181.500	12.87	1079.37	1079.01	.00	1081.03	1.66	.77	.30	1077.10
40000.0	4642.0	33061.7	2296.3	1455.1	2934.8	618.4	2696.9	696.8	1076.10
.69	3.19	11.27	3.71	.045	.035	.045	.000	1066.50	8909.73
.003703	310.	310.	320.	2	8	0	.00	1422.49	10406.92

*SECNO 185.300

3265 DIVIDED FLOW

185.300	13.07	1080.97	1079.63	.00	1082.24	1.26	1.16	.04	1078.80
40000.0	5343.5	33916.1	740.4	2006.4	3487.6	323.2	2744.5	711.4	1078.70
.71	2.66	9.72	2.29	.045	.035	.045	.000	1067.90	8465.87
.002556	390.	380.	375.	3	8	0	.00	1883.72	10601.88

*SECNO 190.000

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1080.70 ELREA= 1082.60

190.000	14.57	1082.37	1078.84	.00	1083.43	1.07	1.18	.02	1080.70
40000.0	695.5	39304.5	.0	506.0	4701.8	.0	2804.1	732.3	1082.60
.72	1.37	8.36	.00	.045	.035	.000	.000	1067.80	8082.58
.002452	480.	470.	450.	2	15	0	.00	1943.56	10396.27

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 193.600

HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1084.00 ELREA= 1082.70

193.600	12.69	1082.89	1080.73	.00	1084.87	1.98	1.16	.27	1084.00
40000.0	.0	39718.8	281.2	.0	3503.1	170.8	2841.0	743.7	1082.70
.73	.00	11.34	1.65	.000	.035	.045	.000	1070.20	9778.67
.004442	380.	360.	360.	2	12	0	.00	749.19	10527.86

*SECNO 198.400

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1085.20 ELREA= 1086.00

198.400	14.07	1085.07	1081.05	.00	1086.42	1.34	1.48	.06	1085.20
40000.0	.0	40000.0	.0	.0	4298.8	.0	2884.9	750.3	1086.00
.75	.00	9.30	.00	.000	.035	.000	.000	1071.00	9751.36
.002268	460.	480.	490.	2	15	0	.00	433.77	10185.13

*SECNO 202.400

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1085.50 ELREA= 1087.30

LOB MOVED TO TOP OF IRRIGATION ROAD TO DETERMINE FLOW SPLIT
<ROAD INTACT>

202.400	13.17	1085.67	1083.29	.00	1087.91	2.24	1.23	.27	1085.50
40000.0	.8	39999.2	.0	2.0	3330.8	.0	2920.0	754.1	1087.30
.75	.43	12.01	.00	.045	.035	.000	.000	1072.50	9767.34
.004380	400.	400.	400.	2	11	0	.00	397.78	10165.12

*SECNO 206.000

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1086.00 ELREA= 1090.00

206.000	13.87	1087.37	1085.06	.00	1089.50	2.13	1.58	.01	1086.00
40000.0	66.0	39934.0	.0	70.2	3407.6	.0	2948.1	758.7	1090.00
.76	.94	11.72	.00	.045	.035	.000	.000	1073.50	9428.99
.004395	360.	360.	380.	3	12	0	.00	707.86	10136.85

*SECNO 210.500

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.31

3470 ENCROACHMENT STATIONS= 8550.0 10620.0 TYPE= 1 TARGET= 2070.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1087.20 ELREA= 1092.00

210.500	18.43	1089.63	1081.98	.00	1090.37	.73	.72	.14	1087.20
40000.0	3222.4	36777.6	.0	1444.0	5148.7	.0	2999.9	768.9	1092.00
.78	2.23	7.14	.00	.045	.035	.000	.000	1071.20	8550.00
.000827	440.	450.	440.	2	15	0	.00	1296.11	10173.99

*SECNO 216.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 8900.0 10480.0 TYPE= 1 TARGET= 1580.000

5 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1085.60 ELREA= 1093.50

216.000	17.98	1090.18	1082.78	.00	1090.81	.63	.43	.01	1085.60	
40000.0	1792.2	38207.8	.0	1048.7	5891.3	.0	3081.1	781.3	1093.50	
.81	1.71	6.49	.00	.045	.035	.000	.000	1072.20	8900.00	
.000769	400.	550.	650.	2	11	0	.00	1102.69	10222.77	

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 218.000

3470 ENCROACHMENT STATIONS= 9000.0 10660.0 TYPE= 1 TARGET= 1660.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1086.20 ELREA= 1094.00

218.000	18.43	1090.53	1082.17	.00	1090.95	.42	.12	.02	1086.20	
40000.0	1743.9	38256.1	.0	1133.6	7181.0	.0	3116.1	786.6	1094.00	
.82	1.54	5.33	.00	.045	.035	.000	.000	1072.10	9000.00	
.000497	200.	200.	200.	2	11	0	.00	1233.75	10233.75	

*SECNO 220.800

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1086.10 ELREA= 1094.40

220.800	17.42	1090.62	1082.73	.00	1091.13	.51	.15	.03	1086.10	
40000.0	1899.4	38100.6	.0	1197.5	6471.9	.0	3167.2	793.6	1094.40	
.83	1.59	5.89	.00	.045	.035	.000	.000	1073.20	9258.02	
.000605	270.	280.	260.	2	11	0	.00	972.02	10230.04	

*SECNO 223.000

3265 DIVIDED FLOW

223.000	16.47	1090.67	1084.23	.00	1091.34	.68	.16	.05	1090.70	
40000.0	1194.4	38805.6	.0	779.8	5795.6	.0	3203.2	798.5	1095.10	
.84	1.53	6.70	.00	.045	.035	.000	.000	1074.20	9255.57	
.000948	220.	220.	230.	2	11	0	.00	984.90	10243.09	

CCHV= .300 CEHV= .500
*SECNO 229.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 8000.0 10380.0 TYPE= 1 TARGET= 2380.000

229.000	11.43	1091.33	1086.29	.00	1091.97	.64	.61	.01	1088.00	
40000.0	572.8	39427.2	.0	344.7	6112.7	.0	3292.9	811.2	1094.00	
.87	1.66	6.45	.00	.045	.035	.000	.000	1079.90	9296.19	
.001096	600.	600.	600.	2	18	0	.00	847.14	10280.41	

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 231.500

3470 ENCROACHMENT STATIONS= 8600.0 10270.0 TYPE= 1 TARGET= 1670.000

5 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1089.00 ELREA= 1092.00

DOWNSTREAM SIDE OLIVE AVE BRIDGE

231.500	11.18	1091.48	1089.11	.00	1092.53	1.05	.36	.20	1082.10	
40000.0	11291.6	28708.4	.0	1932.8	3201.1	.0	3327.0	815.4	1090.00	
.87	5.84	8.97	.00	.045	.035	.000	.000	1080.30	9562.92	
.001885	280.	250.	200.	2	22	0	.00	582.08	10145.00	

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SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    1.05      1.56      2.90       .00     244.00     12.90    2400.00     2.00    1080.00   1080.00

*SECNO 232.600
BTCARD, BRIDGE STENCL=    8600.00   STENCR=   10270.00

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW,  Weir Submergence Based on TRAPEZOIDAL Shape

 EGPRS      EGLWC      H3        QWEIR     QPR       BAREA   TRAPEZOID      ELLC      ELTRD     WEIRLN
                                                              AREA
  1098.21   1094.16     .14      7014.    33155.     2400.    2403.      1089.60   1094.00     1291.


3470 ENCROACHMENT STATIONS=     8600.0   10270.0  TYPE=      1  TARGET=     1670.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1094.20 ELREA=      1096.00

          UPSTREAM SIDE OLIVE AVE BRIDGE WITH 2 FT DEBRIS PER PIER.
  232.600     14.97   1095.07       .00       .00   1096.11      1.03      3.58       .00   1092.00
  40000.0    4303.6   35696.4        .0    2017.5    4148.5        .0    3341.2     818.0   1094.00
      .88      2.13      8.60       .00      .045      .035      .000      .000   1080.10   8600.00
 .001261      110.      110.      110.         2         0         0       .00   1446.39  10145.00


1
  05MAY04      16:11:44                                                                          PAGE   50

   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 235.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     8650.0   10500.0  TYPE=      1  TARGET=     1850.000
  235.000     15.38   1095.48   1089.87       .00   1096.41       .93       .29       .01   1092.60
  40000.0    3707.9   36292.1        .0    1714.6    4485.2        .0    3370.6     823.2   1097.50
      .89      2.16      8.09       .00      .045      .035      .000      .000   1080.10   8650.00
 .001267      130.      240.      350.         2        14         0       .00   1472.16  10168.69


*SECNO 238.800

3470 ENCROACHMENT STATIONS=     8700.0   11200.0  TYPE=      1  TARGET=     2500.000
  238.800     15.63   1096.33   1091.28       .00   1096.87       .54       .42       .04   1093.00
  40000.0    8599.3   31400.7        .0    3440.3    4829.3        .0    3434.9     836.7   1098.50
      .91      2.50      6.50       .00      .045      .035      .000      .000   1080.70   8700.00
 .000959      400.      380.      350.         2        16         0       .00   1522.71  10222.71


*SECNO 240.800

3265 DIVIDED FLOW


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


3470 ENCROACHMENT STATIONS=     8700.0   11200.0  TYPE=      1  TARGET=     2500.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1091.70 ELREA=      1099.00

  240.800     15.59   1096.39   1093.73       .00   1097.25       .86       .29       .10   1091.70
  40000.0   11837.4   28162.6        .0    3008.4    3305.1        .0    3468.4     843.8   1099.00
      .91      3.93      8.52       .00      .045      .035      .000      .000   1080.80   8700.00
 .002410      200.      200.      175.         2        16         0       .00   1531.61  10247.92


*SECNO 245.800
1
  05MAY04      16:11:44                                                                          PAGE   51
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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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1096.60 ELREA= 1101.50

245.800	15.27	1097.17	1094.26	.00	1098.97	1.80	1.44	.28	1096.60
40000.0	1144.3	38855.7	.0	598.8	3560.0	.0	3529.3	859.0	1101.50
.93	1.91	10.91	.00	.045	.035	.000	.000	1081.90	9103.37
.003428	520.	500.	490.	2	8	0	.00	1046.83	10150.19

*SECNO 251.000

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1103.10 ELREA= 1103.00

251.000	17.12	1099.22	1094.00	.00	1100.32	1.11	1.29	.07	1103.10
40000.0	.0	40000.0	.0	.0	4736.3	.0	3582.7	868.4	1103.00
.94	.00	8.45	.00	.000	.035	.000	.000	1082.10	9727.81
.001868	560.	520.	500.	2	15	0	.00	477.78	10205.58

*SECNO 256.000

3301 HV CHANGED MORE THAN HVINS

256.000	16.87	1099.67	1096.03	.00	1101.80	2.13	1.17	.31	1102.00
40000.0	.0	40000.0	.0	.0	3418.3	.0	3629.5	872.8	1105.20
.96	.00	11.70	.00	.000	.035	.000	.000	1082.80	9836.62
.003021	500.	500.	500.	2	15	0	.00	300.58	10137.21

*SECNO 258.800

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1103.30 ELREA= 1104.20

258.800	15.55	1101.15	1096.00	.00	1102.51	1.36	.64	.08	1103.30
40000.0	.0	40000.0	.0	.0	4270.0	.0	3654.2	874.9	1104.20
.96	.00	9.37	.00	.000	.035	.000	.000	1085.60	9807.97
.001772	250.	280.	270.	3	14	0	.00	348.76	10156.73

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 262.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1104.50 ELREA= 1105.20

262.000	15.05	1101.65	1096.78	.00	1103.17	1.52	.61	.05	1104.50
40000.0	.0	40000.0	.0	.0	4046.2	.0	3684.7	877.5	1105.20
.97	.00	9.89	.00	.000	.035	.000	.000	1086.60	9830.44
.002044	290.	320.	340.	2	14	0	.00	340.34	10170.78

*SECNO 265.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.57

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1105.00 ELREA= 1106.40

```
        LOB HOUSES CODED BLOCK BY BLOCK.
  265.000     16.45   1103.05   1096.44       .00   1103.63       .58       .37       .09   1105.00
  0000.0        .0   40000.0        .0        .0    6548.0        .0    3721.2     880.6   1106.40
      .99       .00      6.11       .00      .000      .035      .000      .000   1086.60   9628.87
  .000825      310.      300.      350.         2        14         0       .00    579.69  10208.57


*SECNO 270.500

3301 HV CHANGED MORE THAN HVINS


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1105.60 ELREA=      1106.00

        LOB BLDGS CODED AS SOLID BLOCK. LOB FENCE NOT CONSIDERED
  270.500     15.18   1103.28   1097.84       .00   1104.40      1.13       .60       .16   1105.60
  40000.0        .0   40000.0        .0        .0    4698.0        .0    3792.2     886.8   1106.00
     1.00       .00      8.51       .00      .000      .035      .000      .000   1088.10   9793.61
  .001538      540.      550.      550.         2        14         0       .00    399.58  10193.19


*SECNO 273.500
1
  05MAY04      16:11:44                                                                          PAGE   53

   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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1104.00 ELREA=      1106.00

        LOB AND ROB HOUSES CODED AS SOLID BLOCKS.
        LOB AND ROB FENCE NOT CONSIDERED.
  273.500     13.84   1103.94   1097.84       .00   1104.82       .88       .39       .02   1104.00
  40000.0        .0   40000.0        .0        .0    5300.1        .0    3826.6     889.7   1106.00
     1.02       .00      7.55       .00      .000      .035      .000      .000   1090.10   9705.11
  .001138      300.      300.      300.         2         8         0       .00    429.89  10135.00


*SECNO 277.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .43


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1106.00 ELREA=      1108.50

          HOUSES CODED AS BLOCKS. LOB-ROB FENCE NOT CONSIDERED.
  277.000     12.09   1102.89   1101.76       .00   1106.38      3.49       .78       .78   1106.00
  40000.0        .0   40000.0        .0        .0    2669.2        .0    3858.7     892.5   1108.50
     1.02       .00     14.99       .00      .000      .035      .000      .000   1090.80   9852.76
  .006095      350.      350.      330.         3        15         0       .00    274.48  10127.24


*SECNO 281.800

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1109.00 ELREA=      1111.00

        LOB-ROB HOUSED CODED AND FENCES NOT CONSIDERED
  281.800     13.35   1105.55   1104.43       .00   1109.44      3.89      2.94       .12   1109.00
  40000.0        .0   40000.0        .0        .0    2527.1        .0    3887.3     895.3   1111.00
     1.03       .00     15.83       .00      .000      .035      .000      .000   1092.20   9876.13
  .006159      480.      480.      480.         3         5         0       .00    238.96  10115.09


CCHV=      .300 CEHV=      .500
*SECNO 288.000
1
  05MAY04      16:11:44                                                                          PAGE   54

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

5 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1114.00 ELREA= 1114.00

LOB-ROB ENCROACHED FOR EFFECTIVE FLOW THRU PEORIA AVE BRIDGE.

288.000	16.55	1110.65	1104.99	.00	1111.98	1.33	1.77	.77	1114.00
40000.0	.0	40000.0	.0	.0	4316.5	.0	3936.0	899.4	1114.00
1.05	.00	9.27	.00	.000	.035	.000	.000	1094.10	9874.50
.001645	620.	620.	620.	3	15	0	.00	340.08	10214.59

*SECNO 290.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1113.50 ELREA= 1115.00

DOWNSTREAM SIDE PEORIA AVE BRIDGE

290.000	17.63	1110.93	1103.99	.00	1112.31	1.38	.31	.02	1113.00
41000.0	.0	41000.0	.0	.0	4351.1	.0	3955.9	900.9	1110.00
1.05	.00	9.42	.00	.000	.035	.000	.000	1093.30	9857.68
.001422	220.	200.	160.	3	14	0	.00	290.32	10148.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	2.90	.00	222.20	10.90	3937.00	1.36	1096.00	1095.80

*SECNO 291.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 1110.76 BRIDGE VELOCITY= 11.92 CALCULATED CHANNEL AREA= 3414.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	1112.80	.14	0.	41000.	3937.	3934.	1112.80	1114.00	0.

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1114.00 ELREA= 1117.00

UPSTREAM SIDE PEORIA AVE BRIDGE. BRIDGE PLANS 1 FOOT HIGHER THAN
81 TOPO, PLANS LOWERED 1 FOOT, 2 FOOT DEBRIS

291.000	17.46	1111.06	.00	.00	1112.80	1.73	.49	.00	1110.00
41000.0	.0	41000.0	.0	.0	3882.4	.0	3965.3	901.5	1099.60
1.06	.00	10.56	.00	.000	.035	.000	.000	1093.60	9809.51
.001789	100.	100.	100.	0	0	0	.00	268.18	10077.69

*SECNO 293.000

3470 ENCROACHMENT STATIONS= 9700.0 10450.0 TYPE= 1 TARGET= 750.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1114.00 ELREA= 1110.20

293.000	16.32	1111.42	1106.91	.00	1113.35	1.93	.46	.10	1114.00
41000.0	.0	40735.8	264.2	.0	3642.4	115.9	3982.9	903.1	1110.20
1.06	.00	11.18	2.28	.000	.035	.045	.000	1095.10	9871.44
.003043	170.	200.	220.	2	15	0	.00	427.12	10298.56

CCHV= .100 CEHV= .300
*SECNO 297.000

297.000	13.67	1112.57	1109.09	.00	1114.67	2.09	1.27	.05	1115.50
41000.0	.0	41000.0	.0	.0	3530.2	.0	4016.4	906.6	1115.30
1.07	.00	11.61	.00	.000	.035	.000	.000	1098.90	9857.14
.003294	400.	400.	400.	2	14	0	.00	335.75	10192.89

CNO 302.000

301 HV CHANGED MORE THAN HVINS

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

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        1.3FT ADDED TO 1981 LOB TO MATCH 1983 TOPO.
  302.000     13.89   1112.89   1112.73       .00   1118.05      5.15      2.46       .92   1114.70
  41000.0        .0   41000.0        .0        .0    2250.6        .0    4049.5     909.8   1119.10
     1.08       .00     18.22       .00      .000      .035      .000      .000   1099.00   9895.01
  .008140      480.      500.      510.         3         5         0       .00    211.13  10106.14
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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       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 305.000

3301 HV CHANGED MORE THAN HVINS

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

        NEW X-SECTION.FOR DEFINITION OF TRANSITION TO HIGH VELOCITY X302
        2.4FT ADDED TO 1981 LOB TO MATCH 1983 TOPO.
  305.000     16.12   1116.72   1113.54       .00   1119.85      3.13      1.60       .20   1118.50
  41000.0        .0   41000.0        .0        .0    2886.6        .0    4067.2     911.3   1118.50
     1.09       .00     14.20       .00      .000      .035      .000      .000   1100.60   9885.74
  .003757      260.      300.      320.         4        11         0       .00    217.09  10102.83

*SECNO 307.000

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1114.80 ELREA=      1119.00

        2.0FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
  307.000     17.42   1118.52   1113.56       .00   1120.53      2.01       .57       .11   1114.80
  41000.0    1584.2   39415.8        .0     551.8    3400.6        .0    4082.9     913.0   1119.00
     1.09      2.87     11.59       .00      .045      .035      .000      .000   1101.10   9611.11
  .002240      200.      200.      160.         2        16         0       .00    519.12  10130.23

*SECNO 311.500

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

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

        2.6FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
  311.500     17.52   1120.62   1111.94       .00   1121.11       .49       .43       .15   1120.00
  41000.0    2081.9   37525.9    1392.2    1375.4    6423.5     862.7    4147.5     924.5   1116.40
     1.11      1.51      5.84      1.61      .045      .035      .045      .000   1103.10   8932.65
  .000524      430.      450.      430.         3         8         0       .00   1797.07  10923.47
```



```
   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 314.000
        1.7FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
  314.000     16.23   1120.93   1113.85       .00   1121.25       .32       .12       .02   1111.40
  41000.0    4120.6   36698.5     181.0    1587.2    7840.3     191.3    4199.8     932.8   1117.30
     1.13      2.60      4.68       .95      .045      .035      .045      .000   1104.70   9416.06
  .000446      250.      250.      240.         2        11         0       .00   1126.22  10542.28

*SECNO 318.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .61
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1120.00 ELREA= 1122.00

18.000	14.42	1121.02	1116.61	.00	1121.61	.58	.28	.08	1120.00
1000.0	2.9	40997.1	.0	3.9	6698.1	.0	4275.7	941.8	1122.00
1.15	.73	6.12	.00	.045	.035	.000	.000	1106.60	9612.32
.001196	450.	400.	420.	2	14	0	.00	791.08	10403.40

*SECNO 323.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1126.00 ELREA= 1126.20

323.000	12.39	1121.69	1118.87	.00	1122.39	.70	.75	.04	1126.00
41000.0	.0	41000.0	.0	.0	6113.5	.0	4349.2	951.5	1126.20
1.17	.00	6.71	.00	.000	.035	.000	.000	1109.30	9483.44
.001926	500.	500.	400.	2	18	0	.00	889.55	10372.99

*SECNO 328.000
CHIMP CLSTA= 10000.00 CELCH= 1111.60 BW= 440.00 STCHL= 9730.00 STCHR= 10265.00
EXCAVATION DATA
AEX= 1704.9SQ-FT VEXR= .0K*CU-YD VEXT= .0K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1126.00 ELREA= 1127.10

FIRST CHIMP X-SECT FAIRED INTO NATURAL RIVERBED AT X323.
NEW X-SECTION TO DEFINE LOB DUMP FILL INSIDE CITY SERVICE AREA.
PUSHING DS.

328.000	10.72	1122.32	1118.01	.00	1123.44	1.12	.93	.13	1126.00
41000.0	.0	41000.0	.0	.0	4833.6	.0	4412.1	959.2	1127.10
1.18	.00	8.48	.00	.000	.035	.000	.000	1111.60	9769.28
.001786	600.	500.	460.	2	11	0	.00	461.45	10230.72

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	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 330.000
CHIMP CLSTA= 10038.00 CELCH= 1110.90 BW= 340.00 STCHL= 9830.00 STCHR= 10224.19
EXCAVATION DATA
AEX= 2104.8SQ-FT VEXR= 12.3K*CU-YD VEXT= 12.3K*CU-YD

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1122.00 ELREA= 1127.09

330.000	11.44	1122.34	1118.52	.00	1123.95	1.61	.36	.15	1122.00
41000.0	1.2	40998.8	.0	2.3	4020.6	.0	4429.8	960.9	1127.09
1.19	.50	10.20	.00	.045	.035	.000	.000	1110.90	9816.41
.002432	200.	175.	200.	2	15	0	.00	378.17	10219.44

*SECNO 334.000
CHIMP CLSTA= 10025.00 CELCH= 1112.10 BW= 330.00 STCHL= 9843.64 STCHR= 10205.65
EXCAVATION DATA
AEX= 2250.9SQ-FT VEXR= 32.3K*CU-YD VEXT= 44.6K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1128.46 ELREA= 1127.75

330FT BOTTOM WIDTH CHANNEL TO D.S. GRAND AVE BRIDGE X345.
LOB HOUSES NOT CODED. ALONG SOUTH BORDER ROAD. ROB ENCR AT GOLF BLK
WALL END OF SMALL CHANNEL TO GRAND AVE BRIDGES. LOB ENCR AT BRIDGE
EXPANSION.

334.000	11.15	1123.25	1119.84	.00	1125.05	1.80	1.04	.06	1128.46
41000.0	.0	41000.0	.0	.0	3803.0	.0	4465.8	964.3	1127.75
1.20	.00	10.78	.00	.000	.035	.000	.000	1112.10	9848.85
.002798	400.	400.	400.	2	14	0	.00	352.29	10201.15

*SECNO 337.000
CHIMP CLSTA= 10040.00 CELCH= 1113.20 BW= 330.00 STCHL= 9859.19 STCHR= 10220.83
EXCAVATION DATA
AEX= 2906.4SQ-FT VEXR= 28.7K*CU-YD VEXT= 73.3K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1129.01 ELREA= 1129.03

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
337.000	10.85	1124.05	1120.94	.00	1125.96	1.91	.88	.03	1129.01
41000.0	.0	41000.0	.0	.0	3699.2	.0	4491.6	966.7	1129.03
1.21	.00	11.08	.00	.000	.035	.000	.000	1113.20	9864.15
.003059	300.	300.	300.	2	19	0	.00	351.71	10215.85

*SECNO 340.500
CHIMP CLSTA= 10045.00 CELCH= 1114.40 BW= 330.00 STCHL= 9865.09 STCHR= 10224.84
EXCAVATION DATA
AEX= 2890.7SQ-FT VEXR= 37.6K*CU-YD VEXT= 110.8K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1129.31 ELREA= 1129.24

340.500	10.71	1125.11	1122.16	.00	1127.07	1.96	1.09	.02	1129.31
41000.0	.0	41000.0	.0	.0	3649.1	.0	4521.1	969.5	1129.24
1.22	.00	11.24	.00	.000	.035	.000	.000	1114.40	9869.29
.003196	350.	350.	350.	2	15	0	.00	351.42	10220.71

*SECNO 342.000
CHIMP CLSTA= 10050.00 CELCH= 1114.90 BW= 330.00 STCHL= 9870.25 STCHR= 10230.10
EXCAVATION DATA
AEX= 2693.6SQ-FT VEXR= 15.5K*CU-YD VEXT= 126.3K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1129.65 ELREA= 1130.00

342.000	10.68	1125.58	1122.65	.00	1127.56	1.97	.48	.00	1129.65
41000.0	.0	41000.0	.0	.0	3638.1	.0	4533.7	970.7	1130.00
1.22	.00	11.27	.00	.000	.035	.000	.000	1114.90	9874.32
.003227	150.	150.	150.	0	15	0	.00	351.36	10225.68

*SECNO 343.000
CHIMP CLSTA= 10025.00 CELCH= 1115.20 BW= 330.00 STCHL= 9846.20 STCHR= 10206.80
EXCAVATION DATA
AEX= 2668.8SQ-FT VEXR= 9.9K*CU-YD VEXT= 136.3K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1129.00 ELREA= 1132.00

LOB CODED AS LT BNK ON DIKE TOP.

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	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
343.000	10.72	1125.92	1122.95	.00	1127.88	1.96	.32	.00	1129.00
41000.0	.0	41000.0	.0	.0	3649.1	.0	4542.0	971.6	1132.00
1.22	.00	11.24	.00	.000	.035	.000	.000	1115.20	9849.29
.003196	100.	100.	100.	1	15	0	.00	351.42	10200.71

CCHV= .500 CEHV= .700
*SECNO 344.900

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1132.00 ELREA= 1132.00

DROP STRUCTURE DELETED-CONCRETE INVERT UNDER BRIDGES

344.900	10.21	1126.51	1124.06	.00	1128.70	2.19	.66	.16	1132.00
41000.0	.0	41000.0	.0	.0	3454.7	.0	4557.5	973.1	1132.00
1.23	.00	11.87	.00	.000	.035	.000	.000	1116.30	9827.19
.003776	110.	190.	260.	0	15	0	.00	346.27	10173.46

*SECNO 345.200

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1138.30 ELREA= 1138.30

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          DOWNSTREAM GRAND AVE DUAL HIGHWAY BRIDGE
   345.200     10.49   1126.79   1124.05       .00   1128.86      2.07       .11       .06   1132.00
   41000.0        .0   41000.0        .0        .0    3550.9        .0    4560.0     973.3   1132.00
      1.23       .00     11.55       .00      .000      .035      .000      .000   1116.30   9826.98
   .003455       30.       30.       30.         2        15         0       .00    346.71  10173.69


 SPECIAL BRIDGE

 5227 DOWNSTREAM ELEV IS    1122.35 , NOT    1126.79 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      1.10      1.56      2.90       .00    330.00     36.50   5319.00       .72   1117.00   1116.30

 *SECNO 346.200
 CLASS B LOW FLOW

 3420 BRIDGE W.S.=    1125.06 BRIDGE VELOCITY=      16.28     CALCULATED CHANNEL AREA=      2411.
1
    05MAY04      16:11:44                                                                                    PAGE   61

     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   1130.07      .00        0.    41000.     5319.     5293.     1134.30   1141.90        0.


 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1138.30 ELREA=      1138.30


          UPSTREAM DUAL HIGHWAY BRIDGE AT GRAND AVE.CODED AS SINGLE BRIDGE WITH
          2FT DEBRIS.1983 TOPO 1.5FT LOWER FOR DECK WAS USED
          THAN 1981 TOPO DECK-PLANS LOWERED TO FIT TOPO.RR WEIR FLOW CONTROLS.
          GRAND AVE & RR BRIDGE HAVE  1:1 SIDES, GROUTED INVERT.
   346.200     11.30   1128.30       .00       .00   1130.07      1.77      1.21       .00   1132.00
   41000.0        .0   41000.0        .0        .0    3835.2        .0    4568.4     974.1   1132.00
      1.23       .00     10.69       .00      .000      .035      .000      .000   1117.00   9825.96
   .002698      100.      100.      100.         0         0         0       .00    348.83  10174.79


 *SECNO 346.620

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1140.50 ELREA=      1140.50

          DOWNSTREAM SIDE SANTA FE RR BRIDGE.NO FLOW PERMITTED BETWEEN BRIDGES
   346.620     10.88   1128.38   1125.25       .00   1130.28      1.90       .12       .09   1136.00
   41000.0        .0   41000.0        .0        .0    3702.6        .0    4572.1     974.5   1135.00
      1.23       .00     11.07       .00      .000      .035      .000      .000   1117.50   9830.00
   .003040       42.       42.       42.         2        14         0       .00    350.57  10180.57


 *SECNO 346.720

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE, NRD=   4 MIN ELTRD=  1141.40 MAX ELLC=  1135.80

          JUST INSIDE DOWNSTREAM SIDE OF SANTA FE RR BRIDGE. NO DEBRIS APPLIES.
   346.720     10.84   1128.34   1125.55       .00   1130.51      2.17       .04       .19   1136.00
   41000.0        .0   41000.0        .0        .0    3469.5        .0    4572.9     974.5   1141.00
      1.23       .00     11.82       .00      .000      .035      .000      .000   1117.50   9830.04
   .004707       10.       10.       10.         2         9         0       .00    332.20  10180.53


1
    05MAY04      16:11:44                                                                                    PAGE   62

     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 346.900

 3265 DIVIDED FLOW
```

NORMAL BRIDGE, NRD= 4 MIN ELTRD= 1141.40 MAX ELLC= 1135.80

JUST INSIDE UPSTREAM SIDE OF SANTA FE RR BRIDGE.4FT DEBRIS EACH PIER.

346.900	10.90	1128.40	1125.80	.00	1130.65	2.25	.09	.06	1141.00
41000.0	.0	41000.0	.0	.0	3403.5	.0	4574.3	974.7	1141.00
1.23	.00	12.05	.00	.000	.035	.000	.000	1117.50	9830.05
.004957	18.	18.	18.	0	9	0	.00	326.33	10187.00

*SECNO 347.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1138.60 ELREA= 1141.40

UPSTREAM SANTA FE RR BRIDGE. NORMAL BRIDGE ROUTINE USED TO BETTER
MODEL DUAL ELLC. 4 FEET DEBRIS.
NEW TWO SPAN REPLACES WOOD TRESTLE

347.000	11.55	1129.25	1125.48	.00	1130.96	1.71	.03	.27	1141.00
41000.0	.0	41000.0	.0	.0	3908.3	.0	4575.1	974.7	1141.00
1.23	.00	10.49	.00	.000	.035	.000	.000	1117.70	9831.57
.002526	10.	10.	10.	3	15	0	.00	346.85	10178.43

CCHV= .100 CEHV= .300
*SECNO 349.000
CHIMP CLSTA= 10000.00 CELCH= 1119.10 BW= 330.00 STCHL= 9810.00 STCHR= 10170.00
EXCAVATION DATA
AEX= 2991.4SQ-FT VEXR= 28.8K*CU-YD VEXT= 165.1K*CU-YD

3265 DIVIDED FLOW

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1135.00 ELREA= 1124.00

PILOT CHANNEL TO X-358; BW=330FT, SS=1:1

349.000	10.85	1129.95	1126.86	.00	1131.71	1.76	.73	.02	1135.00
41000.0	.0	39700.3	1299.7	.0	3680.1	292.2	4599.8	977.2	1124.00
1.24	.00	10.79	4.45	.000	.035	.045	.000	1119.10	9824.15
.002828	180.	275.	220.	2	14	0	.00	451.91	10324.08

*SECNO 352.000
CHIMP CLSTA= 9990.00 CELCH= 1121.30 BW= 330.00 STCHL= 9810.00 STCHR= 10160.00
EXCAVATION DATA
AEX= 1925.1SQ-FT VEXR= 27.3K*CU-YD VEXT= 192.4K*CU-YD

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1132.00 ELREA= 1124.00

LOB ENCR FOR NO WEIR FLOW. ROB TERMINATED AT SUN CITY BLOCK FENCE.

352.000	9.25	1130.55	1129.02	.00	1133.02	2.47	1.10	.21	1132.00
41000.0	.0	39907.3	1092.7	.0	3133.1	185.1	4625.5	980.4	1124.00
1.25	.00	12.74	5.90	.000	.035	.045	.000	1121.30	9815.75
.004828	230.	300.	400.	2	15	0	.00	411.99	10401.39

CNO 358.000

5 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

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 ENCROACHMENT STATIONS=     9250.0   10720.0  TYPE=      1  TARGET=     1470.000
        UPSTREAM END OF PILOT CHANNEL
   358.000     10.51   1136.11   1136.11       .00   1138.26      2.15      3.26       .03   1135.00
   41000.0     483.9   29667.9   10848.2     252.0    2256.0    1523.2    4676.5     991.4   1137.50
      1.26      1.92     13.15      7.12      .045      .035      .045      .000   1125.60   9394.56
   .006031      400.      600.      650.         0         8         0       .00   1294.80  10720.00


1
   05MAY04      16:11:44                                                                                PAGE   64

    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 365.000

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=     8500.0   10770.0  TYPE=      1  TARGET=     2270.000
   365.000     12.47   1139.97   1139.29       .00   1141.32      1.34      2.97       .08   1137.00
   41000.0    2971.6   31051.1    6977.3     999.8    2963.3    1737.9    4754.7    1013.1   1136.00
      1.28      2.97     10.48      4.01      .045      .035      .045      .000   1127.50   9361.02
   .003155      700.      700.      700.         2         9         0       .00   1408.98  10770.00


 *SECNO 370.000

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=     8530.0   10800.0  TYPE=      1  TARGET=     2270.000
   370.000     14.21   1141.61   1139.59       .00   1142.71      1.10      1.37       .02   1140.50
   41000.0    3114.1   33744.6    4141.3     877.6    3690.6    1296.4    4819.6    1028.7   1139.00
      1.30      3.55      9.14      3.19      .045      .035      .045      .000   1127.40   9290.07
   .002452      430.      500.      500.         2         5         0       .00   1462.13  10800.00


 *SECNO 373.000

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=     8550.0   10700.0  TYPE=      1  TARGET=     2150.000
   373.000     15.13   1142.33   1139.48       .00   1143.56      1.23       .80       .04   1140.00
   41000.0    4452.1   33683.7    2864.2    1259.8    3469.7    1045.0    4865.1    1042.9   1141.00
      1.31      3.53      9.71      2.74      .045      .035      .045      .000   1127.20   8678.50
   .002343      420.      330.      300.         2        14         0       .00   1931.14  10661.33


 *SECNO 377.000

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=     9300.0   10700.0  TYPE=      1  TARGET=     1400.000
        DOWNSTREAM END OF CHANNELIZATION FROM T-BIRD ROAD.
1
   05MAY04      16:11:44                                                                                PAGE   65


        DS BREAKOUT ENCR HERE.
   377.000     14.64   1143.14   1141.47       .00   1144.78      1.64      1.10       .12   1143.80
   41000.0    4443.9   35243.2    1312.9    1090.5    3208.2     543.6    4912.2    1056.7   1143.90
      1.32      4.08     10.99      2.42      .045      .035      .045      .000   1128.50   9300.00
   .003333      400.      400.      310.         2         8         0       .00   1259.52  10700.00


 *SECNO 384.000

 3470 ENCROACHMENT STATIONS=     9340.0   10240.0  TYPE=      1  TARGET=      900.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1147.00 ELREA=      1146.00

   384.000     15.32   1145.12   1141.34       .00   1147.07      1.95      2.20       .09   1147.00
   41000.0        .0   41000.0        .0        .0    3663.2        .0    4981.3    1070.0   1146.00
      1.34       .00     11.19       .00      .000      .035      .000      .000   1129.80   9851.18
   .002938      750.      700.      730.         2        15         0       .00    339.20  10190.38


 *SECNO 388.000
```

[illegible] OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1148.00 ELREA= 1148.00

388.000	16.55	1146.55	1141.27	.00	1148.07	1.52	.96	.04	1148.00
41000.0	.0	41000.0	.0	.0	4145.8	.0	5017.2	1073.1	1148.00
1.35	.00	9.89	.00	.000	.035	.000	.000	1130.00	9829.97
.001994	400.	400.	400.	2	15	0	.00	344.96	10174.93

*SECNO 391.500

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1156.00 ELREA= 1148.00

391.500	15.56	1147.26	1142.80	.00	1148.88	1.62	.78	.03	1156.00
41000.0	.0	41000.0	.0	.0	4008.8	.0	5049.9	1076.0	1148.00
1.36	.00	10.23	.00	.000	.035	.000	.000	1131.70	9793.74
.002536	350.	350.	350.	2	14	0	.00	380.74	10174.48

*SECNO 395.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1151.30 ELREA= 1150.00

LOB SPLIT FLOW OF 800 CFS ONLY OK TO X-384
DOWNSTREAM END OF DEVELOPERS CHANNEL THRU T BIRD BRIDGE

395.000	16.07	1148.27	1143.07	.00	1149.67	1.40	.77	.02	1151.30
41000.0	.0	41000.0	.0	.0	4314.5	.0	5083.4	1079.0	1150.00
1.37	.00	9.50	.00	.000	.035	.000	.000	1132.20	9773.34
.001908	325.	350.	375.	2	19	0	.00	369.13	10142.46

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

[illegible]NO 402.000

3470 ENCROACHMENT STATIONS= 9150.0 10351.0 TYPE= 1 TARGET= 1201.000

402.000	15.47	1149.67	1144.00	.00	1150.94	1.27	1.26	.01	1150.00
41000.0	.0	41000.0	.0	.0	4528.9	.0	5154.4	1085.1	1150.00
1.39	.00	9.05	.00	.000	.035	.000	.000	1134.20	9806.97
.001694	670.	700.	710.	2	14	0	.00	381.38	10188.36

CCHV= .300 CEHV= .500
*SECNO 406.000

3470 ENCROACHMENT STATIONS= 9500.0 10300.0 TYPE= 1 TARGET= 800.000

406.000	15.23	1150.33	1145.31	.00	1151.75	1.42	.73	.07	1152.00
41000.0	.0	40999.3	.7	.0	4289.2	1.7	5194.9	1088.6	1150.00
1.40	.00	9.56	.45	.000	.035	.045	.000	1135.10	9813.34
.001995	390.	400.	410.	2	14	0	.00	386.62	10199.96

*SECNO 409.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9716.7 10006.0 TYPE= 1 TARGET= 289.300
D.S. SIDE THUNDERBIRD RD.BRIDGE.

409.000	15.23	1150.53	1146.61	.00	1153.00	2.47	.73	.53	1160.00
41000.0	.0	41000.0	.0	.0	3249.6	.0	5220.9	1090.8	1160.00
1.41	.00	12.62	.00	.000	.035	.000	.000	1135.30	9735.94
.002997	550.	300.	150.	2	15	0	.00	250.62	9986.56

*SECNO 409.010

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1161.50 ELREA= 1160.60

JUST INSIDE DOWNSTREAM SIDE OF T BIRD NORMAL BRIDGE. NO PIER DEBRIS
BRIDGE PLANS 0.8 TO 1.0 FT HIGHER THAN 1981 TOPO.
PLAN ELEVATION ADJUSTMENT TO TOPO.

[illegible]09.010	15.22	1150.42	1146.62	.00	1153.12	2.69	.00	.11	1161.50
41000.0	.0	41000.0	.0	.0	3114.6	.0	5221.0	1090.8	1160.60
1.41	.00	13.16	.00	.000	.035	.000	.000	1135.20	9761.12
.003165	1.	1.	1.	2	15	0	.00	232.37	9993.49

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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


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.56      2.90       .00    167.33     18.00   3913.31      2.44   1135.60   1135.20

*SECNO 409.820
CLASS A LOW FLOW

3420 BRIDGE W.S.=    1149.09 BRIDGE VELOCITY=      16.39     CALCULATED CHANNEL AREA=      2459.

 EGPRS      EGLWC      H3       QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD     WEIRLN
                                                             AREA
       .00   1154.05     1.11        0.    41000.     3913.     3913.    1155.40   1163.50        0.


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1161.50 ELREA=      1160.60

          NORMAL BRIDGE.  JUST INSIDE UPSTREAM SIDE THUNDERBIRD BRIDGE.
          2 FEET DEBRIS.  DECK SLOPES 0.8 FEET TOWARDS D.S. SIDE-INCLUDED.
          TOPO ELEV USED.  BT FOR BRIDGE.
   409.820     15.94   1151.54       .00       .00   1154.05      2.51       .93       .00   1161.50
   41000.0        .0   41000.0        .0        .0    3224.9        .0    5226.9    1091.2   1160.60
      1.41       .00     12.71       .00      .000      .035      .000      .000   1135.60   9764.92
   .002807       81.       81.       81.         0         0         0       .00    231.73   9996.65


*SECNO 410.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1155.30 ELREA=      1158.00

          JUST UPSTREAM OF THUNDERBIRD BRIDGE.  ROB MAY BLOCK RT APPR.
          WEIR FLOW
   410.000     16.10   1151.80   1147.24       .00   1154.15      2.35       .05       .05   1155.30
   41000.0        .0   41000.0        .0        .0    3335.4        .0    5228.2    1091.3   1158.00
      1.41       .00     12.29       .00      .000      .035      .000      .000   1135.70   9666.16
   .002650       18.       18.       18.         2        15         0       .00    243.21   9909.37


CCHV=      .100 CEHV=      .300
*SECNO 412.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1159.70 ELREA=      1156.10
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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


   412.000     15.85   1152.65   1148.01       .00   1154.69      2.05       .52       .03   1159.70
   41000.0        .0   41000.0        .0        .0    3571.0        .0    5244.1    1092.5   1156.10
      1.42       .00     11.48       .00      .000      .035      .000      .000   1136.80   9861.64
   .002518      100.      200.      260.         2        19         0       .00    280.95  10142.59


*SECNO 418.000


3470 ENCROACHMENT STATIONS=     9800.0   10190.0  TYPE=      1  TARGET=      390.000
   418.000     16.38   1154.48   1149.64       .00   1156.17      1.69      1.44       .04   1160.00
   41000.0        .0   41000.0        .0        .0    3925.2        .0    5295.7    1096.7 100000.00
      1.43       .00     10.45       .00      .000      .035      .000      .000   1138.10   9836.51
   .002302      550.      600.      700.         2        15         0       .00    335.36  10171.87


CNO 423.000
          UPSTREAM START OF CHANNEL TO X377-370
   423.000     18.01   1155.61   1150.92       .00   1157.40      1.79      1.20       .03   1161.40
   41000.0        .0   41000.0        .0        .0    3823.8        .0    5340.2    1100.5   1162.00
      1.44       .00     10.72       .00      .000      .035      .000      .000   1137.60   9837.93
   .002487      460.      500.      600.         2        15         0       .00    325.58  10163.51
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NO 425.000
        DOWNSTREAM END OF NATURAL STREAMBED TO SKUNK CREEK CHANNELIZATION.
        16FPS ERODES RIVER BED TO MODIFIED GR DIMENSIONS-TIED TO X423 INVERT.
   425.000     20.37   1156.37   1150.41       .00   1157.86      1.49       .43       .03   1159.40
   41000.0        .0   41000.0        .0        .0    4184.3        .0    5358.6    1102.1   1162.00
      1.45       .00      9.80       .00      .000      .035      .000      .000   1136.00   9835.75
   .001905      130.      200.      170.         2        15         0       .00    341.15  10176.90


*SECNO 428.000

3470 ENCROACHMENT STATIONS=     8000.0   10500.0  TYPE=      1  TARGET=     2500.000
        ASSUMED 2FT ERODES FROM BOTTOM DUE TO X423 ORIGINAL DROP INLET.
   428.000     19.19   1157.09   1150.88       .00   1158.40      1.31       .52       .02   1161.40
   41000.0        .0   41000.0        .0        .0    4470.9        .0    5388.4    1104.5   1164.00
      1.46       .00      9.17       .00      .000      .035      .000      .000   1137.90   9833.08
   .001603      300.      300.      300.         2        14         0       .00    352.94  10186.02


1
   05MAY04      16:11:44                                                                          PAGE   69

    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 434.000

3470 ENCROACHMENT STATIONS=     8150.0   10600.0  TYPE=      1  TARGET=     2450.000
   434.000     20.13   1158.13   1152.70       .00   1159.39      1.26       .99       .00   1160.00
   41000.0        .0   41000.0        .0        .0    4550.0        .0    5450.5    1109.5   1164.00
      1.48       .00      9.01       .00      .000      .035      .000      .000   1138.00   9907.21
   .001694      600.      600.      600.         1        19         0       .00    384.77  10291.97


*SECNO 440.000

0 ENCROACHMENT STATIONS=     8600.0   11200.0  TYPE=      1  TARGET=     2600.000
   440.000     19.24   1159.24   1152.69       .00   1160.29      1.05       .88       .02   1166.00
   41000.0        .0   41000.0        .0        .0    4977.1        .0    5516.1    1114.8   1166.00
      1.50       .00      8.24       .00      .000      .035      .000      .000   1140.00   9935.76
   .001271      600.      600.      600.         2        14         0       .00    385.60  10321.36


*SECNO 443.200


3470 ENCROACHMENT STATIONS=     8900.0   11200.0  TYPE=      1  TARGET=     2300.000
   443.200     19.11   1159.61   1154.01       .00   1160.77      1.16       .45       .03   1166.00
   41000.0        .0   41000.0        .0        .0    4751.7        .0    5551.8    1117.7   1170.00
      1.51       .00      8.63       .00      .000      .035      .000      .000   1140.50   9950.49
   .001540      330.      320.      330.         2        19         0       .00    397.38  10347.86


*SECNO 449.100

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     9500.0   11200.0  TYPE=      1  TARGET=     1700.000
   449.100      9.22   1161.22   1161.22       .00   1164.73      3.51      1.85       .71   1169.00
   41000.0        .0   41000.0        .0        .0    2728.5        .0    5602.5    1123.1   1170.80
      1.52       .00     15.03       .00      .000      .035      .000      .000   1152.00   9964.96
   .009499      600.      590.      580.         0        11         0       .00    389.94  10430.50


1
   05MAY04      16:11:44                                                                          PAGE   70

    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 451.000
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[illegible]5 DIVIDED FLOW

[illegible] MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

451.000	11.66	1165.56	1165.56	.00	1169.07	3.51	1.84	.00	1170.00
41000.0	.0	41000.0	.0	.0	2725.6	.0	5614.4	1124.8	1170.00
1.52	.00	15.04	.00	.000	.035	.000	.000	1153.90	9930.85
.009871	200.	190.	120.	0	11	0	.00	397.81	10418.01

CCHV= .200 CEHV= .400
*SECNO 8.655

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.99

3470 ENCROACHMENT STATIONS= 9820.0 10225.0 TYPE= 1 TARGET= 405.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 100000.00 ELREA= 1171.20

CONFLUENCE OF SKUNK CREEK AND NEW RIVER EQUALS NEW RIVER X-SECTION
451.00 LO-FLOW

8.655	15.08	1170.38	1163.50	.00	1171.31	.92	1.71	.52	100000.00
41000.0	.0	41000.0	.0	.0	5317.7	.0	5678.1	1131.1	1171.20
1.55	.00	7.71	.00	.000	.035	.000	.000	1155.30	9820.00
.001106	950.	690.	375.	2	19	0	.00	400.54	10220.54

CCHV= .100 CEHV= .300
*SECNO 8.731
3280 CROSS SECTION 8.73 EXTENDED .20 FEET

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1172.80 ELREA= 1172.20

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
8.731	15.40	1171.50	1160.46	.00	1171.58	.08	.19	.08	1172.80
12000.0	.0	12000.0	.0	.0	5388.5	.0	5727.2	1134.9	1172.20
1.60	.00	2.23	.00	.000	.035	.000	.000	1156.10	9776.61
.000097	400.	400.	400.	2	14	0	.00	433.92	10210.53

*SECNO 8.807

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1174.70 ELREA= 1173.90

8.807	13.23	1171.53	1162.14	.00	1171.63	.10	.05	.01	1174.70
12000.0	.0	12000.0	.0	.0	4723.8	.0	5773.7	1138.9	1173.90
1.64	.00	2.54	.00	.000	.035	.000	.000	1158.30	9783.23
.000144	400.	400.	390.	2	11	0	.00	422.53	10205.75

*SECNO 8.883

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .46

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1174.90 ELREA= 1176.30

8.883	11.40	1171.50	1165.99	.00	1171.80	.30	.11	.06	1174.90
12000.0	.0	12000.0	.0	.0	2738.1	.0	5807.9	1142.4	1176.30
1.67	.00	4.38	.00	.000	.035	.000	.000	1160.10	9847.01
.000677	280.	400.	400.	2	14	0	.00	344.04	10191.05

[illegible]ECNO 8.936

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1177.30 ELREA= 1178.20

8.936	9.90	1171.70	1167.73	.00	1172.04	.35	.23	.01	1177.30

```
   12000.0        .0   12000.0        .0        .0    2537.6        .0    5825.5    1144.7   1178.20
      1.68       .00      4.73       .00      .000      .035      .000      .000   1161.80   9821.41

    .000939      300.      290.      300.         2        11         0       .00    362.48  10183.89


*SECNO 8.977

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1177.20 ELREA=      1179.30

1
   05MAY04      16:11:44                                                                                PAGE   72

    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


      8.977       8.27   1171.77   1168.75       .00   1172.40       .63       .27       .08   1177.20
   12000.0        .0   12000.0        .0        .0    1883.8        .0    5836.2    1146.3   1179.30
      1.69       .00      6.37       .00      .000      .035      .000      .000   1163.50   9894.68
    .001838      220.      210.      200.         2        11         0       .00    285.65  10180.33


*SECNO 9.009

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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1178.00 ELREA=      1179.90

      9.009       9.43   1172.33   1167.92       .00   1172.63       .30       .20       .03   1178.00
   12000.0        .0   12000.0        .0        .0    2717.7        .0    5845.7    1147.7   1179.90
      1.70       .00      4.42       .00      .000      .035      .000      .000   1162.90   9795.44
    .000769      330.      180.      180.         2        14         0       .00    371.89  10167.33


*SECNO 9.047

5 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1177.50 ELREA=      1177.60

      9.047      11.36   1172.56   1166.61       .00   1172.75       .20       .11       .01   1177.50
   12000.0        .0   12000.0        .0        .0    3358.3        .0    5859.6    1149.4   1177.60
      1.72       .00      3.57       .00      .000      .035      .000      .000   1161.20   9710.96
    .000411      280.      200.      160.         2        11         0       .00    393.29  10104.25


*SECNO 9.129

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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1180.60 ELREA=      1178.70

      9.129       8.52   1172.72   1169.21       .00   1173.06       .34       .26       .04   1180.60
   12000.0        .0   12000.0        .0        .0    2575.5        .0    5888.2    1153.3   1178.70
      1.75       .00      4.66       .00      .000      .035      .000      .000   1164.20   9674.23
    .001039      290.      420.      460.         2        18         0       .00    406.92  10081.16


1
   05MAY04      16:11:44                                                                                PAGE   73

    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 9.318

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

0 ENCROACHMENT STATIONS=    19660.0   20015.0  TYPE=       1  TARGET=       355.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1186.00 ELREA=    100000.00

      9.318       7.35   1180.55   1180.55       .00   1182.39      1.84      2.51       .45   1186.00
   12000.0        .0   12000.0        .0        .0    1102.5        .0    5930.4    1161.6 100000.00
```

```
     1.77       .00      10.88       .00      .000      .035      .000      .000   1173.20  19699.38
  .012573     1000.      1000.     1000.         0        15         0       .00    314.98  20014.36

*SECNO 9.492

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.88

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1188.00 ELREA=      1193.90

     9.492      8.16   1187.16   1184.97       .00   1187.84       .68      5.34       .12   1188.00
   11450.0        .0   11450.0        .0        .0    1729.2        .0    5960.3    1168.9   1193.90
      1.81       .00      6.62       .00      .000      .035      .000      .000   1179.00  19826.75
   .003248      910.      920.      890.         3        11         0       .00    381.02  20207.77

*SECNO 9.692

3301 HV CHANGED MORE THAN HVINS

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

1
   05MAY04      16:11:44                                                                          PAGE   74

    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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1195.00 ELREA=      1196.10

     9.692      7.26   1191.36   1190.91       .00   1193.45      2.09      5.18       .42   1195.00
   11450.0        .0   11450.0        .0        .0     987.4        .0    5993.3    1175.8   1196.10
      1.83       .00     11.60       .00      .000      .035      .000      .000   1184.10  19856.19
   .008269     1050.     1056.     1040.         3        15         0       .00    188.27  20044.45

1
   05MAY04      16:11:44                                                                          PAGE   75

T1      FCDMC NEW RIVER FLOODWAY ANALYSIS
T2      100-YEAR FLOWS W/ FLOODWAY ENCROACHMENTS
T3      NEW RIVER-A.F.R. TO S.C.

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ

       0         5          0          0       .001          0          0          0     1028.5          0

J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE

      15         0         -1          0          0          0         -1          6          0          0


1
   05MAY04      16:11:44                                                                          PAGE   76

    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

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=      .100 CEHV=      .300
 CNO 501.450

 5 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=      9300.0   12150.0  TYPE=       1  TARGET=      2850.000
         LAST AGUA FRIA X-SECT.  USED AS STARTING WSEL FOR NEW RIVER W/O
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        PHASING AS REQUESTED PER DAVE JOHNSON OF MCFCD ON 10/20/86 FOR THEIR
        FIS STUDY.  FILE LNRSPFQS CONVERTED TO LNRMCFCD ON 10/21/86 FOR
        NEW RIVER FIS BASE.
   01.450      9.02   1028.22   1024.72   1027.50   1028.42       .20       .00       .00 100000.00
 39000.0        .0   35948.3    3051.7        .0    9750.7    1519.7        .0        .0   1028.00
     .00       .00      3.69      2.01      .000      .035      .045      .000   1019.20   9300.00
 .001000        0.        0.        0.         0        14         5       .00   2800.83  12150.00


*SECNO 10.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     9050.0   10370.0  TYPE=      1  TARGET=     1320.000
  10.000      6.01   1030.01   1030.01   1029.45   1031.58      1.58      2.36       .41   1028.30
 39000.0   13369.9   24392.3    1237.8    1888.5    2113.5     220.6     185.3      51.2   1028.00
     .03      7.08     11.54      5.61      .045      .035      .045      .000   1024.00   9050.00
 .011689      700.     1000.     1700.         0        23         0       .00   1320.00  10370.00


*SECNO 13.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.52

1
  05MAY04      16:11:44                                                                          PAGE   77

   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


   0 ENCROACHMENT STATIONS=     9050.0   10374.0  TYPE=      1  TARGET=     1324.000
        AP PLAN STA. 15+30  CROSS SECTIONS 13.0 THRU 70.5 HAVE BEEN UPDATED
        PER GLENDALE AIRPORT CHANNEL PLANS AND HAVE BEEN ADJUSTED TO COE
        DATUM.  COE B.M.=1074.25  A.P. B.M.=1074.71.  A.P. CROSS SECTION
        DATA ADJUSTED -0.46 FT(USED -0.50).
  13.000      9.77   1031.97   1029.69   1031.08   1032.58       .60       .90       .10   1030.00
 39000.0   10878.9   28121.1        .0    3029.3    4017.8        .0     212.8      56.9 100000.00
     .04      3.59      7.00       .00      .045      .035      .000      .000   1022.20   9050.00
 .001844      100.      300.      300.         2        11         0       .00   1324.00  10374.00


*SECNO 20.000

3470 ENCROACHMENT STATIONS=     9100.0   10445.0  TYPE=      1  TARGET=     1345.000
               AP PLAN STA. 22+30
  20.000      9.77   1033.37   1030.67   1032.46   1033.90       .53      1.31       .01   1033.00
 39000.0    5088.6   33911.4        .0    1675.5    5516.7        .0     341.3      82.3 100000.00
     .08      3.04      6.15       .00      .045      .035      .000      .000   1023.60   9100.00
 .001653      960.      700.      700.         3        19         0       .00   1345.00  10445.00


*SECNO 26.800

3470 ENCROACHMENT STATIONS=     9150.0   10400.0  TYPE=      1  TARGET=     1250.000
               AP PLAN STA. 29+10
  26.800      9.68   1034.58   1032.84   1033.93   1035.45       .87      1.45       .10   1033.00
 39000.0    4482.5   34517.5        .0    1521.4    4370.3        .0     455.2     106.8 100000.00
     .10      2.95      7.90       .00      .045      .035      .000      .000   1024.90   9150.00
 .002510     1000.      680.      680.         2        12         0       .00   1250.00  10400.00


*SECNO 32.600

3470 ENCROACHMENT STATIONS=     9000.0   10233.0  TYPE=      1  TARGET=     1233.000
               AP PLAN STA. 35+40
  32.600      9.83   1036.03   1033.27   1035.25   1036.90       .87      1.45       .00   1034.50
 39000.0    2773.7   36226.3        .0    1091.1    4691.6        .0     535.3     124.4 100000.00
     .12      2.54      7.72       .00      .045      .035      .000      .000   1026.20   9000.00
 .002426      660.      580.      580.         2        17         0       .00   1224.06  10224.06


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  05MAY04      16:11:44                                                                          PAGE   78

   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       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*SECNO 38.000

3470 ENCROACHMENT STATIONS=     8900.0   10073.0  TYPE=      1  TARGET=     1173.000
                AP PLAN STA. 40+30
    38.000     10.12   1037.32   1034.79   1037.16   1038.26       .95       1.34       .02   1035.60
   39000.0    2047.2   36952.8        .0     866.8    4611.9        .0      602.8     138.0   1041.00
       .14      2.36      8.01       .00      .045      .035      .000       .000   1027.20   8900.00
   .002596      440.      540.      500.         2        14         0        .00   1165.23  10065.23

*SECNO 45.000

3470 ENCROACHMENT STATIONS=     9150.0   10136.0  TYPE=      1  TARGET=      986.000
                AP PLAN STA. 45+80
    45.000     10.80   1039.10   1035.49   1039.08   1039.82       .73       1.54       .02   1038.70
   39000.0    1313.0   37687.0        .0     513.5    5428.4        .0      690.5     153.0   1041.20
       .17      2.56      6.94       .00      .045      .035      .000       .000   1028.30   9150.00
   .001939      440.      700.      680.         2        15         0        .00    981.60  10131.60

*SECNO 51.700

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.52

3470 ENCROACHMENT STATIONS=     9799.0   10599.0  TYPE=      1  TARGET=      800.000
                AP PLAN STA. 53+70
    51.700     12.79   1040.19   1034.80   1040.18   1040.66       .47        .81       .03   1041.00
   39000.0        .0   39000.0        .0        .0    7085.1        .0      790.2     166.1   1043.00
       .21       .00      5.50       .00      .000      .035      .000       .000   1027.40   9816.13
   .000834      600.      670.      510.         2        19         0        .00    741.91  10592.59

*SECNO 54.000

3470 ENCROACHMENT STATIONS=     9854.0   10696.0  TYPE=      1  TARGET=      842.000
                AP PLAN STA. 55+65
    54.000     12.45   1040.45   1035.22   1040.44   1040.85       .40        .18       .01   1042.50
   39000.0        .0   39000.0        .0        .0    7678.2        .0      829.2     170.2   1043.20
       .22       .00      5.08       .00      .000      .035      .000       .000   1028.00   9857.21
   .000745      270.      230.      200.         2        11         0        .00    832.30  10689.50

1
    05MAY04      16:11:44                                                                                    PAGE   79

    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 59.000

3470 ENCROACHMENT STATIONS=     9744.0   10701.0  TYPE=      1  TARGET=      957.000
                AP PLAN STA. 60+00
    59.000     10.15   1040.85   1036.70   1040.85   1041.31       .45        .44       .02   1044.00
   39000.0        .0   39000.0        .0        .0    7222.9        .0      914.7     180.3   1044.20
       .24       .00      5.40       .00      .000      .035      .000       .000   1030.70   9767.86
   .001049      760.      500.      490.         2        11         0        .00    925.64  10693.51

*SECNO 63.000

3470 ENCROACHMENT STATIONS=     9669.0   10572.0  TYPE=      1  TARGET=      903.000
                AP PLAN STA. 63+00
    63.000      9.56   1041.26   1037.49   1041.25   1041.82       .57        .48       .03   1043.50
   39000.0        .0   39000.0        .0        .0    6463.7        .0      977.6     188.6   1045.00
       .26       .00      6.03       .00      .000      .035      .000       .000   1031.70   9696.15
   .001393      460.      400.      380.         2        11         0        .00    867.96  10564.11

*SECNO 70.500

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .38
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 ENCROACHMENT STATIONS=      9579.0   10271.0  TYPE=       1  TARGET=       692.000
                AP PLAN STA. 70+50
   70.500      8.77   1042.27   1042.08   1042.27   1044.53      2.25      2.20       .51   1044.00
 39000.0        .0   39000.0        .0        .0    3239.2        .0    1061.1     201.7   1047.50
     .28       .00     12.04       .00      .000      .035      .000      .000   1033.50   9592.92
 .009716      710.      750.      700.         2        15         0       .00    661.33  10254.26


*SECNO 77.000

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

1
   05MAY04      16:11:44                                                                                PAGE   80

    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=      9775.0   10250.0  TYPE=       1  TARGET=       475.000
                AP PLAN STA. 74+16, END CHANNEL AT 107TH AVE.
                NORTH PROJECT X-77.0 USED AS NATURAL RIVER BED
   77.000     12.28   1046.88   1045.95   1046.88   1049.71      2.82      5.01       .17   1051.00
 39000.0        .0   38743.1     256.9        .0    2864.6      73.3    1107.2     209.8   1044.70
     .29       .00     13.52      3.51      .000      .035      .045      .000   1034.60   9795.96
 .006261      480.      650.      660.         2        11         0       .00    418.10  10237.54


*SECNO 84.000
3280 CROSS SECTION     84.00 EXTENDED       .72 FEET

1 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.40


3470 ENCROACHMENT STATIONS=      9844.0   10401.0  TYPE=       1  TARGET=       557.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1053.50 ELREA=      1044.40

   84.000     14.92   1050.72   1045.28   1050.69   1051.43       .71      1.51       .21   1053.50
 39000.0        .0   38993.7      6.3        .0    5775.5       6.4    1177.3     217.5   1044.40
     .32       .00      6.75       .98      .000      .035      .045      .000   1035.80   9859.33
 .001084      620.      700.      700.         3        19         0       .00    541.67  10401.00


*SECNO 88.700

3470 ENCROACHMENT STATIONS=      9729.0   10301.0  TYPE=       1  TARGET=       572.000
                GRAVEL PIT, LOB BREAKOUT TO X95.5. D/S B.O. LIMITED IN Q TO X77
   88.700     17.15   1051.35   1043.65   1051.03   1051.83       .48       .37       .02   1052.00
 39000.0        .0   38995.8      4.2        .0    7023.1       5.7    1246.4     223.5   1045.60
     .35       .00      5.55       .73      .000      .035      .045      .000   1034.20   9731.62
 .000609      520.      470.      430.         2        17         0       .00    569.38  10301.00


*SECNO 95.500

3470 ENCROACHMENT STATIONS=      9499.0   10306.0  TYPE=       1  TARGET=       807.000
1
   05MAY04      16:11:44                                                                                PAGE   81

    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


5 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1052.00 ELREA=      1052.00

                GRAVEL PIT, LOB BREAKOUT TO X88.7.
   95.500     17.67   1051.86   1043.03   1051.52   1052.33       .47       .50       .00   1052.00
 39000.0        .0   39000.0        .0        .0    7111.2        .0    1356.7     234.2   1052.00
     .38       .00      5.48       .00      .000      .035      .000      .000   1034.20   9502.53
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   .000917      400.      680.      680.         1        11         0       .00    802.20  10304.74

CNO 100.700

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .52

3470 ENCROACHMENT STATIONS=     9629.0   10191.0  TYPE=      1  TARGET=      562.000
   100.700     16.90   1051.90   1047.09   1051.54   1053.50      1.61       .83       .34   1055.00
   39000.0        .0   39000.0        .0        .0    3833.0        .0    1422.1     241.7   1052.00
       .39       .00     10.17       .00      .000      .035      .000      .000   1035.00   9675.50
   .003426      550.      520.      620.         3        19         0       .00    456.80  10189.67

*SECNO 107.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.36

3470 ENCROACHMENT STATIONS=     9709.0   10256.0  TYPE=      1  TARGET=      547.000
   107.000     15.77   1053.87   1046.11   1053.66   1054.38       .51       .77       .11   1056.00
   39000.0        .0   39000.0        .0        .0    6819.8        .0    1499.1     248.9   1054.00
       .42       .00      5.72       .00      .000      .035      .000      .000   1038.10   9723.32
   .000616      300.      630.      640.         2        14         0       .00    531.46  10254.78

1
   05MAY04      16:11:44                                                                          PAGE   82

    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=      .300 CEHV=      .500
*SECNO 110.700

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     9734.0   10236.0  TYPE=      1  TARGET=      502.000
   110.700     12.02   1053.52   1053.52   1053.23   1056.46      2.95       .58      1.22   1055.60
   39000.0        .0   39000.0        .0        .0    2830.5        .0    1540.1     253.1   1056.00
       .43       .00     13.78       .00      .000      .035      .000      .000   1041.50   9770.82
   .009416      600.      370.      300.         0        18         0       .00    457.81  10228.63

*SECNO 117.200

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.56

3470 ENCROACHMENT STATIONS=     9844.0   10196.0  TYPE=      1  TARGET=      352.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1061.00 ELREA=      1061.00

         DOWNSTREAM SIDE GLENDALE AVE BRIDGE
   117.200     11.88   1058.28   1056.04   1058.53   1060.43      2.15      3.73       .24   1056.00
   39000.0        .0   39000.0        .0        .0    3314.1        .0    1585.9     259.1   1056.00
       .45       .00     11.77       .00      .000      .035      .000      .000   1046.40   9845.00
   .003855      800.      650.      400.         2        15         0       .00    350.00  10195.00

CIAL BRIDGE

SB  XK         XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
      .90      1.56       2.90        .00     352.00     19.80    5503.00       .00    1046.50    1046.20

*SECNO 118.000
```

BTCARD, BRIDGE STENCL= 9844.00 STENCR= 10196.00

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

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1058.20 BRIDGE VELOCITY= 9.90 CALCULATED CHANNEL AREA= 3888.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	1060.92	.45	0.	39000.	5503.	5515.	1063.10	1063.00	0.

3470 ENCROACHMENT STATIONS= 9844.0 10196.0 TYPE= 1 TARGET= 352.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1063.50 ELREA= 1063.00

UPSTREAM SIDE GLENDALE AVE BRIDGE-PERCHED. 2FT DEBRIS PER PIER.
1983 TOPO WITHIN 0.3FT OF BRIDGE PLAN DECK.USED PLANS MINUS 0.3FT

118.000	11.34	1058.74	.00	1058.93	1060.92	2.18	.48	.00	1058.00
39000.0	.0	39000.0	.0	.0	3290.6	.0	1592.0	259.7	1058.00
.45	.00	11.85	.00	.000	.035	.000	.000	1047.40	9845.00
.003954	80.	80.	80.	0	0	0	.00	350.00	10195.00

*SECNO 120.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.98

70 ENCROACHMENT STATIONS= 9799.0 10206.0 TYPE= 1 TARGET= 407.000

120.000	14.92	1060.82	1053.78	1061.05	1061.67	.85	.36	.40	1058.20
39000.0	2.2	38995.4	2.4	2.6	5274.4	2.8	1611.7	261.5	1058.00
.46	.84	7.39	.85	.045	.035	.045	.000	1045.90	9799.00
.001004	200.	200.	130.	3	19	0	.00	407.00	10206.00

CCHV= .100 CEHV= .300
*SECNO 125.000

3470 ENCROACHMENT STATIONS= 9789.0 10241.0 TYPE= 1 TARGET= 452.000

125.000	15.49	1061.39	1054.85	1061.56	1062.19	.80	.51	.00	1059.80
39000.0	1.2	38997.7	1.0	1.6	5423.5	1.4	1673.1	266.4	1060.00
.48	.77	7.19	.75	.045	.035	.045	.000	1045.90	9789.00
.001050	500.	500.	480.	2	14	0	.00	452.00	10241.00

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 131.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9744.0 10251.0 TYPE= 1 TARGET= 507.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1061.00 ELREA= 1062.70

GRAVEL MINE CODED AS 1062 FILLED. UPSTREAM SIDE.

131.000	11.31	1061.31	1061.31	1062.12	1064.33	3.02	1.46	.66	1061.00
39000.0	.4	38999.6	.0	.3	2797.1	.0	1729.7	272.9	1062.70
.49	1.30	13.94	.00	.045	.035	.000	.000	1050.00	9744.00
.010618	500.	600.	650.	0	19	0	.00	490.16	10234.16

*SECNO 135.000

HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.65

3470 ENCROACHMENT STATIONS= 9799.0 10156.0 TYPE= 1 TARGET= 357.000

135.000	12.91	1064.71	1062.46	1064.84	1066.85	2.14	2.43	.09	1063.50
39000.0	1.7	38991.8	6.5	1.2	3323.6	3.7	1757.9	276.8	1061.00
.50	1.38	11.73	1.76	.045	.035	.045	.000	1051.80	9799.00
.003920	380.	400.	430.	2	11	0	.00	357.00	10156.00

*SECNO 140.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.60

3470 ENCROACHMENT STATIONS= 9744.0 10261.0 TYPE= 1 TARGET= 517.000

140.000	13.32	1067.22	1062.80	1066.47	1068.13	.91	1.16	.12	1065.70
39000.0	1.4	38993.2	5.4	1.5	5098.0	4.7	1806.3	281.8	1062.50
.52	.92	7.65	1.14	.045	.035	.045	.000	1053.90	9744.00
.001535	430.	500.	520.	2	19	0	.00	517.00	10261.00

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 143.000

5 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 9600.0 10401.0 TYPE= 1 TARGET= 801.000

143.000	9.81	1067.71	1064.83	1066.89	1068.75	1.04	.58	.04	1068.00
39000.0	249.4	38750.6	.0	129.2	4716.6	.0	1840.5	286.0	1068.00
.53	1.93	8.22	.00	.045	.035	.000	.000	1057.90	9629.92
.002486	300.	300.	300.	2	11	0	.00	706.33	10398.55

*SECNO 146.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9000.0 10201.0 TYPE= 1 TARGET= 1201.000
LOB POULTRY BLDGS CODED AS SINGLE BLOCK.

146.000	10.74	1068.64	1068.64	1068.64	1070.79	2.16	1.14	.33	1070.80
39000.0	5184.1	33815.9	.0	1165.2	2697.3	.0	1870.7	291.6	1069.70
.53	4.45	12.54	.00	.045	.035	.000	.000	1057.90	9000.00
.006414	310.	300.	290.	0	8	0	.00	913.24	10190.62

*SECNO 149.600

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.88

3470 ENCROACHMENT STATIONS= 8850.0 10206.0 TYPE= 1 TARGET= 1356.000
LOB ON TOP OF SERVICE RD. POULTRY BLDGS CODED AS ONE SOLID BLOCK.

149.600	11.38	1071.28	1069.36	1070.49	1072.08	.80	1.15	.14	1069.30
10000.0	7756.3	32243.4	.4	2598.5	4107.4	.5	1914.8	301.2	1070.80
.55	2.98	7.85	.70	.045	.035	.045	.000	1059.90	8850.00
.001915	370.	360.	375.	2	17	0	.00	1356.00	10206.00

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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 158.000

3470 ENCROACHMENT STATIONS=     8950.0   10250.0  TYPE=      1  TARGET=     1300.000
          CHANNEL GRAVEL MINE BOTTOM AT 1064 DOWNSTREAM OUTLET.
          LEFT BANK CHANNELIZED.
   158.000     13.56   1073.06   1071.45   1072.76   1073.94       .88      1.83       .02   1071.70
   40000.0    8705.3   31294.3        .4    2460.0    3776.7       1.9    2040.2     327.0   1073.00
       .58      3.54      8.29       .23      .045      .035      .045      .000   1059.50   8950.00
   .002493     850.      840.      840.         2         8         0       .00   1300.00  10250.00

*SECNO 167.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9000.0   10250.0  TYPE=      1  TARGET=     1250.000
          250 FT UPSTREAM IN CHANNEL GRAVEL MINE.  INVERT CUT TO OCT. 83
          EXCAVATION 1059.0.
   167.000     15.77   1074.67   1070.37   1074.15   1076.16      1.49      2.04       .18   1071.70
   40000.0    4894.8   34025.7    1079.5    1858.3    3226.9     365.0    2165.5     353.9   1073.70
       .61      2.63     10.54      2.96      .045      .035      .045      .000   1058.90   9000.00
   .001997    1000.      900.      800.         2        15         0       .00   1150.40  10250.00

*SECNO 170.000

3265 DIVIDED FLOW

ENCROACHMENT STATIONS=     9030.0   10136.0  TYPE=      1  TARGET=     1106.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1071.90 ELREA=      1076.00

          OCT 83 EXCAVATION INVERT 1059.3
   170.000     15.93   1075.13   1073.96   1074.45   1076.91      1.78       .67       .09   1071.90
   40000.0    5477.2   34522.8        .0    1863.3    3011.0        .0    2200.9     361.4   1076.00
       .62      2.94     11.47       .00      .045      .035      .000      .000   1059.20   9030.00
   .002502     300.      300.      270.         2         8         0       .00   1051.07  10132.83
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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 174.200
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     8850.0   10300.0  TYPE=      1  TARGET=     1450.000
          OCT 83 EXCAVATION INVERT 1059.6
   174.200     17.69   1077.09   1077.09   1077.21   1079.03      1.94      1.10       .05   1076.00
   40000.0    8114.7   31468.8     416.5    2472.8    2518.1     225.7    2250.6     374.0   1076.50
       .63      3.28     12.50      1.85      .045      .035      .045      .000   1059.40   8850.00
   .002722     440.      420.      430.         0        13         0       .00   1450.00  10300.00

CCHV=      .500 CEHV=      .700
*SECNO 178.000

3265 DIVIDED FLOW

HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.89
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3470 ENCROACHMENT STATIONS=     8750.0   10400.0  TYPE=      1  TARGET=     1650.000
          NEW X-SECTION D.S. NORTHERN AVE DROP STRUCTURE DEFINITION.
          INVERT 1060.0.
   178.000     19.54   1079.44   1070.10   1079.14   1080.15       .70       .49       .62   1080.70
   40000.0    4932.1   34539.0     528.9    2674.7    4796.4     399.2    2307.7     387.1   1080.00
       .64      1.84      7.20      1.32      .045      .035      .045      .000   1059.90   8750.00
   .000759     390.      380.      300.         3        11         0       .00   1592.09  10400.00


*SECNO 178.500

3470 ENCROACHMENT STATIONS=     8750.0   10415.0  TYPE=      1  TARGET=     1665.000
          NORTHERN AVE. DIP-CROSSING CROWN.
   178.500     11.97   1079.67   1077.14   1079.30   1080.25       .59       .05       .06   1076.00
   40000.0    6811.0   32435.7     753.3    2659.2    4821.4     315.9    2316.6     388.9   1076.00
       .65      2.56      6.73      2.38      .045      .035      .045      .000   1067.70   8750.00
   .001492      50.       50.       50.         2        11         0       .00   1665.00  10415.00


1
   05MAY04      16:11:44                                                                          PAGE    88

    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 181.500

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .68


0 ENCROACHMENT STATIONS=     9100.0   10325.0  TYPE=      1  TARGET=     1225.000
   181.500     13.18   1079.68   1078.92   1079.37   1081.19      1.51       .66       .28   1077.10
   40000.0    5182.3   32708.8    2108.9    1533.8    3030.6     534.0    2362.6     399.0   1076.10
       .65      3.38     10.79      3.95      .045      .035      .045      .000   1066.50   9100.00
   .003256     310.      310.      320.         2         8         0       .00   1150.35  10325.00


*SECNO 185.300

3470 ENCROACHMENT STATIONS=     9500.0   10211.0  TYPE=      1  TARGET=      711.000
   185.300     12.80   1080.70   1078.32   1080.97   1082.61      1.92      1.30       .12   1078.80
   40000.0    1617.5   38379.5       3.0     540.7    3389.3       2.0    2402.2     407.0   1078.70
       .66      2.99     11.32      1.51      .045      .035      .045      .000   1067.90   9559.89
   .003601     390.      380.      375.         2        11         0       .00    651.11  10211.00


*SECNO 190.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9804.0   10401.0  TYPE=      1  TARGET=      597.000
   190.000     15.18   1082.98   1078.85   1082.37   1083.94       .97      1.24       .09   1080.70
   40000.0       2.6   39997.1        .2       2.3    5063.2        .4    2450.8     413.7   1082.60
       .68      1.16      7.90       .62      .045      .035      .045      .000   1067.80   9804.00
   .002000     480.      470.      450.         3        11         0       .00    597.00  10401.00


*SECNO 193.600
1
   05MAY04      16:11:44                                                                          PAGE    89

    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


1 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9744.0   10211.0  TYPE=      1  TARGET=      467.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1084.00 ELREA=      1082.70
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 193.600     13.16   1083.36   1080.83   1082.89   1085.16      1.81       .97       .25   1084.00
 0000.0        .0   39999.3        .7        .0    3709.8        .7    2487.1     418.0   1082.70
    .69       .00     10.78      1.11      .000      .035      .045      .000   1070.20   9770.67
 .003813     380.      360.      360.         2        20         0       .00    440.33  10211.00

*SECNO 198.400

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9749.0   10201.0  TYPE=      1  TARGET=      452.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1085.20 ELREA=      1086.00

 198.400     14.27   1085.27   1081.05   1085.07   1086.56      1.29      1.34       .05   1085.20
 40000.0       .0   40000.0        .0        .1    4383.8        .0    2531.7     422.8   1086.00
    .70       .02      9.12       .00      .045      .035      .000      .000   1071.00   9749.00
 .002141     460.      480.      490.         2        15         0       .00    437.16  10186.16

*SECNO 202.400

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9789.0   10181.0  TYPE=      1  TARGET=      392.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1085.50 ELREA=      1087.30

        LOB MOVED TO TOP OF IRRIGATION ROAD TO DETERMINE FLOW SPLIT
        <ROAD INTACT>
 202.400     13.32   1085.82   1083.28   1085.67   1087.98      2.16      1.16       .26   1085.50
 40000.0       .3   39999.7        .0        .3    3388.6        .0    2567.4     426.6   1087.30
    .71       .84     11.80       .00      .045      .035      .000      .000   1072.50   9789.00
 .004169     400.      400.      400.         2        15         0       .00    378.42  10167.42
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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 206.000

3470 ENCROACHMENT STATIONS=     9721.0   10171.0  TYPE=      1  TARGET=      450.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1086.00 ELREA=      1090.00

 206.000     13.90   1087.40   1085.08   1087.37   1089.52      2.12      1.53       .00   1086.00
 40000.0     27.2    39972.8        .0      14.8    3418.2        .0    2595.6     429.9   1090.00
    .72      1.83     11.69       .00      .045      .035      .000      .000   1073.50   9721.00
 .004360     360.      360.      380.         3        11         0       .00    415.98  10136.98

*SECNO 210.500

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.08

3470 ENCROACHMENT STATIONS=     9814.0   10181.0  TYPE=      1  TARGET=      367.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1087.20 ELREA=      1092.00

 210.500     18.31   1089.51   1081.98   1089.63   1090.46       .95       .83       .12   1087.20
 40000.0      2.0    39998.0        .0       2.5    5105.7        .0    2639.7     433.9   1092.00
    .74       .80      7.83       .00      .045      .035      .000      .000   1071.20   9814.00
 .001004     440.      450.      440.         2        15         0       .00    359.69  10173.69

CNO 216.000

70 ENCROACHMENT STATIONS=     9769.0   10241.0  TYPE=      1  TARGET=      472.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1085.60 ELREA=      1093.50

 216.000     18.08   1090.28   1082.78   1090.18   1090.99       .70       .50       .02   1085.60
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   40000.0       3.9   39996.1        .0       4.7    5935.7        .0    2709.4     439.0   1093.50
      .76       .83      6.74       .00      .045      .035      .000      .000   1072.20   9769.00
   .000822      400.      550.      650.         2        11         0       .00    454.16  10223.16
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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 218.000

3470 ENCROACHMENT STATIONS=     9699.0   10256.0  TYPE=      1  TARGET=      557.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1086.20 ELREA=      1094.00

   218.000     18.57   1090.67   1082.17   1090.53   1091.14       .47       .13       .02   1086.20
   40000.0       3.0   39997.0        .0       4.5    7256.5        .0    2739.7     441.3   1094.00
      .77       .66      5.51       .00      .045      .035      .000      .000   1072.10   9699.00
   .000525      200.      200.      200.         2        11         0       .00    535.21  10234.21

*SECNO 220.800

3470 ENCROACHMENT STATIONS=     9749.0   10256.0  TYPE=      1  TARGET=      507.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1086.10 ELREA=      1094.40

   220.800     17.55   1090.75   1082.73   1090.62   1091.33       .58       .16       .03   1086.10
   40000.0       3.4   39996.6        .0       4.7    6538.4        .0    2784.1     444.5   1094.40
      .78       .74      6.12       .00      .045      .035      .000      .000   1073.20   9749.00
   .000645      270.      280.      260.         2        11         0       .00    481.45  10230.45

*SECNO 223.000

3470 ENCROACHMENT STATIONS=     9749.0   10271.0  TYPE=      1  TARGET=      522.000
   223.000     16.63   1090.83   1084.22   1090.67   1091.55       .72       .17       .04   1090.70
   40000.0        .0   40000.0        .0        .1    5875.7        .0    2815.5     447.0   1095.10
      .79       .25      6.81       .00      .045      .035      .000      .000   1074.20   9749.00
   .000966      220.      220.      230.         2        11         0       .00    494.91  10243.91

CCHV=     .300 CEHV=     .500
*SECNO 229.000

3470 ENCROACHMENT STATIONS=     9659.0   10296.0  TYPE=      1  TARGET=      637.000
   229.000     11.64   1091.54   1086.29   1091.33   1092.18       .64       .60       .02   1088.00
   40000.0       3.2   39996.8        .0       3.5    6244.9        .0    2899.0     454.7   1094.00
      .82       .91      6.40       .00      .045      .035      .000      .000   1079.90   9659.00
   .001053      600.      600.      600.         2        18         0       .00    622.57  10281.57
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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

*SECNO 231.500

3470 ENCROACHMENT STATIONS=     9600.0   10146.0  TYPE=      1  TARGET=      546.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1089.00 ELREA=      1092.00

          DOWNSTREAM SIDE OLIVE AVE BRIDGE
   231.500     11.40   1091.70   1089.00   1091.48   1092.70      1.00       .34       .18   1082.10
   40000.0   11345.4   28654.6        .0    1958.9    3264.4        .0    2932.5     458.1   1090.00
      .83      5.79      8.78       .00      .045      .035      .000      .000   1080.30   9600.00
   .001759      280.      250.      200.         2        29         0       .00    545.00  10145.00

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.56      2.90       .00    244.00     12.90   2400.00      2.00   1080.00   1080.00
```

ECNO 232.600
RD, BRIDGE STENCL= 9550.00 STENCR= 10146.00
SSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1098.43	1094.27	.13	4319.	35672.	2400.	2403.	1089.60	1094.00	310.

3470 ENCROACHMENT STATIONS= 9550.0 10146.0 TYPE= 1 TARGET= 596.000
UPSTREAM SIDE OLIVE AVE BRIDGE WITH 2 FT DEBRIS PER PIER.

232.600	15.97	1096.07	.00	1095.07	1097.05	.98	4.35	.00	1092.00
40000.0	3314.8	36683.5	1.7	1220.7	4443.4	2.1	2946.3	459.6	1094.00
.83	2.72	8.26	.83	.045	.035	.045	.000	1080.10	9550.00
.001060	110.	110.	110.	3	0	2	.00	596.00	10146.00

CCHV= .100 CEHV= .300
*SECNO 235.000

3470 ENCROACHMENT STATIONS= 9620.0 10176.0 TYPE= 1 TARGET= 556.000

235.000	16.30	1096.40	1089.86	1095.48	1097.31	.91	.25	.01	1092.60
40000.0	2227.4	37772.6	.0	786.1	4820.1	.0	2974.8	462.1	1097.50
.84	2.83	7.84	.00	.045	.035	.000	.000	1080.10	9620.00
.001091	130.	240.	350.	0	14	0	.00	551.36	10171.36

1
05MAY04 16:11:44 PAGE 93

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 238.800

ENCROACHMENT STATIONS= 9700.0 10241.0 TYPE= 1 TARGET= 541.000

238.800	16.20	1096.90	1091.42	1096.33	1097.75	.84	.44	.01	1093.00
40000.0	1849.1	38150.9	.0	511.5	5080.4	.0	3024.0	466.9	1098.50
.85	3.61	7.51	.00	.045	.035	.000	.000	1080.70	9700.00
.001205	400.	380.	350.	2	14	0	.00	525.21	10225.21

*SECNO 240.800

3470 ENCROACHMENT STATIONS= 9630.0 10266.0 TYPE= 1 TARGET= 636.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1091.70 ELREA= 1099.00

240.800	16.29	1097.09	1093.47	1096.39	1098.14	1.05	.33	.06	1091.70
40000.0	8493.8	31506.2	.0	1489.4	3584.4	.0	3048.4	469.5	1099.00
.86	5.70	8.79	.00	.045	.035	.000	.000	1080.80	9630.00
.002342	200.	200.	175.	2	19	0	.00	623.15	10253.15

*SECNO 245.800

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9620.0 10211.0 TYPE= 1 TARGET= 591.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1096.60 ELREA= 1101.50

245.800	16.08	1097.98	1094.27	1097.17	1099.55	1.57	1.26	.15	1096.60
40000.0	759.6	39240.4	.0	285.2	3873.7	.0	3101.8	476.2	1101.50
.88	2.66	10.13	.00	.045	.035	.000	.000	1081.90	9620.00
.002682	520.	500.	490.	0	16	0	.00	534.88	10154.88

*SECNO 251.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 9704.0 10241.0 TYPE= 1 TARGET= 537.000

1
05MAY04 16:11:44 PAGE 94

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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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1103.10 ELREA=      1103.00

   251.000     17.57   1099.67   1094.00   1099.22   1100.68      1.01      1.08       .06   1103.10
   40000.0       .0   40000.0       .0        .0    4952.5        .0    3156.4     482.4   1103.00
       .89      .00      8.08      .00      .000      .035      .000      .000   1082.10   9723.31
   .001642     560.      520.     500.         2        19         0       .00    484.81  10208.13


*SECNO 256.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9814.0   10151.0  TYPE=      1  TARGET=      337.000
   256.000     17.22   1100.02   1096.06   1099.67   1102.02      2.00      1.05       .30   1102.00
   40000.0       .0   40000.0       .0        .0    3523.6        .0    3205.0     486.9   1105.20
       .91      .00     11.35      .00      .000      .035      .000      .000   1082.80   9834.71
   .002764     500.      500.     500.         2        15         0       .00    303.30  10138.01


*SECNO 258.800

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9789.0   10175.0  TYPE=      1  TARGET=      386.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1103.30 ELREA=    100000.00

   258.800     15.77   1101.37   1096.01   1101.15   1102.69      1.31       .59       .07   1103.30
   40000.0       .0   40000.0       .0        .0    4350.2        .0    3230.3     489.0 100000.00
       .91      .00      9.19      .00      .000      .035      .000      .000   1085.60   9807.17
   .001673     250.      280.     270.         2        14         0       .00    349.90  10157.07


*SECNO 262.000

3470 ENCROACHMENT STATIONS=     9799.0   10190.0  TYPE=      1  TARGET=      391.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1104.50 ELREA=    100000.00

   262.000     15.24   1101.84   1096.77   1101.65   1103.31      1.47       .58       .05   1104.50
   40000.0       .0   40000.0       .0        .0    4110.8        .0    3261.4     491.6 100000.00
       .92      .00      9.73      .00      .000      .035      .000      .000   1086.60   9829.11
   .001954     290.      320.     340.         2        14         0       .00    342.33  10171.44


1
   05MAY04      16:11:44                                                                                  PAGE   95

   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 265.000


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.57


3470 ENCROACHMENT STATIONS=     9599.0   10220.0  TYPE=      1  TARGET=      621.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1105.00 ELREA=    100000.00

          LOB HOUSES CODED BLOCK BY BLOCK.
   265.000     16.59   1103.19   1096.44   1103.05   1103.76       .57       .36       .09   1105.00
   40000.0       .0   40000.0       .0        .0    6628.6        .0    3298.4     494.8 100000.00
       .94      .00      6.03      .00      .000      .035      .000      .000   1086.60   9626.10
   .000797     310.      300.     350.         2        14         0       .00    582.63  10208.73


*SECNO 270.500

3301 HV CHANGED MORE THAN HVINS
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ENCROACHMENT STATIONS=     9774.0   10211.0  TYPE=      1  TARGET=      437.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1105.60 ELREA=      1106.00

          LOB BLDGS CODED AS SOLID BLOCK. LOB FENCE NOT CONSIDERED
   270.500     15.30   1103.40   1097.84   1103.28   1104.50      1.10       .58       .16   1105.60
   40000.0        .0   40000.0        .0        .0    4748.2        .0    3370.2     501.0   1106.00
       .96       .00      8.42       .00      .000      .035      .000      .000   1088.10   9792.99
   .001489      540.      550.      550.         2        14         0       .00    400.52  10193.51


*SECNO 273.500

3470 ENCROACHMENT STATIONS=     9699.0   10156.0  TYPE=      1  TARGET=      457.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1104.00 ELREA=      1106.00

          LOB AND ROB HOUSES CODED AS SOLID BLOCKS.
          LOB AND ROB FENCE NOT CONSIDERED.
1
   05MAY04      16:11:44                                                                                    PAGE   96

    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


   273.500     13.94   1104.04   1097.84   1103.94   1104.91       .87       .38       .02   1104.00
   40000.0        .0   40000.0        .0        .0    5345.1        .0    3405.0     503.8   1106.00
       .97       .01      7.48       .00      .000      .035      .000      .000   1090.10   9704.90
   .001107      300.      300.      300.         2         8         0       .00    430.10  10135.00


*SECNO 277.000

3301 HV CHANGED MORE THAN HVINS

2 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .44

3470 ENCROACHMENT STATIONS=     9804.0   10151.0  TYPE=      1  TARGET=      347.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1106.00 ELREA=      1108.50

            HOUSES CODED AS BLOCKS. LOB-ROB FENCE NOT CONSIDERED.
   277.000     12.23   1103.03   1101.76   1102.89   1106.42      3.39       .75       .76   1106.00
   40000.0        .0   40000.0        .0        .0    2706.3        .0    3437.3     506.7   1108.50
       .97       .00     14.78       .00      .000      .035      .000      .000   1090.80   9852.42
   .005842      350.      350.      330.         3        15         0       .00    275.15  10127.58


*SECNO 281.800

3470 ENCROACHMENT STATIONS=     9849.0   10126.0  TYPE=      1  TARGET=      277.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1109.00 ELREA=      1111.00

          LOB-ROB HOUSED CODED AND FENCES NOT CONSIDERED
   281.800     13.36   1105.56   1104.40   1105.55   1109.44      3.88      2.88       .15   1109.00
   40000.0        .0   40000.0        .0        .0    2529.1        .0    3466.1     509.5   1111.00
       .98       .00     15.82       .00      .000      .035      .000      .000   1092.20   9876.11
   .006145      480.      480.      480.         3         5         0       .00    239.00  10115.10


CCHV=      .300 CEHV=      .500
*SECNO 288.000

3301 HV CHANGED MORE THAN HVINS

1
   05MAY04      16:11:44                                                                                    PAGE   97

    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 =  1.93
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3470 ENCROACHMENT STATIONS=     9844.0   10246.0  TYPE=      1  TARGET=      402.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1114.00 ELREA=      1114.00

          LOB-ROB ENCROACHED FOR EFFECTIVE FLOW THRU PEORIA AVE BRIDGE.
   288.000     16.55   1110.65   1104.99   1110.65   1111.98      1.33      1.77       .77   1114.00
   40000.0        .0   40000.0        .0        .0    4316.1        .0    3514.9     513.6   1114.00
      1.00       .00      9.27       .00      .000      .035      .000      .000   1094.10   9874.51
   .001645      620.      620.      620.         3        15         0       .00    340.07  10214.58


*SECNO 290.000

3470 ENCROACHMENT STATIONS=     9851.0   10149.0  TYPE=      1  TARGET=      298.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1113.50 ELREA=      1115.00

          DOWNSTREAM SIDE PEORIA AVE BRIDGE
   290.000     17.63   1110.93   1103.99   1110.93   1112.31      1.38       .31       .02   1113.00
   41000.0        .0   41000.0        .0        .0    4350.8        .0    3534.8     515.1   1110.00
      1.01       .00      9.42       .00      .000      .035      .000      .000   1093.30   9857.68
   .001422      220.      200.      160.         3        14         0       .00    290.32  10148.00


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     .90      1.56      2.90       .00    222.20     10.90   3937.00     1.36   1096.00   1095.80

*SECNO 291.000
BTCARD, BRIDGE STENCL=    9808.61   STENCR=   10078.59

3301 HV CHANGED MORE THAN HVINS

PRESSURE FLOW

1
   05MAY04      16:11:44                                                                          PAGE   98

    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
   1113.55   1113.30      .14        0.    41000.     3937.     3934.     1112.80   1114.00        0.


