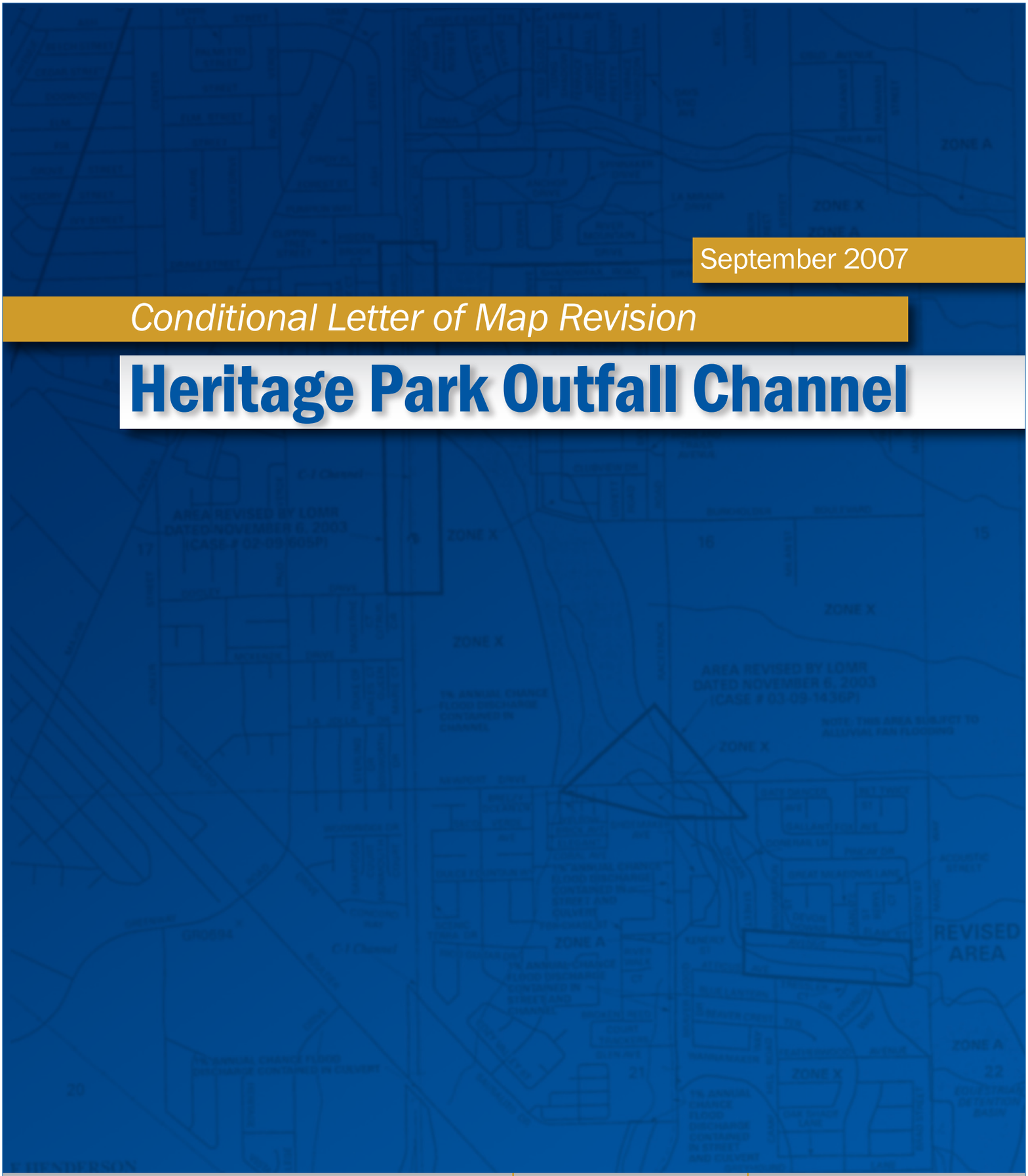
September 2007

Conditional Letter of Map Revision

Heritage Park Outfall Channel



prepared for THE CITY OF HENDERSON

prepared by vtm

FEDERAL EMERGENCY MANAGEMENT AGENCY

PAYMENT INFORMATION FORM

Community Name: CITY OF HENDERSON

Project Identifier: HERITAGE PARK OUTFALL CHANNEL

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

Type of Request:

☐ MT-1 application
☒ MT-2 application

FEMA
Fee Charge System Administrator
P.O. Box 22787
Alexandria, VA 22304
FAX (703) 317-3076

☐ EDR application

FEMA Project Library
3601 Eisenhower Avenue
Alexandria, VA 22304
FAX (703) 751-7391

Request No.: _____ (if known)

Amount: 4000.00

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

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

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

COMPLETE THIS SECTION ONLY IF PAYING BY CREDIT CARD

CARD NUMBER

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

EXP. DATE

		—	
Month			Year

_____ _____

Date Signature

NAME *(AS IT APPEARS ON CARD)*: _____
(please print or type)

ADDRESS: 2727 SOUTH RAINBOW BOULEVARD
(*for your credit card receipt-please print or type*) LAS VEGAS, NEVADA 89146

DAYTIME PHONE: 702-247-4020

FEMA

REQUEST FOR CONDITIONAL LETTER OF MAP REVISION

HERITAGE PARK OUTFALL CHANNEL

(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)

PREPARED FOR:

CITY OF HENDERSON

240 Water Street

Henderson, NV 89009

PREPARED BY:

VTN NEVADA

2727 S. Rainbow Boulevard

Las Vegas, NV 89146

(702) 247-4020



September 2007

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A. FEMA Forms

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Post-Project Conditions HEC-RAS Output – HP Outfall Channel (Equestrian.prj)
Post Project Conditions CHECK-RAS Output – Heritage Park Outfall Channel
Post-Project Conditions WSPGW Model - HP Outfall Channel (HPOC15.WSW)
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Drake Channel Manning's Equation Calculations

D. Reference Material

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Heritage Park Outfall Channel (AKA Equestrian D.B. Outfall Channel)
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Equestrian Detention Basin Outfall Channel - Channel Plan & Profile
C-1 Channel As-Builts – Lake Mead Drive to the Drake/C1 Confluence
Channel Plan & Profile
C-1 Channel As-Builts – Drake Confluence to Burkholder Boulevard
Channel Plan & Profile
C-1 Channel As-Builts – Upper and Middle Reaches of the C-1 Channel - Phase I
Channel Plan & Profile

E. Data CD

Electronic Hydraulic Model Files, Exhibits, and LOMR Reference Material

1.0 INTRODUCTION

The purpose of this request for Condition Letter of Map Revision (CLOMR) is to analyze and address a needed revision to the current flood zone within the C-1 Watershed in the City of Henderson, Nevada, Clark County. This CLOMR is provided to address the modification of the existing Zone A flood zone between the outfall of the existing Equestrian Detention Basin and the confluence of the existing Drake and C-1 Channels. This analysis provides documentation to demonstrate that the proposed channel improvements will contain the 100 year flood flow and the post-improvement condition will no longer warrant a portion of the flood zone delineations shown on the existing FIRM Panel 2615 dated January 16, 2004.

In the existing condition, the outflow from the Equestrian Detention Basin combines with runoff from a 0.52 square mile area north of the detention basin on the west side of Magic Way. The flows combine in an existing earthen channel/natural wash that is greater than 100 ft wide. The natural channel flows westerly and then turns to the north and conveys runoff to an existing culvert (nine 45"x 29" elliptical pipes) at the intersection of Newport Drive and Racetrack Road. The runoff flows through the existing culvert northwesterly across the intersection and flows across an undeveloped parcel toward an existing lined channel (concrete invert and grouted rip rap side slopes) along the north side of the parcel and eventually drains into the existing concrete lined C-1 Channel.

The analysis presented in this CLOMR request shows that the Heritage Park Outfall Channel (AKA Equestrian Detention Basin Outfall Channel) will collect the 100 year flood flow from the existing earthen channel/natural wash approximately 1,000 ft downstream of Equestrian Detention Basin outfall channel (1,800 ft west of Magic Way) and convey the flow in a reinforced concrete box channel to the existing concrete lined C-1 Channel just south of Burkholder Boulevard. The reinforced concrete box channel facility between the natural channel and the C-1 Channel ranges in size from an 8'x6' RCB to a 24.5'x6' RCB. Refer to the Heritage Park Outfall Channel plans and the Equestrian Detention Basin Outfall plans located in Appendix D.