3470 ENCROACHMENT STATIONS=     9851.0   10149.0  TYPE=      1  TARGET=      298.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1114.00 ELREA=      1117.00

          UPSTREAM SIDE PEORIA AVE BRIDGE.   BRIDGE PLANS 1 FOOT HIGHER THAN
          81 TOPO,  PLANS LOWERED 1 FOOT, 2 FOOT DEBRIS
   291.000     17.82   1111.42       .00   1111.06   1113.55      2.13      1.25       .00 100000.00
   41000.0        .0   41000.0        .0        .0    3498.4        .0    3543.8     515.6   1099.60
      1.01       .00     11.72       .00      .000      .035      .000      .000   1093.60   9851.00
   .002165      100.      100.      100.         3         0         0       .00    226.69  10077.69


*SECNO 293.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9844.0   10216.0  TYPE=      1  TARGET=      372.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1114.00 ELREA=      1110.20

   293.000     17.44   1112.54   1106.95   1111.42   1114.15      1.61       .44       .16   1114.00
   41000.0        .0   40997.1       2.9        .0    4029.2       2.4    3561.1     517.0   1110.20
      1.01       .00     10.18      1.23      .000      .035      .045      .000   1095.10   9867.82
   .002234      170.      200.      220.         3        14         0       .00    348.17  10216.00


CEHV=      .100 CEHV=      .300
*SECNO 297.000

3470 ENCROACHMENT STATIONS=     9844.0   10226.0  TYPE=      1  TARGET=      382.000
   297.000     14.48   1113.38   1109.14   1112.57   1115.18      1.80       .97       .06   1115.50
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41000.0        .0   41000.0        .0        .0    3803.4        .0    3597.0     520.1   1115.30
   1.02       .00     10.78       .00      .000      .035      .000      .000   1098.90   9855.93
.002654      400.      400.      400.         2        11         0       .00    343.79  10199.72
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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 302.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .61

3470 ENCROACHMENT STATIONS=     9874.0   10121.0  TYPE=      1  TARGET=      247.000
        1.3FT ADDED TO 1981 LOB TO MATCH 1983 TOPO.
302.000     14.39   1113.39   1112.75   1112.89   1118.10      4.70      2.04       .87   1114.70
41000.0        .0   41000.0        .0        .0    2356.2        .0    3632.4     523.3   1119.10
   1.03       .00     17.40       .00      .000      .035      .000      .000   1099.00   9893.65
.007092      480.      500.      510.         3        12         0       .00    213.35  10107.00

*SECNO 305.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9879.0   10111.0  TYPE=      1  TARGET=      232.000
        NEW X-SECTION.FOR DEFINITION OF TRANSITION TO HIGH VELOCITY X302
        2.4FT ADDED TO 1981 LOB TO MATCH 1983 TOPO.
305.000     15.99   1116.59   1113.55   1116.72   1119.78      3.19      1.54       .15   1118.50
41000.0        .0   41000.0        .0        .0    2859.4        .0    3650.3     524.8   1118.50
   1.04       .00     14.34       .00      .000      .035      .000      .000   1100.60   9885.81
.003869      260.      300.      320.         4        11         0       .00    216.80  10102.61

*SECNO 307.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9889.0   10136.0  TYPE=      1  TARGET=      247.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1114.80 ELREA=      1119.00

        2.0FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
307.000     17.00   1118.10   1113.52   1118.52   1120.49      2.40       .63       .08   1114.80
41000.0       4.7   40995.3        .0       3.3    3299.9        .0    3664.5     525.9   1119.00
   1.04      1.42     12.42       .00      .045      .035      .000      .000   1101.10   9889.00
.002617      200.      200.      160.         2        15         0       .00    237.00  10126.00
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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 311.500

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS=     9844.0   10271.0  TYPE=      1  TARGET=      427.000
        2.6FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
311.500     17.44   1120.54   1111.90   1120.62   1121.18       .64       .51       .18   1120.00
41000.0        .2   40996.8       3.0        .5    6391.0       4.1    3714.6     529.3   1116.40
   1.06       .41      6.41       .72      .045      .035      .045      .000   1103.10   9844.00
.000636      430.      450.      430.         2        11         0       .00    427.00  10271.00
```

```
*SECNO 314.000

  ENCROACHMENT STATIONS=     9694.0   10351.0  TYPE=      1  TARGET=      657.000
       1.7FT ADDED TO 1981 TOPO TO MATCH 1983 TOPO.
   314.000     16.23   1120.93   1113.74   1120.93   1121.35       .42       .15       .02   1111.40
   41000.0       6.9   40990.7       2.4       9.5    7842.0       3.6    3755.5     532.4   1117.30
      1.07       .73      5.23       .66      .045      .035      .045      .000   1104.70   9694.00
   .000556      250.      250.      240.         1        11         0       .00    657.00  10351.00


*SECNO 318.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .70


3470 ENCROACHMENT STATIONS=     9619.0   10411.0  TYPE=      1  TARGET=      792.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1120.00 ELREA=      1122.00

   318.000     14.54   1121.14   1116.61   1121.02   1121.70       .57       .31       .04   1120.00
   41000.0        .8   40999.2        .0       1.1    6787.1        .0    3822.7     539.0   1122.00
      1.09       .73      6.04       .00      .045      .035      .000      .000   1106.60   9619.00
   .001146      450.      400.      420.         2        14         0       .00    785.17  10404.17


*SECNO 323.000
1
   05MAY04      16:11:44                                                                                    PAGE  101

    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=     9429.0   10401.0  TYPE=      1  TARGET=      972.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1126.00 ELREA=      1126.20

   323.000     12.47   1121.77   1118.87   1121.69   1122.46       .68       .72       .03   1126.00
   41000.0        .0   41000.0        .0        .0    6189.1        .0    3897.2     548.6   1126.20
      1.11       .00      6.62       .00      .000      .035      .000      .000   1109.30   9482.50
   .001853      500.      500.      400.         2        18         0       .00    890.83  10373.32


*SECNO 328.000
CHIMP CLSTA=   10000.00 CELCH=    1111.60 BW=     440.00 STCHL=    9730.00 STCHR=   10265.00
EXCAVATION DATA
AEX=    1704.9SQ-FT     VEXR=        .0K*CU-YD     VEXT=         .0K*CU-YD


3470 ENCROACHMENT STATIONS=     9729.0   10270.0  TYPE=      1  TARGET=      541.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1126.00 ELREA=      1127.10

          FIRST CHIMP X-SECT FAIRED INTO NATURAL RIVERBED AT X323.
          NEW X-SECTION TO DEFINE LOB DUMP FILL INSIDE CITY SERVICE AREA.
          PUSHING DS.
   328.000     10.78   1122.38   1118.00   1122.32   1123.49      1.11       .90       .13   1126.00
   41000.0        .0   41000.0        .0        .0    4859.3        .0    3960.6     556.4   1127.10
      1.13       .00      8.44       .00      .000      .035      .000      .000   1111.60   9769.22
   .001756      600.      500.      460.         2        11         0       .00    461.56  10230.78


*SECNO 330.000
CHIMP CLSTA=   10038.00 CELCH=    1110.90 BW=     340.00 STCHL=    9830.00 STCHR=   10224.19
EXCAVATION DATA
AEX=    2104.8SQ-FT     VEXR=      12.3K*CU-YD     VEXT=       12.3K*CU-YD


3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     9820.0   10260.0  TYPE=      1  TARGET=      440.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1122.00 ELREA=      1127.09

1
   05MAY04      16:11:44                                                                                    PAGE  102

    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
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```
 30.000      11.49   1122.39   1118.49   1122.34   1123.99      1.60       .36       .15   1122.00
41000.0        1.8   40998.2        .0       2.7    4039.7        .0    3978.5     558.1   1127.09
  1.14         .66     10.15       .00      .045      .035      .000      .000   1110.90   9820.00
.002397       200.      175.      200.         2        19         0       .00    374.94  10219.49


*SECNO 334.000
CHIMP CLSTA=   10025.00 CELCH=    1112.10 BW=     330.00 STCHL=    9843.64 STCHR=   10205.65
EXCAVATION DATA
AEX=    2250.9SQ-FT     VEXR=      32.3K*CU-YD     VEXT=       44.6K*CU-YD


3470 ENCROACHMENT STATIONS=     9840.0   10210.0  TYPE=      1  TARGET=      370.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1128.46 ELREA=      1127.75

         330FT BOTTOM WIDTH CHANNEL TO D.S. GRAND AVE BRIDGE X345.
         LOB HOUSES NOT CODED.  ALONG SOUTH BORDER ROAD.  ROB ENCR AT GOLF BLK
         WALL END OF SMALL CHANNEL TO GRAND AVE BRIDGES.  LOB ENCR AT BRIDGE
         EXPANSION.
  334.000      11.18   1123.28   1119.84   1123.25   1125.08      1.79      1.03       .06   1128.46
  41000.0         .0   41000.0        .0        .0    3816.0        .0    4014.6     561.4   1127.75
     1.15        .00     10.74       .00      .000      .035      .000      .000   1112.10   9848.82
 .002767       400.      400.      400.         2        14         0       .00    352.37  10201.18


*SECNO 337.000
CHIMP CLSTA=   10040.00 CELCH=    1113.20 BW=     330.00 STCHL=    9859.19 STCHR=   10220.83
EXCAVATION DATA
AEX=    2906.4SQ-FT     VEXR=      28.7K*CU-YD     VEXT=       73.3K*CU-YD


3470 ENCROACHMENT STATIONS=     9855.0   10225.0  TYPE=      1  TARGET=      370.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1129.01 ELREA=      1129.03

  337.000      10.88   1124.08   1120.94   1124.05   1125.98      1.90       .87       .03   1129.01
  41000.0         .0   41000.0        .0        .0    3708.6        .0    4040.5     563.9   1129.03
     1.15        .00     11.06       .00      .000      .035      .000      .000   1113.20   9864.12
 .003034       300.      300.      300.         2        19         0       .00    351.76  10215.88


1
  05MAY04      16:11:44                                                                          PAGE  103

   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 340.500
CHIMP CLSTA=   10045.00 CELCH=    1114.40 BW=     330.00 STCHL=    9865.09 STCHR=   10224.84
EXCAVATION DATA
AEX=    2890.7SQ-FT     VEXR=      37.6K*CU-YD     VEXT=      110.8K*CU-YD


3470 ENCROACHMENT STATIONS=     9860.0   10230.0  TYPE=      1  TARGET=      370.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1129.31 ELREA=      1129.24

  340.500      10.73   1125.13   1122.16   1125.11   1127.08      1.95      1.09       .02   1129.31
  41000.0         .0   41000.0        .0        .0    3654.9        .0    4070.1     566.7   1129.24
     1.16        .00     11.22       .00      .000      .035      .000      .000   1114.40   9869.27
 .003180       350.      350.      350.         2        15         0       .00    351.45  10220.73


*SECNO 342.000
CHIMP CLSTA=   10050.00 CELCH=    1114.90 BW=     330.00 STCHL=    9870.25 STCHR=   10230.10
EXCAVATION DATA
AEX=    2693.6SQ-FT     VEXR=      15.5K*CU-YD     VEXT=      126.3K*CU-YD


3470 ENCROACHMENT STATIONS=     9870.0   10235.0  TYPE=      1  TARGET=      365.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1129.65 ELREA=      1130.00

  342.000      10.70   1125.60   1122.65   1125.58   1127.56      1.97       .48       .00   1129.65
  41000.0         .0   41000.0        .0        .0    3643.0        .0    4082.6     567.9   1130.00
     1.17        .00     11.25       .00      .000      .035      .000      .000   1114.90   9874.31
 .003213       150.      150.      150.         0        15         0       .00    351.39  10225.69
```

```
*SECNO 343.000
CHIMP CLSTA=   10025.00 CELCH=    1115.20 BW=     330.00 STCHL=    9846.20 STCHR=   10206.80
 VATION DATA
      2668.8SQ-FT     VEXR=        9.9K*CU-YD     VEXT=      136.3K*CU-YD


3470 ENCROACHMENT STATIONS=     9840.0   10220.0  TYPE=      1  TARGET=      380.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1129.00 ELREA=      1132.00

          LOB     CODED AS LT BNK ON DIKE TOP.
1
   05MAY04      16:11:44                                                                                                PAGE  104

    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


   343.000     10.73    1125.93    1122.95    1125.92    1127.89      1.96        .32        .00    1129.00
   41000.0       .0    41000.0        .0         .0     3653.4        .0     4091.0      568.7    1132.00
      1.17      .00      11.22       .00       .000       .035      .000       .000    1115.20    9849.28
   .003184     100.       100.      100.          1         15         0        .00     351.45   10200.72


CCHV=      .500 CEHV=      .700
*SECNO 344.900

3470 ENCROACHMENT STATIONS=     9822.0   10179.0  TYPE=      1  TARGET=      357.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1182.00 ELREA=      1132.00

            DROP STRUCTURE DELETED-CONCRETE INVERT UNDER BRIDGES
   344.900     10.22    1126.52    1124.07    1126.51    1128.70      2.18        .66        .16    1182.00
   41000.0       .0    41000.0        .0         .0     3458.0        .0     4106.5      570.2    1132.00
      1.17      .00      11.86       .00       .000       .035      .000       .000    1116.30    9827.18
   .003764     110.       190.      260.          0         15         0        .00     346.28   10173.47


 CNO 345.200
 0 ENCROACHMENT STATIONS=     9822.0   10179.0  TYPE=      1  TARGET=      357.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1138.30 ELREA=      1138.30

          DOWNSTREAM GRAND AVE DUAL HIGHWAY BRIDGE
   345.200     10.50    1126.80    1124.05    1126.79    1128.87      2.07        .11        .06    1182.00
   41000.0       .0    41000.0        .0         .0     3552.9        .0     4108.9      570.5    1132.00
      1.17      .00      11.54       .00       .000       .035      .000       .000    1116.30    9826.97
   .003449      30.        30.       30.          2         15         0        .00     346.72   10173.69


SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS    1122.35 , NOT    1126.80 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
     1.10      1.56       2.90        .00     330.00      36.50    5319.00       .72    1117.00    1116.30

*SECNO 346.200
BTCARD, BRIDGE STENCL=    9822.00   STENCR=   10179.00
1
   05MAY04      16:11:44                                                                                                PAGE  105

    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


CLASS B LOW FLOW

3420 BRIDGE W.S.=    1125.05 BRIDGE VELOCITY=      16.29     CALCULATED CHANNEL AREA=      2411.

 EGPRS      EGLWC      H3         QWEIR      QLOW       BAREA      TRAPEZOID      ELLC       ELTRD      WEIRLN
                                                                     AREA
      .00   1130.07       .00         0.    41000.      5319.      5293.     1134.30    1141.90         0.


3470 ENCROACHMENT STATIONS=     9822.0   10179.0  TYPE=      1  TARGET=      357.000
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1138.30 ELREA= 1138.30

UPSTREAM DUAL HIGHWAY BRIDGE AT GRAND AVE.CODED AS SINGLE BRIDGE WITH
2FT DEBRIS.1983 TOPO 1.5FT LOWER FOR DECK WAS USED
THAN 1981 TOPO DECK-PLANS LOWERED TO FIT TOPO.RR WEIR FLOW CONTROLS.
GRAND AVE & RR BRIDGE HAVE 1:1 SIDES, GROUTED INVERT.

346.200	11.30	1128.30	.00	1128.30	1130.07	1.77	1.21	.00	1182.00
41000.0	.0	41000.0	.0	.0	3835.1	.0	4117.4	571.3	1132.00
1.18	.00	10.69	.00	.000	.035	.000	.000	1117.00	9825.96
.002699	100.	100.	100.	0	0	0	.00	348.83	10174.79

*SECNO 346.620

3470 ENCROACHMENT STATIONS= 9822.0 10188.0 TYPE= 1 TARGET= 366.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1140.50 ELREA= 1140.50

DOWNSTREAM SIDE SANTA FE RR BRIDGE.NO FLOW PERMITTED BETWEEN BRIDGES

346.620	10.88	1128.38	1125.25	1128.38	1130.28	1.90	.12	.09	1186.00
41000.0	.0	41000.0	.0	.0	3702.5	.0	4121.0	571.6	1135.00
1.18	.00	11.07	.00	.000	.035	.000	.000	1117.50	9830.00
.003040	42.	42.	42.	2	14	0	.00	350.57	10180.57

*SECNO 346.720

3265 DIVIDED FLOW

1
05MAY04 16:11:44 PAGE 106

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

0 NORMAL BRIDGE, NRD= 4 MIN ELTRD= 1141.40 MAX ELLC= 1135.80

3470 ENCROACHMENT STATIONS= 9822.0 10188.0 TYPE= 1 TARGET= 366.000
JUST INSIDE DOWNSTREAM SIDE OF SANTA FE RR BRIDGE. NO DEBRIS APPLIES.

346.720	10.84	1128.34	1125.55	1128.34	1130.51	2.17	.04	.19	1186.00
41000.0	.0	41000.0	.0	.0	3469.5	.0	4121.9	571.7	1141.00
1.18	.00	11.82	.00	.000	.035	.000	.000	1117.50	9830.04
.004707	10.	10.	10.	2	9	0	.00	332.20	10180.53

*SECNO 346.900

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 4 MIN ELTRD= 1141.40 MAX ELLC= 1135.80

3470 ENCROACHMENT STATIONS= 9822.0 10188.0 TYPE= 1 TARGET= 366.000
JUST INSIDE UPSTREAM SIDE OF SANTA FE RR BRIDGE.4FT DEBRIS EACH PIER.

346.900	10.90	1128.40	1125.80	1128.40	1130.65	2.25	.09	.06	1191.00
41000.0	.0	41000.0	.0	.0	3403.4	.0	4123.3	571.8	1141.00
1.18	.00	12.05	.00	.000	.035	.000	.000	1117.50	9830.05
.004957	18.	18.	18.	0	9	0	.00	326.33	10187.00

*SECNO 347.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

3470 ENCROACHMENT STATIONS= 9822.0 10188.0 TYPE= 1 TARGET= 366.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1138.60 ELREA= 1141.40

UPSTREAM SANTA FE RR BRIDGE. NORMAL BRIDGE ROUTINE USED TO BETTER
MODEL DUAL ELLC. 4 FEET DEBRIS.
NEW TWO SPAN REPLACES WOOD TRESTLE

1
05MAY04 16:11:44 PAGE 107

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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

  347.000     11.55    1129.25    1125.48    1129.25    1130.96       1.71        .03        .27    1141.00
  41000.0       .0    41000.0        .0         .0     3908.3         .0     4124.1      571.9    1141.00
     1.18      .00      10.49        .00       .000       .035       .000       .000    1117.70    9831.57
  .002526      10.        10.        10.          3         15          0        .00     346.85   10178.43


CCHV=     .100 CEHV=     .300
*SECNO 349.000
CHIMP CLSTA=   10000.00 CELCH=    1119.10 BW=     330.00 STCHL=    9810.00 STCHR=   10170.00
EXCAVATION DATA
AEX=    2991.4SQ-FT     VEXR=      28.8K*CU-YD     VEXT=      165.1K*CU-YD


3470 ENCROACHMENT STATIONS=     9809.0   10214.0  TYPE=      1  TARGET=      405.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1135.00 ELREA=      1124.00

          PILOT CHANNEL TO X-358; BW=330FT, SS=1:1
  349.000     10.83    1129.93    1126.86    1129.95    1131.73       1.80        .74        .03    1135.00
  41000.0       .0    39925.2     1074.8         .0     3673.5      193.3     4148.5      574.2    1124.00
     1.19      .00      10.87       5.56       .000       .035       .045       .000    1119.10    9824.17
  .002877     180.       275.      220.          2         14          0        .00     381.06   10205.23


*SECNO 352.000
CHIMP CLSTA=    9990.00 CELCH=    1121.30 BW=     330.00 STCHL=    9810.00 STCHR=   10160.00
EXCAVATION DATA
AEX=    1925.1SQ-FT     VEXR=      27.3K*CU-YD     VEXT=      192.4K*CU-YD


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9809.0   10180.0  TYPE=      1  TARGET=      371.000

95 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1132.00 ELREA=      1124.00

        LOB ENCR FOR NO WEIR FLOW. ROB TERMINATED AT SUN CITY BLOCK FENCE.
  352.000      9.24    1130.54    1128.95    1130.55    1133.06       2.52       1.12        .22    1132.00
  41000.0       .0    40160.5     839.5         .0     3127.9      120.8     4173.4      576.8    1124.00
     1.19      .00      12.84       6.95       .000       .035       .045       .000    1121.30    9815.76
  .004916     230.       300.      400.          2         19          0        .00     364.24   10180.00


1
   05MAY04      16:11:44                                                                                    PAGE  108

   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 358.000

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     9770.0   10400.0  TYPE=      1  TARGET=      630.000
          UPSTREAM END OF PILOT CHANNEL
  358.000      9.88    1135.48    1135.48    1136.11    1138.65       3.17       3.92        .19    1135.00
  41000.0      45.0    31615.2     9339.9       31.4     2080.0      879.0     4216.9      583.1    1137.50
     1.20      1.43      15.20      10.63       .045       .035       .045       .000    1125.60    9770.00
  .008914      400.       600.      650.          0          8          0        .00     566.95   10400.00


*SECNO 365.000

01 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.86


3470 ENCROACHMENT STATIONS=     9650.0   10600.0  TYPE=      1  TARGET=      950.000
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   365.000      13.15   1140.65   1139.15   1139.97   1141.89      1.24      3.05       .19   1137.00
   41000.0     2294.7   31532.8    7172.5     671.7    3179.5    1659.8    4285.2     595.3   1136.00
      1.23       3.42      9.92      4.32      .045      .035      .045      .000   1127.50   9650.00
   .002573       700.      700.      700.         3         8         0       .00    950.00  10600.00


*SECNO 370.000

3470 ENCROACHMENT STATIONS=      9640.0   10350.0  TYPE=       1  TARGET=      710.000
   370.000      14.38   1141.78   1139.26   1141.61   1143.42      1.65      1.41       .12   1140.50
   41000.0      779.2   39375.4    845.4     296.7    3754.3     240.9    4340.7     604.3   1139.00
      1.24       2.63     10.49      3.51      .045      .035      .045      .000   1127.40   9673.34
   .003153       430.      500.      500.         3         8         0       .00    676.66  10350.00


1
   05MAY04      16:11:44                                                                          PAGE  109

    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 373.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      9550.0   10250.0  TYPE=       1  TARGET=      700.000
   373.000      15.49   1142.69   1139.48   1142.33   1144.44      1.74       .98       .03   1140.00
   41000.0     1613.4   38985.9    400.7     534.8    3595.8     136.7    4373.8     609.9   1141.00
      1.25       3.02     10.84      2.93      .045      .035      .045      .000   1127.20   9550.00
   .002787       420.      330.      300.         2        12         0       .00    681.77  10250.00


*SECNO 377.000

3265 DIVIDED FLOW


0 ENCROACHMENT STATIONS=      9500.0   10230.0  TYPE=       1  TARGET=      730.000
         DOWNSTREAM END OF CHANNELIZATION FROM T-BIRD ROAD.
         DS BREAKOUT ENCR HERE.
   377.000      15.24   1143.74   1141.10   1143.14   1145.76      2.02      1.24       .08   1143.80
   41000.0     1409.6   39590.4        .0     526.2    3411.5        .0    4411.3     616.1   1143.90
      1.26       2.68     11.60       .00      .045      .035      .000      .000   1128.50   9500.00
   .003474       400.      400.      310.         2        12         0       .00    686.14  10189.57


*SECNO 384.000

3470 ENCROACHMENT STATIONS=      9829.0   10240.0  TYPE=       1  TARGET=      411.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1147.00 ELREA=      1146.00

   384.000      16.33   1146.13   1141.35   1145.12   1147.75      1.62      1.95       .04   1147.00
   41000.0         .0   40999.9        .1        .0    4011.5        .3    4475.5     624.6   1146.00
      1.28        .00     10.22       .26      .000      .035      .045      .000   1129.80   9843.05
   .002281       750.      700.      730.         2        15         0       .00    356.14  10199.19


*SECNO 388.000

3470 ENCROACHMENT STATIONS=      9819.0   10201.0  TYPE=       1  TARGET=      382.000
1
   05MAY04      16:11:44                                                                          PAGE  110

    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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1148.00 ELREA=      1148.00

   388.000      17.20   1147.20   1141.24   1146.55   1148.56      1.37       .79       .03   1148.00
   41000.0         .0   41000.0        .0        .0    4371.8        .0    4514.0     627.9   1148.00
      1.29        .00      9.38       .00      .000      .035      .000      .000   1130.00   9825.51
   .001715       400.      400.      400.         2        19         0       .00    351.69  10177.20


*SECNO 391.500
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3470 ENCROACHMENT STATIONS=     9719.0   10191.0  TYPE=      1  TARGET=      472.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1156.00 ELREA=      1148.00

   391.500     16.12   1147.82   1142.79   1147.26   1149.28      1.46       .68       .03   1156.00
   41000.0        .0   41000.0        .0        .0    4224.8        .0    4548.5     630.9   1148.00
      1.30       .00      9.70       .00      .000      .035      .000      .000   1131.70   9789.05
   .002251      350.      350.      350.         2        14         0       .00    397.09  10186.14


*SECNO 395.000

3470 ENCROACHMENT STATIONS=     9734.0   10191.0  TYPE=      1  TARGET=      457.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1151.30 ELREA=      1150.00

          LOB SPLIT FLOW OF 800 CFS ONLY OK TO X-384
          DOWNSTREAM END OF DEVELOPERS CHANNEL THRU T BIRD BRIDGE
   395.000     16.49   1148.69   1143.09   1148.27   1150.00      1.30       .70       .02   1151.30
   41000.0        .0   41000.0        .0        .0    4473.3        .0    4583.5     634.0   1150.00
      1.31       .00      9.17       .00      .000      .035      .000      .000   1132.20   9767.66
   .001797      325.      350.      375.         2        14         0       .00    386.37  10154.03


*SECNO 402.000

3470 ENCROACHMENT STATIONS=     9804.0   10191.0  TYPE=      1  TARGET=      387.000
   402.000     15.77   1149.97   1144.00   1149.67   1151.18      1.21      1.18       .01   1150.00

   41000.0        .0   41000.0        .0        .0    4644.7        .0    4656.8     640.2   1150.00
      1.33       .00      8.83       .00      .000      .035      .000      .000   1134.20   9805.16
   .001576      670.      700.      710.         2        14         0       .00    384.70  10189.87


1
   05MAY04      16:11:44                                                                          PAGE  111

    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=      .300 CEHV=      .500
*SECNO 406.000

3470 ENCROACHMENT STATIONS=     9804.0   10191.0  TYPE=      1  TARGET=      387.000
   406.000     15.48   1150.58   1145.31   1150.33   1151.94      1.36       .68       .07   1152.00
   41000.0        .0   40999.6        .4        .0    4383.8        .6    4698.2     643.8   1150.00
      1.34       .00      9.35       .73      .000      .035      .045      .000   1135.10   9812.09
   .001863      390.      400.      410.         2        14         0       .00    378.91  10191.00


*SECNO 409.000
3280 CROSS SECTION    409.00 EXTENDED       .05 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9716.7   10006.0  TYPE=      1  TARGET=      289.300
          D.S. SIDE THUNDERBIRD RD.BRIDGE.
   409.000     15.45   1150.75   1146.62   1150.53   1153.14      2.39       .68       .52   1160.00
   41000.0        .0   41000.0        .0        .0    3304.5        .0    4724.7     645.9   1160.00
      1.35       .00     12.41       .00      .000      .035      .000      .000   1135.30   9735.49
   .002849      550.      300.      150.         2        15         0       .00    251.51   9987.01


*SECNO 409.010

3470 ENCROACHMENT STATIONS=     9747.2   10010.8  TYPE=      1  TARGET=      263.600

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1161.50 ELREA=      1160.60

          JUST INSIDE DOWNSTREAM SIDE OF T BIRD NORMAL BRIDGE. NO PIER DEBRIS
          BRIDGE PLANS 0.8 TO 1.0 FT HIGHER THAN 1981 TOPO.
          PLAN ELEVATION ADJUSTMENT TO TOPO.
   409.010     15.45   1150.65   1146.63   1150.42   1153.25      2.60       .00       .11   1161.50
   41000.0        .0   41000.0        .0        .0    3166.0        .0    4724.8     645.9   1160.60
      1.35       .00     12.95       .00      .000      .035      .000      .000   1135.20   9760.85
   .003009        1.        1.        1.         2        15         0       .00    233.02   9993.86


1
   05MAY04      16:11:44                                                                          PAGE  112
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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

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.56	2.90	.00	167.33	18.00	3913.31	2.44	1135.60	1135.20

*SECNO 409.820
CLASS A LOW FLOW

3420 BRIDGE W.S.= 1149.55 BRIDGE VELOCITY= 15.76 CALCULATED CHANNEL AREA= 2558.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	1154.14	1.04	0.	41000.	3913.	3913.	1155.40	1163.50	0.

3470 ENCROACHMENT STATIONS= 9750.5 10014.0 TYPE= 1 TARGET= 263.500

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1161.50 ELREA= 100000.00

NORMAL BRIDGE. JUST INSIDE UPSTREAM SIDE THUNDERBIRD BRIDGE.
2 FEET DEBRIS. DECK SLOPES 0.8 FEET TOWARDS D.S. SIDE-INCLUDED.
TOPO ELEV USED. BT FOR BRIDGE.

409.820	16.08	1151.68	.00	1151.54	1154.14	2.46	.89	.00	1161.50
41000.0	.0	41000.0	.0	.0	3258.0	.0	4730.7	646.4	100000.00
1.35	.00	12.58	.00	.000	.035	.000	.000	1135.60	9764.71
.002721	81.	81.	81.	0	0	0	.00	232.21	9996.92

*SECNO 410.000

3470 ENCROACHMENT STATIONS= 9659.2 9922.8 TYPE= 1 TARGET= 263.600

5 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1155.30 ELREA= 1158.00

JUST UPSTREAM OF THUNDERBIRD BRIDGE. ROB MAY BLOCK RT APPR.
WEIR FLOW

410.000	16.23	1151.93	1147.25	1151.80	1154.24	2.30	.05	.05	1155.30
41000.0	.0	41000.0	.0	.0	3368.0	.0	4732.1	646.5	1158.00
1.35	.00	12.17	.00	.000	.035	.000	.000	1135.70	9665.90
.002574	18.	18.	18.	2	15	0	.00	243.76	9909.66

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 412.000

3470 ENCROACHMENT STATIONS= 9824.0 10166.0 TYPE= 1 TARGET= 342.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1159.70 ELREA= 1156.10

412.000	15.95	1152.75	1148.02	1152.65	1154.77	2.01	.50	.03	1159.70
41000.0	.0	41000.0	.0	.0	3601.4	.0	4748.1	647.7	1156.10
1.36	.00	11.38	.00	.000	.035	.000	.000	1136.80	9861.31
.002456	100.	200.	260.	2	19	0	.00	281.68	10142.99

*SECNO 418.000

3470 ENCROACHMENT STATIONS= 9804.0 10206.0 TYPE= 1 TARGET= 402.000

418.000	16.44	1154.54	1149.60	1154.48	1156.22	1.68	1.42	.03	1160.00
41000.0	.0	41000.0	.0	.0	3946.2	.0	4800.1	651.9	1160.00
1.37	.00	10.39	.00	.000	.035	.000	.000	1138.10	9836.16
.002268	550.	600.	700.	2	19	0	.00	336.09	10172.25