The hydrologic characteristics and flow patterns of the study area have changed considerably in the past several years based on the ongoing development in the area and the construction of CCRFCD Master Plan drainage facilities. In July 2001, the LOMR for the CCRFCD Master Planned Equestrian Detention Basin and Diversion Channel facility was approved. This facility significantly reduced the flood zone limits within the southern portion of the study area. An electronic copy of this LOMR has been included on the Data CD in Appendix E. The C-1 Channel System Flood Insurance Study, Carter Burgess, 2002, provided an overall hydrologic and hydraulic analysis of the tributary area to the C-1 Channel. The study included all of the existing Master Plan facilities that were constructed at that time. A copy of the C-1 Channel System FIS subbasin map is included in Appendix D. In February 2006, the LOMR for the CCRFCD Boulder Highway Channel was approved. This existing channel facility conveys the runoff that reaches Boulder Highway from the south to the northwest along the roadway and into the C-1 Channel. The channel eliminates the majority of the culvert diversions across Boulder Highway that were previously featured in the 2002 FIS Restudy. The hydrologic model for the area was updated with the 2006 LOMR to reflect the changes. The FEMA approved flowrates from the updated Boulder Highway Channel model were used for this CLOMR request analysis.

Refer to Figure 1.0 Vicinity Map, Appendix B, for an overall view of the project area and where it is in relation to the Las Vegas Valley. This CLOMR request will analyze and show that the proposed Heritage Park Outfall Channel (AKA Equestrian Detention Basin Outfall Channel) improvements will contain the 100 year flood, and that post-project conditions no longer require certain flood zone delineations that are shown on the current effective FEMA FIRM Panel 2615 dated January 16, 2004.

2.0 HYDROLOGY

The hydrologic analysis approved for the Boulder Highway Channel LOMR (05-09-A429P) was used for the hydraulic analysis performed for this CLOMR request. An excerpt from the LOMR study, including a complete summary table of flowrates throughout the C-1 Channel system, has been included in Appendix D. The applicable flowrates used for this CLOMR analysis are shown in Table 1 below.

TABLE 1 – FEMA 100 YEAR FLOOD FLOWRATE SUMMARY

Concentration Point[1)]	Location	Area (sq. mi.)	Storm Distribution	100 Year Peak Discharge [2)]
34	Outfall of Equestrian Detention Basin with additional 0.52 sq.mi. trib area to the north of DB.	7.22	3	706
35	Intersection of Newport Drive and Racetrack Road	8.09	4	1168
38	C-1 Channel at Burkholder Boulevard	25.31	5	2868

[1)] Refer to Watershed Map (Figure 7) from the C-1 Channel System FIS Restudy located in Appendix D.
[2)] Flow from Boulder Highway Channel LOMR (05-09-A429P). Flow table from LOMR provided in Appendix D.

3.0 HYDRAULICS

The study area was analyzed with six different hydraulic models for this analysis. HEC-RAS was used to model the Pre-Project Conditions for the Heritage Park Outfall Channel alignment in order to establish the existing water surface elevations between the Equestrian Detention Basin outfall channel and the C-1 Channel at Burkholder Boulevard. HEC-RAS was used again to model the upstream natural channel between the Equestrian Detention Basin outfall channel and the proposed transition structure at the upstream end of the channel improvements to establish the upstream Post-Project Conditions water surface elevations. The WSPGW model was used to establish the Post-Project Conditions water surface elevations in the concrete-lined portions of the Heritage Park Outfall Channel (AKA Equestrian Detention Basin Outfall Channel). WSPGW was also used to determine the Pre- and Post-Project Conditions water surface elevations in the C-1 Channel. FlowMaster was used to establish the water surface elevations in the existing Drake Channel.

3.1 Pre-Project Conditions – HEC-RAS

The Pre-Project Conditions for this Heritage Park Outfall Channel CLOMR request were modeled using HEC-RAS (Equestrian.prj). The model determined the existing flood zone

through the currently Zone A designated area located downstream of the Equestrian Detention Basin to the C-1 Channel at Burkholder Blvd. As discussed above, the design flows that were used for modeling the existing natural channel were taken from the Boulder Highway Channel LOMR (05-09-A429P). Cross sections were taken along the existing earthen channel alignment at spacing between 25 ft and 100 ft based on the available 1-foot contour information. See Appendix C for the Heritage Park Outfall Channel Pre-Project Conditions HEC-RAS output.

3.2 Post-Project Conditions – HEC-RAS

The proposed channel facility is a reinforced concrete box facility that will convey the 100 year flood flows from the existing natural channel at the outfall of the Equestrian Detention Basin to the C-1 Channel at Burkholder. Therefore, it was important to analyze the inlet structure to the RCB facility to insure that the 100 year flood flow will be captured and conveyed into the facility. A Post-Project analysis of the natural channel at the upstream end of the project was performed using HEC-RAS (Equestrian.prj) to verify that the proposed improvements will convey the entire 100 year flood flow from the natural channel into the RCB facility. The Post-Project Conditions HEC-RAS analysis, showing that the improvements will collect the entire 100-year flood flow, is included in Appendix C.

3.3 Post-Project Conditions – WSPGW

The Heritage Park Outfall Channel (AKA Equestrian Detention Basin Outfall Channel) facility, from the upstream end of the RCB channel to the confluence with the existing concrete-lined C-1 Channel at Burkholder Blvd, was modeled using WSPGW (HPOC15.wsw), in conformance with local standards in CCRFCD *Hydrologic Criteria and Drainage Design Manual*. The FEMA 100 year flood flow used in the analysis was 706 cfs from the upstream end to the intersection of Newport Drive and Racetrack Road. At the intersection, CP35, the flowrate is increased to 1,168 cfs and conveyed into the channel through two lateral channels. The flowrate increased again at the confluence with the C-1 Channel, CP38, and the model is run downstream through the C-1 Channel to Drake Street

to tie into the Pre-Project 100 year flood water surface elevation. Appendix C contains the Post-Project WSPGW analysis for the Heritage Park Outfall Channel. The storm drain plan and profile sheets for the channel are provided in two plan sets in Appendix D; 1) Heritage Park Outfall Channel (AKA Equestrian Detention Basin Outfall Channel), and 2) Equestrian Detention Basin Outfall Channel.

3.4 Pre-Project Conditions - C-1 Channel - WSPGW

A Pre-Project Conditions analysis of the C-1 Channel was run using WSPGW (C1CHEX.wsw) to establish the existing 100 year flood water surface elevation within the existing concrete channel facility. The analysis of the pre- and post- conditions showed that the water surface elevation in the C-1 Channel is not adversely affected by the Heritage Park Outfall Channel improvements and the Post-Project water surface will tie-in exactly to the existing water surface elevation at or before Drake Street. The Pre-Project Conditions C-1 Channel WSPGW analysis is provided in Appendix C.

3.5 Post-Project Conditions - Drake Channel

The Drake Channel is located along Drake Street approximately 2,300 ft north of the Heritage Park Outfall Channel confluence with the C-1 Channel. The current Zone A flood zone extends northwesterly from the Newport/Racetrack intersection to the intersection of the C-1 Channel and the Drake Channel. The Heritage Park Outfall Channel improvements will convey the major offsite flows at the intersection of Newport and Racetrack to the C-1 Channel at Burkholder. The Drake Channel was analyzed with FlowMaster to determine the water surface elevation in the channel based on the FEMA 100 year flood flow of 3,914 cfs, C-1 FIS Restudy combination point CP44. The FlowMaster analysis shows that the water surface elevation in the channel would be slightly above the channel walls, but based on the contours found on the channel As-built plans, would still be contained and conveyed into the C-1 Channel. Refer to the C-1/Drake Channel As-built plans provided in Appendix D.

4.0 RESULTS

The post-project analysis performed with HEC-RAS and WSPG shows that the channel improvements will collect the 100 year flood flow from the earthen channel downstream of the Equestrian Detention Basin outfall channel and convey the flow northwest, with flow added through two lateral facilities at Newport/Racetrack, to the C-1 Channel just south of Burkholder Boulevard. Manning's equation analysis of the Drake Channel shows that the 100 year flood water surface is slightly above the channel walls, but the flow would be contained and conveyed to the C-1 Channel based on the graded slopes adjacent to the channel per the channel As-built plans.