*SECNO 423.000

3470 ENCROACHMENT STATIONS= 9789.0 10211.0 TYPE= 1 TARGET= 422.000
UPSTREAM START OF CHANNEL TO X377-370

```
   423.000     18.05   1155.65   1150.92   1155.61   1157.43      1.77      1.18       .03   1161.40
   41000.0        .0   41000.0        .0        .0    3838.0        .0    4844.8     655.7   1162.00
      1.39       .00     10.68       .00      .000      .035      .000      .000   1137.60   9837.65
   .002461      460.      500.      600.         2        15         0       .00    326.02  10163.67


 *SECNO 425.000

 3470 ENCROACHMENT STATIONS=     9799.0   10211.0  TYPE=      1  TARGET=      412.000
          DOWNSTREAM END OF NATURAL STREAMBED TO SKUNK CREEK CHANNELIZATION.
          16FPS ERODES RIVER BED TO MODIFIED GR DIMENSIONS-TIED TO X423 INVERT.
   425.000     20.40   1156.40   1150.41   1156.37   1157.88      1.48       .43       .03   1159.40
   41000.0        .0   41000.0        .0        .0    4196.1        .0    4863.2     657.3   1162.00
      1.39       .00      9.77       .00      .000      .035      .000      .000   1136.00   9835.52
   .001890      130.      200.      170.         2        15         0       .00    341.60  10177.12


1
   05MAY04      16:11:44                                                                          PAGE  114

    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 428.000

 3470 ENCROACHMENT STATIONS=     9809.0   10229.0  TYPE=      1  TARGET=      420.000
          ASSUMED 2FT ERODES FROM BOTTOM DUE TO X423 ORIGINAL DROP INLET.
   428.000     19.22   1157.12   1150.88   1157.09   1158.42      1.30       .52       .02   1161.40
   41000.0        .0   41000.0        .0        .0    4480.7        .0    4893.1     659.6   1164.00
      1.40       .00      9.15       .00      .000      .035      .000      .000   1137.90   9833.04
   .001592      300.      300.      300.         2        14         0       .00    353.14  10186.17


 *SECNO 434.000

 3470 ENCROACHMENT STATIONS=     9901.0   10326.0  TYPE=      1  TARGET=      425.000
   434.000     20.15   1158.15   1152.70   1158.13   1159.41      1.26       .98       .00   1160.00
   41000.0        .0   41000.0        .0        .0    4558.0        .0    4955.3     664.7   1164.00
      1.42       .00      9.00       .00      .000      .035      .000      .000   1138.00   9907.15
   .001685      600.      600.      600.         1        19         0       .00    384.94  10292.09


 *SECNO 440.000

 3470 ENCROACHMENT STATIONS=     9919.0   10359.0  TYPE=      1  TARGET=      440.000
   440.000     19.25   1159.25   1152.69   1159.24   1160.30      1.05       .87       .02   1166.00
   41000.0        .0   41000.0        .0        .0    4982.8        .0    5021.0     670.0   1166.00
      1.44       .00      8.23       .00      .000      .035      .000      .000   1140.00   9935.75
   .001267      600.      600.      600.         2        14         0       .00    385.69  10321.44


 *SECNO 443.200

 3470 ENCROACHMENT STATIONS=     9939.0   10386.0  TYPE=      1  TARGET=      447.000
   443.200     19.12   1159.62   1154.01   1159.61   1160.78      1.15       .45       .03   1166.00
   41000.0        .0   41000.0        .0        .0    4757.0        .0    5056.8     672.9   1170.00
      1.45       .00      8.62       .00      .000      .035      .000      .000   1140.50   9950.47
   .001535      330.      320.      330.         2        19         0       .00    397.46  10347.93


 *SECNO 449.100

 3265 DIVIDED FLOW

1
   05MAY04      16:11:44                                                                          PAGE  115

    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

 [illegible]5 MINIMUM SPECIFIC ENERGY
 [illegible]20 CRITICAL DEPTH ASSUMED

 3470 ENCROACHMENT STATIONS=     9937.0   10501.0  TYPE=      1  TARGET=      564.000
   449.100      9.22   1161.22   1161.22   1161.22   1164.73      3.51      1.84       .71   1169.00
   41000.0        .0   41000.0        .0        .0    2728.6        .0    5107.5     678.2   1170.80
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     1.46       .00      15.03       .00      .000      .035      .000      .000   1152.00   9964.96
  .009498      600.       590.      580.         0        11         0       .00    389.94  10430.50


*SECNO 451.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      9909.0   10460.0  TYPE=       1  TARGET=       551.000
   451.000     11.66   1165.56   1165.56   1165.56   1169.07      3.51      1.84       .00   1170.00
   41000.0        .0   41000.0       .0        .0    2725.6        .0    5119.4     680.0 100000.00
      1.47       .00     15.04       .00      .000      .035      .000      .000   1153.90   9930.85
   .009871      200.      190.      120.         0        11         0       .00    397.81  10418.01


CCHV=      .200 CEHV=      .400
*SECNO 8.655

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.99


3470 ENCROACHMENT STATIONS=      9820.0   10225.0  TYPE=       1  TARGET=       405.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     100000.00 ELREA=       1171.20

          CONFLUENCE OF SKUNK CREEK AND NEW RIVER EQUALS NEW RIVER X-SECTION
          451.00 LO-FLOW
     8.655     15.08   1170.38   1163.50   1170.38   1171.31       .92      1.71       .52 100000.00
   41000.0        .0   41000.0       .0        .0    5317.7        .0    5183.1     686.3   1171.20
      1.49       .00      7.71       .00      .000      .035      .000      .000   1155.30   9820.00
   .001106      950.      690.      375.         2        19         0       .00    400.54  10220.54


1
   05MAY04       16:11:44                                                                          PAGE  116

    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 8.731
3280 CROSS SECTION       8.73 EXTENDED        .20 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      9762.5   10213.5  TYPE=       1  TARGET=       451.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       1172.80 ELREA=     100000.00

     8.731     15.40   1171.50   1160.46   1171.50   1171.58       .08       .19       .08   1172.80
   12000.0        .0   12000.0       .0        .0    5388.5        .0    5232.3     690.1 100000.00
      1.54       .00      2.23       .00      .000      .035      .000      .000   1156.10   9776.61
   .000097      400.      400.      400.         2        14         0       .00    433.92  10210.53


*SECNO 8.807

3470 ENCROACHMENT STATIONS=      9771.5   10219.2  TYPE=       1  TARGET=       447.700

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     100000.00 ELREA=     100000.00

     8.807     13.23   1171.53   1162.14   1171.53   1171.63       .10       .05       .01 100000.00
   12000.0        .0   12000.0       .0        .0    4723.8        .0    5278.7     694.0 100000.00
      1.58       .00      2.54       .00      .000      .035      .000      .000   1158.30   9783.23
   .000144      400.      400.      390.         2        11         0       .00    422.53  10205.75


*SECNO 8.883

2 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .46


3470 ENCROACHMENT STATIONS=      9824.7   10216.9  TYPE=       1  TARGET=       392.200

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       1174.90 ELREA=     100000.00
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   8.883     11.40   1171.50   1165.99   1171.50   1171.80       .30       .11       .06   1174.90
 12000.0        .0   12000.0        .0        .0    2738.1        .0    5312.9     697.6 100000.00
    1.61       .00      4.38       .00      .000      .035      .000      .000   1160.10   9847.01
 .000677      280.      400.      400.         2        14         0       .00    344.04  10191.05
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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 8.936

3470 ENCROACHMENT STATIONS=     9809.4   10213.2  TYPE=      1  TARGET=      403.800

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1177.30 ELREA=    100000.00

   8.936      9.90   1171.70   1167.73   1171.70   1172.04       .35       .23       .01   1177.30
 12000.0        .0   12000.0        .0        .0    2537.6        .0    5330.5     699.9 100000.00
    1.63       .00      4.73       .00      .000      .035      .000      .000   1161.80   9821.41
 .000939      300.      290.      300.         2        11         0       .00    362.48  10183.89

*SECNO 8.977

3470 ENCROACHMENT STATIONS=     9886.1   10212.7  TYPE=      1  TARGET=      326.601

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1177.20 ELREA=    100000.00

   8.977      8.27   1171.77   1168.75   1171.77   1172.40       .63       .27       .08   1177.20
 12000.0        .0   12000.0        .0        .0    1883.8        .0    5341.2     701.5 100000.00
    1.64       .00      6.37       .00      .000      .035      .000      .000   1163.50   9894.68
 .001838      220.      210.      200.         2        11         0       .00    285.65  10180.33

SECNO 9.009

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

3470 ENCROACHMENT STATIONS=     9764.5   10207.0  TYPE=      1  TARGET=      442.500

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1178.00 ELREA=    100000.00

   9.009      9.43   1172.33   1167.92   1172.33   1172.63       .30       .20       .03   1178.00
 12000.0        .0   12000.0        .0        .0    2717.7        .0    5350.7     702.8 100000.00
    1.65       .00      4.42       .00      .000      .035      .000      .000   1162.90   9795.44
 .000769      330.      180.      180.         2        14         0       .00    371.89  10167.33

*SECNO 9.047

3470 ENCROACHMENT STATIONS=     9689.8   10113.8  TYPE=      1  TARGET=      424.000
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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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1177.50 ELREA=    100000.00

   9.047     11.36   1172.56   1166.61   1172.56   1172.75       .20       .11       .01   1177.50
 12000.0        .0   12000.0        .0        .0    3358.3        .0    5364.6     704.6 100000.00
    1.66       .00      3.57       .00      .000      .035      .000      .000   1161.20   9710.96
 .000411      280.      200.      160.         2        11         0       .00    393.29  10104.25

*SECNO 9.129

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

3470 ENCROACHMENT STATIONS=     9641.2   10090.0  TYPE=      1  TARGET=      448.800

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1180.60 ELREA=    100000.00
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     9.129      8.52   1172.72   1169.21   1172.72   1173.06       .34       .26       .04   1180.60
   12000.0        .0   12000.0        .0        .0    2575.5        .0    5393.2     708.5 100000.00
      1.69       .00      4.66       .00      .000      .035      .000      .000   1164.20   9674.23
   .001039      290.      420.      460.         2        18         0       .00    406.92  10081.16


CCHV=     .100 CEHV=     .300
*SECNO 9.318

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    19660.0   20015.0  TYPE=      1  TARGET=      355.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1186.00 ELREA=    100000.00

     9.318      7.35   1180.55   1180.55   1180.55   1182.39      1.84      2.51       .45   1186.00
   12000.0        .0   12000.0        .0        .0    1102.5        .0    5435.4     716.7 100000.00
      1.71       .00     10.88       .00      .000      .035      .000      .000   1173.20  19699.38
   .012573     1000.     1000.     1000.         0        15         0       .00    314.98  20014.36


1
   05MAY04      16:11:44                                                                          PAGE  119

    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 9.492

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.88


0 ENCROACHMENT STATIONS=    19770.0   20235.0  TYPE=      1  TARGET=      465.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1188.00 ELREA=    100000.00

     9.492      8.16   1187.16   1184.97   1187.16   1187.84       .68      5.33       .12   1188.00
   11450.0        .0   11450.0        .0        .0    1730.0        .0    5465.4     724.1 100000.00
      1.75       .00      6.62       .00      .000      .035      .000      .000   1179.00  19826.61
   .003244      910.      920.      890.         3        11         0       .00    381.17  20207.77


*SECNO 9.692

3301 HV CHANGED MORE THAN HVINS


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


3470 ENCROACHMENT STATIONS=    19840.0   20060.0  TYPE=      1  TARGET=      220.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1195.00 ELREA=    100000.00

     9.692      7.25   1191.35   1190.91   1191.36   1193.45      2.09      5.19       .42   1195.00
   11450.0        .0   11450.0        .0        .0     986.5        .0    5498.3     731.0 100000.00
      1.78       .00     11.61       .00      .000      .035      .000      .000   1184.10  19856.21
   .008292     1050.     1056.     1040.         3        15         0       .00    188.23  20044.44


1
   05MAY04      16:11:44                                                                          PAGE  120


                                                                    THIS RUN EXECUTED 05MAY04     16:11:44
*************************************
 HEC-2 WATER SURFACE PROFILES

 rsion   4.6.2;  May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST
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NEW RIVER-A.F.R. TO S.C.

MMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	EG	VCH	OLOSS	SSTA	TOPWID	ENDST
	501.450	39000.00	1027.50	8.30	1027.62	3.20	.00	8395.00	6594.18	15157.41
	501.450	39000.00	1028.22	9.02	1028.42	3.69	.00	9300.00	2800.83	12150.00
*	10.000	39000.00	1029.45	5.45	1030.66	10.69	.33	8600.00	2223.60	10908.61
*	10.000	39000.00	1030.01	6.01	1031.58	11.54	.41	9050.00	1320.00	10370.00
*	13.000	39000.00	1031.08	8.88	1031.50	6.21	.08	8600.00	2347.98	10947.98
*	13.000	39000.00	1031.97	9.77	1032.58	7.00	.10	9050.00	1324.00	10374.00
	20.000	39000.00	1032.46	8.86	1032.92	6.08	.01	8800.00	2303.88	11128.37
	20.000	39000.00	1033.37	9.77	1033.90	6.15	.01	9100.00	1345.00	10445.00
	26.800	39000.00	1033.93	9.03	1034.54	7.14	.04	8000.00	3200.43	11200.43
	26.800	39000.00	1034.58	9.68	1035.45	7.90	.10	9150.00	1250.00	10400.00
	32.600	39000.00	1035.25	9.05	1036.42	8.88	.17	8500.00	1680.05	10222.50
	32.600	39000.00	1036.03	9.83	1036.90	7.72	.00	9000.00	1224.06	10224.06
	38.000	39000.00	1037.16	9.96	1038.17	8.26	.02	8900.00	1164.90	10064.90
	38.000	39000.00	1037.32	10.12	1038.26	8.01	.02	8900.00	1165.23	10065.23
	45.000	39000.00	1039.08	10.78	1039.81	6.96	.03	9150.00	981.56	10131.56
	45.000	39000.00	1039.10	10.80	1039.82	6.94	.02	9150.00	981.60	10131.60
*	51.700	39000.00	1040.18	12.78	1040.66	5.51	.03	9816.33	741.62	10592.57
*	51.700	39000.00	1040.19	12.79	1040.66	5.50	.03	9816.13	741.91	10592.59
	54.000	39000.00	1040.44	12.44	1040.84	5.08	.01	9857.22	832.27	10689.49
	54.000	39000.00	1040.45	12.45	1040.85	5.08	.01	9857.21	832.30	10689.50
	59.000	39000.00	1040.85	10.15	1041.30	5.41	.02	9767.88	925.61	10693.49
	59.000	39000.00	1040.85	10.15	1041.31	5.40	.02	9767.86	925.64	10693.51

1

05MAY04 16:11:44 PAGE 121

	SECNO	Q	CWSEL	DEPTH	EG	VCH	OLOSS	SSTA	TOPWID	ENDST
	63.000	39000.00	1041.25	9.55	1041.82	6.04	.03	9696.25	867.85	10564.10
	63.000	39000.00	1041.26	9.56	1041.82	6.03	.03	9696.15	867.96	10564.11
*	70.500	39000.00	1042.27	8.77	1044.53	12.04	.51	9592.93	661.32	10254.25
*	70.500	39000.00	1042.27	8.77	1044.53	12.04	.51	9592.92	661.33	10254.26
	77.000	39000.00	1046.88	12.28	1049.71	13.52	.17	9795.96	418.12	10237.54
	77.000	39000.00	1046.88	12.28	1049.71	13.52	.17	9795.96	418.10	10237.54
*	84.000	39000.00	1050.69	14.89	1051.15	5.77	.24	9859.46	930.54	10790.00
*	84.000	39000.00	1050.72	14.92	1051.43	6.75	.21	9859.33	541.67	10401.00
	88.700	39000.00	1051.03	16.83	1051.48	5.48	.00	9732.41	999.80	10917.22
	88.700	39000.00	1051.35	17.15	1051.83	5.55	.02	9731.62	569.38	10301.00
	95.500	39000.00	1051.52	17.32	1052.03	5.70	.02	9508.36	795.78	10304.13
	95.500	39000.00	1051.86	17.67	1052.33	5.48	.00	9502.53	802.20	10304.74
*	100.700	39000.00	1051.54	16.54	1053.28	10.59	.37	9692.93	399.10	10188.63
*	100.700	39000.00	1051.90	16.90	1053.50	10.17	.34	9675.50	456.80	10189.67
*	107.000	39000.00	1053.66	15.56	1054.18	5.82	.12	9724.66	529.75	10254.42
*	107.000	39000.00	1053.87	15.77	1054.38	5.72	.11	9723.32	531.46	10254.78
*	110.700	39000.00	1053.23	11.73	1056.47	14.45	1.36	9771.30	456.59	10227.90
*	110.700	39000.00	1053.52	12.02	1056.46	13.78	1.22	9770.82	457.81	10228.63
*	117.200	39000.00	1058.53	12.13	1060.57	11.46	.36	9845.00	350.00	10195.00
*	117.200	39000.00	1058.28	11.88	1060.43	11.77	.24	9845.00	350.00	10195.00
	118.000	39000.00	1058.93	11.53	1061.03	11.61	.00	9845.00	350.00	10195.00
	118.000	39000.00	1058.74	11.34	1060.92	11.85	.00	9845.00	350.00	10195.00
*	120.000	39000.00	1061.05	15.15	1061.75	6.88	.42	9550.00	850.00	10400.00
	120.000	39000.00	1060.82	14.92	1061.67	7.39	.40	9799.00	407.00	10206.00
	125.000	39000.00	1061.56	15.66	1062.19	6.59	.01	8950.00	1850.00	10800.00
	125.000	39000.00	1061.39	15.49	1062.19	7.19	.00	9789.00	452.00	10241.00
*	131.000	39000.00	1062.12	12.12	1064.40	12.15	.50	8644.03	1489.22	10237.57
*	131.000	39000.00	1061.31	11.31	1064.33	13.94	.66	9744.00	490.16	10234.16

*	135.000	39000.00	1064.84	13.04	1066.12	9.79	.10	8400.00	1707.62	10292.42
	135.000	39000.00	1064.71	12.91	1066.85	11.73	.09	9799.00	357.00	10156.00
	140.000	39000.00	1066.47	12.57	1067.14	7.07	.06	7543.08	2338.85	10581.75
*	140.000	39000.00	1067.22	13.32	1068.13	7.65	.12	9744.00	517.00	10261.00
	143.000	39000.00	1066.89	8.99	1067.79	8.06	.07	7772.90	2041.33	10394.48
	143.000	39000.00	1067.71	9.81	1068.75	8.22	.04	9629.92	706.33	10398.55

	SECNO	Q	CWSEL	DEPTH	EG	VCH	OLOSS	SSTA	TOPWID	ENDST
*	146.000	39000.00	1068.64	10.74	1070.12	11.00	.18	7818.53	1823.13	10304.55
*	146.000	39000.00	1068.64	10.74	1070.79	12.54	.33	9000.00	913.24	10190.62
*	149.600	40000.00	1070.49	10.59	1071.42	8.56	.06	7638.77	2993.35	10946.04
*	149.600	40000.00	1071.28	11.38	1072.08	7.85	.14	8850.00	1356.00	10206.00
	158.000	40000.00	1072.76	13.26	1073.43	7.59	.03	8153.09	2484.14	10750.11
	158.000	40000.00	1073.06	13.56	1073.94	8.29	.02	8950.00	1300.00	10250.00
	167.000	40000.00	1074.15	15.25	1075.73	10.92	.28	8792.33	1771.34	10663.36
	167.000	40000.00	1074.67	15.77	1076.16	10.54	.18	9000.00	1150.40	10250.00
	170.000	40000.00	1074.45	15.25	1076.76	12.76	.22	8971.37	1107.05	10131.13
	170.000	40000.00	1075.13	15.93	1076.91	11.47	.09	9030.00	1051.07	10132.83
*	174.200	40000.00	1077.21	17.81	1078.90	11.90	.06	8641.65	2158.35	10800.00
*	174.200	40000.00	1077.09	17.69	1079.03	12.50	.05	8850.00	1450.00	10300.00
*	178.000	40000.00	1079.14	19.24	1079.87	7.35	.48	8720.54	1796.72	10600.00
*	178.000	40000.00	1079.44	19.54	1080.15	7.20	.62	8750.00	1592.09	10400.00
*	178.500	40000.00	1079.30	11.60	1079.97	7.13	.03	8449.86	2100.14	10550.00
	178.500	40000.00	1079.67	11.97	1080.25	6.73	.06	8750.00	1665.00	10415.00
*	181.500	40000.00	1079.37	12.87	1081.03	11.27	.30	8909.73	1422.49	10406.92
	181.500	40000.00	1079.68	13.18	1081.19	10.79	.28	9100.00	1150.35	10325.00
	185.300	40000.00	1080.97	13.07	1082.24	9.72	.04	8465.87	1883.72	10601.88
	185.300	40000.00	1080.70	12.80	1082.61	11.32	.12	9559.89	651.11	10211.00
	190.000	40000.00	1082.37	14.57	1083.43	8.36	.02	8082.58	1943.56	10396.27
	190.000	40000.00	1082.98	15.18	1083.94	7.90	.09	9804.00	597.00	10401.00
	193.600	40000.00	1082.89	12.69	1084.87	11.34	.27	9778.67	749.19	10527.86
	193.600	40000.00	1083.36	13.16	1085.16	10.78	.25	9770.67	440.33	10211.00
	198.400	40000.00	1085.07	14.07	1086.42	9.30	.06	9751.36	433.77	10185.13
	198.400	40000.00	1085.27	14.27	1086.56	9.12	.05	9749.00	437.16	10186.16
	202.400	40000.00	1085.67	13.17	1087.91	12.01	.27	9767.34	397.78	10165.12
	202.400	40000.00	1085.82	13.32	1087.98	11.80	.26	9789.00	378.42	10167.42
	206.000	40000.00	1087.37	13.87	1089.50	11.72	.01	9428.99	707.86	10136.85
	206.000	40000.00	1087.40	13.90	1089.52	11.69	.00	9721.00	415.98	10136.98
*	210.500	40000.00	1089.63	18.43	1090.37	7.14	.14	8550.00	1296.11	10173.99
*	210.500	40000.00	1089.51	18.31	1090.46	7.83	.12	9814.00	359.69	10173.69
	216.000	40000.00	1090.18	17.98	1090.81	6.49	.01	8900.00	1102.69	10222.77
	216.000	40000.00	1090.28	18.08	1090.99	6.74	.02	9769.00	454.16	10223.16

SECNO	Q	CWSEL	DEPTH	EG	VCH	OLOSS	SSTA	TOPWID	ENDST
218.000	40000.00	1090.53	18.43	1090.95	5.33	.02	9000.00	1233.75	10233.75
218.000	40000.00	1090.67	18.57	1091.14	5.51	.02	9699.00	535.21	10234.21
220.800	40000.00	1090.62	17.42	1091.13	5.89	.03	9258.02	972.02	10230.04
220.800	40000.00	1090.75	17.55	1091.33	6.12	.03	9749.00	481.45	10230.45
223.000	40000.00	1090.67	16.47	1091.34	6.70	.05	9255.57	984.90	10243.09
223.000	40000.00	1090.83	16.63	1091.55	6.81	.04	9749.00	494.91	10243.91
229.000	40000.00	1091.33	11.43	1091.97	6.45	.01	9296.19	847.14	10280.41
229.000	40000.00	1091.54	11.64	1092.18	6.40	.02	9659.00	622.57	10281.57
231.500	40000.00	1091.48	11.18	1092.53	8.97	.20	9562.92	582.08	10145.00
231.500	40000.00	1091.70	11.40	1092.70	8.78	.18	9600.00	545.00	10145.00

	232.600	40000.00	1095.07	14.97	1096.11	8.60	.00	8600.00	1446.39	10145.00
	232.600	40000.00	1096.07	15.97	1097.05	8.26	.00	9550.00	596.00	10146.00
	235.000	40000.00	1095.48	15.38	1096.41	8.09	.01	8650.00	1472.16	10168.69
	235.000	40000.00	1096.40	16.30	1097.31	7.84	.01	9620.00	551.36	10171.36
	238.800	40000.00	1096.33	15.63	1096.87	6.50	.04	8700.00	1522.71	10222.71
	238.800	40000.00	1096.90	16.20	1097.75	7.51	.01	9700.00	525.21	10225.21
*	240.800	40000.00	1096.39	15.59	1097.25	8.52	.10	8700.00	1531.61	10247.92
	240.800	40000.00	1097.09	16.29	1098.14	8.79	.06	9630.00	623.15	10253.15
	245.800	40000.00	1097.17	15.27	1098.97	10.91	.28	9103.37	1046.83	10150.19
	245.800	40000.00	1097.98	16.08	1099.55	10.13	.15	9620.00	534.88	10154.88
	251.000	40000.00	1099.22	17.12	1100.32	8.45	.07	9727.81	477.78	10205.58
	251.000	40000.00	1099.67	17.57	1100.68	8.08	.06	9723.31	484.81	10208.13
	256.000	40000.00	1099.67	16.87	1101.80	11.70	.31	9836.62	300.58	10137.21
	256.000	40000.00	1100.02	17.22	1102.02	11.35	.30	9834.71	303.30	10138.01
	258.800	40000.00	1101.15	15.55	1102.51	9.37	.08	9807.97	348.76	10156.73
	258.800	40000.00	1101.37	15.77	1102.69	9.19	.07	9807.17	349.90	10157.07
	262.000	40000.00	1101.65	15.05	1103.17	9.89	.05	9830.44	340.34	10170.78
	262.000	40000.00	1101.84	15.24	1103.31	9.73	.05	9829.11	342.33	10171.44
*	265.000	40000.00	1103.05	16.45	1103.63	6.11	.09	9628.87	579.69	10208.57
*	265.000	40000.00	1103.19	16.59	1103.76	6.03	.09	9626.10	582.63	10208.73
	270.500	40000.00	1103.28	15.18	1104.40	8.51	.16	9793.61	399.58	10193.19
	270.500	40000.00	1103.40	15.30	1104.50	8.42	.16	9792.99	400.52	10193.51
	273.500	40000.00	1103.94	13.84	1104.82	7.55	.02	9705.11	429.89	10135.00
	273.500	40000.00	1104.04	13.94	1104.91	7.48	.02	9704.90	430.10	10135.00

	SECNO	Q	CWSEL	DEPTH	EG	VCH	OLOSS	SSTA	TOPWID	ENDST
	277.000	40000.00	1102.89	12.09	1106.38	14.99	.78	9852.76	274.48	10127.24
*	277.000	40000.00	1103.03	12.23	1106.42	14.78	.76	9852.42	275.15	10127.58
	281.800	40000.00	1105.55	13.35	1109.44	15.83	.12	9876.13	238.96	10115.09
	281.800	40000.00	1105.56	13.36	1109.44	15.82	.15	9876.11	239.00	10115.10
*	288.000	40000.00	1110.65	16.55	1111.98	9.27	.77	9874.50	340.08	10214.59
*	288.000	40000.00	1110.65	16.55	1111.98	9.27	.77	9874.51	340.07	10214.58
	290.000	41000.00	1110.93	17.63	1112.31	9.42	.02	9857.68	290.32	10148.00
	290.000	41000.00	1110.93	17.63	1112.31	9.42	.02	9857.68	290.32	10148.00
	291.000	41000.00	1111.06	17.46	1112.80	10.56	.00	9809.51	268.18	10077.69
	291.000	41000.00	1111.42	17.82	1113.55	11.72	.00	9851.00	226.69	10077.69
	293.000	41000.00	1111.42	16.32	1113.35	11.18	.10	9871.44	427.12	10298.56
	293.000	41000.00	1112.54	17.44	1114.15	10.18	.16	9867.82	348.17	10216.00
	297.000	41000.00	1112.57	13.67	1114.67	11.61	.05	9857.14	335.75	10192.89
	297.000	41000.00	1113.38	14.48	1115.18	10.78	.06	9855.93	343.79	10199.72
*	302.000	41000.00	1112.89	13.89	1118.05	18.22	.92	9895.01	211.13	10106.14
*	302.000	41000.00	1113.39	14.39	1118.10	17.40	.87	9893.65	213.35	10107.00
*	305.000	41000.00	1116.72	16.12	1119.85	14.20	.20	9885.74	217.09	10102.83
	305.000	41000.00	1116.59	15.99	1119.78	14.34	.15	9885.81	216.80	10102.61
	307.000	41000.00	1118.52	17.42	1120.53	11.59	.11	9611.11	519.12	10130.23
	307.000	41000.00	1118.10	17.00	1120.49	12.42	.08	9889.00	237.00	10126.00
*	311.500	41000.00	1120.62	17.52	1121.11	5.84	.15	8932.65	1797.07	10923.47
*	311.500	41000.00	1120.54	17.44	1121.18	6.41	.18	9844.00	427.00	10271.00
	314.000	41000.00	1120.93	16.23	1121.25	4.68	.02	9416.06	1126.22	10542.28
	314.000	41000.00	1120.93	16.23	1121.35	5.23	.02	9694.00	657.00	10351.00
*	318.000	41000.00	1121.02	14.42	1121.61	6.12	.08	9612.32	791.08	10403.40
	318.000	41000.00	1121.14	14.54	1121.70	6.04	.04	9619.00	785.17	10404.17
	323.000	41000.00	1121.69	12.39	1122.39	6.71	.04	9483.44	889.55	10372.99
	323.000	41000.00	1121.77	12.47	1122.46	6.62	.03	9482.50	890.83	10373.32
	328.000	41000.00	1122.32	10.72	1123.44	8.48	.13	9769.28	461.45	10230.72
	328.000	41000.00	1122.38	10.78	1123.49	8.44	.13	9769.22	461.56	10230.78

	330.000	41000.00	1122.34	11.44	1123.95	10.20	.15	9816.41	378.17	10219.44
	330.000	41000.00	1122.39	11.49	1123.99	10.15	.15	9820.00	374.94	10219.49
	334.000	41000.00	1123.25	11.15	1125.05	10.78	.06	9848.85	352.29	10201.15
	334.000	41000.00	1123.28	11.18	1125.08	10.74	.06	9848.82	352.37	10201.18

	SECNO	Q	CWSEL	DEPTH	EG	VCH	OLOSS	SSTA	TOPWID	ENDST
	337.000	41000.00	1124.05	10.85	1125.96	11.08	.03	9864.15	351.71	10215.85
	337.000	41000.00	1124.08	10.88	1125.98	11.06	.03	9864.12	351.76	10215.88
	340.500	41000.00	1125.11	10.71	1127.07	11.24	.02	9869.29	351.42	10220.71
	340.500	41000.00	1125.13	10.73	1127.08	11.22	.02	9869.27	351.45	10220.73
	342.000	41000.00	1125.58	10.68	1127.56	11.27	.00	9874.32	351.36	10225.68
	342.000	41000.00	1125.60	10.70	1127.56	11.25	.00	9874.31	351.39	10225.69
	343.000	41000.00	1125.92	10.72	1127.88	11.24	.00	9849.29	351.42	10200.71
	343.000	41000.00	1125.93	10.73	1127.89	11.22	.00	9849.28	351.45	10200.72
	344.900	41000.00	1126.51	10.21	1128.70	11.87	.16	9827.19	346.27	10173.46
	344.900	41000.00	1126.52	10.22	1128.70	11.86	.16	9827.18	346.28	10173.47
	345.200	41000.00	1126.79	10.49	1128.86	11.55	.06	9826.98	346.71	10173.69
	345.200	41000.00	1126.80	10.50	1128.87	11.54	.06	9826.97	346.72	10173.69
*	346.200	41000.00	1128.30	11.30	1130.07	10.69	.00	9825.96	348.83	10174.79
*	346.200	41000.00	1128.30	11.30	1130.07	10.69	.00	9825.96	348.83	10174.79
	346.620	41000.00	1128.38	10.88	1130.28	11.07	.09	9830.00	350.57	10180.57
	346.620	41000.00	1128.38	10.88	1130.28	11.07	.09	9830.00	350.57	10180.57
	346.720	41000.00	1128.34	10.84	1130.51	11.82	.19	9830.04	332.20	10180.53
	346.720	41000.00	1128.34	10.84	1130.51	11.82	.19	9830.04	332.20	10180.53
	346.900	41000.00	1128.40	10.90	1130.65	12.05	.06	9830.05	326.33	10187.00
	346.900	41000.00	1128.40	10.90	1130.65	12.05	.06	9830.05	326.33	10187.00
	347.000	41000.00	1129.25	11.55	1130.96	10.49	.27	9831.57	346.85	10178.43
*	347.000	41000.00	1129.25	11.55	1130.96	10.49	.27	9831.57	346.85	10178.43
	349.000	41000.00	1129.95	10.85	1131.71	10.79	.02	9824.15	451.91	10324.08
	349.000	41000.00	1129.93	10.83	1131.73	10.87	.03	9824.17	381.06	10205.23
	352.000	41000.00	1130.55	9.25	1133.02	12.74	.21	9815.75	411.99	10401.39
	352.000	41000.00	1130.54	9.24	1133.06	12.84	.22	9815.76	364.24	10180.00
*	358.000	41000.00	1136.11	10.51	1138.26	13.15	.03	9394.56	1294.80	10720.00
*	358.000	41000.00	1135.48	9.88	1138.65	15.20	.19	9770.00	566.95	10400.00
	365.000	41000.00	1139.97	12.47	1141.32	10.48	.08	9361.02	1408.98	10770.00
*	365.000	41000.00	1140.65	13.15	1141.89	9.92	.19	9650.00	950.00	10600.00
	370.000	41000.00	1141.61	14.21	1142.71	9.14	.02	9290.07	1462.13	10800.00
	370.000	41000.00	1141.78	14.38	1143.42	10.49	.12	9673.34	676.66	10350.00
	373.000	41000.00	1142.33	15.13	1143.56	9.71	.04	8678.50	1931.14	10661.33
	373.000	41000.00	1142.69	15.49	1144.44	10.84	.03	9550.00	681.77	10250.00

SECNO	Q	CWSEL	DEPTH	EG	VCH	OLOSS	SSTA	TOPWID	ENDST
377.000	41000.00	1143.14	14.64	1144.78	10.99	.12	9300.00	1259.52	10700.00
377.000	41000.00	1143.74	15.24	1145.76	11.60	.08	9500.00	686.14	10189.57
384.000	41000.00	1145.12	15.32	1147.07	11.19	.09	9851.18	339.20	10190.38
384.000	41000.00	1146.13	16.33	1147.75	10.22	.04	9843.05	356.14	10199.19
388.000	41000.00	1146.55	16.55	1148.07	9.89	.04	9829.97	344.96	10174.93
388.000	41000.00	1147.20	17.20	1148.56	9.38	.03	9825.51	351.69	10177.20
391.500	41000.00	1147.26	15.56	1148.88	10.23	.03	9793.74	380.74	10174.48
391.500	41000.00	1147.82	16.12	1149.28	9.70	.03	9789.05	397.09	10186.14
395.000	41000.00	1148.27	16.07	1149.67	9.50	.02	9773.34	369.13	10142.46
395.000	41000.00	1148.69	16.49	1150.00	9.17	.02	9767.66	386.37	10154.03
402.000	41000.00	1149.67	15.47	1150.94	9.05	.01	9806.97	381.38	10188.36
402.000	41000.00	1149.97	15.77	1151.18	8.83	.01	9805.16	384.70	10189.87

406.000	41000.00	1150.33	15.23	1151.75	9.56	.07	9813.34	386.62	10199.96
406.000	41000.00	1150.58	15.48	1151.94	9.35	.07	9812.09	378.91	10191.00
409.000	41000.00	1150.53	15.23	1153.00	12.62	.53	9735.94	250.62	9986.56
409.000	41000.00	1150.75	15.45	1153.14	12.41	.52	9735.49	251.51	9987.01
409.010	41000.00	1150.42	15.22	1153.12	13.16	.11	9761.12	232.37	9993.49
409.010	41000.00	1150.65	15.45	1153.25	12.95	.11	9760.85	233.02	9993.86
409.820	41000.00	1151.54	15.94	1154.05	12.71	.00	9764.92	231.73	9996.65
409.820	41000.00	1151.68	16.08	1154.14	12.58	.00	9764.71	232.21	9996.92
410.000	41000.00	1151.80	16.10	1154.15	12.29	.05	9666.16	243.21	9909.37
410.000	41000.00	1151.93	16.23	1154.24	12.17	.05	9665.90	243.76	9909.66
412.000	41000.00	1152.65	15.85	1154.69	11.48	.03	9861.64	280.95	10142.59
412.000	41000.00	1152.75	15.95	1154.77	11.38	.03	9861.31	281.68	10142.99
418.000	41000.00	1154.48	16.38	1156.17	10.45	.04	9836.51	335.36	10171.87
418.000	41000.00	1154.54	16.44	1156.22	10.39	.03	9836.16	336.09	10172.25
423.000	41000.00	1155.61	18.01	1157.40	10.72	.03	9837.93	325.58	10163.51
423.000	41000.00	1155.65	18.05	1157.43	10.68	.03	9837.65	326.02	10163.67
425.000	41000.00	1156.37	20.37	1157.86	9.80	.03	9835.75	341.15	10176.90
425.000	41000.00	1156.40	20.40	1157.88	9.77	.03	9835.52	341.60	10177.12
428.000	41000.00	1157.09	19.19	1158.40	9.17	.02	9833.08	352.94	10186.02
428.000	41000.00	1157.12	19.22	1158.42	9.15	.02	9833.04	353.14	10186.17
434.000	41000.00	1158.13	20.13	1159.39	9.01	.00	9907.21	384.77	10291.97
434.000	41000.00	1158.15	20.15	1159.41	9.00	.00	9907.15	384.94	10292.09

	SECNO	Q	CWSEL	DEPTH	EG	VCH	OLOSS	SSTA	TOPWID	ENDST
	440.000	41000.00	1159.24	19.24	1160.29	8.24	.02	9935.76	385.60	10321.36
	440.000	41000.00	1159.25	19.25	1160.30	8.23	.02	9935.75	385.69	10321.44
	443.200	41000.00	1159.61	19.11	1160.77	8.63	.03	9950.49	397.38	10347.86
	443.200	41000.00	1159.62	19.12	1160.78	8.62	.03	9950.47	397.46	10347.93
*	449.100	41000.00	1161.22	9.22	1164.73	15.03	.71	9964.96	389.94	10430.50
*	449.100	41000.00	1161.22	9.22	1164.73	15.03	.71	9964.96	389.94	10430.50
*	451.000	41000.00	1165.56	11.66	1169.07	15.04	.00	9930.85	397.81	10418.01
*	451.000	41000.00	1165.56	11.66	1169.07	15.04	.00	9930.85	397.81	10418.01
*	8.655	41000.00	1170.38	15.08	1171.31	7.71	.52	9820.00	400.54	10220.54
*	8.655	41000.00	1170.38	15.08	1171.31	7.71	.52	9820.00	400.54	10220.54
	8.731	12000.00	1171.50	15.40	1171.58	2.23	.08	9776.61	433.92	10210.53
	8.731	12000.00	1171.50	15.40	1171.58	2.23	.08	9776.61	433.92	10210.53
	8.807	12000.00	1171.53	13.23	1171.63	2.54	.01	9783.23	422.53	10205.75
	8.807	12000.00	1171.53	13.23	1171.63	2.54	.01	9783.23	422.53	10205.75
*	8.883	12000.00	1171.50	11.40	1171.80	4.38	.06	9847.01	344.04	10191.05
*	8.883	12000.00	1171.50	11.40	1171.80	4.38	.06	9847.01	344.04	10191.05
	8.936	12000.00	1171.70	9.90	1172.04	4.73	.01	9821.41	362.48	10183.89
	8.936	12000.00	1171.70	9.90	1172.04	4.73	.01	9821.41	362.48	10183.89
	8.977	12000.00	1171.77	8.27	1172.40	6.37	.08	9894.68	285.65	10180.33
	8.977	12000.00	1171.77	8.27	1172.40	6.37	.08	9894.68	285.65	10180.33
*	9.009	12000.00	1172.33	9.43	1172.63	4.42	.03	9795.44	371.89	10167.33
*	9.009	12000.00	1172.33	9.43	1172.63	4.42	.03	9795.44	371.89	10167.33
	9.047	12000.00	1172.56	11.36	1172.75	3.57	.01	9710.96	393.29	10104.25
	9.047	12000.00	1172.56	11.36	1172.75	3.57	.01	9710.96	393.29	10104.25
*	9.129	12000.00	1172.72	8.52	1173.06	4.66	.04	9674.23	406.92	10081.16
*	9.129	12000.00	1172.72	8.52	1173.06	4.66	.04	9674.23	406.92	10081.16
*	9.318	12000.00	1180.55	7.35	1182.39	10.88	.45	19699.38	314.98	20014.36
	9.318	12000.00	1180.55	7.35	1182.39	10.88	.45	19699.38	314.98	20014.36
	9.492	11450.00	1187.16	8.16	1187.84	6.62	.12	19826.75	381.02	20207.77
*	9.492	11450.00	1187.16	8.16	1187.84	6.62	.12	19826.61	381.17	20207.77
*	9.692	11450.00	1191.36	7.26	1193.45	11.60	.42	19856.19	188.27	20044.45
*	9.692	11450.00	1191.35	7.25	1193.45	11.61	.42	19856.21	188.23	20044.44

NEW RIVER-A.F.R. TO S.C.

SUMMARY PRINTOUT TABLE 105

	SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	QCH	QROB
	501.450	1027.50	.00	.00	6594.18	199.19	26795.27	12005.53
	501.450	1028.22	.00	.00	2800.83	.00	35948.30	3051.70
*	10.000	1029.45	2.52	.33	2223.60	18099.46	19449.04	1451.51
*	10.000	1030.01	2.36	.41	1320.00	13369.86	24392.32	1237.82
*	13.000	1031.08	.76	.08	2347.98	16149.57	22061.76	788.67
*	13.000	1031.97	.90	.10	1324.00	10878.90	28121.10	.00
	20.000	1032.46	1.40	.01	2303.88	7026.06	29026.95	2946.99
	20.000	1033.37	1.31	.01	1345.00	5088.63	33911.37	.00
	26.800	1033.93	1.58	.04	3200.43	9897.68	28400.53	701.78
	26.800	1034.58	1.45	.10	1250.00	4482.55	34517.45	.00
	32.600	1035.25	1.71	.17	1680.05	1906.65	37093.35	.00
	32.600	1036.03	1.45	.00	1224.06	2773.67	36226.33	.00
	38.000	1037.16	1.74	.02	1164.90	1798.14	37201.86	.00
	38.000	1037.32	1.34	.02	1165.23	2047.21	36952.79	.00
	45.000	1039.08	1.61	.03	981.56	1302.15	37697.86	.00
	45.000	1039.10	1.54	.02	981.60	1312.98	37687.02	.00
*	51.700	1040.18	.82	.03	741.62	.00	39000.00	.00
*	51.700	1040.19	.81	.03	741.91	.00	39000.00	.00
	54.000	1040.44	.18	.01	832.27	.00	39000.00	.00
	54.000	1040.45	.18	.01	832.30	.00	39000.00	.00
	59.000	1040.85	.44	.02	925.61	.00	39000.00	.00
	59.000	1040.85	.44	.02	925.64	.00	39000.00	.00
	63.000	1041.25	.48	.03	867.85	.00	39000.00	.00
	63.000	1041.26	.48	.03	867.96	.00	39000.00	.00
*	70.500	1042.27	2.20	.51	661.32	.00	39000.00	.00
*	70.500	1042.27	2.20	.51	661.33	.00	39000.00	.00
	77.000	1046.88	5.01	.17	418.12	.00	38742.97	257.03
	77.000	1046.88	5.01	.17	418.10	.00	38743.14	256.87
*	84.000	1050.69	1.21	.24	930.54	.00	33223.66	5776.34
*	84.000	1050.72	1.51	.21	541.67	.00	38993.74	6.26
	88.700	1051.03	.32	.00	999.80	.00	37488.48	1511.51
	88.700	1051.35	.37	.02	569.38	.00	38995.80	4.20

	SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	QCH	QROB
	95.500	1051.52	.53	.02	795.78	.00	39000.00	.00
	95.500	1051.86	.50	.00	802.20	.00	39000.00	.00
*	100.700	1051.54	.88	.37	399.10	.00	39000.00	.00
*	100.700	1051.90	.83	.34	456.80	.00	39000.00	.00
*	107.000	1053.66	.78	.12	529.75	.00	39000.00	.00
*	107.000	1053.87	.77	.11	531.46	.00	39000.00	.00
*	110.700	1053.23	.62	1.36	456.59	.00	39000.00	.00
*	110.700	1053.52	.58	1.22	457.81	.00	39000.00	.00
*	117.200	1058.53	3.74	.36	350.00	.00	39000.00	.00
*	117.200	1058.28	3.73	.24	350.00	.00	39000.00	.00
	118.000	1058.93	.46	.00	350.00	.00	39000.00	.00
	118.000	1058.74	.48	.00	350.00	.00	39000.00	.00
*	120.000	1061.05	.31	.42	850.00	1258.44	36947.83	793.73
*	120.000	1060.82	.36	.40	407.00	2.22	38995.38	2.41

	125.000	1061.56	.43	.01	1850.00	1736.11	36263.72	1000.17
	125.000	1061.39	.51	.00	452.00	1.23	38997.74	1.03
*	131.000	1062.12	1.13	.50	1489.22	210.20	38789.80	.00
*	131.000	1061.31	1.46	.66	490.16	.40	38999.60	.00
*	135.000	1064.84	1.62	.10	1707.62	3904.06	32996.92	2099.02
*	135.000	1064.71	2.43	.09	357.00	1.68	38991.78	6.54
	140.000	1066.47	.95	.06	2338.85	4144.66	33272.75	1582.58
*	140.000	1067.22	1.16	.12	517.00	1.41	38993.21	5.38
	143.000	1066.89	.58	.07	2041.33	4921.68	34078.32	.00
	143.000	1067.71	.58	.04	706.33	249.36	38750.64	.00
*	146.000	1068.64	1.08	.18	1823.13	9322.22	29675.68	2.10
*	146.000	1068.64	1.14	.33	913.24	5184.05	33815.95	.00
*	149.600	1070.49	1.25	.06	2993.35	7750.15	31965.07	284.78
*	149.600	1071.28	1.15	.14	1356.00	7756.27	32243.37	.36
	158.000	1072.76	1.98	.03	2484.14	12267.02	27616.07	116.91
	158.000	1073.06	1.83	.02	1300.00	8705.27	31294.29	.44
	167.000	1074.15	2.03	.28	1771.34	3562.46	33863.18	2574.37
	167.000	1074.67	2.04	.18	1150.40	4894.83	34025.67	1079.50
	170.000	1074.45	.81	.22	1107.05	3599.02	36400.98	.00
	170.000	1075.13	.67	.09	1051.07	5477.19	34522.81	.00

	SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	QCH	QROB
*	174.200	1077.21	1.19	.06	2158.35	8354.85	30210.27	1434.88
*	174.200	1077.09	1.10	.05	1450.00	8114.65	31468.81	416.54
	178.000	1079.14	.49	.48	1796.72	4214.03	34592.47	1193.50
	178.000	1079.44	.49	.62	1592.09	4932.11	34539.03	528.87
*	178.500	1079.30	.06	.03	2100.14	6314.02	32850.79	835.19
	178.500	1079.67	.05	.06	1665.00	6811.04	32435.69	753.27
*	181.500	1079.37	.77	.30	1422.49	4641.99	33061.74	2296.27
*	181.500	1079.68	.66	.28	1150.35	5182.30	32708.76	2108.94
	185.300	1080.97	1.16	.04	1883.72	5343.48	33916.11	740.41
	185.300	1080.70	1.30	.12	651.11	1617.47	38379.53	3.00
	190.000	1082.37	1.18	.02	1943.56	695.53	39304.47	.00
	190.000	1082.98	1.24	.09	597.00	2.63	39997.13	.24
	193.600	1082.89	1.16	.27	749.19	.00	39718.79	281.20
	193.600	1083.36	.97	.25	440.33	.00	39999.25	.75
	198.400	1085.07	1.48	.06	433.77	.00	40000.00	.00
	198.400	1085.27	1.34	.05	437.16	.00	40000.00	.00
	202.400	1085.67	1.23	.27	397.78	.85	39999.15	.00
	202.400	1085.82	1.16	.26	378.42	.27	39999.73	.00
	206.000	1087.37	1.58	.01	707.86	66.04	39933.96	.00
	206.000	1087.40	1.53	.00	415.98	27.16	39972.84	.00
*	210.500	1089.63	.72	.14	1296.11	3222.42	36777.58	.00
*	210.500	1089.51	.83	.12	359.69	1.99	39998.01	.00
	216.000	1090.18	.43	.01	1102.69	1792.23	38207.77	.00
	216.000	1090.28	.50	.02	454.16	3.90	39996.11	.00
	218.000	1090.53	.12	.02	1233.75	1743.94	38256.05	.00
	218.000	1090.67	.13	.02	535.21	2.96	39997.05	.00
	220.800	1090.62	.15	.03	972.02	1899.41	38100.59	.00
	220.800	1090.75	.16	.03	481.45	3.43	39996.57	.00
	223.000	1090.67	.16	.05	984.90	1194.43	38805.57	.00
	223.000	1090.83	.17	.04	494.91	.03	39999.97	.00
	229.000	1091.33	.61	.01	847.14	572.85	39427.16	.00
	229.000	1091.54	.60	.02	622.57	3.21	39996.79	.00
	231.500	1091.48	.36	.20	582.08	11291.59	28708.41	.00

231.500	1091.70	.34	.18	545.00	11345.43	28654.57	.00

	SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	QCH	QROB
	232.600	1095.07	3.58	.00	1446.39	4303.64	35696.36	.00
	232.600	1096.07	4.35	.00	596.00	3314.84	36683.46	1.71
	235.000	1095.48	.29	.01	1472.16	3707.92	36292.08	.00
	235.000	1096.40	.25	.01	551.36	2227.36	37772.64	.00
	238.800	1096.33	.42	.04	1522.71	8599.27	31400.73	.00
	238.800	1096.90	.44	.01	525.21	1849.11	38150.89	.00
*	240.800	1096.39	.29	.10	1531.61	11837.41	28162.59	.00
	240.800	1097.09	.33	.06	623.15	8493.76	31506.25	.00
	245.800	1097.17	1.44	.28	1046.83	1144.31	38855.69	.00
	245.800	1097.98	1.26	.15	534.88	759.61	39240.39	.00
	251.000	1099.22	1.29	.07	477.78	.00	40000.00	.00
	251.000	1099.67	1.08	.06	484.81	.00	40000.00	.00
	256.000	1099.67	1.17	.31	300.58	.00	40000.00	.00
	256.000	1100.02	1.05	.30	303.30	.00	40000.00	.00
	258.800	1101.15	.64	.08	348.76	.00	40000.00	.00
	258.800	1101.37	.59	.07	349.90	.00	40000.00	.00
	262.000	1101.65	.61	.05	340.34	.00	40000.00	.00
	262.000	1101.84	.58	.05	342.33	.00	40000.00	.00
*	265.000	1103.05	.37	.09	579.69	.00	40000.00	.00
*	265.000	1103.19	.36	.09	582.63	.00	40000.00	.00
	270.500	1103.28	.60	.16	399.58	.00	40000.00	.00
	270.500	1103.40	.58	.16	400.52	.00	40000.00	.00
	273.500	1103.94	.39	.02	429.89	.00	40000.00	.00
	273.500	1104.04	.38	.02	430.10	.00	40000.00	.00
*	277.000	1102.89	.78	.78	274.48	.00	40000.00	.00
*	277.000	1103.03	.75	.76	275.15	.00	40000.00	.00
	281.800	1105.55	2.94	.12	238.96	.00	40000.00	.00
	281.800	1105.56	2.88	.15	239.00	.00	40000.00	.00
*	288.000	1110.65	1.77	.77	340.08	.00	40000.00	.00
*	288.000	1110.65	1.77	.77	340.07	.00	40000.00	.00
	290.000	1110.93	.31	.02	290.32	.00	41000.00	.00
	290.000	1110.93	.31	.02	290.32	.00	41000.00	.00
	291.000	1111.06	.49	.00	268.18	.00	41000.00	.00
	291.000	1111.42	1.25	.00	226.69	.00	41000.00	.00

1

	SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	QCH	QROB
	293.000	1111.42	.46	.10	427.12	.00	40735.85	264.15
	293.000	1112.54	.44	.16	348.17	.00	40997.10	2.90
	297.000	1112.57	1.27	.05	335.75	.00	41000.00	.00
	297.000	1113.38	.97	.06	343.79	.00	41000.00	.00
*	302.000	1112.89	2.46	.92	211.13	.00	41000.00	.00
*	302.000	1113.39	2.04	.87	213.35	.00	41000.00	.00
*	305.000	1116.72	1.60	.20	217.09	.00	41000.00	.00
	305.000	1116.59	1.54	.15	216.80	.00	41000.00	.00
	307.000	1118.52	.57	.11	519.12	1584.17	39415.84	.00
	307.000	1118.10	.63	.08	237.00	4.66	40995.34	.00
	311.500	1120.62	.43	.15	1797.07	2081.86	37525.95	1392.19
	311.500	1120.54	.51	.18	427.00	.22	40996.80	2.98
	314.000	1120.93	.12	.02	1126.22	4120.56	36698.47	180.96
	314.000	1120.93	.15	.02	657.00	6.94	40990.67	2.39

*	318.000	1121.02	.28	.08	791.08	2.85	40997.15	.00
*	318.000	1121.14	.31	.04	785.17	.79	40999.21	.00
	323.000	1121.69	.75	.04	889.55	.00	41000.00	.00
	323.000	1121.77	.72	.03	890.83	.00	41000.00	.00
	328.000	1122.32	.93	.13	461.45	.00	41000.00	.00
	328.000	1122.38	.90	.13	461.56	.00	41000.00	.00
	330.000	1122.34	.36	.15	378.17	1.15	40998.85	.00
	330.000	1122.39	.36	.15	374.94	1.77	40998.23	.00
	334.000	1123.25	1.04	.06	352.29	.00	41000.00	.00
	334.000	1123.28	1.03	.06	352.37	.00	41000.00	.00
	337.000	1124.05	.88	.03	351.71	.00	41000.00	.00
	337.000	1124.08	.87	.03	351.76	.00	41000.00	.00
	340.500	1125.11	1.09	.02	351.42	.00	41000.00	.00
	340.500	1125.13	1.09	.02	351.45	.00	41000.00	.00
	342.000	1125.58	.48	.00	351.36	.00	41000.00	.00
	342.000	1125.60	.48	.00	351.39	.00	41000.00	.00
	343.000	1125.92	.32	.00	351.42	.00	41000.00	.00
	343.000	1125.93	.32	.00	351.45	.00	41000.00	.00
	344.900	1126.51	.66	.16	346.27	.00	41000.00	.00
	344.900	1126.52	.66	.16	346.28	.00	41000.00	.00

	SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	QCH	QROB
	345.200	1126.79	.11	.06	346.71	.00	41000.00	.00
	345.200	1126.80	.11	.06	346.72	.00	41000.00	.00
*	346.200	1128.30	1.21	.00	348.83	.00	41000.00	.00
	346.200	1128.30	1.21	.00	348.83	.00	41000.00	.00
	346.620	1128.38	.12	.09	350.57	.00	41000.00	.00
	346.620	1128.38	.12	.09	350.57	.00	41000.00	.00
	346.720	1128.34	.04	.19	332.20	.00	41000.00	.00
	346.720	1128.34	.04	.19	332.20	.00	41000.00	.00
	346.900	1128.40	.09	.06	326.33	.00	41000.00	.00
	346.900	1128.40	.09	.06	326.33	.00	41000.00	.00
*	347.000	1129.25	.03	.27	346.85	.00	41000.00	.00
*	347.000	1129.25	.03	.27	346.85	.00	41000.00	.00
	349.000	1129.95	.73	.02	451.91	.00	39700.31	1299.69
	349.000	1129.93	.74	.03	381.06	.00	39925.15	1074.85
	352.000	1130.55	1.10	.21	411.99	.00	39907.28	1092.72
	352.000	1130.54	1.12	.22	364.24	.00	40160.52	839.48
*	358.000	1136.11	3.26	.03	1294.80	483.95	29667.89	10848.17
*	358.000	1135.48	3.92	.19	566.95	45.00	31615.15	9339.85
	365.000	1139.97	2.97	.08	1408.98	2971.62	31051.10	6977.29
*	365.000	1140.65	3.05	.19	950.00	2294.68	31532.82	7172.50
	370.000	1141.61	1.37	.02	1462.13	3114.12	33744.60	4141.28
	370.000	1141.78	1.41	.12	676.66	779.20	39375.36	845.44
	373.000	1142.33	.80	.04	1931.14	4452.09	33683.66	2864.24
	373.000	1142.69	.98	.03	681.77	1613.41	38985.91	400.68
	377.000	1143.14	1.10	.12	1259.52	4443.89	35243.21	1312.90
	377.000	1143.74	1.24	.08	686.14	1409.63	39590.37	.00
	384.000	1145.12	2.20	.09	339.20	.00	41000.00	.00
	384.000	1146.13	1.95	.04	356.14	.00	40999.93	.07
	388.000	1146.55	.96	.04	344.96	.00	41000.00	.00
	388.000	1147.20	.79	.03	351.69	.00	41000.00	.00
	391.500	1147.26	.78	.03	380.74	.00	41000.00	.00
	391.500	1147.82	.68	.03	397.09	.00	41000.00	.00
	395.000	1148.27	.77	.02	369.13	.00	41000.00	.00

395.000	1148.69	.70	.02	386.37	.00	41000.00	.00

SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	QCH	QROB
402.000	1149.67	1.26	.01	381.38	.00	41000.00	.00
402.000	1149.97	1.18	.01	384.70	.00	41000.00	.00
406.000	1150.33	.73	.07	386.62	.00	40999.26	.74
406.000	1150.58	.68	.07	378.91	.00	40999.59	.41
409.000	1150.53	.73	.53	250.62	.00	41000.00	.00
409.000	1150.75	.68	.52	251.51	.00	41000.00	.00
409.010	1150.42	.00	.11	232.37	.00	41000.00	.00
409.010	1150.65	.00	.11	233.02	.00	41000.00	.00
409.820	1151.54	.93	.00	231.73	.00	41000.00	.00
409.820	1151.68	.89	.00	232.21	.00	41000.00	.00
410.000	1151.80	.05	.05	243.21	.00	41000.00	.00
410.000	1151.93	.05	.05	243.76	.00	41000.00	.00
412.000	1152.65	.52	.03	280.95	.00	41000.00	.00
412.000	1152.75	.50	.03	281.68	.00	41000.00	.00
418.000	1154.48	1.44	.04	335.36	.00	41000.00	.00
418.000	1154.54	1.42	.03	336.09	.00	41000.00	.00
423.000	1155.61	1.20	.03	325.58	.00	41000.00	.00
423.000	1155.65	1.18	.03	326.02	.00	41000.00	.00
425.000	1156.37	.43	.03	341.15	.00	41000.00	.00
425.000	1156.40	.43	.03	341.60	.00	41000.00	.00
428.000	1157.09	.52	.02	352.94	.00	41000.00	.00
428.000	1157.12	.52	.02	353.14	.00	41000.00	.00
434.000	1158.13	.99	.00	384.77	.00	41000.00	.00
434.000	1158.15	.98	.00	384.94	.00	41000.00	.00
440.000	1159.24	.88	.02	385.60	.00	41000.00	.00
440.000	1159.25	.87	.02	385.69	.00	41000.00	.00
443.200	1159.61	.45	.03	397.38	.00	41000.00	.00
443.200	1159.62	.45	.03	397.46	.00	41000.00	.00
* 449.100	1161.22	1.85	.71	389.94	.00	41000.00	.00
* 449.100	1161.22	1.84	.71	389.94	.00	41000.00	.00
* 451.000	1165.56	1.84	.00	397.81	.00	41000.00	.00
* 451.000	1165.56	1.84	.00	397.81	.00	41000.00	.00
* 8.655	1170.38	1.71	.52	400.54	.00	41000.00	.00
* 8.655	1170.38	1.71	.52	400.54	.00	41000.00	.00

1

SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	QCH	QROB
8.731	1171.50	.19	.08	433.92	.00	12000.00	.00
8.731	1171.50	.19	.08	433.92	.00	12000.00	.00
8.807	1171.53	.05	.01	422.53	.00	12000.00	.00
8.807	1171.53	.05	.01	422.53	.00	12000.00	.00
* 8.883	1171.50	.11	.06	344.04	.00	12000.00	.00
* 8.883	1171.50	.11	.06	344.04	.00	12000.00	.00
8.936	1171.70	.23	.01	362.48	.00	12000.00	.00
8.936	1171.70	.23	.01	362.48	.00	12000.00	.00
8.977	1171.77	.27	.08	285.65	.00	12000.00	.00
8.977	1171.77	.27	.08	285.65	.00	12000.00	.00
9.009	1172.33	.20	.03	371.89	.00	12000.00	.00
9.009	1172.33	.20	.03	371.89	.00	12000.00	.00
9.047	1172.56	.11	.01	393.29	.00	12000.00	.00
9.047	1172.56	.11	.01	393.29	.00	12000.00	.00

*	9.129	1172.72	.26	.04	406.92	.00	12000.00	.00
*	9.129	1172.72	.26	.04	406.92	.00	12000.00	.00
	9.318	1180.55	2.51	.45	314.98	.00	12000.00	.00
	9.318	1180.55	2.51	.45	314.98	.00	12000.00	.00
*	9.492	1187.16	5.34	.12	381.02	.00	11450.00	.00
*	9.492	1187.16	5.33	.12	381.17	.00	11450.00	.00
*	9.692	1191.36	5.18	.42	188.27	.00	11450.00	.00
*	9.692	1191.35	5.19	.42	188.23	.00	11450.00	.00

NEW RIVER-A.F.R. TO S.C.

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	501.450	.00	.00	.00	1019.20	39000.00	1027.50	1024.62	1027.62	9.91	3.20	15340.78	12386.92
	501.450	.00	.00	.00	1019.20	39000.00	1028.22	1024.72	1028.42	10.00	3.69	11270.33	12331.60
*	10.000	1000.00	.00	.00	1024.00	39000.00	1029.45	1029.45	1030.66	122.36	10.69	4969.74	3525.68
*	10.000	1000.00	.00	.00	1024.00	39000.00	1030.01	1030.01	1031.58	116.89	11.54	4222.62	3607.20
*	13.000	300.00	.00	.00	1022.20	39000.00	1031.08	1029.07	1031.50	16.94	6.21	8675.90	9475.77
*	13.000	300.00	.00	.00	1022.20	39000.00	1031.97	1029.69	1032.58	18.44	7.00	7047.08	9082.55
	20.000	700.00	.00	.00	1023.60	39000.00	1032.46	1030.69	1032.92	19.20	6.08	8285.85	8900.25
	20.000	700.00	.00	.00	1023.60	39000.00	1033.37	1030.67	1033.90	16.53	6.15	7192.19	9593.18
	26.800	680.00	.00	.00	1024.90	39000.00	1033.93	1032.93	1034.54	23.11	7.14	8161.15	8111.86
	26.800	680.00	.00	.00	1024.90	39000.00	1034.58	1032.84	1035.45	25.10	7.90	5891.66	7785.04
	32.600	580.00	.00	.00	1026.20	39000.00	1035.25	1033.34	1036.42	37.32	8.88	5089.86	6383.69
	32.600	580.00	.00	.00	1026.20	39000.00	1036.03	1033.27	1036.90	24.26	7.72	5782.75	7918.29
	38.000	540.00	.00	.00	1027.20	39000.00	1037.16	1034.82	1038.17	28.45	8.26	5284.44	7312.40
	38.000	540.00	.00	.00	1027.20	39000.00	1037.32	1034.79	1038.26	25.96	8.01	5478.71	7654.07
	45.000	700.00	.00	.00	1028.30	39000.00	1039.08	1035.48	1039.81	19.57	6.96	5924.26	8817.02
	45.000	700.00	.00	.00	1028.30	39000.00	1039.10	1035.49	1039.82	19.39	6.94	5941.88	8856.13
*	51.700	670.00	.00	.00	1027.40	39000.00	1040.18	1034.80	1040.66	8.37	5.51	7077.61	13480.55
*	51.700	670.00	.00	.00	1027.40	39000.00	1040.19	1034.80	1040.66	8.34	5.50	7085.12	13500.89
	54.000	230.00	.00	.00	1028.00	39000.00	1040.44	1035.22	1040.84	7.48	5.08	7670.43	14263.82
	54.000	230.00	.00	.00	1028.00	39000.00	1040.45	1035.22	1040.85	7.45	5.08	7678.15	14287.37
	59.000	500.00	.00	.00	1030.70	39000.00	1040.85	1036.70	1041.30	10.53	5.41	7215.30	12018.79
	59.000	500.00	.00	.00	1030.70	39000.00	1040.85	1036.70	1041.31	10.49	5.40	7222.87	12039.47
	63.000	400.00	.00	.00	1031.70	39000.00	1041.25	1037.49	1041.82	13.96	6.04	6458.00	10436.45
	63.000	400.00	.00	.00	1031.70	39000.00	1041.26	1037.49	1041.82	13.93	6.03	6463.72	10450.94
*	70.500	750.00	.00	.00	1033.50	39000.00	1042.27	1042.08	1044.53	97.25	12.04	3238.29	3954.76
*	70.500	750.00	.00	.00	1033.50	39000.00	1042.27	1042.08	1044.53	97.16	12.04	3239.18	3956.52
	77.000	650.00	.00	.00	1034.60	39000.00	1046.88	1045.95	1049.71	62.59	13.52	2938.14	4929.53
	77.000	650.00	.00	.00	1034.60	39000.00	1046.88	1045.95	1049.71	62.61	13.52	2937.83	4928.80
*	84.000	700.00	.00	.00	1035.80	39000.00	1050.69	1045.17	1051.15	7.96	5.77	7449.40	13825.00
*	84.000	700.00	.00	.00	1035.80	39000.00	1050.72	1045.28	1051.43	10.84	6.75	5781.93	11847.62
	88.700	470.00	.00	.00	1034.20	39000.00	1051.03	1043.63	1051.48	6.12	5.48	7653.60	15759.83
	88.700	470.00	.00	.00	1034.20	39000.00	1051.35	1043.65	1051.83	6.09	5.55	7028.79	15807.87

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	95.500	680.00	.00	.00	1034.20	39000.00	1051.52	1043.03	1052.03	10.30	5.70	6845.21	12149.76
	95.500	680.00	.00	.00	1034.20	39000.00	1051.86	1043.03	1052.33	9.17	5.48	7111.17	12876.88
	100.700	520.00	.00	.00	1035.00	39000.00	1051.54	1047.09	1053.28	32.74	10.59	3683.80	6816.30
	100.700	520.00	.00	.00	1035.00	39000.00	1051.90	1047.09	1053.50	34.26	10.17	3833.00	6663.03
*	107.000	630.00	.00	.00	1038.10	39000.00	1053.66	1046.14	1054.18	6.48	5.82	6705.71	15317.47
*	107.000	630.00	.00	.00	1038.10	39000.00	1053.87	1046.11	1054.38	6.16	5.72	6819.83	15719.67
*	110.700	370.00	.00	.00	1041.50	39000.00	1053.23	1053.23	1056.47	109.87	14.45	2699.30	3720.77

*	110.700	370.00	.00	.00	1041.50	39000.00	1053.52	1053.52	1056.46	94.16	13.78	2830.45	4019.07
	117.200	650.00	.00	.00	1046.40	39000.00	1058.53	1056.04	1060.57	35.29	11.46	3403.27	6565.48
	117.200	650.00	.00	.00	1046.40	39000.00	1058.28	1056.04	1060.43	38.55	11.77	3314.11	6281.29
	118.000	80.00	1063.00	1063.10	1047.40	39000.00	1058.93	.00	1061.03	36.87	11.61	3360.47	6423.09
	118.000	80.00	1063.00	1063.10	1047.40	39000.00	1058.74	.00	1060.92	39.54	11.85	3290.57	6201.97
*	120.000	200.00	.00	.00	1045.90	39000.00	1061.05	1053.79	1061.75	8.50	6.88	6499.01	13376.85
*	120.000	200.00	.00	.00	1045.90	39000.00	1060.82	1053.78	1061.67	10.04	7.39	5279.80	12310.02
	125.000	500.00	.00	.00	1045.90	39000.00	1061.56	1054.85	1062.19	8.65	6.59	7620.03	13261.70
	125.000	500.00	.00	.00	1045.90	39000.00	1061.39	1054.85	1062.19	10.50	7.19	5426.48	12033.91
*	131.000	600.00	.00	.00	1050.00	39000.00	1062.12	1062.12	1064.40	68.30	12.15	3367.63	4718.93
*	131.000	600.00	.00	.00	1050.00	39000.00	1061.31	1061.31	1064.33	106.18	13.94	2797.45	3784.79
*	135.000	400.00	.00	.00	1051.80	39000.00	1064.84	1063.95	1066.12	26.84	9.79	5628.40	7527.81
*	135.000	400.00	.00	.00	1051.80	39000.00	1064.71	1062.46	1066.85	39.20	11.73	3328.57	6228.89
	140.000	500.00	.00	.00	1053.90	39000.00	1066.47	1062.97	1067.14	14.58	7.07	7611.63	10214.75
*	140.000	500.00	.00	.00	1053.90	39000.00	1067.22	1062.80	1068.13	15.35	7.65	5104.23	9952.86
	143.000	300.00	.00	.00	1057.90	39000.00	1066.89	1064.91	1067.79	27.25	8.06	6344.07	7470.54
	143.000	300.00	.00	.00	1057.90	39000.00	1067.71	1064.83	1068.75	24.86	8.22	4845.79	7822.65
*	146.000	300.00	.00	.00	1057.90	39000.00	1068.64	1068.64	1070.12	49.38	11.00	5252.01	5550.19
*	146.000	300.00	.00	.00	1057.90	39000.00	1068.64	1068.64	1070.79	64.14	12.54	3862.56	4869.76
*	149.600	360.00	.00	.00	1059.90	40000.00	1070.49	1069.43	1071.42	25.55	8.56	7032.69	7913.72
*	149.600	360.00	.00	.00	1059.90	40000.00	1071.28	1069.36	1072.08	19.15	7.85	6706.43	9139.56
	158.000	840.00	.00	.00	1059.50	40000.00	1072.76	1071.56	1073.43	21.66	7.59	7843.22	8594.39
	158.000	840.00	.00	.00	1059.50	40000.00	1073.06	1071.45	1073.94	24.93	8.29	6238.63	8011.10
	167.000	900.00	.00	.00	1058.90	40000.00	1074.15	1073.10	1075.73	22.60	10.92	5542.37	8413.82
	167.000	900.00	.00	.00	1058.90	40000.00	1074.67	1070.37	1076.16	19.97	10.54	5450.20	8950.23
	170.000	300.00	.00	.00	1059.20	40000.00	1074.45	1074.03	1076.76	32.94	12.76	4173.31	6968.99
	170.000	300.00	.00	.00	1059.20	40000.00	1075.13	1073.96	1076.91	25.02	11.47	4874.30	7997.13

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	174.200	420.00	.00	.00	1059.40	40000.00	1077.21	1077.21	1078.90	24.42	11.90	6011.19	8094.46
*	174.200	420.00	.00	.00	1059.40	40000.00	1077.09	1077.09	1079.03	27.22	12.50	5216.62	7666.28
*	178.000	380.00	.00	.00	1059.90	40000.00	1079.14	1070.10	1079.87	8.04	7.35	7874.13	14110.83
*	178.000	380.00	.00	.00	1059.90	40000.00	1079.44	1070.10	1080.15	7.59	7.20	7870.29	14523.17
*	178.500	50.00	.00	.00	1067.70	40000.00	1079.30	1077.15	1079.97	17.77	7.13	7609.47	9488.32
	178.500	50.00	.00	.00	1067.70	40000.00	1079.67	1077.14	1080.25	14.92	6.73	7796.55	10356.74
*	181.500	310.00	.00	.00	1066.50	40000.00	1079.37	1079.01	1081.03	37.03	11.27	5008.27	6573.33
*	181.500	310.00	.00	.00	1066.50	40000.00	1079.68	1078.92	1081.19	32.56	10.79	5098.40	7009.76
	185.300	380.00	.00	.00	1067.90	40000.00	1080.97	1079.63	1082.24	25.56	9.72	5817.27	7911.59
	185.300	380.00	.00	.00	1067.90	40000.00	1080.70	1078.32	1082.61	36.01	11.32	3931.95	6665.85
	190.000	470.00	.00	.00	1067.80	40000.00	1082.37	1078.84	1083.43	24.52	8.36	5207.76	8078.20
	190.000	470.00	.00	.00	1067.80	40000.00	1082.98	1078.85	1083.94	20.00	7.90	5065.85	8943.65
	193.600	360.00	.00	.00	1070.20	40000.00	1082.89	1080.73	1084.87	44.42	11.34	3673.91	6001.57
	193.600	360.00	.00	.00	1070.20	40000.00	1083.36	1080.83	1085.16	38.13	10.78	3710.47	6477.96
	198.400	480.00	.00	.00	1071.00	40000.00	1085.07	1081.05	1086.42	22.68	9.30	4298.79	8398.75
	198.400	480.00	.00	.00	1071.00	40000.00	1085.27	1081.05	1086.56	21.41	9.12	4383.85	8645.44
	202.400	400.00	.00	.00	1072.50	40000.00	1085.67	1083.29	1087.91	43.80	12.01	3332.76	6044.31
	202.400	400.00	.00	.00	1072.50	40000.00	1085.82	1083.28	1087.98	41.69	11.80	3388.93	6194.85
	206.000	360.00	.00	.00	1073.50	40000.00	1087.37	1085.06	1089.50	43.95	11.72	3477.79	6033.44
	206.000	360.00	.00	.00	1073.50	40000.00	1087.40	1085.08	1089.52	43.60	11.69	3433.01	6057.52
*	210.500	450.00	.00	.00	1071.20	40000.00	1089.63	1081.98	1090.37	8.27	7.14	6592.68	13911.70
*	210.500	450.00	.00	.00	1071.20	40000.00	1089.51	1081.98	1090.46	10.04	7.83	5108.15	12621.37
	216.000	550.00	.00	.00	1072.20	40000.00	1090.18	1082.78	1090.81	7.69	6.49	6940.03	14427.58
	216.000	550.00	.00	.00	1072.20	40000.00	1090.28	1082.78	1090.99	8.22	6.74	5940.40	13947.82