A comparison of the Pre-Project Conditions HEC-RAS analysis and the Post-Project Conditions HEC-RAS analysis reveals that the water surface elevations upstream of the proposed RCB facility at the transition structure are increased in some locations as a result of the proposed improvements. The transition structure configuration was restricted by an existing 21" sanitary sewer that crosses the wash in this location. The transition structure was placed in the current location within the natural channel to collect the flow and convey it to the proposed RCB before the alignment turns to the north toward the Newport/Racetrack intersection. According to the Post-Project Conditions Work Map, refer to Appendix D for a copy, the Post-Project Conditions inundation limits will be within the current graphical limits of the designated Zone A flood zone. Despite the increase in the water surface, post-project water surface will stay within the existing earthen channel with the necessary freeboard. The adjacent properties outside of the natural earthen channel will not be adversely affected by the increase in water surface. A summary comparison table of the Pre- and Post-Project Condition water surface elevations through the natural channel has been provided in Appendix C with the Post-Project Conditions HEC-RAS output.

5.0 CONCLUSION

The data and calculations provided in this CLOMR request show that the 100 year flood flow will be contained in the proposed concrete box channel improvements and that the existing FEMA FIRM Panel 2615 dated, January 16, 2004, should be revised to reflect the conveyance of the 1% annual chance flood discharge within the flood control facility. See Figure 3.1, Appendix B, to view the annotated FEMA flood zone map. Figure 3.2 is the Pre-Project Conditions Work Map and Figure 3.3 is the Post-Project Conditions Work Map.

6.0 REFERENCES

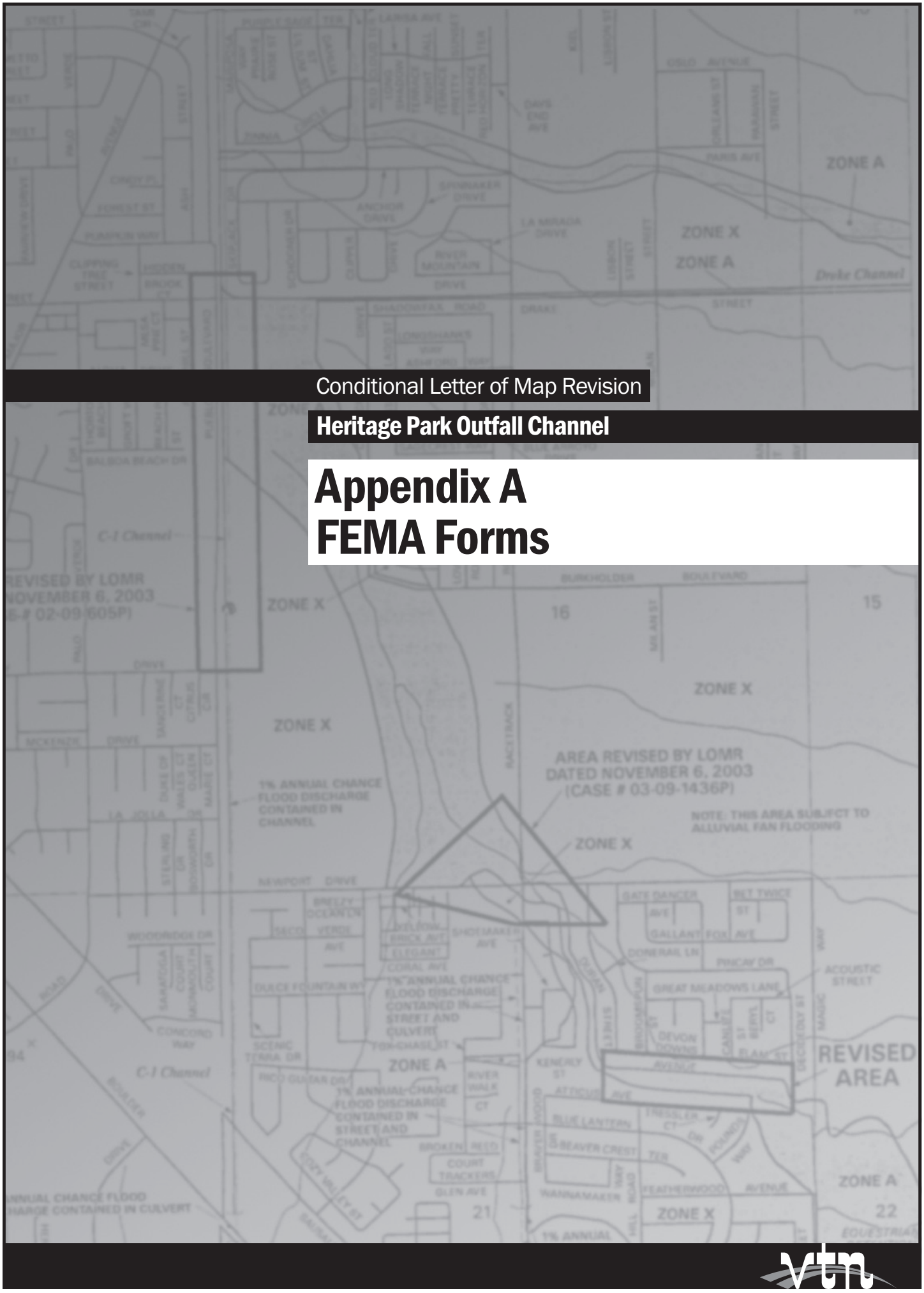
1. Clark County Regional Flood Control District, *Hydrologic Criteria and Drainage Design Manual*, August 1999.