	218.000	200.00	.00	.00	1072.10	40000.00	1090.53	1082.17	1090.95	4.97	5.33	8314.54	17945.97
	218.000	200.00	.00	.00	1072.10	40000.00	1090.67	1082.17	1091.14	5.25	5.51	7260.93	17456.22

220.800	280.00	.00	.00	1073.20	40000.00	1090.62	1082.73	1091.13	6.05	5.89	7669.37	16266.74
220.800	280.00	.00	.00	1073.20	40000.00	1090.75	1082.73	1091.33	6.45	6.12	6543.02	15752.50
223.000	220.00	.00	.00	1074.20	40000.00	1090.67	1084.23	1091.34	9.48	6.70	6575.40	12989.46
223.000	220.00	.00	.00	1074.20	40000.00	1090.83	1084.22	1091.55	9.66	6.81	5875.82	12870.45
229.000	600.00	.00	.00	1079.90	40000.00	1091.33	1086.29	1091.97	10.96	6.45	6457.34	12080.92
229.000	600.00	.00	.00	1079.90	40000.00	1091.54	1086.29	1092.18	10.53	6.40	6248.47	12325.85
231.500	250.00	.00	.00	1080.30	40000.00	1091.48	1089.11	1092.53	18.85	8.97	5133.90	9214.01
231.500	250.00	.00	.00	1080.30	40000.00	1091.70	1089.00	1092.70	17.59	8.78	5223.30	9537.43

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	232.600	110.00	1094.00	1089.60	1080.10	40000.00	1095.07	.00	1096.11	12.61	8.60	6166.08	11262.11
	232.600	110.00	1094.00	1089.60	1080.10	40000.00	1096.07	.00	1097.05	10.60	8.26	5666.18	12287.80
	235.000	240.00	.00	.00	1080.10	40000.00	1095.48	1089.87	1096.41	12.67	8.09	6199.85	11238.40
	235.000	240.00	.00	.00	1080.10	40000.00	1096.40	1089.86	1097.31	10.91	7.84	5606.14	12111.65
	238.800	380.00	.00	.00	1080.70	40000.00	1096.33	1091.28	1096.87	9.59	6.50	8269.62	12915.52
	238.800	380.00	.00	.00	1080.70	40000.00	1096.90	1091.42	1097.75	12.05	7.51	5591.87	11522.36
*	240.800	200.00	.00	.00	1080.80	40000.00	1096.39	1093.73	1097.25	24.10	8.52	6313.50	8147.49
	240.800	200.00	.00	.00	1080.80	40000.00	1097.09	1093.47	1098.14	23.42	8.79	5073.86	8264.76
	245.800	500.00	.00	.00	1081.90	40000.00	1097.17	1094.26	1098.97	34.28	10.91	4158.84	6831.40
	245.800	500.00	.00	.00	1081.90	40000.00	1097.98	1094.27	1099.55	26.82	10.13	4158.88	7723.51
	251.000	520.00	.00	.00	1082.10	40000.00	1099.22	1094.00	1100.32	18.68	8.45	4736.26	9254.78
	251.000	520.00	.00	.00	1082.10	40000.00	1099.67	1094.00	1100.68	16.42	8.08	4952.52	9872.65
	256.000	500.00	.00	.00	1082.80	40000.00	1099.67	1096.03	1101.80	30.21	11.70	3418.32	7277.20
	256.000	500.00	.00	.00	1082.80	40000.00	1100.02	1096.06	1102.02	27.64	11.35	3523.64	7607.78
	258.800	280.00	.00	.00	1085.60	40000.00	1101.15	1096.00	1102.51	17.72	9.37	4270.05	9501.99
	258.800	280.00	.00	.00	1085.60	40000.00	1101.37	1096.01	1102.69	16.73	9.19	4350.22	9778.30
	262.000	320.00	.00	.00	1086.60	40000.00	1101.65	1096.78	1103.17	20.44	9.89	4046.19	8847.78
	262.000	320.00	.00	.00	1086.60	40000.00	1101.84	1096.77	1103.31	19.54	9.73	4110.77	9049.13
*	265.000	300.00	.00	.00	1086.60	40000.00	1103.05	1096.44	1103.63	8.25	6.11	6547.97	13927.57
*	265.000	300.00	.00	.00	1086.60	40000.00	1103.19	1096.44	1103.76	7.97	6.03	6628.63	14166.34
	270.500	550.00	.00	.00	1088.10	40000.00	1103.28	1097.84	1104.40	15.38	8.51	4697.99	10199.93
	270.500	550.00	.00	.00	1088.10	40000.00	1103.40	1097.84	1104.50	14.89	8.42	4748.24	10365.78
	273.500	300.00	.00	.00	1090.10	40000.00	1103.94	1097.84	1104.82	11.38	7.55	5300.06	11857.10
	273.500	300.00	.00	.00	1090.10	40000.00	1104.04	1097.84	1104.91	11.07	7.48	5345.09	12021.23
*	277.000	350.00	.00	.00	1090.80	40000.00	1102.89	1101.76	1106.38	60.95	14.99	2669.23	5123.42
*	277.000	350.00	.00	.00	1090.80	40000.00	1103.03	1101.76	1106.42	58.42	14.78	2706.30	5233.44
	281.800	480.00	.00	.00	1092.20	40000.00	1105.55	1104.43	1109.44	61.59	15.83	2527.13	5096.76
	281.800	480.00	.00	.00	1092.20	40000.00	1105.56	1104.40	1109.44	61.45	15.82	2529.11	5102.88
*	288.000	620.00	.00	.00	1094.10	40000.00	1110.65	1104.99	1111.98	16.45	9.27	4316.50	9862.53
*	288.000	620.00	.00	.00	1094.10	40000.00	1110.65	1104.99	1111.98	16.45	9.27	4316.13	9861.37
	290.000	200.00	.00	.00	1093.30	41000.00	1110.93	1103.99	1112.31	14.22	9.42	4351.10	10873.26
	290.000	200.00	.00	.00	1093.30	41000.00	1110.93	1103.99	1112.31	14.22	9.42	4350.82	10872.14
	291.000	100.00	1114.00	1112.80	1093.60	41000.00	1111.06	.00	1112.80	17.89	10.56	3882.38	9693.29
	291.000	100.00	1114.00	1112.80	1093.60	41000.00	1111.42	.00	1113.55	21.65	11.72	3498.43	8811.60

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	293.000	200.00	.00	.00	1095.10	41000.00	1111.42	1106.91	1113.35	30.43	11.18	3758.33	7432.49
	293.000	200.00	.00	.00	1095.10	41000.00	1112.54	1106.95	1114.15	22.34	10.18	4031.51	8675.02
	297.000	400.00	.00	.00	1098.90	41000.00	1112.57	1109.09	1114.67	32.94	11.61	3530.18	7143.57
	297.000	400.00	.00	.00	1098.90	41000.00	1113.38	1109.14	1115.18	26.54	10.78	3803.39	7958.80
	302.000	500.00	.00	.00	1099.00	41000.00	1112.89	1112.73	1118.05	81.40	18.22	2250.65	4544.31
	302.000	500.00	.00	.00	1099.00	41000.00	1113.39	1112.75	1118.10	70.92	17.40	2356.22	4868.67
*	305.000	300.00	.00	.00	1100.60	41000.00	1116.72	1113.54	1119.85	37.57	14.20	2886.56	6688.74
	305.000	300.00	.00	.00	1100.60	41000.00	1116.59	1113.55	1119.78	38.69	14.34	2859.37	6591.62

	307.000	200.00	.00	.00	1101.10	41000.00	1118.52	1113.56	1120.53	22.40	11.59	3952.45	8662.14
	307.000	200.00	.00	.00	1101.10	41000.00	1118.10	1113.52	1120.49	26.17	12.42	3303.21	8014.12
	311.500	450.00	.00	.00	1103.10	41000.00	1120.62	1111.94	1121.11	5.24	5.84	8661.69	17906.70
*	311.500	450.00	.00	.00	1103.10	41000.00	1120.54	1111.90	1121.18	6.36	6.41	6395.68	16252.59
	314.000	250.00	.00	.00	1104.70	41000.00	1120.93	1113.85	1121.25	4.46	4.68	9618.73	19421.80
	314.000	250.00	.00	.00	1104.70	41000.00	1120.93	1113.74	1121.35	5.56	5.23	7855.14	17394.61
*	318.000	400.00	.00	.00	1106.60	41000.00	1121.02	1116.61	1121.61	11.96	6.12	6702.02	11856.77
*	318.000	400.00	.00	.00	1106.60	41000.00	1121.14	1116.61	1121.70	11.46	6.04	6788.15	12111.88
	323.000	500.00	.00	.00	1109.30	41000.00	1121.69	1118.87	1122.39	19.26	6.71	6113.49	9341.51
	323.000	500.00	.00	.00	1109.30	41000.00	1121.77	1118.87	1122.46	18.53	6.62	6189.12	9525.74
	328.000	500.00	.00	.00	1111.60	41000.00	1122.32	1118.01	1123.44	17.86	8.48	4833.63	9700.42
	328.000	500.00	.00	.00	1111.60	41000.00	1122.38	1118.00	1123.49	17.56	8.44	4859.31	9784.31
	330.000	175.00	.00	.00	1110.90	41000.00	1122.34	1118.52	1123.95	24.32	10.20	4022.96	8313.73
	330.000	175.00	.00	.00	1110.90	41000.00	1122.39	1118.49	1123.99	23.97	10.15	4042.38	8373.46
	334.000	400.00	.00	.00	1112.10	41000.00	1123.25	1119.84	1125.05	27.98	10.78	3802.96	7751.41
	334.000	400.00	.00	.00	1112.10	41000.00	1123.28	1119.84	1125.08	27.67	10.74	3816.04	7794.37
	337.000	300.00	.00	.00	1113.20	41000.00	1124.05	1120.94	1125.96	30.59	11.08	3699.20	7413.51
	337.000	300.00	.00	.00	1113.20	41000.00	1124.08	1120.94	1125.98	30.34	11.06	3708.60	7443.90
	340.500	350.00	.00	.00	1114.40	41000.00	1125.11	1122.16	1127.07	31.96	11.24	3649.11	7252.39
	340.500	350.00	.00	.00	1114.40	41000.00	1125.13	1122.16	1127.08	31.80	11.22	3654.91	7270.96
	342.000	150.00	.00	.00	1114.90	41000.00	1125.58	1122.65	1127.56	32.27	11.27	3638.14	7217.24
	342.000	150.00	.00	.00	1114.90	41000.00	1125.60	1122.65	1127.56	32.13	11.25	3643.02	7232.88
	343.000	100.00	.00	.00	1115.20	41000.00	1125.92	1122.95	1127.88	31.96	11.24	3649.07	7252.25
	343.000	100.00	.00	.00	1115.20	41000.00	1125.93	1122.95	1127.89	31.84	11.22	3653.37	7266.01
	344.900	190.00	.00	.00	1116.30	41000.00	1126.51	1124.06	1128.70	37.76	11.87	3454.74	6672.27
	344.900	190.00	.00	.00	1116.30	41000.00	1126.52	1124.07	1128.70	37.64	11.86	3458.03	6682.58

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	345.200	30.00	.00	.00	1116.30	41000.00	1126.79	1124.05	1128.86	34.55	11.55	3550.87	6975.34
	345.200	30.00	.00	.00	1116.30	41000.00	1126.80	1124.05	1128.87	34.49	11.54	3552.90	6981.79
*	346.200	100.00	1141.90	1134.30	1117.00	41000.00	1128.30	.00	1130.07	26.98	10.69	3835.21	7892.78
*	346.200	100.00	1141.90	1134.30	1117.00	41000.00	1128.30	.00	1130.07	26.99	10.69	3835.13	7892.50
	346.620	42.00	.00	.00	1117.50	41000.00	1128.38	1125.25	1130.28	30.40	11.07	3702.59	7435.92
	346.620	42.00	.00	.00	1117.50	41000.00	1128.38	1125.25	1130.28	30.40	11.07	3702.54	7435.77
	346.720	10.00	1141.40	1135.80	1117.50	41000.00	1128.34	1125.55	1130.51	47.07	11.82	3469.55	5976.07
	346.720	10.00	1141.40	1135.80	1117.50	41000.00	1128.34	1125.55	1130.51	47.07	11.82	3469.46	5975.85
	346.900	18.00	1141.40	1135.80	1117.50	41000.00	1128.40	1125.80	1130.65	49.57	12.05	3403.49	5823.61
	346.900	18.00	1141.40	1135.80	1117.50	41000.00	1128.40	1125.80	1130.65	49.57	12.05	3403.40	5823.39
*	347.000	10.00	.00	.00	1117.70	41000.00	1129.25	1125.48	1130.96	25.26	10.49	3908.30	8157.65
*	347.000	10.00	.00	.00	1117.70	41000.00	1129.25	1125.48	1130.96	25.26	10.49	3908.34	8157.79
	349.000	275.00	.00	.00	1119.10	41000.00	1129.95	1126.86	1131.71	28.28	10.79	3972.30	7709.69
	349.000	275.00	.00	.00	1119.10	41000.00	1129.93	1126.86	1131.73	28.77	10.87	3866.81	7643.52
	352.000	300.00	.00	.00	1121.30	41000.00	1130.55	1129.02	1133.02	48.28	12.74	3318.24	5900.87
	352.000	300.00	.00	.00	1121.30	41000.00	1130.54	1128.95	1133.06	49.16	12.84	3248.71	5847.65
*	358.000	600.00	.00	.00	1125.60	41000.00	1136.11	1136.11	1138.26	60.31	13.15	4031.23	5279.27
*	358.000	600.00	.00	.00	1125.60	41000.00	1135.48	1135.48	1138.65	89.14	15.20	2990.34	4342.60
	365.000	700.00	.00	.00	1127.50	41000.00	1139.97	1139.29	1141.32	31.55	10.48	5700.95	7299.36
*	365.000	700.00	.00	.00	1127.50	41000.00	1140.65	1139.15	1141.89	25.73	9.92	5510.94	8082.88
	370.000	500.00	.00	.00	1127.40	41000.00	1141.61	1139.59	1142.71	24.52	9.14	5864.58	8279.96
	370.000	500.00	.00	.00	1127.40	41000.00	1141.78	1139.26	1143.42	31.53	10.49	4291.89	7301.29
	373.000	330.00	.00	.00	1127.20	41000.00	1142.33	1139.48	1143.56	23.43	9.71	5774.51	8470.05
	373.000	330.00	.00	.00	1127.20	41000.00	1142.69	1139.48	1144.44	27.87	10.84	4267.34	7766.62
	377.000	400.00	.00	.00	1128.50	41000.00	1143.14	1141.47	1144.78	33.33	10.99	4842.29	7101.89
	377.000	400.00	.00	.00	1128.50	41000.00	1143.74	1141.10	1145.76	34.74	11.60	3937.71	6956.32
	384.000	700.00	.00	.00	1129.80	41000.00	1145.12	1141.34	1147.07	29.38	11.19	3663.17	7563.59

384.000	700.00	.00	.00	1129.80	41000.00	1146.13	1141.35	1147.75	22.81	10.22	4011.78	8585.05
388.000	400.00	.00	.00	1130.00	41000.00	1146.55	1141.27	1148.07	19.94	9.89	4145.75	9181.04
388.000	400.00	.00	.00	1130.00	41000.00	1147.20	1141.24	1148.56	17.15	9.38	4371.79	9900.54
391.500	350.00	.00	.00	1131.70	41000.00	1147.26	1142.80	1148.88	25.36	10.23	4008.79	8141.41
391.500	350.00	.00	.00	1131.70	41000.00	1147.82	1142.79	1149.28	22.51	9.70	4224.80	8640.86
395.000	350.00	.00	.00	1132.20	41000.00	1148.27	1143.07	1149.67	19.08	9.50	4314.46	9385.87
395.000	350.00	.00	.00	1132.20	41000.00	1148.69	1143.09	1150.00	17.97	9.17	4473.32	9671.86

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
402.000	700.00	.00	.00	1134.20	41000.00	1149.67	1144.00	1150.94	16.94	9.05	4528.95	9961.20
402.000	700.00	.00	.00	1134.20	41000.00	1149.97	1144.00	1151.18	15.76	8.83	4644.67	10328.56
406.000	400.00	.00	.00	1135.10	41000.00	1150.33	1145.31	1151.75	19.95	9.56	4290.90	9180.22
406.000	400.00	.00	.00	1135.10	41000.00	1150.58	1145.31	1151.94	18.63	9.35	4384.36	9498.57
409.000	300.00	.00	.00	1135.30	41000.00	1150.53	1146.61	1153.00	29.97	12.62	3249.65	7489.62
409.000	300.00	.00	.00	1135.30	41000.00	1150.75	1146.62	1153.14	28.49	12.41	3304.51	7681.76
409.010	1.00	.00	.00	1135.20	41000.00	1150.42	1146.62	1153.12	31.65	13.16	3114.59	7288.33
409.010	1.00	.00	.00	1135.20	41000.00	1150.65	1146.63	1153.25	30.09	12.95	3166.03	7473.75
409.820	81.00	1163.50	1155.40	1135.60	41000.00	1151.54	.00	1154.05	28.07	12.71	3224.94	7738.92
409.820	81.00	1163.50	1155.40	1135.60	41000.00	1151.68	.00	1154.14	27.21	12.58	3258.01	7859.46
410.000	18.00	.00	.00	1135.70	41000.00	1151.80	1147.24	1154.15	26.50	12.29	3335.41	7964.23
410.000	18.00	.00	.00	1135.70	41000.00	1151.93	1147.25	1154.24	25.74	12.17	3367.96	8081.00
412.000	200.00	.00	.00	1136.80	41000.00	1152.65	1148.01	1154.69	25.18	11.48	3570.99	8171.16
412.000	200.00	.00	.00	1136.80	41000.00	1152.75	1148.02	1154.77	24.56	11.38	3601.42	8272.68
418.000	600.00	.00	.00	1138.10	41000.00	1154.48	1149.64	1156.17	23.02	10.45	3925.24	8544.90
418.000	600.00	.00	.00	1138.10	41000.00	1154.54	1149.60	1156.22	22.68	10.39	3946.18	8608.44
423.000	500.00	.00	.00	1137.60	41000.00	1155.61	1150.92	1157.40	24.87	10.72	3823.84	8221.46
423.000	500.00	.00	.00	1137.60	41000.00	1155.65	1150.92	1157.43	24.61	10.68	3838.00	8264.83
425.000	200.00	.00	.00	1136.00	41000.00	1156.37	1150.41	1157.86	19.05	9.80	4184.30	9394.29
425.000	200.00	.00	.00	1136.00	41000.00	1156.40	1150.41	1157.88	18.90	9.77	4196.14	9430.32
428.000	300.00	.00	.00	1137.90	41000.00	1157.09	1150.88	1158.40	16.03	9.17	4470.88	10241.49
428.000	300.00	.00	.00	1137.90	41000.00	1157.12	1150.88	1158.42	15.92	9.15	4480.71	10274.97
434.000	600.00	.00	.00	1138.00	41000.00	1158.13	1152.70	1159.39	16.94	9.01	4550.03	9962.58
434.000	600.00	.00	.00	1138.00	41000.00	1158.15	1152.70	1159.41	16.85	9.00	4558.02	9988.74
440.000	600.00	.00	.00	1140.00	41000.00	1159.24	1152.69	1160.29	12.71	8.24	4977.06	11498.96
440.000	600.00	.00	.00	1140.00	41000.00	1159.25	1152.69	1160.30	12.67	8.23	4982.76	11518.90
443.200	320.00	.00	.00	1140.50	41000.00	1159.61	1154.01	1160.77	15.40	8.63	4751.74	10446.60
443.200	320.00	.00	.00	1140.50	41000.00	1159.62	1154.01	1160.78	15.35	8.62	4756.98	10464.17
* 449.100	590.00	.00	.00	1152.00	41000.00	1161.22	1161.22	1164.73	94.99	15.03	2728.49	4206.68
* 449.100	590.00	.00	.00	1152.00	41000.00	1161.22	1161.22	1164.73	94.98	15.03	2728.63	4207.00
* 451.000	190.00	.00	.00	1153.90	41000.00	1165.56	1165.56	1169.07	98.71	15.04	2725.64	4126.65
* 451.000	190.00	.00	.00	1153.90	41000.00	1165.56	1165.56	1169.07	98.71	15.04	2725.64	4126.65
* 8.655	690.00	.00	.00	1155.30	41000.00	1170.38	1163.50	1171.31	11.06	7.71	5317.71	12326.03
* 8.655	690.00	.00	.00	1155.30	41000.00	1170.38	1163.50	1171.31	11.06	7.71	5317.71	12326.03

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
8.731	400.00	.00	.00	1156.10	12000.00	1171.50	1160.46	1171.58	.97	2.23	5388.54	12209.09
8.731	400.00	.00	.00	1156.10	12000.00	1171.50	1160.46	1171.58	.97	2.23	5388.54	12209.10
8.807	400.00	.00	.00	1158.30	12000.00	1171.53	1162.14	1171.63	1.44	2.54	4723.84	9985.75
8.807	400.00	.00	.00	1158.30	12000.00	1171.53	1162.14	1171.63	1.44	2.54	4723.84	9985.75
8.883	400.00	.00	.00	1160.10	12000.00	1171.50	1165.99	1171.80	6.77	4.38	2738.10	4611.26
8.883	400.00	.00	.00	1160.10	12000.00	1171.50	1165.99	1171.80	6.77	4.38	2738.10	4611.26
8.936	290.00	.00	.00	1161.80	12000.00	1171.70	1167.73	1172.04	9.39	4.73	2537.63	3915.69
8.936	290.00	.00	.00	1161.80	12000.00	1171.70	1167.73	1172.04	9.39	4.73	2537.63	3915.69
8.977	210.00	.00	.00	1163.50	12000.00	1171.77	1168.75	1172.40	18.38	6.37	1883.79	2798.75

	8.977	210.00	.00	.00	1163.50	12000.00	1171.77	1168.75	1172.40	18.38	6.37	1883.79	2798.75
	9.009	180.00	.00	.00	1162.90	12000.00	1172.33	1167.92	1172.63	7.69	4.42	2717.69	4327.61
	9.009	180.00	.00	.00	1162.90	12000.00	1172.33	1167.92	1172.63	7.69	4.42	2717.69	4327.61
	9.047	200.00	.00	.00	1161.20	12000.00	1172.56	1166.61	1172.75	4.11	3.57	3358.31	5918.55
	9.047	200.00	.00	.00	1161.20	12000.00	1172.56	1166.61	1172.75	4.11	3.57	3358.31	5918.56
*	9.129	420.00	.00	.00	1164.20	12000.00	1172.72	1169.21	1173.06	10.39	4.66	2575.49	3722.78
*	9.129	420.00	.00	.00	1164.20	12000.00	1172.72	1169.21	1173.06	10.39	4.66	2575.49	3722.78
*	9.318	1000.00	.00	.00	1173.20	12000.00	1180.55	1180.55	1182.39	125.73	10.88	1102.47	1070.19
*	9.318	1000.00	.00	.00	1173.20	12000.00	1180.55	1180.55	1182.39	125.73	10.88	1102.47	1070.19
*	9.492	920.00	.00	.00	1179.00	11450.00	1187.16	1184.97	1187.84	32.48	6.62	1729.22	2009.20
*	9.492	920.00	.00	.00	1179.00	11450.00	1187.16	1184.97	1187.84	32.44	6.62	1730.01	2010.21
*	9.692	1056.00	.00	.00	1184.10	11450.00	1191.36	1190.91	1193.45	82.69	11.60	987.35	1259.15
*	9.692	1056.00	.00	.00	1184.10	11450.00	1191.35	1190.91	1193.45	82.92	11.61	986.46	1257.42

NEW RIVER-A.F.R. TO S.C.

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	501.450	39000.00	1027.50	.00	.00	.00	6594.18	.00
	501.450	39000.00	1028.22	.72	.00	.72	2800.83	.00
*	10.000	39000.00	1029.45	.00	1.95	.00	2223.60	1000.00
*	10.000	39000.00	1030.01	.55	1.79	.55	1320.00	1000.00
*	13.000	39000.00	1031.08	.00	1.63	.00	2347.98	300.00
*	13.000	39000.00	1031.97	.89	1.97	.89	1324.00	300.00
	20.000	39000.00	1032.46	.00	1.37	.00	2303.88	700.00
	20.000	39000.00	1033.37	.91	1.40	.91	1345.00	700.00
	26.800	39000.00	1033.93	.00	1.47	.00	3200.43	680.00
	26.800	39000.00	1034.58	.65	1.21	.65	1250.00	680.00
	32.600	39000.00	1035.25	.00	1.32	.00	1680.05	580.00
	32.600	39000.00	1036.03	.78	1.46	.78	1224.06	580.00
	38.000	39000.00	1037.16	.00	1.91	.00	1164.90	540.00
	38.000	39000.00	1037.32	.16	1.28	.16	1165.23	540.00
	45.000	39000.00	1039.08	.00	1.92	.00	981.56	700.00
	45.000	39000.00	1039.10	.02	1.78	.02	981.60	700.00
*	51.700	39000.00	1040.18	.00	1.10	.00	741.62	670.00
*	51.700	39000.00	1040.19	.01	1.10	.01	741.91	670.00
	54.000	39000.00	1040.44	.00	.26	.00	832.27	230.00
	54.000	39000.00	1040.45	.01	.26	.01	832.30	230.00
	59.000	39000.00	1040.85	.00	.40	.00	925.61	500.00
	59.000	39000.00	1040.85	.01	.40	.01	925.64	500.00
	63.000	39000.00	1041.25	.00	.40	.00	867.85	400.00
	63.000	39000.00	1041.26	.01	.40	.01	867.96	400.00
*	70.500	39000.00	1042.27	.00	1.02	.00	661.32	750.00
*	70.500	39000.00	1042.27	.00	1.02	.00	661.33	750.00
	77.000	39000.00	1046.88	.00	4.61	.00	418.12	650.00
	77.000	39000.00	1046.88	.00	4.61	.00	418.10	650.00
*	84.000	39000.00	1050.69	.00	3.80	.00	930.54	700.00
*	84.000	39000.00	1050.72	.04	3.84	.04	541.67	700.00
	88.700	39000.00	1051.03	.00	.34	.00	999.80	470.00
	88.700	39000.00	1051.35	.32	.63	.32	569.38	470.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
95.500	39000.00	1051.52	.00	.49	.00	795.78	680.00

	95.500	39000.00	1051.86	.34	.52	.34	802.20	680.00
	100.700	39000.00	1051.54	.00	.01	.00	399.10	520.00
	100.700	39000.00	1051.90	.36	.03	.36	456.80	520.00
*	107.000	39000.00	1053.66	.00	2.12	.00	529.75	630.00
*	107.000	39000.00	1053.87	.21	1.97	.21	531.46	630.00
*	110.700	39000.00	1053.23	.00	-.43	.00	456.59	370.00
*	110.700	39000.00	1053.52	.29	-.35	.29	457.81	370.00
*	117.200	39000.00	1058.53	.00	5.30	.00	350.00	650.00
*	117.200	39000.00	1058.28	-.25	4.76	-.25	350.00	650.00
	118.000	39000.00	1058.93	.00	.40	.00	350.00	80.00
	118.000	39000.00	1058.74	-.20	.45	-.20	350.00	80.00
*	120.000	39000.00	1061.05	.00	2.12	.00	850.00	200.00
*	120.000	39000.00	1060.82	-.23	2.09	-.23	407.00	200.00
	125.000	39000.00	1061.56	.00	.51	.00	1850.00	500.00
	125.000	39000.00	1061.39	-.17	.56	-.17	452.00	500.00
*	131.000	39000.00	1062.12	.00	.56	.00	1489.22	600.00
*	131.000	39000.00	1061.31	-.81	-.07	-.81	490.16	600.00
*	135.000	39000.00	1064.84	.00	2.72	.00	1707.62	400.00
*	135.000	39000.00	1064.71	-.13	3.40	-.13	357.00	400.00
	140.000	39000.00	1066.47	.00	1.63	.00	2338.85	500.00
*	140.000	39000.00	1067.22	.76	2.51	.76	517.00	500.00
	143.000	39000.00	1066.89	.00	.43	.00	2041.33	300.00
	143.000	39000.00	1067.71	.81	.48	.81	706.33	300.00
*	146.000	39000.00	1068.64	.00	1.74	.00	1823.13	300.00
*	146.000	39000.00	1068.64	.00	.93	.00	913.24	300.00
*	149.600	40000.00	1070.49	.00	1.85	.00	2993.35	360.00
*	149.600	40000.00	1071.28	.79	2.64	.79	1356.00	360.00
	158.000	40000.00	1072.76	.00	2.27	.00	2484.14	840.00
	158.000	40000.00	1073.06	.30	1.78	.30	1300.00	840.00
	167.000	40000.00	1074.15	.00	1.38	.00	1771.34	900.00
	167.000	40000.00	1074.67	.52	1.61	.52	1150.40	900.00
	170.000	40000.00	1074.45	.00	.30	.00	1107.05	300.00
	170.000	40000.00	1075.13	.69	.46	.69	1051.07	300.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	174.200	40000.00	1077.21	.00	2.76	.00	2158.35	420.00
*	174.200	40000.00	1077.09	-.12	1.96	-.12	1450.00	420.00
*	178.000	40000.00	1079.14	.00	1.93	.00	1796.72	380.00
*	178.000	40000.00	1079.44	.30	2.36	.30	1592.09	380.00
*	178.500	40000.00	1079.30	.00	.16	.00	2100.14	50.00
	178.500	40000.00	1079.67	.36	.22	.36	1665.00	50.00
*	181.500	40000.00	1079.37	.00	.07	.00	1422.49	310.00
*	181.500	40000.00	1079.68	.30	.01	.30	1150.35	310.00
	185.300	40000.00	1080.97	.00	1.60	.00	1883.72	380.00
	185.300	40000.00	1080.70	-.28	1.02	-.28	651.11	380.00
	190.000	40000.00	1082.37	.00	1.39	.00	1943.56	470.00
	190.000	40000.00	1082.98	.61	2.28	.61	597.00	470.00
	193.600	40000.00	1082.89	.00	.52	.00	749.19	360.00
	193.600	40000.00	1083.36	.47	.38	.47	440.33	360.00
	198.400	40000.00	1085.07	.00	2.18	.00	433.77	480.00
	198.400	40000.00	1085.27	.19	1.91	.19	437.16	480.00
	202.400	40000.00	1085.67	.00	.60	.00	397.78	400.00
	202.400	40000.00	1085.82	.15	.55	.15	378.42	400.00
	206.000	40000.00	1087.37	.00	1.70	.00	707.86	360.00
	206.000	40000.00	1087.40	.03	1.58	.03	415.98	360.00

*	210.500	40000.00	1089.63	.00	2.26	.00	1296.11	450.00
*	210.500	40000.00	1089.51	-.12	2.11	-.12	359.69	450.00
	216.000	40000.00	1090.18	.00	.55	.00	1102.69	550.00
	216.000	40000.00	1090.28	.10	.77	.10	454.16	550.00
	218.000	40000.00	1090.53	.00	.35	.00	1233.75	200.00
	218.000	40000.00	1090.67	.14	.39	.14	535.21	200.00
	220.800	40000.00	1090.62	.00	.09	.00	972.02	280.00
	220.800	40000.00	1090.75	.14	.09	.14	481.45	280.00
	223.000	40000.00	1090.67	.00	.05	.00	984.90	220.00
	223.000	40000.00	1090.83	.16	.07	.16	494.91	220.00
	229.000	40000.00	1091.33	.00	.66	.00	847.14	600.00
	229.000	40000.00	1091.54	.21	.71	.21	622.57	600.00
	231.500	40000.00	1091.48	.00	.15	.00	582.08	250.00
	231.500	40000.00	1091.70	.21	.16	.21	545.00	250.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	232.600	40000.00	1095.07	.00	3.59	.00	1446.39	110.00
	232.600	40000.00	1096.07	1.00	4.37	1.00	596.00	110.00
	235.000	40000.00	1095.48	.00	.40	.00	1472.16	240.00
	235.000	40000.00	1096.40	.92	.33	.92	551.36	240.00
	238.800	40000.00	1096.33	.00	.85	.00	1522.71	380.00
	238.800	40000.00	1096.90	.58	.51	.58	525.21	380.00
*	240.800	40000.00	1096.39	.00	.06	.00	1531.61	200.00
	240.800	40000.00	1097.09	.70	.18	.70	623.15	200.00
	245.800	40000.00	1097.17	.00	.78	.00	1046.83	500.00
	245.800	40000.00	1097.98	.81	.90	.81	534.88	500.00
	251.000	40000.00	1099.22	.00	2.05	.00	477.78	520.00
	251.000	40000.00	1099.67	.45	1.68	.45	484.81	520.00
	256.000	40000.00	1099.67	.00	.46	.00	300.58	500.00
	256.000	40000.00	1100.02	.35	.36	.35	303.30	500.00
	258.800	40000.00	1101.15	.00	1.48	.00	348.76	280.00
	258.800	40000.00	1101.37	.22	1.35	.22	349.90	280.00
	262.000	40000.00	1101.65	.00	.50	.00	340.34	320.00
	262.000	40000.00	1101.84	.19	.47	.19	342.33	320.00
*	265.000	40000.00	1103.05	.00	1.40	.00	579.69	300.00
*	265.000	40000.00	1103.19	.14	1.35	.14	582.63	300.00
	270.500	40000.00	1103.28	.00	.22	.00	399.58	550.00
	270.500	40000.00	1103.40	.13	.21	.13	400.52	550.00
	273.500	40000.00	1103.94	.00	.66	.00	429.89	300.00
	273.500	40000.00	1104.04	.10	.64	.10	430.10	300.00
*	277.000	40000.00	1102.89	.00	-1.05	.00	274.48	350.00
*	277.000	40000.00	1103.03	.14	-1.01	.14	275.15	350.00
	281.800	40000.00	1105.55	.00	2.66	.00	238.96	480.00
	281.800	40000.00	1105.56	.01	2.53	.01	239.00	480.00
*	288.000	40000.00	1110.65	.00	5.10	.00	340.08	620.00
*	288.000	40000.00	1110.65	.00	5.09	.00	340.07	620.00
	290.000	41000.00	1110.93	.00	.28	.00	290.32	200.00
	290.000	41000.00	1110.93	.00	.28	.00	290.32	200.00
	291.000	41000.00	1111.06	.00	.14	.00	268.18	100.00
	291.000	41000.00	1111.42	.36	.49	.36	226.69	100.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
293.000	41000.00	1111.42	.00	.36	.00	427.12	200.00
293.000	41000.00	1112.54	1.12	1.12	1.12	348.17	200.00

	297.000	41000.00	1112.57	.00	1.15	.00	335.75	400.00
	297.000	41000.00	1113.38	.80	.83	.80	343.79	400.00
	302.000	41000.00	1112.89	.00	.32	.00	211.13	500.00
*	302.000	41000.00	1113.39	.50	.02	.50	213.35	500.00
*	305.000	41000.00	1116.72	.00	3.82	.00	217.09	300.00
	305.000	41000.00	1116.59	-.13	3.20	-.13	216.80	300.00
	307.000	41000.00	1118.52	.00	1.81	.00	519.12	200.00
	307.000	41000.00	1118.10	-.42	1.51	-.42	237.00	200.00
*	311.500	41000.00	1120.62	.00	2.10	.00	1797.07	450.00
*	311.500	41000.00	1120.54	-.08	2.45	-.08	427.00	450.00
	314.000	41000.00	1120.93	.00	.31	.00	1126.22	250.00
	314.000	41000.00	1120.93	-.01	.38	-.01	657.00	250.00
*	318.000	41000.00	1121.02	.00	.09	.00	791.08	400.00
*	318.000	41000.00	1121.14	.11	.21	.11	785.17	400.00
	323.000	41000.00	1121.69	.00	.67	.00	889.55	500.00
	323.000	41000.00	1121.77	.08	.64	.08	890.83	500.00
	328.000	41000.00	1122.32	.00	.63	.00	461.45	500.00
	328.000	41000.00	1122.38	.06	.60	.06	461.56	500.00
	330.000	41000.00	1122.34	.00	.01	.00	378.17	175.00
	330.000	41000.00	1122.39	.05	.01	.05	374.94	175.00
	334.000	41000.00	1123.25	.00	.91	.00	352.29	400.00
	334.000	41000.00	1123.28	.04	.89	.04	352.37	400.00
	337.000	41000.00	1124.05	.00	.81	.00	351.71	300.00
	337.000	41000.00	1124.08	.03	.79	.03	351.76	300.00
	340.500	41000.00	1125.11	.00	1.06	.00	351.42	350.00
	340.500	41000.00	1125.13	.02	1.05	.02	351.45	350.00
	342.000	41000.00	1125.58	.00	.47	.00	351.36	150.00
	342.000	41000.00	1125.60	.01	.47	.01	351.39	150.00
	343.000	41000.00	1125.92	.00	.33	.00	351.42	100.00
	343.000	41000.00	1125.93	.01	.33	.01	351.45	100.00
	344.900	41000.00	1126.51	.00	.59	.00	346.27	190.00
	344.900	41000.00	1126.52	.01	.59	.01	346.28	190.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	345.200	41000.00	1126.79	.00	.28	.00	346.71	30.00
	345.200	41000.00	1126.80	.01	.28	.01	346.72	30.00
*	346.200	41000.00	1128.30	.00	1.51	.00	348.83	100.00
*	346.200	41000.00	1128.30	.00	1.50	.00	348.83	100.00
	346.620	41000.00	1128.38	.00	.08	.00	350.57	42.00
	346.620	41000.00	1128.38	.00	.08	.00	350.57	42.00
	346.720	41000.00	1128.34	.00	-.04	.00	332.20	10.00
	346.720	41000.00	1128.34	.00	-.04	.00	332.20	10.00
	346.900	41000.00	1128.40	.00	.06	.00	326.33	18.00
	346.900	41000.00	1128.40	.00	.06	.00	326.33	18.00
*	347.000	41000.00	1129.25	.00	.85	.00	346.85	10.00
*	347.000	41000.00	1129.25	.00	.85	.00	346.85	10.00
	349.000	41000.00	1129.95	.00	.70	.00	451.91	275.00
	349.000	41000.00	1129.93	-.02	.68	-.02	381.06	275.00
	352.000	41000.00	1130.55	.00	.60	.00	411.99	300.00
	352.000	41000.00	1130.54	-.02	.61	-.02	364.24	300.00
*	358.000	41000.00	1136.11	.00	5.56	.00	1294.80	600.00
*	358.000	41000.00	1135.48	-.63	4.94	-.63	566.95	600.00
	365.000	41000.00	1139.97	.00	3.86	.00	1408.98	700.00
	365.000	41000.00	1140.65	.68	5.17	.68	950.00	700.00
	370.000	41000.00	1141.61	.00	1.64	.00	1462.13	500.00
	370.000	41000.00	1141.78	.16	1.13	.16	676.66	500.00

373.000	41000.00	1142.33	.00	.71	.00	1931.14	330.00
373.000	41000.00	1142.69	.37	.92	.37	681.77	330.00
377.000	41000.00	1143.14	.00	.81	.00	1259.52	400.00
377.000	41000.00	1143.74	.60	1.04	.60	686.14	400.00
384.000	41000.00	1145.12	.00	1.99	.00	339.20	700.00
384.000	41000.00	1146.13	1.01	2.39	1.01	356.14	700.00
388.000	41000.00	1146.55	.00	1.43	.00	344.96	400.00
388.000	41000.00	1147.20	.65	1.07	.65	351.69	400.00
391.500	41000.00	1147.26	.00	.71	.00	380.74	350.00
391.500	41000.00	1147.82	.56	.62	.56	397.09	350.00
395.000	41000.00	1148.27	.00	1.01	.00	369.13	350.00
395.000	41000.00	1148.69	.42	.88	.42	386.37	350.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
402.000	41000.00	1149.67	.00	1.40	.00	381.38	700.00
402.000	41000.00	1149.97	.30	1.28	.30	384.70	700.00
406.000	41000.00	1150.33	.00	.66	.00	386.62	400.00
406.000	41000.00	1150.58	.25	.61	.25	378.91	400.00
409.000	41000.00	1150.53	.00	.20	.00	250.62	300.00
409.000	41000.00	1150.75	.22	.17	.22	251.51	300.00
409.010	41000.00	1150.42	.00	-.11	.00	232.37	1.00
409.010	41000.00	1150.65	.22	-.10	.22	233.02	1.00
409.820	41000.00	1151.54	.00	1.11	.00	231.73	81.00
409.820	41000.00	1151.68	.14	1.04	.14	232.21	81.00
410.000	41000.00	1151.80	.00	.26	.00	243.21	18.00
410.000	41000.00	1151.93	.13	.25	.13	243.76	18.00
412.000	41000.00	1152.65	.00	.85	.00	280.95	200.00
412.000	41000.00	1152.75	.11	.82	.11	281.68	200.00
418.000	41000.00	1154.48	.00	1.83	.00	335.36	600.00
418.000	41000.00	1154.54	.06	1.79	.06	336.09	600.00
423.000	41000.00	1155.61	.00	1.13	.00	325.58	500.00
423.000	41000.00	1155.65	.04	1.11	.04	326.02	500.00
425.000	41000.00	1156.37	.00	.76	.00	341.15	200.00
425.000	41000.00	1156.40	.03	.75	.03	341.60	200.00
428.000	41000.00	1157.09	.00	.73	.00	352.94	300.00
428.000	41000.00	1157.12	.03	.72	.03	353.14	300.00
434.000	41000.00	1158.13	.00	1.04	.00	384.77	600.00
434.000	41000.00	1158.15	.02	1.03	.02	384.94	600.00
440.000	41000.00	1159.24	.00	1.10	.00	385.60	600.00
440.000	41000.00	1159.25	.01	1.10	.01	385.69	600.00
443.200	41000.00	1159.61	.00	.38	.00	397.38	320.00
443.200	41000.00	1159.62	.01	.37	.01	397.46	320.00
* 449.100	41000.00	1161.22	.00	1.61	.00	389.94	590.00
* 449.100	41000.00	1161.22	.00	1.60	.00	389.94	590.00
* 451.000	41000.00	1165.56	.00	4.34	.00	397.81	190.00
* 451.000	41000.00	1165.56	.00	4.34	.00	397.81	190.00
* 8.655	41000.00	1170.38	.00	4.82	.00	400.54	690.00
* 8.655	41000.00	1170.38	.00	4.82	.00	400.54	690.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
8.731	12000.00	1171.50	.00	1.12	.00	433.92	400.00
8.731	12000.00	1171.50	.00	1.12	.00	433.92	400.00
8.807	12000.00	1171.53	.00	.03	.00	422.53	400.00

	8.807	12000.00	1171.53	.00	.03	.00	422.53	400.00
	8.883	12000.00	1171.50	.00	-.03	.00	344.04	400.00
	8.883	12000.00	1171.50	.00	-.03	.00	344.04	400.00
	8.936	12000.00	1171.70	.00	.20	.00	362.48	290.00
	8.936	12000.00	1171.70	.00	.20	.00	362.48	290.00
	8.977	12000.00	1171.77	.00	.07	.00	285.65	210.00
	8.977	12000.00	1171.77	.00	.07	.00	285.65	210.00
*	9.009	12000.00	1172.33	.00	.56	.00	371.89	180.00
*	9.009	12000.00	1172.33	.00	.56	.00	371.89	180.00
	9.047	12000.00	1172.56	.00	.22	.00	393.29	200.00
	9.047	12000.00	1172.56	.00	.22	.00	393.29	200.00
*	9.129	12000.00	1172.72	.00	.16	.00	406.92	420.00
*	9.129	12000.00	1172.72	.00	.16	.00	406.92	420.00
*	9.318	12000.00	1180.55	.00	7.83	.00	314.98	1000.00
*	9.318	12000.00	1180.55	.00	7.83	.00	314.98	1000.00
*	9.492	11450.00	1187.16	.00	6.61	.00	381.02	920.00
*	9.492	11450.00	1187.16	.00	6.61	.00	381.17	920.00
*	9.692	11450.00	1191.36	.00	4.20	.00	188.27	1056.00
*	9.692	11450.00	1191.35	.00	4.20	.00	188.23	1056.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=     10.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     10.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     13.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     13.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     51.700  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     51.700  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     70.500  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     70.500  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     84.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     84.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    100.700  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    100.700  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    107.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    107.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    110.700  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    110.700  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    110.700  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    110.700  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=    117.200  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    117.200  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    120.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    120.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    131.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    131.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    131.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    131.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=    135.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    135.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    140.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    146.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    146.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    146.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=    146.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=    149.600  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    149.600  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    174.200  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    174.200  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    174.200  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    174.200  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=    178.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    178.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    178.500  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    181.500  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    181.500  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    210.500  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    210.500  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    240.800  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    265.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    265.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    277.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    277.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    288.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    288.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    302.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    302.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    305.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    311.500  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    311.500  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    318.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    318.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    346.200  PROFILE=  1  HYDRAULIC JUMP D.S.
CAUTION SECNO=    346.200  PROFILE=  2  HYDRAULIC JUMP D.S.

WARNING SECNO=    347.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    347.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    358.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    358.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
1
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CAUTION SECNO=    358.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    358.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=    365.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    449.100  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    449.100  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    449.100  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    449.100  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=    451.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    451.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    451.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    451.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      8.655  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      8.655  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.883  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      8.883  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.009  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      9.009  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.129  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      9.129  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.318  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.318  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      9.318  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=      9.318  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.492  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      9.492  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.692  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      9.692  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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FLOODWAY DATA, NEW RIVER-A.F.R. TO S.C.
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
501.450	2850.	11270.	3.5	1028.2	1027.5	.7
10.000	1320.	4223.	9.2	1030.1	1029.5	.6
13.000	1324.	7047.	5.5	1032.0	1031.1	.9
20.000	1345.	7192.	5.4	1033.4	1032.5	.9
26.800	1250.	5892.	6.6	1034.5	1033.9	.6
32.600	1224.	5783.	6.7	1036.1	1035.3	.8
38.000	1165.	5479.	7.1	1037.4	1037.2	.2
45.000	982.	5942.	6.6	1039.1	1039.1	.0
51.700	776.	7085.	5.5	1040.2	1040.2	.0
54.000	832.	7678.	5.1	1040.4	1040.4	.0
59.000	926.	7223.	5.4	1040.8	1040.8	.0
63.000	868.	6464.	6.0	1041.3	1041.3	.0
70.500	661.	3239.	12.0	1042.3	1042.3	.0
77.000	442.	2938.	13.3	1046.9	1046.9	.0
84.000	542.	5782.	6.7	1050.7	1050.7	.0
88.700	569.	7029.	5.5	1051.3	1051.0	.3
95.500	802.	7111.	5.5	1051.8	1051.5	.3
100.700	514.	3833.	10.2	1051.9	1051.5	.4
107.000	531.	6820.	5.7	1053.9	1053.7	.2
110.700	458.	2830.	13.8	1053.5	1053.2	.3
117.200	350.	3314.	11.8	1058.3	1058.5	-.2
118.000	350.	3291.	11.9	1058.7	1058.9	-.2
120.000	407.	5280.	7.4	1060.9	1061.1	-.2
125.000	452.	5426.	7.2	1061.4	1061.6	-.2
131.000	490.	2797.	13.9	1061.3	1062.1	-.8
135.000	357.	3329.	11.7	1064.7	1064.8	-.1
140.000	517.	5104.	7.6	1067.3	1066.5	.8
143.000	769.	4846.	8.0	1067.7	1066.9	.8
146.000	1191.	3863.	10.1	1068.6	1068.6	.0
149.600	1356.	6706.	6.0	1071.3	1070.5	.8
158.000	1300.	6239.	6.4	1073.1	1072.8	.3
167.000	1250.	5450.	7.3	1074.6	1074.1	.5
170.000	1103.	4874.	8.2	1075.1	1074.4	.7
174.200	1450.	5217.	7.7	1077.1	1077.2	-.1
178.000	1650.	7870.	5.1	1079.4	1079.1	.3
178.500	1665.	7797.	5.1	1079.7	1079.3	.4
181.500	1225.	5098.	7.8	1079.7	1079.4	.3
185.300	651.	3932.	10.2	1080.7	1081.0	-.3
190.000	597.	5066.	7.9	1083.0	1082.4	.6
193.600	440.	3710.	10.8	1083.4	1082.9	.5
198.400	437.	4384.	9.1	1085.3	1085.1	.2
202.400	378.	3389.	11.8	1085.8	1085.7	.1

FLOODWAY DATA, NEW RIVER-A.F.R. TO S.C.
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
206.000	416.	3433.	11.7	1087.4	1087.4	.0
210.500	360.	5108.	7.8	1089.5	1089.6	-.1
216.000	454.	5940.	6.7	1090.3	1090.2	.1
218.000	535.	7261.	5.5	1090.6	1090.5	.1
220.800	481.	6543.	6.1	1090.7	1090.6	.1
223.000	495.	5876.	6.8	1090.9	1090.7	.2
229.000	623.	6248.	6.4	1091.5	1091.3	.2
231.500	545.	5223.	7.7	1091.7	1091.5	.2

232.600	596.	5666.	7.1	1096.1	1095.1	1.0
235.000	551.	5606.	7.1	1096.4	1095.5	.9
238.800	525.	5592.	7.2	1096.9	1096.3	.6
240.800	623.	5074.	7.9	1097.1	1096.4	.7
245.800	535.	4159.	9.6	1098.0	1097.2	.8
251.000	485.	4953.	8.1	1099.7	1099.2	.5
256.000	303.	3524.	11.4	1100.0	1099.7	.3
258.800	350.	4350.	9.2	1101.4	1101.2	.2
262.000	342.	4111.	9.7	1101.9	1101.7	.2
265.000	583.	6629.	6.0	1103.2	1103.1	.1
270.500	401.	4748.	8.4	1103.4	1103.3	.1
273.500	430.	5345.	7.5	1104.0	1103.9	.1
277.000	275.	2706.	14.8	1103.0	1102.9	.1
281.800	239.	2529.	15.8	1105.5	1105.5	.0
288.000	340.	4316.	9.3	1110.6	1110.6	.0
290.000	290.	4351.	9.4	1110.9	1110.9	.0
291.000	227.	3498.	11.7	1111.5	1111.1	.4
293.000	348.	4032.	10.2	1112.5	1111.4	1.1
297.000	344.	3803.	10.8	1113.4	1112.6	.8
302.000	213.	2356.	17.4	1113.4	1112.9	.5
305.000	217.	2859.	14.3	1116.6	1116.7	-.1
307.000	237.	3303.	12.4	1118.1	1118.5	-.4
311.500	427.	6396.	6.4	1120.5	1120.6	-.1
314.000	657.	7855.	5.2	1120.9	1120.9	.0
318.000	785.	6788.	6.0	1121.1	1121.0	.1
323.000	891.	6189.	6.6	1121.8	1121.7	.1
328.000	462.	4859.	8.4	1122.4	1122.3	.1
330.000	399.	4042.	10.1	1122.4	1122.3	.1
334.000	352.	3816.	10.7	1123.2	1123.2	.0
337.000	352.	3709.	11.1	1124.1	1124.1	.0
340.500	351.	3655.	11.2	1125.1	1125.1	.0
342.000	351.	3643.	11.3	1125.6	1125.6	.0
343.000	351.	3653.	11.2	1125.9	1125.9	.0
344.900	346.	3458.	11.9	1126.5	1126.5	.0

FLOODWAY DATA, NEW RIVER-A.F.R. TO S.C.
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
345.200	347.	3553.	11.5	1126.8	1126.8	.0
346.200	349.	3835.	10.7	1128.3	1128.3	.0
346.620	351.	3703.	11.1	1128.4	1128.4	.0
346.720	350.	3469.	11.8	1128.3	1128.3	.0
346.900	357.	3403.	12.0	1128.4	1128.4	.0
347.000	347.	3908.	10.5	1129.3	1129.3	.0
349.000	381.	3867.	10.6	1129.9	1129.9	.0
352.000	364.	3249.	12.6	1130.6	1130.6	.0
358.000	630.	2990.	13.7	1135.5	1136.1	-.6
365.000	950.	5511.	7.4	1140.7	1140.0	.7
370.000	677.	4292.	9.6	1141.8	1141.6	.2
373.000	700.	4267.	9.6	1142.7	1142.3	.4
377.000	690.	3938.	10.4	1143.7	1143.1	.6
384.000	356.	4012.	10.2	1146.1	1145.1	1.0
388.000	352.	4372.	9.4	1147.2	1146.6	.6
391.500	397.	4225.	9.7	1147.9	1147.3	.6
395.000	386.	4473.	9.2	1148.7	1148.3	.4
402.000	385.	4645.	8.8	1150.0	1149.7	.3
406.000	379.	4384.	9.4	1150.6	1150.3	.3
409.000	252.	3305.	12.4	1150.7	1150.5	.2
409.010	233.	3166.	12.9	1150.6	1150.4	.2
409.820	232.	3258.	12.6	1151.6	1151.5	.1
410.000	244.	3368.	12.2	1151.9	1151.8	.1
412.000	282.	3601.	11.4	1152.7	1152.6	.1
418.000	336.	3946.	10.4	1154.6	1154.5	.1
423.000	326.	3838.	10.7	1155.6	1155.6	.0
425.000	342.	4196.	9.8	1156.4	1156.4	.0
428.000	353.	4481.	9.2	1157.1	1157.1	.0
434.000	385.	4558.	9.0	1158.1	1158.1	.0
440.000	386.	4983.	8.2	1159.2	1159.2	.0
443.200	397.	4757.	8.6	1159.6	1159.6	.0
449.100	466.	2729.	15.0	1161.2	1161.2	.0
451.000	487.	2726.	15.0	1165.6	1165.6	.0
8.655	401.	5318.	7.7	1170.4	1170.4	.0
8.731	434.	5389.	2.2	1171.5	1171.5	.0
8.807	423.	4724.	2.5	1171.5	1171.5	.0
8.883	344.	2738.	4.4	1171.5	1171.5	.0
8.936	362.	2538.	4.7	1171.7	1171.7	.0
8.977	286.	1884.	6.4	1171.8	1171.8	.0

9.009	372.	2718.	4.4	1172.3	1172.3	.0
9.047	393.	3358.	3.6	1172.6	1172.6	.0
9.129	407.	2575.	4.7	1172.7	1172.7	.0

FLOODWAY DATA, NEW RIVER-A.F.R. TO S.C.
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
9.318	315.	1102.	10.9	1180.5	1180.5	.0
9.492	381.	1730.	6.6	1187.2	1187.2	.0
9.692	188.	986.	11.6	1191.4	1191.4	.0

APPENDIX C

HEC-RAS Output Files for Corrected Effective FIS (Pre-Project Conditions) Model

HEC-RAS Plan: Corrected Ef River: New River Reach: Grand Ave to S.C

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave to S.C	334	Floodplain	41000.00	1113.92	1125.17	1121.69	1126.94	0.002701	10.68	3837.17	352.49	0.57
Grand Ave to S.C	334	Floodway	41000.00	1113.92	1125.17	1121.69	1126.94	0.002701	10.68	3837.17	352.49	0.57
Grand Ave to S.C	337	Floodplain	41000.00	1115.02	1125.94	1122.81	1127.83	0.002994	11.01	3723.81	351.85	0.60
Grand Ave to S.C	337	Floodway	41000.00	1115.02	1125.94	1122.81	1127.83	0.002994	11.01	3723.81	351.85	0.60
Grand Ave to S.C	340.5	Floodplain	41000.00	1116.22	1126.92	1124.02	1128.95	0.003189	11.42	3589.43	351.41	0.62
Grand Ave to S.C	340.5	Floodway	41000.00	1116.22	1126.92	1124.02	1128.95	0.003189	11.42	3589.43	351.41	0.62
Grand Ave to S.C	342	Floodplain	41000.00	1116.72	1127.50	1124.51	1129.43	0.003120	11.17	3671.73	351.55	0.61
Grand Ave to S.C	342	Floodway	41000.00	1116.72	1127.50	1124.51	1129.43	0.003120	11.17	3671.73	351.55	0.61
Grand Ave to S.C	343	Floodplain	41000.00	1117.02	1127.65	1124.96	1129.83	0.003468	11.85	3458.87	351.26	0.65
Grand Ave to S.C	343	Floodway	41000.00	1117.02	1127.65	1124.96	1129.83	0.003468	11.85	3458.87	351.26	0.65
Grand Ave to S.C	344.9	Floodplain	41000.00	1118.12	1128.34	1125.92	1130.53	0.003775	11.87	3455.16	346.27	0.66
Grand Ave to S.C	344.9	Floodway	41000.00	1118.12	1128.34	1125.92	1130.53	0.003775	11.87	3455.16	346.27	0.66
Grand Ave to S.C	345.5	Floodplain	41000.00	1119.40	1127.63	1127.63	1131.59	0.006408	16.16	2641.41	342.16	0.99
Grand Ave to S.C	345.5	Floodway	41000.00	1119.40	1127.61	1127.61	1131.59	0.006464	16.20	2634.15	342.05	1.00
Grand Ave to S.C	345.95		Bridge									
Grand Ave to S.C	346.4	Floodplain	41000.00	1119.80	1131.38	1128.00	1133.31	0.001997	11.33	3825.46	356.97	0.59
Grand Ave to S.C	346.4	Floodway	41000.00	1119.80	1131.38	1128.00	1133.31	0.001997	11.33	3825.46	356.97	0.59
Grand Ave to S.C	346.8	Floodplain	41000.00	1119.92	1131.51		1133.36	0.002089	10.92	3753.61	348.36	0.59
Grand Ave to S.C	346.8	Floodway	41000.00	1119.92	1131.51		1133.36	0.002089	10.92	3753.61	348.36	0.59
Grand Ave to S.C	347.1	Floodplain	41000.00	1120.40	1131.41		1133.49	0.002296	11.74	3668.82	360.11	0.62
Grand Ave to S.C	347.1	Floodway	41000.00	1120.40	1131.41		1133.49	0.002296	11.74	3668.82	360.11	0.62
Grand Ave to S.C	347.255		Bridge									
Grand Ave to S.C	347.4	Floodplain	41000.00	1120.50	1132.05	1128.59	1133.93	0.001949	11.17	3866.59	363.00	0.58
Grand Ave to S.C	347.4	Floodway	41000.00	1120.50	1132.05	1128.59	1133.93	0.001949	11.17	3866.59	363.00	0.58
Grand Ave to S.C	352.4	Floodplain	41000.00	1122.00	1132.74	1131.84	1135.69	0.004736	13.79	2982.80	371.43	0.85
Grand Ave to S.C	352.4	Floodway	41000.00	1122.00	1132.74	1131.84	1135.69	0.004736	13.79	2982.80	371.43	0.85
Grand Ave to S.C	358.25	Floodplain	41000.00	1123.00	1135.53	1134.31	1138.33	0.004163	13.42	3060.26	495.91	0.80
Grand Ave to S.C	358.25	Floodway	41000.00	1123.00	1135.53	1134.31	1138.33	0.004163	13.42	3060.26	495.91	0.80

HEC-RAS Plan: Corrected Ef River: New River Reach: Grand Ave to S.C (Continued)

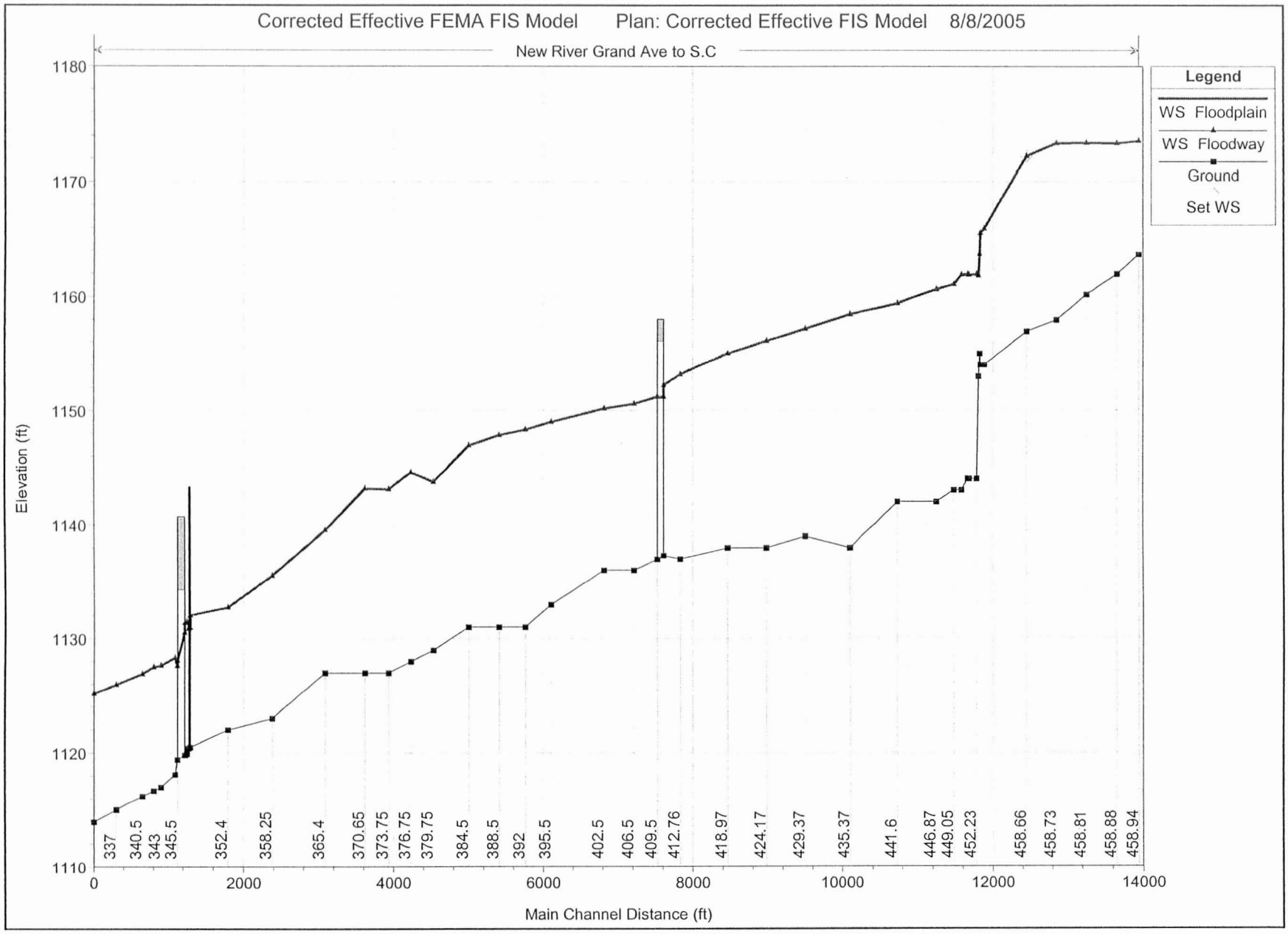
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave to S.C	365.4	Floodplain	41000.00	1127.00	1139.56	1139.56	1142.73	0.004491	14.61	3279.82	735.48	0.84
Grand Ave to S.C	365.4	Floodway	41000.00	1127.00	1139.56	1139.56	1142.73	0.004491	14.61	3279.82	735.48	0.84
Grand Ave to S.C	370.65	Floodplain	41000.00	1127.00	1143.13		1144.29	0.001625	9.20	5891.54	1125.90	0.51
Grand Ave to S.C	370.65	Floodway	41000.00	1127.00	1143.13		1144.29	0.001625	9.20	5891.54	1125.90	0.51
Grand Ave to S.C	373.75	Floodplain	41000.00	1127.00	1143.08	1141.33	1145.30	0.003157	12.55	4362.99	1183.45	0.71
Grand Ave to S.C	373.75	Floodway	41000.00	1127.00	1143.08	1141.33	1145.30	0.003157	12.55	4362.99	1183.45	0.71
Grand Ave to S.C	376.75	Floodplain	41000.00	1128.00	1144.57		1146.01	0.001499	9.81	4873.43	939.33	0.51
Grand Ave to S.C	376.75	Floodway	41000.00	1128.00	1144.57		1146.01	0.001499	9.81	4873.43	939.33	0.51
Grand Ave to S.C	379.75	Floodplain	41000.00	1129.00	1143.71	1142.60	1147.39	0.004294	15.49	2863.47	542.28	0.84
Grand Ave to S.C	379.75	Floodway	41000.00	1129.00	1143.71	1142.60	1147.39	0.004294	15.49	2863.47	542.28	0.84
Grand Ave to S.C	384.5	Floodplain	41000.00	1131.00	1146.95		1148.78	0.001694	10.88	3808.95	338.96	0.54
Grand Ave to S.C	384.5	Floodway	41000.00	1131.00	1146.95		1148.78	0.001694	10.88	3808.95	338.96	0.54
Grand Ave to S.C	388.5	Floodplain	41000.00	1131.00	1147.85	1142.83	1149.44	0.001460	10.14	4060.28	392.94	0.50
Grand Ave to S.C	388.5	Floodway	41000.00	1131.00	1147.85	1142.83	1149.44	0.001460	10.14	4060.28	392.94	0.50
Grand Ave to S.C	392	Floodplain	41000.00	1131.00	1148.33	1143.81	1150.01	0.001658	10.39	3956.85	429.82	0.53
Grand Ave to S.C	392	Floodway	41000.00	1131.00	1148.33	1143.81	1150.01	0.001658	10.39	3956.85	429.82	0.53
Grand Ave to S.C	395.5	Floodplain	41000.00	1133.00	1149.01	1144.56	1150.59	0.001638	10.27	4194.27	427.25	0.53
Grand Ave to S.C	395.5	Floodway	41000.00	1133.00	1149.01	1144.56	1150.59	0.001638	10.27	4194.27	427.25	0.53
Grand Ave to S.C	402.5	Floodplain	41000.00	1136.00	1150.18		1151.78	0.001681	10.16	4037.33	359.05	0.53
Grand Ave to S.C	402.5	Floodway	41000.00	1136.00	1150.18		1151.78	0.001681	10.16	4037.33	359.05	0.53
Grand Ave to S.C	406.5	Floodplain	41000.00	1136.00	1150.61		1152.78	0.002627	11.83	3466.68	342.30	0.65
Grand Ave to S.C	406.5	Floodway	41000.00	1136.00	1150.61		1152.78	0.002627	11.83	3466.68	342.30	0.65
Grand Ave to S.C	409.5	Floodplain	41000.00	1136.97	1151.20		1154.17	0.004005	13.82	2967.46	249.08	0.71
Grand Ave to S.C	409.5	Floodway	41000.00	1136.97	1151.20		1154.17	0.004005	13.82	2967.46	249.08	0.71
Grand Ave to S.C	410.02		Bridge									
Grand Ave to S.C	410.54	Floodplain	41000.00	1137.30	1152.23	1148.86	1154.88	0.003391	13.07	3136.60	251.93	0.65
Grand Ave to S.C	410.54	Floodway	41000.00	1137.30	1152.23	1148.86	1154.88	0.003391	13.07	3136.60	251.93	0.65

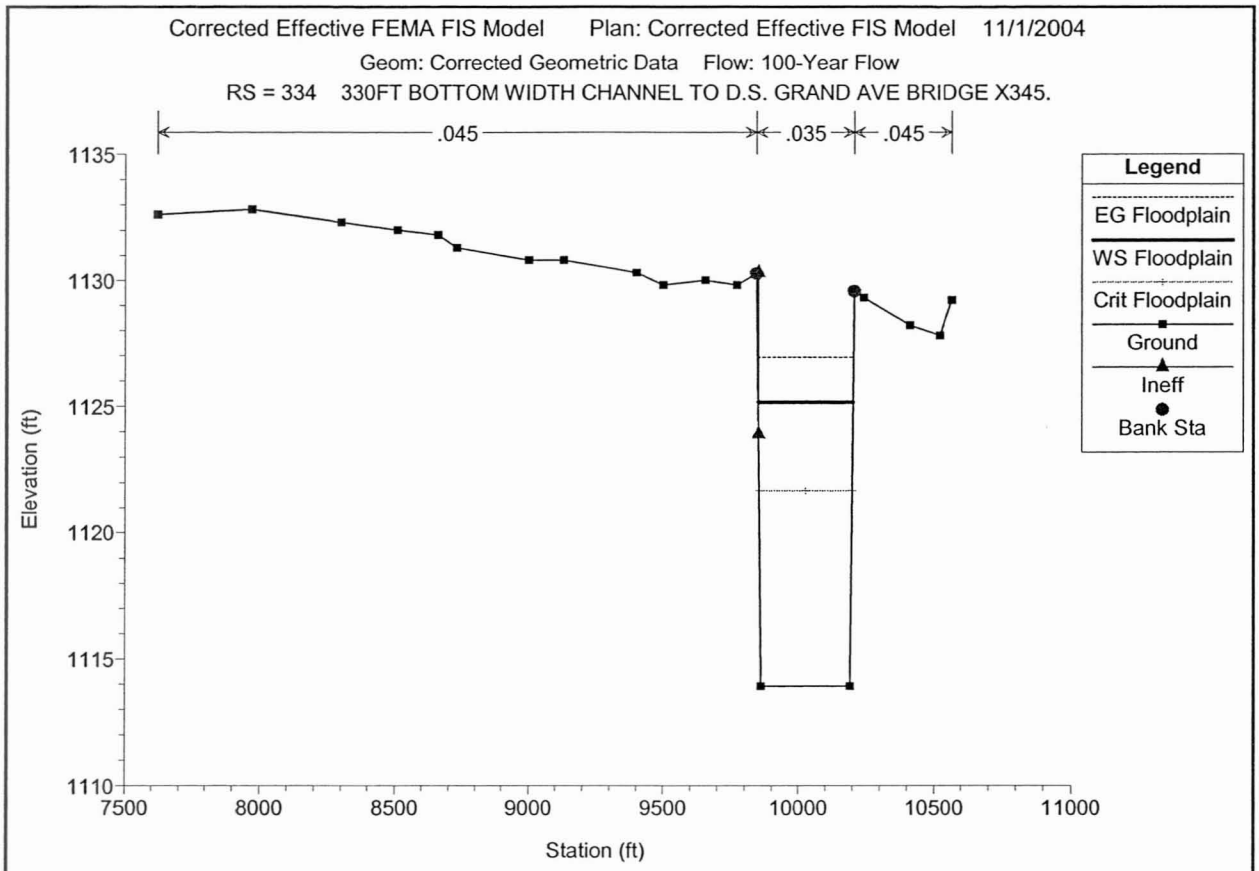
HEC-RAS Plan: Corrected Ef River: New River Reach: Grand Ave to S.C (Continued)

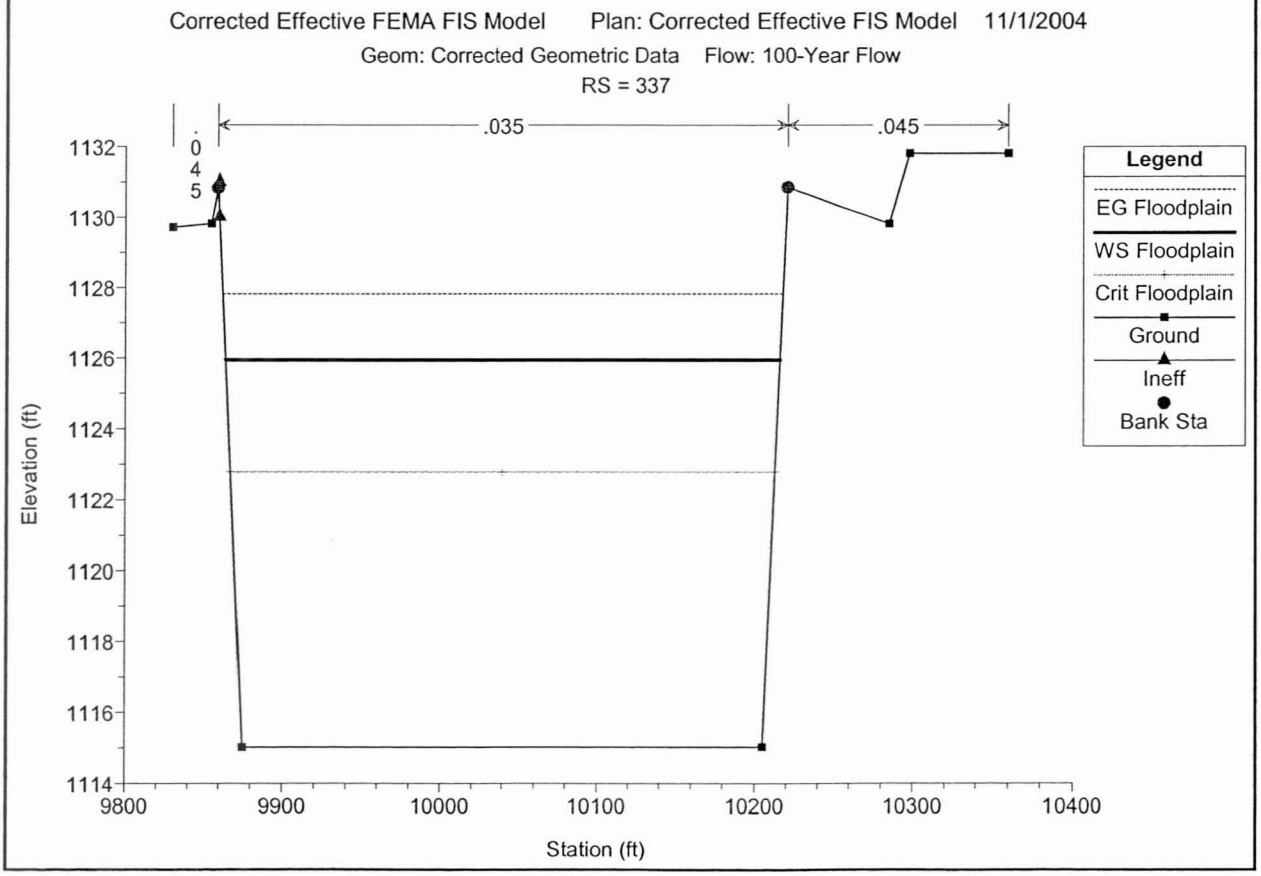
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave to S.C	412.76	Floodplain	41000.00	1137.00	1153.19		1155.54	0.002414	12.28	3337.99	290.63	0.64
Grand Ave to S.C	412.76	Floodway	41000.00	1137.00	1153.19		1155.54	0.002414	12.28	3337.99	290.63	0.64
Grand Ave to S.C	418.97	Floodplain	41000.00	1138.00	1155.01		1156.99	0.002105	11.30	3628.48	323.72	0.59
Grand Ave to S.C	418.97	Floodway	41000.00	1138.00	1155.01		1156.99	0.002105	11.30	3628.48	323.72	0.59
Grand Ave to S.C	424.17	Floodplain	41000.00	1138.00	1156.12		1158.07	0.002030	11.19	3664.30	323.26	0.59
Grand Ave to S.C	424.17	Floodway	41000.00	1138.00	1156.12		1158.07	0.002030	11.19	3664.30	323.26	0.59
Grand Ave to S.C	429.37	Floodplain	41000.00	1139.00	1157.18		1159.10	0.001920	11.12	3686.18	314.97	0.57
Grand Ave to S.C	429.37	Floodway	41000.00	1139.00	1157.18		1159.10	0.001920	11.12	3686.18	314.97	0.57
Grand Ave to S.C	435.37	Floodplain	41000.00	1138.00	1158.41		1160.18	0.001653	10.68	3850.32	320.14	0.53
Grand Ave to S.C	435.37	Floodway	41000.00	1138.00	1158.41		1160.18	0.001653	10.68	3850.32	320.14	0.53
Grand Ave to S.C	441.6	Floodplain	41000.00	1142.00	1159.36	1155.38	1161.41	0.002089	11.50	3565.40	330.24	0.60
Grand Ave to S.C	441.6	Floodway	41000.00	1142.00	1159.36	1155.38	1161.41	0.002089	11.50	3565.40	330.24	0.60
Grand Ave to S.C	446.87	Floodplain	41000.00	1142.00	1160.58		1162.42	0.001678	10.87	3773.30	301.15	0.54
Grand Ave to S.C	446.87	Floodway	41000.00	1142.00	1160.58		1162.42	0.001678	10.87	3773.30	301.15	0.54
Grand Ave to S.C	449.05	Floodplain	41000.00	1143.00	1161.03		1162.80	0.001560	10.67	3843.95	298.46	0.52
Grand Ave to S.C	449.05	Floodway	41000.00	1143.00	1161.03		1162.80	0.001560	10.67	3843.95	298.46	0.52
Grand Ave to S.C	450.23	Floodplain	41000.00	1143.00	1161.88		1162.97	0.000808	8.39	4885.05	330.88	0.38
Grand Ave to S.C	450.23	Floodway	41000.00	1143.00	1161.88		1162.97	0.000808	8.39	4885.05	330.88	0.38
Grand Ave to S.C	451.05	Floodplain	41000.00	1144.00	1161.91		1163.05	0.000767	8.58	4776.77	293.33	0.37
Grand Ave to S.C	451.05	Floodway	41000.00	1144.00	1161.91		1163.05	0.000767	8.58	4776.77	293.33	0.37
Grand Ave to S.C	451.23	Floodplain	41000.00	1144.00	1161.86		1163.09	0.000838	8.91	4602.92	283.89	0.39
Grand Ave to S.C	451.23	Floodway	41000.00	1144.00	1161.86		1163.09	0.000838	8.91	4602.92	283.89	0.39
Grand Ave to S.C	452.23	Floodplain	41000.00	1144.00	1161.94		1163.18	0.000865	8.96	4577.84	287.02	0.40
Grand Ave to S.C	452.23	Floodway	41000.00	1144.00	1161.94		1163.18	0.000865	8.96	4577.84	287.02	0.40
Grand Ave to S.C	452.5	Floodplain	41000.00	1153.00	1161.81	1161.81	1166.06	0.006628	16.55	2477.02	291.30	1.00
Grand Ave to S.C	452.5	Floodway	41000.00	1153.00	1161.81	1161.81	1166.06	0.006628	16.55	2477.02	291.30	1.00
Grand Ave to S.C	452.65	Floodplain	41000.00	1155.00	1163.68	1163.68	1167.89	0.006700	16.47	2488.75	297.82	1.00
Grand Ave to S.C	452.65	Floodway	41000.00	1155.00	1163.68	1163.68	1167.89	0.006700	16.47	2488.75	297.82	1.00

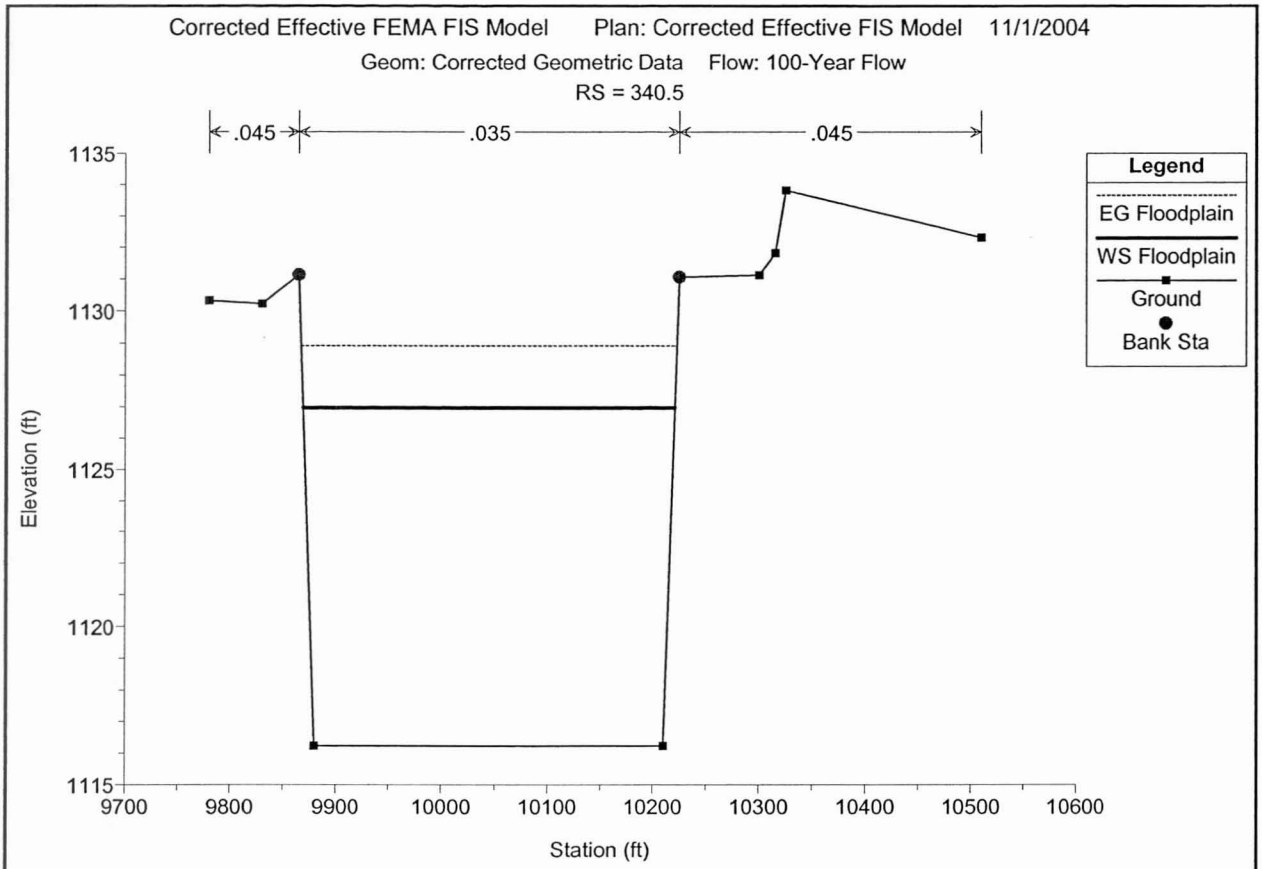
HEC-RAS Plan: Corrected Ef River: New River Reach: Grand Ave to S.C (Continued)

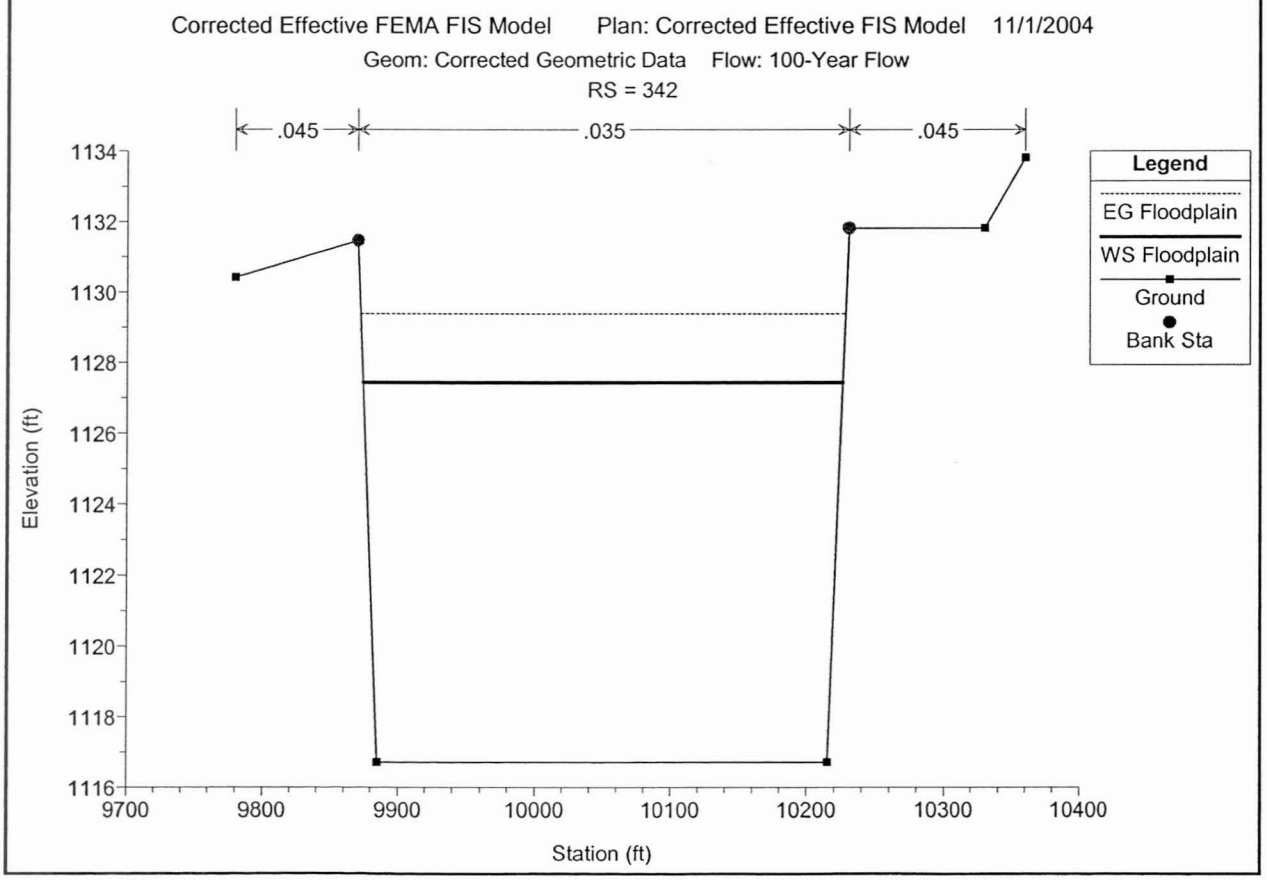
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave to S.C	452.73	Floodplain	41000.00	1154.00	1165.51		1168.09	0.003062	12.90	3177.98	303.96	0.70
Grand Ave to S.C	452.73	Floodway	41000.00	1154.00	1165.51		1168.09	0.003062	12.90	3177.98	303.96	0.70
Grand Ave to S.C	453.23	Floodplain	41000.00	1154.00	1165.91		1168.26	0.002650	12.30	3332.69	308.23	0.66
Grand Ave to S.C	453.23	Floodway	41000.00	1154.00	1165.91		1168.26	0.002650	12.30	3332.69	308.23	0.66
Grand Ave to S.C	458.66	Floodplain	41000.00	1157.12	1172.19		1173.11	0.001109	7.71	5314.66	400.51	0.37
Grand Ave to S.C	458.66	Floodway	41000.00	1157.12	1172.19		1173.11	0.001109	7.71	5314.66	400.51	0.37
Grand Ave to S.C	458.73	Floodplain	12000.00	1157.92	1173.31	1162.29	1173.39	0.000097	2.23	5383.27	433.80	0.11
Grand Ave to S.C	458.73	Floodway	12000.00	1157.92	1173.31	1162.29	1173.39	0.000097	2.23	5383.27	433.80	0.11
Grand Ave to S.C	458.81	Floodplain	12000.00	1160.12	1173.34	1163.97	1173.44	0.000145	2.54	4718.82	422.41	0.13
Grand Ave to S.C	458.81	Floodway	12000.00	1160.12	1173.34	1163.97	1173.44	0.000145	2.54	4718.82	422.41	0.13
Grand Ave to S.C	458.88	Floodplain	12000.00	1161.92	1173.31	1167.83	1173.61	0.000680	4.39	2734.01	343.92	0.27
Grand Ave to S.C	458.88	Floodway	12000.00	1161.92	1173.31	1167.83	1173.61	0.000680	4.39	2734.01	343.92	0.27
Grand Ave to S.C	458.94	Floodplain	12000.00	1163.62	1173.51	1169.61	1173.85	0.000944	4.74	2533.63	362.43	0.32
Grand Ave to S.C	458.94	Floodway	12000.00	1163.62	1173.51	1169.61	1173.85	0.000944	4.74	2533.63	362.43	0.32


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 8/8/2005
New River Grand Ave to S.C
Legend
WS Floodplain
WS Floodway
Ground
Set WS
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
1110
0
2000
4000
6000
8000
10000
12000
14000
Main Channel Distance (ft)
337
340.5
343
345.5
352.4
358.25
365.4
370.65
373.75
376.75
379.75
384.5
388.5
392
395.5
402.5
406.5
409.5
412.76
418.97
424.17
429.37
435.37
441.6
446.87
449.05
452.23
458.66
458.73
458.81
458.88
458.94


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 334 330FT BOTTOM WIDTH CHANNEL TO D.S. GRAND AVE BRIDGE X345.
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1135
1130
1125
1120
1115
1110
7500
8000
8500
9000
9500
10000
10500
11000
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 337
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1132
1130
1128
1126
1124
1122
1120
1118
1116
1114
9800
9900
10000
10100
10200
10300
10400
Station (ft)

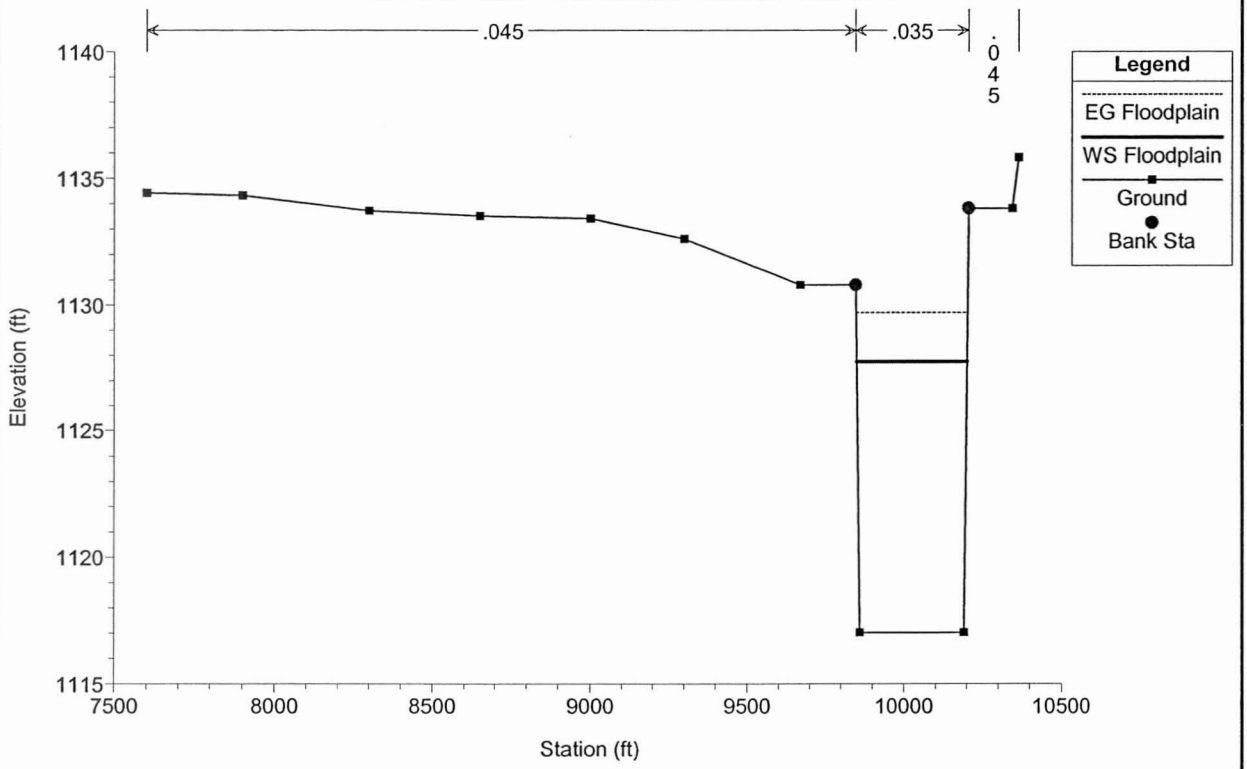

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 340.5
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
1135
1130
1125
1120
1115
9700
9800
9900
10000
10100
10200
10300
10400
10500
10600
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 342
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
1134
1132
1130
1128
1126
1124
1122
1120
1118
1116
9700
9800
9900
10000
10100
10200
10300
10400
Station (ft)

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

Geom: Corrected Geometric Data Flow: 100-Year Flow

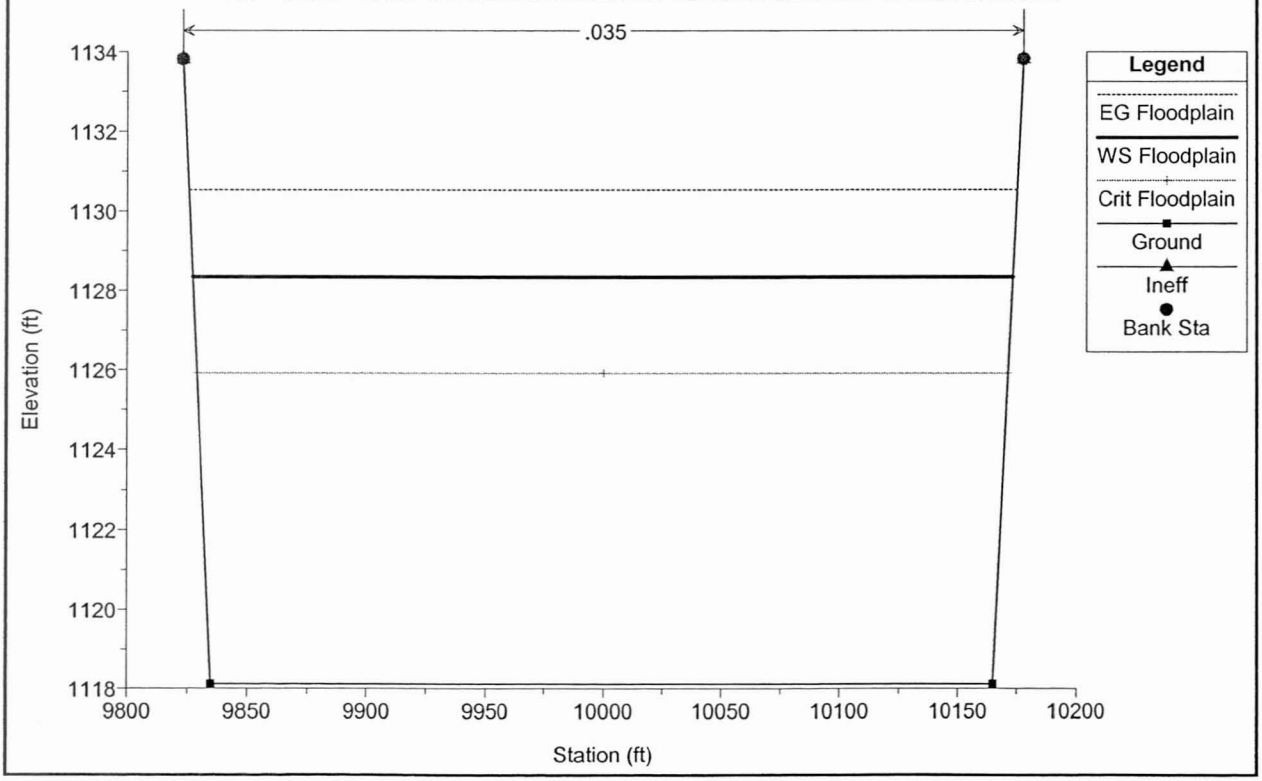
RS = 343 LOB CODED AS LT BNK ON DIKE TOP.



Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

Geom: Corrected Geometric Data Flow: 100-Year Flow

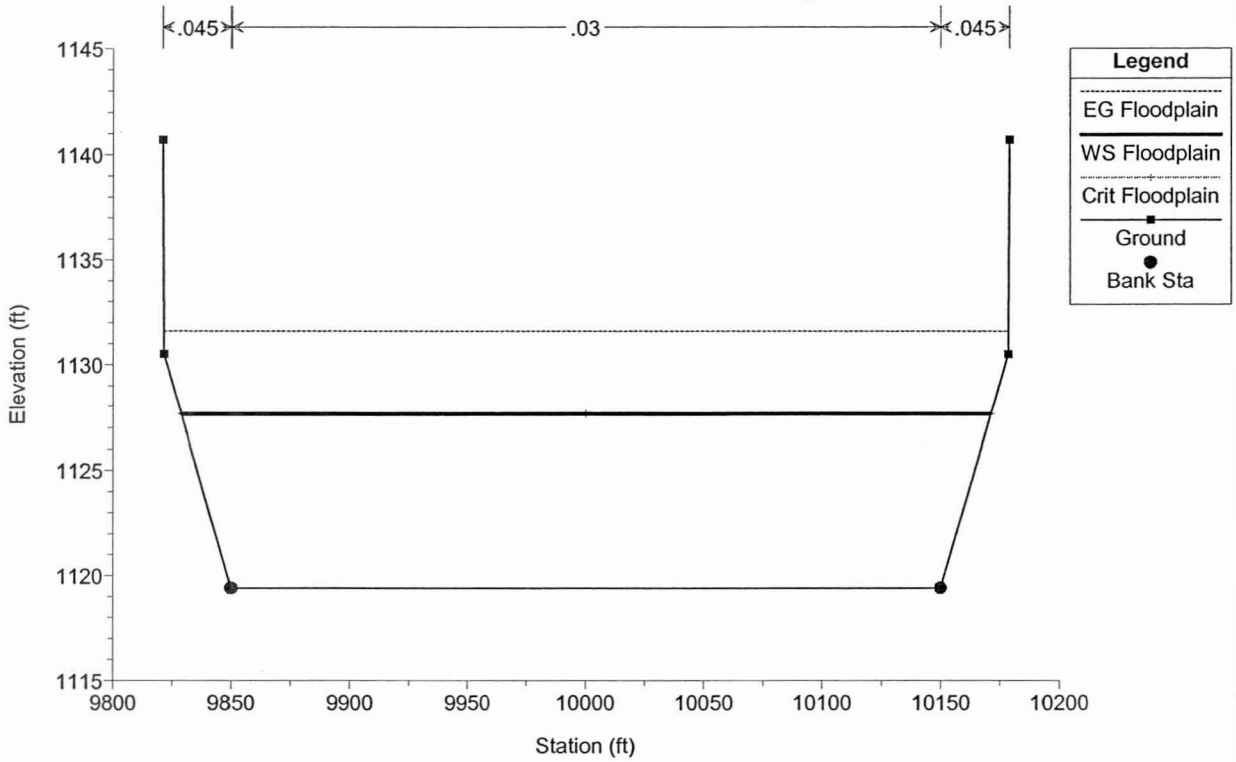
RS = 344.9 DROP STRUCTURE DELETED-CONCRETE INVERT UNDER BRIDGES



Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

Geom: Corrected Geometric Data Flow: 100-Year Flow

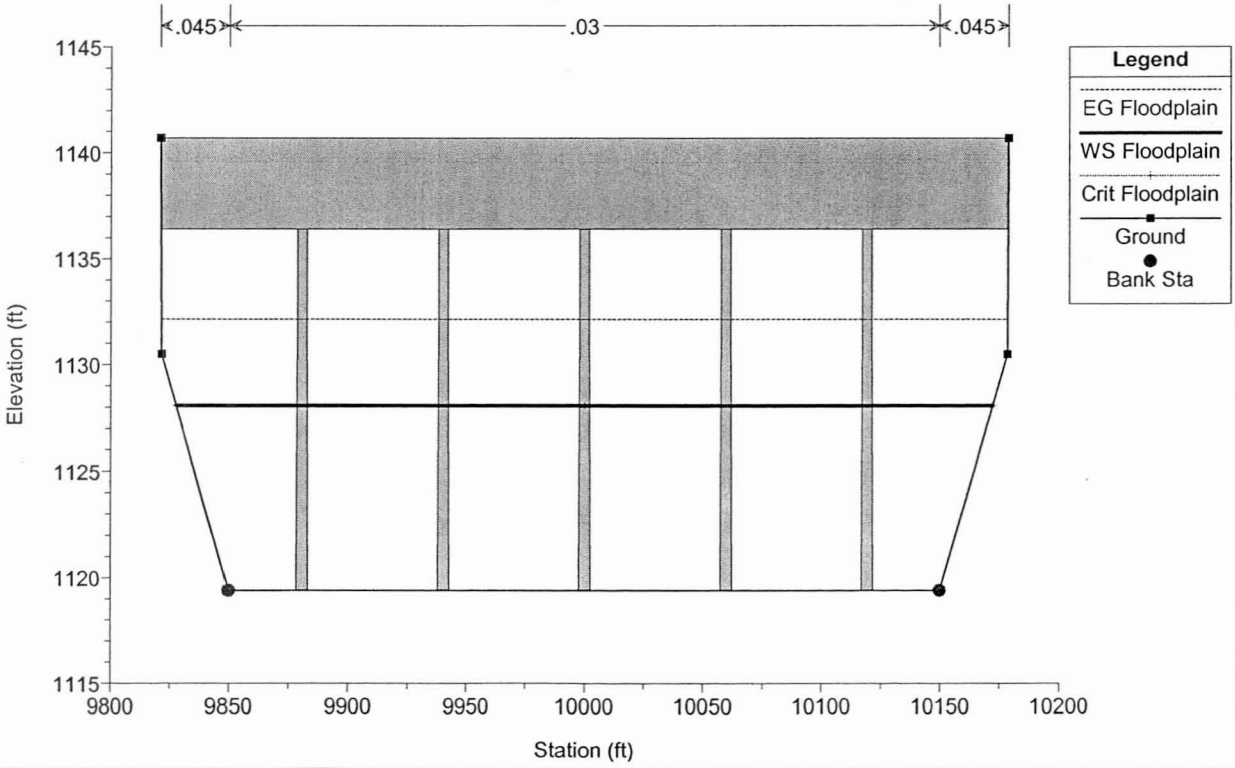
RS = 345.5 D/S of Grand Avenue Bridge

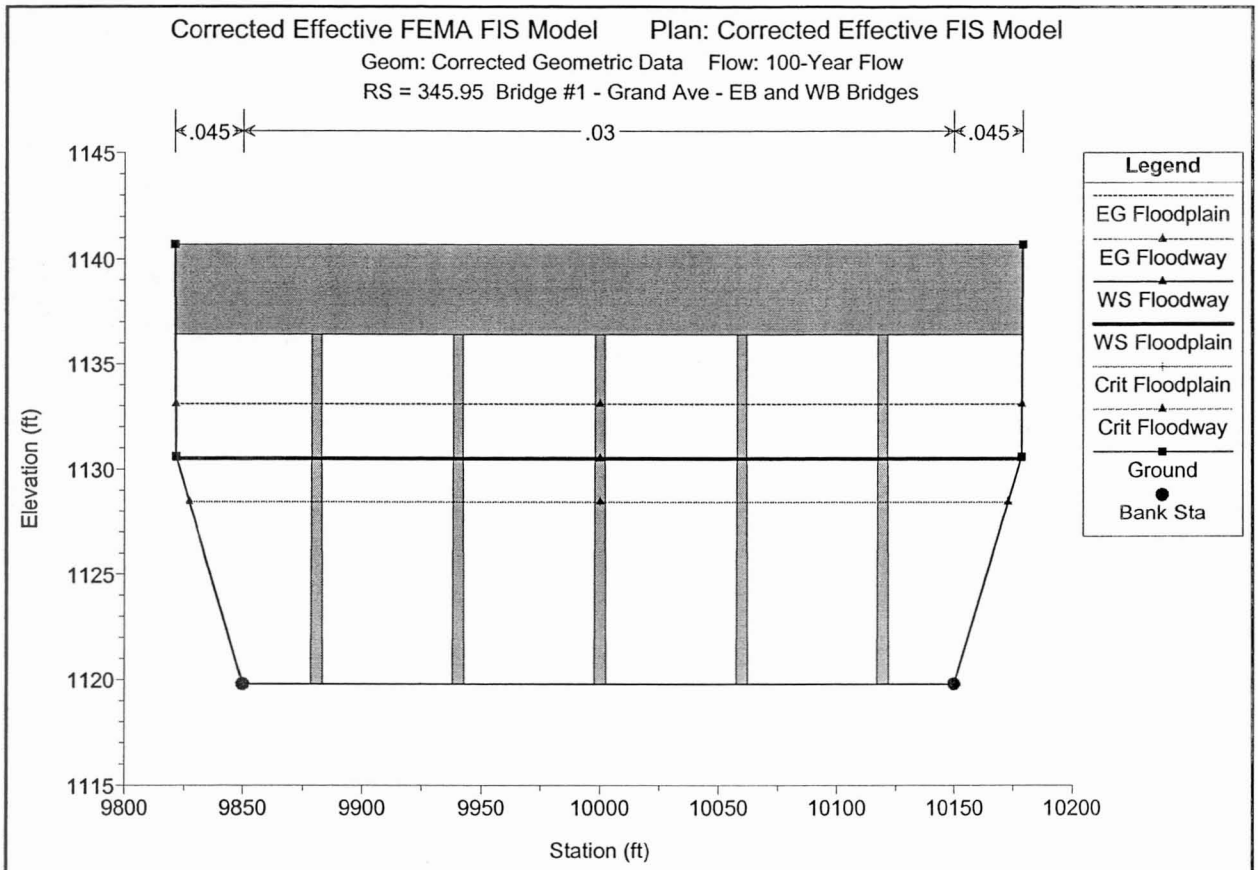


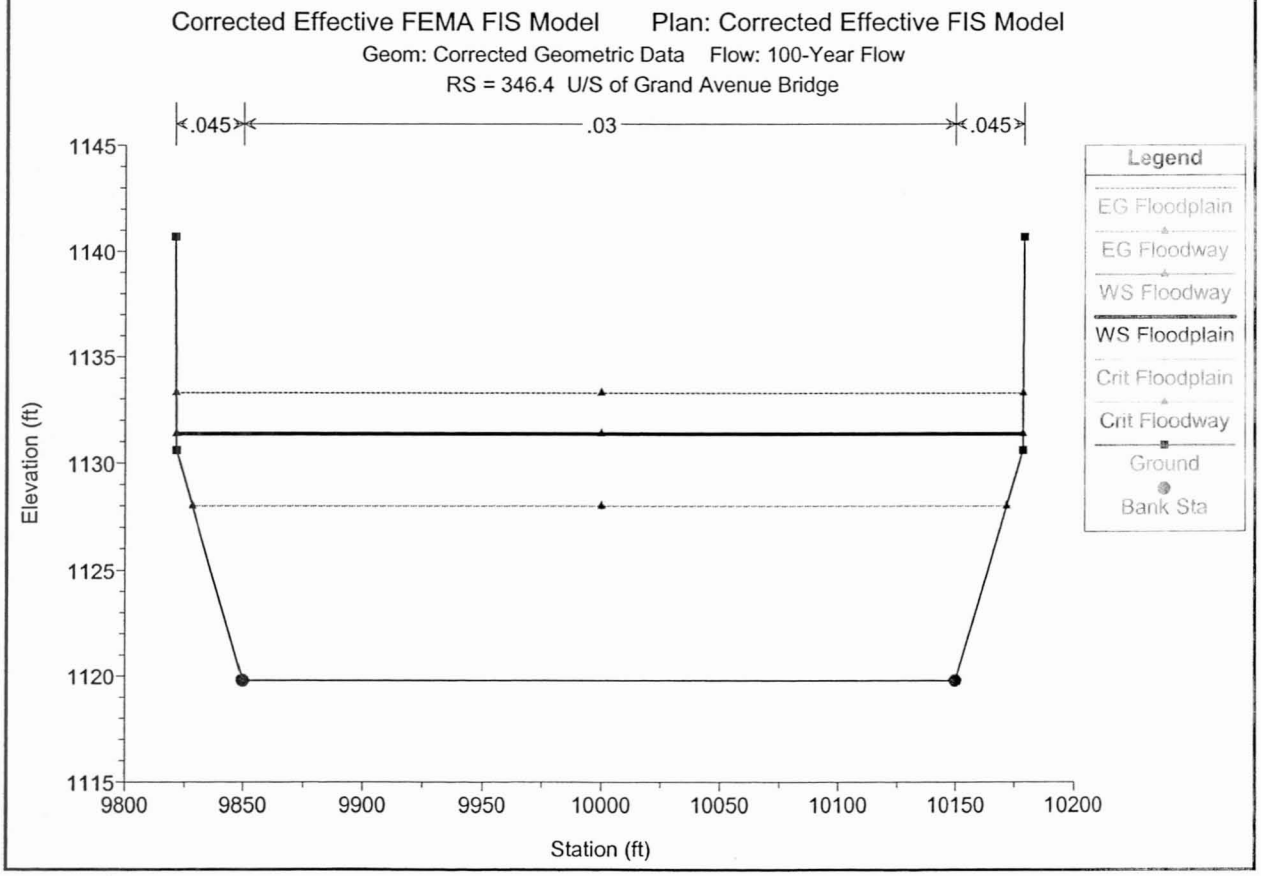
Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

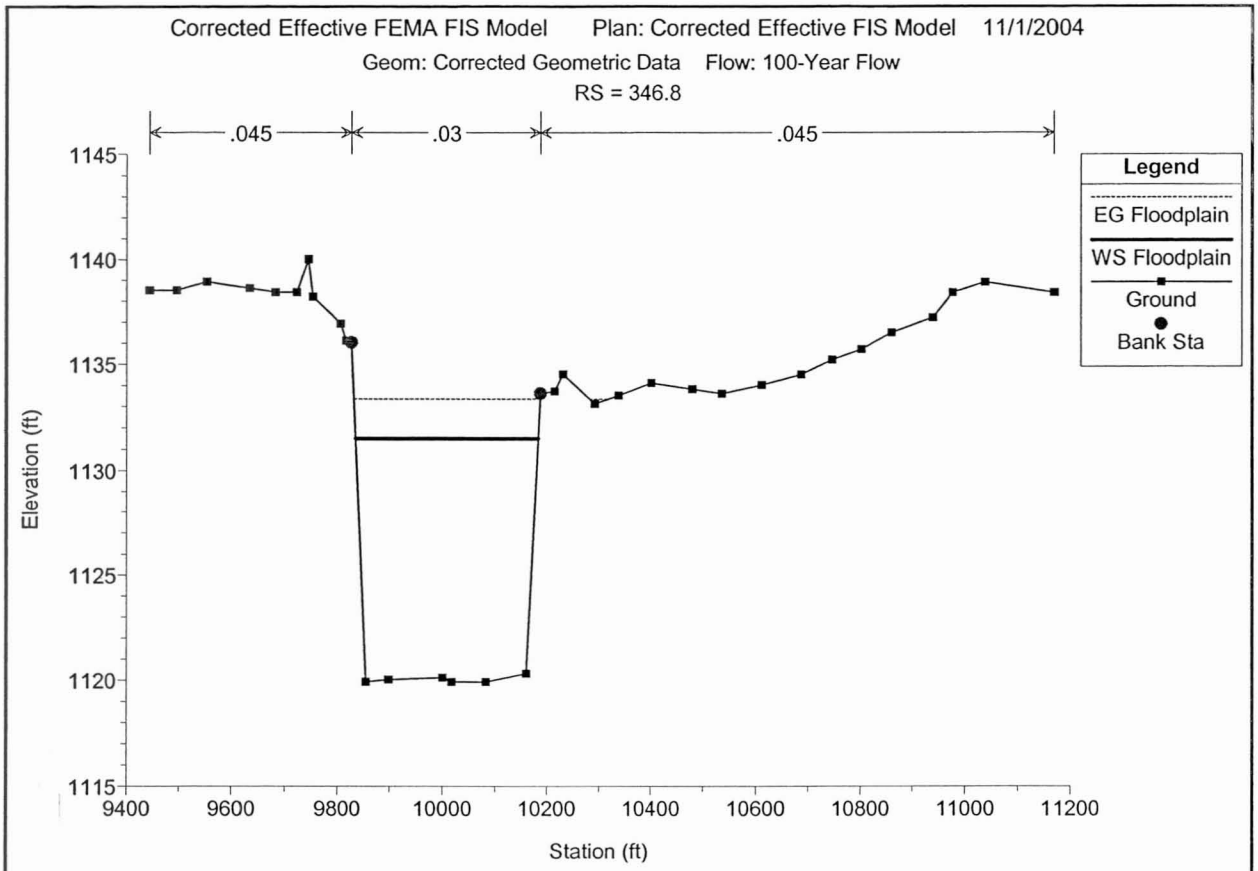
Geom: Corrected Geometric Data Flow: 100-Year Flow

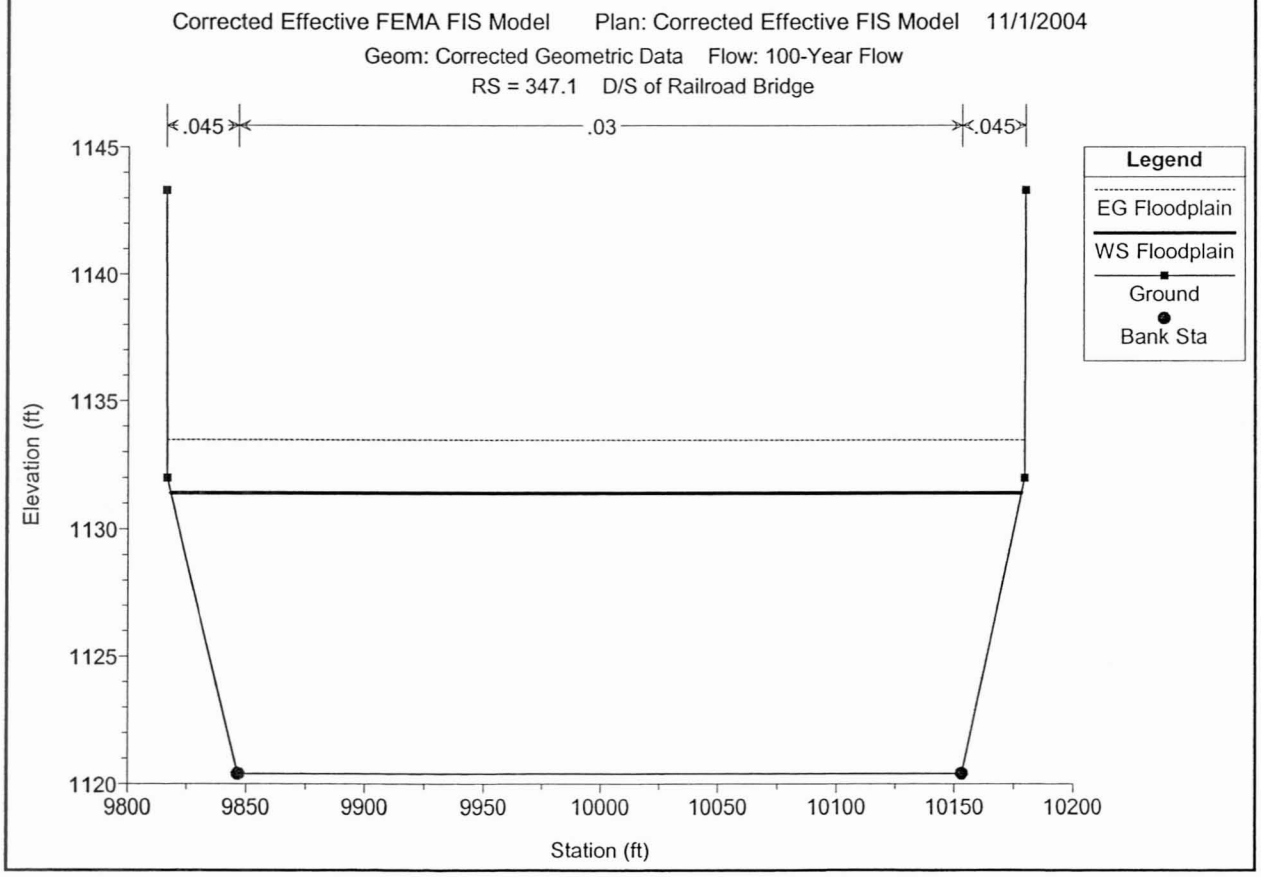
RS = 345.95 BR Bridge #1 - Grand Ave - EB and WB Bridges

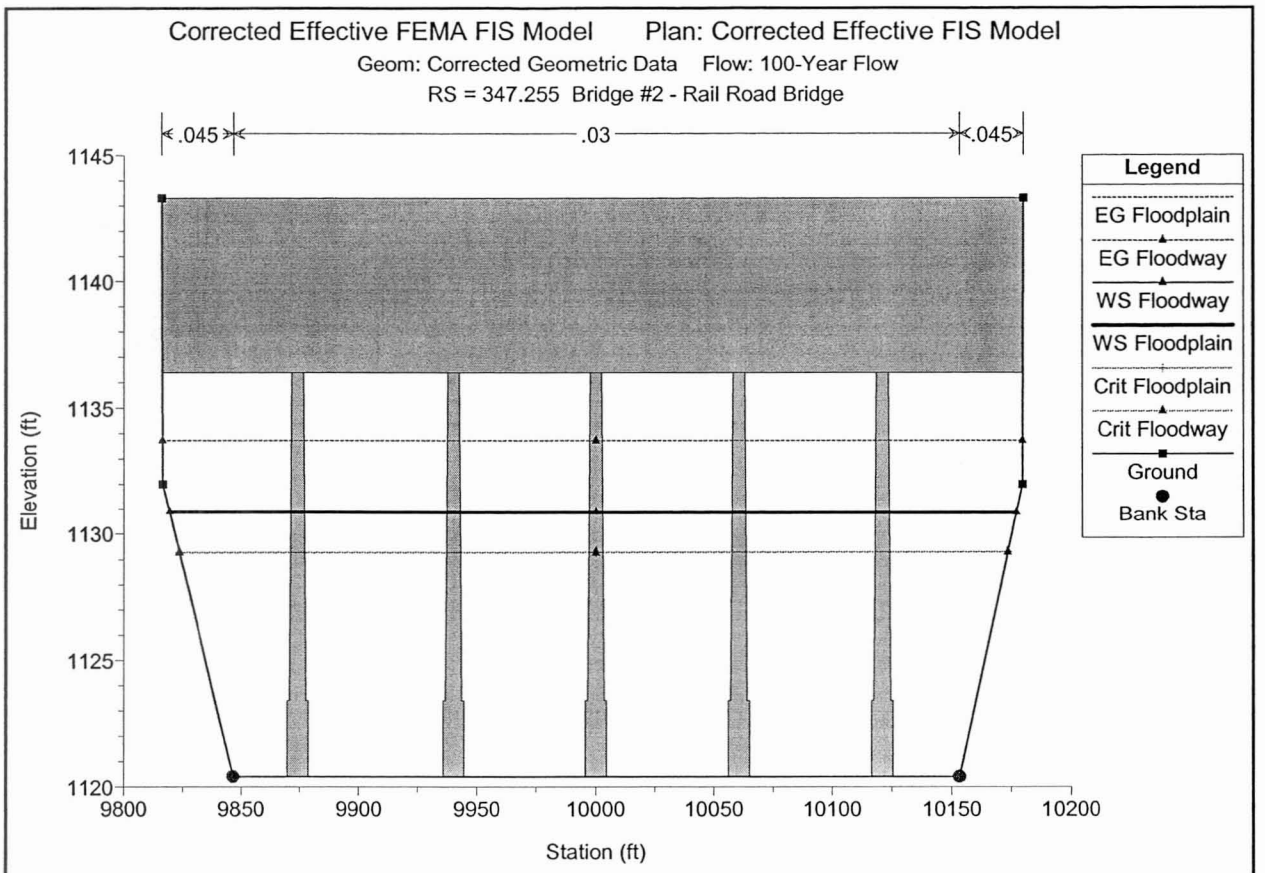


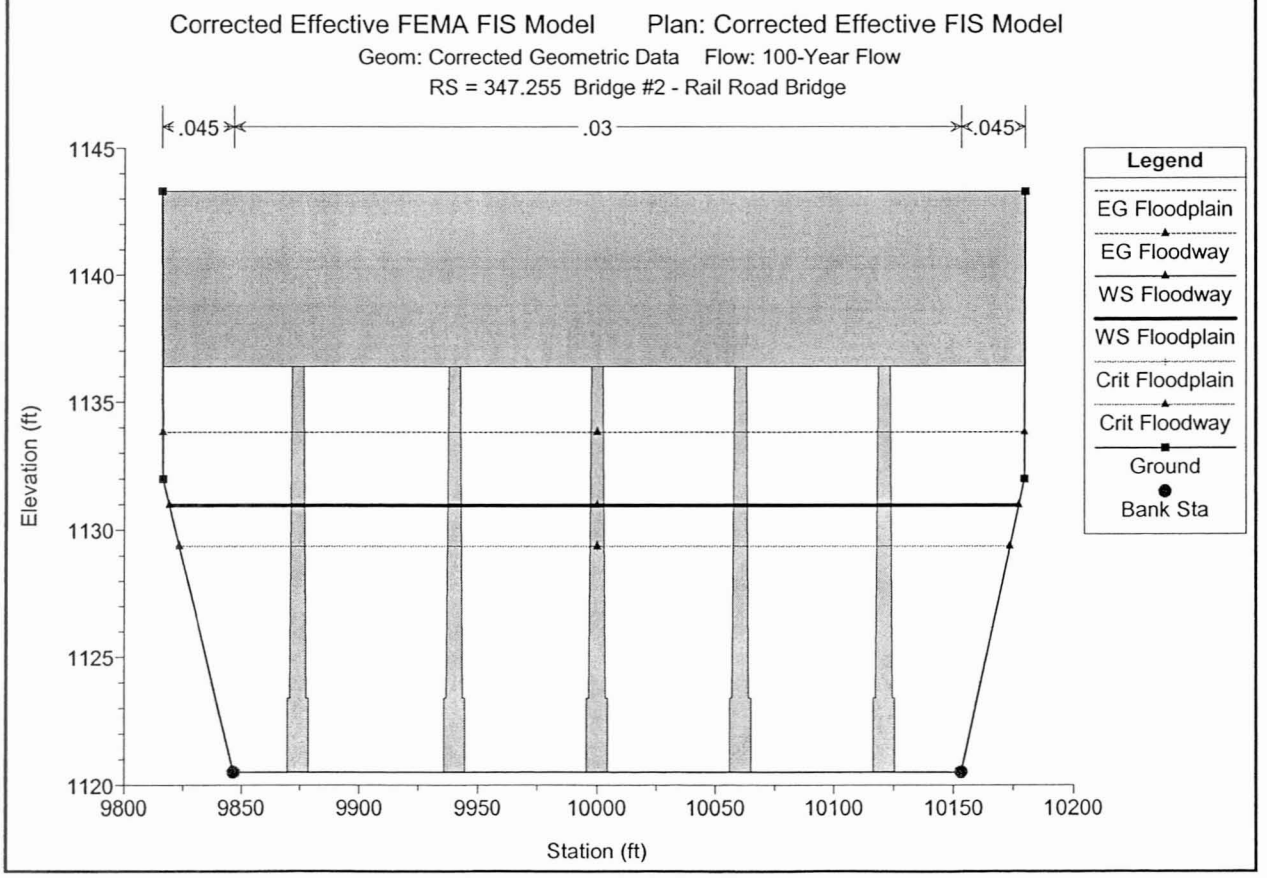

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 345.95 Bridge #1 - Grand Ave - EB and WB Bridges
.045
.03
.045
Elevation (ft)
1145
1140
1135
1130
1125
1120
1115
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)
Legend
EG Floodplain
EG Floodway
WS Floodway
WS Floodplain
Crit Floodplain
Crit Floodway
Ground
Bank Sta

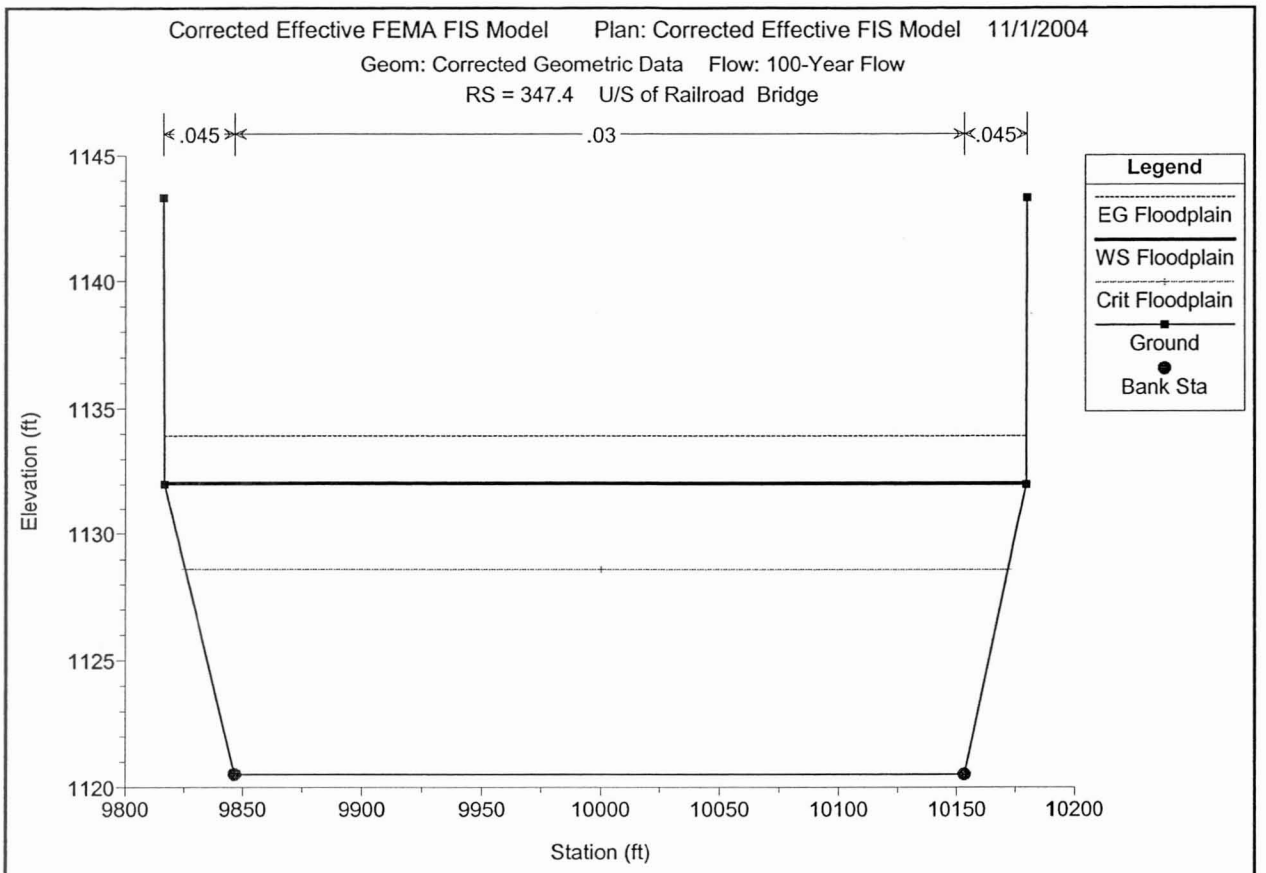

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 346.4 U/S of Grand Avenue Bridge
.045
.03
.045
Elevation (ft)
1145
1140
1135
1130
1125
1120
1115
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)
Legend
EG Floodplain
EG Floodway
WS Floodway
WS Floodplain
Crit Floodplain
Crit Floodway
Ground
Bank Sta

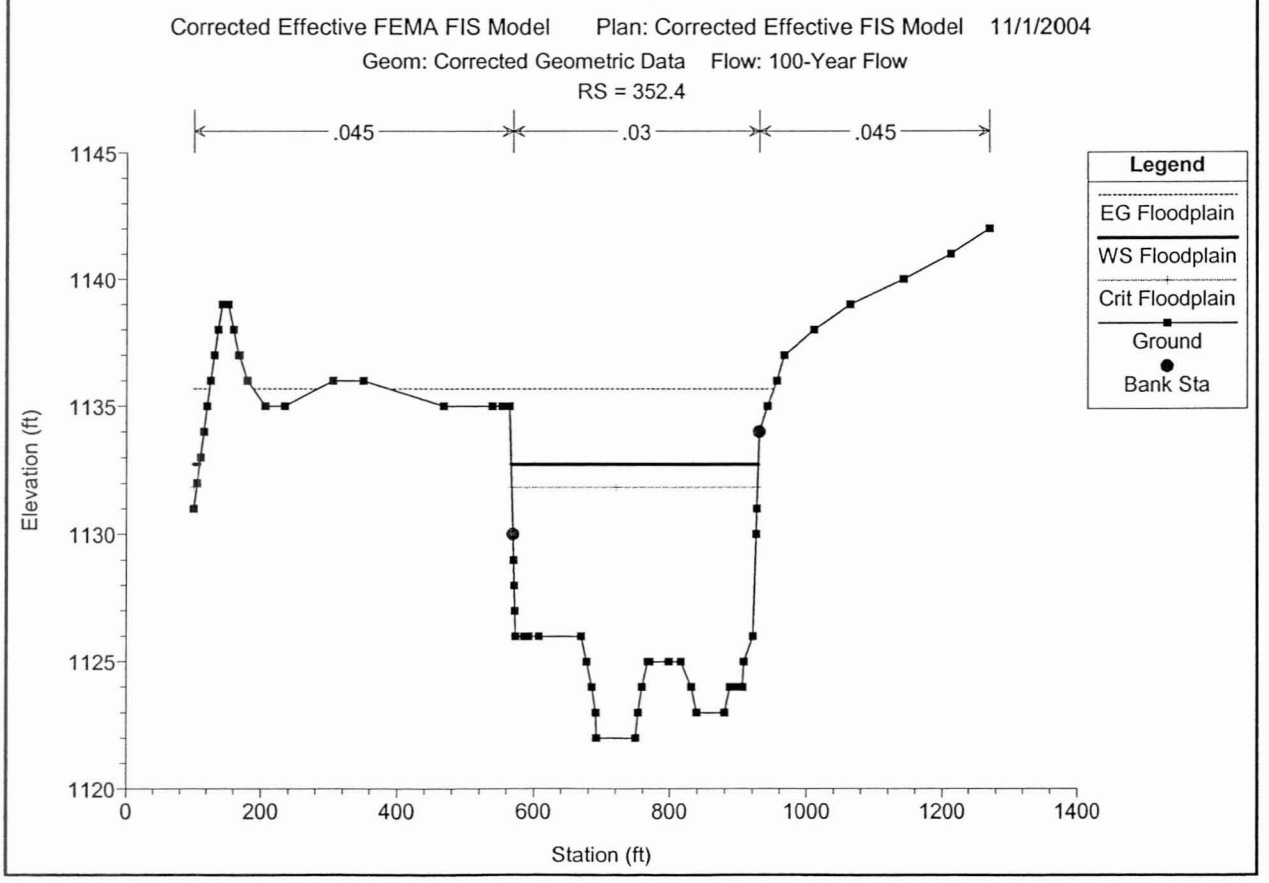

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 346.8
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
1145
1140
1135
1130
1125
1120
1115
9400
9600
9800
10000
10200
10400
10600
10800
11000
11200
Station (ft)

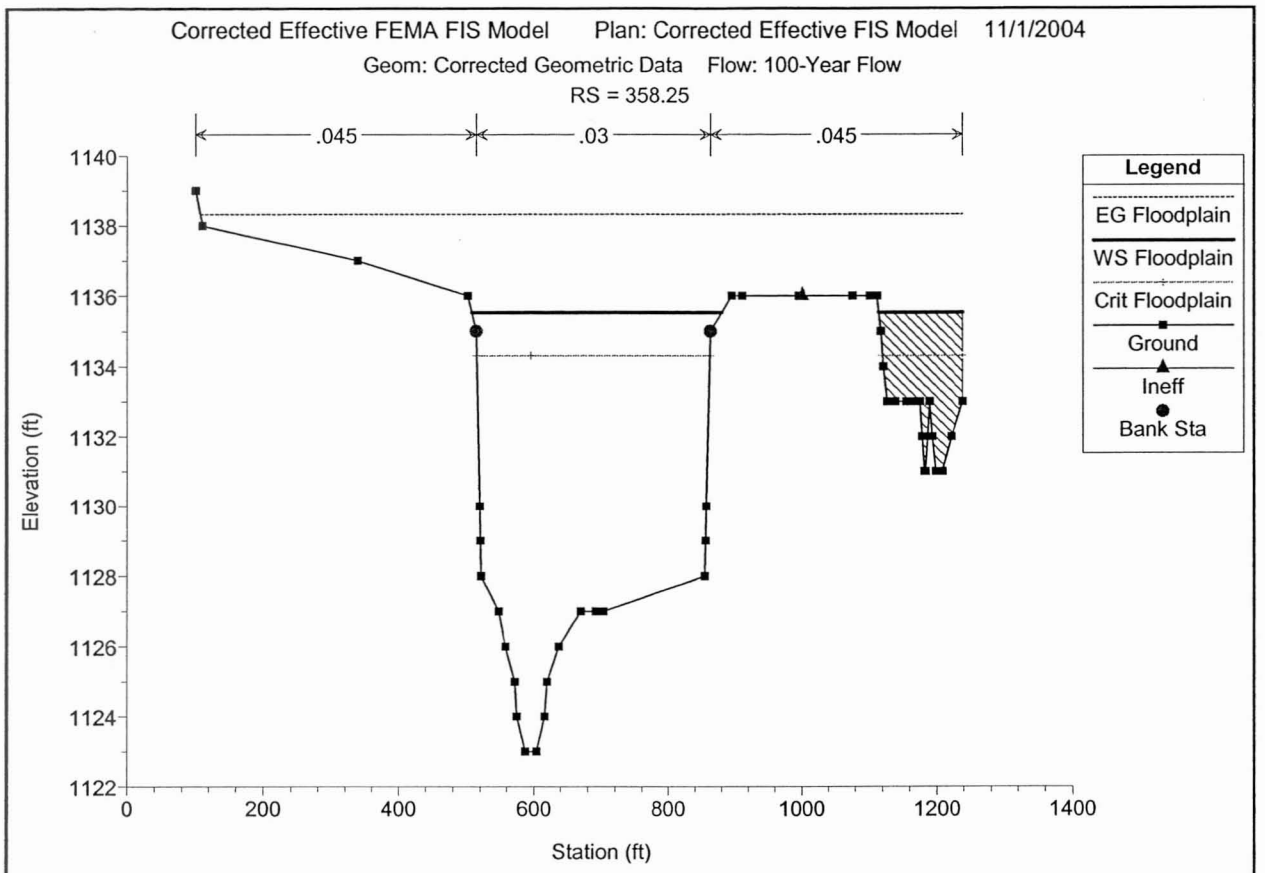

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 347.1 D/S of Railroad Bridge
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
1145
1140
1135
1130
1125
1120
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)

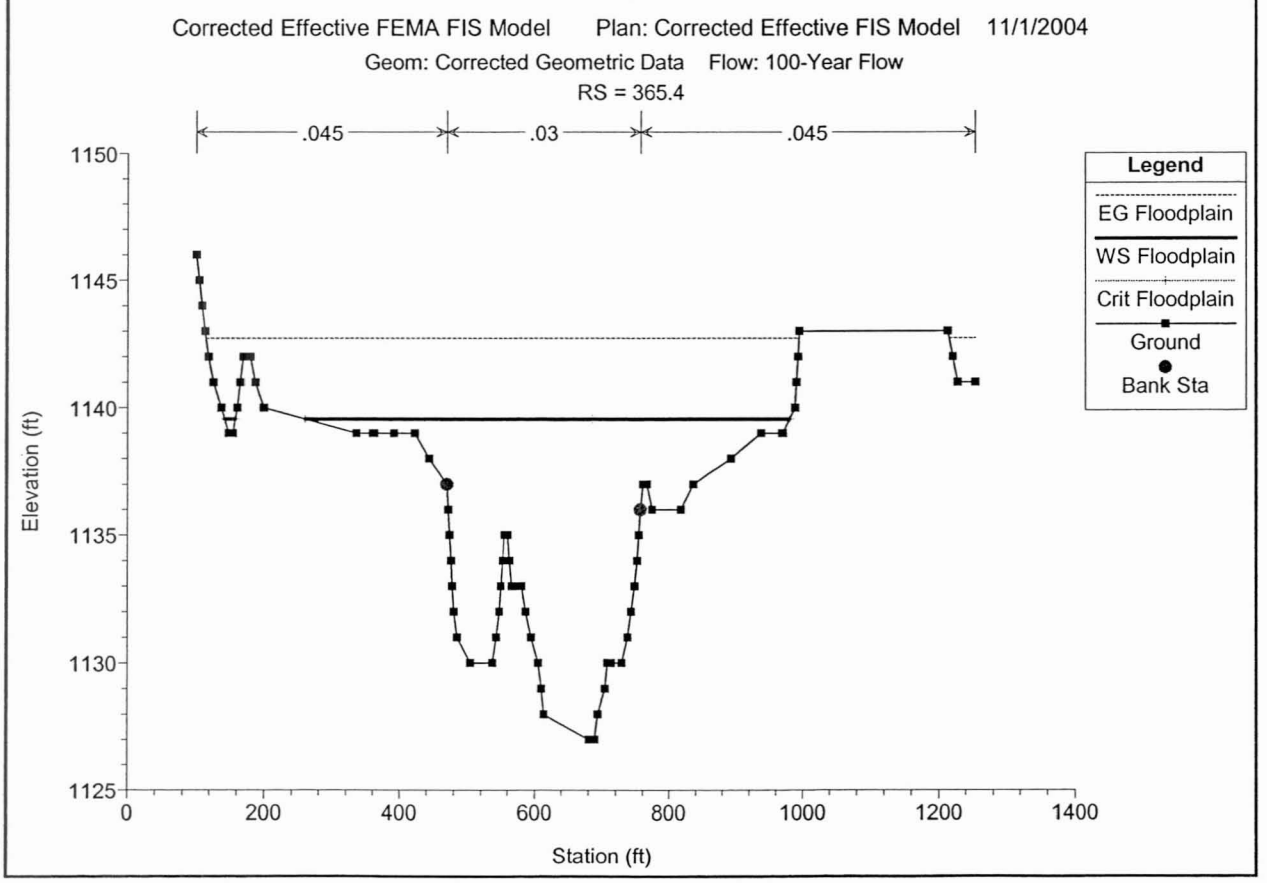

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 347.255 Bridge #2 - Rail Road Bridge
.045
.03
.045
Elevation (ft)
1145
1140
1135
1130
1125
1120
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)
Legend
EG Floodplain
EG Floodway
WS Floodway
WS Floodplain
Crit Floodplain
Crit Floodway
Ground
Bank Sta

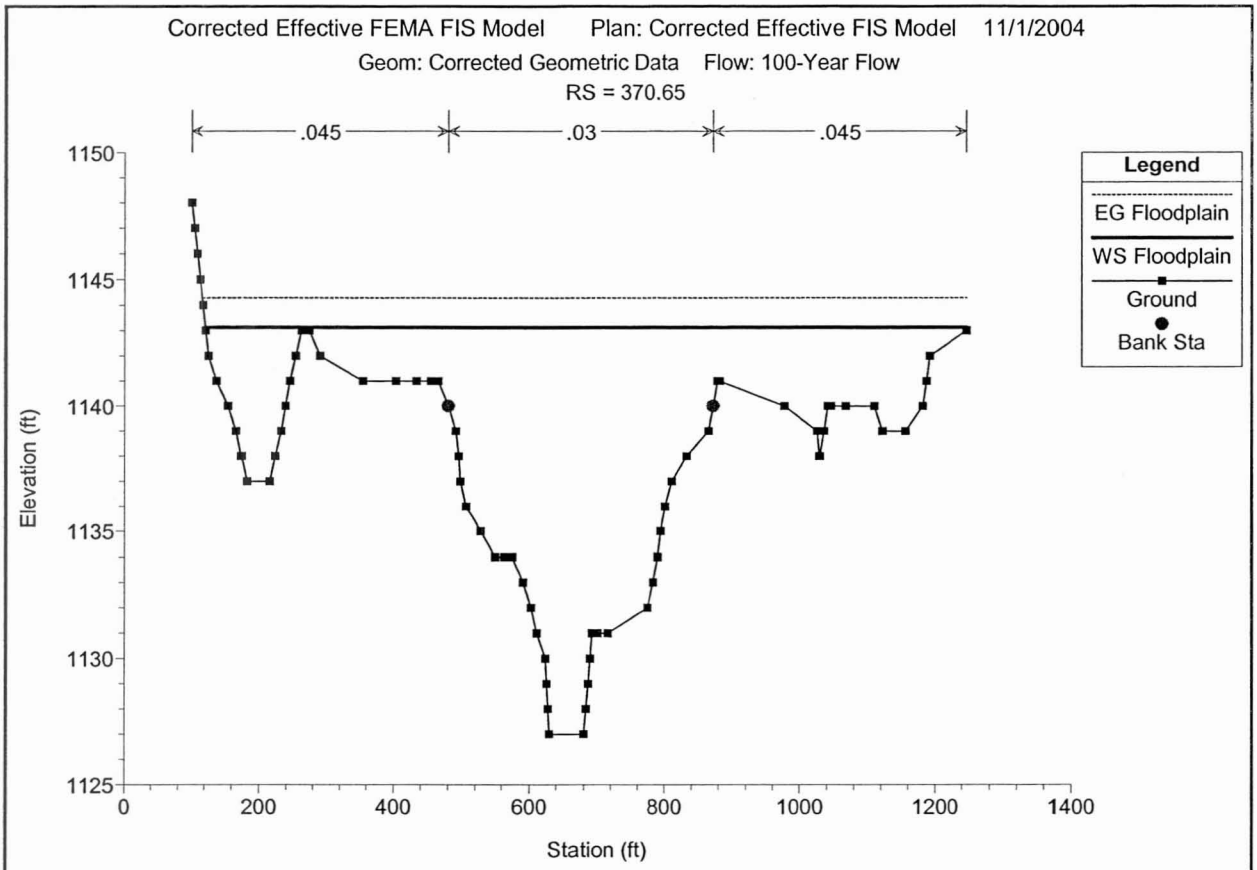

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 347.255 Bridge #2 - Rail Road Bridge
.045
.03
.045
Elevation (ft)
1145
1140
1135
1130
1125
1120
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)
Legend
EG Floodplain
EG Floodway
WS Floodway
WS Floodplain
Crit Floodplain
Crit Floodway
Ground
Bank Sta

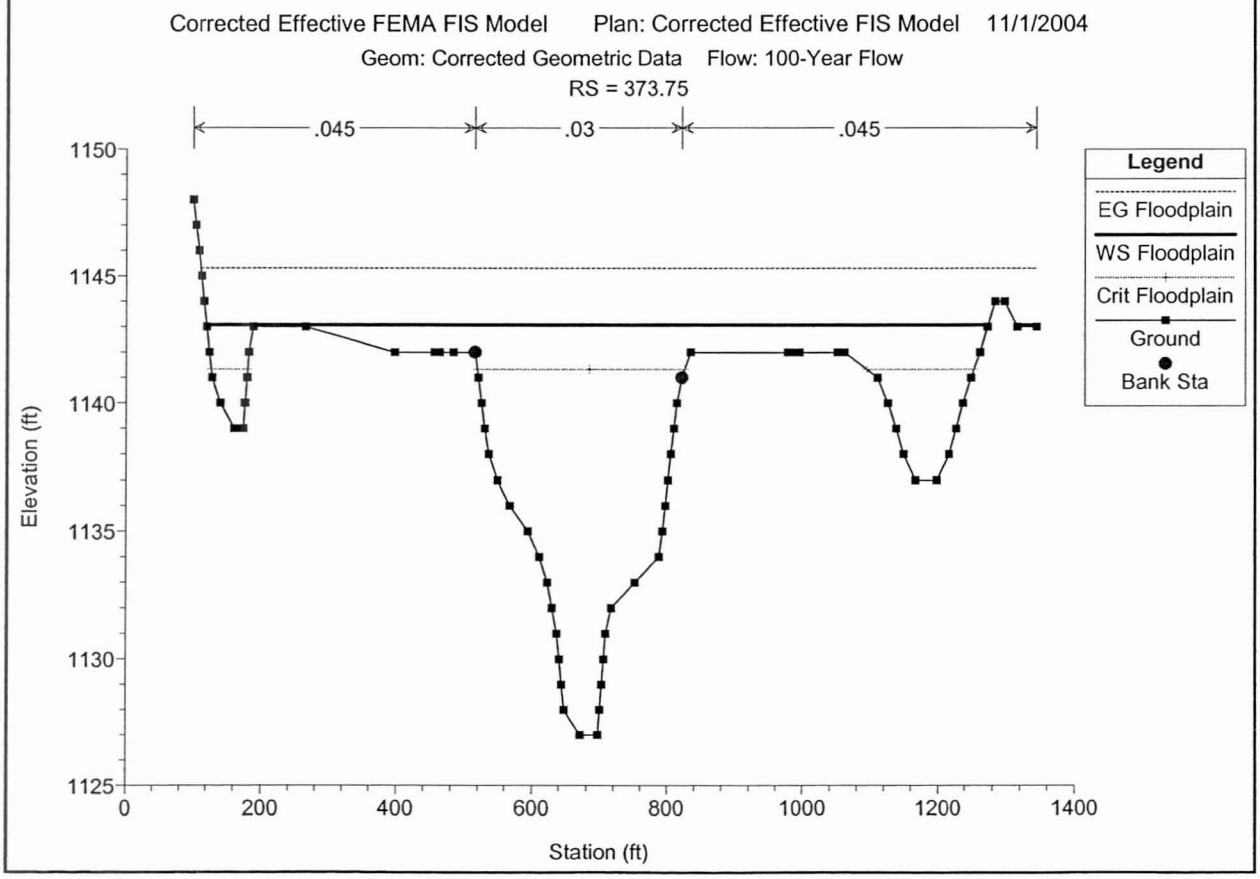

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 347.4 U/S of Railroad Bridge
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Bank Sta
Elevation (ft)
1145
1140
1135
1130
1125
1120
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)

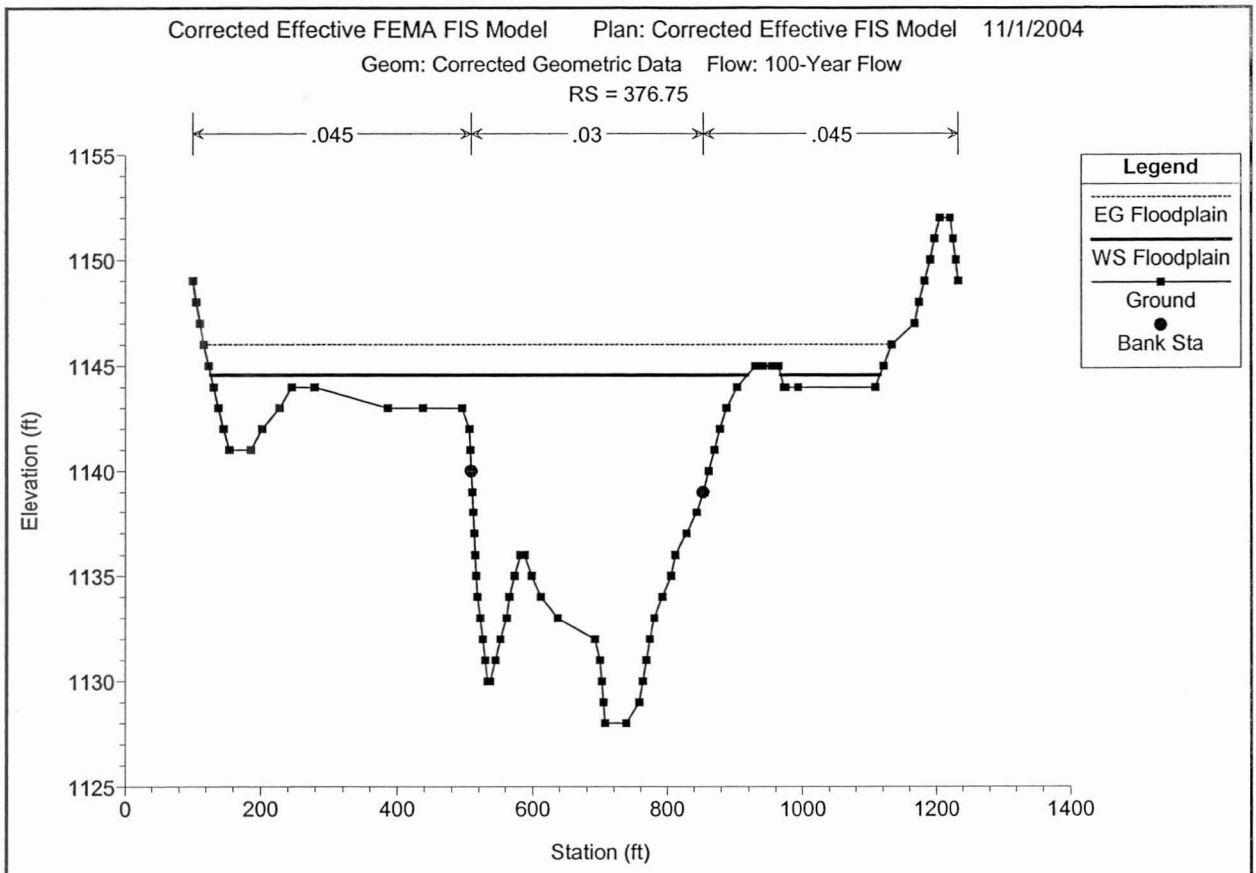

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 352.4
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Bank Sta
Elevation (ft)
1145
1140
1135
1130
1125
1120
0
200
400
600
800
1000
1200
1400
Station (ft)

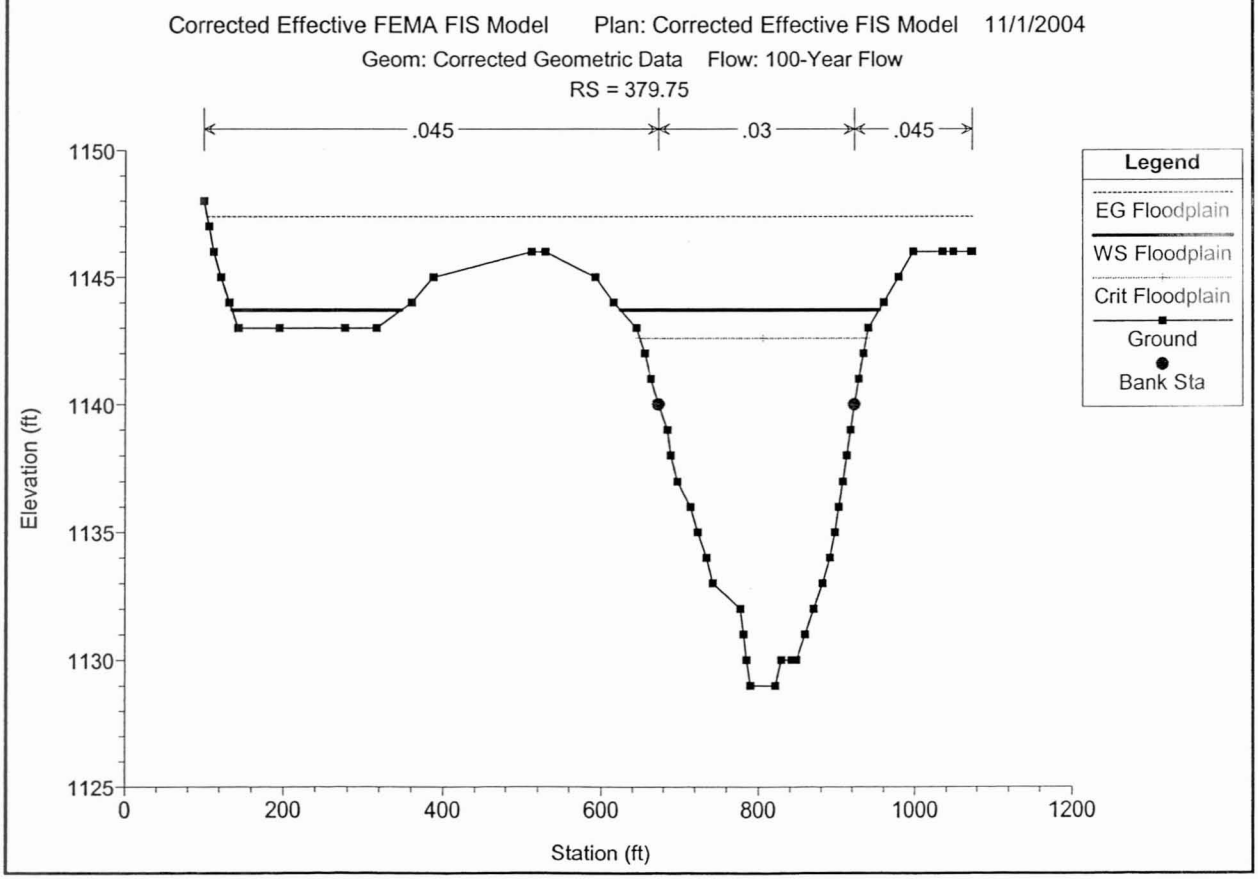

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 358.25
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

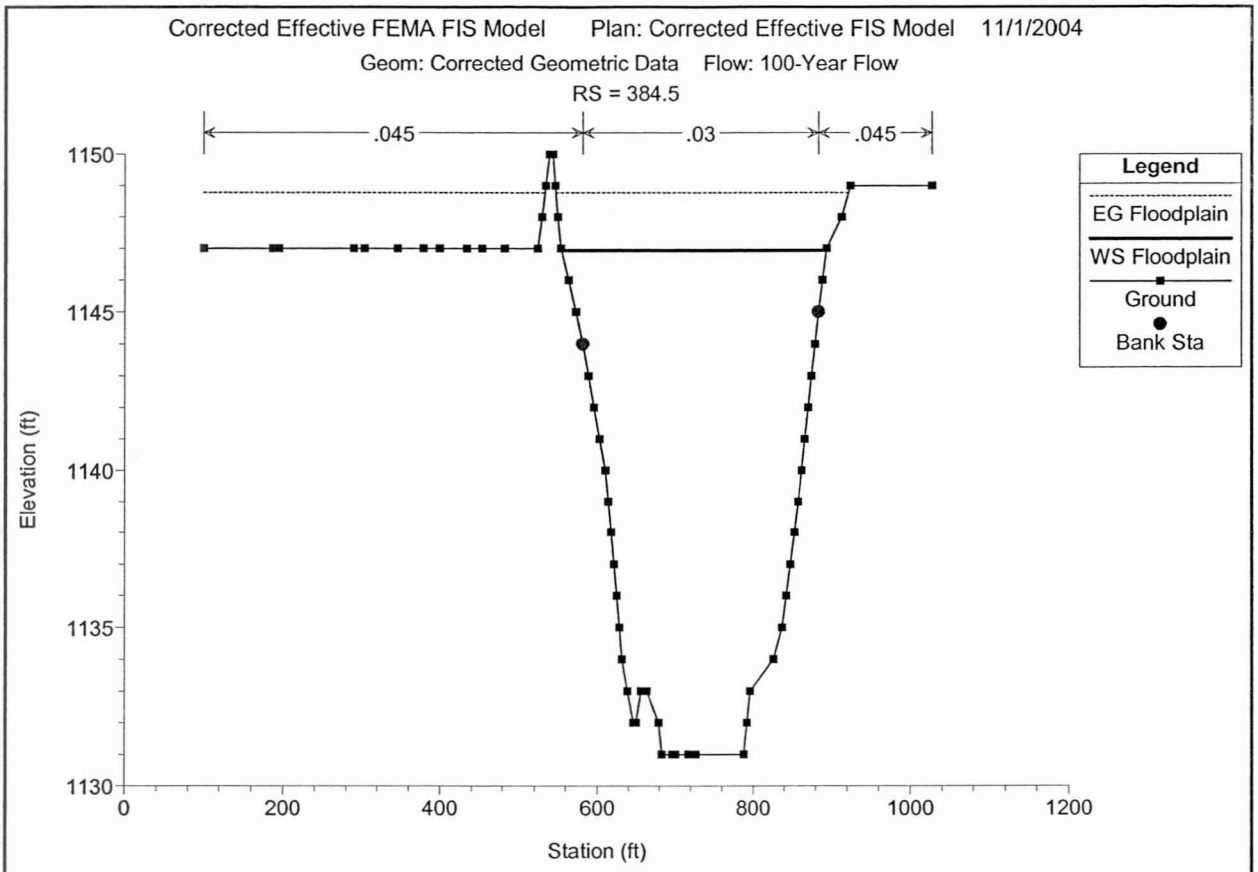

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 365.4
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)

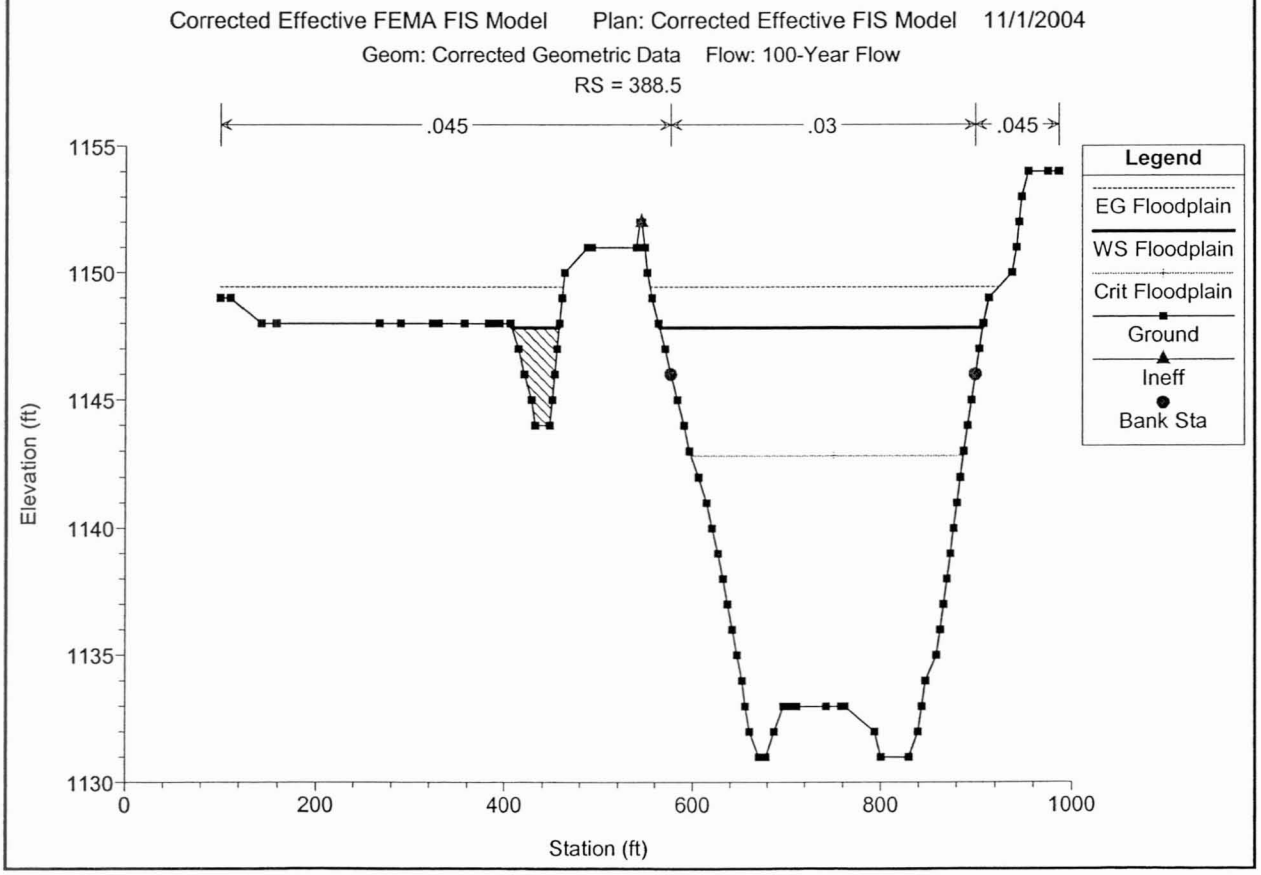

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 370.65
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)
1150
1145
1140
1135
1130
1125
0
200
400
600
800
1000
1200
1400

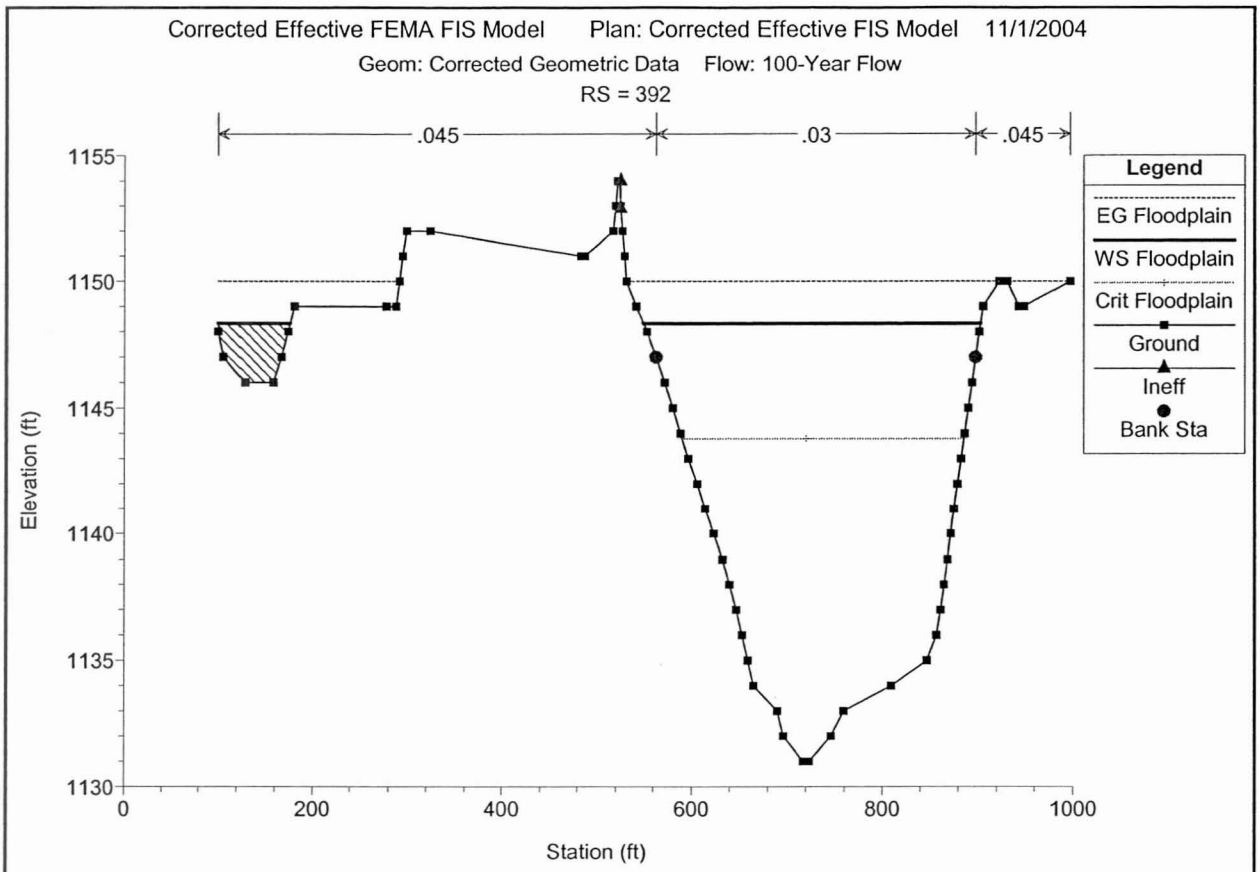

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 373.75
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)
1150
1145
1140
1135
1130
1125
0
200
400
600
800
1000
1200
1400

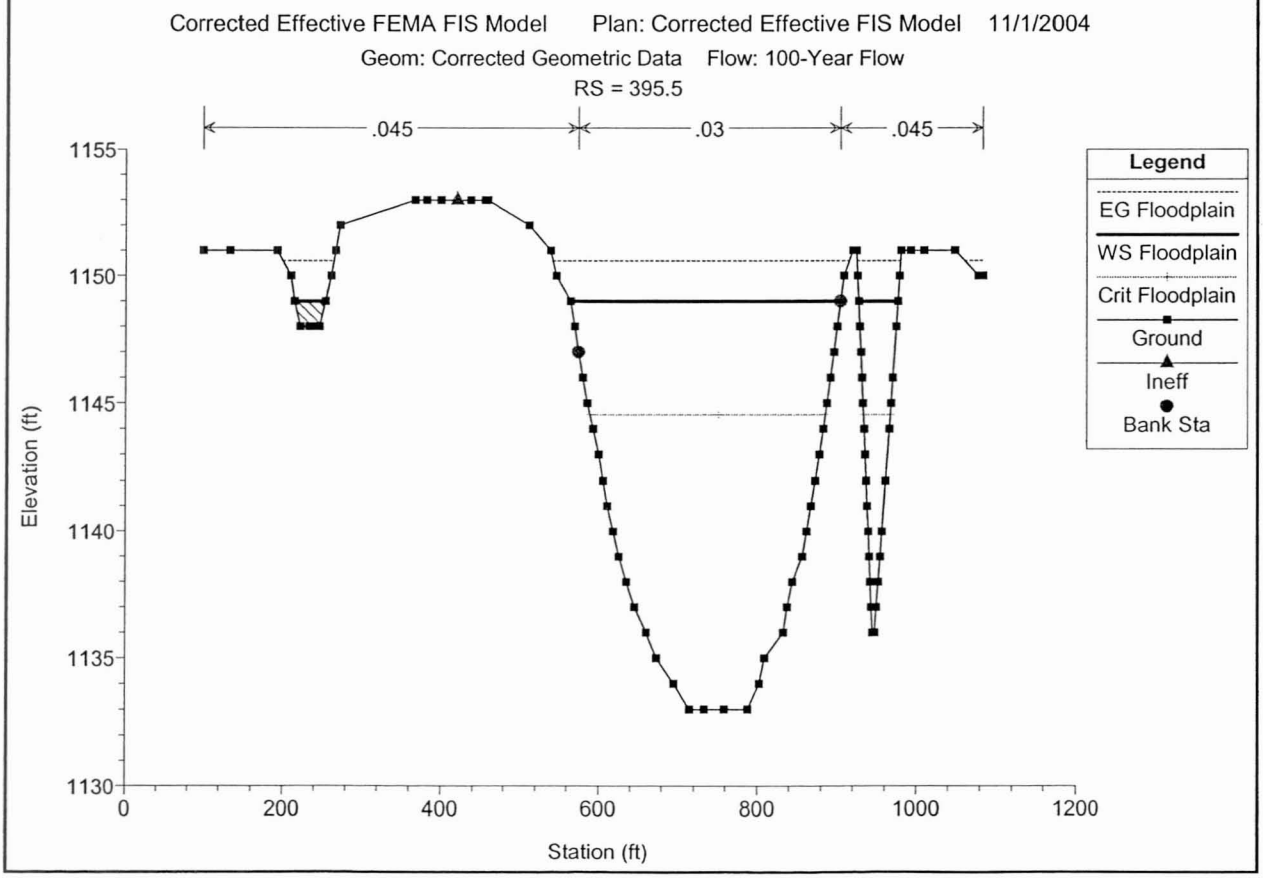

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 376.75
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)
1155
1150
1145
1140
1135
1130
1125
0
200
400
600
800
1000
1200
1400


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 379.75
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)
1150
1145
1140
1135
1130
1125
0
200
400
600
800
1000
1200


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 384.5
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
1150
1145
1140
1135
1130
0
200
400
600
800
1000
1200
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 388.5
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1155
1150
1145
1140
1135
1130
0
200
400
600
800
1000
Station (ft)

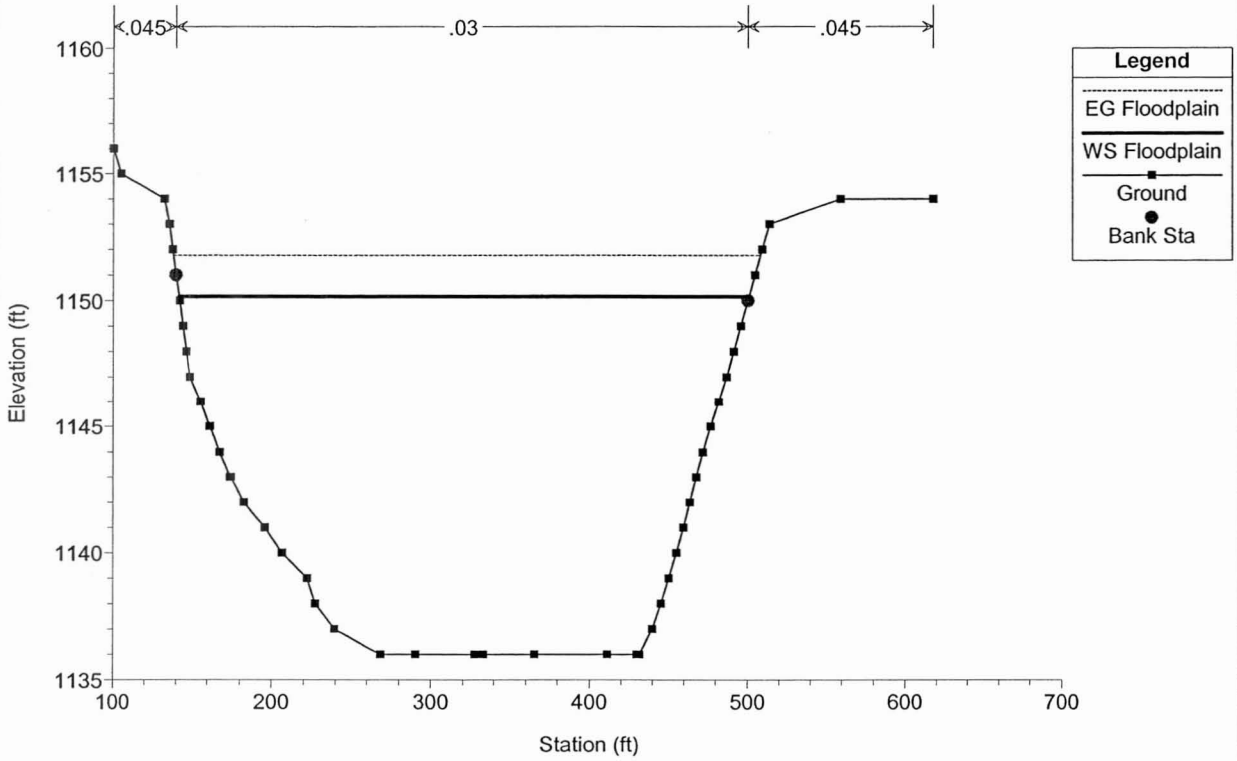

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 392
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1155
1150
1145
1140
1135
1130
0
200
400
600
800
1000
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 395.5
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1155
1150
1145
1140
1135
1130
0
200
400
600
800
1000
1200
Station (ft)

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

Geom: Corrected Geometric Data Flow: 100-Year Flow

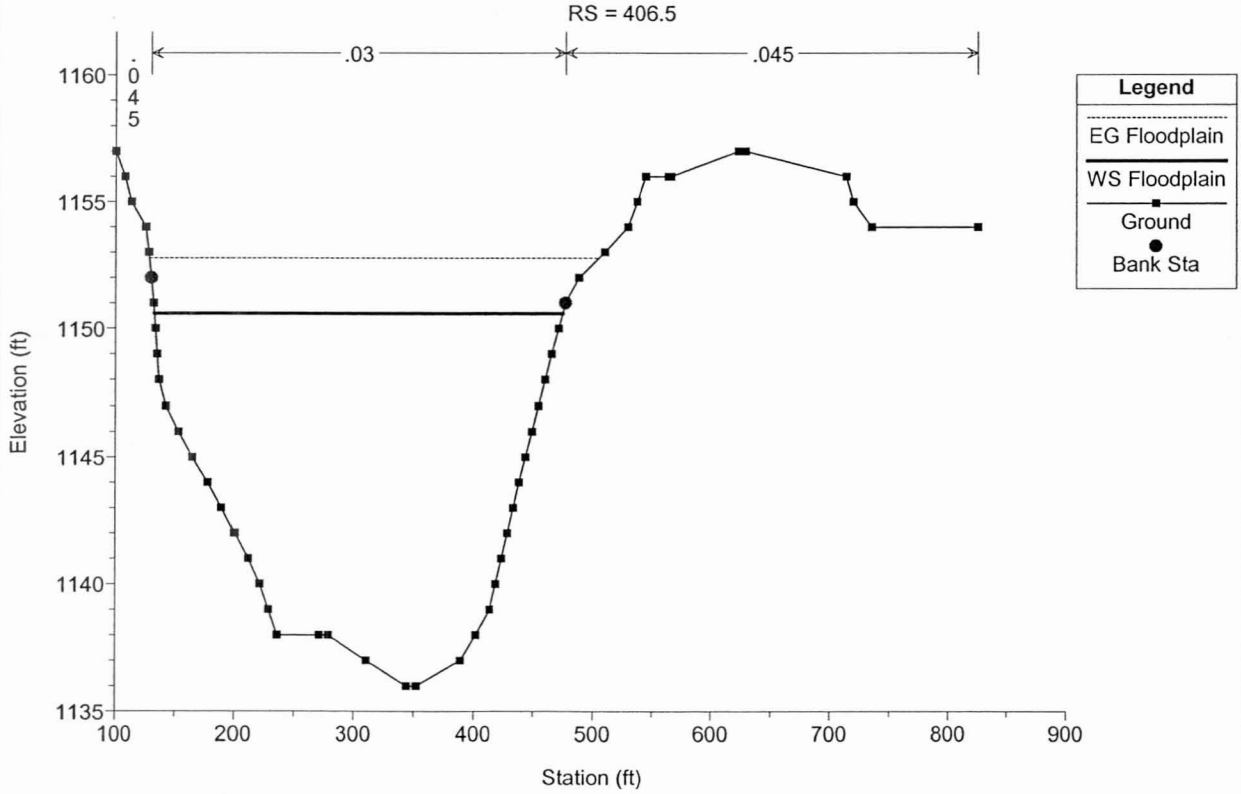
RS = 402.5

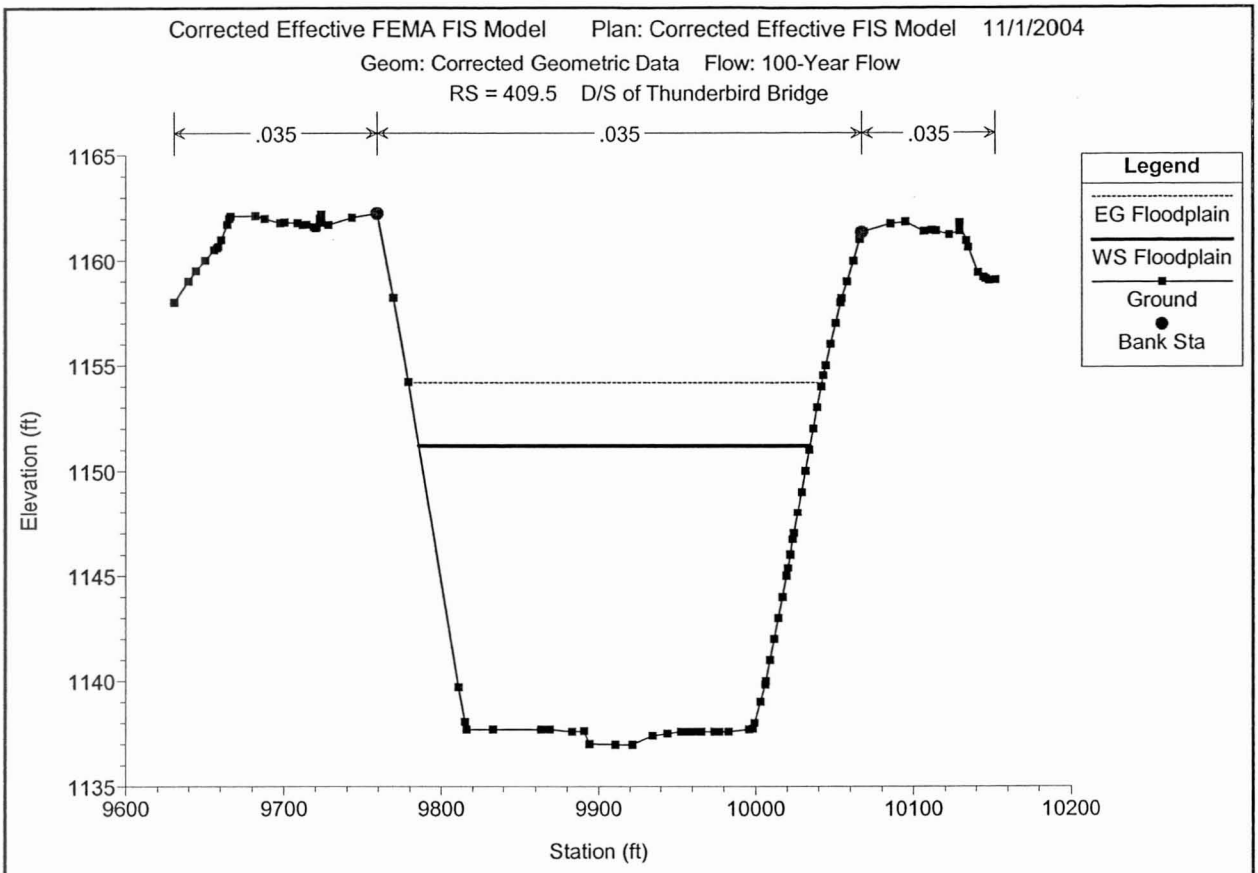


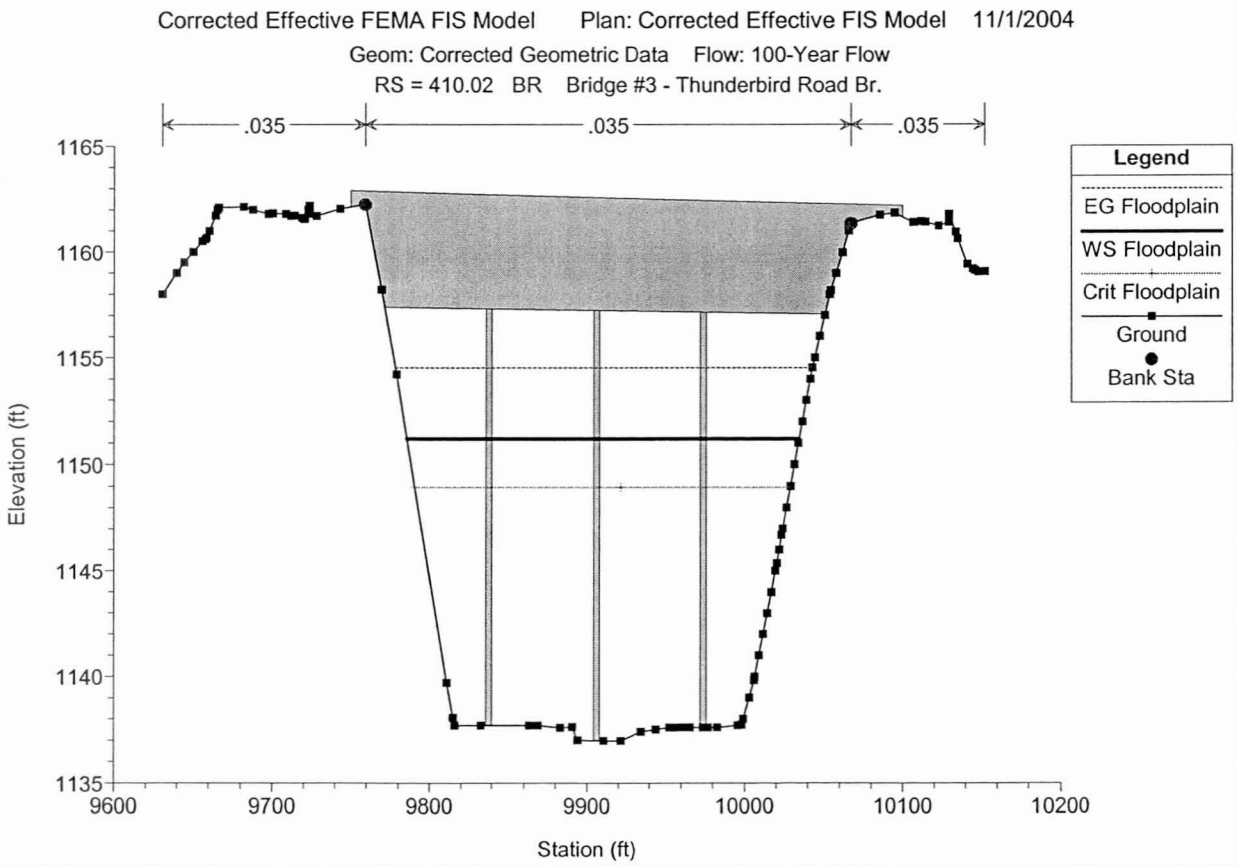
Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

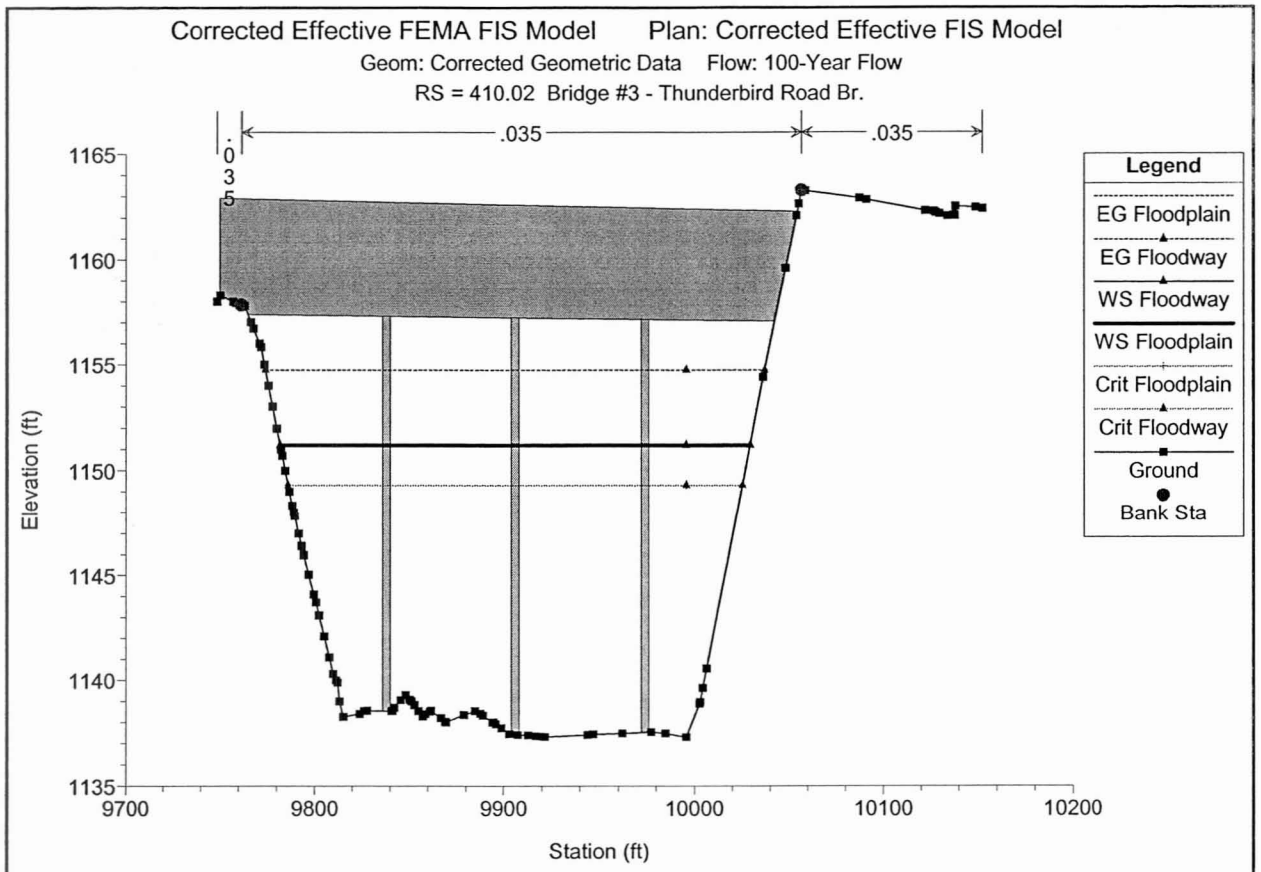
Geom: Corrected Geometric Data Flow: 100-Year Flow

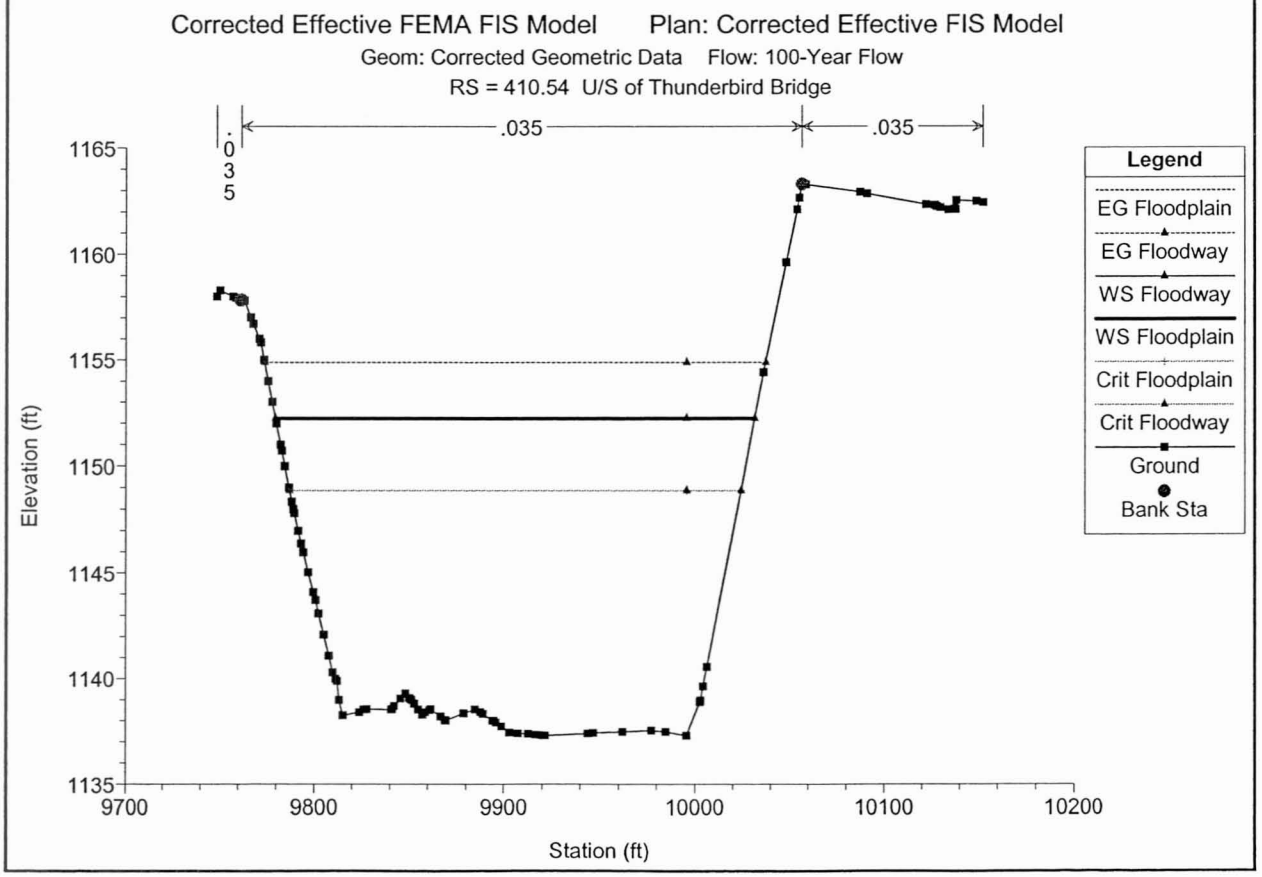
RS = 406.5




Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 409.5 D/S of Thunderbird Bridge
.035
.035
.035
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
9600
9700
9800
9900
10000
10100
10200
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 410.02 BR Bridge #3 - Thunderbird Road Br.
.035
.035
.035
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Bank Sta
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
9600
9700
9800
9900
10000
10100
10200
Station (ft)

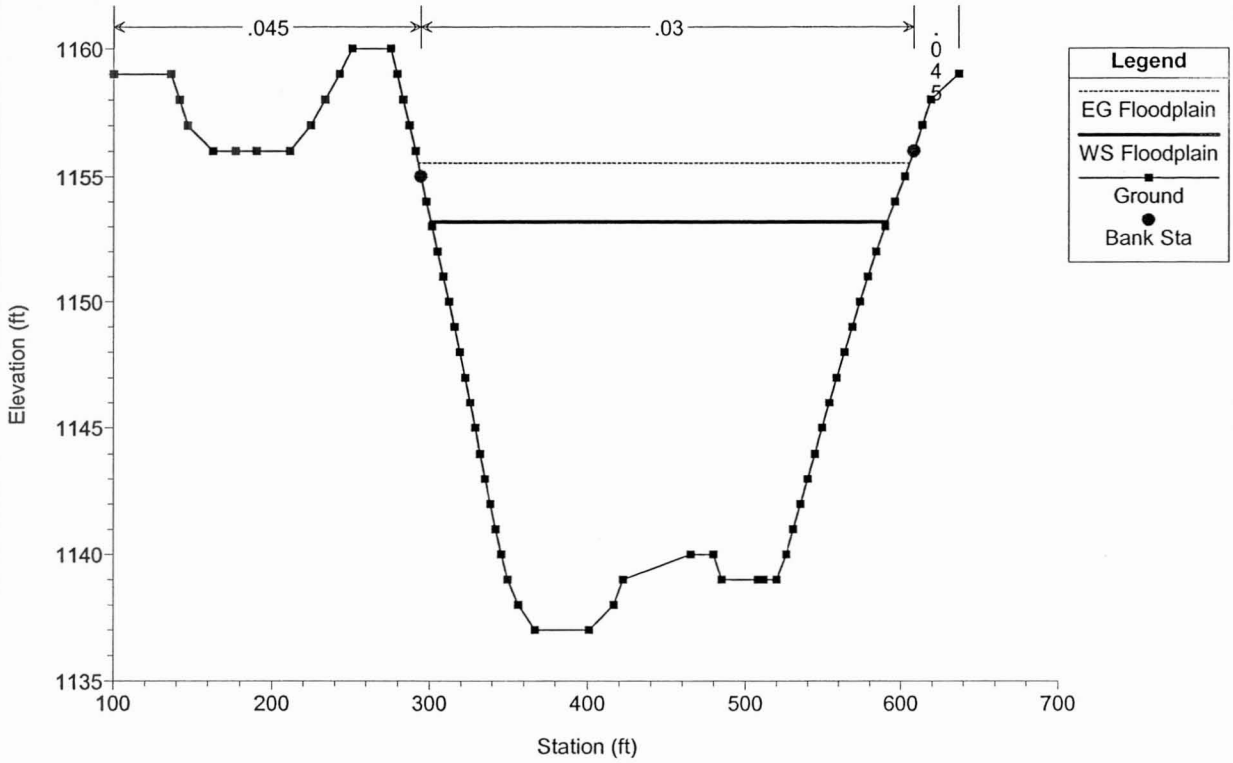

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 410.02 Bridge #3 - Thunderbird Road Br.
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG Floodplain
EG Floodway
WS Floodway
WS Floodplain
Crit Floodplain
Crit Floodway
Ground
Bank Sta


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 410.54 U/S of Thunderbird Bridge
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG Floodplain
EG Floodway
WS Floodway
WS Floodplain
Crit Floodplain
Crit Floodway
Ground
Bank Sta

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

Geom: Corrected Geometric Data Flow: 100-Year Flow

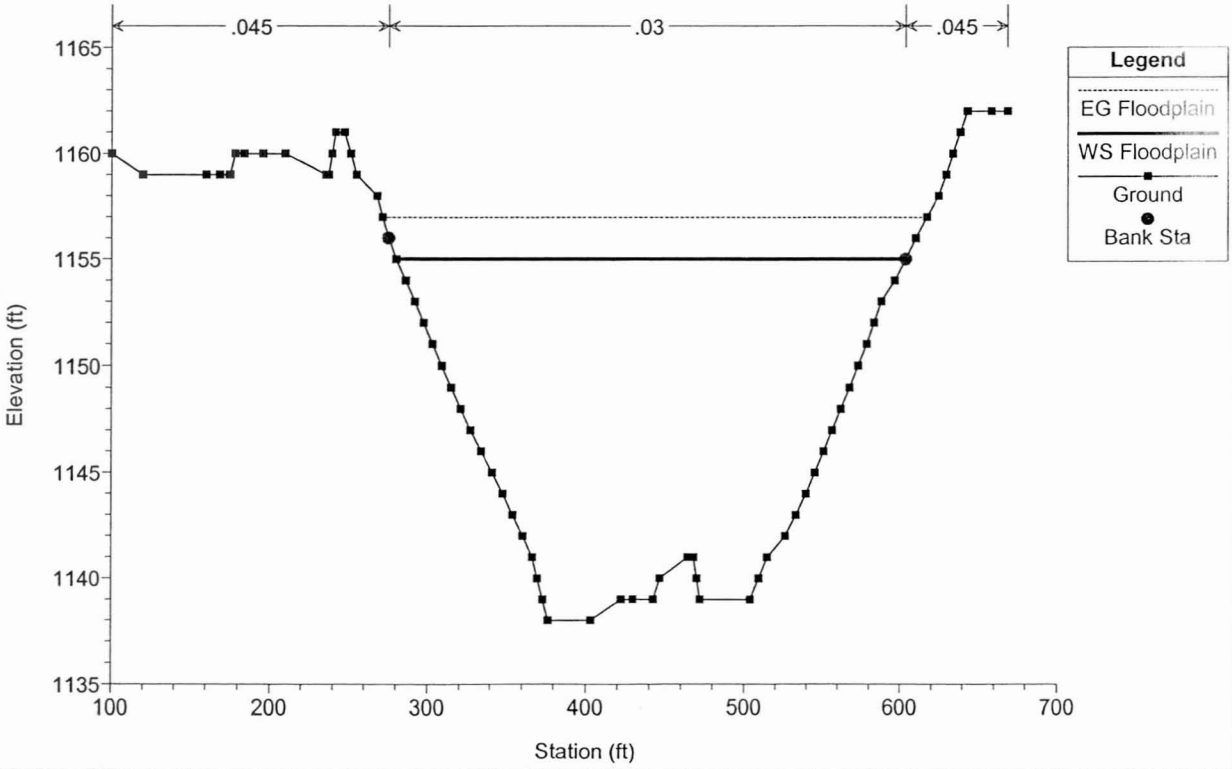
RS = 412.76

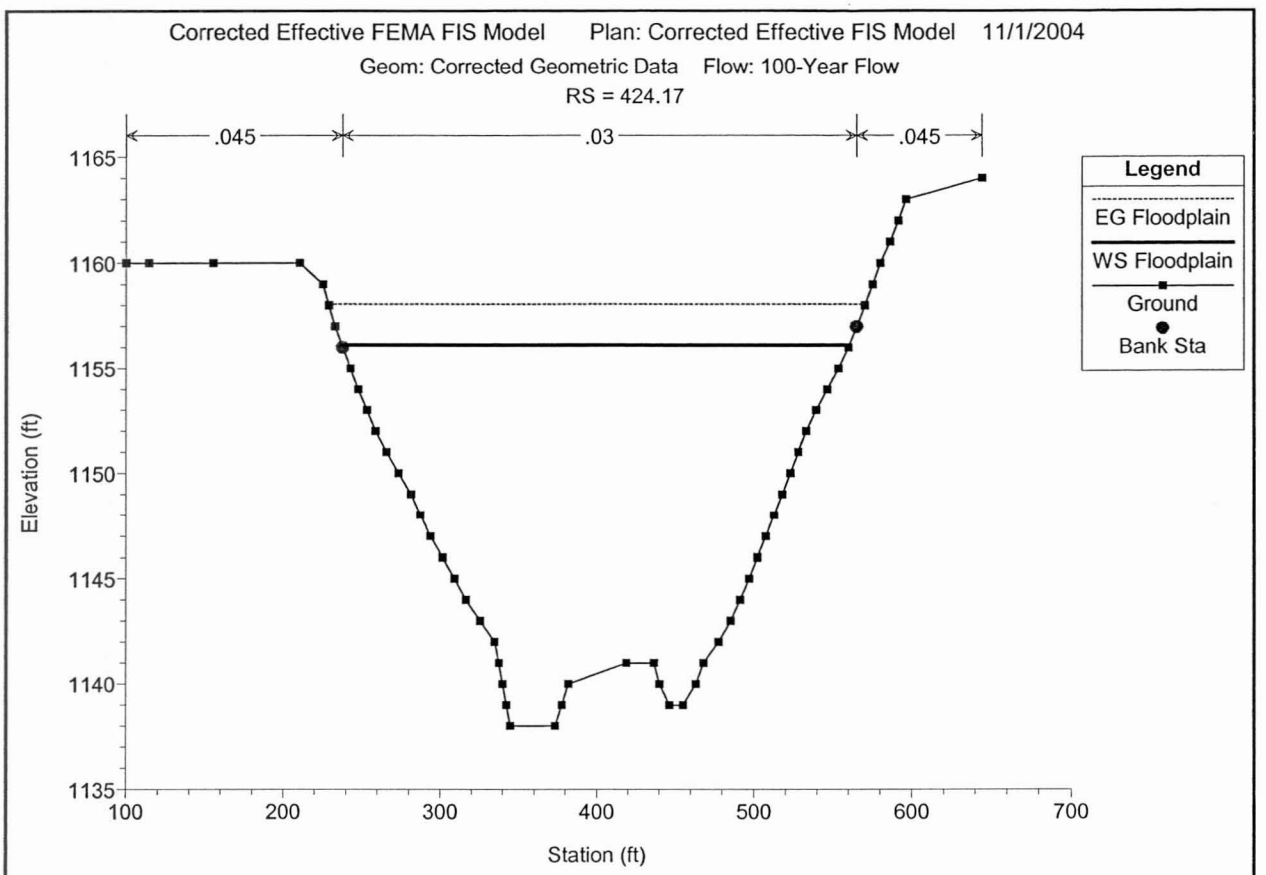


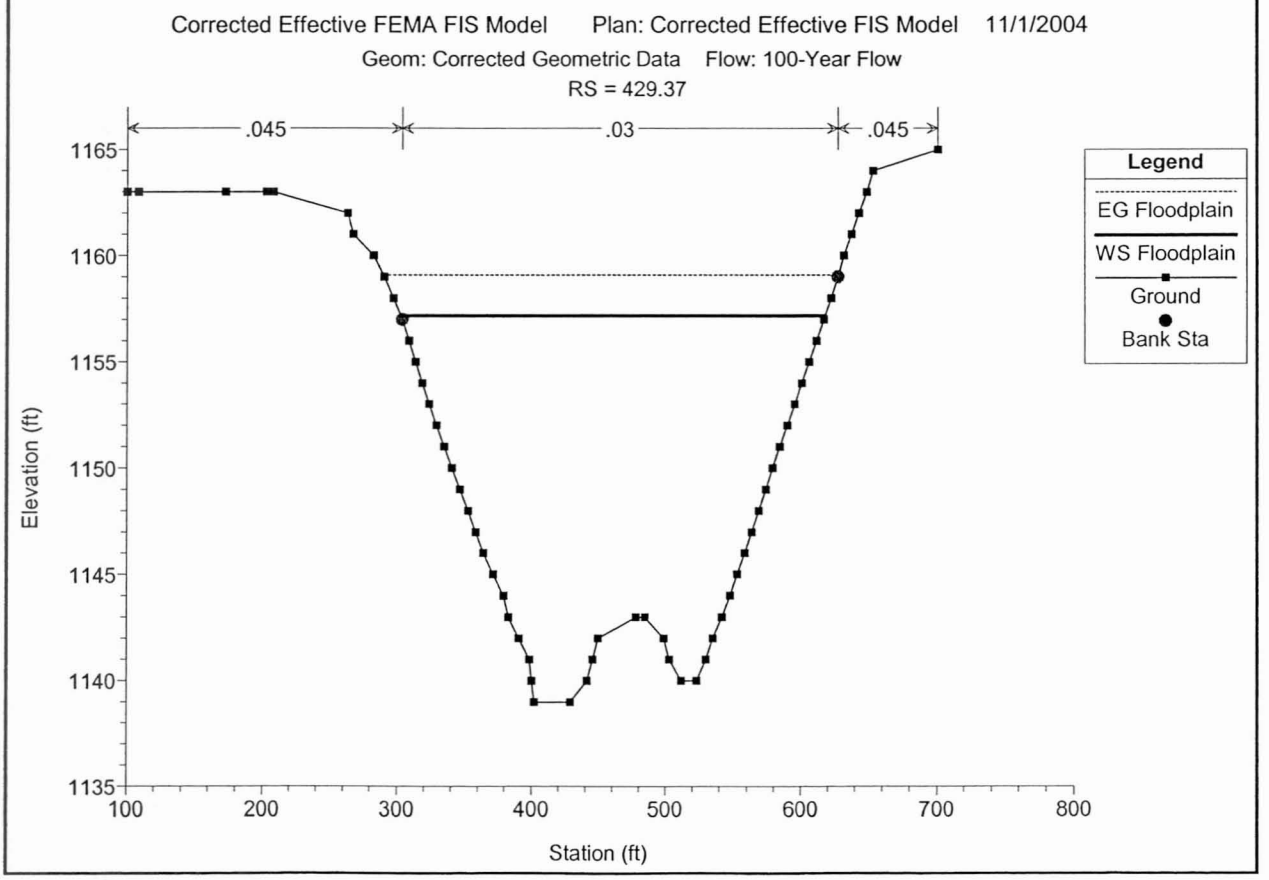
Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

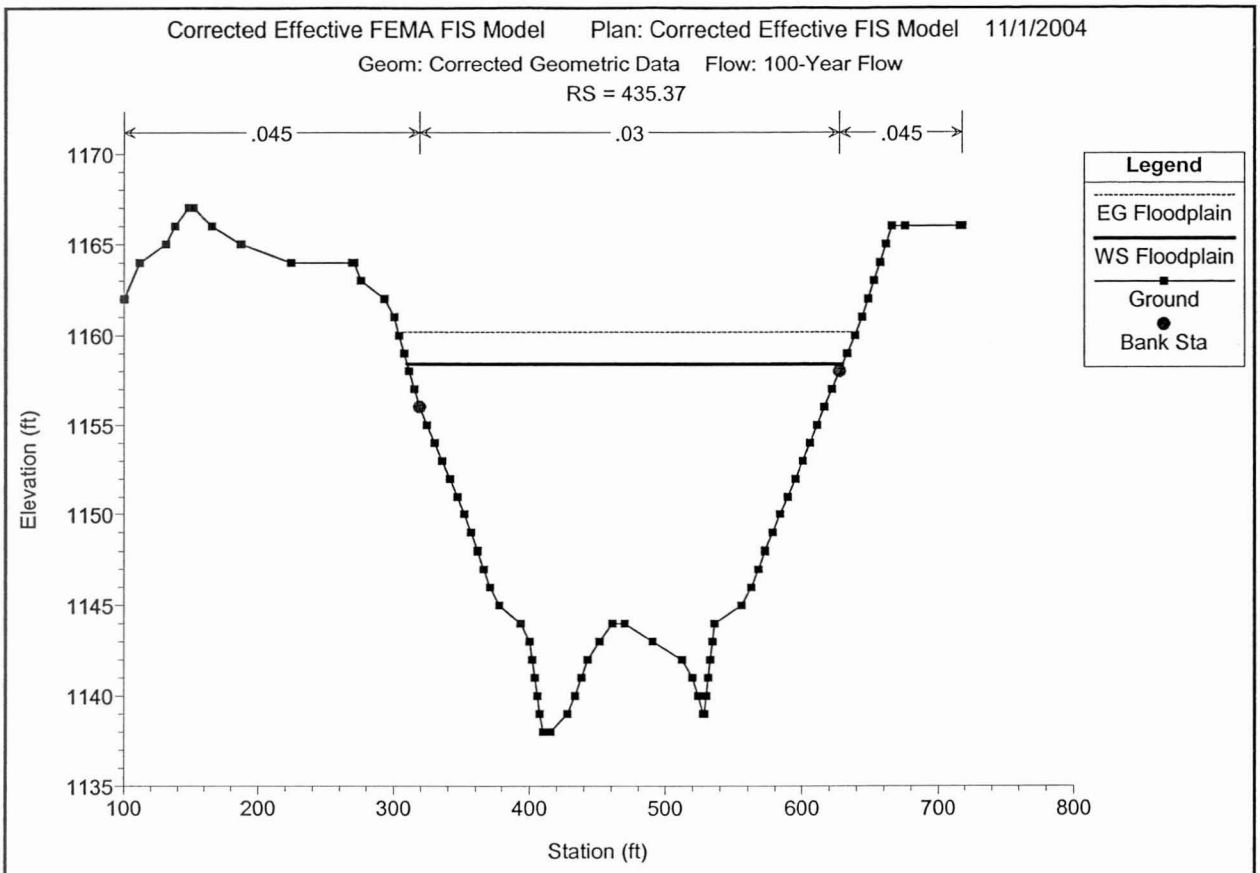
Geom: Corrected Geometric Data Flow: 100-Year Flow

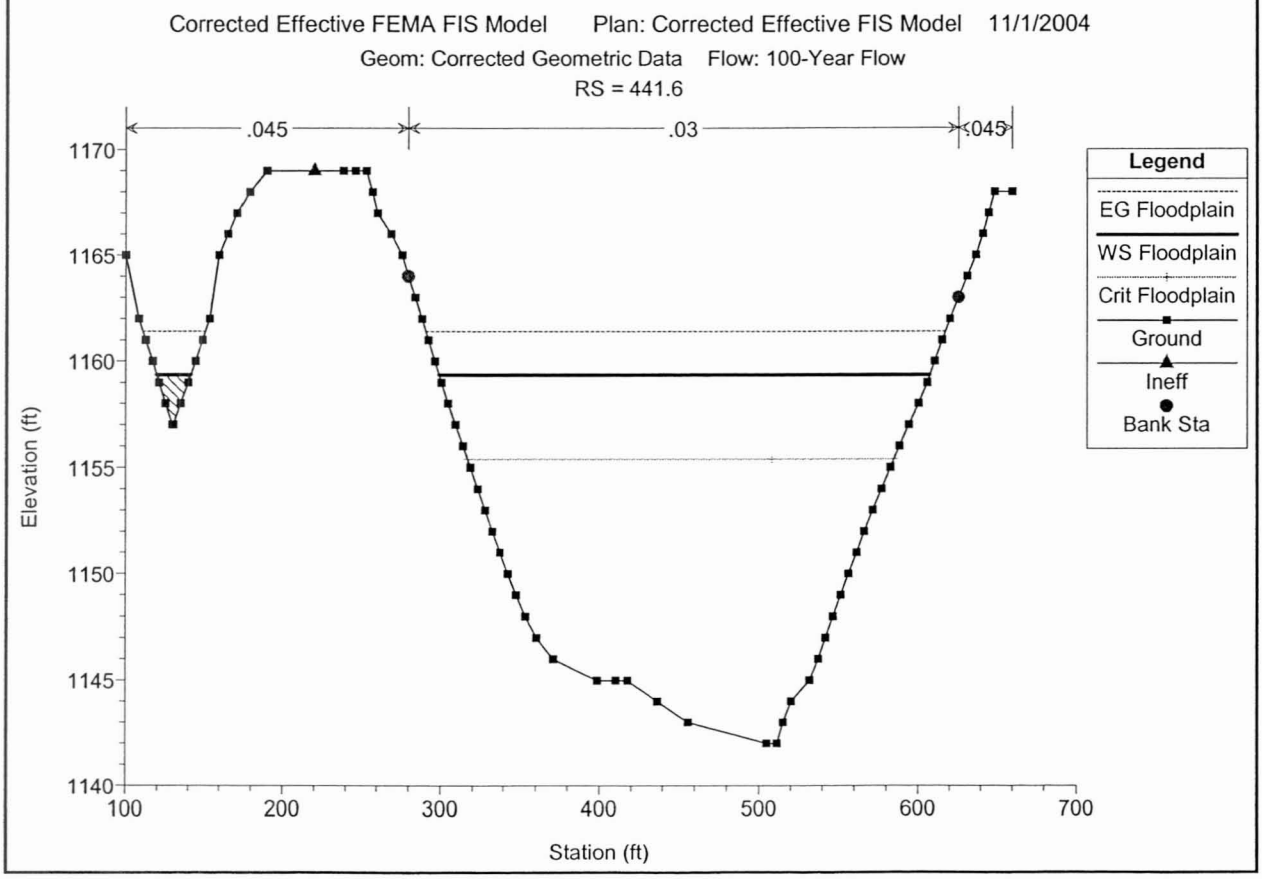
RS = 418.97

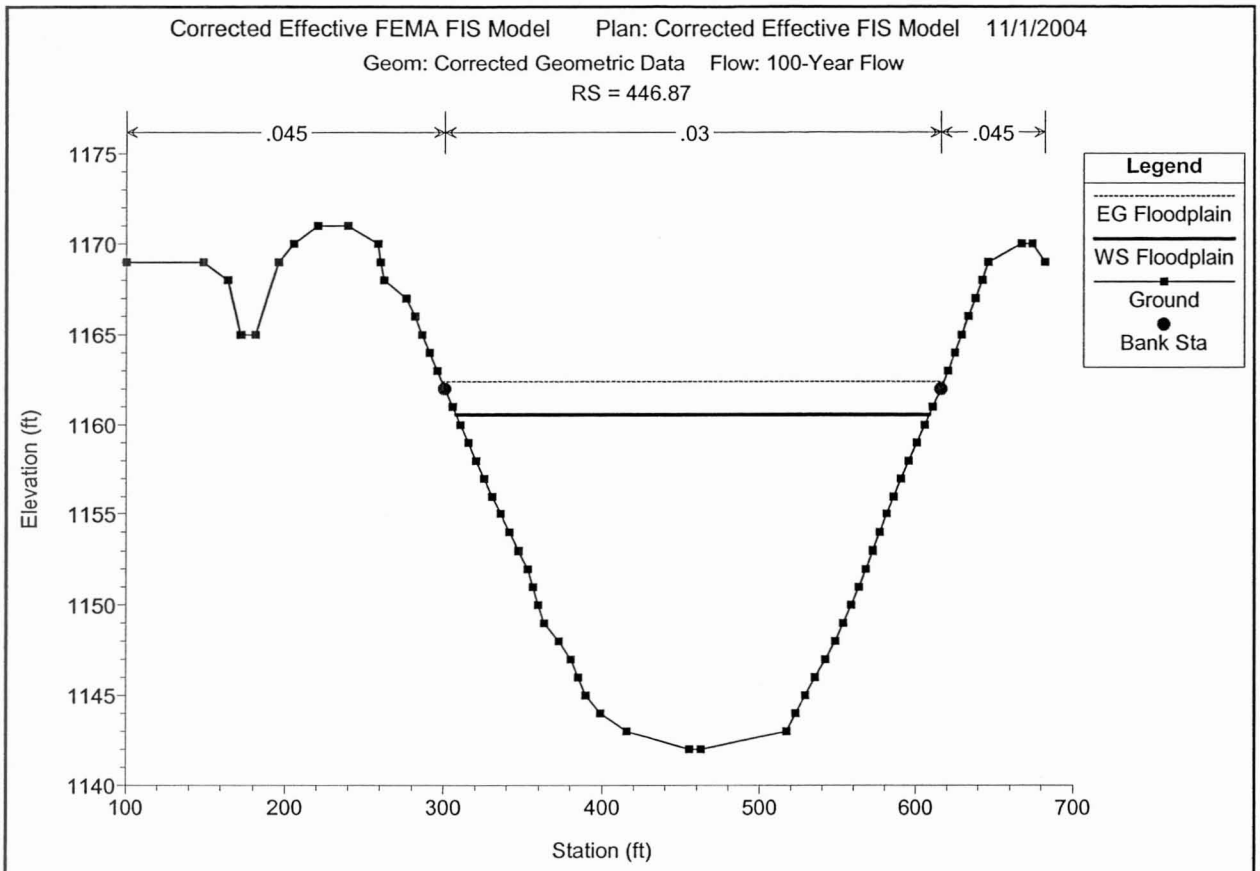


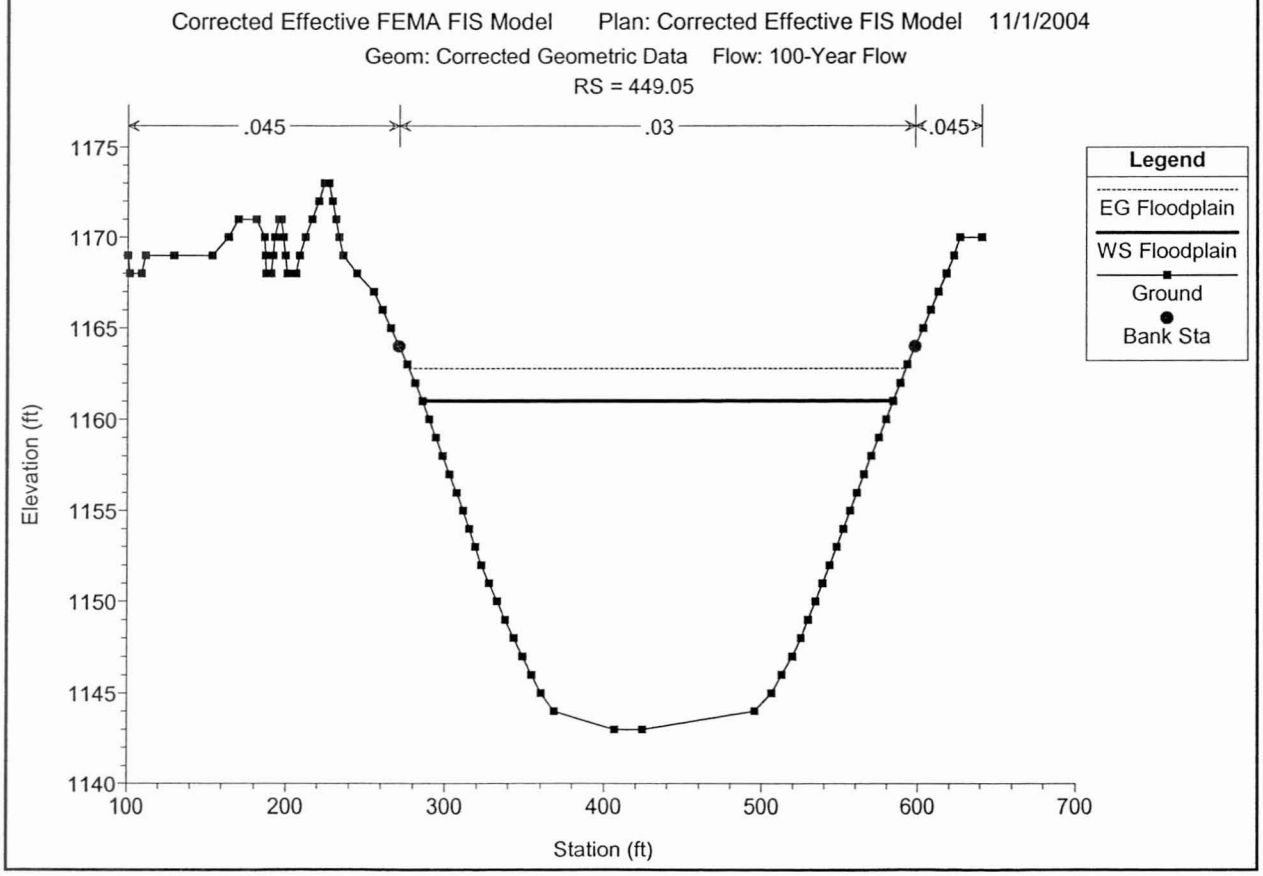

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 424.17
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
100
200
300
400
500
600
700
Station (ft)

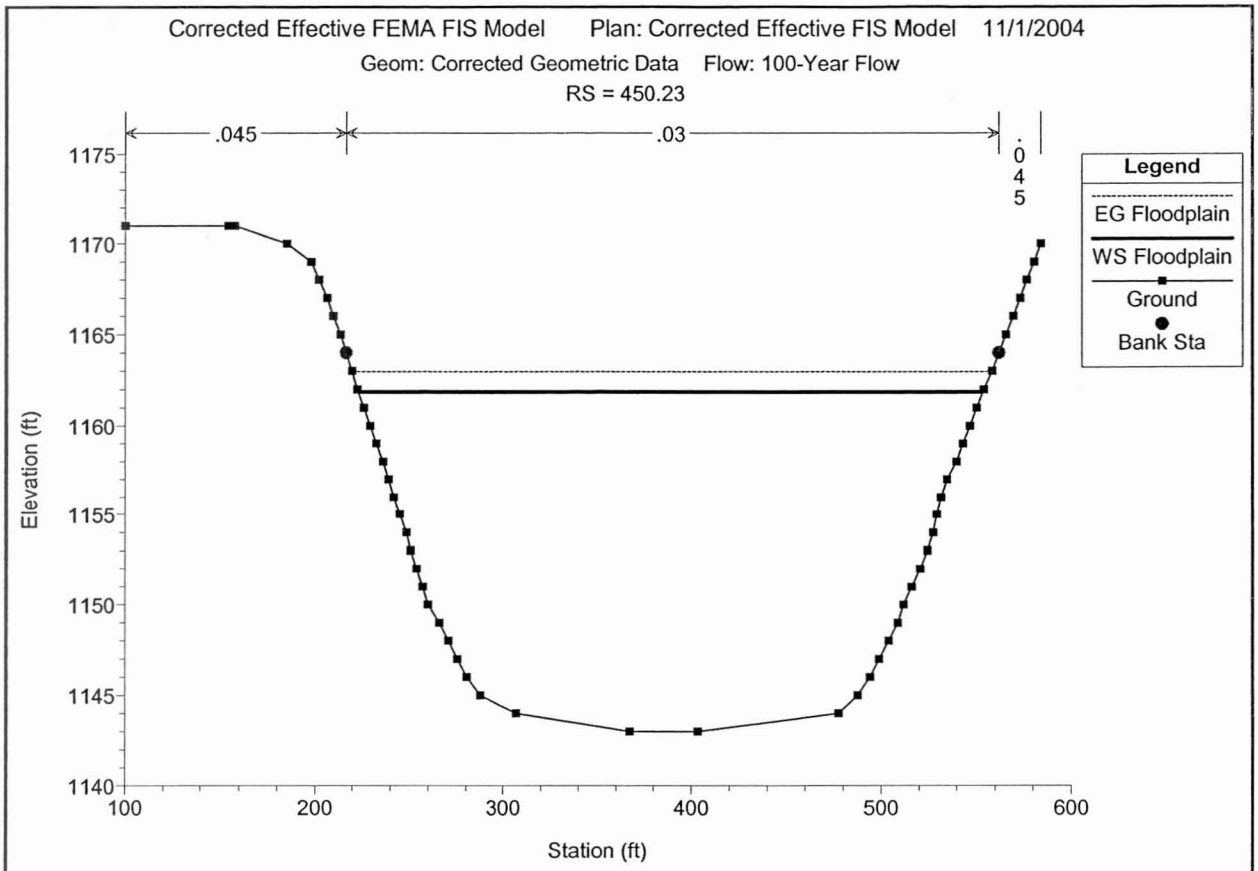

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 429.37
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
100
200
300
400
500
600
700
800
Station (ft)

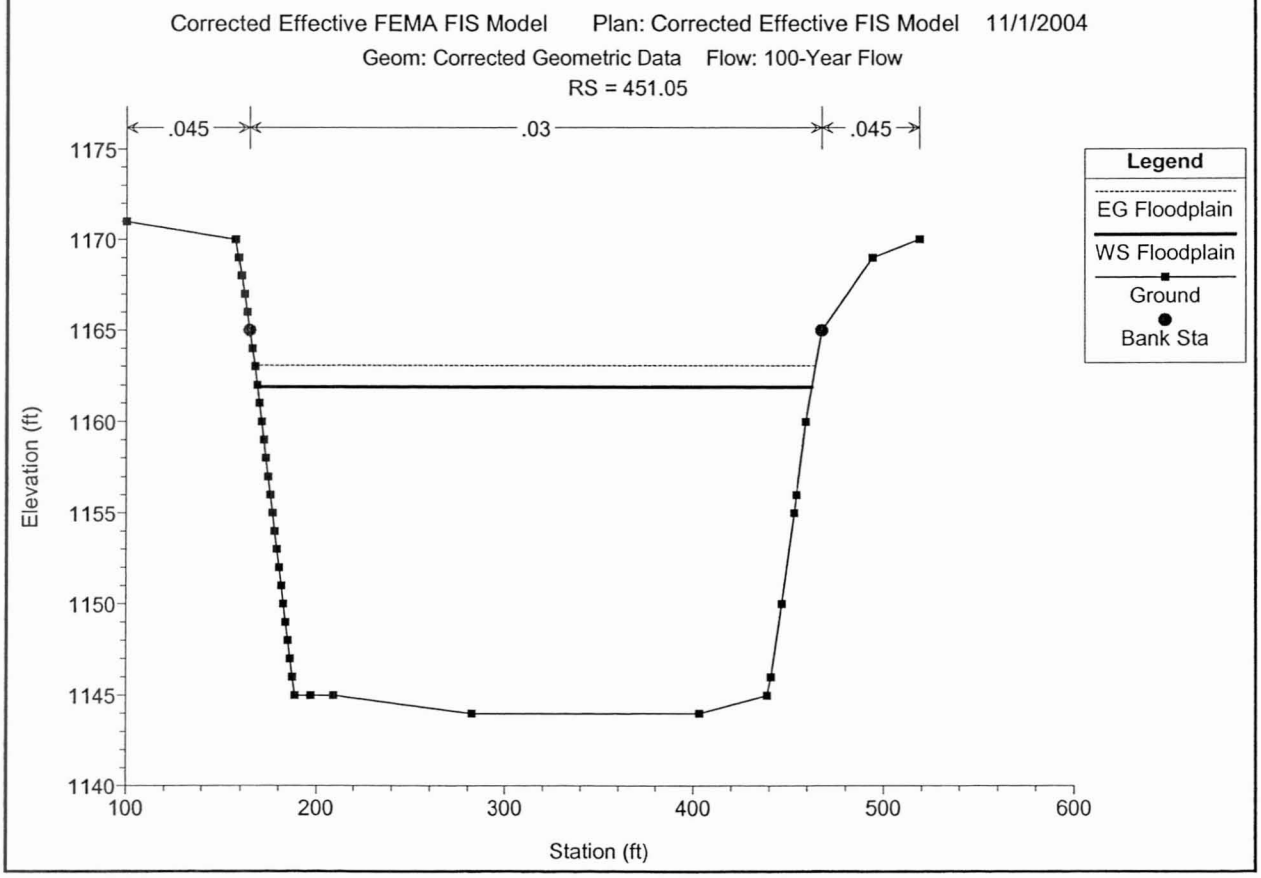

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 435.37
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)

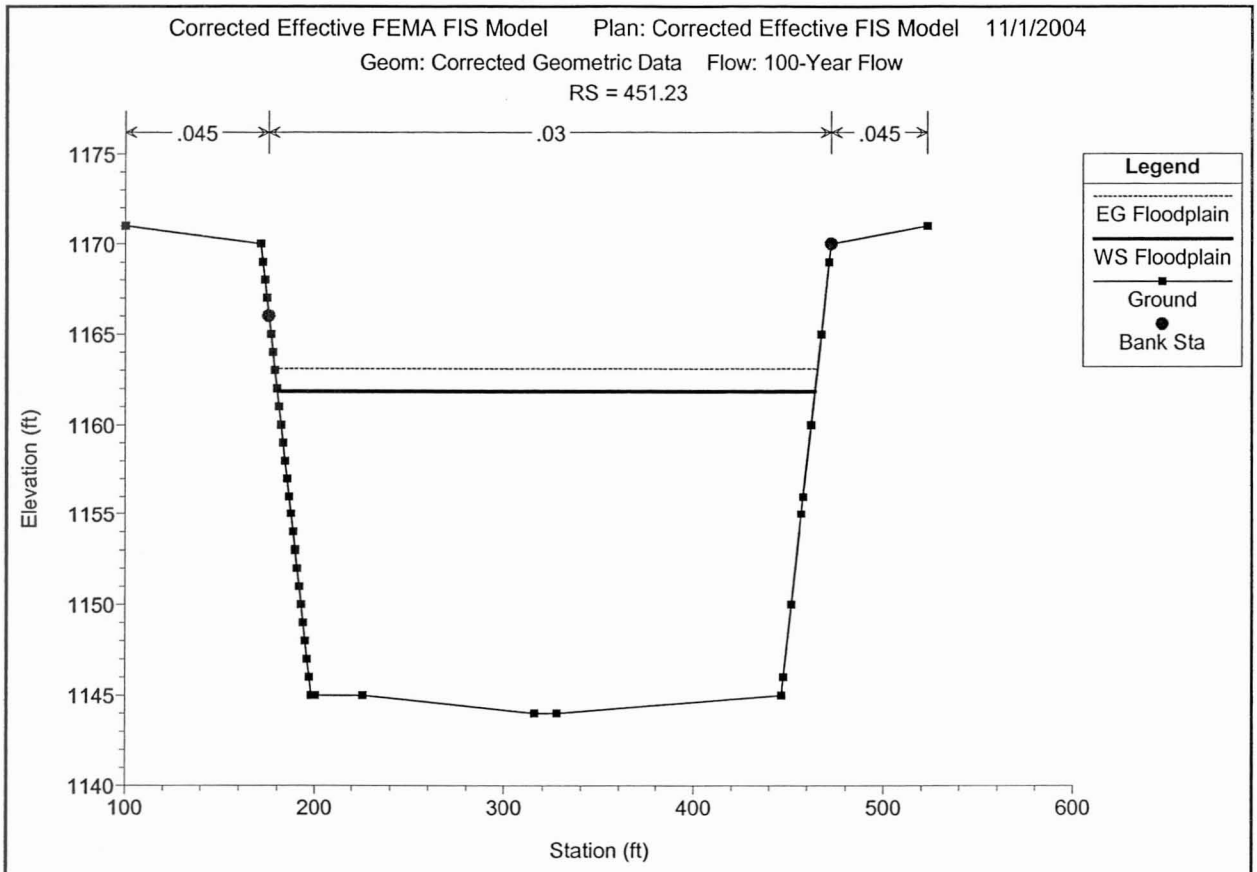

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 441.6
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

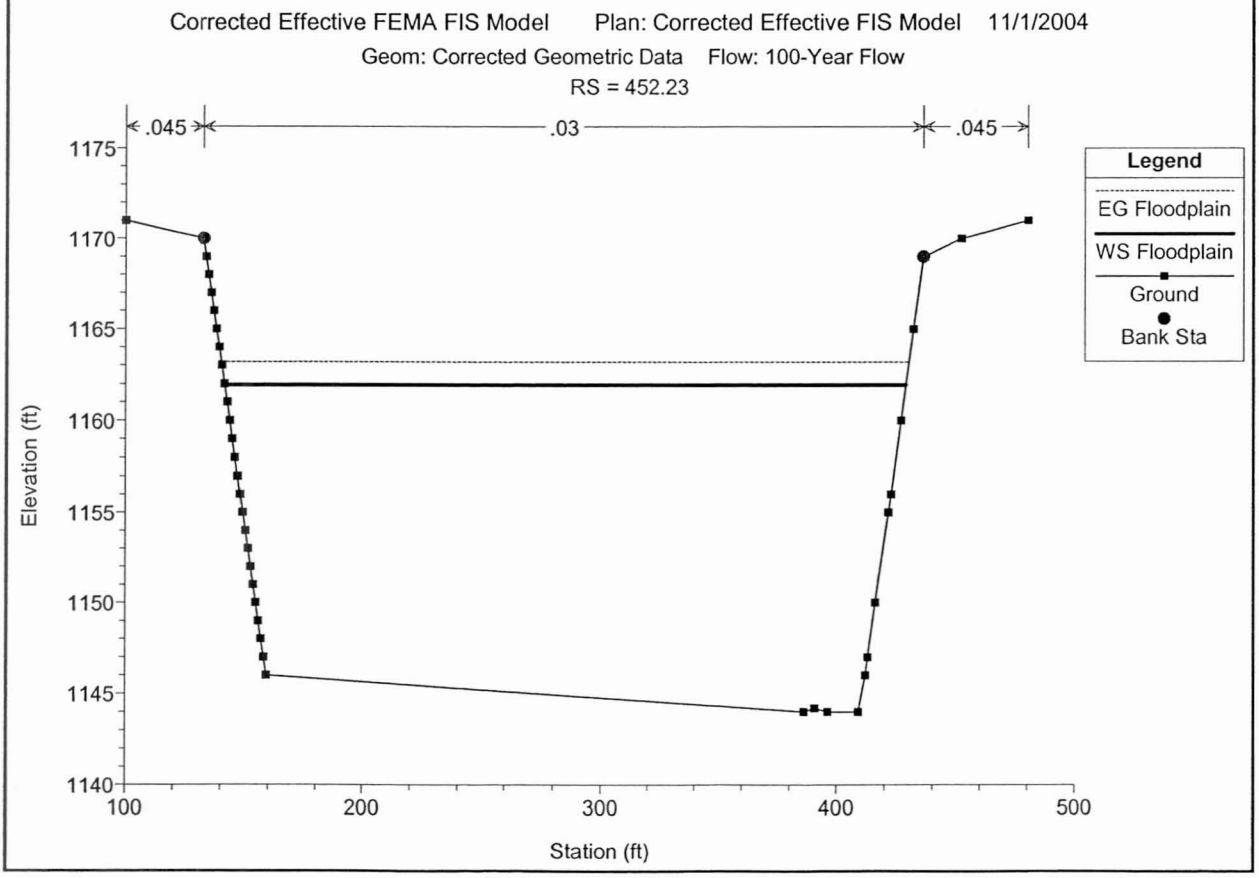

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 446.87
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)

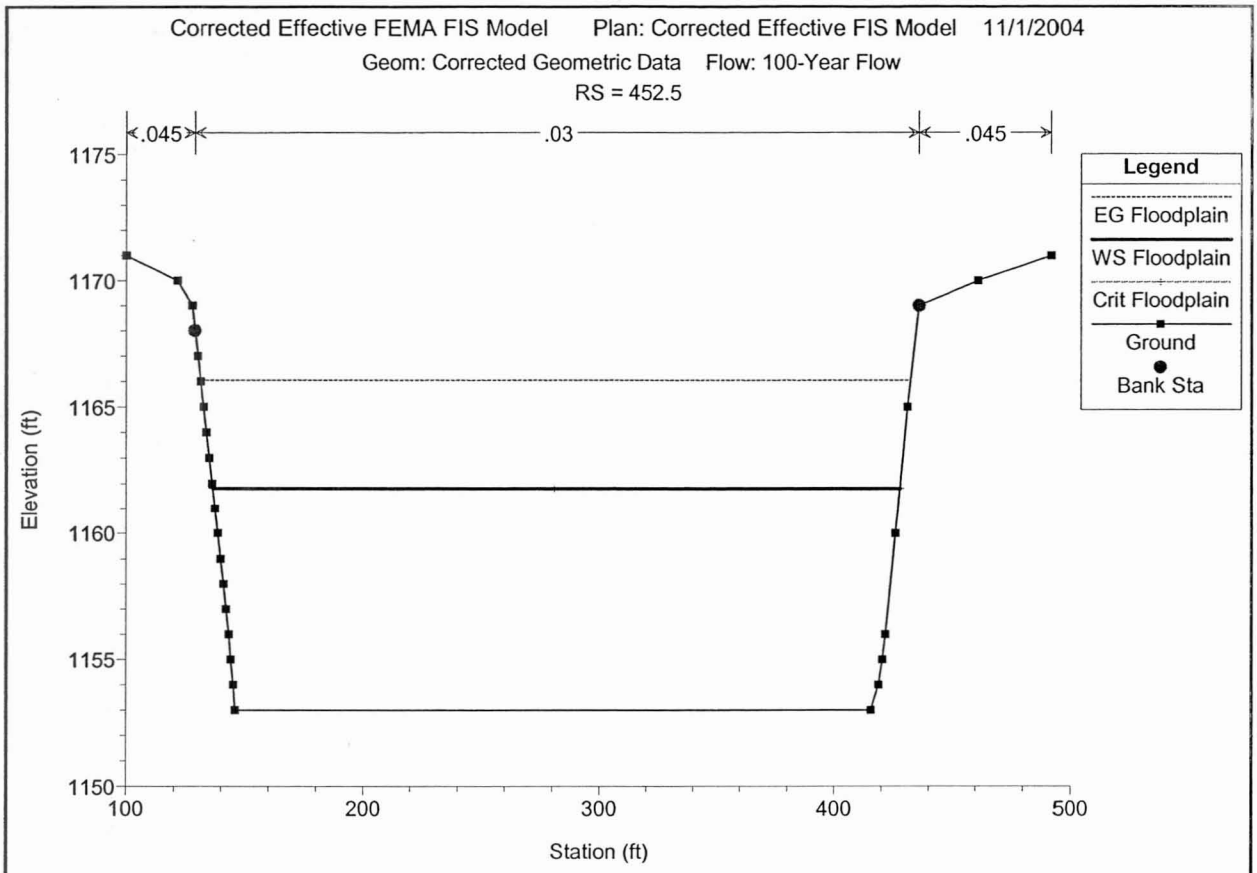

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 449.05
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)

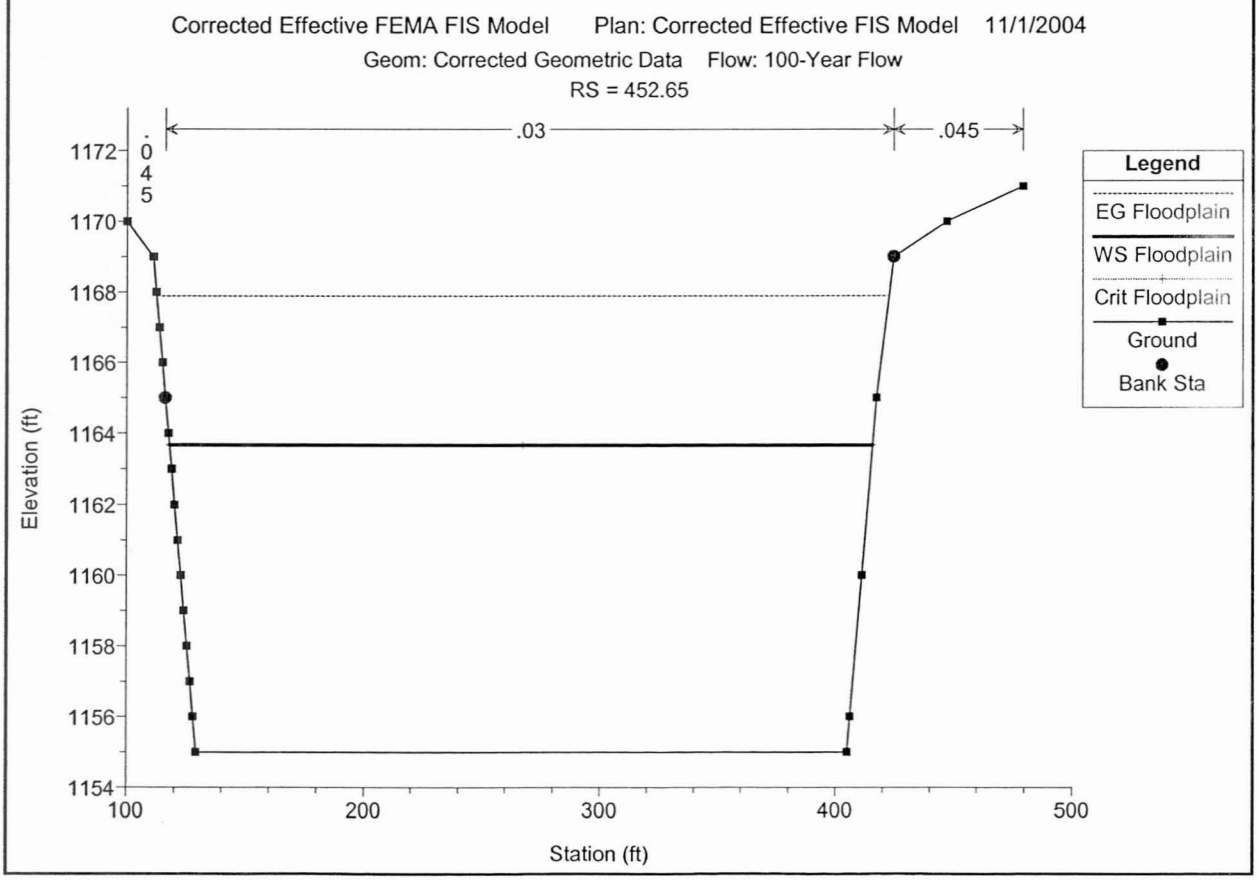

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 450.23
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)
1175
1170
1165
1160
1155
1150
1145
1140
100
200
300
400
500
600


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 451.05
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)
1175
1170
1165
1160
1155
1150
1145
1140
100
200
300
400
500
600


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 451.23
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 452.23
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Ground
Bank Sta
Elevation (ft)
Station (ft)

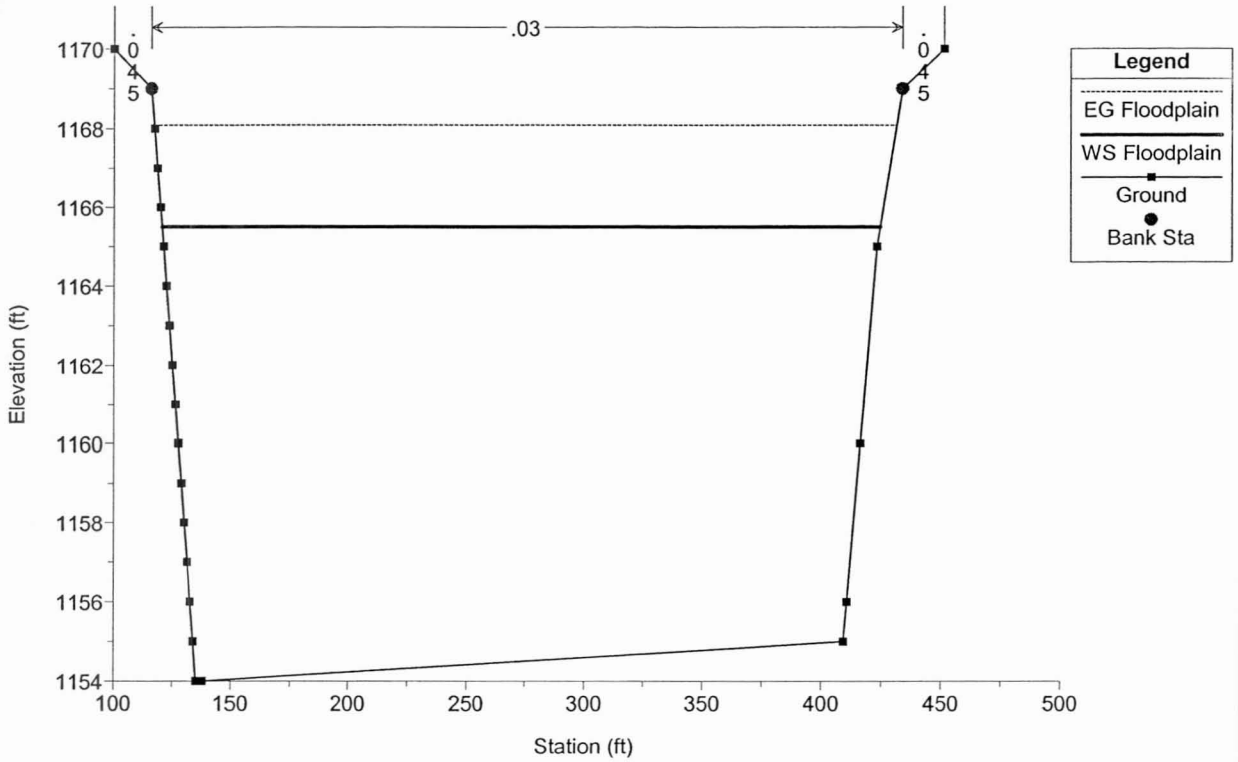

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 452.5
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Bank Sta
Elevation (ft)
1175
1170
1165
1160
1155
1150
100
200
300
400
500
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 452.65
.045
.03
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Bank Sta
Elevation (ft)
1172
1170
1168
1166
1164
1162
1160
1158
1156
1154
100
200
300
400
500
Station (ft)

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

Geom: Corrected Geometric Data Flow: 100-Year Flow

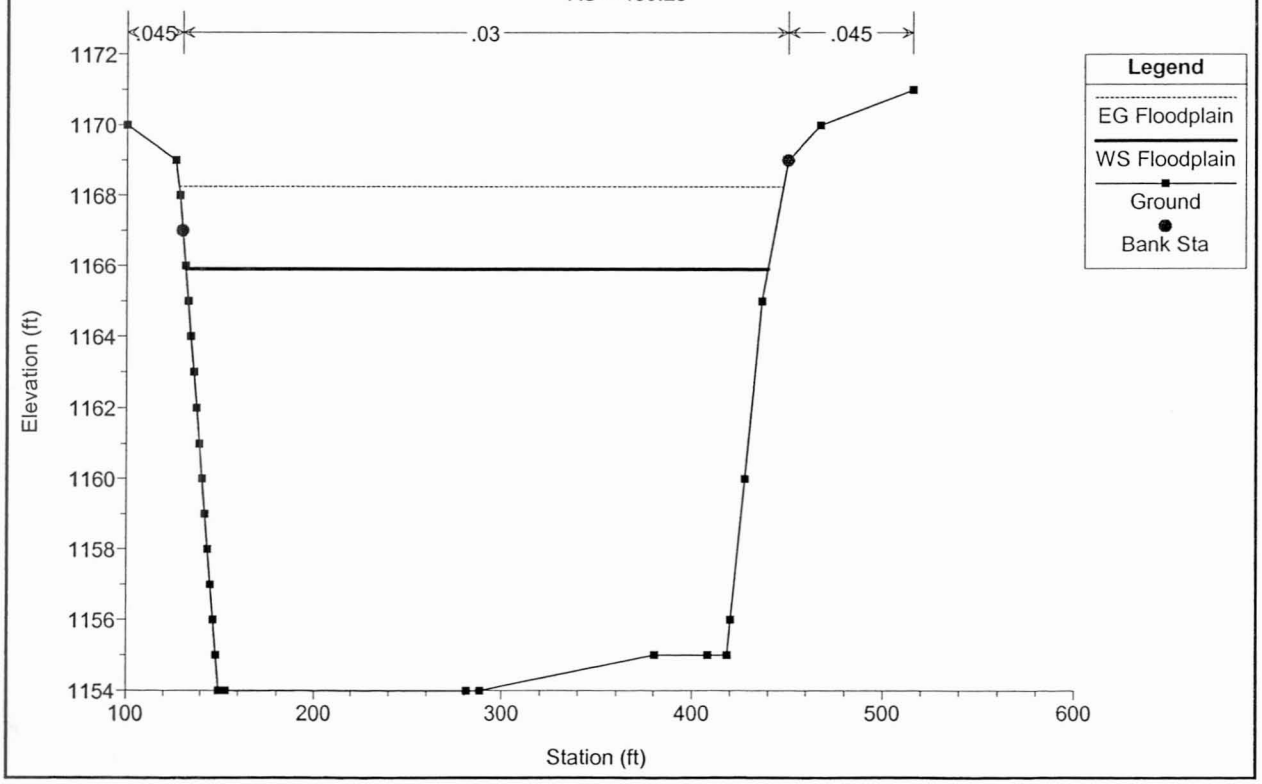
RS = 452.73

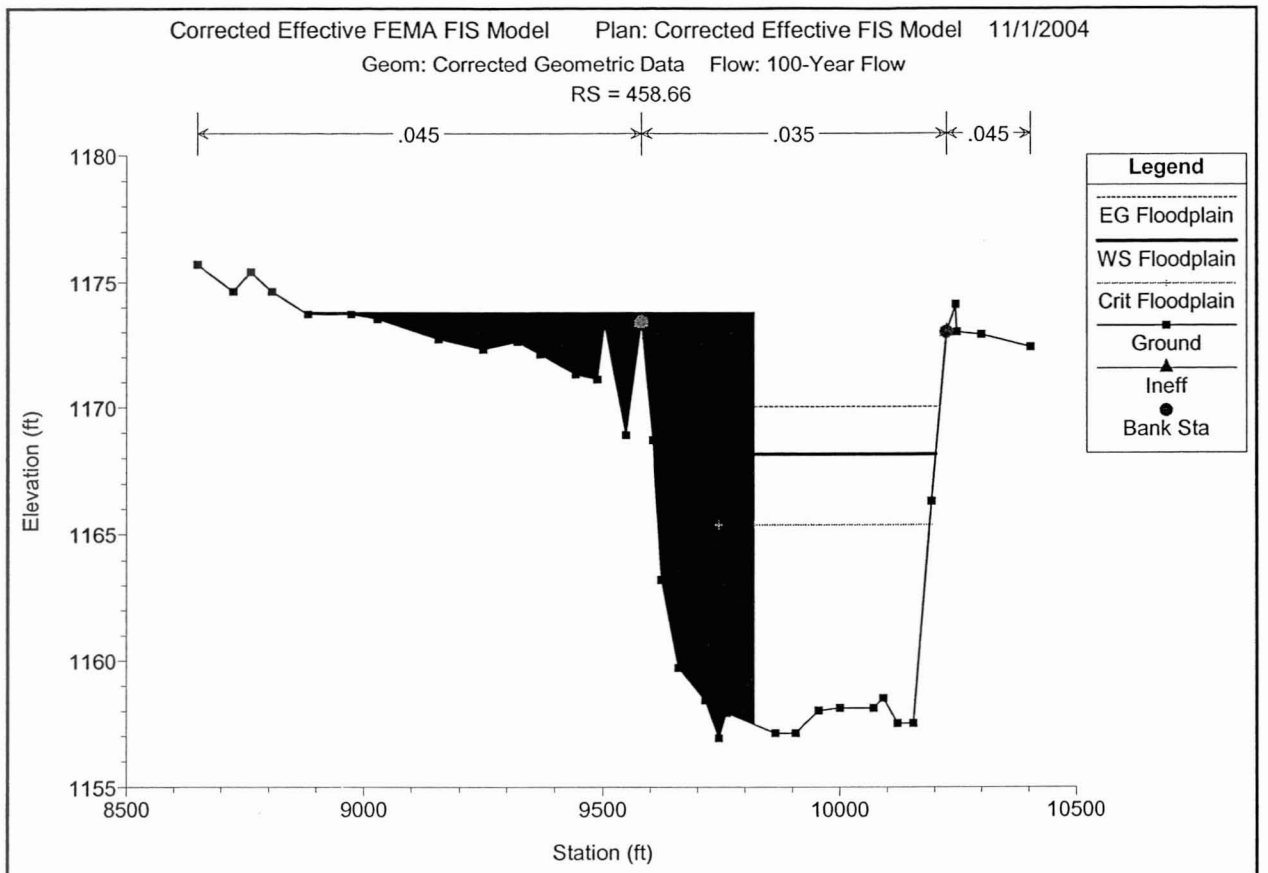


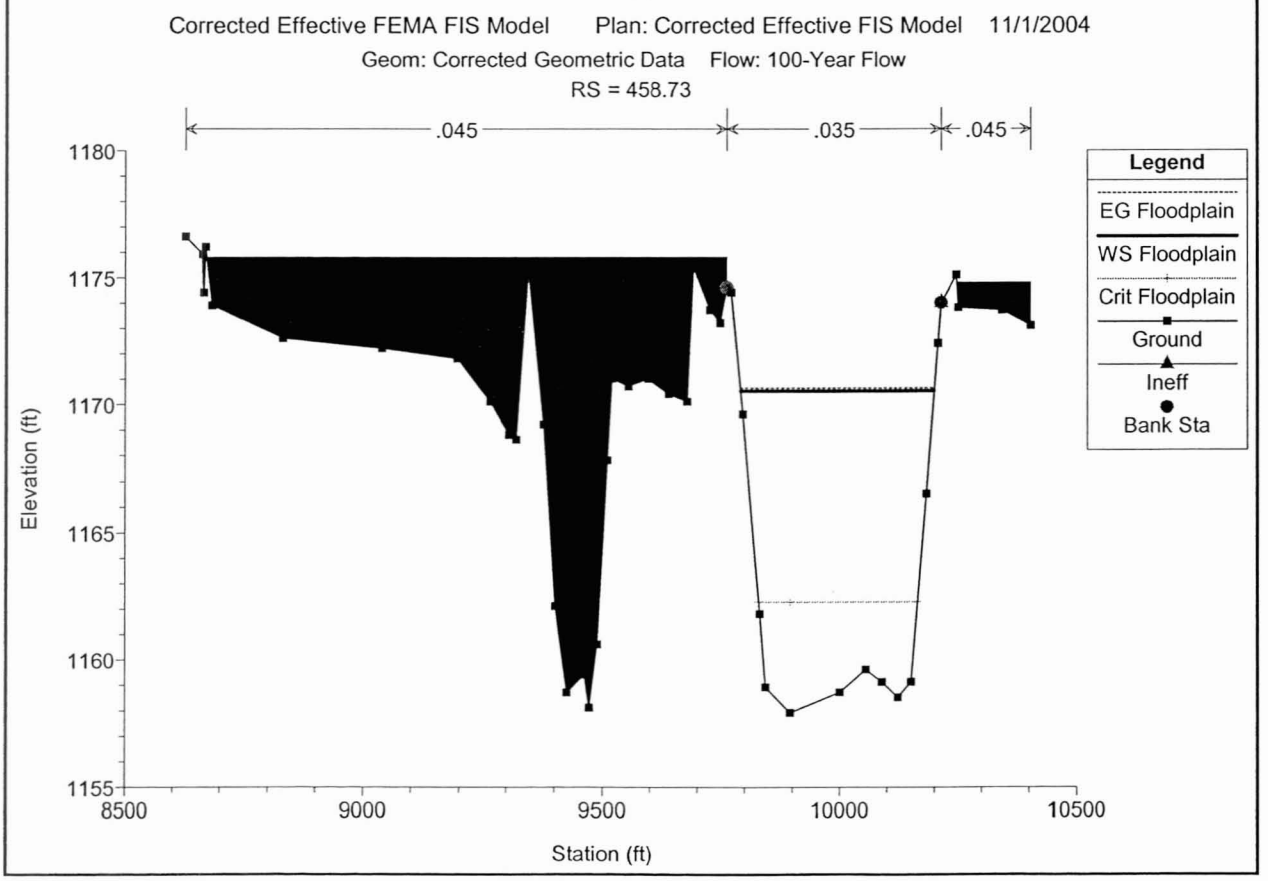
Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004

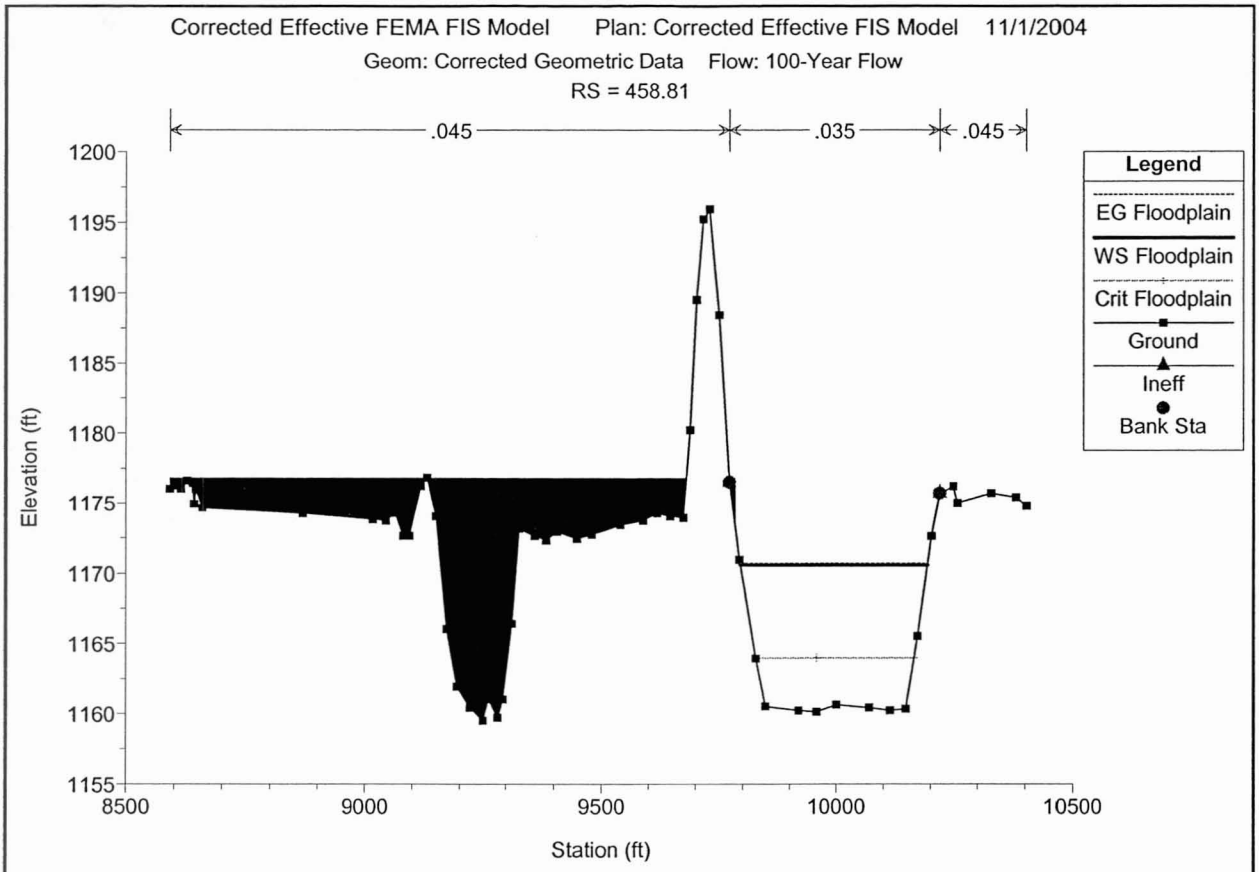
Geom: Corrected Geometric Data Flow: 100-Year Flow

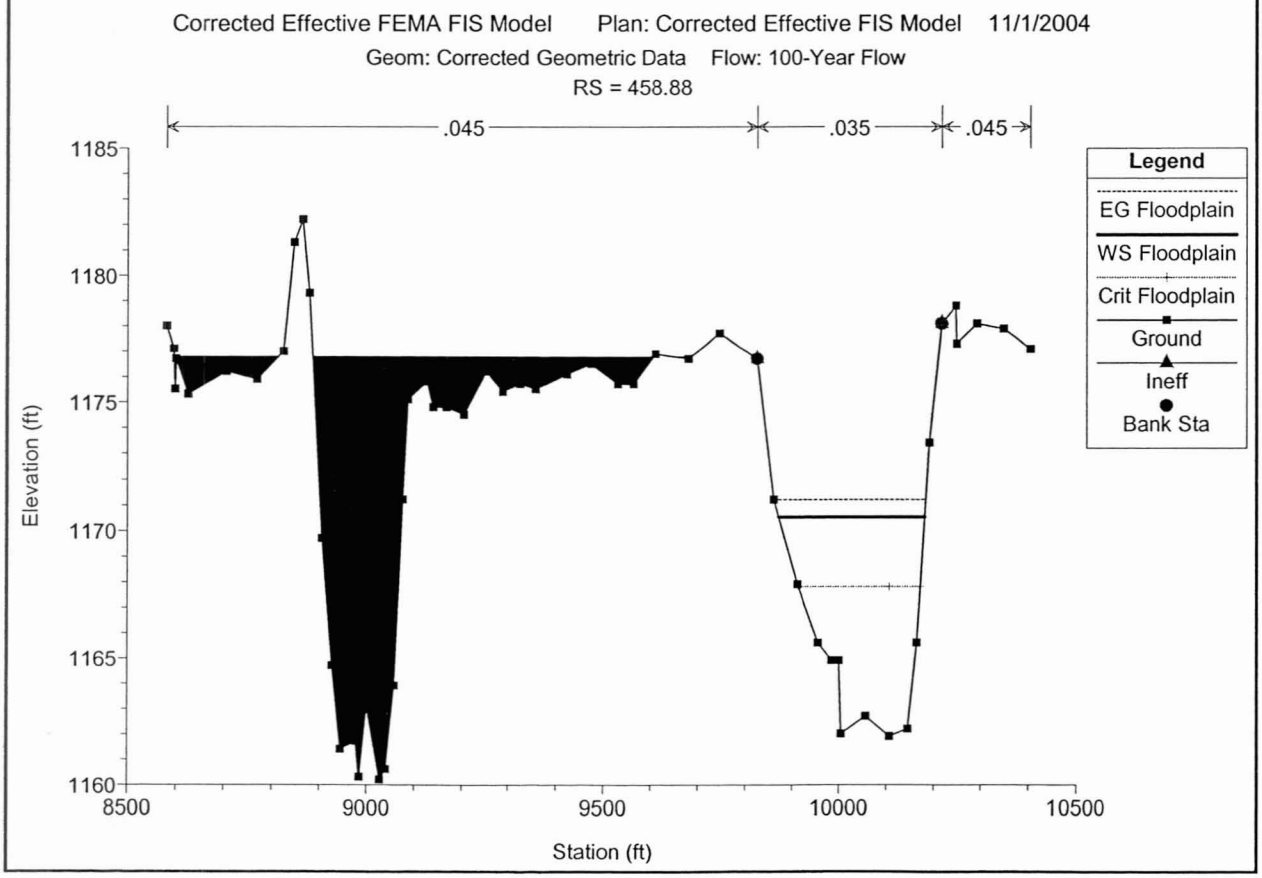
RS = 453.23

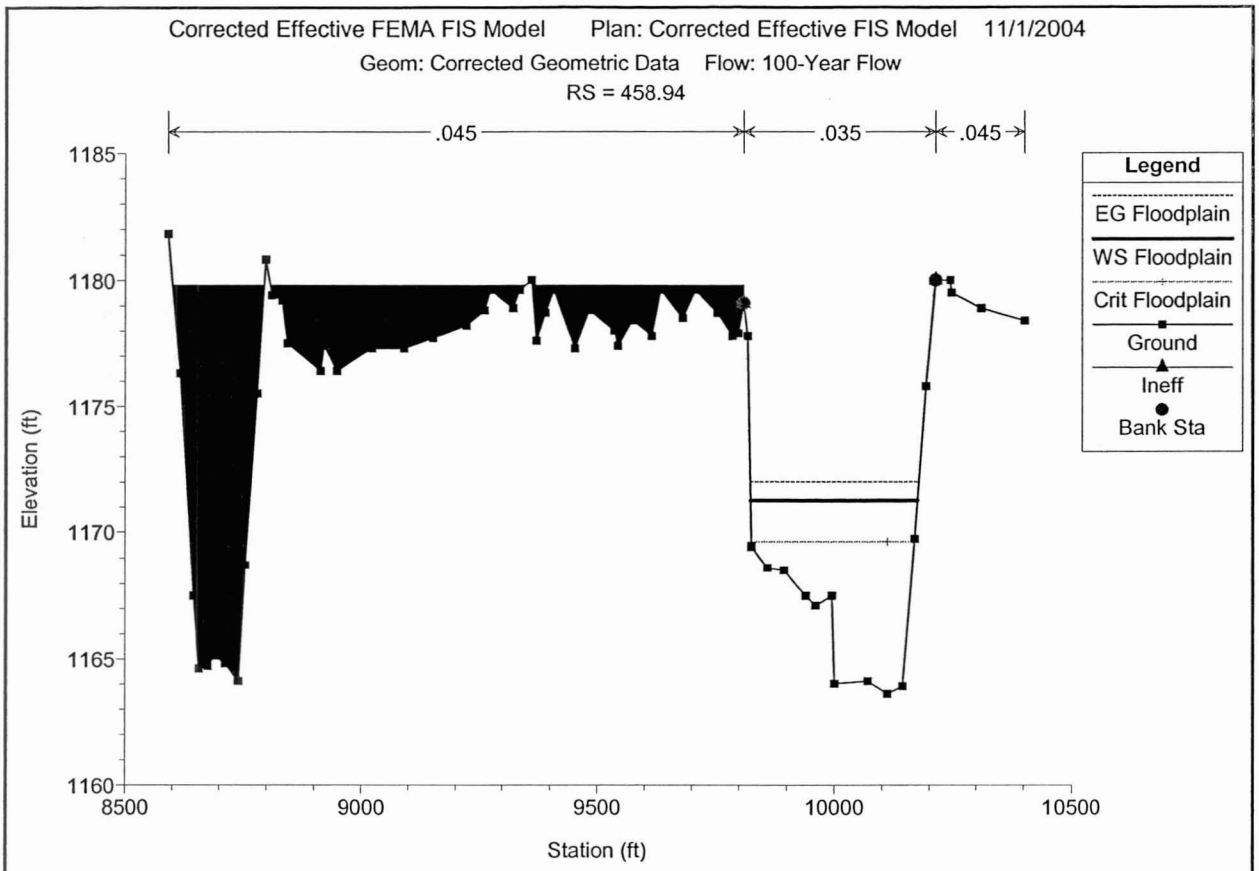


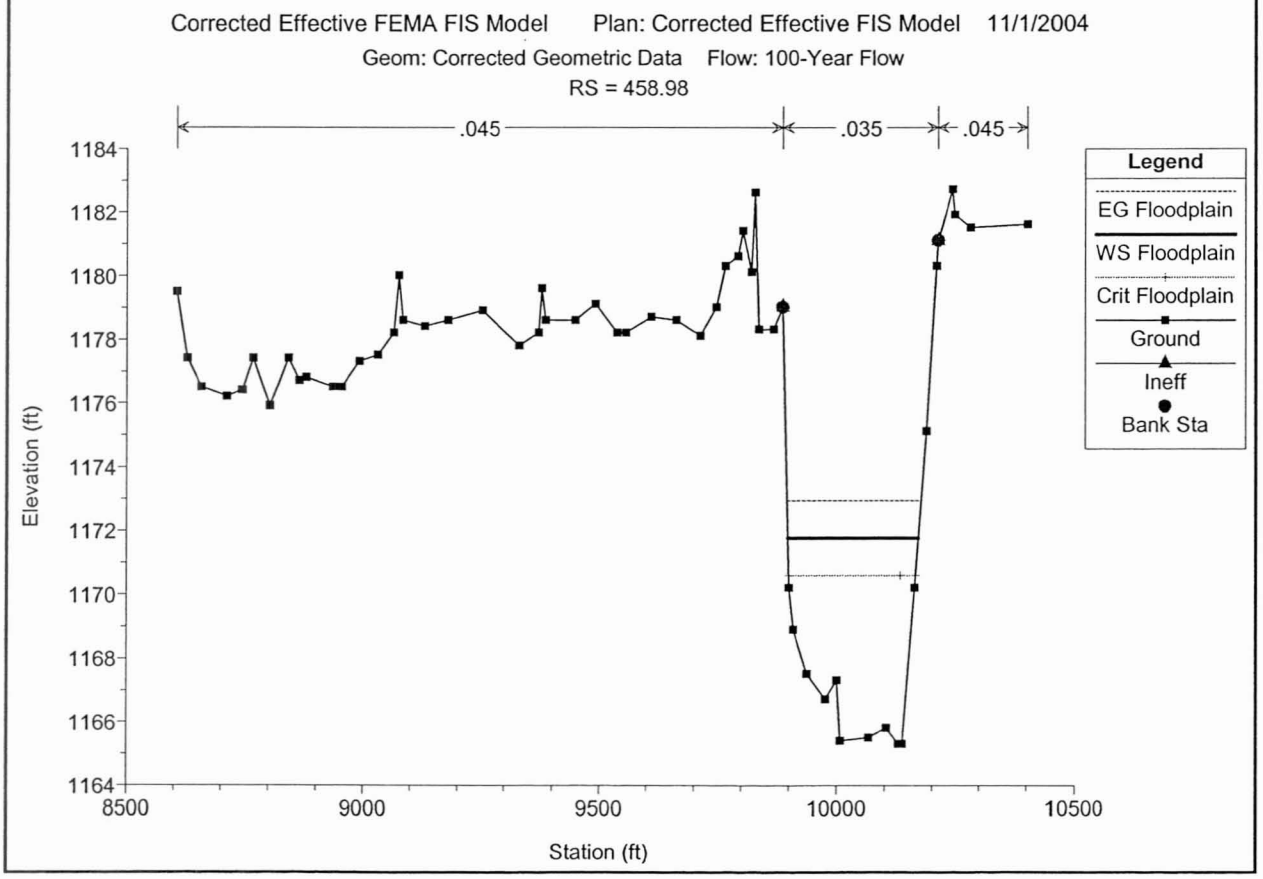

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 458.66
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1180
1175
1170
1165
1160
1155
8500
9000
9500
10000
10500
Station (ft)

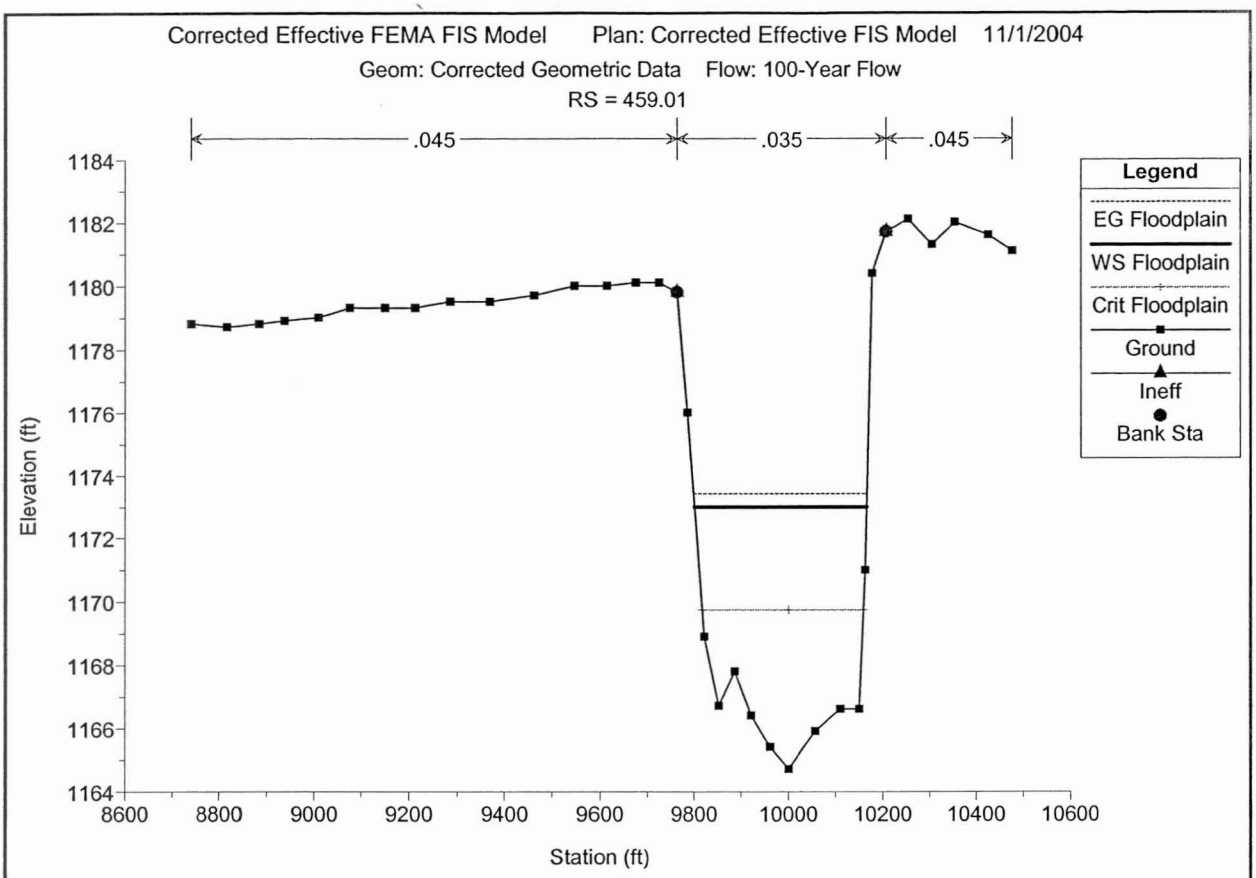

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 458.73
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1180
1175
1170
1165
1160
1155
8500
9000
9500
10000
10500
Station (ft)

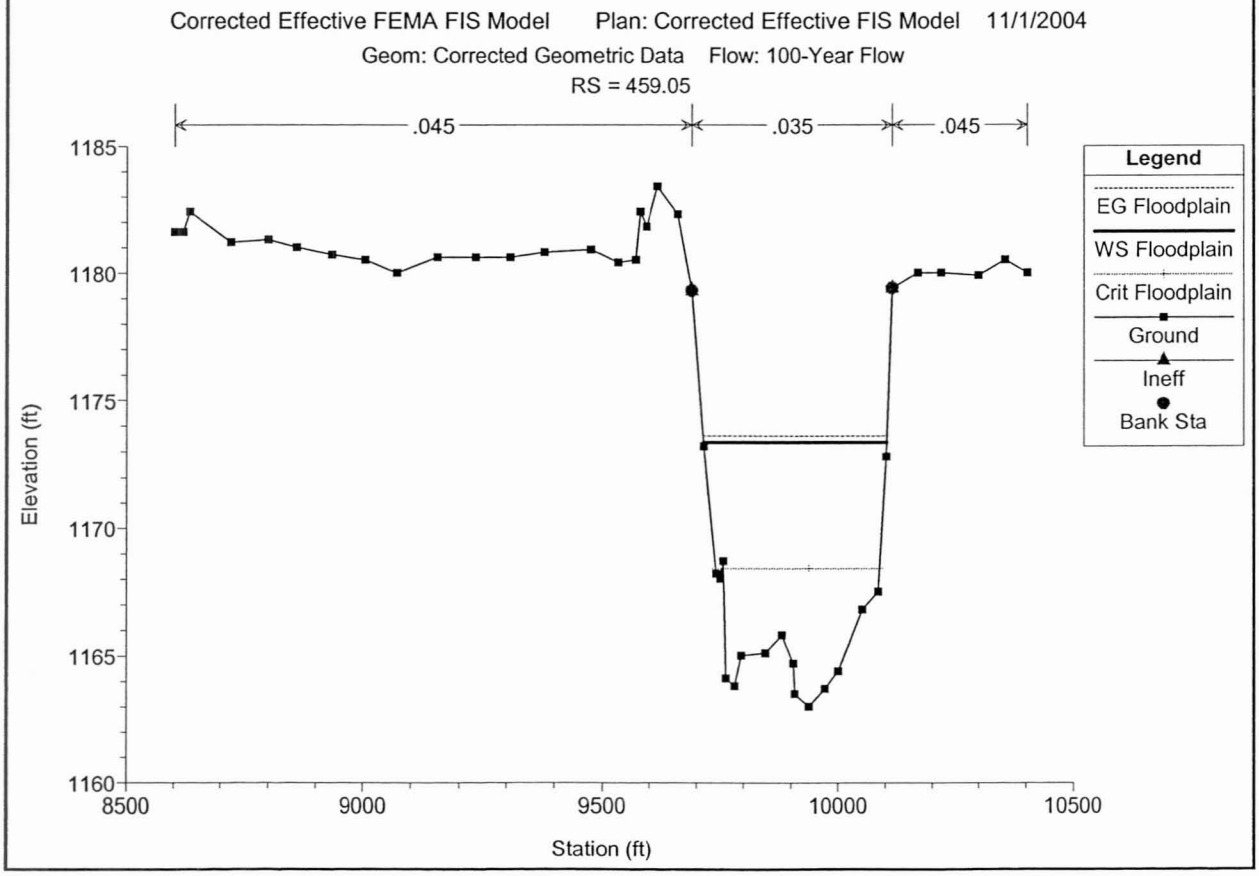

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 458.81
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1200
1195
1190
1185
1180
1175
1170
1165
1160
1155
8500
9000
9500
10000
10500
Station (ft)

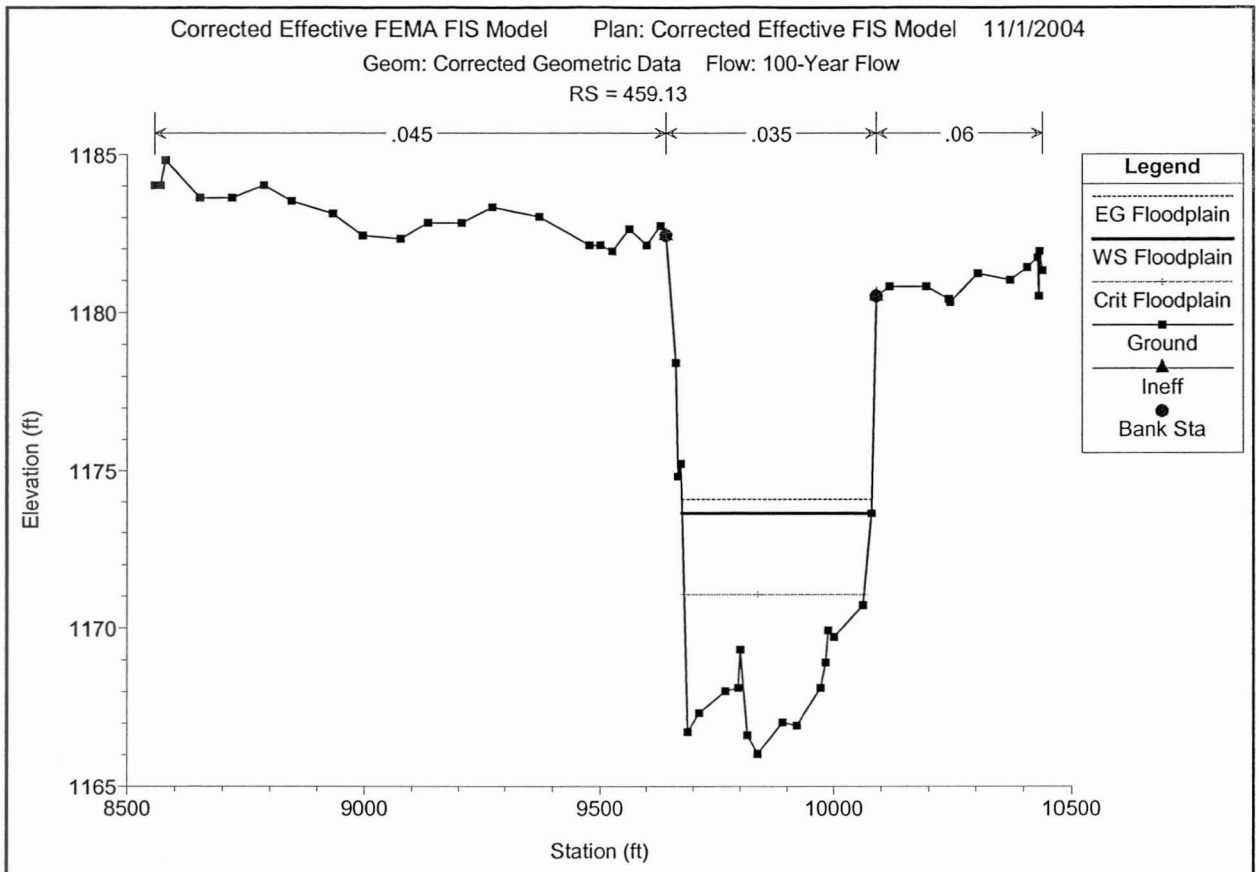

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 458.88
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1185
1180
1175
1170
1165
1160
8500
9000
9500
10000
10500
Station (ft)

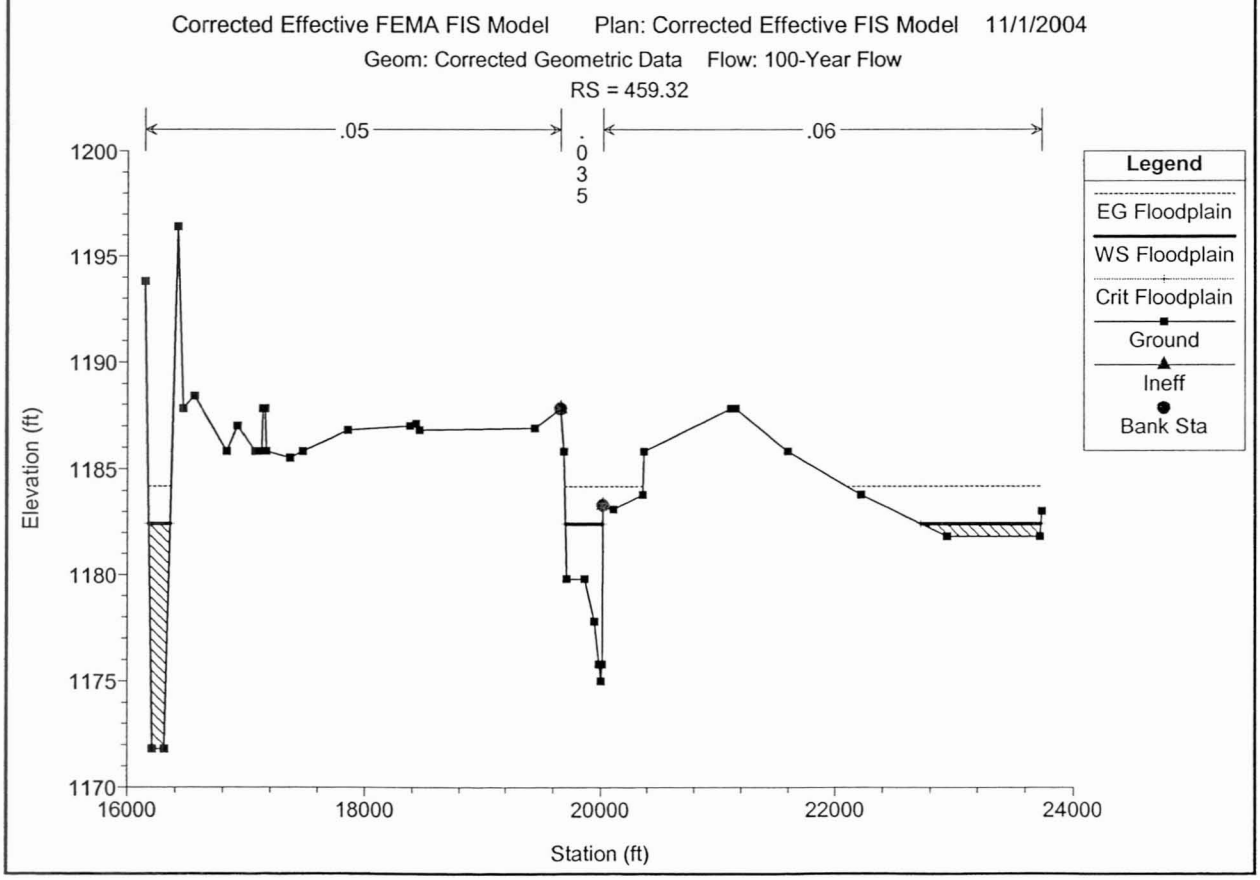

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 458.94
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1185
1180
1175
1170
1165
1160
8500
9000
9500
10000
10500
Station (ft)

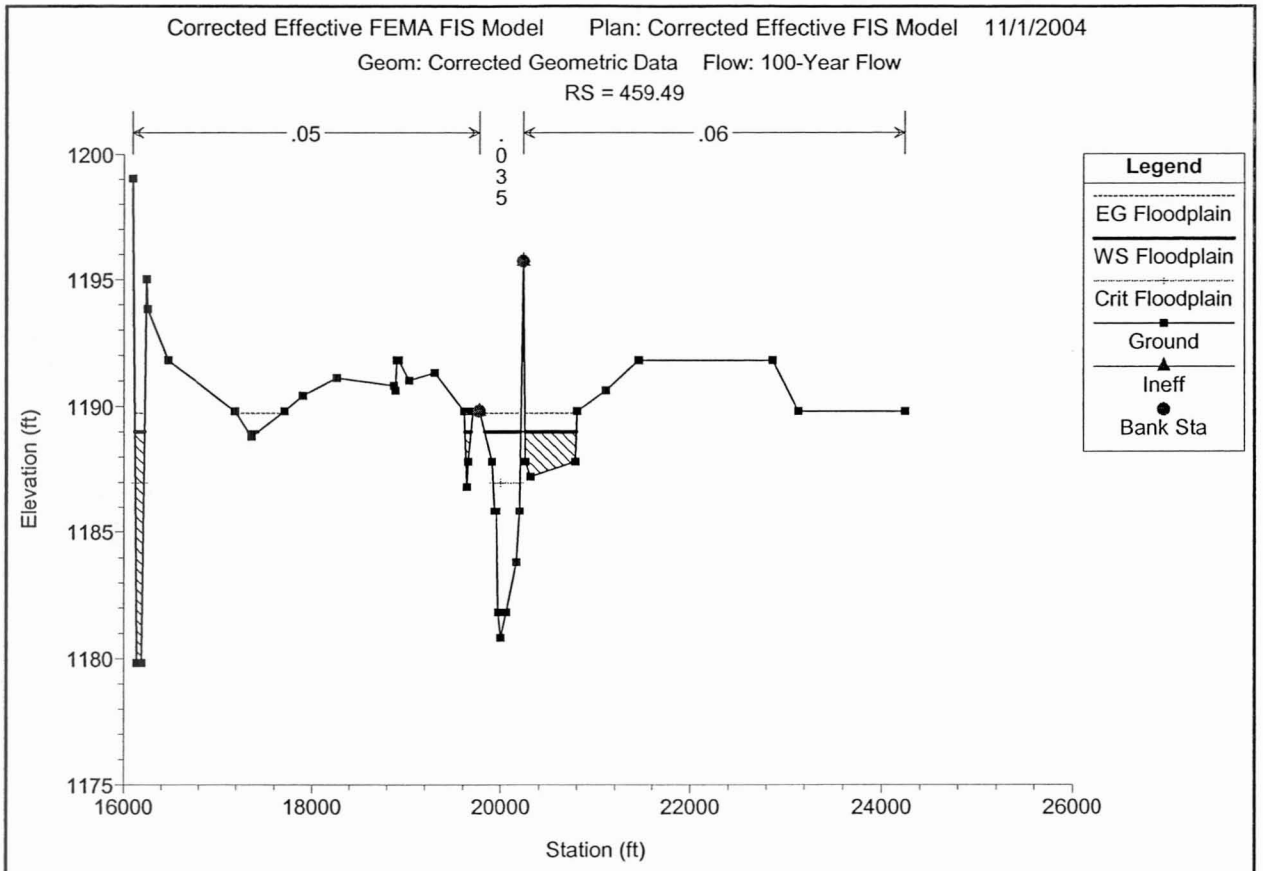

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 458.98
.045
.035
.045
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1184
1182
1180
1178
1176
1174
1172
1170
1168
1166
1164
8500
9000
9500
10000
10500
Station (ft)

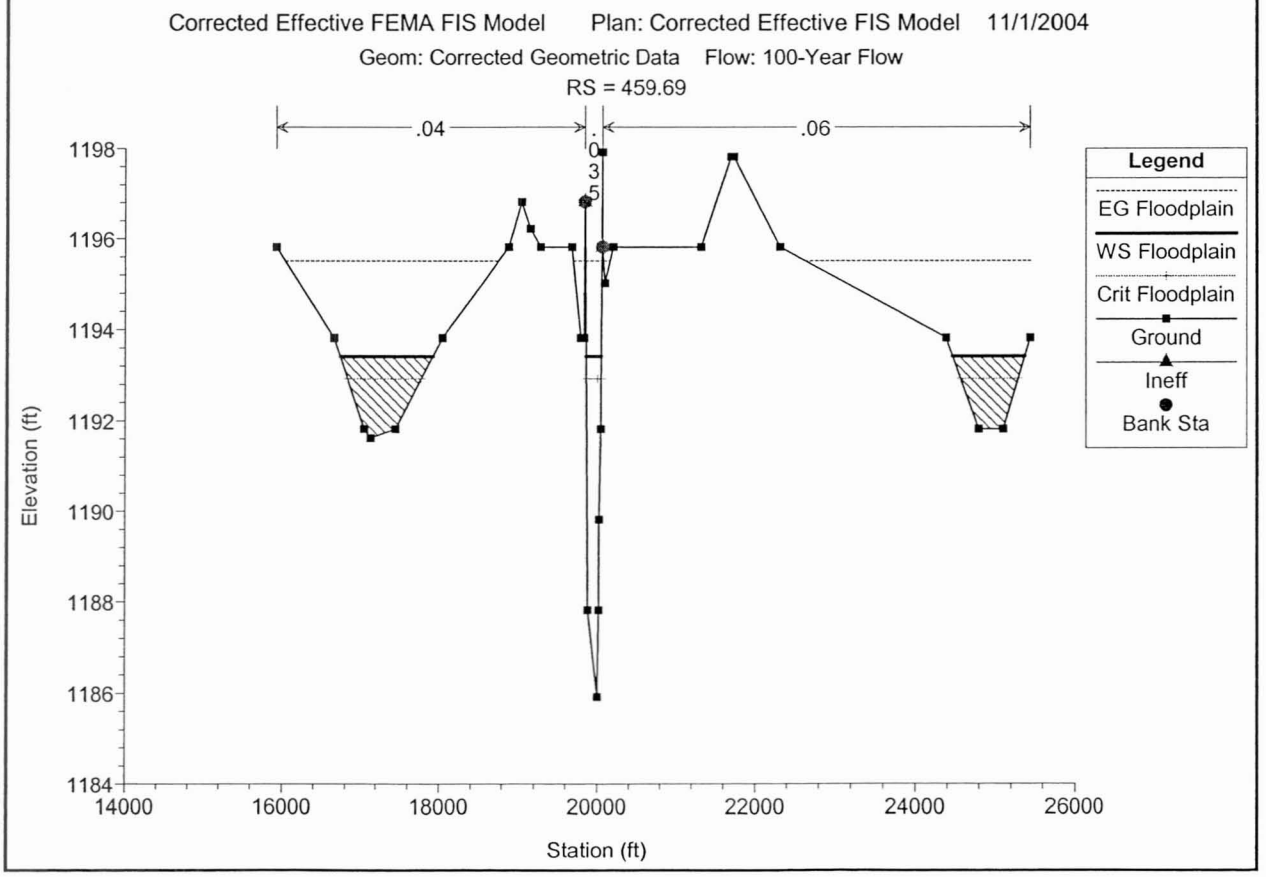

Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 459.01
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 459.05
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 459.13
.045
.035
.06
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1185
1180
1175
1170
1165
8500
9000
9500
10000
10500
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 459.32
.05
.035
.06
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
1200
1195
1190
1185
1180
1175
1170
16000
18000
20000
22000
24000
Station (ft)


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 459.49
.05
.035
.06
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1200
1195
1190
1185
1180
1175
16000
18000
20000
22000
24000
26000


Corrected Effective FEMA FIS Model Plan: Corrected Effective FIS Model 11/1/2004
Geom: Corrected Geometric Data Flow: 100-Year Flow
RS = 459.69
.04
.035
.06
Legend
EG Floodplain
WS Floodplain
Crit Floodplain
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1198
1196
1194
1192
1190
1188
1186
1184
14000
16000
18000
20000
22000
24000
26000

APPENDIX D

HEC-RAS Output Files for Post-Project Conditions Model

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	334	100 Year FP	41000.00	1113.92	1125.17	1121.69	1126.94	0.002701	10.68	3837.21	352.49	0.57
Grand Ave - Drop	334	100 Year FW	41000.00	1113.92	1125.17	1121.69	1126.94	0.002701	10.68	3837.21	352.49	0.57
Grand Ave - Drop	334	10 Year Flow	13500.00	1113.92	1119.70	1117.65	1120.45	0.002702	6.96	1939.74	341.55	0.51
Grand Ave - Drop	334	50 Year Flow	31000.00	1113.92	1123.44	1120.38	1124.87	0.002700	9.59	3233.60	349.05	0.56
Grand Ave - Drop	334	500 Year Flow	75000.00	1113.92	1129.89	1125.50	1132.66	0.002703	13.44	5978.57	836.58	0.60
Grand Ave - Drop	337	100 Year FP	41000.00	1115.02	1125.94	1122.79	1127.83	0.002994	11.01	3723.85	351.85	0.60
Grand Ave - Drop	337	100 Year FW	41000.00	1115.02	1125.94	1122.79	1127.83	0.002994	11.01	3723.85	351.85	0.60
Grand Ave - Drop	337	10 Year Flow	13500.00	1115.02	1120.52	1118.73	1121.35	0.003182	7.32	1845.17	341.00	0.55
Grand Ave - Drop	337	50 Year Flow	31000.00	1115.02	1124.23	1121.46	1125.76	0.003020	9.92	3123.56	348.42	0.58
Grand Ave - Drop	337	500 Year Flow	75000.00	1115.02	1130.58	1126.61	1133.60	0.003079	13.95	5396.05	441.46	0.64
Grand Ave - Drop	340.5	100 Year FP	41000.00	1116.22	1126.98		1128.92	0.003152	11.19	3664.91	351.51	0.61
Grand Ave - Drop	340.5	100 Year FW	41000.00	1116.22	1126.98		1128.92	0.003152	11.19	3664.91	351.51	0.61
Grand Ave - Drop	340.5	10 Year Flow	13500.00	1116.22	1121.64		1122.50	0.003335	7.42	1818.95	340.85	0.57
Grand Ave - Drop	340.5	50 Year Flow	31000.00	1116.22	1125.28		1126.86	0.003190	10.09	3071.14	348.12	0.60
Grand Ave - Drop	340.5	500 Year Flow	75000.00	1116.22	1131.65		1134.69	0.003135	14.02	5478.27	531.37	0.64
Grand Ave - Drop	342	100 Year FP	41000.00	1116.72	1127.44		1129.40	0.003185	11.22	3653.11	351.44	0.61
Grand Ave - Drop	342	100 Year FW	41000.00	1116.72	1127.44		1129.40	0.003185	11.22	3653.11	351.44	0.61
Grand Ave - Drop	342	10 Year Flow	13500.00	1116.72	1122.14		1123.00	0.003334	7.42	1819.03	340.85	0.57
Grand Ave - Drop	342	50 Year Flow	31000.00	1116.72	1125.75		1127.35	0.003219	10.12	3062.81	348.07	0.60
Grand Ave - Drop	342	500 Year Flow	75000.00	1116.72	1132.11		1135.17	0.003169	14.07	5449.24	554.33	0.65
Grand Ave - Drop	343	100 Year FP	41000.00	1117.02	1127.77		1129.71	0.003161	11.20	3661.73	351.49	0.61
Grand Ave - Drop	343	100 Year FW	41000.00	1117.02	1127.77		1129.71	0.003161	11.20	3661.73	351.49	0.61
Grand Ave - Drop	343	10 Year Flow	13500.00	1117.02	1122.49		1123.33	0.003251	7.36	1833.22	340.93	0.56
Grand Ave - Drop	343	50 Year Flow	31000.00	1117.02	1126.08		1127.66	0.003185	10.09	3072.80	348.13	0.60
Grand Ave - Drop	343	500 Year Flow	75000.00	1117.02	1132.67		1135.50	0.002895	13.62	6087.73	925.24	0.62
Grand Ave - Drop	344.9	100 Year FP	41000.00	1118.12	1128.35	1125.92	1130.53	0.003761	11.85	3459.13	346.29	0.66
Grand Ave - Drop	344.9	100 Year FW	41000.00	1118.12	1128.35	1125.92	1130.53	0.003761	11.85	3459.13	346.29	0.66
Grand Ave - Drop	344.9	10 Year Flow	13500.00	1118.12	1123.14	1121.82	1124.15	0.004321	8.04	1678.12	338.00	0.64
Grand Ave - Drop	344.9	50 Year Flow	31000.00	1118.12	1126.69	1124.60	1128.48	0.003876	10.75	2884.80	343.64	0.65
Grand Ave - Drop	344.9	500 Year Flow	75000.00	1118.12	1133.13	1129.71	1136.45	0.003534	14.61	5132.56	353.90	0.68
Grand Ave - Drop	345.5	100 Year FP	41000.00	1119.40	1127.63	1127.63	1131.59	0.006408	16.16	2641.41	342.16	0.99
Grand Ave - Drop	345.5	100 Year FW	41000.00	1119.40	1127.61	1127.61	1131.59	0.006464	16.20	2634.15	342.05	1.00

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	345.5	10 Year Flow	13500.00	1119.40	1123.34	1123.34	1125.29	0.008324	11.27	1221.52	320.19	1.00
Grand Ave - Drop	345.5	50 Year Flow	31000.00	1119.40	1126.24	1126.24	1129.56	0.006846	14.76	2171.41	335.04	0.99
Grand Ave - Drop	345.5	500 Year Flow	75000.00	1119.40	1132.36	1131.62	1137.46	0.004552	18.44	4310.93	357.09	0.90
Grand Ave - Drop	345.95		Bridge									
Grand Ave - Drop	346.4	100 Year FP	41000.00	1119.80	1131.53	1127.92	1133.27	0.001918	10.57	3879.88	356.98	0.56
Grand Ave - Drop	346.4	100 Year FW	41000.00	1119.80	1131.53	1127.92	1133.27	0.001918	10.57	3879.88	356.98	0.56
Grand Ave - Drop	346.4	10 Year Flow	13500.00	1119.80	1125.85	1123.72	1126.63	0.001987	7.06	1911.49	331.87	0.52
Grand Ave - Drop	346.4	50 Year Flow	31000.00	1119.80	1129.72	1126.56	1131.15	0.001972	9.58	3235.68	352.25	0.56
Grand Ave - Drop	346.4	500 Year Flow	75000.00	1119.80	1136.56	1131.77	1139.27	0.001808	13.22	5675.40	357.54	0.58
Grand Ave - Drop	346.8	100 Year FP	41000.00	1119.92	1131.50		1133.35	0.002097	10.94	3749.19	348.31	0.59
Grand Ave - Drop	346.8	100 Year FW	41000.00	1119.92	1131.50		1133.35	0.002097	10.94	3749.19	348.31	0.59
Grand Ave - Drop	346.8	10 Year Flow	13500.00	1119.92	1125.86		1126.69	0.002199	7.31	1845.97	327.43	0.54
Grand Ave - Drop	346.8	50 Year Flow	31000.00	1119.92	1129.71		1131.23	0.002123	9.90	3131.22	341.67	0.58
Grand Ave - Drop	346.8	500 Year Flow	75000.00	1119.92	1136.51		1139.36	0.002042	13.56	5533.01	360.30	0.61
Grand Ave - Drop	347.1	100 Year FP	41000.00	1120.40	1131.39		1133.48	0.002305	11.76	3664.12	360.05	0.62
Grand Ave - Drop	347.1	100 Year FW	41000.00	1120.40	1131.39		1133.48	0.002305	11.76	3664.12	360.05	0.62
Grand Ave - Drop	347.1	10 Year Flow	13500.00	1120.40	1125.82		1126.80	0.002726	7.98	1734.14	332.97	0.60
Grand Ave - Drop	347.1	50 Year Flow	31000.00	1120.40	1129.63		1131.34	0.002390	10.65	3035.09	351.45	0.62
Grand Ave - Drop	347.1	500 Year Flow	75000.00	1120.40	1136.33		1139.52	0.002176	14.63	5454.59	363.38	0.65
Grand Ave - Drop	347.255		Bridge									
Grand Ave - Drop	347.4	100 Year FP	41000.00	1120.50	1132.04	1128.59	1133.92	0.001954	11.18	3863.40	363.00	0.58
Grand Ave - Drop	347.4	100 Year FW	41000.00	1120.50	1132.04	1128.59	1133.92	0.001954	11.18	3863.40	363.00	0.58
Grand Ave - Drop	347.4	10 Year Flow	13500.00	1120.50	1126.24	1124.38	1127.11	0.002252	7.53	1840.43	334.75	0.55
Grand Ave - Drop	347.4	50 Year Flow	31000.00	1120.50	1130.20	1127.24	1131.75	0.002015	10.11	3204.60	354.17	0.57
Grand Ave - Drop	347.4	500 Year Flow	75000.00	1120.50	1137.11	1132.60	1140.03	0.001886	14.00	5705.21	363.45	0.61
Grand Ave - Drop	352.4	100 Year FP	41000.00	1122.00	1133.17		1135.35	0.003698	11.85	3459.81	363.31	0.68
Grand Ave - Drop	352.4	100 Year FW	41000.00	1122.00	1133.17		1135.35	0.003698	11.85	3459.81	363.31	0.68
Grand Ave - Drop	352.4	10 Year Flow	13500.00	1122.00	1127.72		1128.96	0.005758	8.91	1514.46	351.90	0.76
Grand Ave - Drop	352.4	50 Year Flow	31000.00	1122.00	1131.39		1133.27	0.004095	11.00	2817.22	359.32	0.69
Grand Ave - Drop	352.4	500 Year Flow	75000.00	1122.00	1138.27		1141.22	0.002918	13.88	5666.38	512.43	0.64

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	358.25	100 Year FP	41000.00	1123.00	1135.26	1133.04	1137.53	0.003737	12.07	3397.30	356.31	0.68
Grand Ave - Drop	358.25	100 Year FW	41000.00	1123.00	1135.26	1133.04	1137.53	0.003737	12.07	3397.30	356.31	0.68
Grand Ave - Drop	358.25	10 Year Flow	13500.00	1123.00	1130.55	1128.96	1131.45	0.003261	7.61	1774.27	339.01	0.59
Grand Ave - Drop	358.25	50 Year Flow	31000.00	1123.00	1133.71	1131.73	1135.54	0.003731	10.86	2855.11	345.98	0.67
Grand Ave - Drop	358.25	500 Year Flow	75000.00	1123.00	1139.81	1137.02	1143.18	0.003424	14.83	5261.57	449.35	0.69
Grand Ave - Drop	365.4	100 Year FP	41000.00	1125.50	1138.30		1140.12	0.003539	10.81	3791.64	415.23	0.63
Grand Ave - Drop	365.4	100 Year FW	41000.00	1125.50	1138.30		1140.12	0.003539	10.81	3791.64	415.23	0.63
Grand Ave - Drop	365.4	10 Year Flow	13500.00	1125.50	1133.15		1134.12	0.004448	7.91	1706.43	394.60	0.67
Grand Ave - Drop	365.4	50 Year Flow	31000.00	1125.50	1136.64		1138.19	0.003756	9.97	3108.69	408.57	0.64
Grand Ave - Drop	365.4	500 Year Flow	75000.00	1125.50	1142.98		1145.54	0.003096	12.87	5909.75	482.81	0.62
Grand Ave - Drop	370.65	100 Year FP	41000.00	1126.50	1140.39		1141.40	0.001569	8.05	5091.36	495.35	0.44
Grand Ave - Drop	370.65	100 Year FW	41000.00	1126.50	1140.39		1141.40	0.001569	8.05	5091.36	495.35	0.44
Grand Ave - Drop	370.65	10 Year Flow	13500.00	1126.50	1135.05		1135.50	0.001598	5.39	2502.40	473.99	0.41
Grand Ave - Drop	370.65	50 Year Flow	31000.00	1126.50	1138.67		1139.50	0.001595	7.30	4245.76	488.48	0.44
Grand Ave - Drop	370.65	500 Year Flow	75000.00	1126.50	1145.24		1146.73	0.001450	9.86	7901.81	655.60	0.45
Grand Ave - Drop	373.75	100 Year FP	41000.00	1127.00	1140.92		1141.88	0.001518	7.88	5204.35	487.91	0.43
Grand Ave - Drop	373.75	100 Year FW	41000.00	1127.00	1140.92		1141.88	0.001518	7.88	5204.35	487.91	0.43
Grand Ave - Drop	373.75	10 Year Flow	13500.00	1127.00	1135.57		1135.97	0.001384	5.06	2665.60	461.33	0.37
Grand Ave - Drop	373.75	50 Year Flow	31000.00	1127.00	1139.20		1139.98	0.001504	7.08	4376.34	479.52	0.41
Grand Ave - Drop	373.75	500 Year Flow	75000.00	1127.00	1145.70		1147.18	0.001483	9.81	7881.48	644.43	0.44
Grand Ave - Drop	376.75	100 Year FP	41000.00	1128.00	1141.14		1142.70	0.003231	10.03	4086.35	416.58	0.56
Grand Ave - Drop	376.75	100 Year FW	41000.00	1128.00	1141.14		1142.70	0.003231	10.03	4086.35	416.58	0.56
Grand Ave - Drop	376.75	10 Year Flow	13500.00	1128.00	1135.98		1136.67	0.003385	6.70	2014.15	386.88	0.52
Grand Ave - Drop	376.75	50 Year Flow	31000.00	1128.00	1139.49		1140.78	0.003286	9.09	3408.80	406.95	0.55
Grand Ave - Drop	376.75	500 Year Flow	75000.00	1128.00	1145.68		1148.08	0.003087	12.44	6087.78	528.57	0.59
Grand Ave - Drop	379.75	100 Year FP	41000.00	1129.00	1142.01		1143.59	0.002705	10.07	4070.28	398.55	0.56
Grand Ave - Drop	379.75	100 Year FW	41000.00	1129.00	1142.01		1143.59	0.002705	10.07	4070.28	398.55	0.56
Grand Ave - Drop	379.75	10 Year Flow	13500.00	1129.00	1136.89		1137.54	0.002457	6.48	2083.13	376.39	0.49
Grand Ave - Drop	379.75	50 Year Flow	31000.00	1129.00	1140.39		1141.66	0.002657	9.04	3430.50	391.55	0.54
Grand Ave - Drop	379.75	500 Year Flow	75000.00	1129.00	1146.49		1148.99	0.002783	12.70	5952.27	441.16	0.59
Grand Ave - Drop	384.5	100 Year FP	41000.00	1130.50	1143.30	1140.05	1144.97	0.003061	10.34	3963.48	392.20	0.57
Grand Ave - Drop	384.5	100 Year FW	41000.00	1130.50	1143.30	1140.05	1144.97	0.003061	10.34	3963.48	392.20	0.57

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	384.5	10 Year Flow	13500.00	1130.50	1138.10	1136.17	1138.82	0.002947	6.82	1979.44	369.97	0.52
Grand Ave - Drop	384.5	50 Year Flow	31000.00	1130.50	1141.67	1138.77	1143.02	0.003030	9.31	3328.45	385.22	0.56
Grand Ave - Drop	384.5	500 Year Flow	75000.00	1130.50	1147.79	1143.64	1150.40	0.003093	12.98	5836.99	437.53	0.61
Grand Ave - Drop	388.5	100 Year FP	41000.00	1131.00	1144.64		1146.04	0.002260	9.50	4315.03	396.72	0.51
Grand Ave - Drop	388.5	100 Year FW	41000.00	1131.00	1144.64		1146.04	0.002260	9.50	4315.03	396.72	0.51
Grand Ave - Drop	388.5	10 Year Flow	13500.00	1131.00	1139.24		1139.81	0.002027	6.04	2234.23	374.22	0.44
Grand Ave - Drop	388.5	50 Year Flow	31000.00	1131.00	1142.95		1144.07	0.002200	8.49	3650.84	389.68	0.49
Grand Ave - Drop	388.5	500 Year Flow	75000.00	1131.00	1149.25		1151.51	0.002359	12.09	6275.63	460.96	0.55
Grand Ave - Drop	392	100 Year FP	41000.00	1131.00	1145.41		1146.78	0.001948	9.37	4377.09	387.48	0.49
Grand Ave - Drop	392	100 Year FW	41000.00	1131.00	1145.41		1146.78	0.001948	9.37	4377.09	387.48	0.49
Grand Ave - Drop	392	10 Year Flow	13500.00	1131.00	1139.90		1140.44	0.001596	5.85	2306.86	364.09	0.41
Grand Ave - Drop	392	50 Year Flow	31000.00	1131.00	1143.70		1144.78	0.001859	8.34	3718.86	380.20	0.47
Grand Ave - Drop	392	500 Year Flow	75000.00	1131.00	1150.06		1152.30	0.002122	12.02	6302.74	438.66	0.54
Grand Ave - Drop	395.5	100 Year FP	41000.00	1133.00	1145.87		1147.66	0.002578	10.74	3817.54	354.31	0.58
Grand Ave - Drop	395.5	100 Year FW	41000.00	1133.00	1145.87		1147.66	0.002578	10.74	3817.54	354.31	0.58
Grand Ave - Drop	395.5	10 Year Flow	13500.00	1133.00	1140.41		1141.16	0.002386	6.95	1942.34	331.19	0.51
Grand Ave - Drop	395.5	50 Year Flow	31000.00	1133.00	1144.18		1145.62	0.002514	9.62	3223.92	347.77	0.56
Grand Ave - Drop	395.5	500 Year Flow	75000.00	1133.00	1150.40		1153.32	0.002781	13.72	5494.42	392.63	0.63
Grand Ave - Drop	402.5	100 Year FP	41000.00	1136.00	1147.58		1150.35	0.004594	13.35	3071.82	318.97	0.76
Grand Ave - Drop	402.5	100 Year FW	41000.00	1136.00	1147.58		1150.35	0.004594	13.35	3071.82	318.97	0.76
Grand Ave - Drop	402.5	10 Year Flow	13500.00	1136.00	1142.41		1143.70	0.005063	9.14	1476.82	297.50	0.72
Grand Ave - Drop	402.5	50 Year Flow	31000.00	1136.00	1145.96		1148.24	0.004651	12.10	2561.38	312.26	0.74
Grand Ave - Drop	402.5	500 Year Flow	75000.00	1136.00	1151.94		1156.23	0.004568	16.63	4559.43	361.65	0.80
Grand Ave - Drop	406.5	100 Year FP	41000.00	1136.00	1149.89		1151.84	0.002784	11.21	3659.02	345.71	0.61
Grand Ave - Drop	406.5	100 Year FW	41000.00	1136.00	1149.89		1151.84	0.002784	11.21	3659.02	345.71	0.61
Grand Ave - Drop	406.5	10 Year Flow	13500.00	1136.00	1144.30		1145.14	0.002519	7.36	1835.04	306.57	0.53
Grand Ave - Drop	406.5	50 Year Flow	31000.00	1136.00	1148.11		1149.71	0.002745	10.14	3056.85	333.30	0.59
Grand Ave - Drop	406.5	500 Year Flow	75000.00	1136.00	1154.80		1157.75	0.002725	13.79	5497.37	418.49	0.63
Grand Ave - Drop	409.5	100 Year FP	41000.00	1136.97	1150.22		1153.73	0.004784	15.06	2723.34	244.41	0.79
Grand Ave - Drop	409.5	100 Year FW	41000.00	1136.97	1150.22		1153.73	0.004784	15.06	2723.34	244.41	0.79
Grand Ave - Drop	409.5	10 Year Flow	13500.00	1136.97	1144.97		1146.22	0.003207	8.97	1505.83	219.99	0.60
Grand Ave - Drop	409.5	50 Year Flow	31000.00	1136.97	1148.60		1151.34	0.004361	13.27	2335.69	236.79	0.74

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	409.5	500 Year Flow	75000.00	1136.97	1154.45	1153.53	1160.50	0.005899	19.74	3799.50	264.43	0.92
Grand Ave - Drop	410.02		Bridge									
Grand Ave - Drop	410.54	100 Year FP	41000.00	1137.30	1152.79	1148.85	1155.22	0.002808	12.50	3279.73	254.37	0.61
Grand Ave - Drop	410.54	100 Year FW	41000.00	1137.30	1152.79	1148.85	1155.22	0.002808	12.50	3279.73	254.37	0.61
Grand Ave - Drop	410.54	10 Year Flow	13500.00	1137.30	1145.33	1143.26	1146.58	0.003314	8.98	1503.29	220.63	0.61
Grand Ave - Drop	410.54	50 Year Flow	31000.00	1137.30	1149.66	1147.05	1152.04	0.003630	12.38	2505.02	240.76	0.68
Grand Ave - Drop	410.54	500 Year Flow	75000.00	1137.30	1160.36	1153.86	1163.41	0.002210	14.02	5372.18	301.27	0.57
Grand Ave - Drop	412.76	100 Year FP	41000.00	1137.00	1154.71		1155.87	0.001945	8.64	4743.20	342.43	0.41
Grand Ave - Drop	412.76	100 Year FW	41000.00	1137.00	1154.71		1155.87	0.001945	8.64	4743.20	342.43	0.41
Grand Ave - Drop	412.76	10 Year Flow	13500.00	1137.00	1146.69		1147.32	0.002752	6.35	2127.39	310.37	0.43
Grand Ave - Drop	412.76	50 Year Flow	31000.00	1137.00	1151.76		1152.82	0.002341	8.26	3751.51	330.64	0.43
Grand Ave - Drop	412.76	500 Year Flow	75000.00	1137.00	1162.45		1163.96	0.001475	9.91	7847.21	535.10	0.38
Grand Ave - Drop	418.97	100 Year FP	41000.00	1138.00	1155.94		1157.26	0.002340	9.22	4447.08	311.54	0.43
Grand Ave - Drop	418.97	100 Year FW	41000.00	1138.00	1155.94		1157.26	0.002340	9.22	4447.08	311.54	0.43
Grand Ave - Drop	418.97	10 Year Flow	13500.00	1138.00	1148.35		1148.94	0.002397	6.14	2199.68	281.21	0.39
Grand Ave - Drop	418.97	50 Year Flow	31000.00	1138.00	1153.25		1154.38	0.002556	8.55	3623.81	300.79	0.43
Grand Ave - Drop	418.97	500 Year Flow	75000.00	1138.00	1163.32		1165.07	0.001834	10.75	7518.60	567.27	0.41
Grand Ave - Drop	424.17	100 Year FP	41000.00	1138.00	1157.20	1148.77	1158.27	0.001608	8.30	4940.70	312.57	0.37
Grand Ave - Drop	424.17	100 Year FW	41000.00	1138.00	1157.20	1148.77	1158.27	0.001608	8.30	4940.70	312.57	0.37
Grand Ave - Drop	424.17	10 Year Flow	13500.00	1138.00	1149.43	1143.92	1149.84	0.001285	5.13	2629.77	281.78	0.30
Grand Ave - Drop	424.17	50 Year Flow	31000.00	1138.00	1154.57	1147.22	1155.44	0.001614	7.51	4130.50	302.33	0.36
Grand Ave - Drop	424.17	500 Year Flow	75000.00	1138.00	1164.37	1153.13	1165.93	0.001462	10.13	7908.12	541.81	0.37
Grand Ave - Drop	429.37	100 Year FP	41000.00	1139.00	1157.92	1149.79	1159.03	0.001306	8.45	4849.93	310.50	0.38
Grand Ave - Drop	429.37	100 Year FW	41000.00	1139.00	1157.92	1149.79	1159.03	0.001306	8.45	4849.93	310.50	0.38
Grand Ave - Drop	429.37	10 Year Flow	13500.00	1139.00	1150.01	1144.94	1150.46	0.001099	5.38	2509.98	280.25	0.32
Grand Ave - Drop	429.37	50 Year Flow	31000.00	1139.00	1155.29	1148.20	1156.20	0.001311	7.67	4044.28	301.35	0.37
Grand Ave - Drop	429.37	500 Year Flow	75000.00	1139.00	1164.98	1154.27	1166.64	0.001213	10.43	7501.53	557.39	0.39
Grand Ave - Drop	435.37	100 Year FP	41000.00	1138.00	1158.70		1159.84	0.001410	8.57	4785.76	301.82	0.38
Grand Ave - Drop	435.37	100 Year FW	41000.00	1138.00	1158.70		1159.84	0.001410	8.57	4785.76	301.82	0.38
Grand Ave - Drop	435.37	10 Year Flow	13500.00	1138.00	1150.68		1151.14	0.001178	5.41	2493.90	269.74	0.31
Grand Ave - Drop	435.37	50 Year Flow	31000.00	1138.00	1156.08		1157.01	0.001397	7.73	4007.99	291.33	0.37

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

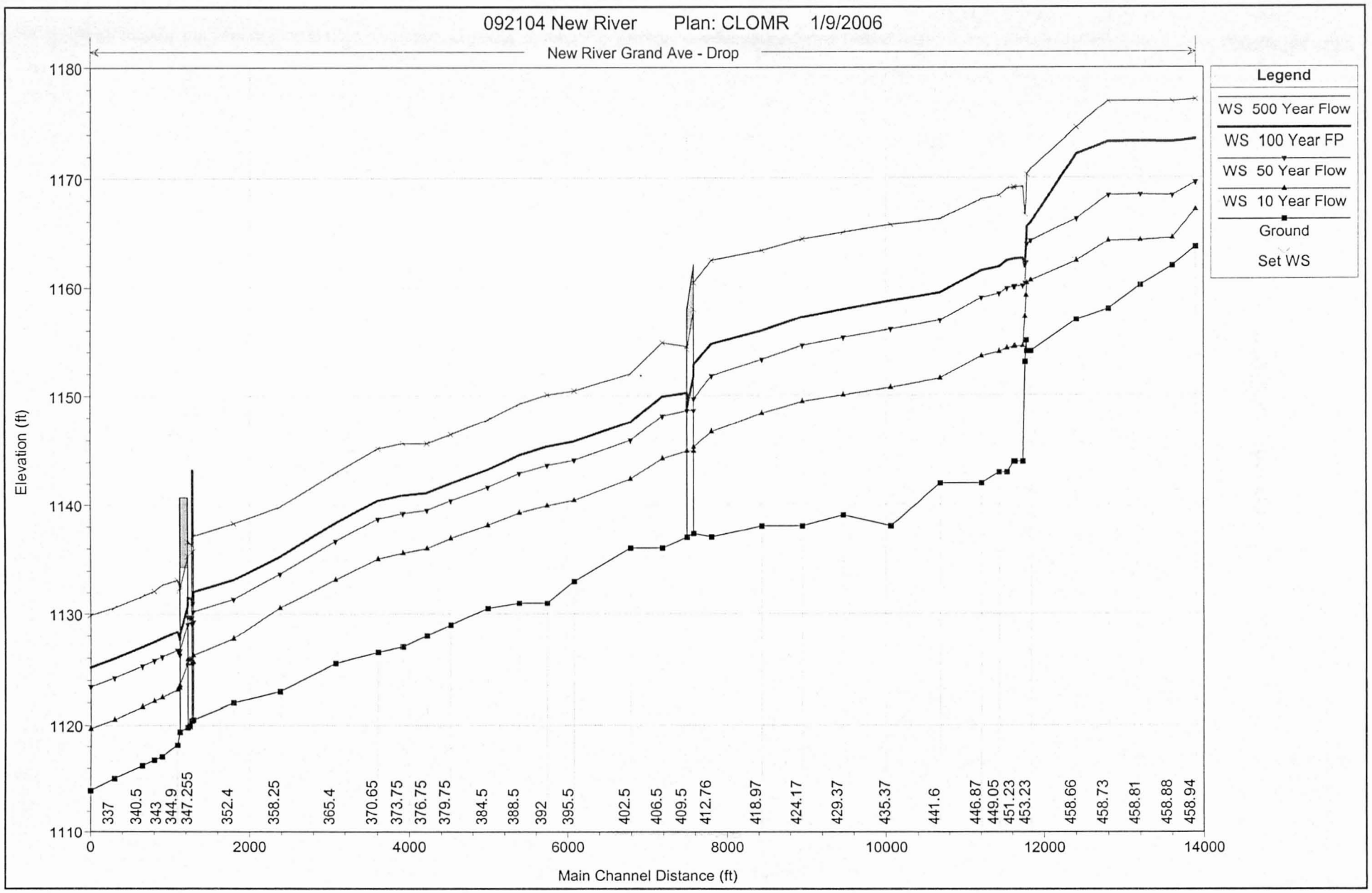
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	435.37	500 Year Flow	75000.00	1138.00	1165.71		1167.41	0.001328	10.57	7653.25	564.20	0.39
Grand Ave - Drop	441.6	100 Year FP	41000.00	1142.00	1159.45		1161.34	0.003220	11.03	3716.23	310.06	0.54
Grand Ave - Drop	441.6	100 Year FW	41000.00	1142.00	1159.45		1161.34	0.003220	11.03	3716.23	310.06	0.54
Grand Ave - Drop	441.6	10 Year Flow	13500.00	1142.00	1151.54		1152.60	0.004505	8.28	1630.40	240.02	0.56
Grand Ave - Drop	441.6	50 Year Flow	31000.00	1142.00	1156.88		1158.54	0.003552	10.34	2998.10	272.07	0.55
Grand Ave - Drop	441.6	500 Year Flow	75000.00	1142.00	1166.25		1168.76	0.002510	12.85	6100.87	449.91	0.51
Grand Ave - Drop	446.87	100 Year FP	41000.00	1142.00	1161.48		1162.68	0.001903	8.80	4660.96	303.52	0.40
Grand Ave - Drop	446.87	100 Year FW	41000.00	1142.00	1161.48		1162.68	0.001903	8.80	4660.96	303.52	0.40
Grand Ave - Drop	446.87	10 Year Flow	13500.00	1142.00	1153.55		1154.05	0.001740	5.67	2379.28	271.79	0.34
Grand Ave - Drop	446.87	50 Year Flow	31000.00	1142.00	1158.96		1159.93	0.001892	7.93	3908.07	293.43	0.38
Grand Ave - Drop	446.87	500 Year Flow	75000.00	1142.00	1168.09		1169.97	0.001936	11.06	6907.59	413.62	0.42
Grand Ave - Drop	449.05	100 Year FP	41000.00	1143.00	1161.84		1163.24	0.002633	9.51	4313.14	276.92	0.42
Grand Ave - Drop	449.05	100 Year FW	41000.00	1143.00	1161.84		1163.24	0.002633	9.51	4313.14	276.92	0.42
Grand Ave - Drop	449.05	10 Year Flow	13500.00	1143.00	1153.95		1154.51	0.002242	5.99	2253.02	245.36	0.35
Grand Ave - Drop	449.05	50 Year Flow	31000.00	1143.00	1159.35		1160.47	0.002579	8.53	3634.88	266.94	0.41
Grand Ave - Drop	449.05	500 Year Flow	75000.00	1143.00	1168.41		1170.57	0.002761	11.83	6423.87	395.73	0.47
Grand Ave - Drop	450.23	100 Year FP	41000.00	1143.00	1162.39		1163.49	0.001760	8.40	4878.86	299.66	0.37
Grand Ave - Drop	450.23	100 Year FW	41000.00	1143.00	1162.39		1163.49	0.001760	8.40	4878.86	299.66	0.37
Grand Ave - Drop	450.23	10 Year Flow	13500.00	1143.00	1154.27		1154.70	0.001455	5.25	2572.26	268.60	0.30
Grand Ave - Drop	450.23	50 Year Flow	31000.00	1143.00	1159.83		1160.71	0.001707	7.52	4124.39	289.87	0.35
Grand Ave - Drop	450.23	500 Year Flow	75000.00	1143.00	1169.04		1170.84	0.001945	10.78	6983.52	372.49	0.41
Grand Ave - Drop	451.05	100 Year FP	41000.00	1144.00	1162.54		1163.66	0.002331	8.51	4818.35	295.13	0.37
Grand Ave - Drop	451.05	100 Year FW	41000.00	1144.00	1162.54		1163.66	0.002331	8.51	4818.35	295.13	0.37
Grand Ave - Drop	451.05	10 Year Flow	13500.00	1144.00	1154.40		1154.85	0.002105	5.39	2503.11	274.62	0.31
Grand Ave - Drop	451.05	50 Year Flow	31000.00	1144.00	1159.98		1160.88	0.002286	7.61	4072.18	287.84	0.36
Grand Ave - Drop	451.05	500 Year Flow	75000.00	1144.00	1169.18		1171.04	0.002562	10.94	6854.18	325.94	0.42
Grand Ave - Drop	451.23	100 Year FP	41000.00	1144.00	1162.56		1163.69	0.000736	8.54	4800.03	285.37	0.37
Grand Ave - Drop	451.23	100 Year FW	41000.00	1144.00	1162.56		1163.69	0.000736	8.54	4800.03	285.37	0.37
Grand Ave - Drop	451.23	10 Year Flow	13500.00	1144.00	1154.44		1154.87	0.000586	5.29	2553.26	268.19	0.30
Grand Ave - Drop	451.23	50 Year Flow	31000.00	1144.00	1160.00		1160.90	0.000700	7.60	4079.03	279.95	0.35
Grand Ave - Drop	451.23	500 Year Flow	75000.00	1144.00	1169.16		1171.09	0.000881	11.14	6731.10	299.35	0.41

HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	452.23	100 Year FP	41000.00	1144.00	1162.62		1163.77	0.000758	8.59	4774.26	288.48	0.37
Grand Ave - Drop	452.23	100 Year FW	41000.00	1144.00	1162.62		1163.77	0.000758	8.59	4774.26	288.48	0.37
Grand Ave - Drop	452.23	10 Year Flow	13500.00	1144.00	1154.48		1154.94	0.000639	5.41	2497.65	271.08	0.31
Grand Ave - Drop	452.23	50 Year Flow	31000.00	1144.00	1160.06		1160.98	0.000729	7.67	4043.73	283.04	0.36
Grand Ave - Drop	452.23	500 Year Flow	75000.00	1144.00	1169.25		1171.18	0.000875	11.14	6733.95	306.45	0.42
Grand Ave - Drop	452.5	100 Year FP	41000.00	1153.00	1161.80	1161.80	1166.06	0.006638	16.56	2475.88	291.29	1.00
Grand Ave - Drop	452.5	100 Year FW	41000.00	1153.00	1161.80	1161.80	1166.06	0.006638	16.56	2475.88	291.29	1.00
Grand Ave - Drop	452.5	10 Year Flow	13500.00	1153.00	1157.22	1157.22	1159.31	0.008348	11.59	1164.55	280.99	1.00
Grand Ave - Drop	452.5	50 Year Flow	31000.00	1153.00	1160.33	1160.33	1163.88	0.007000	15.14	2048.18	288.02	1.00
Grand Ave - Drop	452.5	500 Year Flow	75000.00	1153.00	1166.67	1166.08	1172.35	0.005119	19.13	3921.51	302.58	0.94
Grand Ave - Drop	452.65	100 Year FP	41000.00	1155.00	1163.68	1163.68	1167.89	0.006703	16.48	2488.35	297.82	1.00
Grand Ave - Drop	452.65	100 Year FW	41000.00	1155.00	1163.68	1163.68	1167.89	0.006703	16.48	2488.35	297.82	1.00
Grand Ave - Drop	452.65	10 Year Flow	13500.00	1155.00	1159.17	1159.17	1161.23	0.008372	11.52	1172.18	286.46	1.00
Grand Ave - Drop	452.65	50 Year Flow	31000.00	1155.00	1162.22	1162.22	1165.74	0.007085	15.07	2056.55	294.15	1.00
Grand Ave - Drop	452.65	500 Year Flow	75000.00	1155.00	1167.93	1167.93	1174.04	0.006029	19.83	3781.91	310.26	1.00
Grand Ave - Drop	452.73	100 Year FP	41000.00	1154.00	1165.51		1168.09	0.003062	12.90	3178.06	303.96	0.70
Grand Ave - Drop	452.73	100 Year FW	41000.00	1154.00	1165.51		1168.09	0.003062	12.90	3178.06	303.96	0.70
Grand Ave - Drop	452.73	10 Year Flow	13500.00	1154.00	1160.31		1161.37	0.002795	8.24	1637.99	289.45	0.61
Grand Ave - Drop	452.73	50 Year Flow	31000.00	1154.00	1163.84		1165.93	0.003020	11.58	2677.07	298.85	0.68
Grand Ave - Drop	452.73	500 Year Flow	75000.00	1154.00	1170.30	1167.48	1174.28	0.003015	16.03	4704.06	351.44	0.74
Grand Ave - Drop	453.23	100 Year FP	41000.00	1154.00	1165.91		1168.26	0.002650	12.30	3332.76	308.23	0.66
Grand Ave - Drop	453.23	100 Year FW	41000.00	1154.00	1165.91		1168.26	0.002650	12.30	3332.76	308.23	0.66
Grand Ave - Drop	453.23	10 Year Flow	13500.00	1154.00	1160.57		1161.50	0.002262	7.75	1742.82	288.92	0.56
Grand Ave - Drop	453.23	50 Year Flow	31000.00	1154.00	1164.20		1166.08	0.002577	11.02	2812.74	301.07	0.64
Grand Ave - Drop	453.23	500 Year Flow	75000.00	1154.00	1170.84		1174.46	0.002585	15.29	4982.07	407.90	0.69
Grand Ave - Drop	458.66	100 Year FP	41000.00	1157.12	1172.19		1173.11	0.001109	7.71	5314.66	400.51	0.37
Grand Ave - Drop	458.66	100 Year FW	41000.00	1157.12	1172.19		1173.11	0.001109	7.71	5314.66	400.51	0.37
Grand Ave - Drop	458.66	10 Year Flow	13500.00	1157.12	1162.37	1161.40	1163.48	0.005423	8.43	1601.44	356.20	0.70
Grand Ave - Drop	458.66	50 Year Flow	31000.00	1157.12	1166.25	1164.09	1167.89	0.003747	10.28	3015.18	373.38	0.64
Grand Ave - Drop	458.66	500 Year Flow	75000.00	1157.12	1174.50	1169.03	1176.50	0.003531	11.47	7195.98	1587.07	0.64
Grand Ave - Drop	458.73	100 Year FP	12000.00	1157.92	1173.31	1162.29	1173.39	0.000097	2.23	5383.27	433.80	0.11
Grand Ave - Drop	458.73	100 Year FW	12000.00	1157.92	1173.31	1162.29	1173.39	0.000097	2.23	5383.27	433.80	0.11

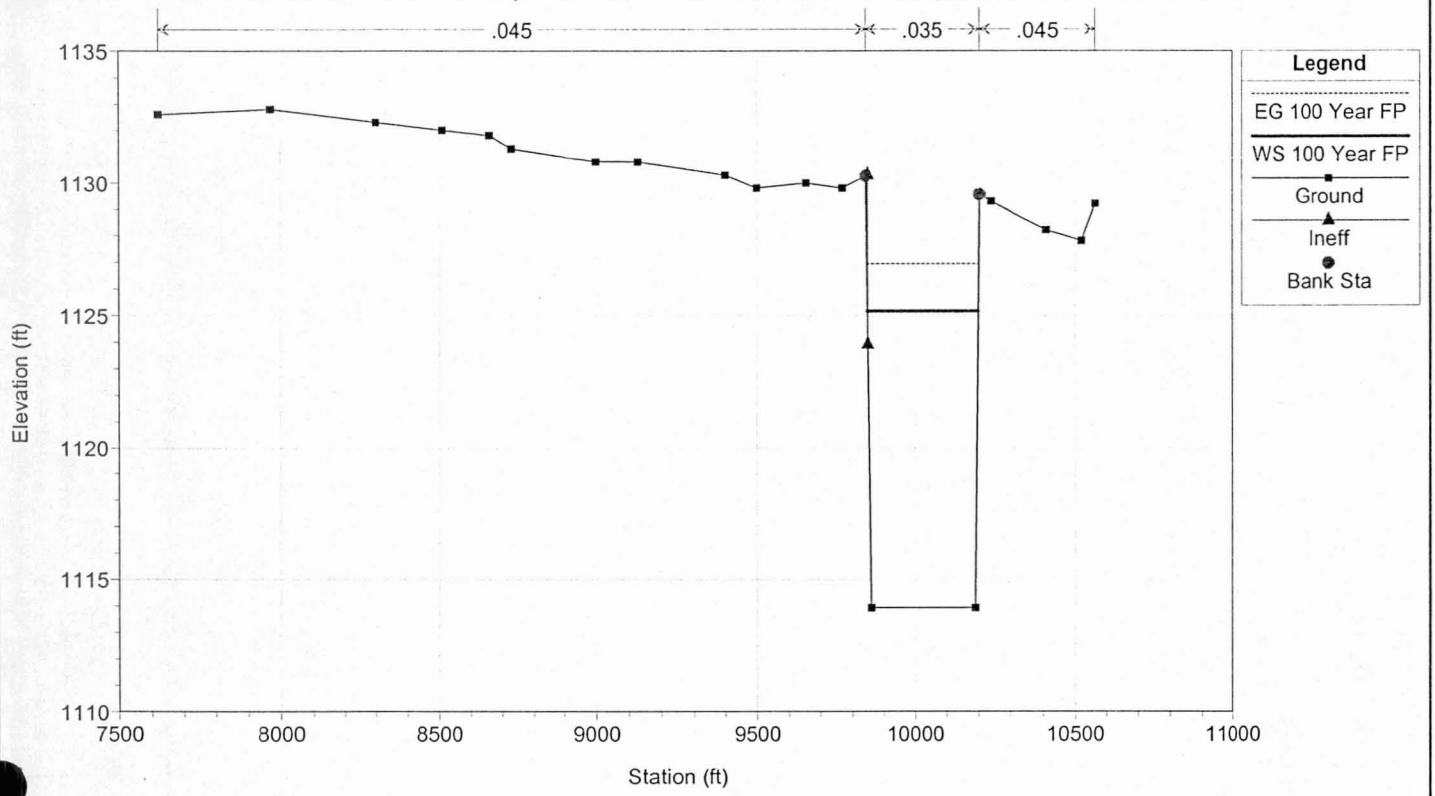
HEC-RAS Plan: CLOMR River: New River Reach: Grand Ave - Drop (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Grand Ave - Drop	458.73	10 Year Flow	2700.00	1157.92	1164.18	1160.04	1164.21	0.000144	1.50	1796.14	352.51	0.12
Grand Ave - Drop	458.73	50 Year Flow	8000.00	1157.92	1168.45	1161.46	1168.54	0.000175	2.36	3383.79	389.97	0.14
Grand Ave - Drop	458.73	500 Year Flow	22000.00	1157.92	1176.92	1164.03	1177.06	0.000134	3.04	8641.65	1776.00	0.14
Grand Ave - Drop	458.81	100 Year FP	12000.00	1160.12	1173.34	1163.97	1173.44	0.000145	2.54	4718.82	422.41	0.13
Grand Ave - Drop	458.81	100 Year FW	12000.00	1160.12	1173.34	1163.97	1173.44	0.000145	2.54	4718.82	422.41	0.13
Grand Ave - Drop	458.81	10 Year Flow	2700.00	1160.12	1164.24	1161.72	1164.32	0.000471	2.18	1240.44	340.70	0.20
Grand Ave - Drop	458.81	50 Year Flow	8000.00	1160.12	1168.52	1163.13	1168.64	0.000325	2.88	2781.34	380.30	0.19
Grand Ave - Drop	458.81	500 Year Flow	22000.00	1160.12	1176.96	1165.71	1177.14	0.000202	3.47	6694.12	1721.94	0.16
Grand Ave - Drop	458.88	100 Year FP	12000.00	1161.92	1173.31	1167.83	1173.61	0.000680	4.39	2734.01	343.92	0.27
Grand Ave - Drop	458.88	100 Year FW	12000.00	1161.92	1173.31	1167.83	1173.61	0.000680	4.39	2734.01	343.92	0.27
Grand Ave - Drop	458.88	10 Year Flow	2700.00	1161.92	1164.45	1164.45	1165.52	0.014519	8.29	325.69	156.95	1.01
Grand Ave - Drop	458.88	50 Year Flow	8000.00	1161.92	1168.43	1166.72	1169.11	0.003315	6.61	1210.15	270.46	0.55
Grand Ave - Drop	458.88	500 Year Flow	22000.00	1161.92	1176.90	1169.99	1177.36	0.000721	5.43	4130.03	1415.51	0.30
Grand Ave - Drop	458.94	100 Year FP	12000.00	1163.62	1173.51	1169.61	1173.85	0.000944	4.74	2533.63	362.43	0.32
Grand Ave - Drop	458.94	100 Year FW	12000.00	1163.62	1173.51	1169.61	1173.85	0.000944	4.74	2533.63	362.43	0.32
Grand Ave - Drop	458.94	10 Year Flow	2700.00	1163.62	1167.11	1166.13	1167.59	0.004086	5.59	483.39	162.48	0.57
Grand Ave - Drop	458.94	50 Year Flow	8000.00	1163.62	1169.59	1168.67	1170.34	0.005370	6.95	1151.28	343.18	0.67
Grand Ave - Drop	458.94	500 Year Flow	22000.00	1163.62	1177.10	1171.31	1177.60	0.000834	5.69	3867.48	381.26	0.31


092104 New River Plan: CLOMR 1/9/2006
New River Grand Ave - Drop
Elevation (ft)
Main Channel Distance (ft)
Legend
WS 500 Year Flow
WS 100 Year FP
WS 50 Year Flow
WS 10 Year Flow
Ground
Set WS
1110
1120
1130
1140
1150
1160
1170
1180
0
2000
4000
6000
8000
10000
12000
14000
337
340.5
343
344.9
347.255
352.4
358.25
365.4
370.65
373.75
376.75
379.75
384.5
388.5
392
395.5
402.5
406.5
409.5
412.76
418.97
424.17
429.37
435.37
441.6
446.87
449.05
451.23
453.23
458.66
458.73
458.81
458.88
458.94

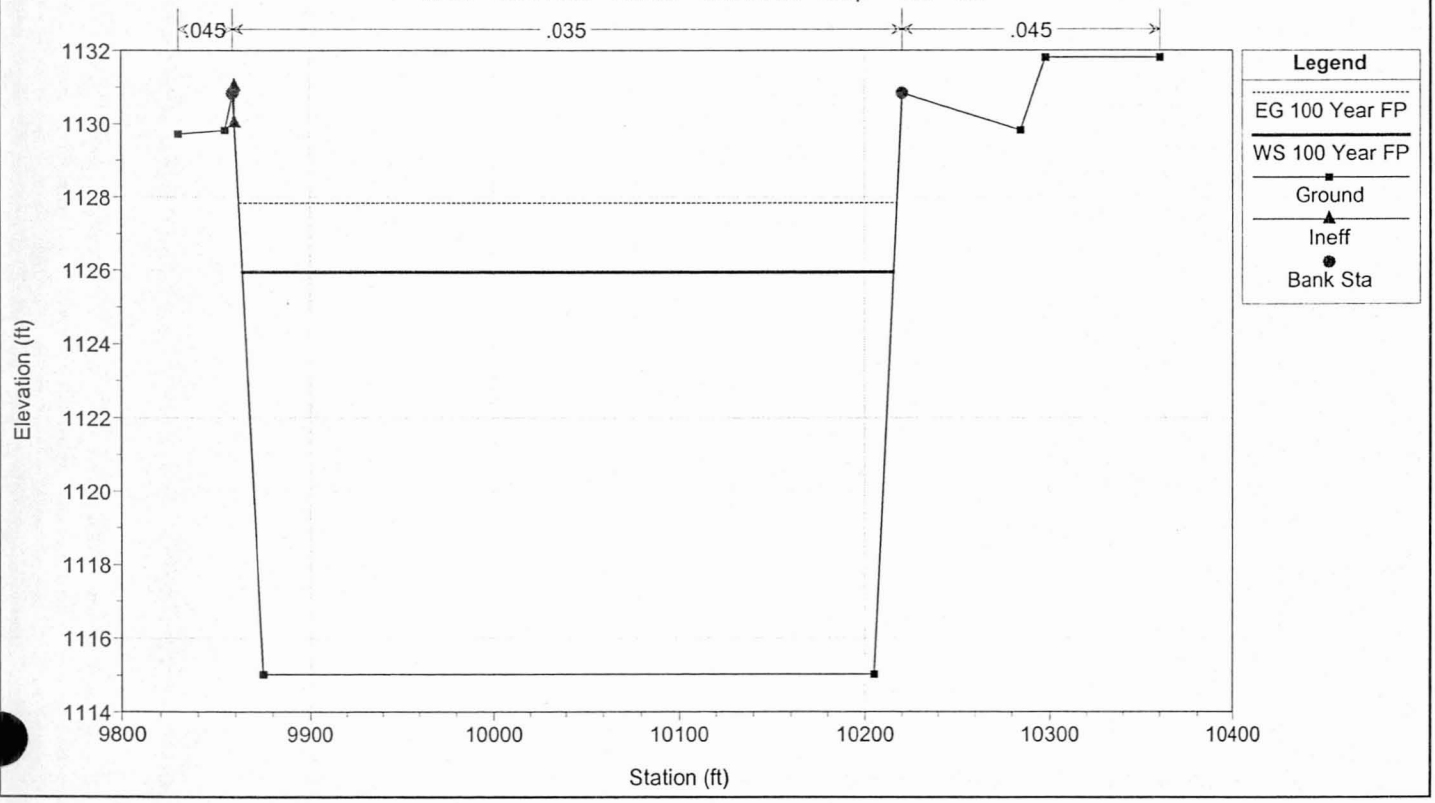
092104 New River Plan: CLOMR 1/9/2006

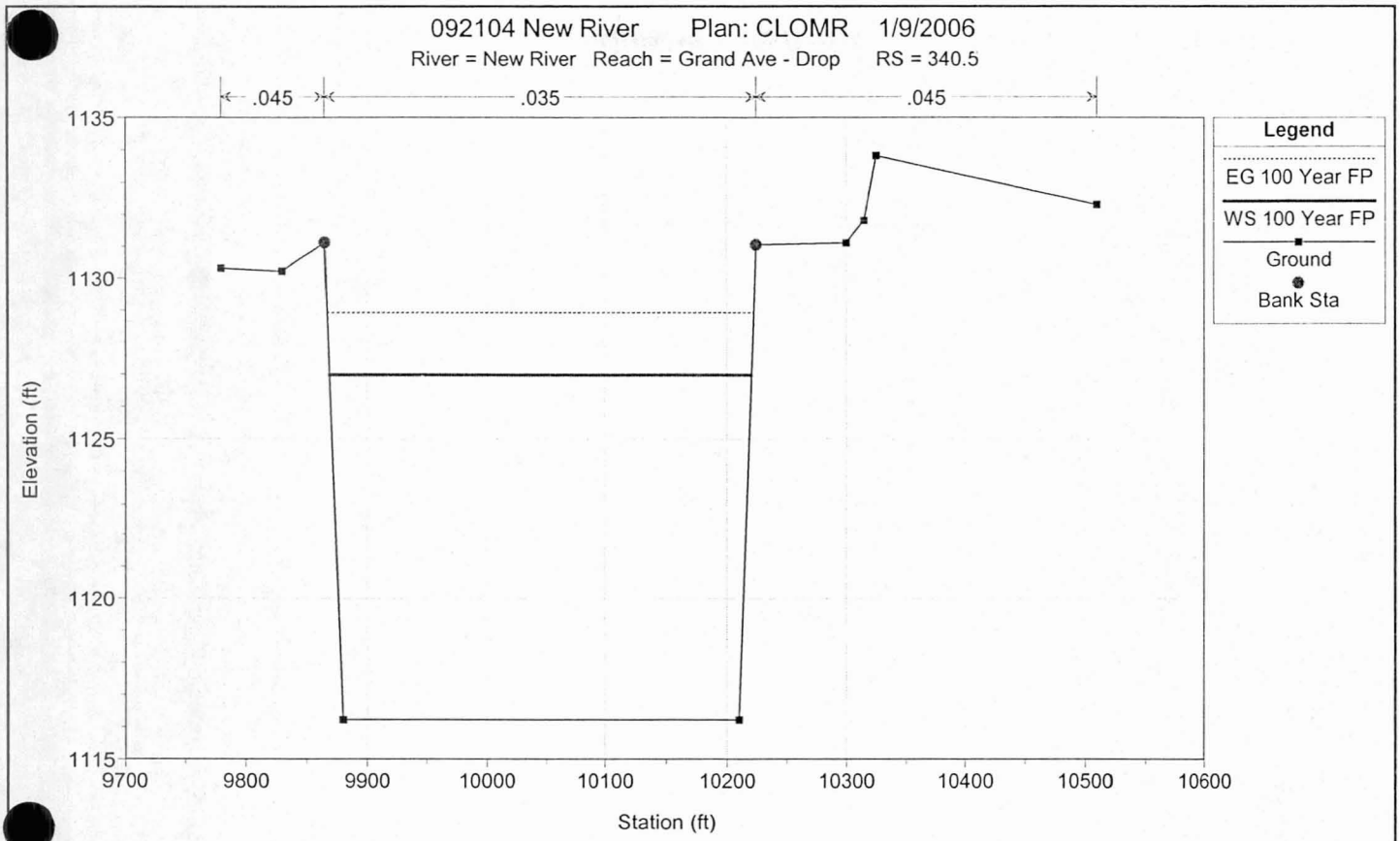
River = New River Reach = Grand Ave - Drop RS = 334 330FT BOTTOM WIDTH CHANNEL TO D.S. GRAND AVE BRIDGE X345.

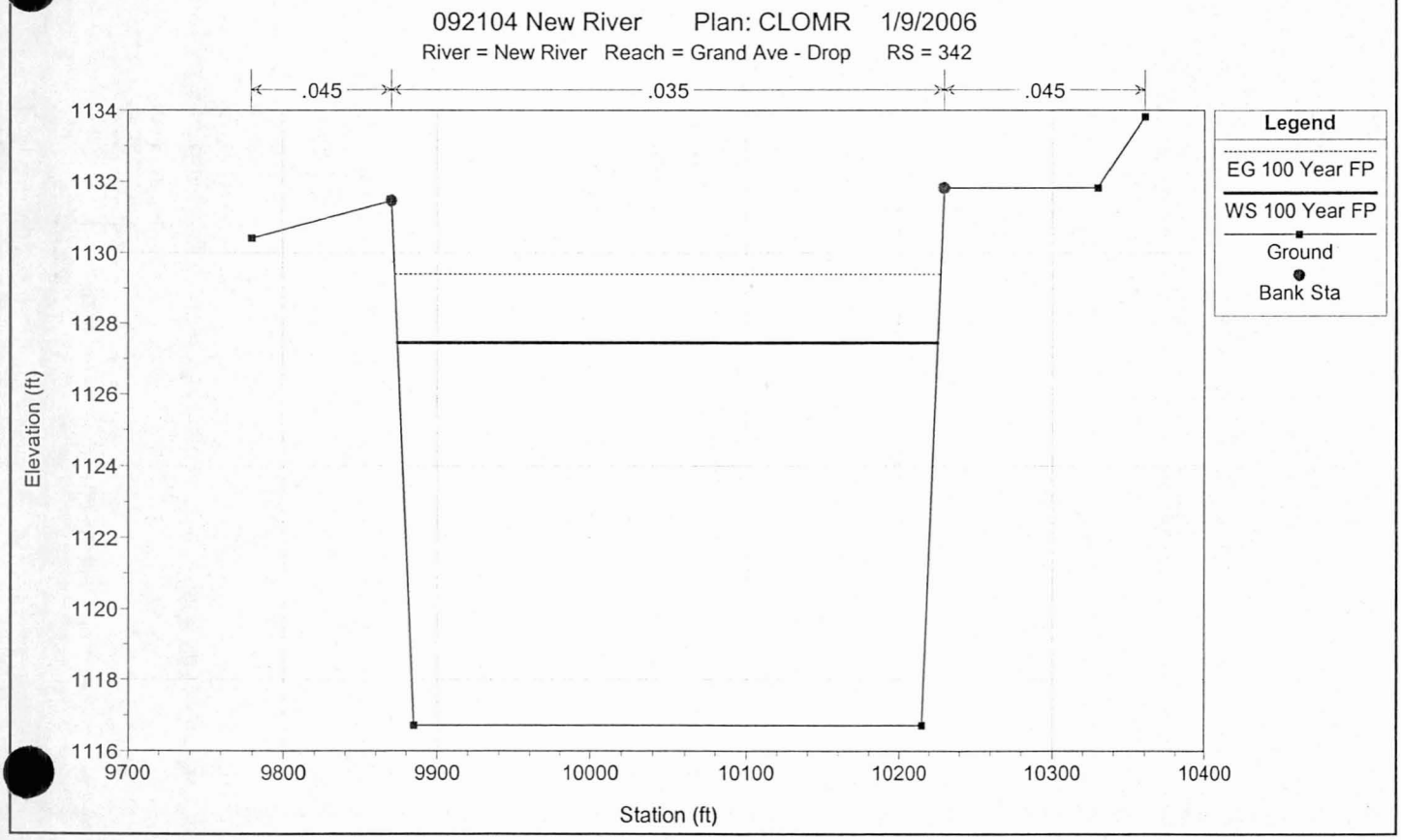


092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 337

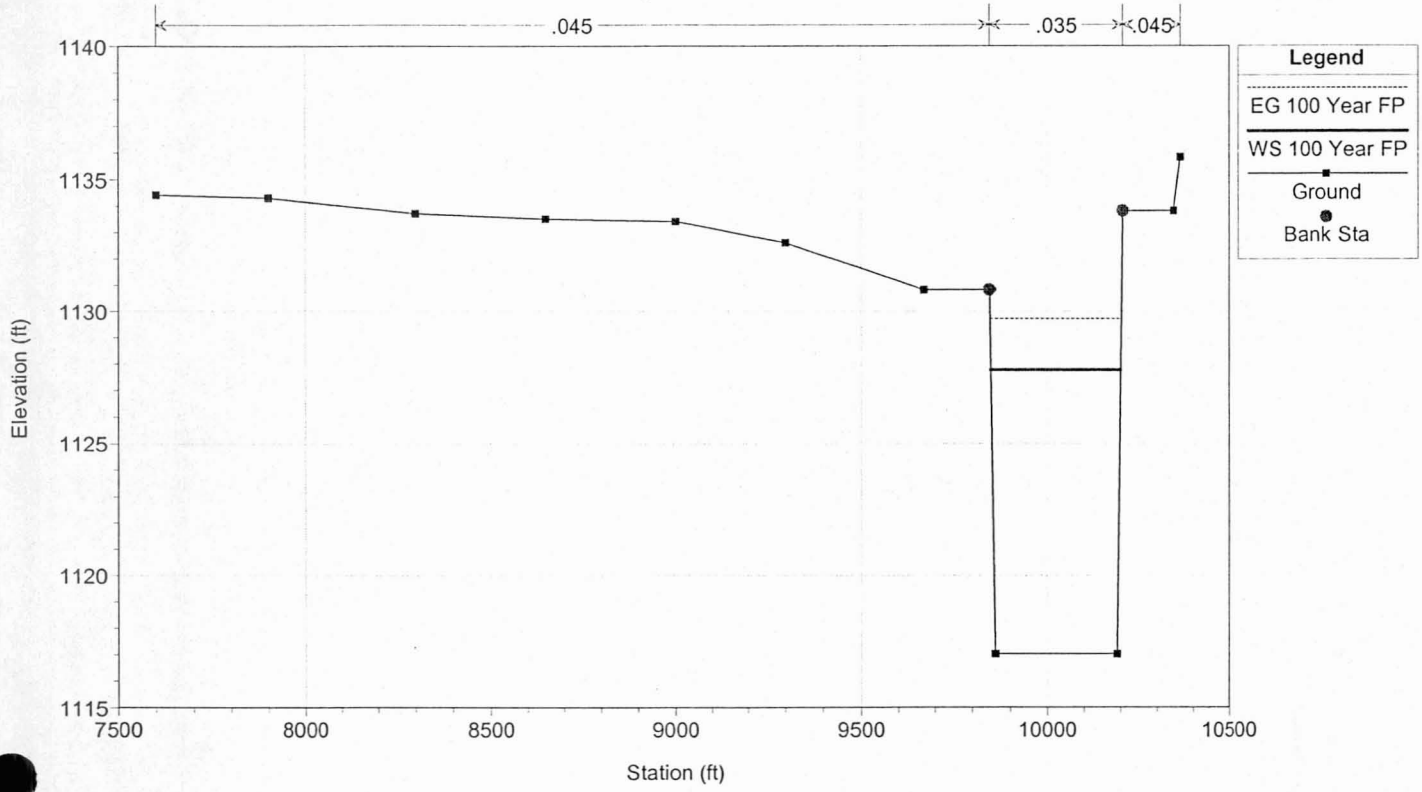



092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 340.5
.045
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1135
1130
1125
1120
1115
9700
9800
9900
10000
10100
10200
10300
10400
10500
10600
Station (ft)


092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 342
.045
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1134
1132
1130
1128
1126
1124
1122
1120
1118
1116
9700
9800
9900
10000
10100
10200
10300
10400
Station (ft)

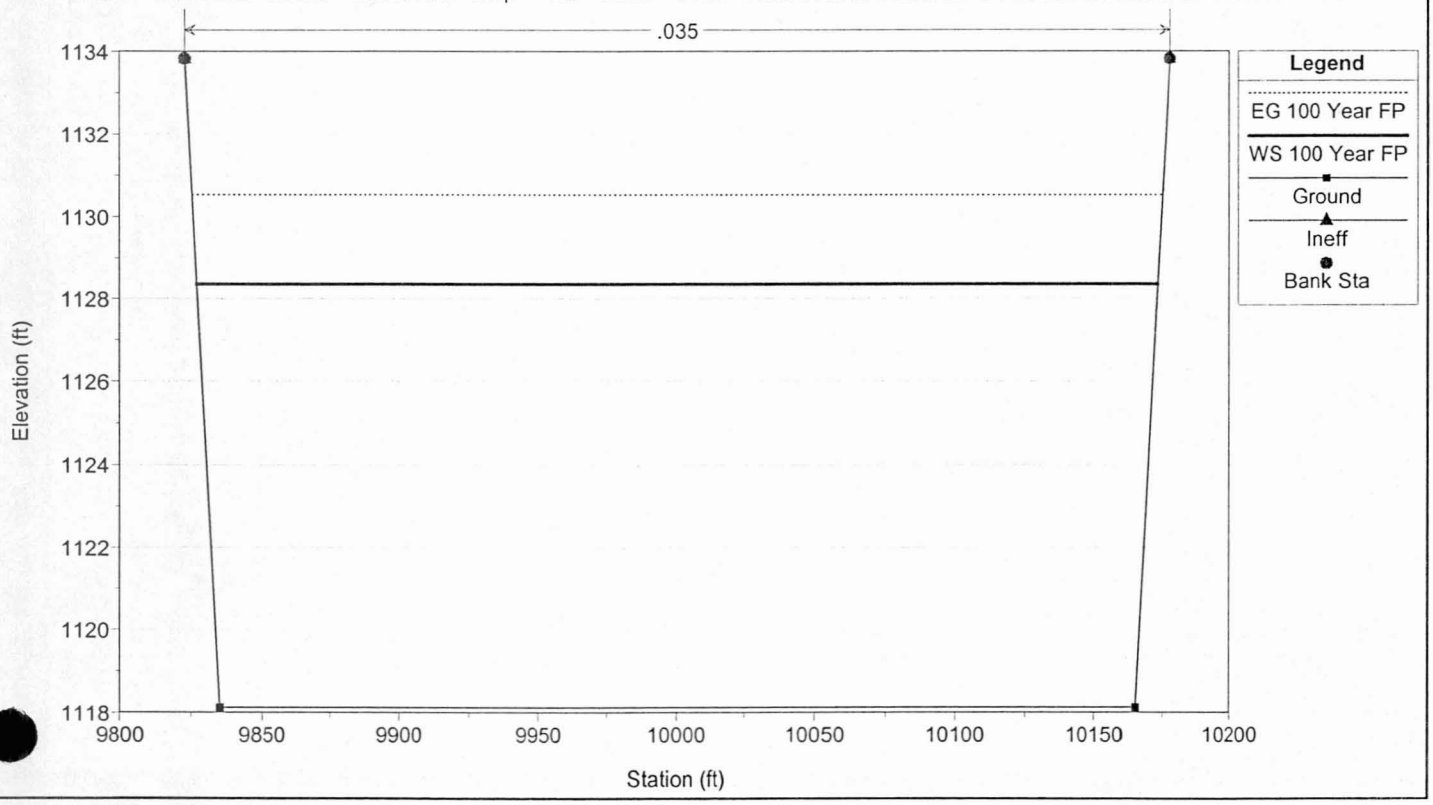
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 343 LOB CODED AS LT BNK ON DIKE TOP.



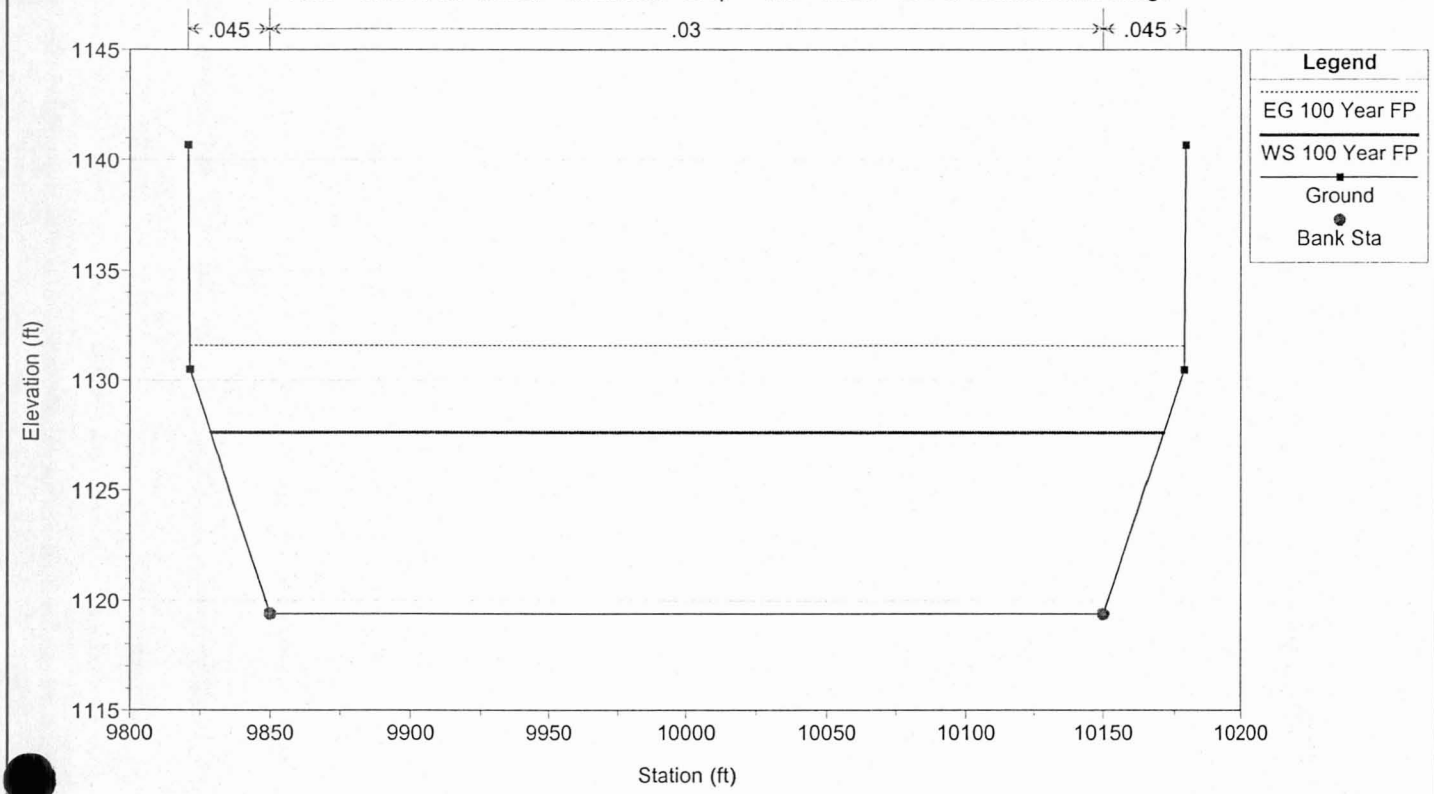
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 344.9 DROP STRUCTURE DELETED-CONCRETE INVERT UNDER BRIDGES



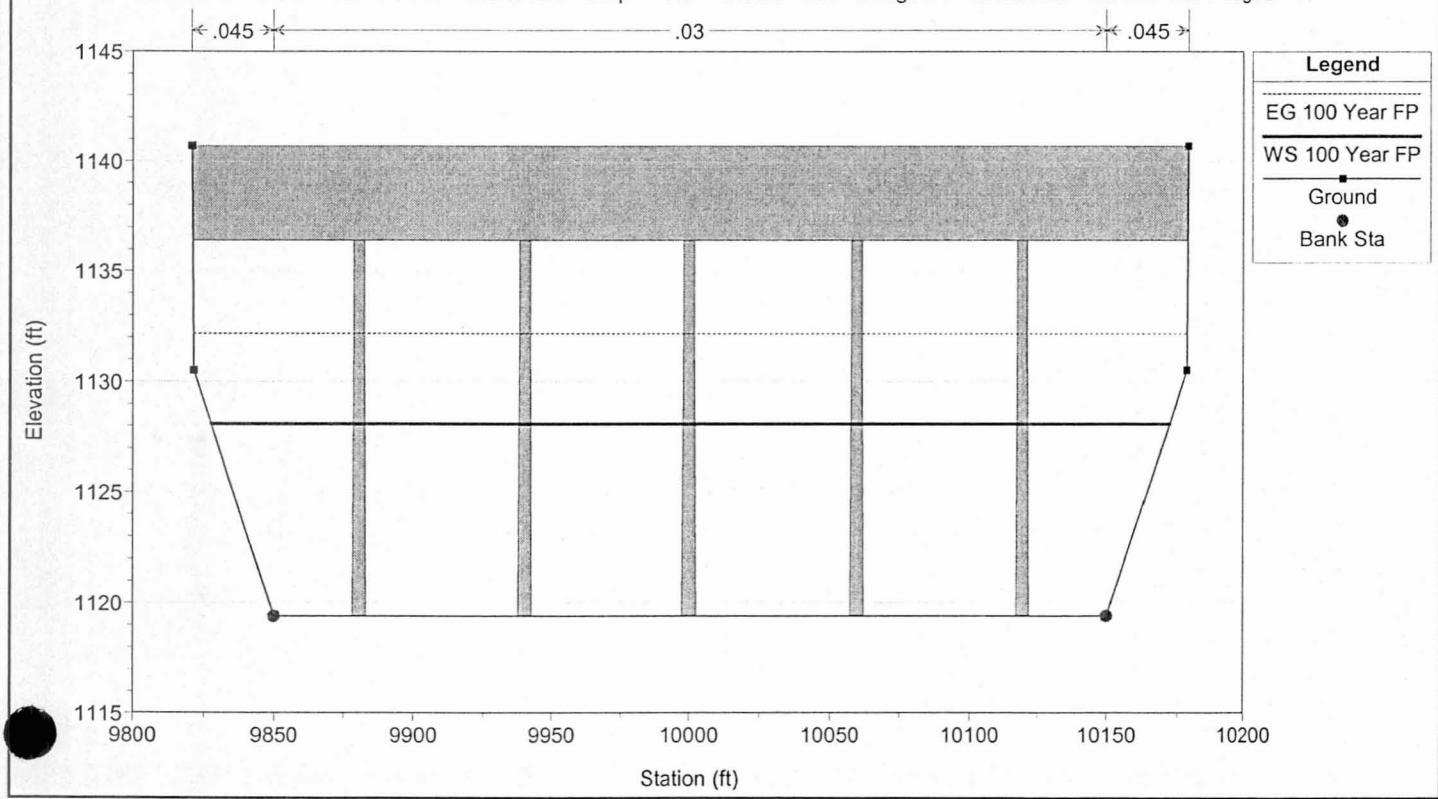
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 345.5 D/S of Grand Avenue Bridge



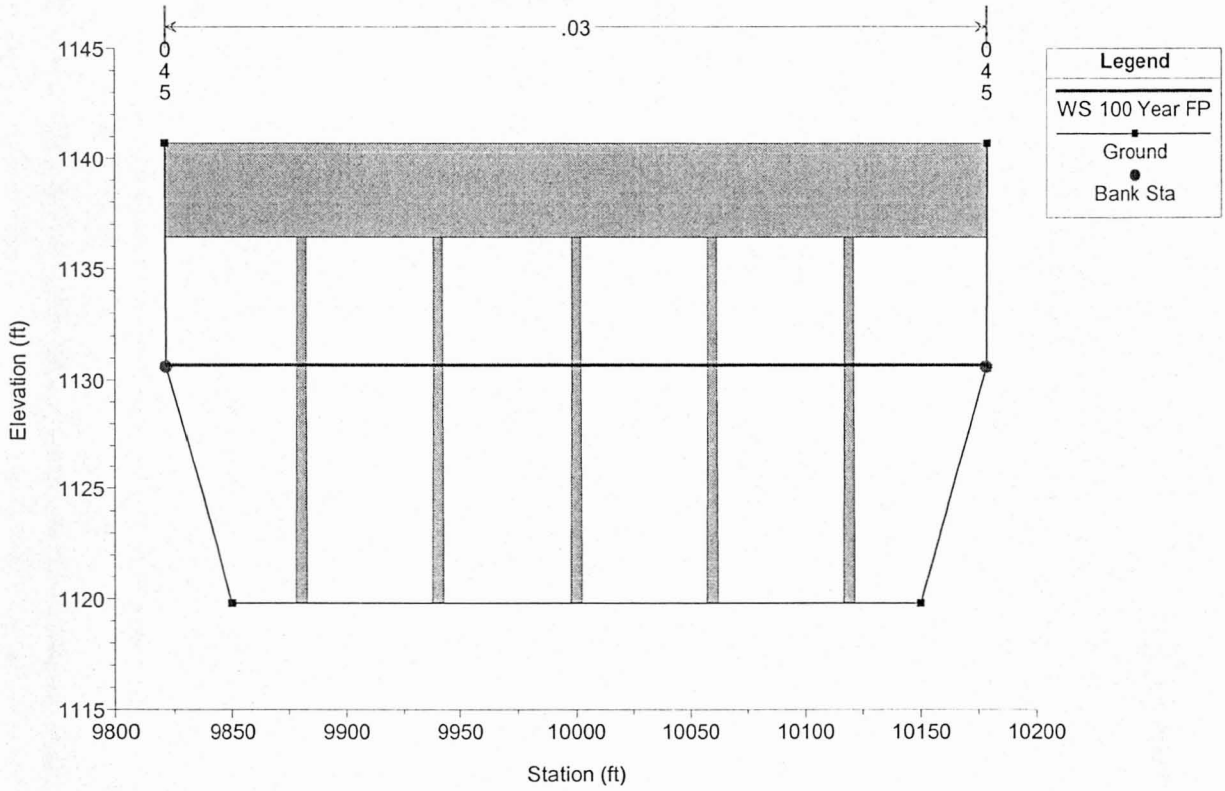
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 345.95 BR Bridge #1 - Grand Ave - EB and WB Bridges



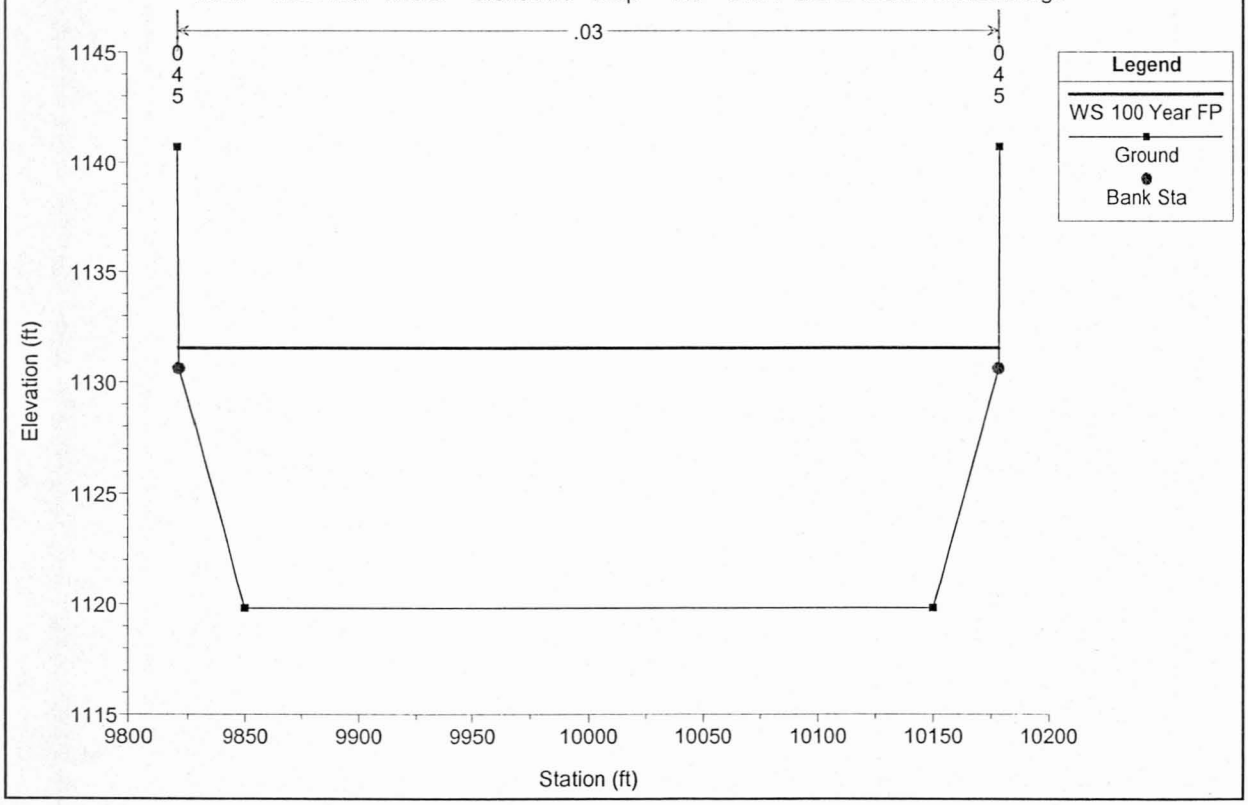
092104 New River Plan: CLOMR

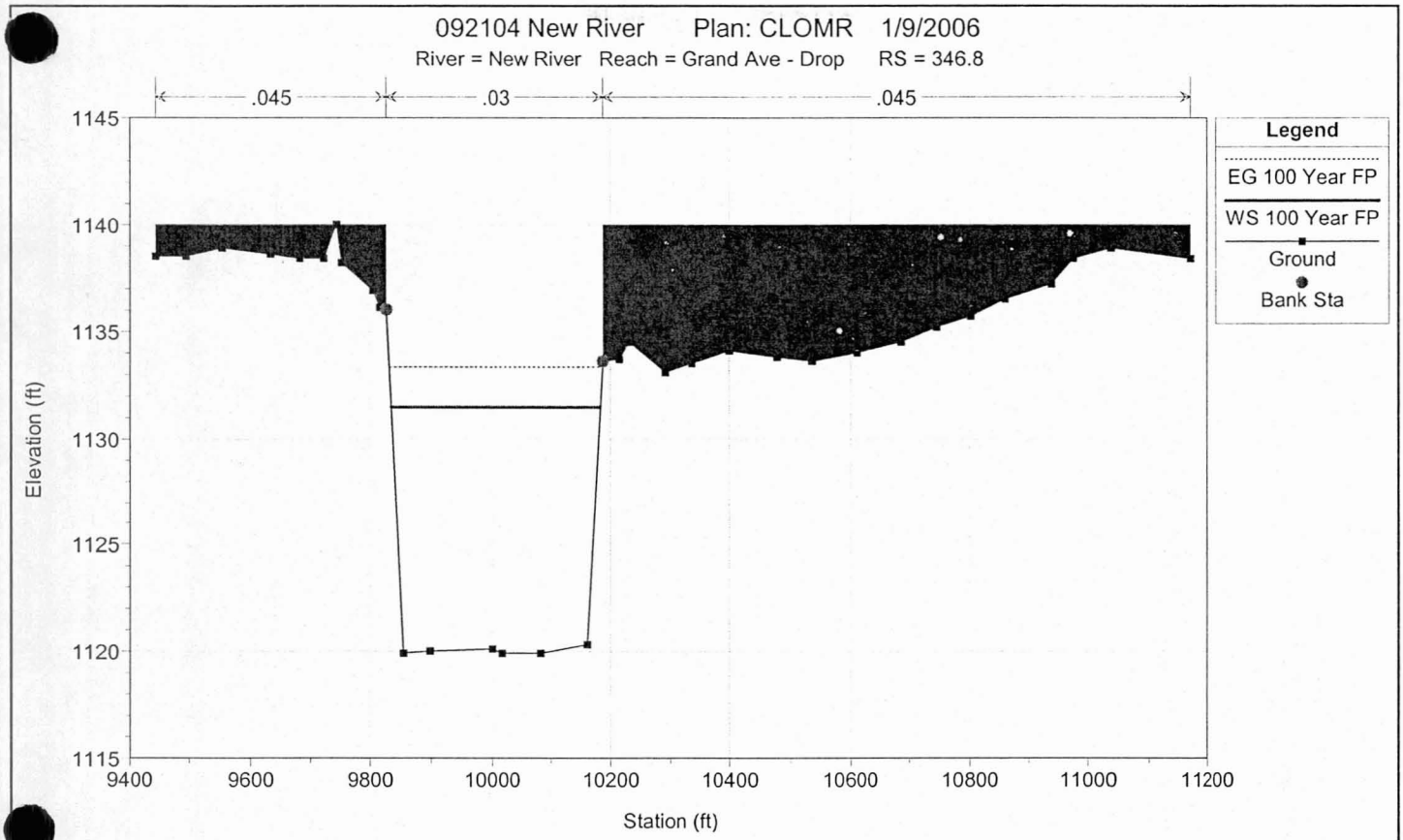
River = New River Reach = Grand Ave - Drop RS = 345.95 Bridge #1 - Grand Ave - EB and WB Bridges

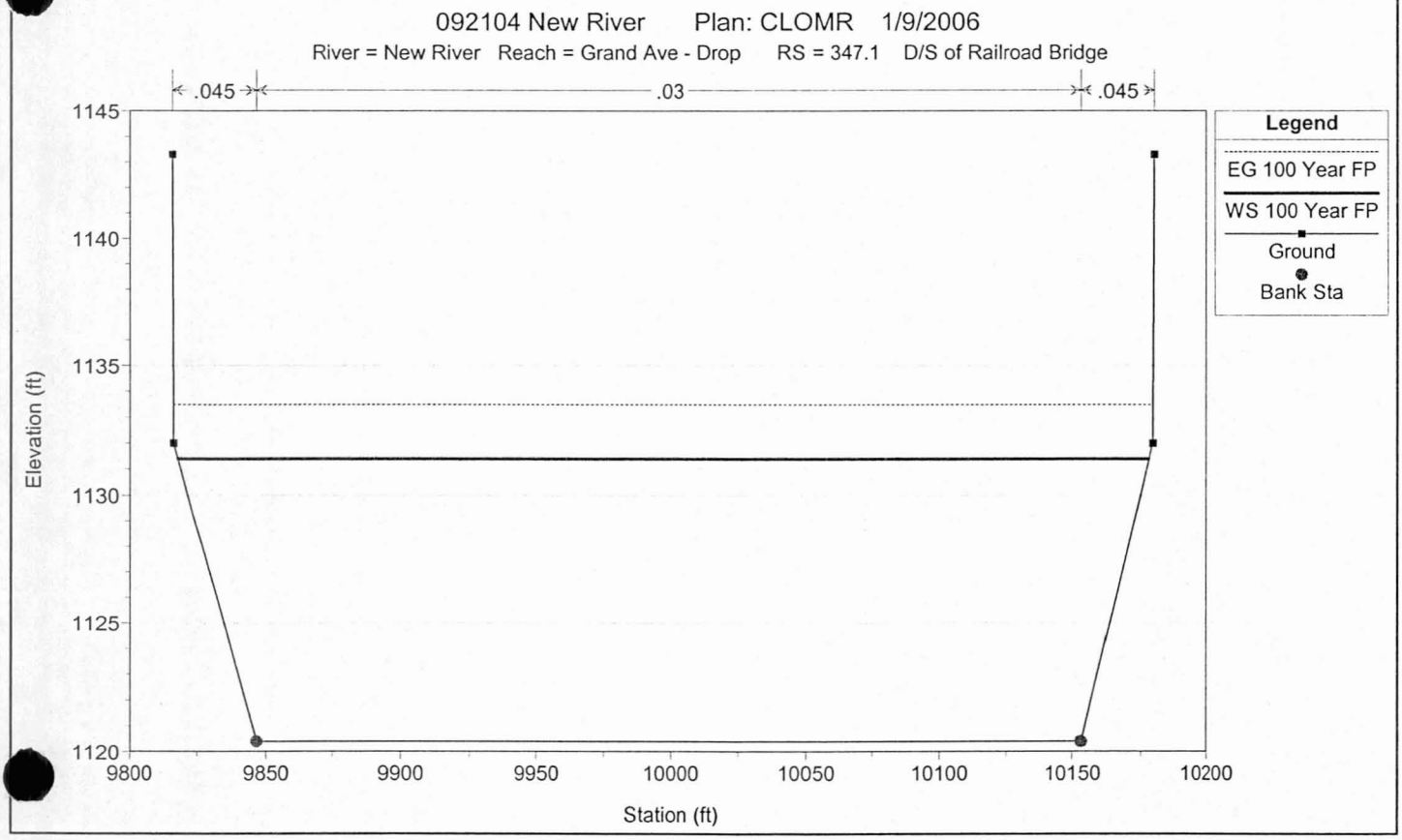


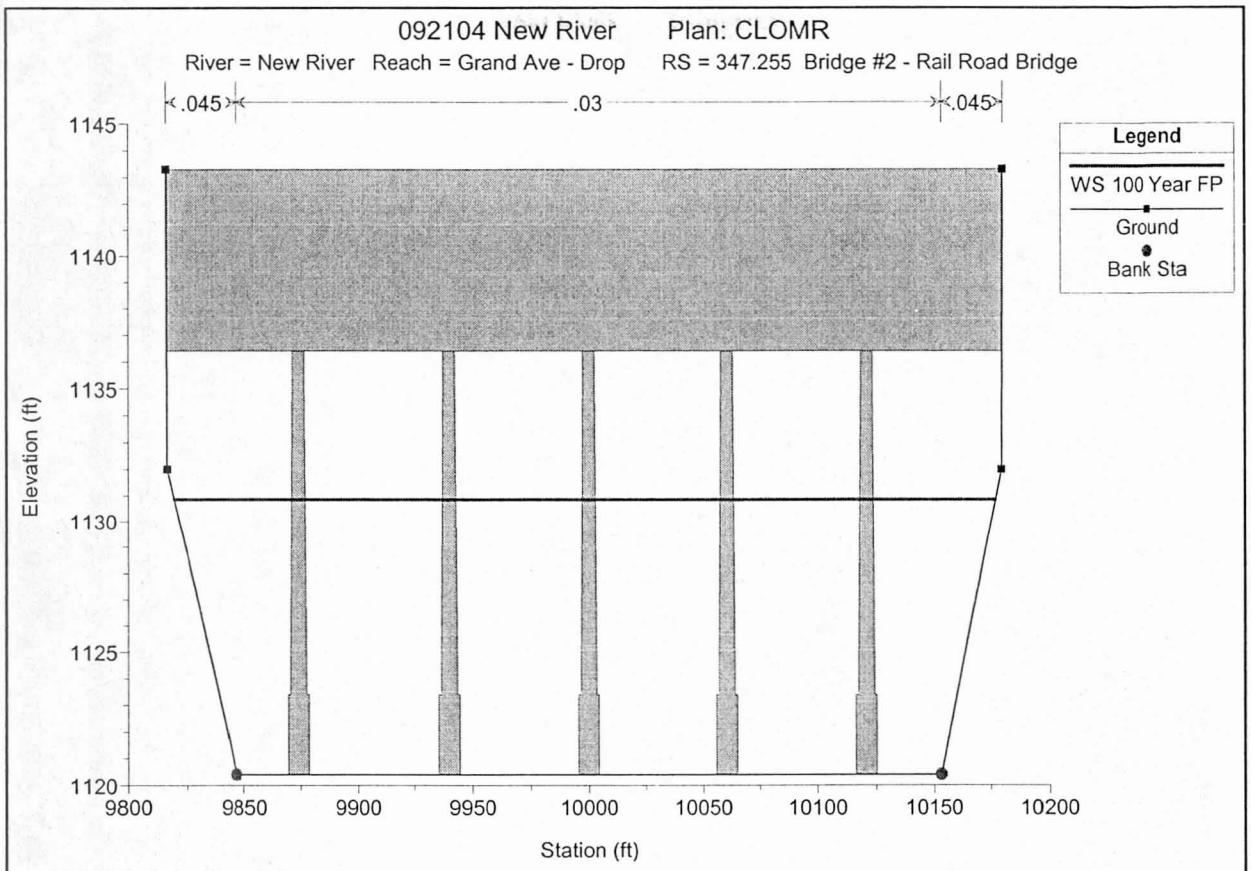
092104 New River Plan: CLOMR

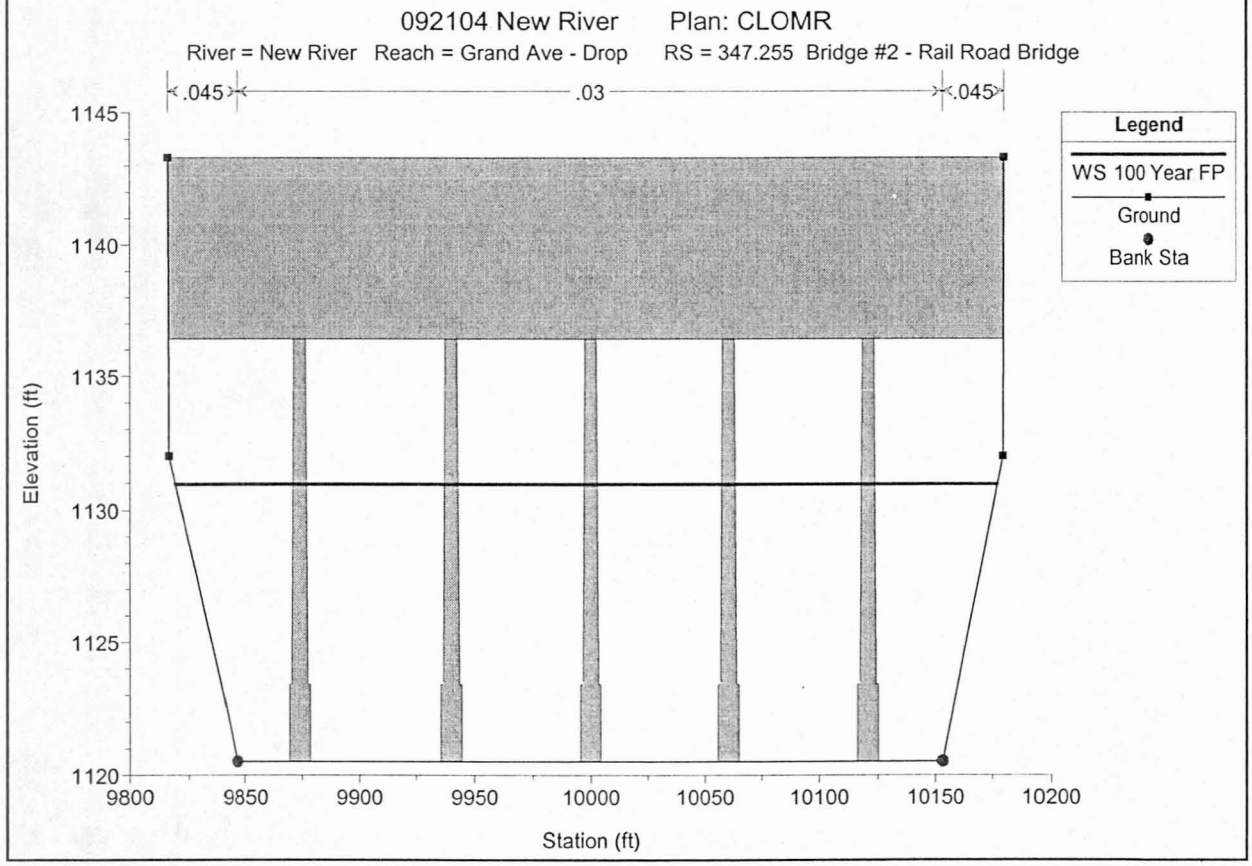
River = New River Reach = Grand Ave - Drop RS = 346.4 U/S of Grand Avenue Bridge




092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 346.8
.045
.03
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1145
1140
1135
1130
1125
1120
1115
9400
9600
9800
10000
10200
10400
10600
10800
11000
11200
Station (ft)

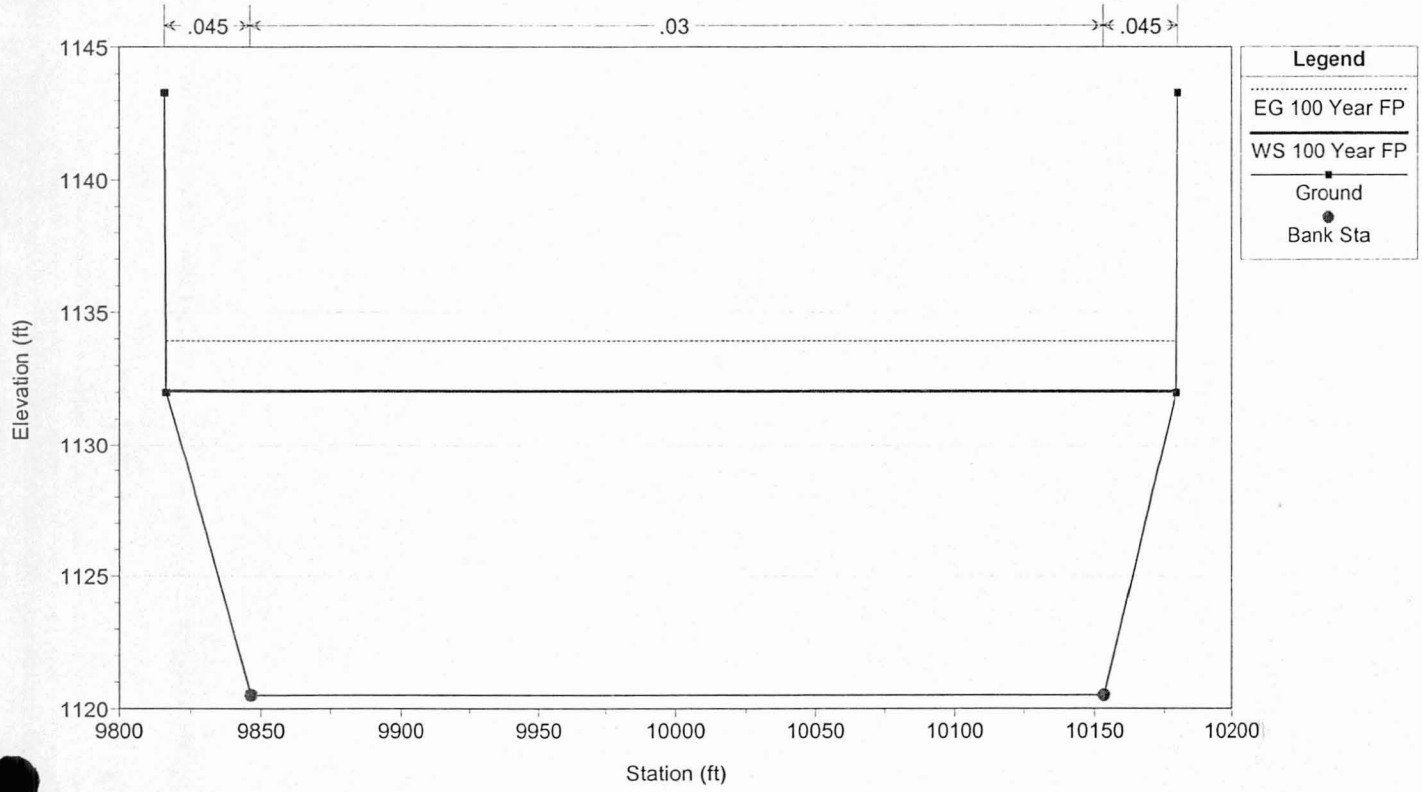

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 347.1 D/S of Railroad Bridge
.045
.03
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1145
1140
1135
1130
1125
1120
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)


092104 New River Plan: CLOMR
River = New River Reach = Grand Ave - Drop RS = 347.255 Bridge #2 - Rail Road Bridge
.045
.03
.045
Legend
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1145
1140
1135
1130
1125
1120
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)


092104 New River Plan: CLOMR
River = New River Reach = Grand Ave - Drop RS = 347.255 Bridge #2 - Rail Road Bridge
.045
.03
.045
Legend
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1145
1140
1135
1130
1125
1120
9800
9850
9900
9950
10000
10050
10100
10150
10200
Station (ft)

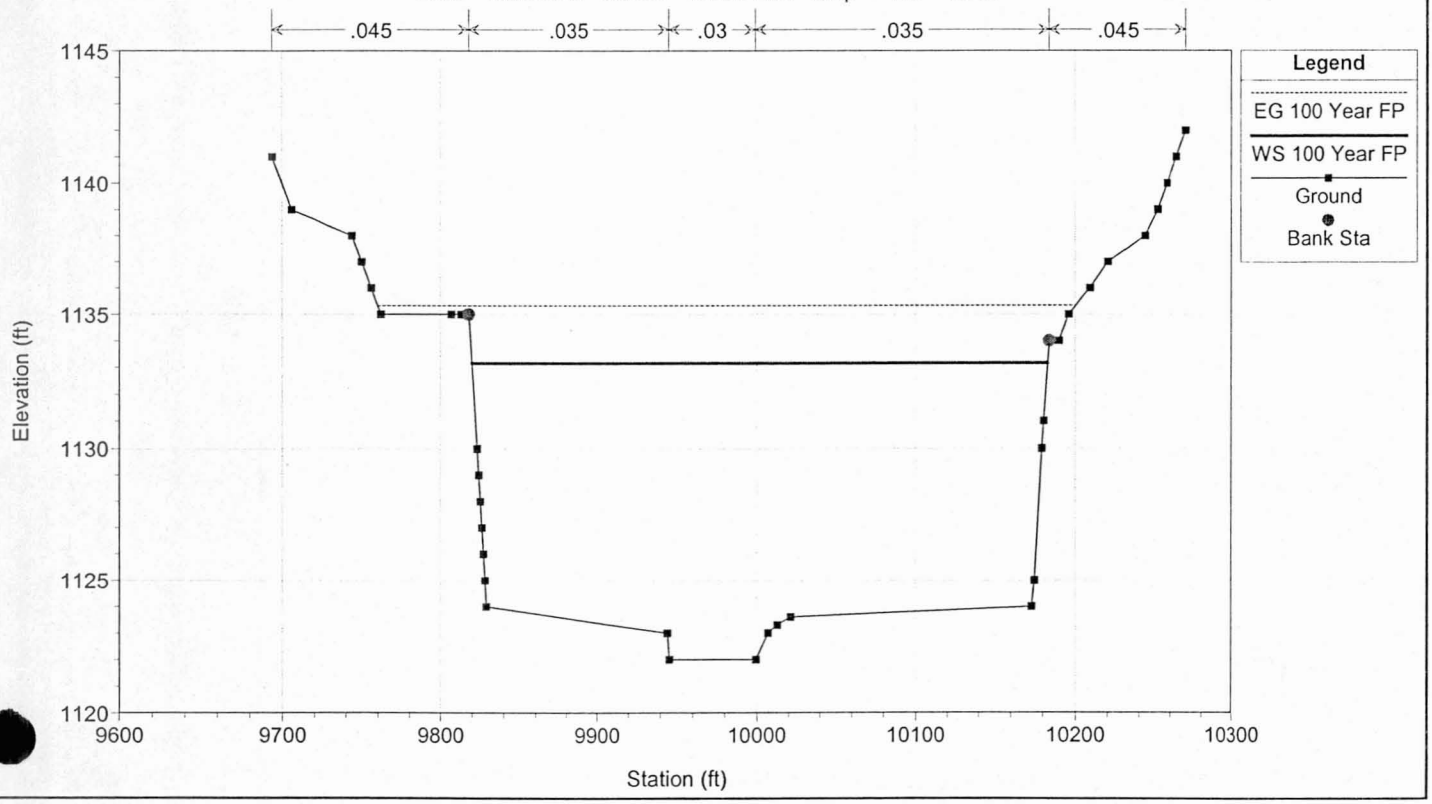
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 347.4 U/S of Railroad Bridge



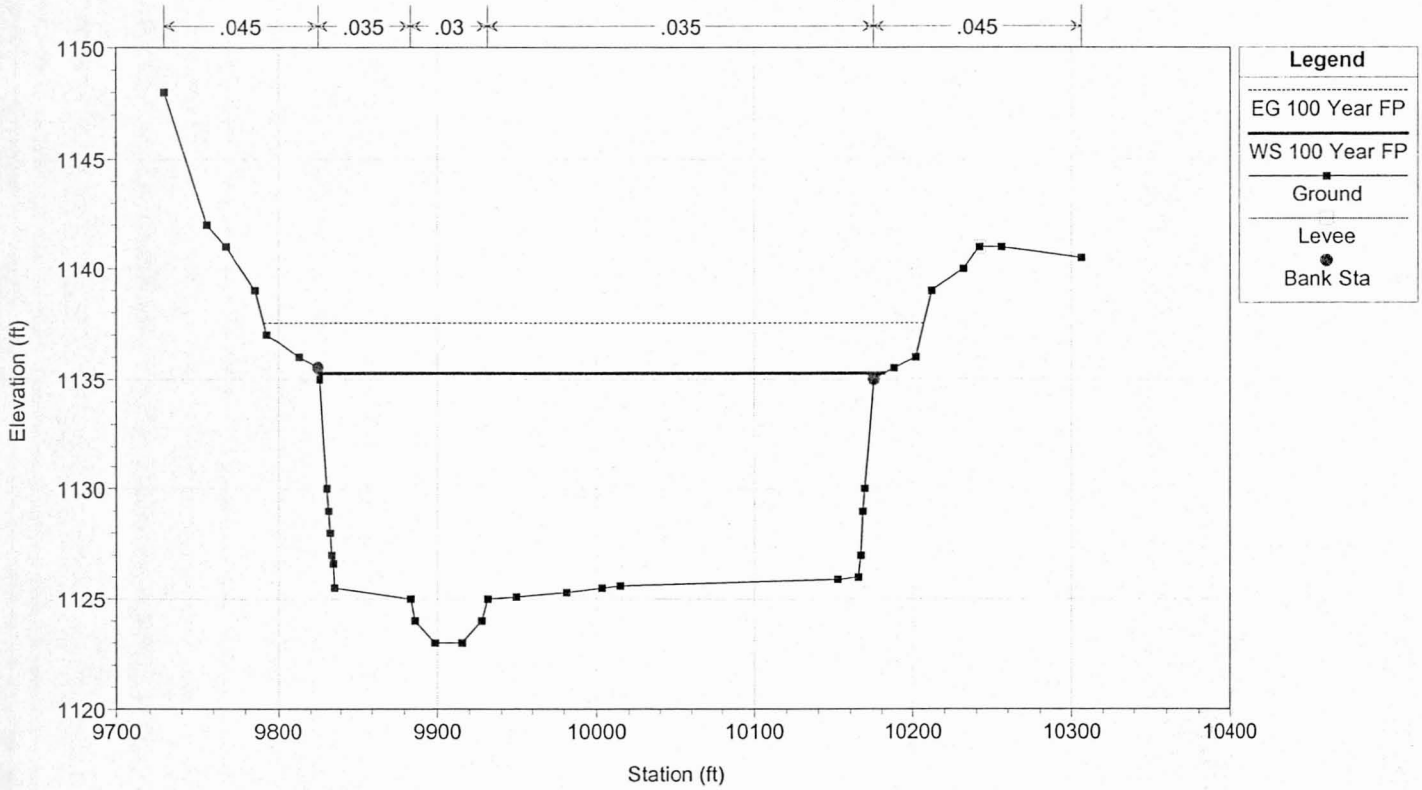
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 352.4



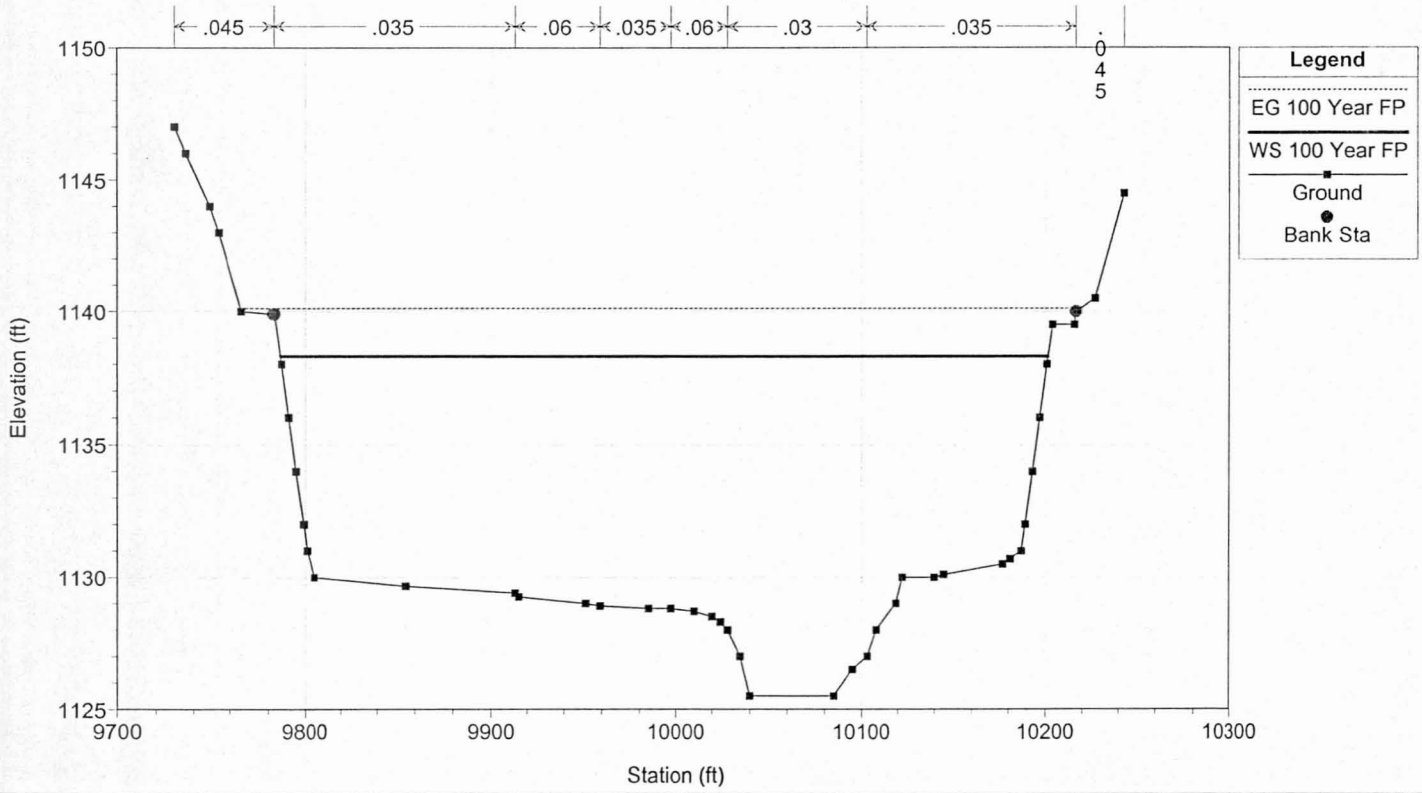
092104 New River Plan: CLOMR 1/9/2006

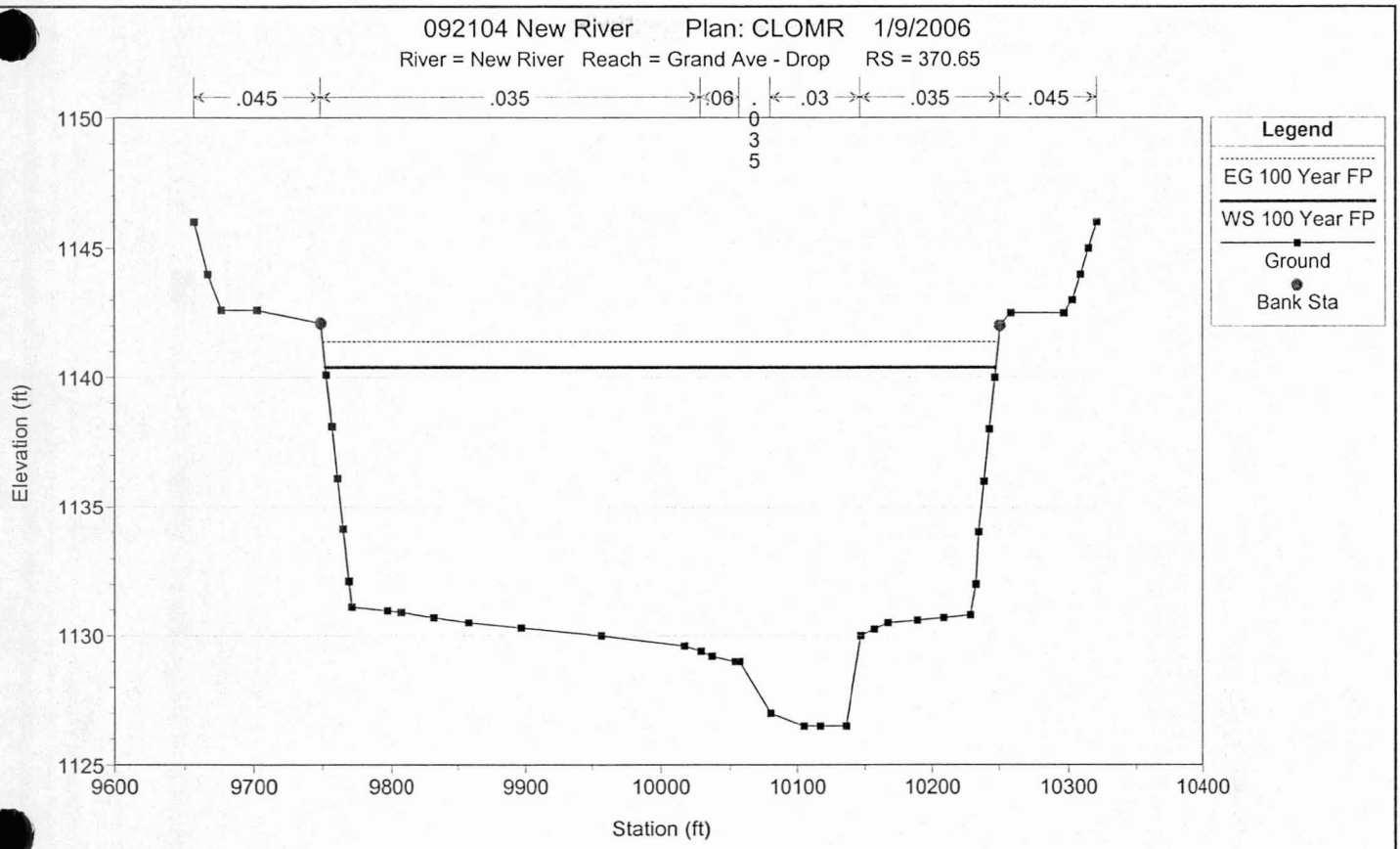
River = New River Reach = Grand Ave - Drop RS = 358.25

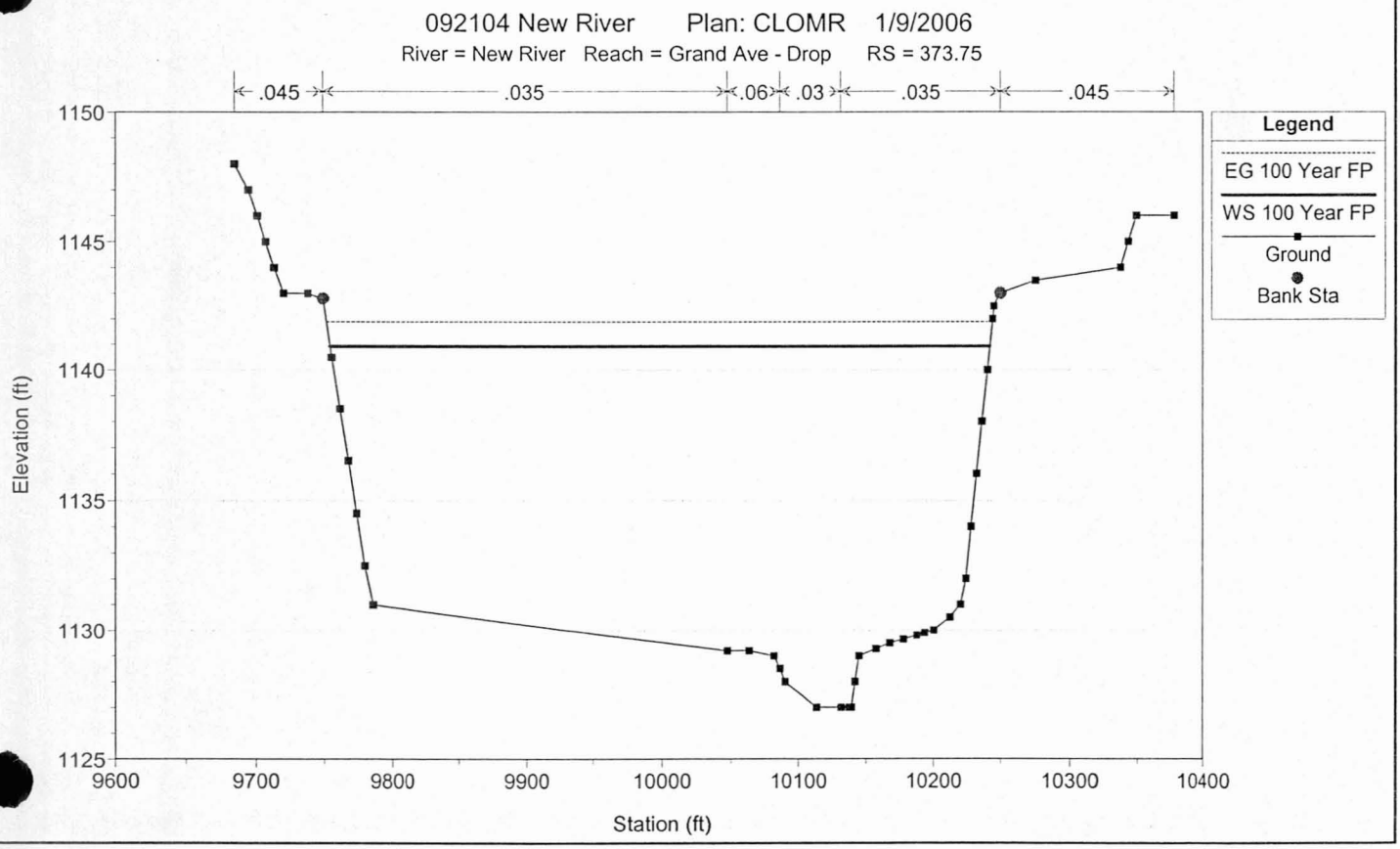


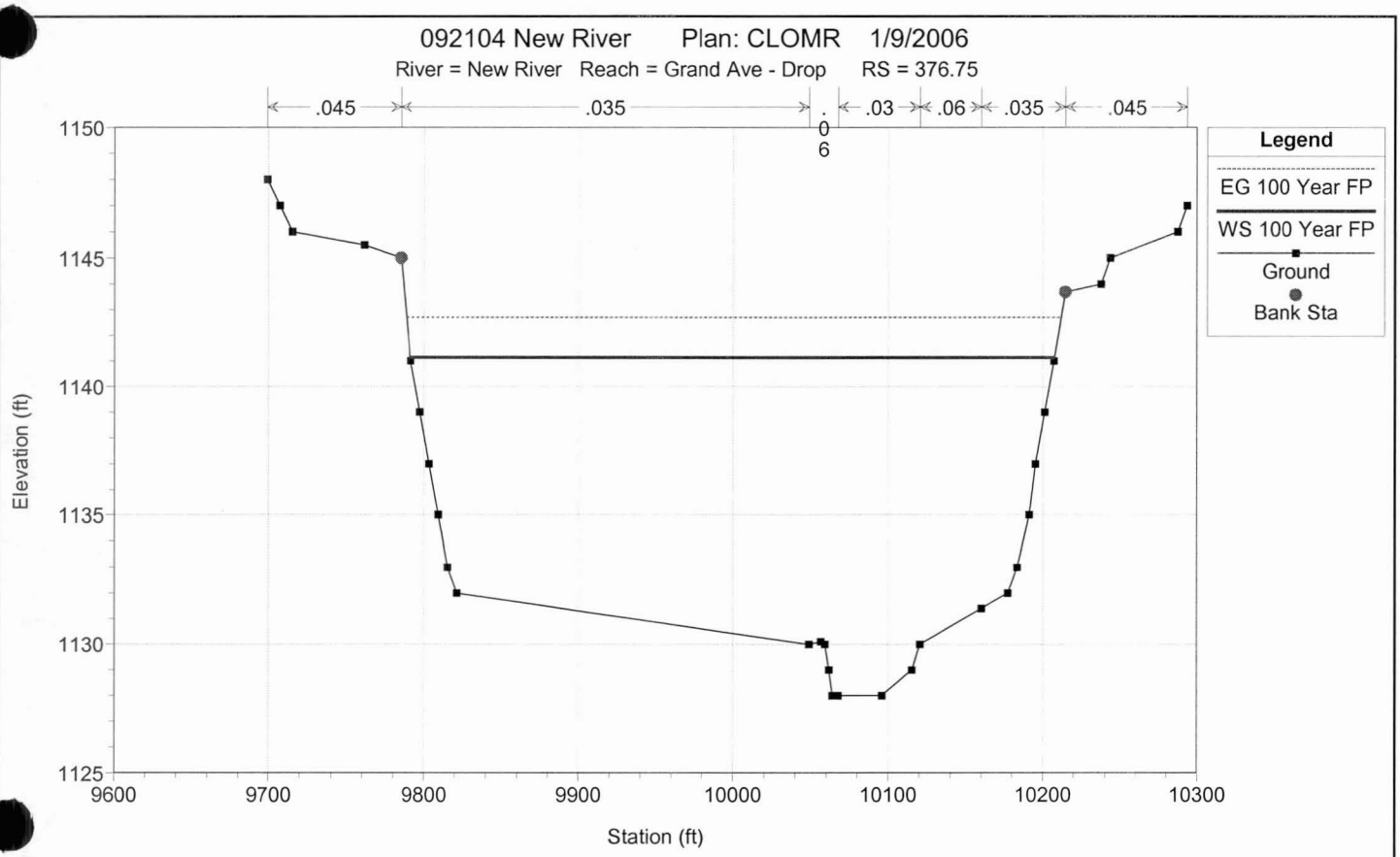
092104 New River Plan: CLOMR 1/9/2006

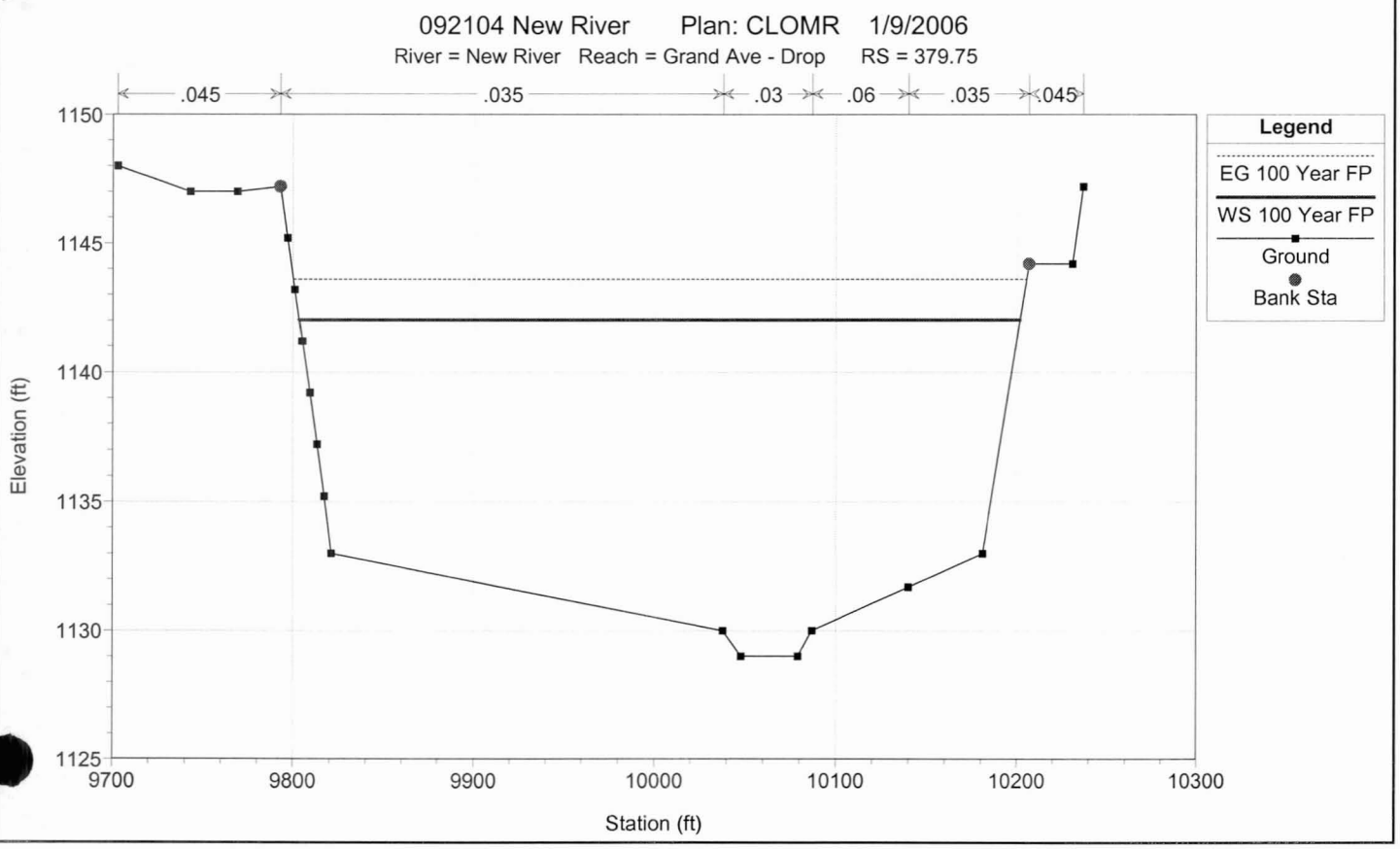
River = New River Reach = Grand Ave - Drop RS = 365.4

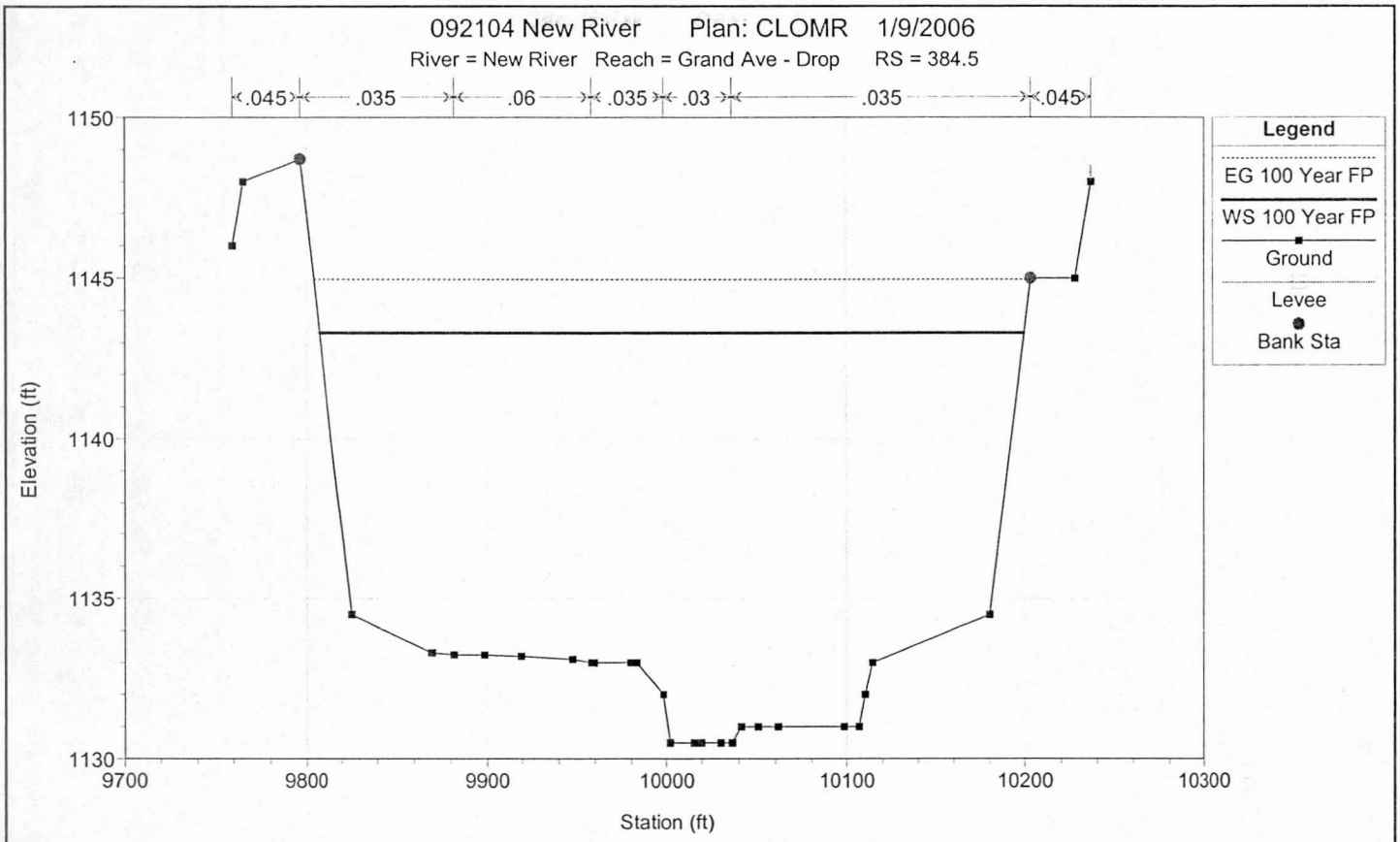


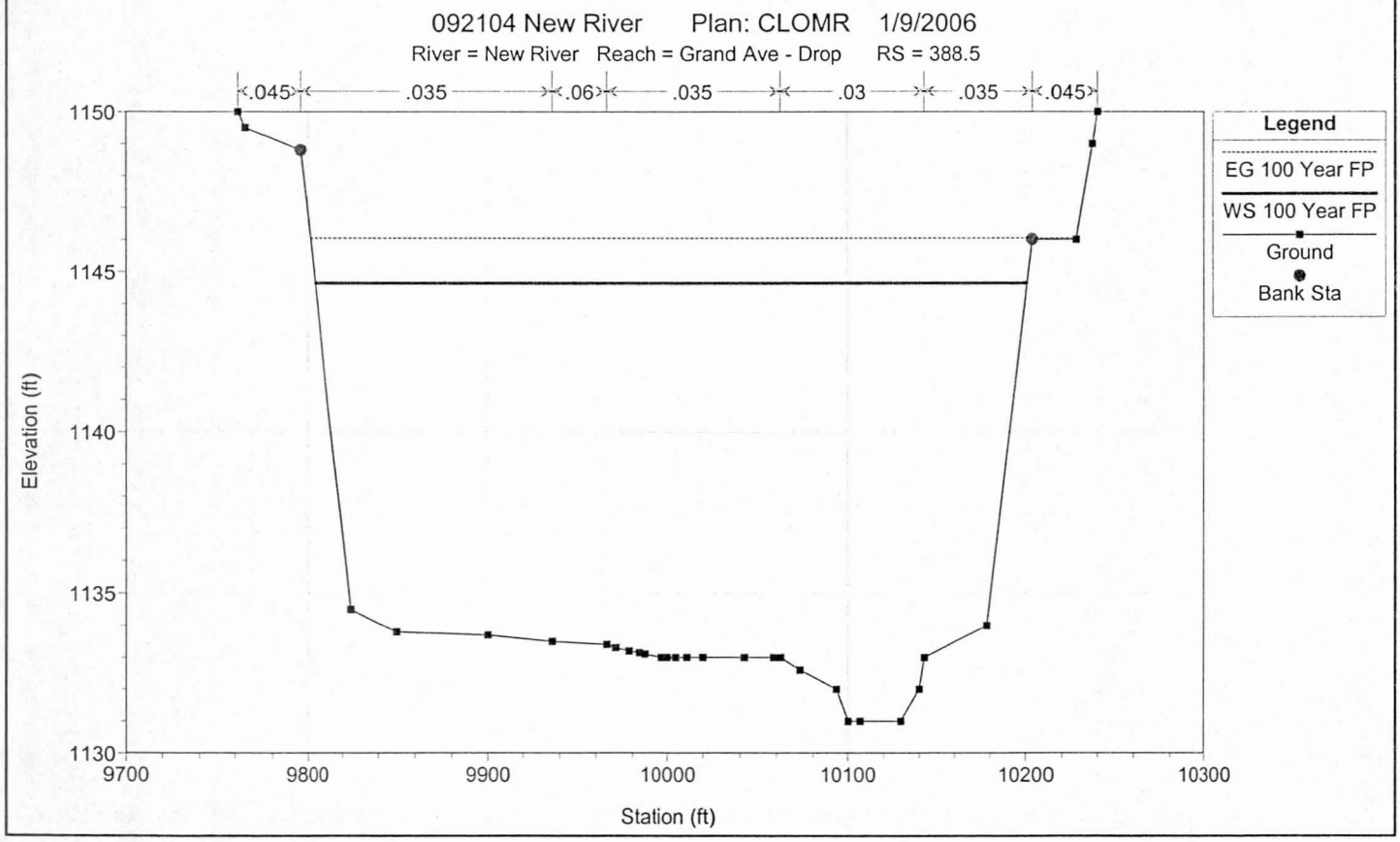

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 370.65
.045
.035
.06
.035
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)
1150
1145
1140
1135
1130
1125
9600
9700
9800
9900
10000
10100
10200
10300
10400

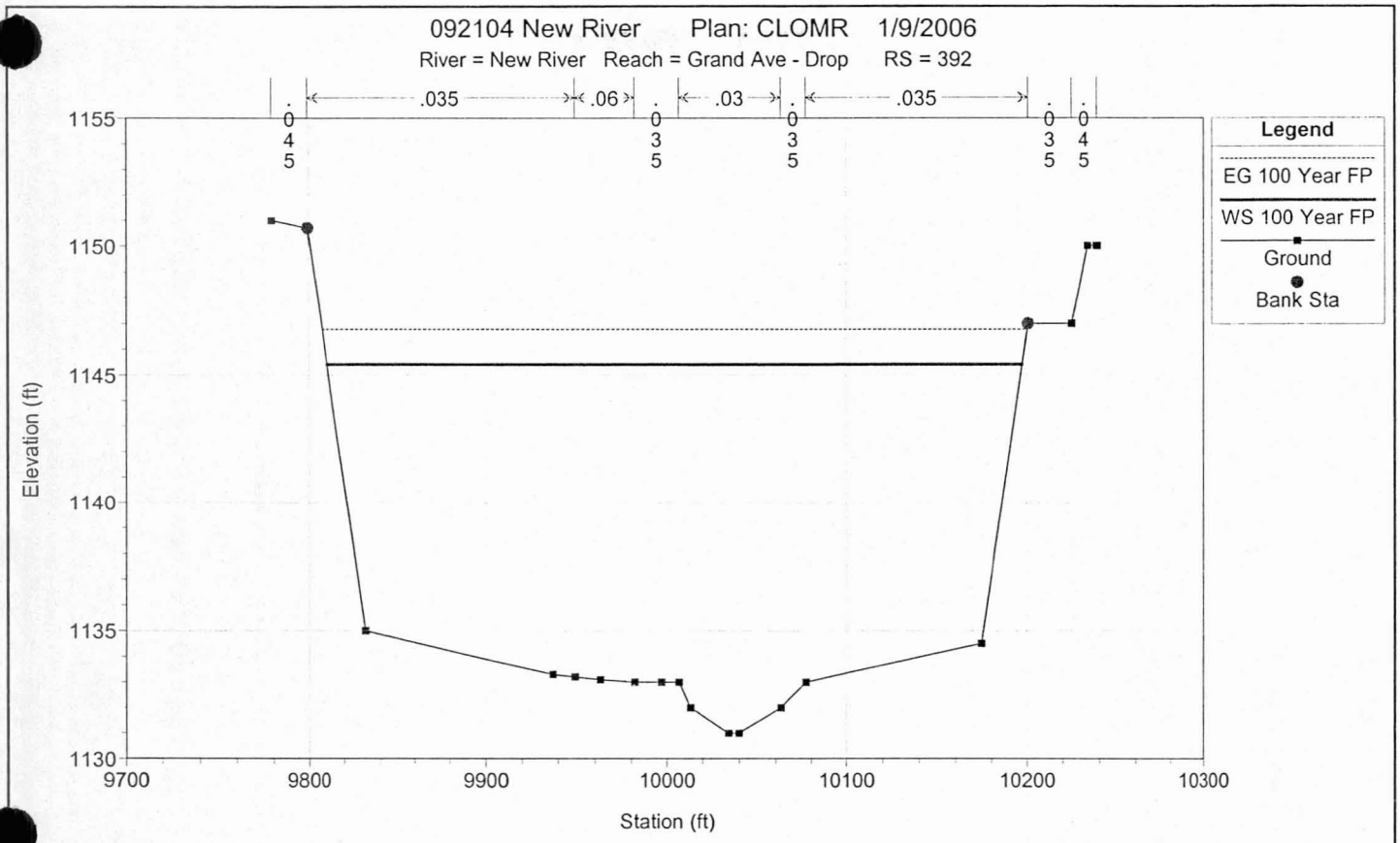

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 373.75
.045
.035
.06
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)
1150
1145
1140
1135
1130
1125
9600
9700
9800
9900
10000
10100
10200
10300
10400

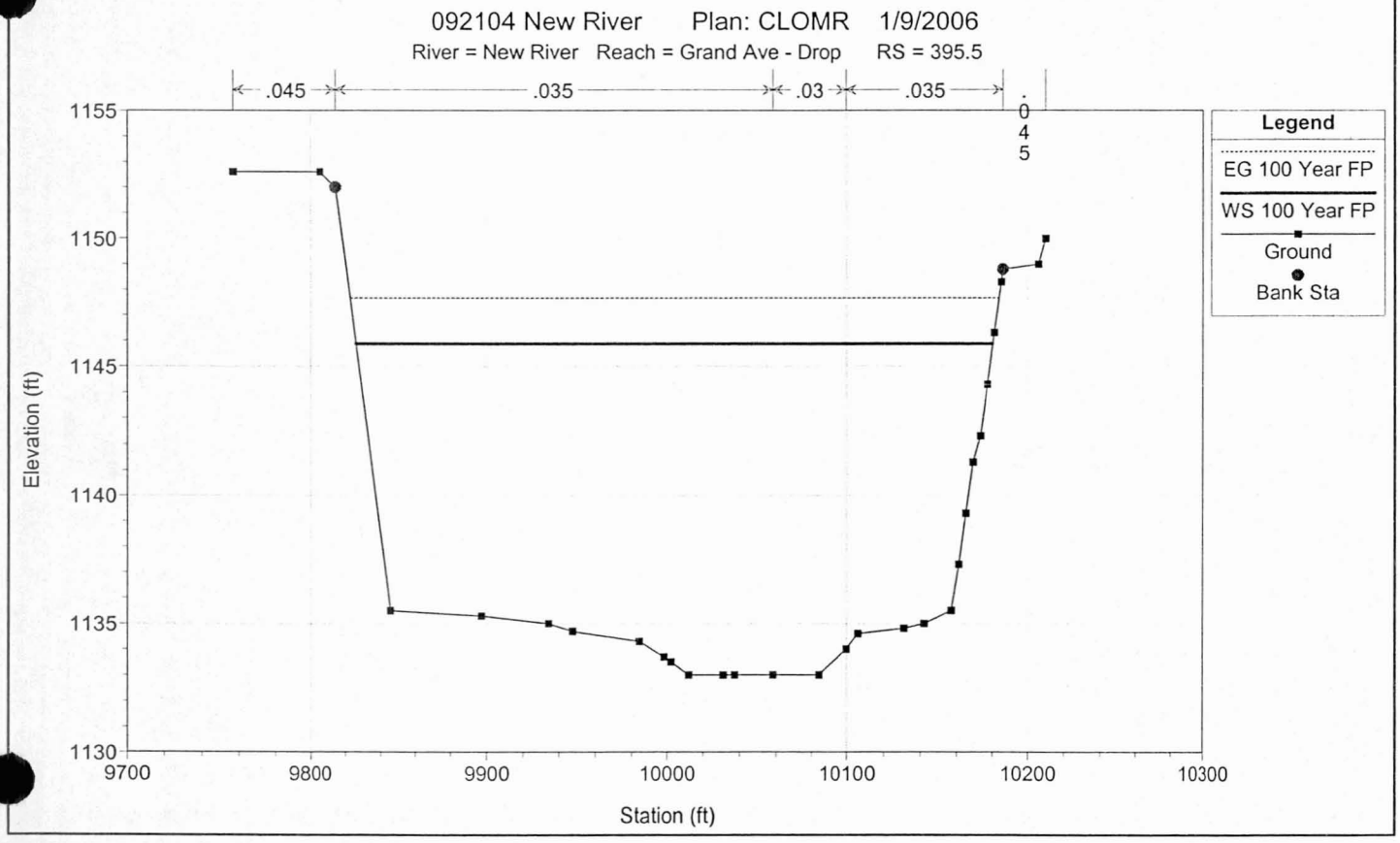

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 376.75
.045
.035
.06
.03
.06
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)
1150
1145
1140
1135
1130
1125
9600
9700
9800
9900
10000
10100
10200
10300

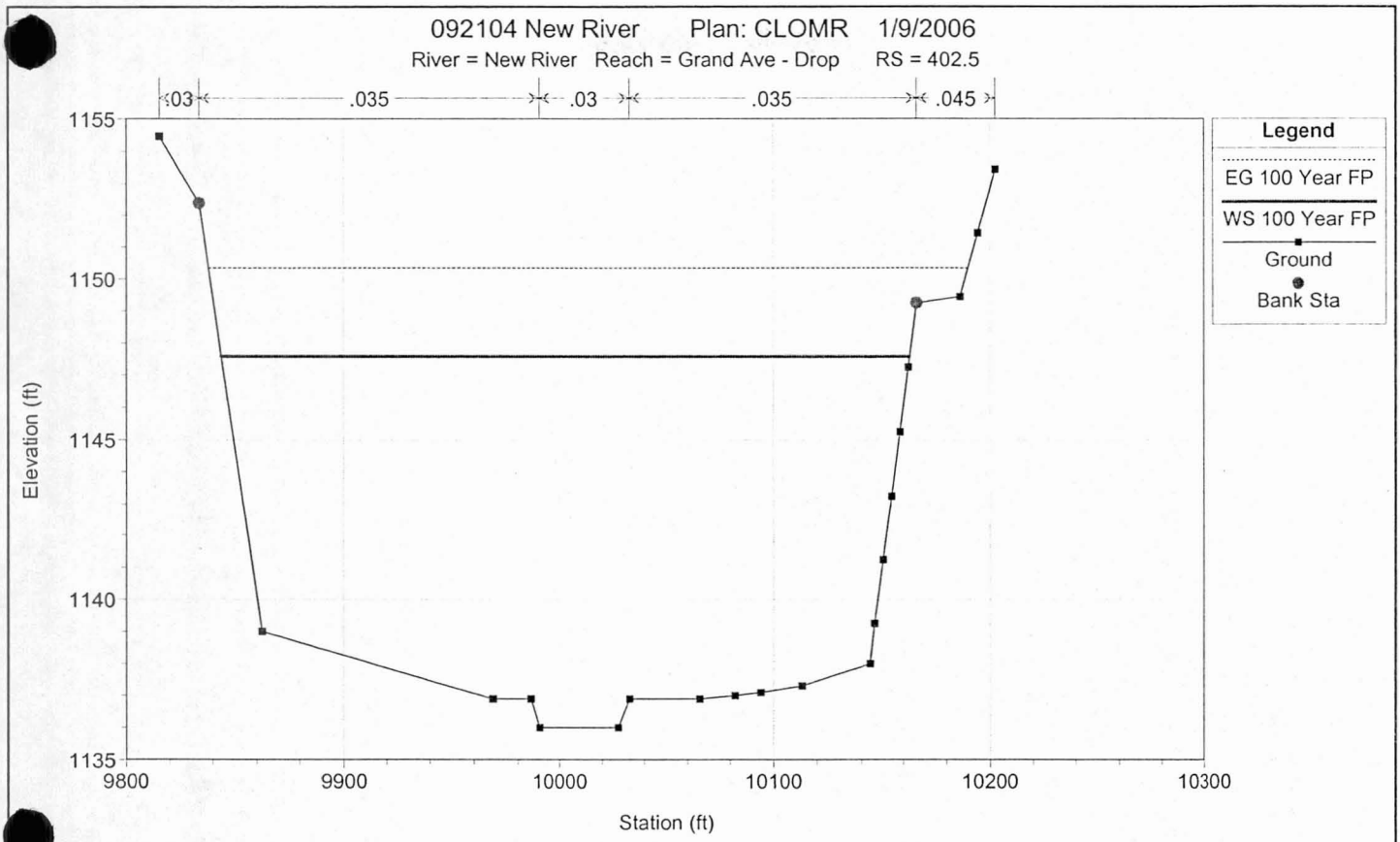

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 379.75
.045
.035
.03
.06
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)
1150
1145
1140
1135
1130
1125
9700
9800
9900
10000
10100
10200
10300

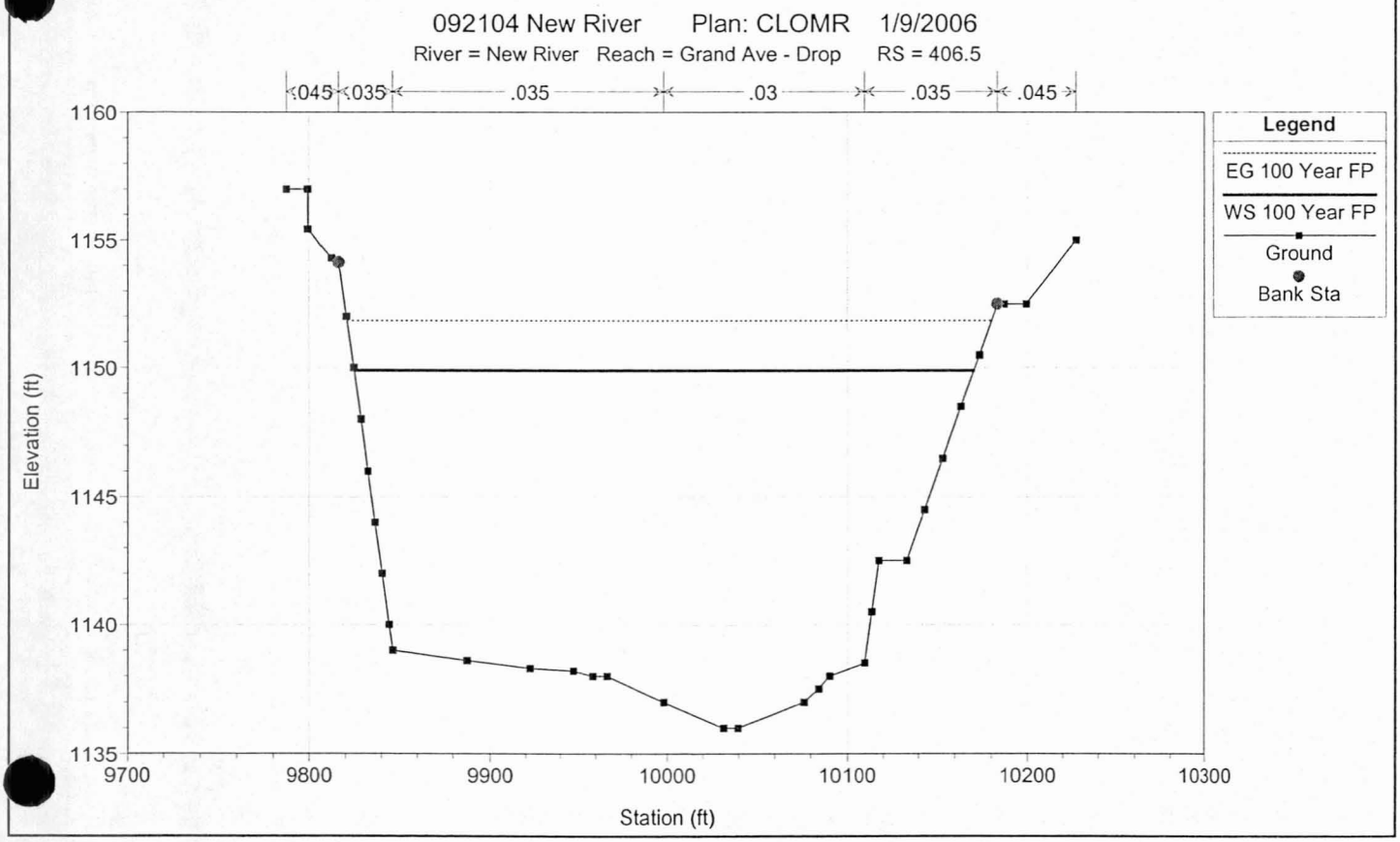

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 384.5
.045
.035
.06
.035
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Levee
Bank Sta
Elevation (ft)
1150
1145
1140
1135
1130
9700
9800
9900
10000
10100
10200
10300
Station (ft)

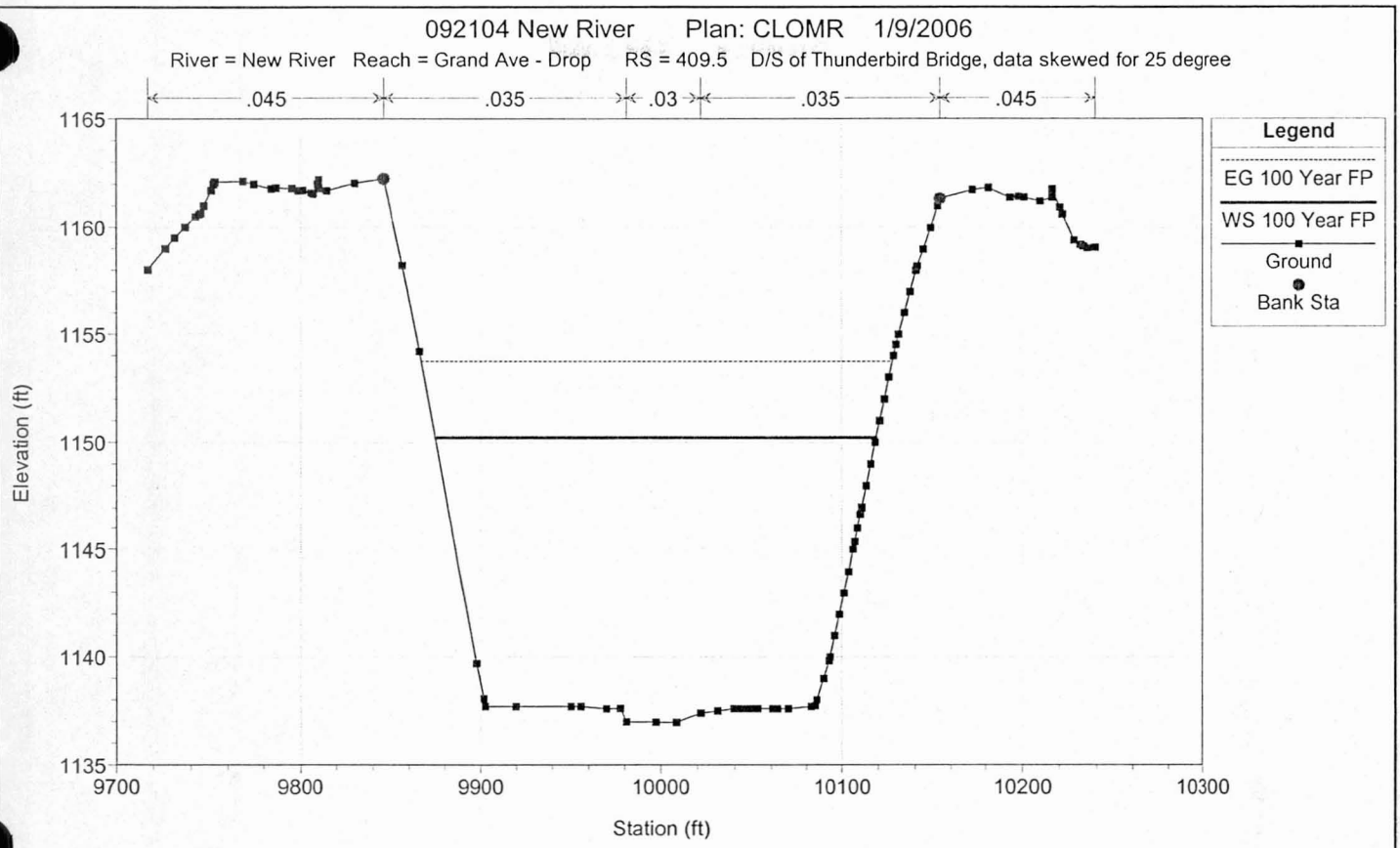

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 388.5
.045
.035
.06
.035
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1150
1145
1140
1135
1130
9700
9800
9900
10000
10100
10200
10300
Station (ft)

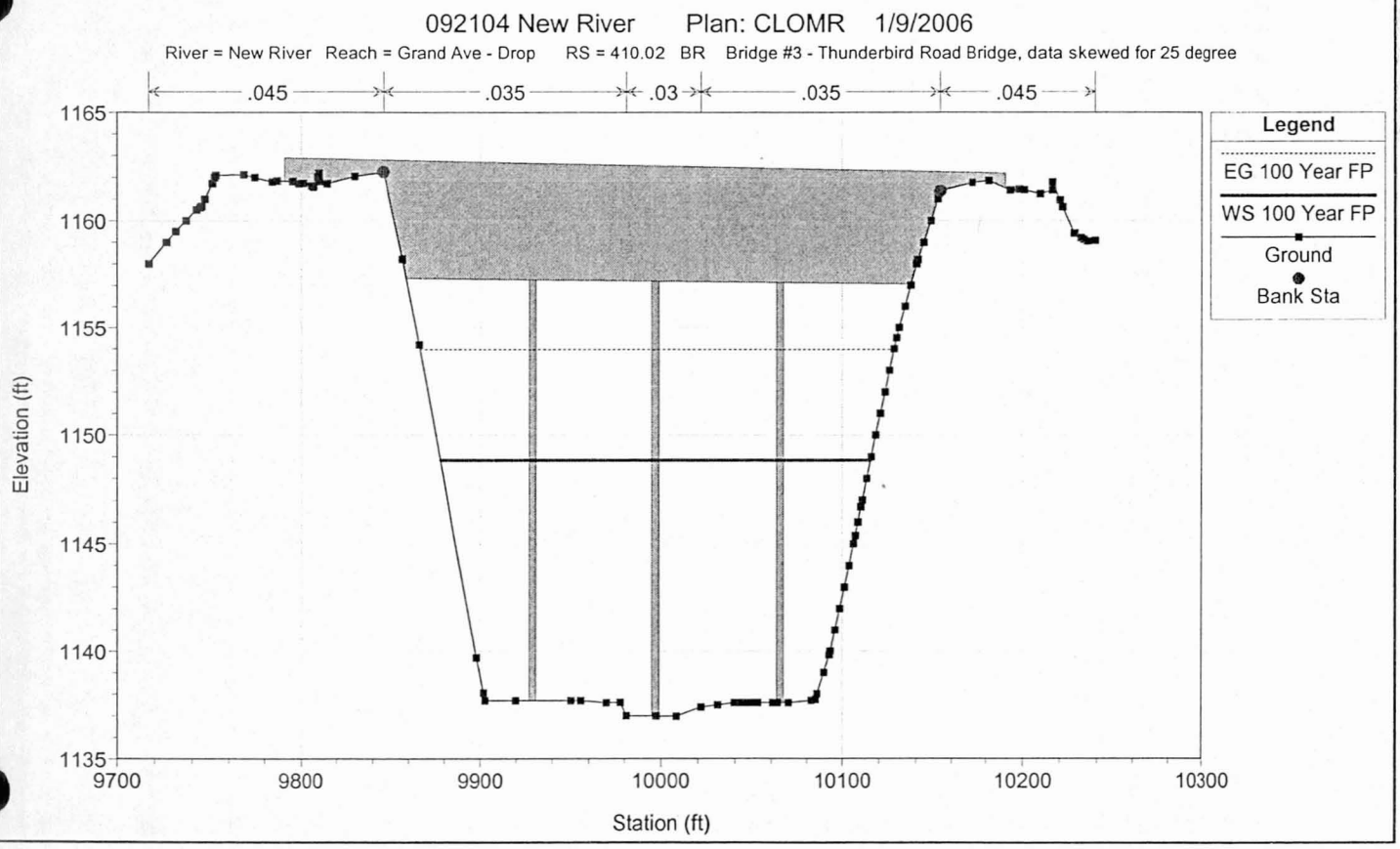

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 392
.045
.035
.06
.035
.03
.035
.045
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)
1155
1150
1145
1140
1135
1130
9700
9800
9900
10000
10100
10200
10300

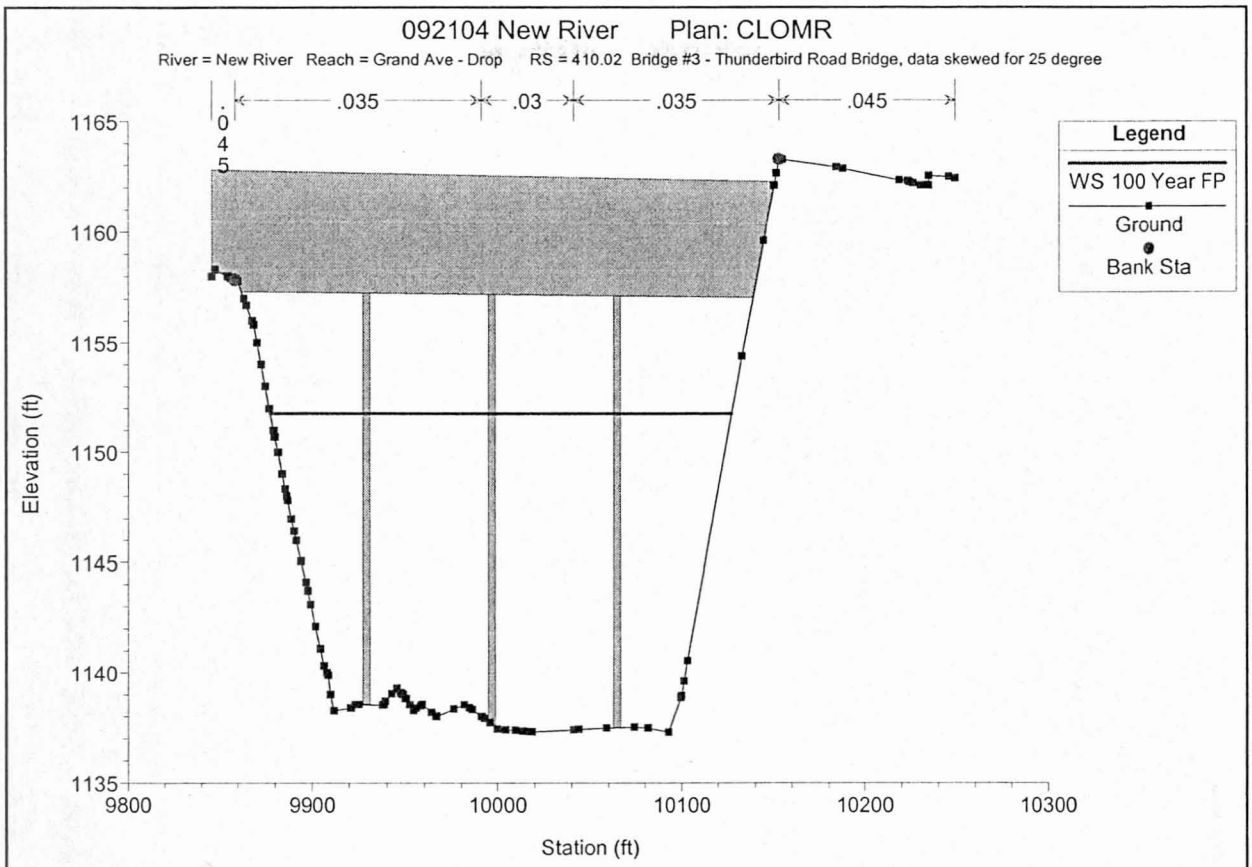

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 395.5
.045
.035
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)
1155
1150
1145
1140
1135
1130
9700
9800
9900
10000
10100
10200
10300

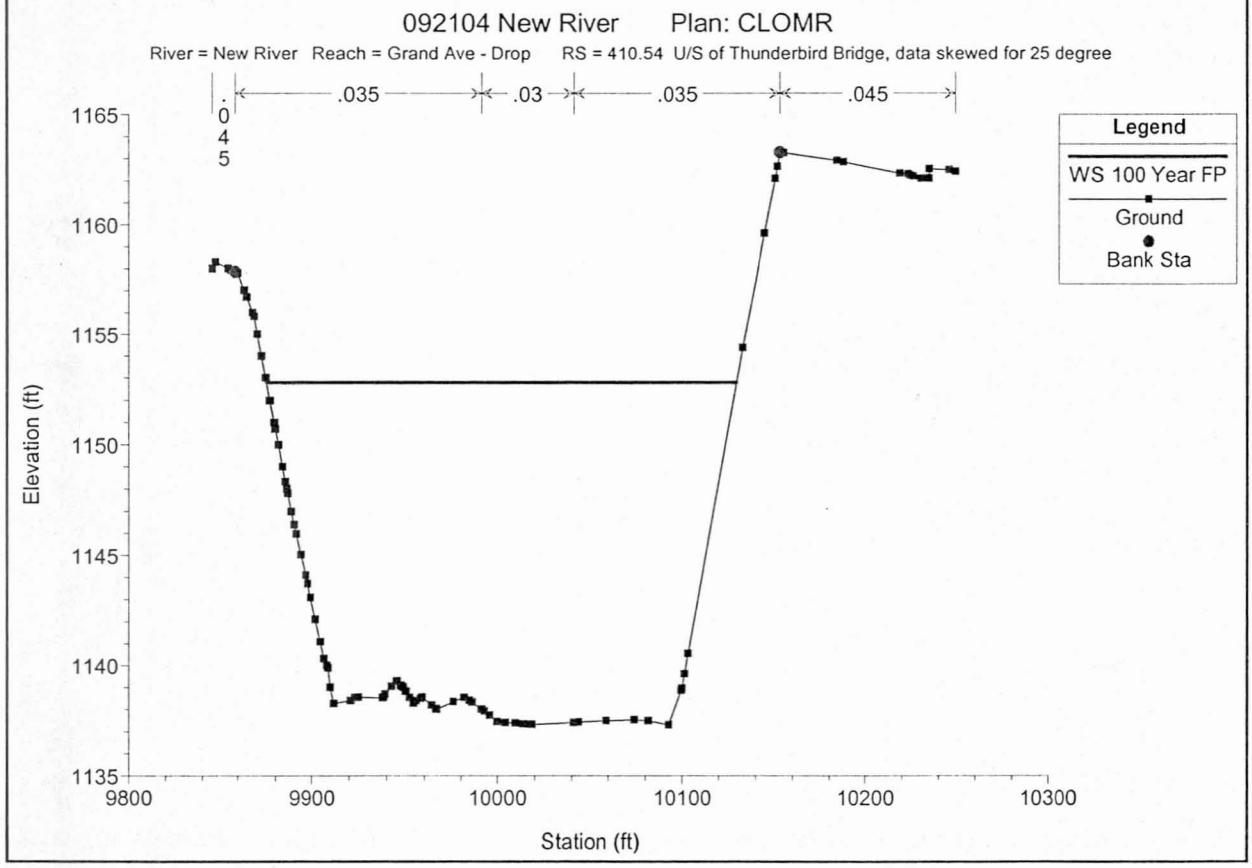

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 402.5
.03
.035
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1155
1150
1145
1140
1135
9800
9900
10000
10100
10200
10300
Station (ft)

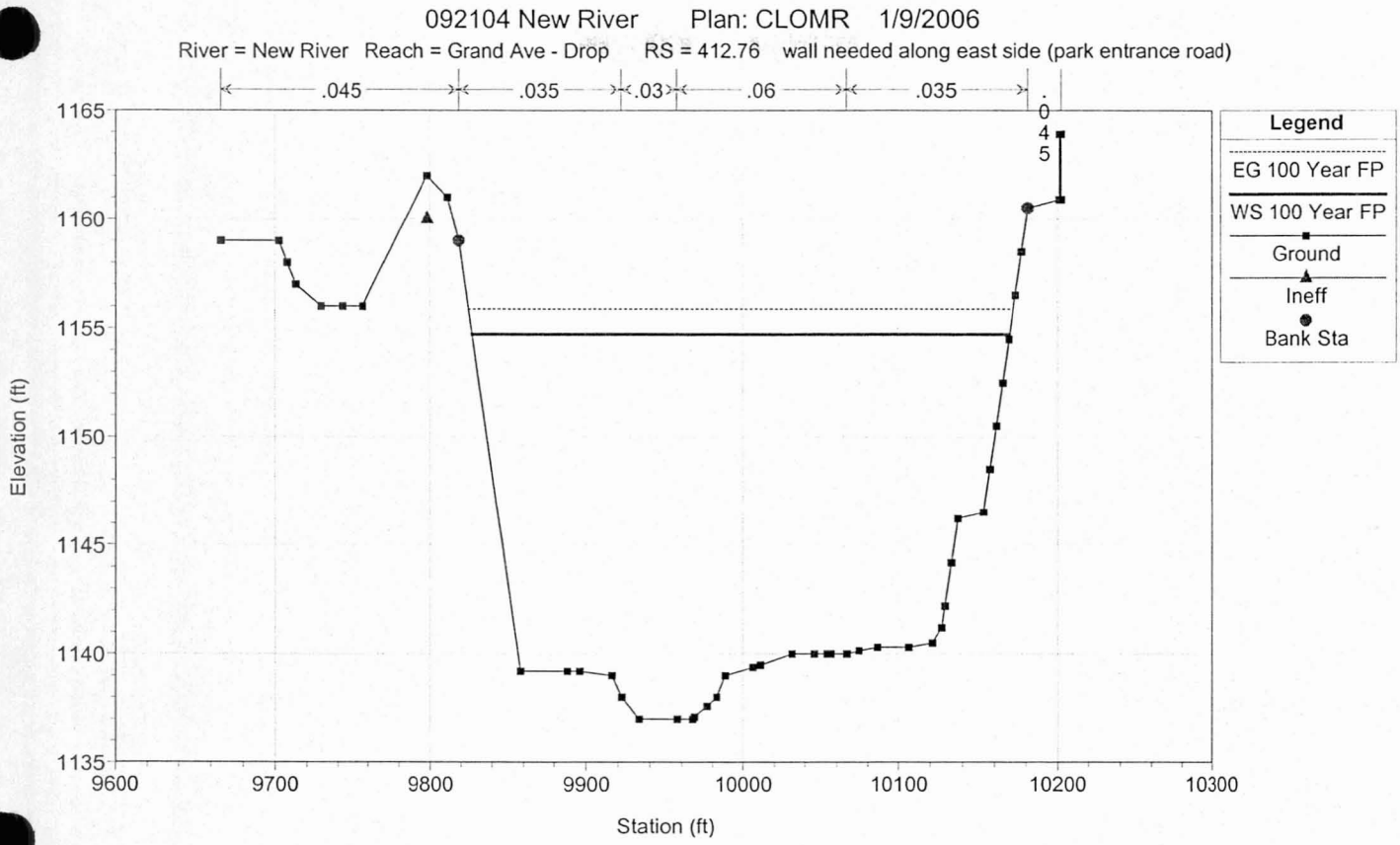

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 406.5
.045
.035
.035
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1160
1155
1150
1145
1140
1135
9700
9800
9900
10000
10100
10200
10300
Station (ft)

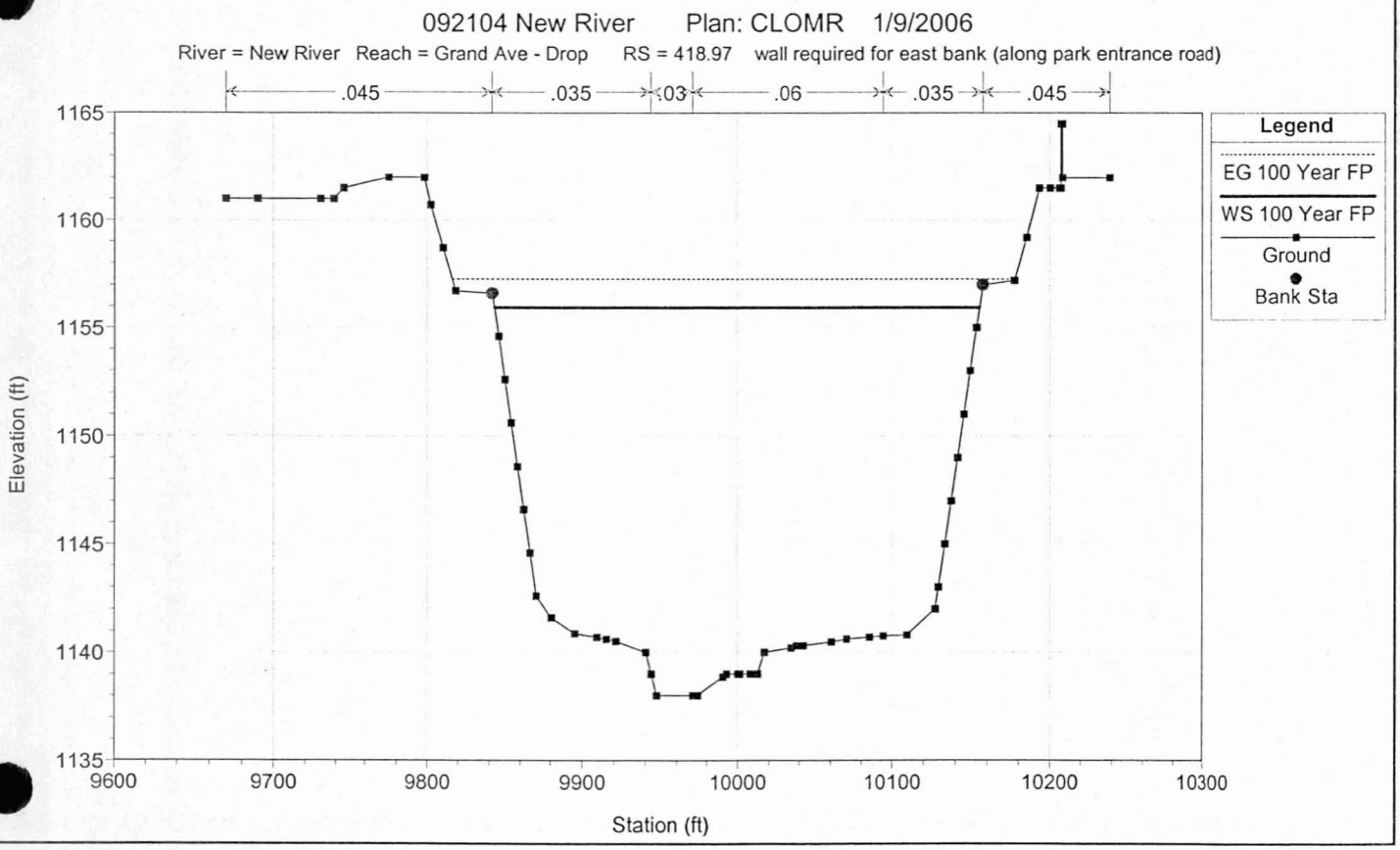

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 409.5 D/S of Thunderbird Bridge, data skewed for 25 degree
.045
.035
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
9700
9800
9900
10000
10100
10200
10300
Station (ft)


092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 410.02 BR Bridge #3 - Thunderbird Road Bridge, data skewed for 25 degree
.045
.035
.03
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
9700
9800
9900
10000
10100
10200
10300
Station (ft)


092104 New River Plan: CLOMR
River = New River Reach = Grand Ave - Drop RS = 410.02 Bridge #3 - Thunderbird Road Bridge, data skewed for 25 degree
.045
.035
.03
.035
.045
Legend
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
9800
9900
10000
10100
10200
10300
Station (ft)

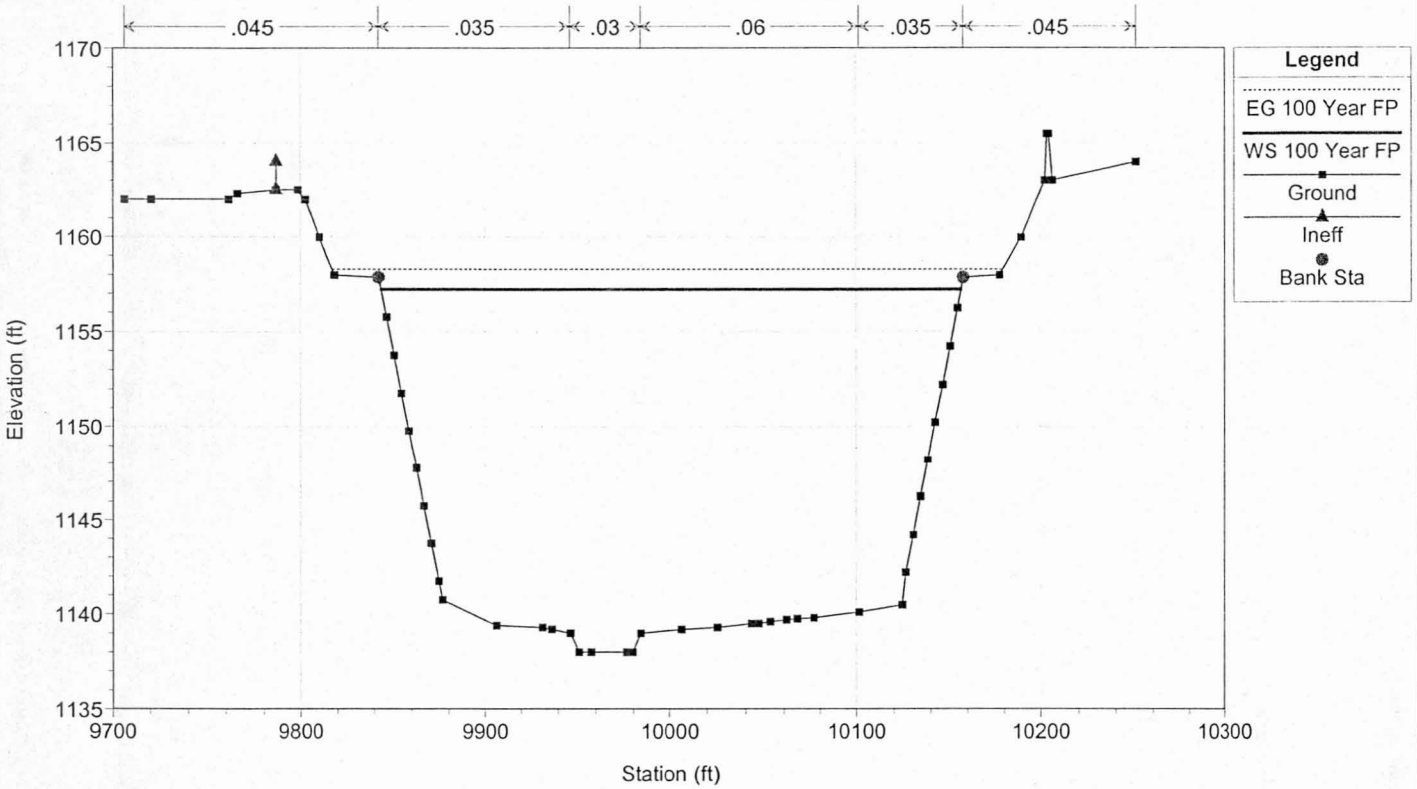

092104 New River Plan: CLOMR
River = New River Reach = Grand Ave - Drop RS = 410.54 U/S of Thunderbird Bridge, data skewed for 25 degree
.045
.035
.03
.035
.045
Legend
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
9800
9900
10000
10100
10200
10300
Station (ft)


092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 412.76 wall needed along east side (park entrance road)
.045
.035
.03
.06
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1165
1160
1155
1150
1145
1140
1135
9600
9700
9800
9900
10000
10100
10200
10300


092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 418.97 wall required for east bank (along park entrance road)
.045
.035
.03
.06
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)
1165
1160
1155
1150
1145
1140
1135
9600
9700
9800
9900
10000
10100
10200
10300

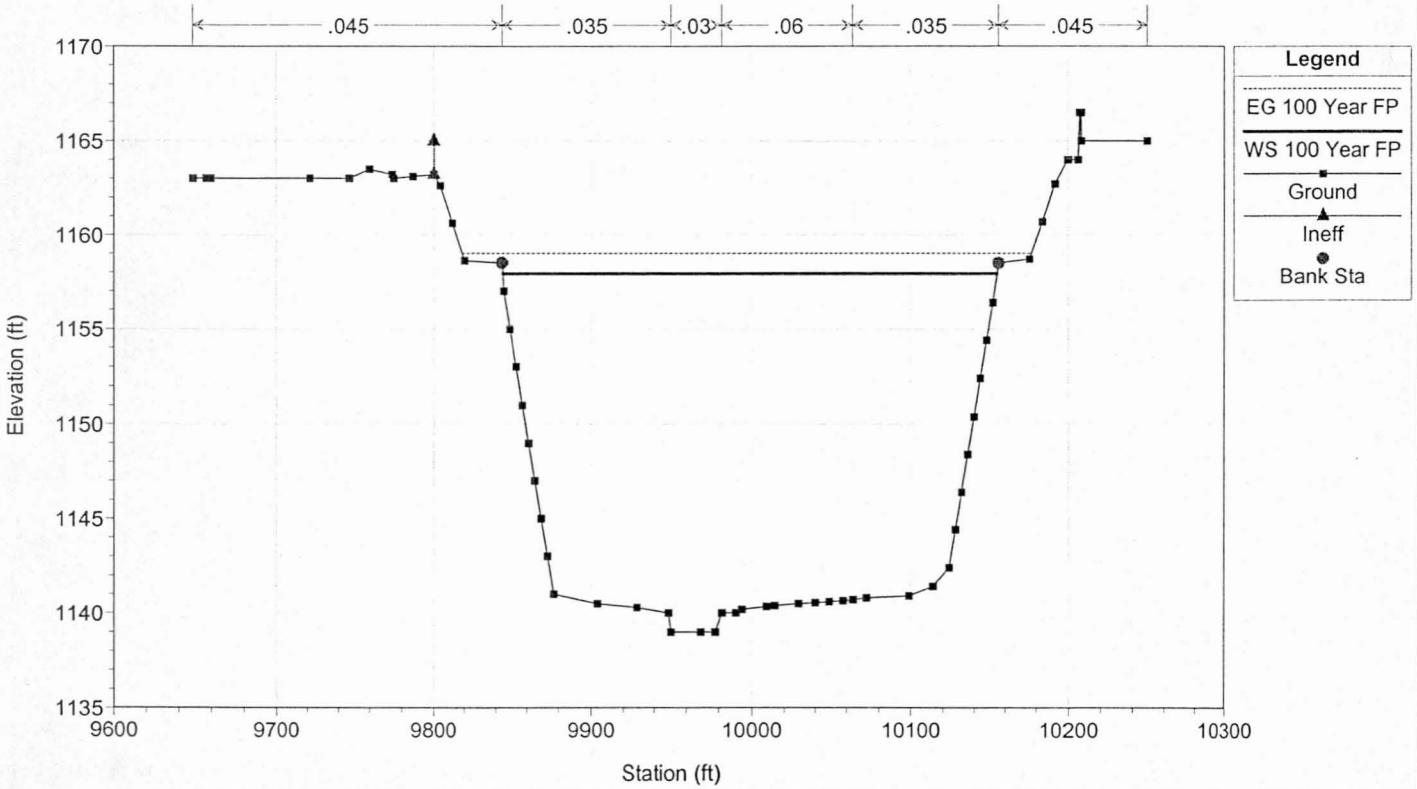
092104 New River Plan: CLOMR 1/9/2006

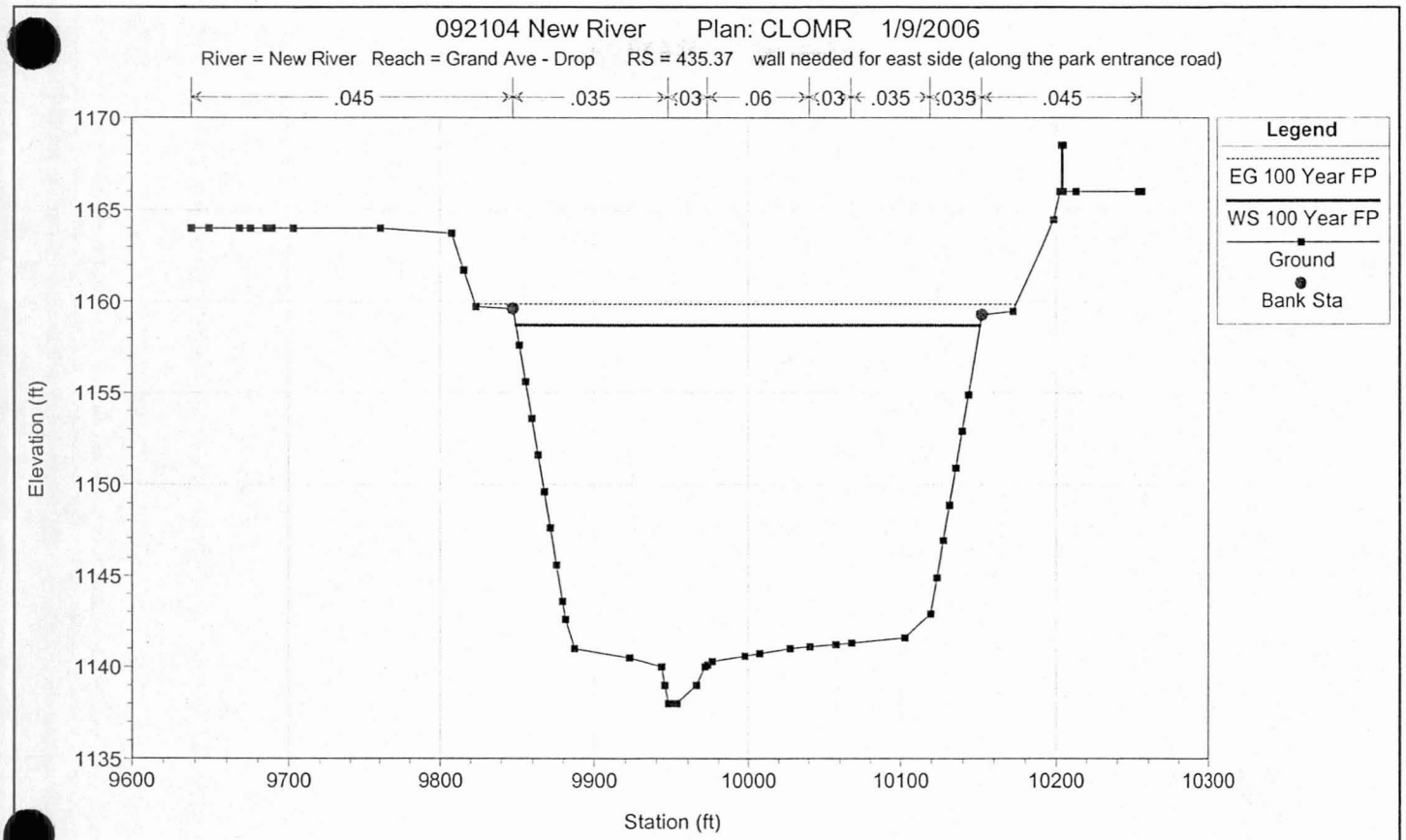
River = New River Reach = Grand Ave - Drop RS = 424.17

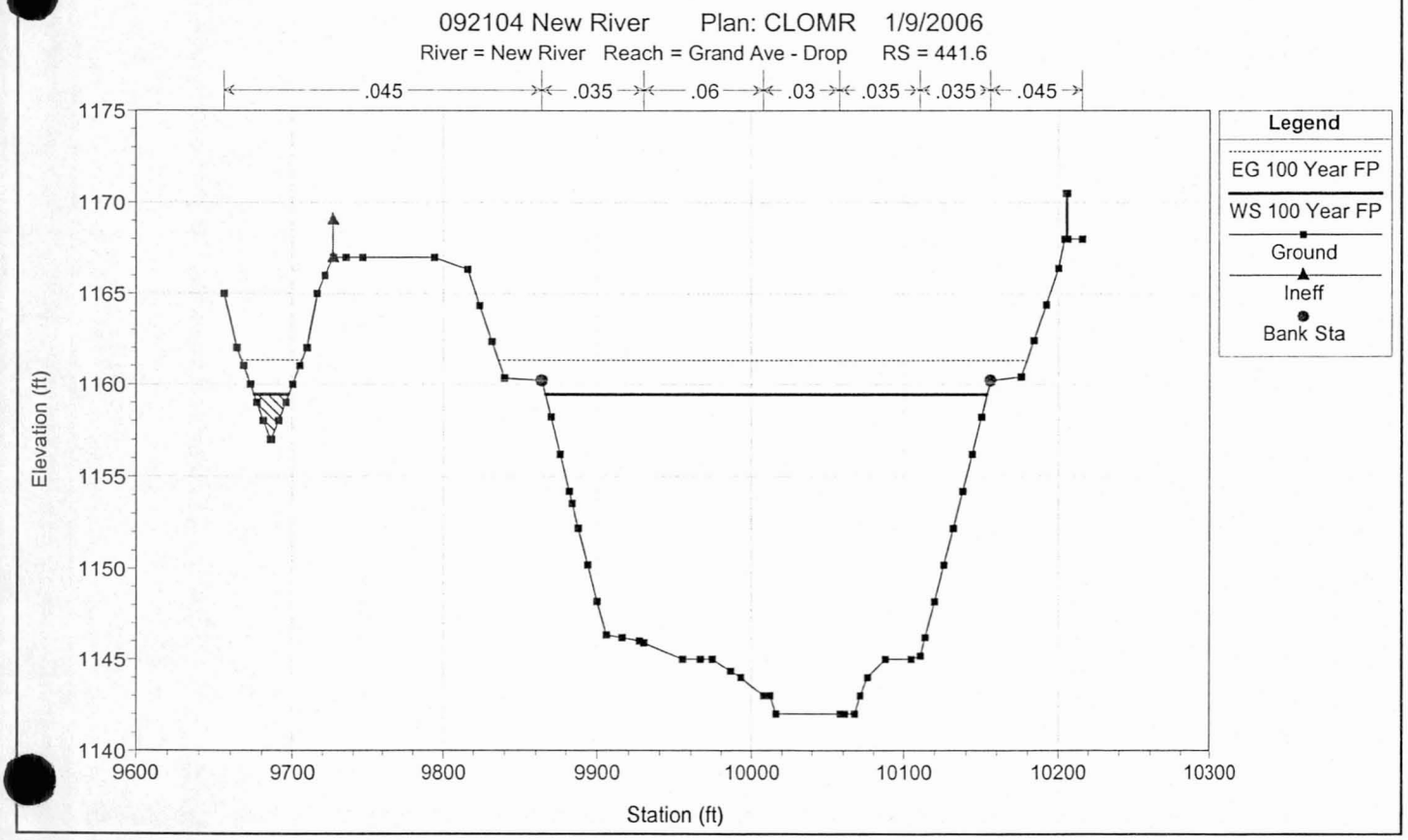


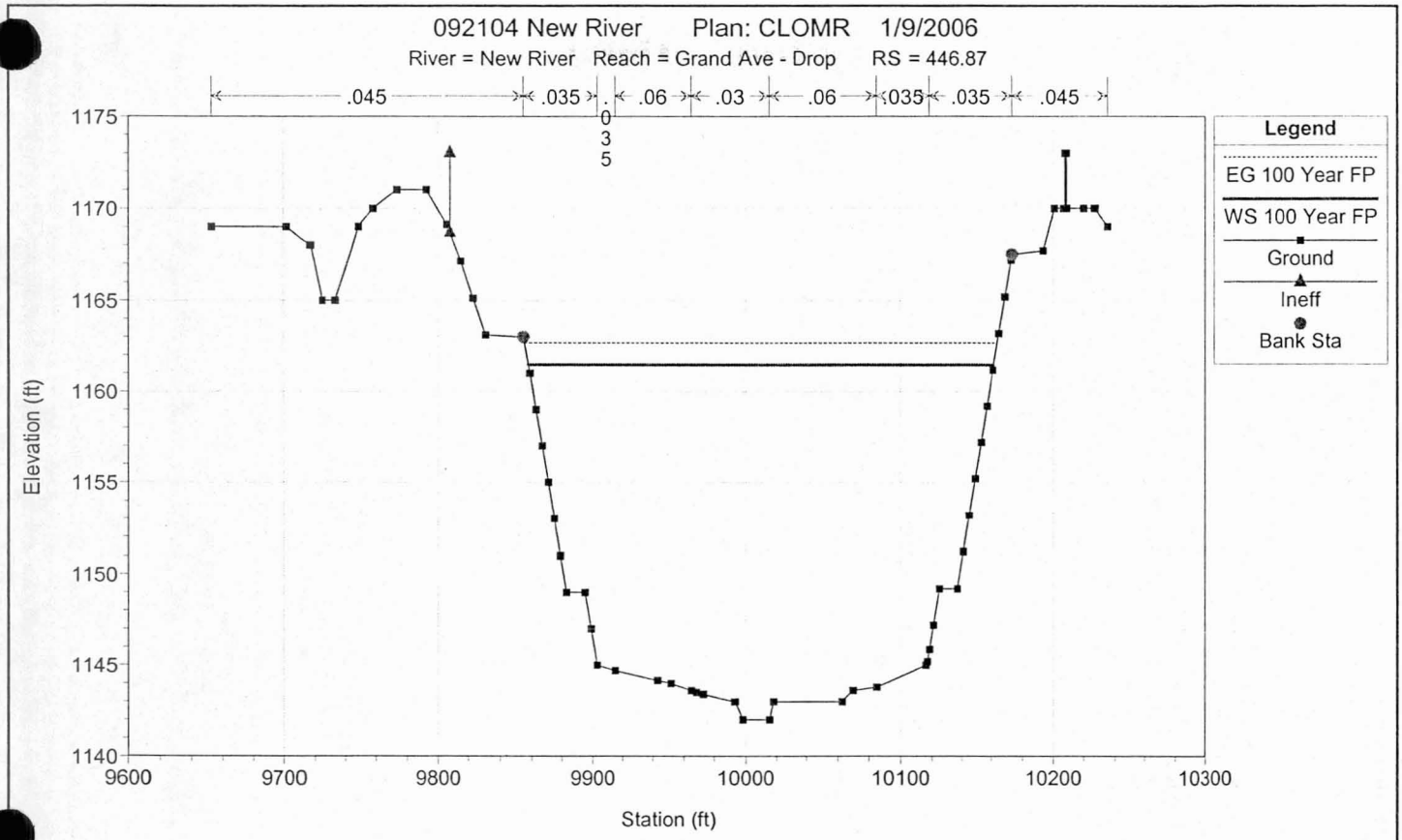
092104 New River Plan: CLOMR 1/9/2006

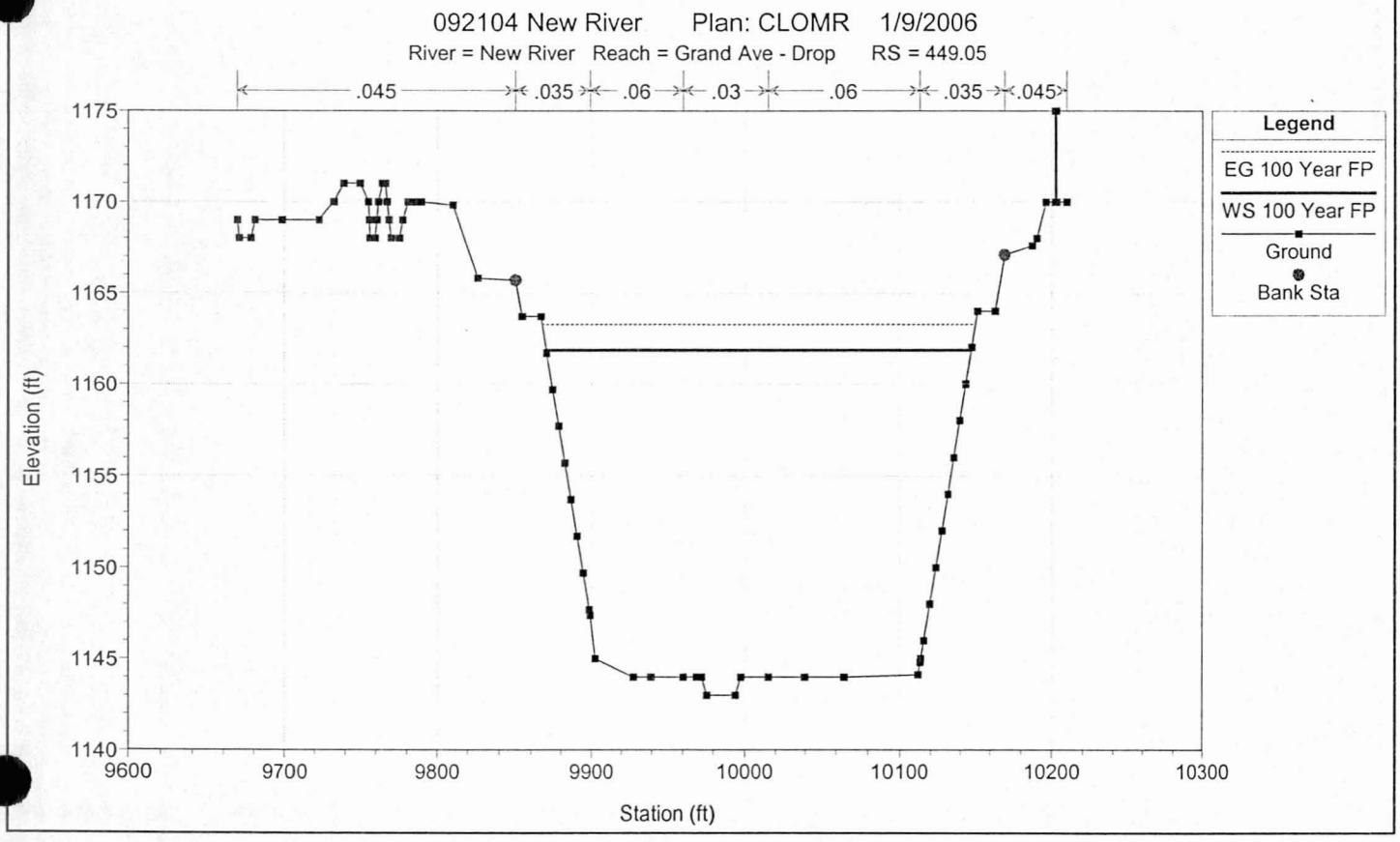
River = New River Reach = Grand Ave - Drop RS = 429.37 wall needed for east bank (along the park entrance road)

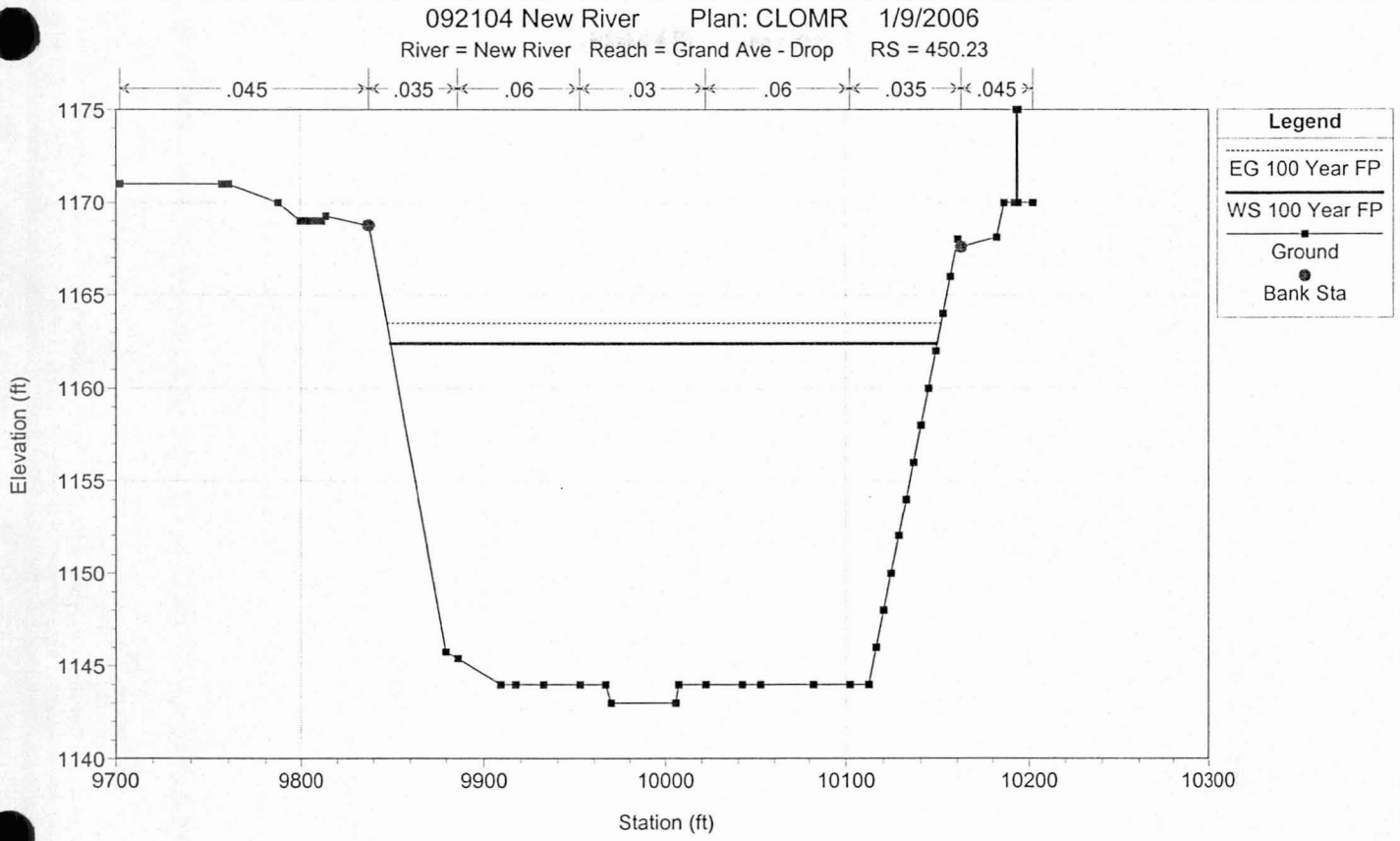


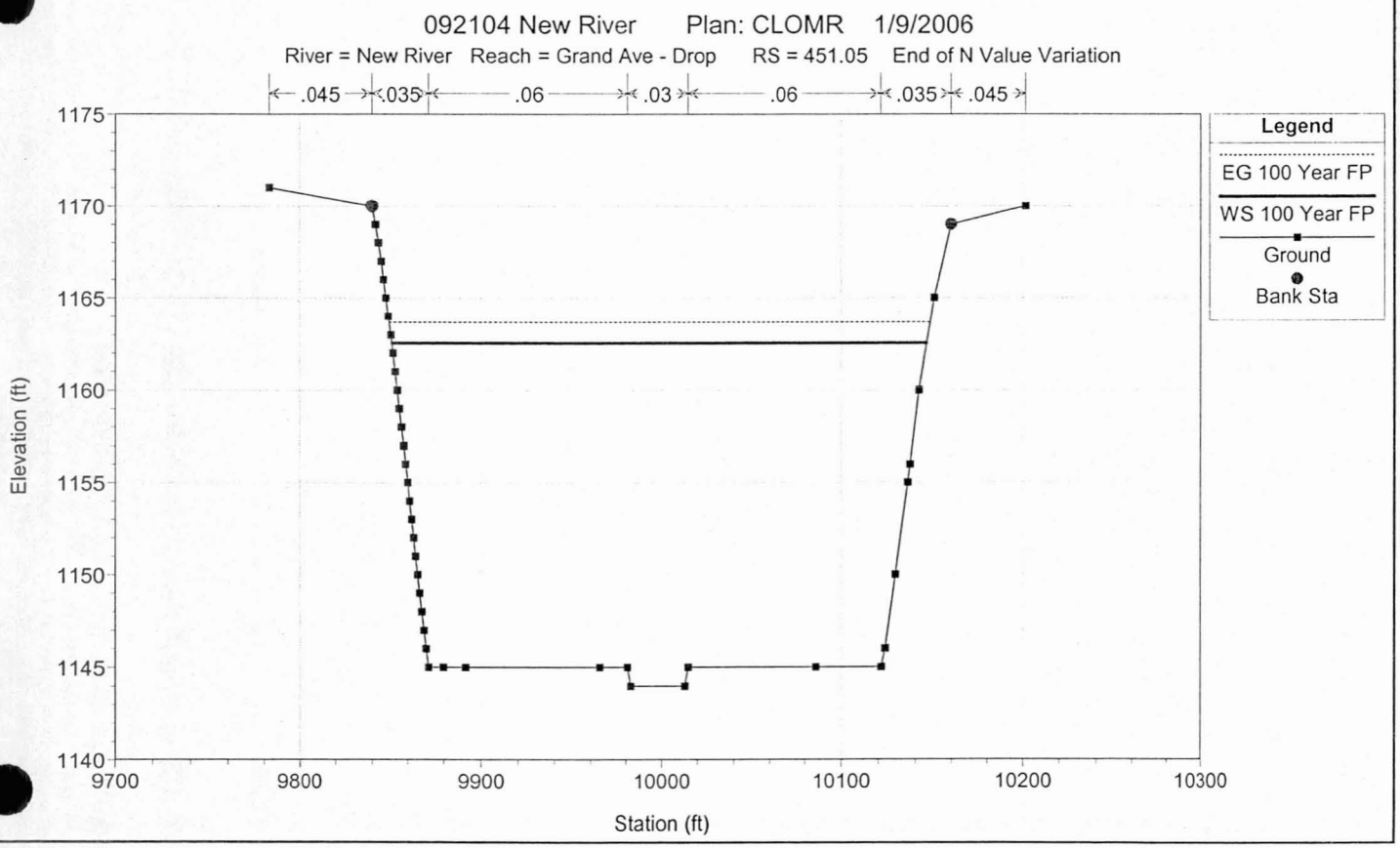

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 435.37 wall needed for east side (along the park entrance road)
.045
.035
.03
.06
.03
.035
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

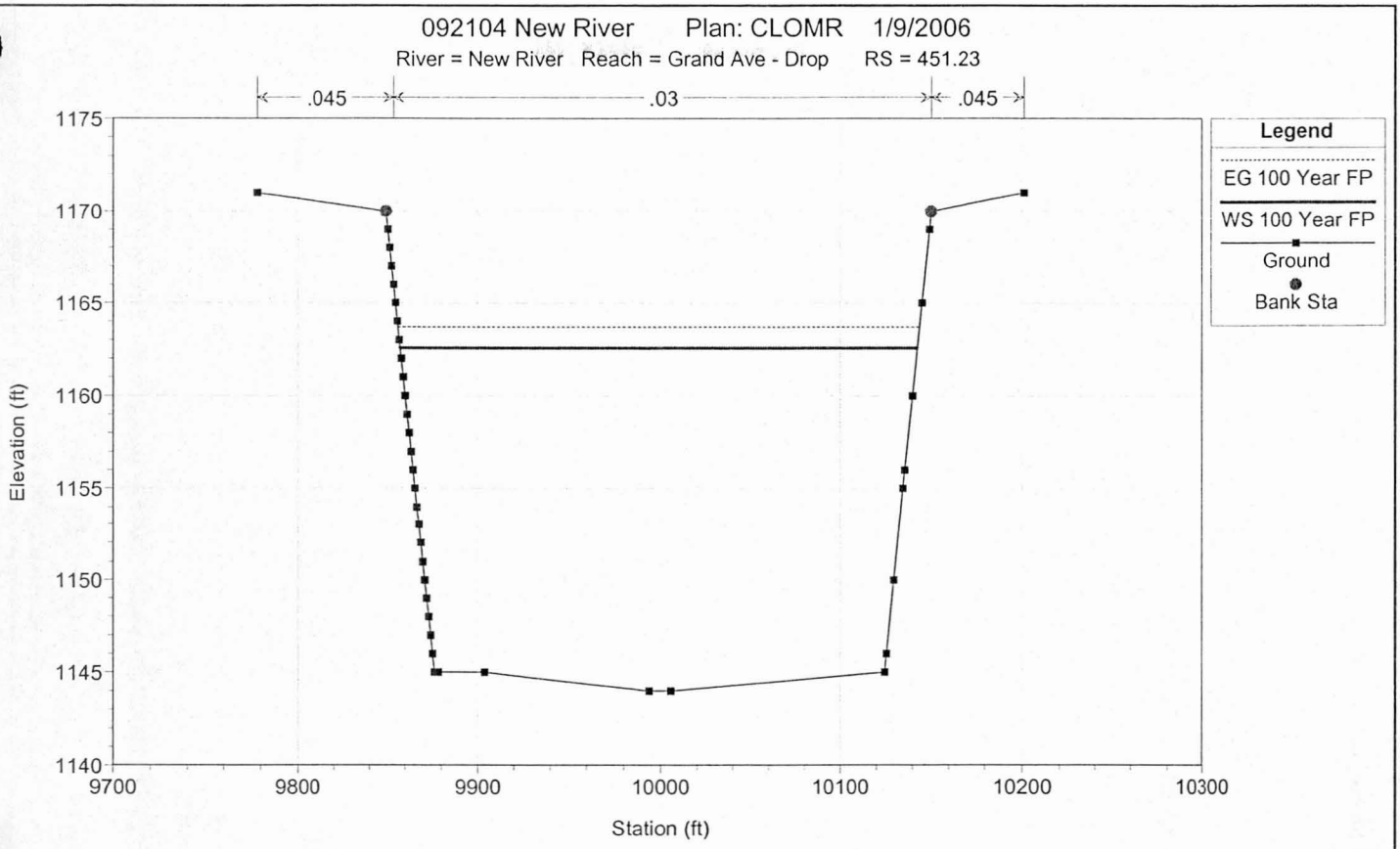

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 441.6
.045
.035
.06
.03
.035
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

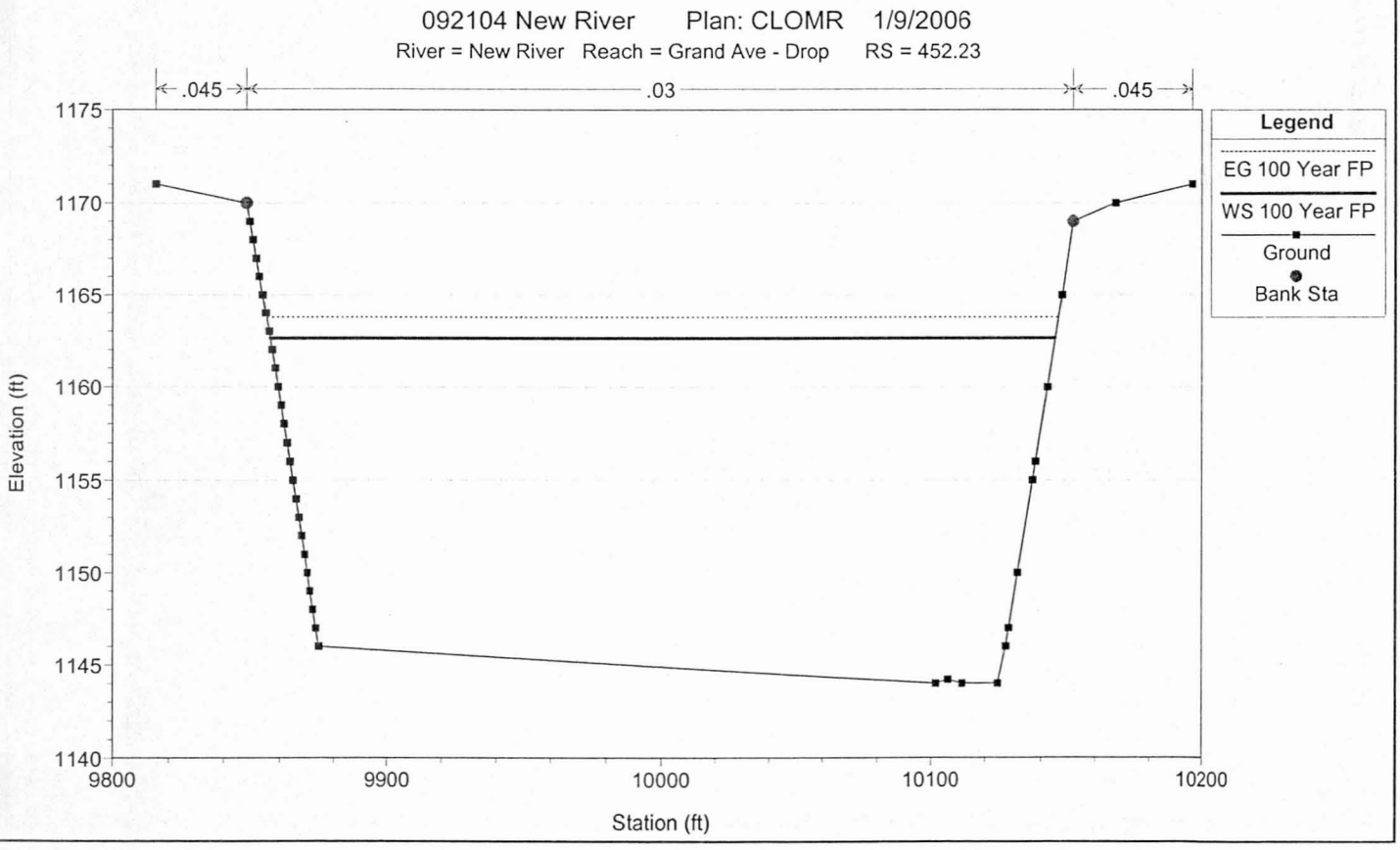

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 446.87
.045
.035
.06
.03
.06
.035
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 449.05
.045
.035
.06
.03
.06
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)


092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 450.23
.045
.035
.06
.03
.06
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

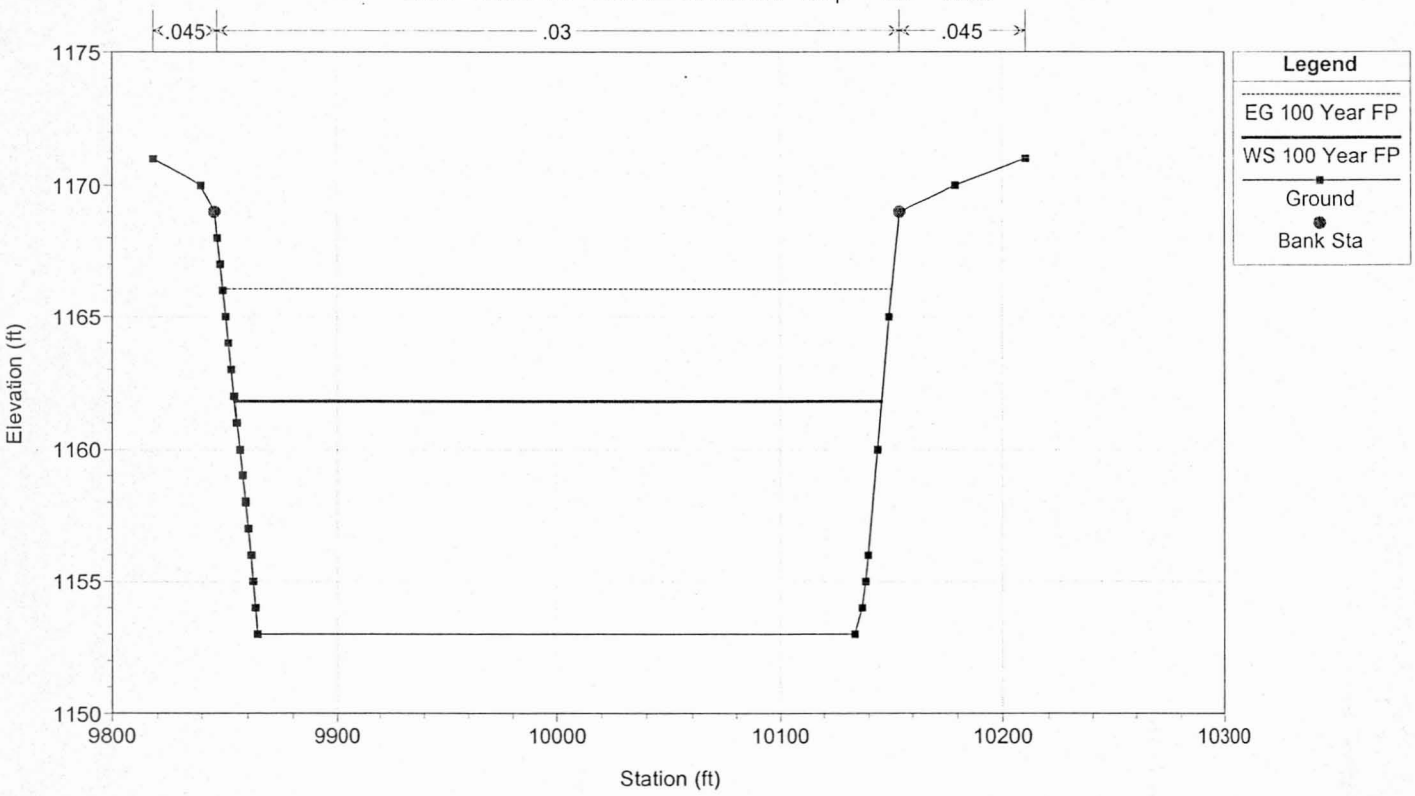

092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 451.05 End of N Value Variation
.045
.035
.06
.03
.06
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
Station (ft)


092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 451.23
.045
.03
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1175
1170
1165
1160
1155
1150
1145
1140
9700
9800
9900
10000
10100
10200
10300
Station (ft)


092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 452.23
.045
.03
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Bank Sta
Elevation (ft)
1175
1170
1165
1160
1155
1150
1145
1140
9800
9900
10000
10100
10200
Station (ft)

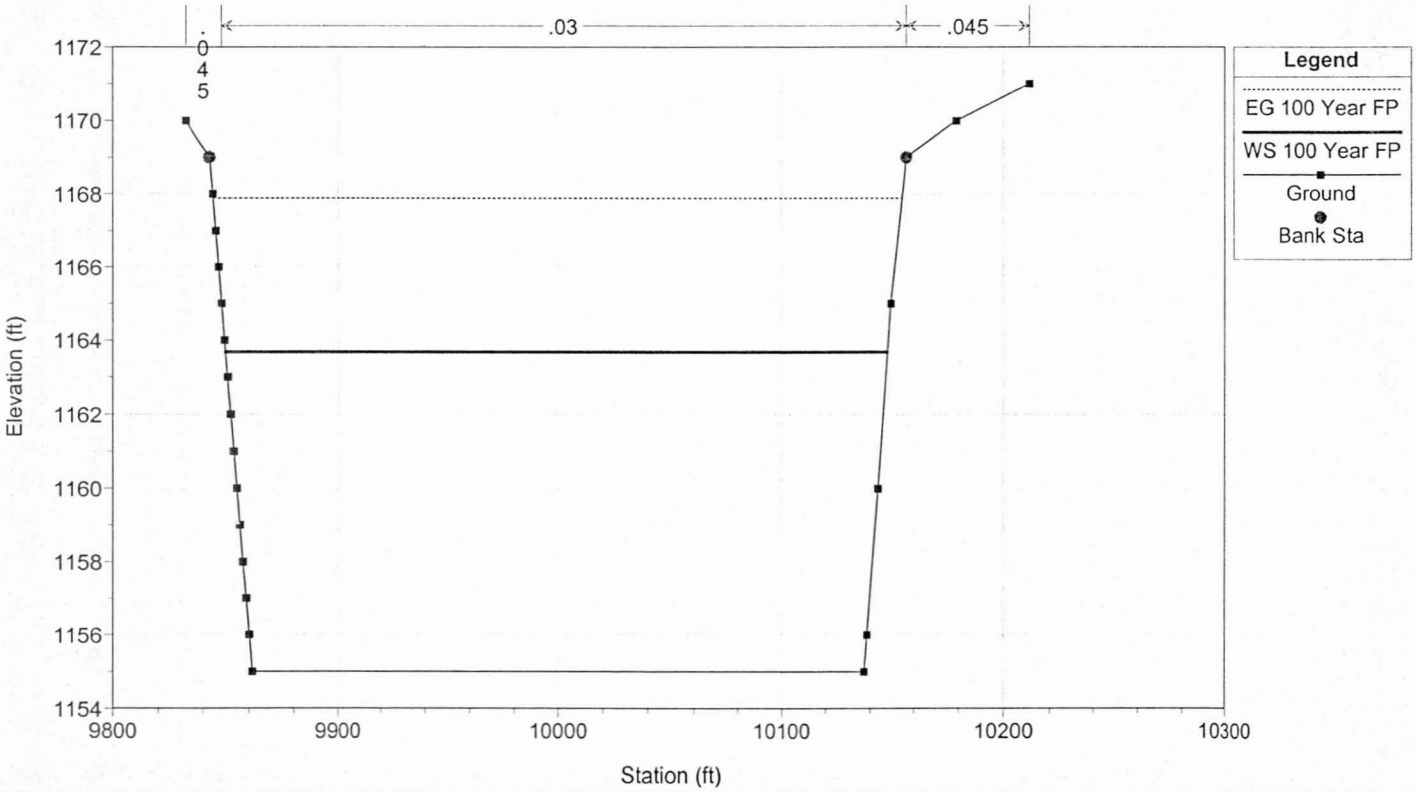
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 452.5



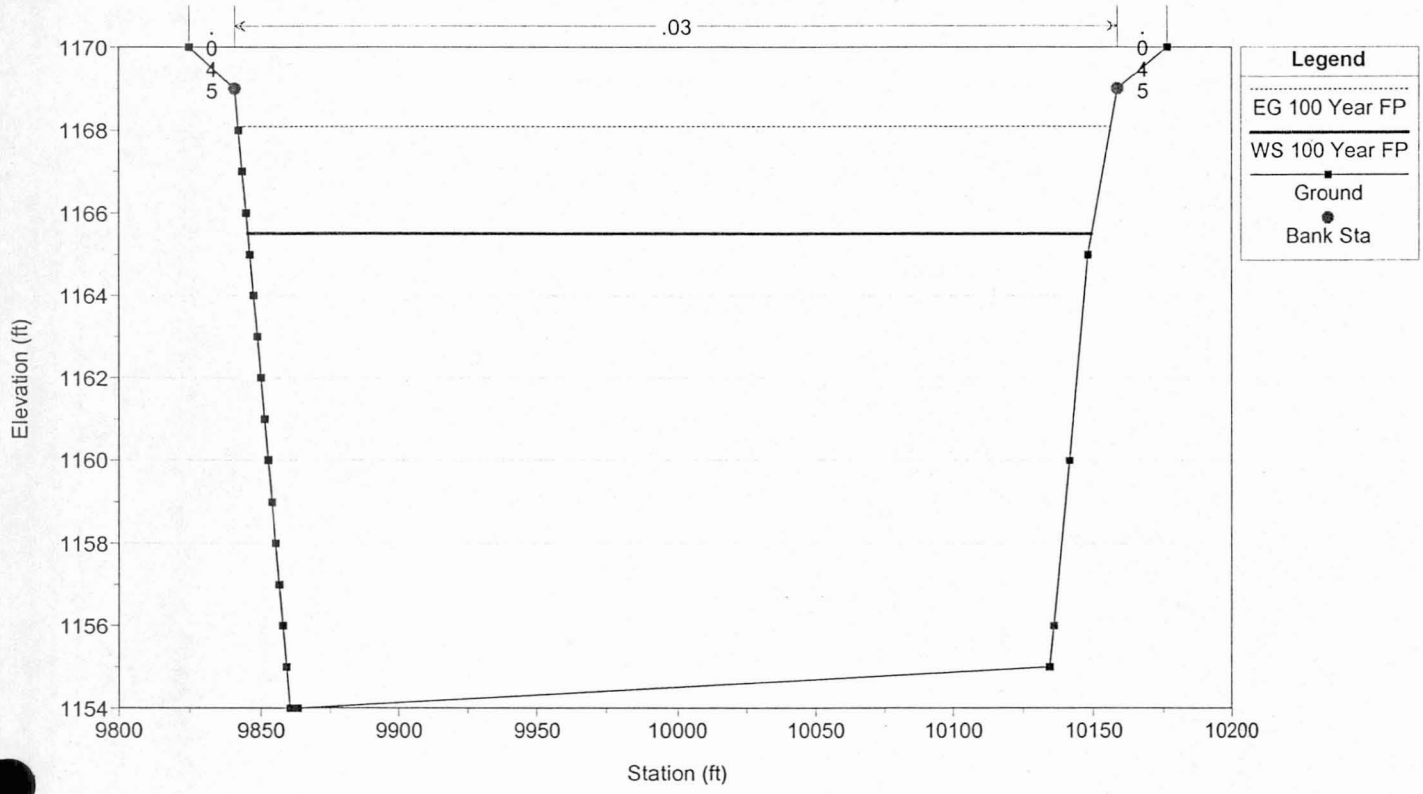
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 452.65



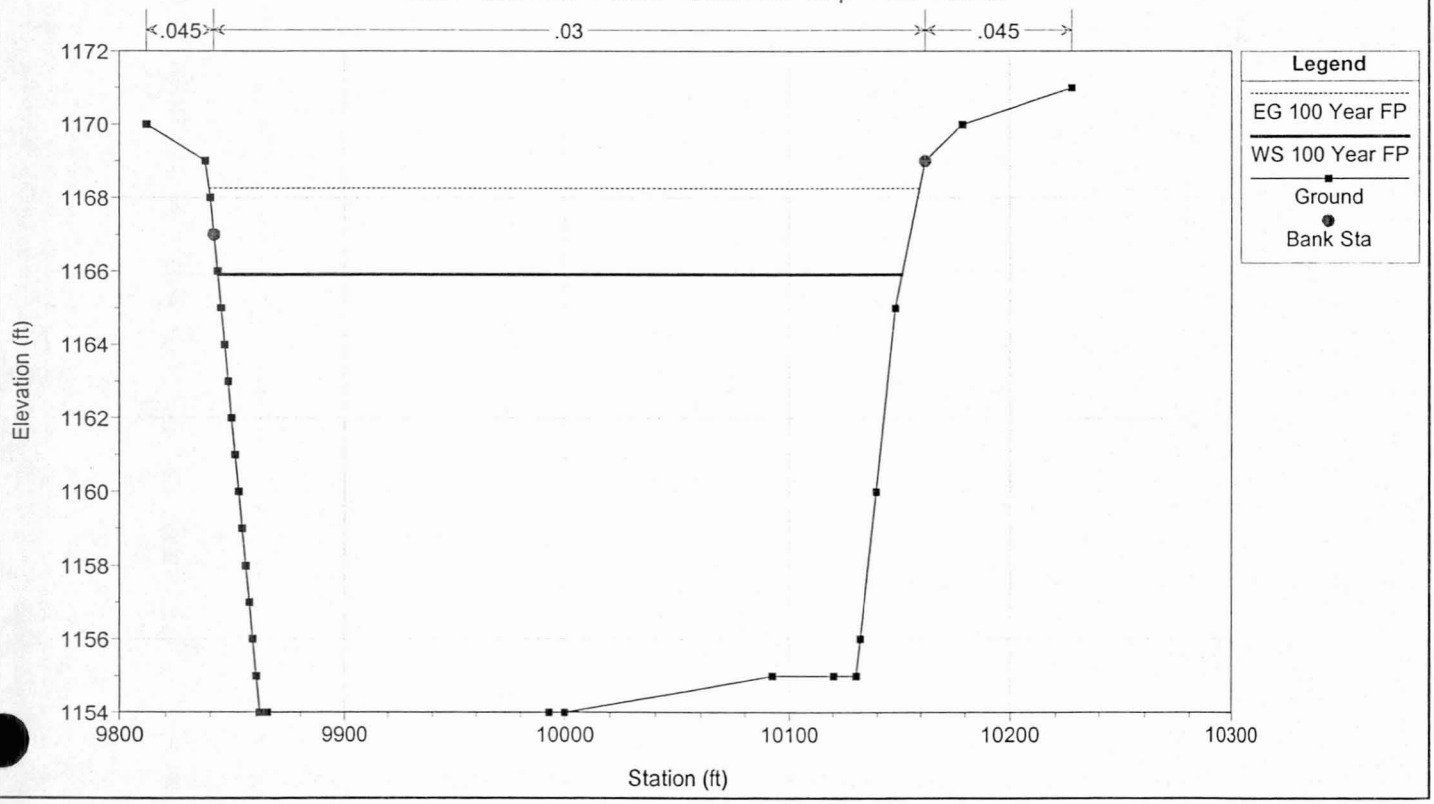
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 452.73



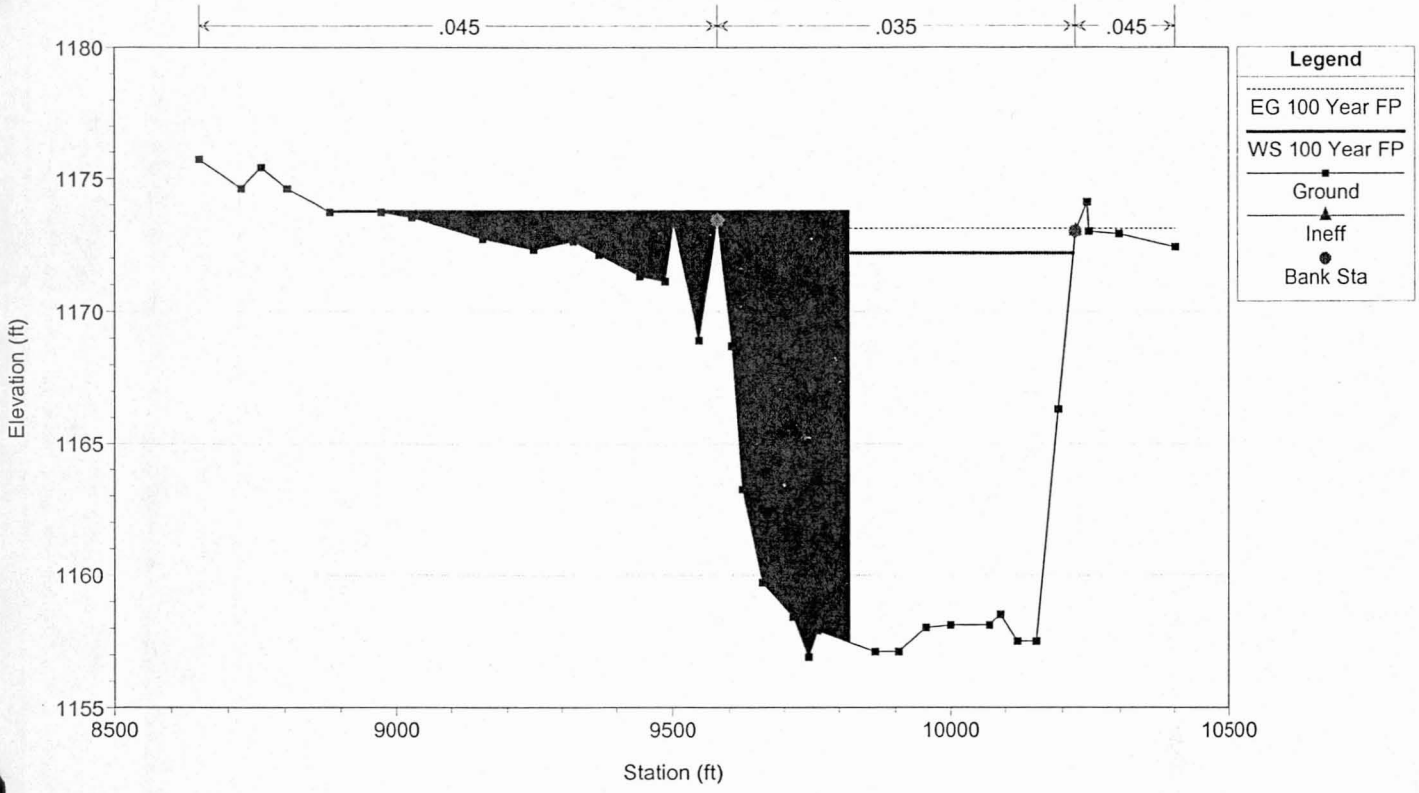
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 453.23



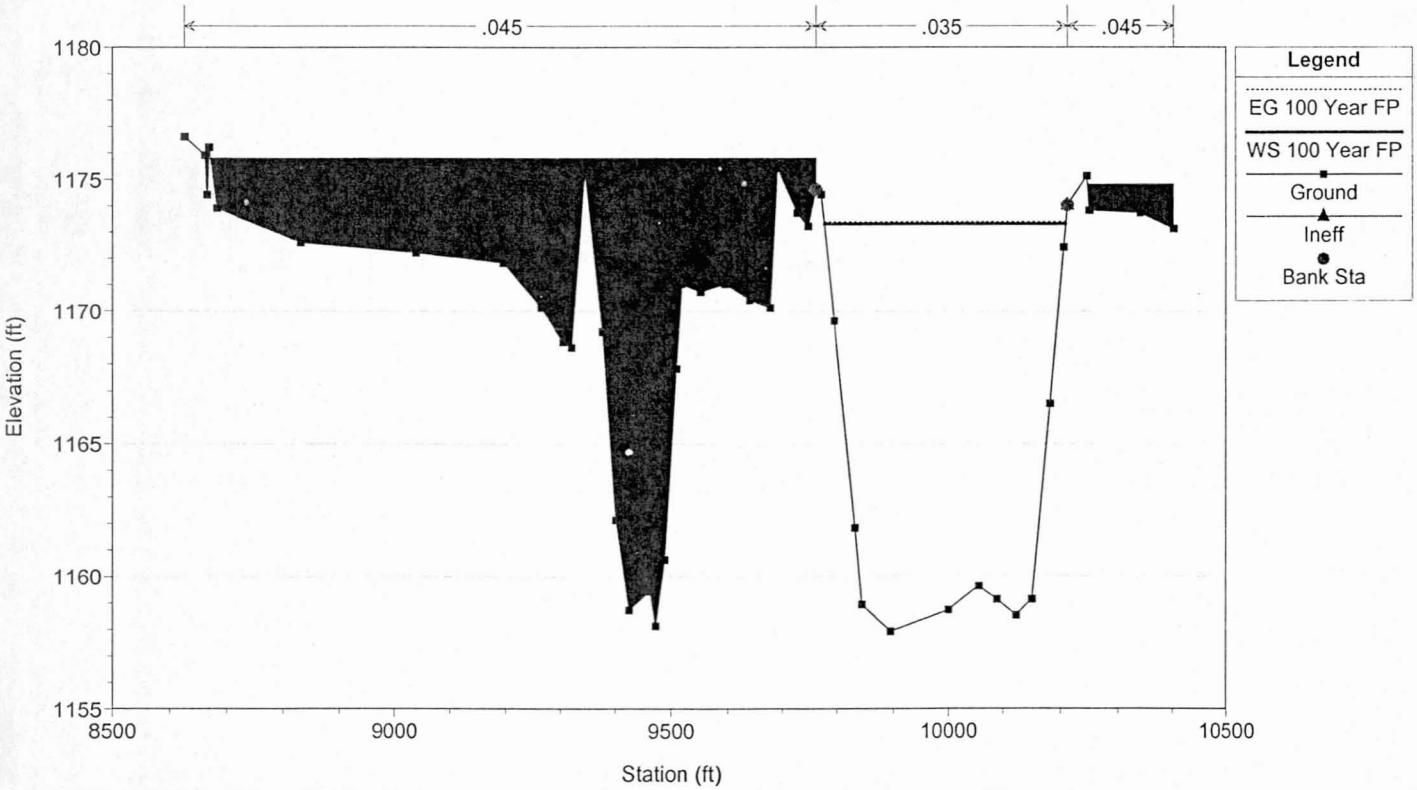
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 458.66



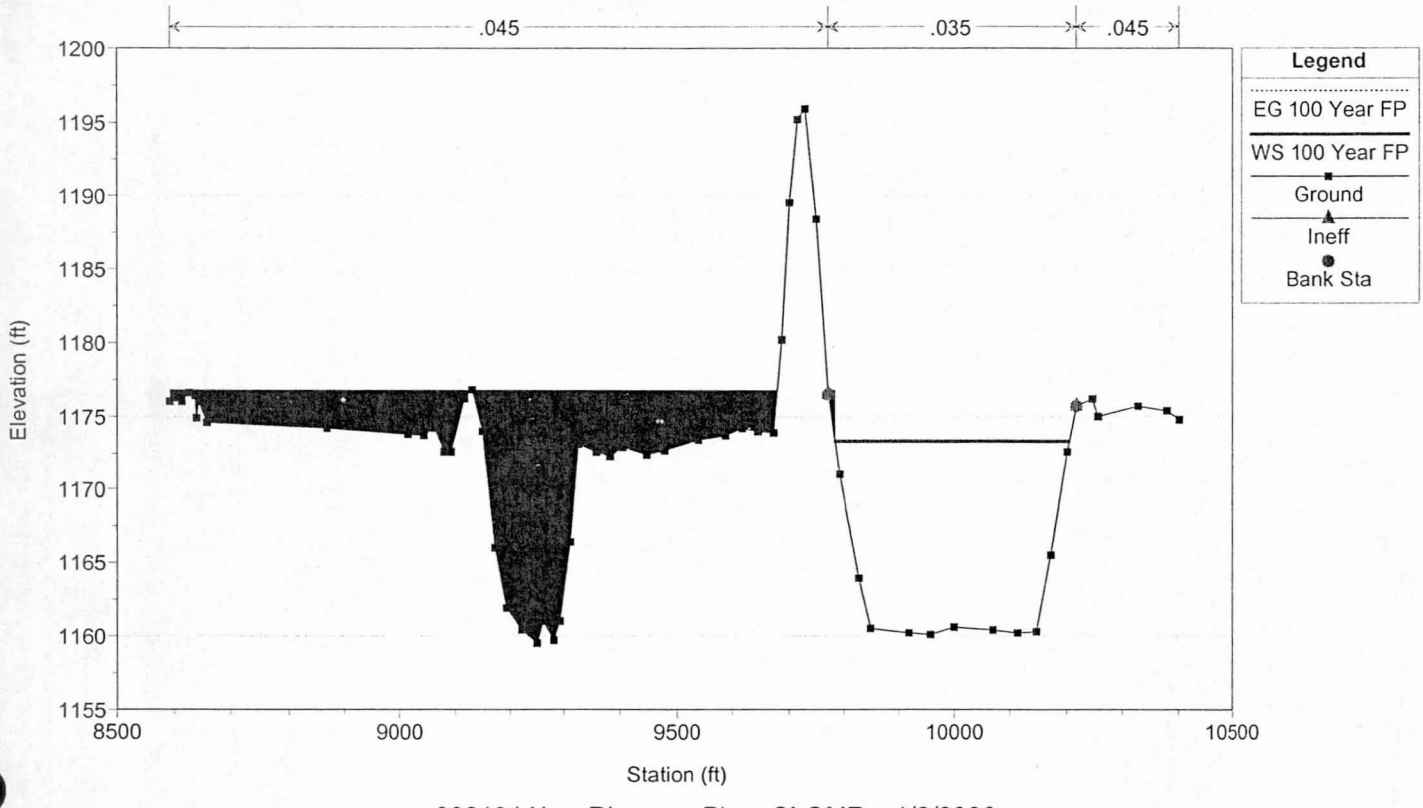
092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 458.73



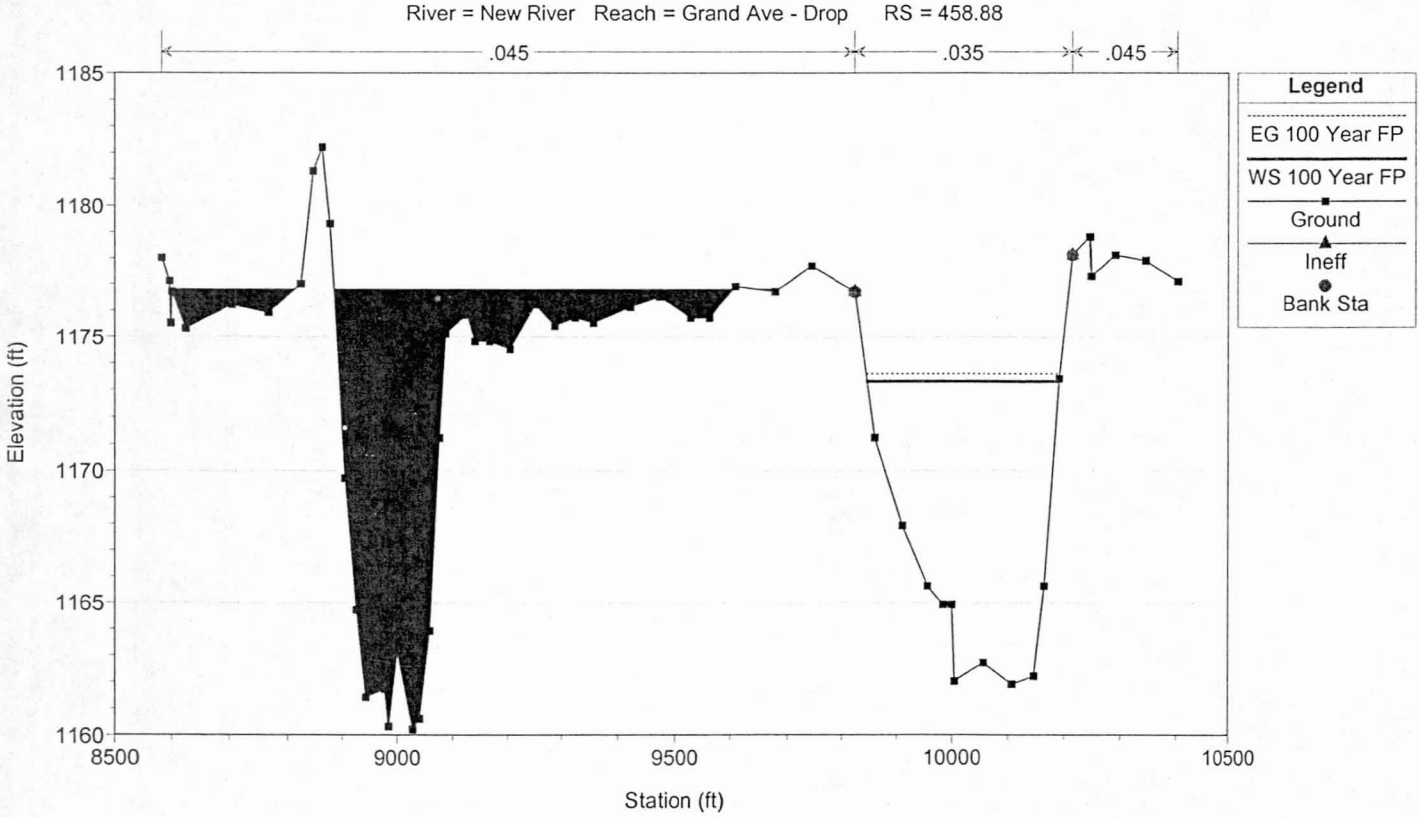
092104 New River Plan: CLOMR 1/9/2006

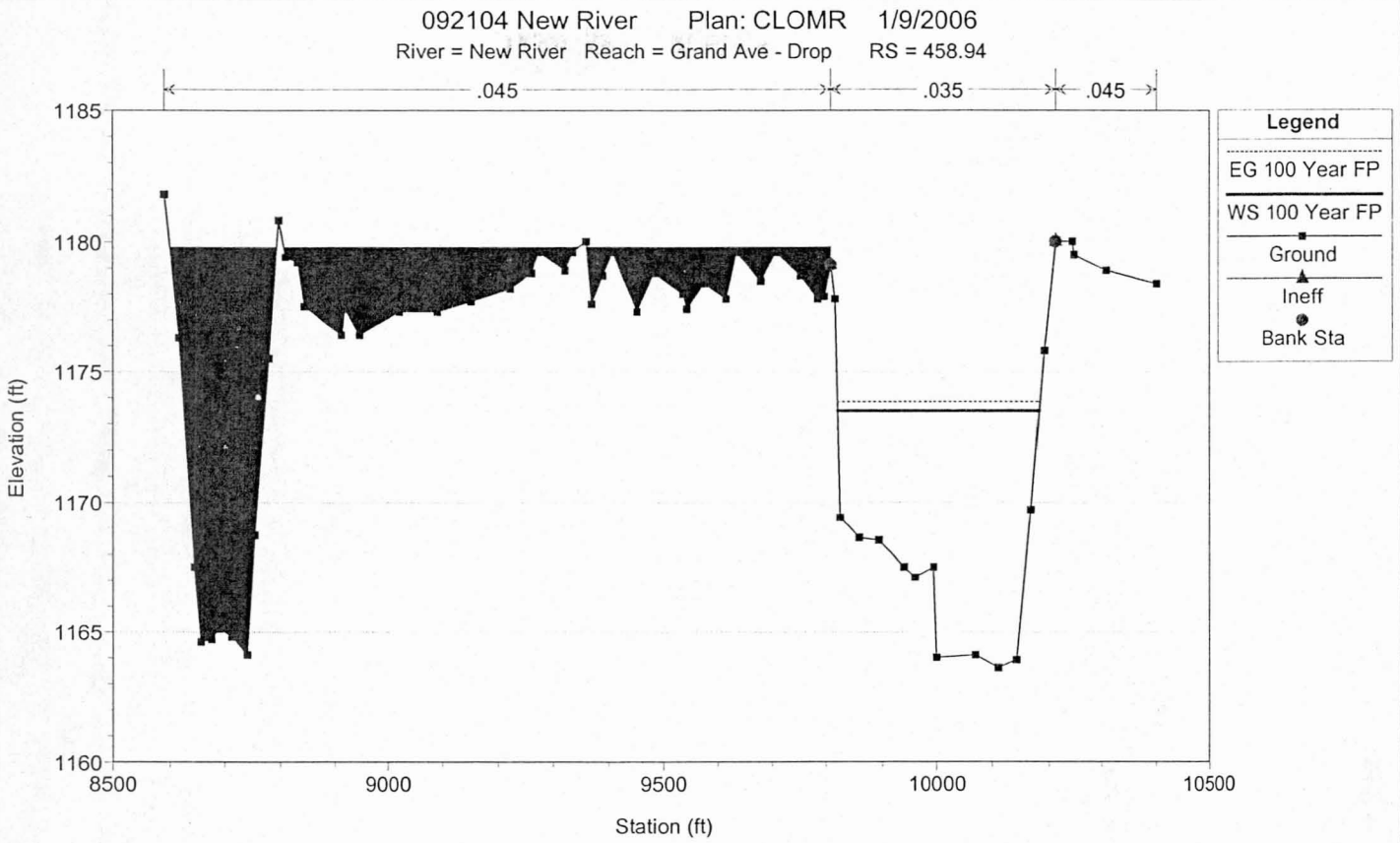
River = New River Reach = Grand Ave - Drop RS = 458.81



092104 New River Plan: CLOMR 1/9/2006

River = New River Reach = Grand Ave - Drop RS = 458.88




092104 New River Plan: CLOMR 1/9/2006
River = New River Reach = Grand Ave - Drop RS = 458.94
.045
.035
.045
Legend
EG 100 Year FP
WS 100 Year FP
Ground
Ineff
Bank Sta
Elevation (ft)
1185
1180
1175
1170
1165
1160
8500
9000
9500
10000
10500
Station (ft)

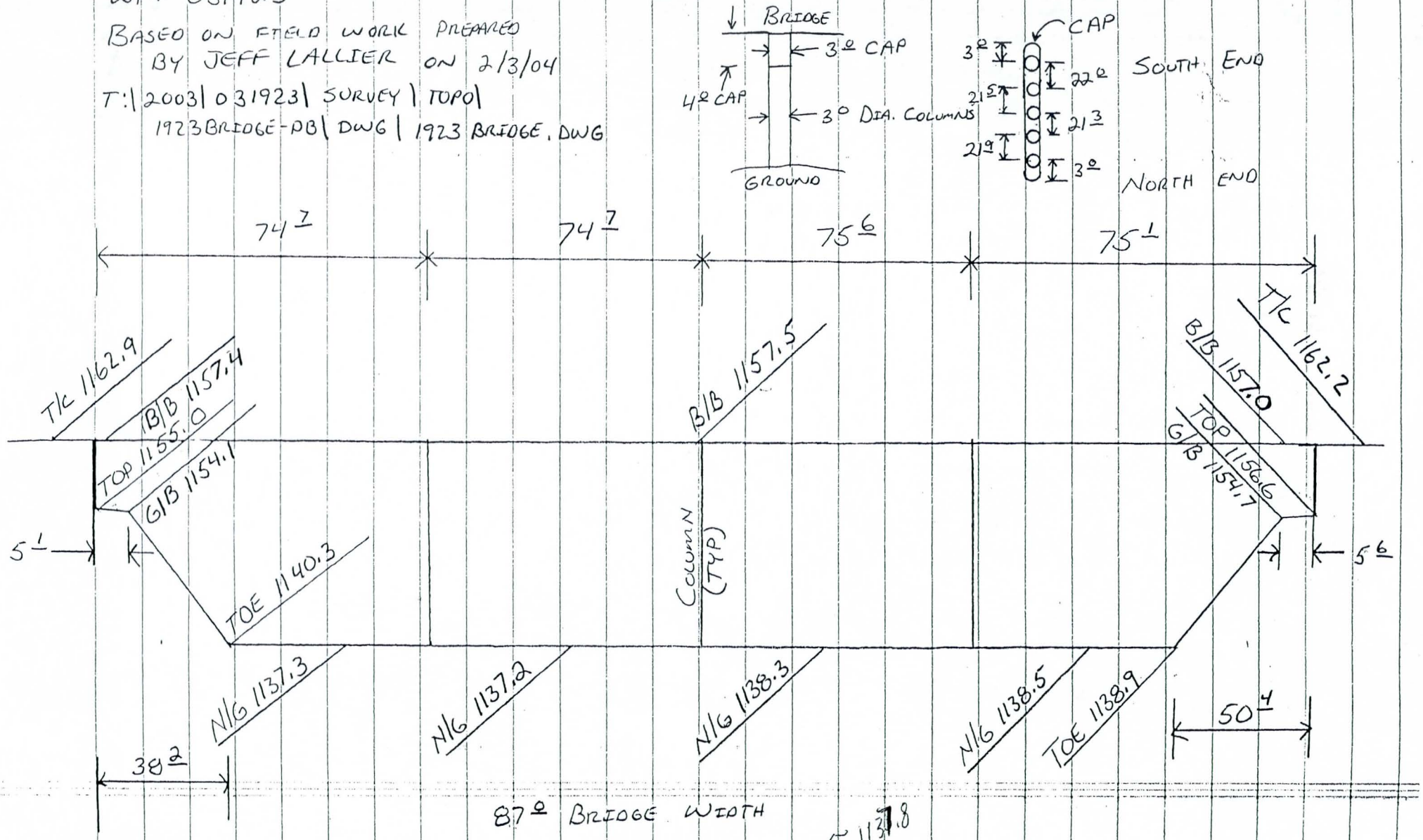
APPENDIX E

Survey Data and As-Built Plans for the Thunderbird Road Bridge

THUNDERBIRD ROAD
BRIDGE OVER NEW RIVER
LOOKING SOUTH (DOWN STREAM)
N.T.S.
WP# 031923
BASED ON FIELD WORK PREPARED BY JEFF LALLIER ON 2/3/04
T:\2003\031923\SURVEY\TOPO\1923BRIDGE-PB\DWG\1923 BRIDGE.DWG

T/C = TOP OF CURB
B/B = BOTTOM OF BRIDGE (BEAM)
TOP = TOP OF BANK @ ABUTMENT
TOE = TOE OF BANK
N/G = NATURAL GROUND (AVERAGE ELEVATION)
G/B = GRADE BREAK

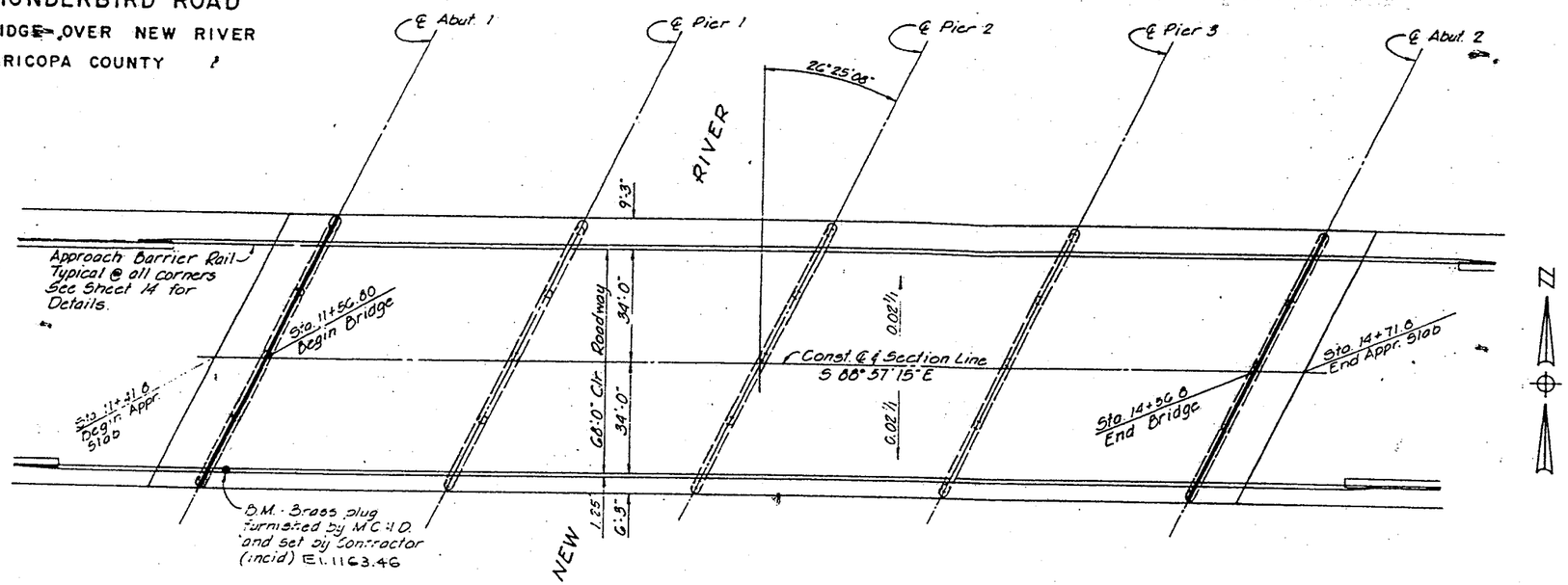
2-4-2004



FHWA REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	55300	9	14	1-30-81

F.C.

THUNDERBIRD ROAD
BRIDGE OVER NEW RIVER
MARICOPA COUNTY



NEW 4 SPAN PRESTRESSED CONCRETE GIRDER BRIDGE

68'-0" CLEAR ROADWAY
SCALE: 1" = 20'

GENERAL NOTES

CONSTRUCTION - Uniform Std. Spec's. for Public Works Construction Maricopa Assn. of Govts. 1975.

DESIGN - A.A.S.H.T.O. Specifications for Highway Bridges 1977 Revised to Date.

DEAD LOAD - Dead load includes allowance of 35 pounds per square foot for future wearing surface.

COMPOSITE DESIGN - Dead load by girders only.

LOADING CLASS - HS20-44

STRESSES - Class B Conc. f'c = 2500 psi, fc = 1000 psi
Class A Conc. f'c = 3000 psi, fc = 1200 psi
Class AA Conc. f'c = 4000 psi, fc = 1600 psi
Class S Conc. f'c = 5000 psi
Structural Steel fs = 20,000 psi
Prestressing Steel = 1/2" ϕ 7 Wire Strand (A = 0.153 sq in)
Min. f's 270,000 psi, P = 41,900 lbs.

CONCRETE CLASS DESIGNATIONS

CLASS A-A - Columns, column caps & abutments
CLASS A - Deck, Wingwalls, Backwalls & Diaphrams.
CLASS B - Approach Slabs & Barrier Rails.
CLASS S - Precast Girders

Reinforcing steel shall conform to A.S.T.M. Spec. A615 Grade 60 (fs = 24,000 psi)

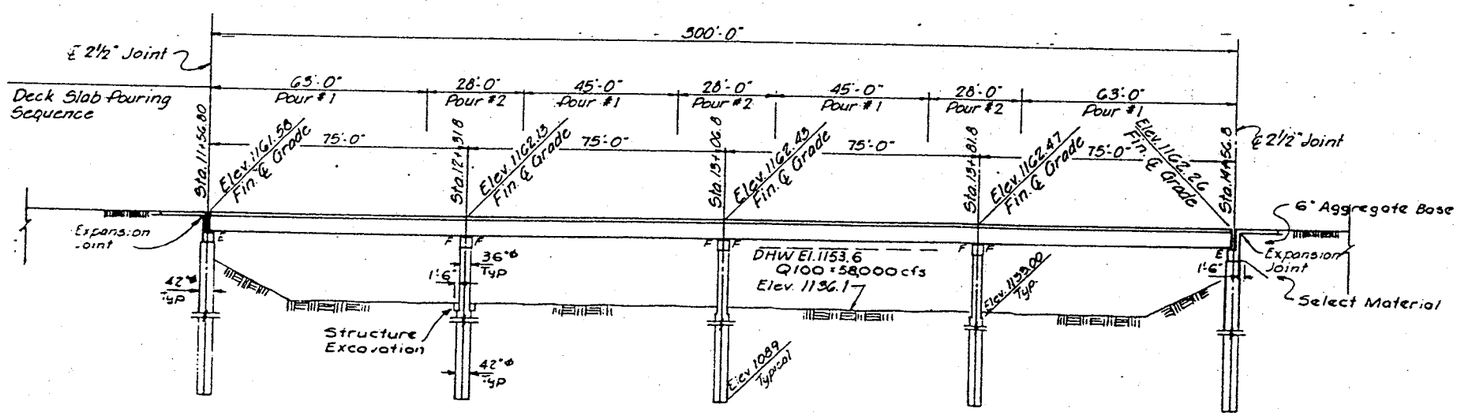
Prestressing Steel shall conform to A.S.T.M. A-416 Grade 270.

Structural Steel shall conform to A.S.T.M. spec. A36.

All dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2" clear cover unless noted otherwise.

Dimensions shall not be scaled from drawings.



Note: All deck concrete in the areas marked "Pour #1" shall be allowed to cure for at least 72 hours before concrete is placed in areas marked "Pour #2".

Diaphragms at Abutments #1 & #2 shall be poured with Pour #1

Diaphragms at Piers #2, 3, & 4 shall be poured with Pour #2.

CONCRETE SLAB POURING SEQUENCE & SECTION ON CONSTRUCTION ℄

SCALE: 1" = 20'

APPROXIMATE QUANTITIES

Item	Class AA Conc. C.Y	Class A Conc. C.Y	Class B Conc. C.Y.	Reinf. Steel Lbs.	Precast Girders No.	Precast Girders L.F.
Superstructure		835	56*	207,942	40	3000
Abut. #1	155	40	43	63,190		
Abut. #2	156	40	43	63,657		
Pier #1	147			58,803		
Pier #2	148			59,044		
Pier #3	148			59,044		
Totals	754	915	142	511,680	40	3,000

* Includes Barrier Transition

MARICOPA COUNTY HIGHWAY DEPARTMENT

Scale: AS NOTED
Date:
LOCATION PLAN
Drawn by: G.Y.
Checked: R.A.M.

ROYDER ENGINEERING CO.
2646 W. WELDON - PHOENIX, ARIZ.

Sheet No. 9

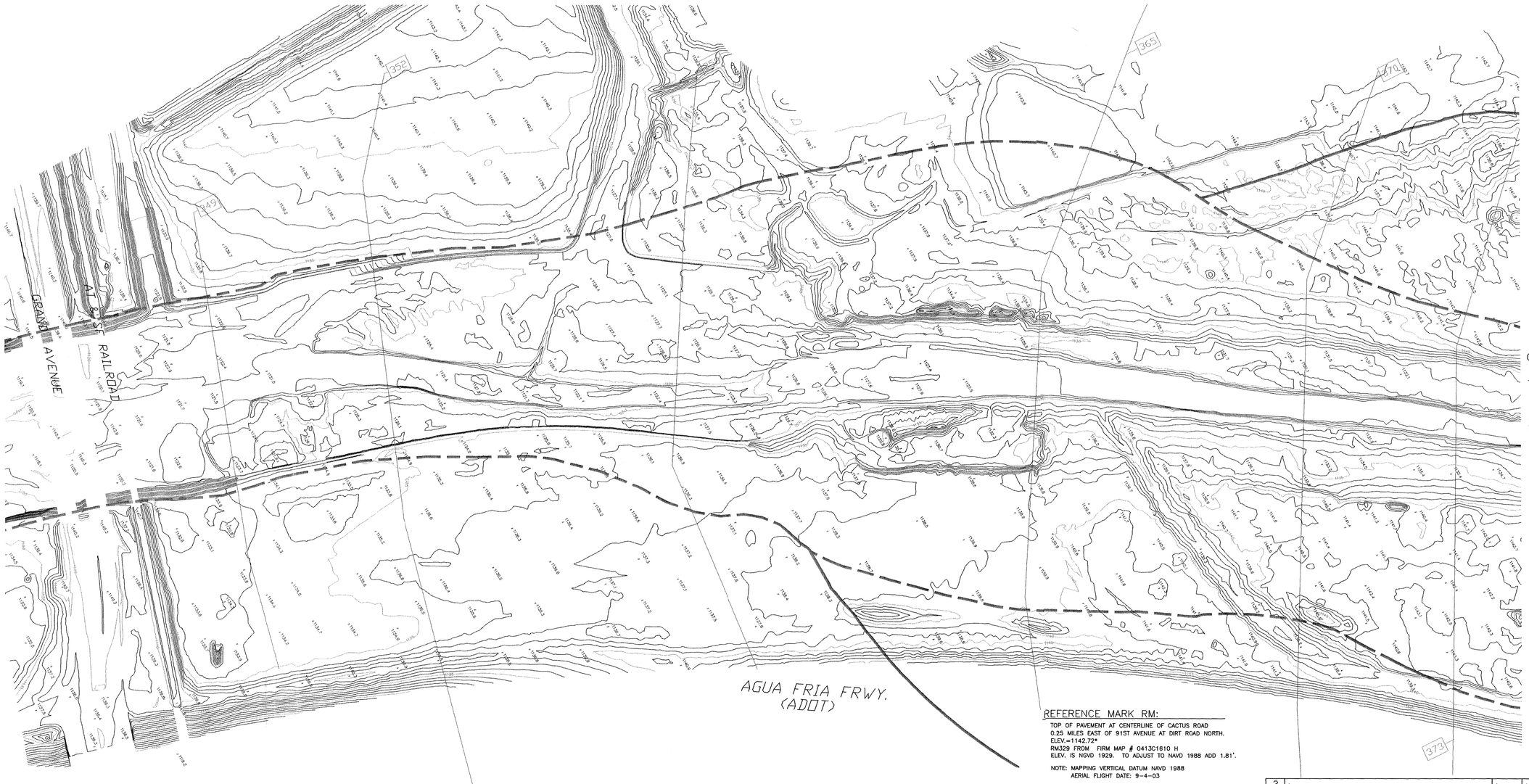
EXHIBIT A

Proposed Construction Plans

(Under Separate Cover)

EXHIBIT B

Study Work Maps



REFERENCE MARK RM:

TOP OF PAVEMENT AT CENTERLINE OF CACTUS ROAD
0.25 MILES EAST OF 91ST AVENUE AT DIRT ROAD NORTH.
ELEV.=1142.72*
RM329 FROM FIRM MAP # 0413C1610 H
ELEV. IS NGVD 1929. TO ADJUST TO NAVD 1988 ADD 1.81'.

NOTE: MAPPING VERTICAL DATUM NAVD 1988
AERIAL FLIGHT DATE: 9-4-03

LEGEND:

	EFFECTIVE FLOODWAY BOUNDARY
	EFFECTIVE FLOODPLAIN BOUNDARY
ZONE AE	FLOOD INSURANCE RATE ZONE
365	EFFECTIVE FIS CROSS SECTION NUMBER

50 0 50 100
Scale in Feet

NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
ENGINEERING DIVISION

NEW RIVER - GRAND AVENUE TO SKUNK CREEK
PROJECT NUMBER
FCD2003C001

Registered Professional Engineer (Civil)
CERTIFICATE NO. 32854
SHMIN ZOU
Date Signed
ARIZONA, U.S.A.

	BY	DATE
DESIGNED	KD/SZ	01-06
DRAWN	KD/DH	01-06
CHECKED	JH/AP	01-06

J2 Engineering and Environmental Design
8222 South 48th Street, Ste. 135
Phoenix, AZ 85044

Wood, Patel & Associates, Inc.
2051 West Northern, Ste. 100
Phoenix, AZ 85021

DRAWING NO.

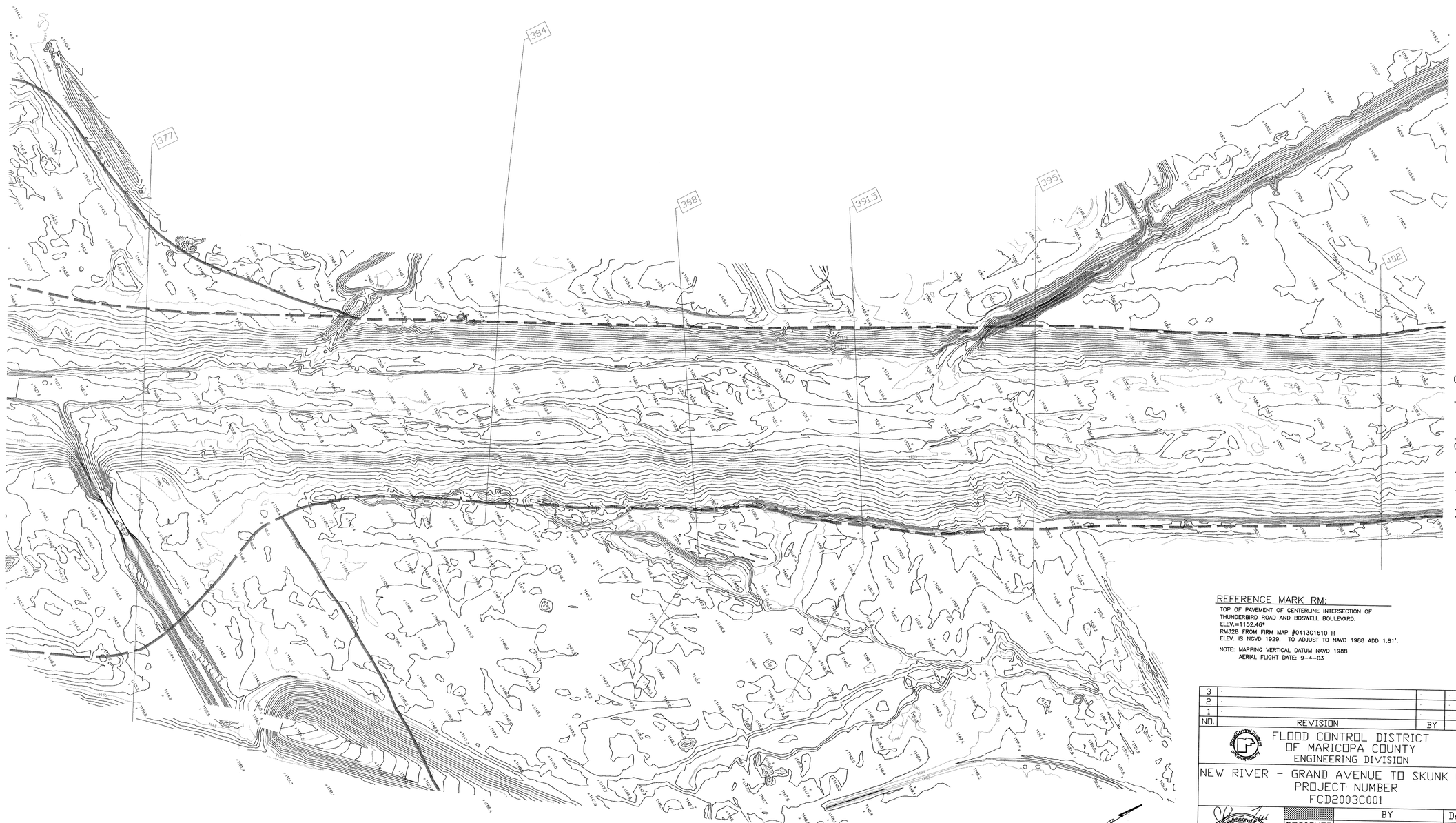
EXHIBIT B1-EXISTING
STUDY WORK MAP

SHEET OF
1 4

H:\2003Projects\FCD\FCD_New River\CLOMRS_Jim\Exhibits\Hydrologic\ EXHB-EXISTING.dwg

LEGEND:

— — — —	EFFECTIVE FLOODWAY BOUNDARY
———	EFFECTIVE FLOODPLAIN BOUNDARY
ZONE AE	FLOOD INSURANCE RATE ZONE
365	EFFECTIVE FIS CROSS SECTION NUMBER



REFERENCE MARK RM:

TOP OF PAVEMENT OF CENTERLINE INTERSECTION OF THUNDERBIRD ROAD AND BOSWELL BOULEVARD.
ELEV.=1152.46'
RM328 FROM FIRM MAP #0413C1610 H
ELEV. IS NGVD 1929. TO ADJUST TO NAVD 1988 ADD 1.81'.

NOTE: MAPPING VERTICAL DATUM NAVD 1988
AERIAL FLIGHT DATE: 9-4-03

NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
ENGINEERING DIVISION

NEW RIVER - GRAND AVENUE TO SKUNK CREEK
PROJECT NUMBER
FCD2003C001

	BY	DATE
DESIGNED	KD/SZ	01-06
DRAWN	KD/DH	01-06
CHECKED	JH/AP	01-06

Registered Professional Engineer (Civil)
CERTIFICATE NO. 32854
SHIMIN ZOU
Date Signed 1-5-06
ARIZONA, U.S.A.

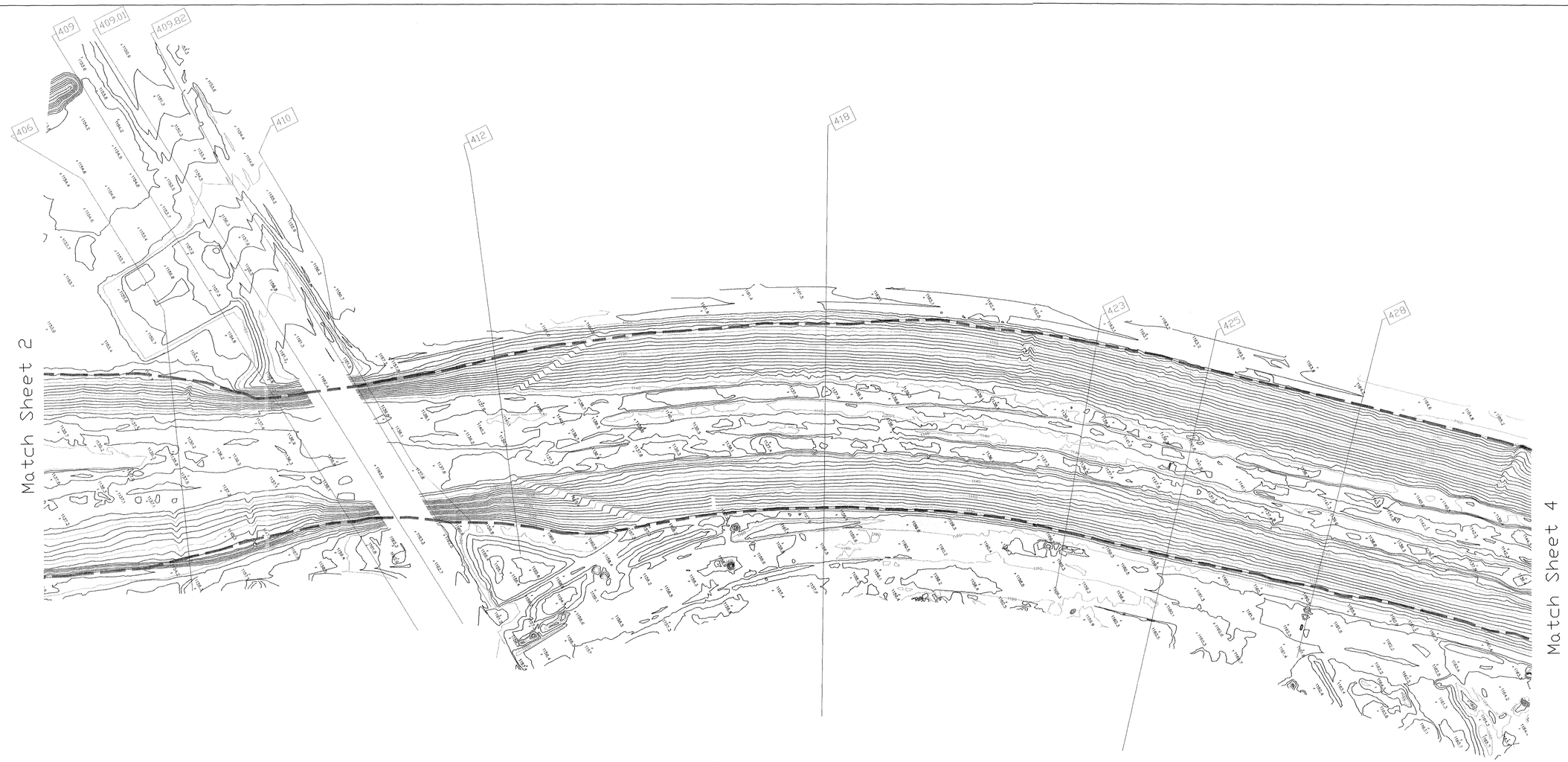
JE Engineering and Environmental Design
8222 South 48th Street, Ste. 135
Phoenix, AZ 85044

Wood, Patel & Associates, Inc.
2051 West Northern, Ste. 100
Phoenix, AZ 85021

DRAWING NO.

EXHIBIT B2-EXISTING
STUDY WORK MAP

SHEET OF
2 4



REFERENCE MARK RM:

TOP OF PAVEMENT OF CENTERLINE INTERSECTION OF THUNDERBIRD ROAD AND BOSWELL BOULEVARD.
ELEV.=1152.46*
RM328 FROM FIRM MAP #0413C1610 H
ELEV. IS NGVD 1929. TO ADJUST TO NAVD 1988 ADD 1.81'.

NOTE: MAPPING VERTICAL DATUM NAVD 1988
AERIAL FLIGHT DATE: 9-4-03

LEGEND:

— — —	EFFECTIVE FLOODWAY BOUNDARY
———	EFFECTIVE FLOODPLAIN BOUNDARY
ZONE AE	FLOOD INSURANCE RATE ZONE
365	EFFECTIVE FIS CROSS SECTION NUMBER

N

50 0 50 100
Scale in Feet

NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
ENGINEERING DIVISION

NEW RIVER - GRAND AVENUE TO SKUNK CREEK
PROJECT NUMBER
FCD2003C001

	BY	DATE
DESIGNED	KD/SZ	01-06
DRAWN	KD/DH	01-06
CHECKED	JH/AP	01-06

Registered Professional Engineer (Civil) CERTIFICATE NO. 32854 SHIMIN ZOU Date Signed 1-9-06 ARIZONA, U.S.A.

J2 Engineering and Environmental Design
8222 South 48th Street, Ste. 135
Phoenix, AZ 85044

Wood, Patel & Associates, Inc.
2051 West Northern, Ste. 100
Phoenix, AZ 85021

DRAWING NO. | EXHIBIT B3-EXISTING STUDY WORK MAP | SHEET 3 OF 4

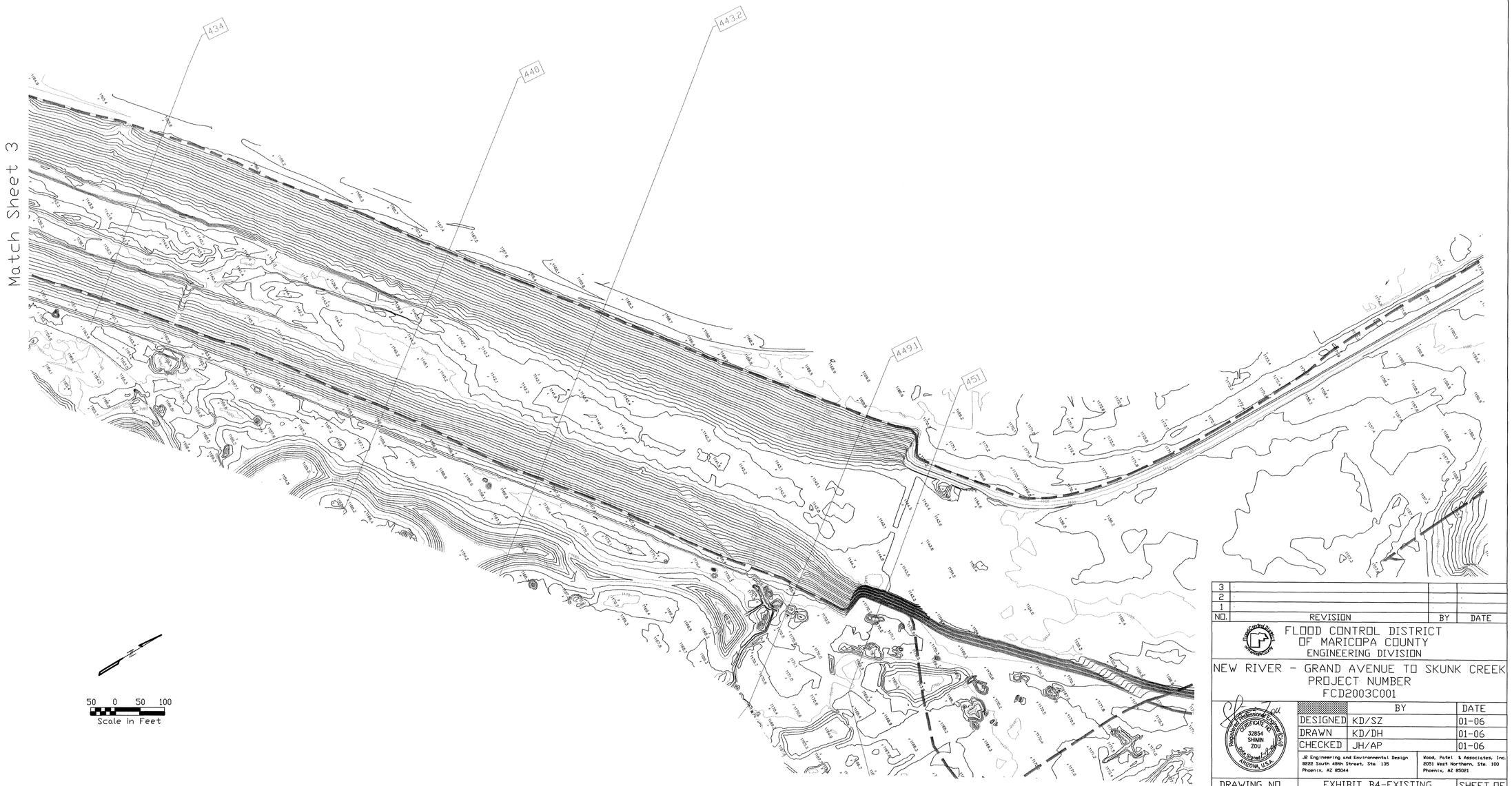
REFERENCE MARK RM:

TOP OF PAVEMENT OF CENTERLINE INTERSECTION OF THUNDERBIRD ROAD AND BOSWELL BOULEVARD.
ELEV.=1152.46*
RM328 FROM FIRM MAP #0413C1610 H
ELEV. IS NGVD 1929. TO ADJUST TO NAVD 1988 ADD 1.81'.

NOTE: MAPPING VERTICAL DATUM NAVD 1988
AERIAL FLIGHT DATE: 9-4-03

LEGEND:

— — — —	EFFECTIVE FLOODWAY BOUNDARY
————	EFFECTIVE FLOODPLAIN BOUNDARY
ZONE AE	FLOOD INSURANCE RATE ZONE
365	EFFECTIVE FIS CROSS SECTION NUMBER



NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
ENGINEERING DIVISION

NEW RIVER - GRAND AVENUE TO SKUNK CREEK
PROJECT NUMBER
FCD2003C001

	BY	DATE
DESIGNED	KD/SZ	01-06
DRAWN	KD/DH	01-06
CHECKED	JH/AP	01-06

Registered Professional Engineer (Civil) CERTIFICATE NO. 32854 SHIMIN ZOU Date Signed 1-12-06 ARIZONA, U.S.A.

JE Engineering and Environmental Design
8222 South 48th Street, Ste. 135
Phoenix, AZ 85044

Wood, Patel & Associates, Inc.
2051 West Northern, Ste. 100
Phoenix, AZ 85021

DRAWING NO.

EXHIBIT B4-EXISTING
STUDY WORK MAP

SHEET OF
4 4

EXHIBIT C

Annotated FIRM Panels