2. Clark County Regional Flood Control District, *Flood Control Master Plan Update of the Las Vegas Valley*, 2002 – by PBS&J, G.C. Wallace, and Louis Berger Group.

3. C-1 Channel System Flood Insurance Restudy, November 2002, submitted by Carter Burgess.

4. Request for Letter of Map Revision – Boulder Highway Channel - Draft, August 22, 2005, submitted by Louis Berger Group, Inc.

5. Water Surface and Pressure Gradient Hydraulic Analysis System (WSPG) User Manual, April 1979.



Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix A
FEMA Forms

FEMA 'OVERVIEW & CONCURRENCE FORM'
– MT-2 FORM 1

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 480287	City of Katy Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 09/28/90
320005	CITY OF HENDERSON CLARK COUNTY, UNINCORPORATED AREAS	NV	32003C	2615E	09/27/02
320003	CITY OF HENDERSON CLARK COUNTY, UNINCORPORATED AREAS	NV	32003C	2615E	01/16/04

2. Flooding Source: Henderson Basin

3. Project Name/Identifier: Heritage Park Outfall Channel

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

5. Basis for Request and Type of Revision:

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

☒ Physical Change ☐ Improved Methodology/Data

☐ Regulatory Floodway Revision ☐ 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: $4,000

☐ No, Attach Explanation

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

D. SIGNATURE

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

Name: Jeffrey Griest, P.E.	Company: VTN Nevada	
Mailing Address: 2727 S. Rainbow Blvd. Las Vegas, Nevada 89146	Daytime Telephone No.: 702 253-2373	Fax No.: 702 247-4262
	E-Mail Address: jeffg@vtnnv.com	
Signature of Requester (required):		Date: 09/18/07

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: JOSEPH DAMIANI, P.E. PROJECT MANAGER		Telephone No.: 702 267-3050
Community Name: City of Henderson	Community Official's Signature (required):	Date: 09/18/07

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: Jeffrey Griest, P.E.	License No.: NV 17156	Expiration Date: 12-31-07
Company Name: VTN Nevada	Telephone No.: 702 253-2373	Fax No.: 702 247-4262
Signature:		Date: 09/18/07

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

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

Seal (Optional)

FEMA ‘RIVERINE HYDROLOGY & HYDRAULICS FORM’
– MT-2 FORM 2

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: Henderson Basin
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)

3. 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/fhm/en_modl.shtm.

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	C-1 Channel at Drake Street	100+74.71(126+91)	1878.73	1878.73
Upstream Limit	Outfall of Equestrian Detention Basin	HEC-RAS sta -1500	2031.84	2031.84

2. Hydraulic Method Used

Hydraulic Analysis WSPGW & 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/fhm/frm_soft.shtm. 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: N/A	Floodway File Name: N/A
Corrected Effective Model*	Natural File Name: N/A	Floodway File Name: N/A
Existing or Pre-Project Conditions Model	Natural File Name: Equestrian.prj	Floodway File Name: N/A
Revised or Post-Project Conditions Model	Natural File Name: HPOC15.wsw	Floodway File Name: N/A
Other - (attach description)	Natural File Name: C1CHEX & CICH15.wsw	Floodway File Name: N/A

*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/fhm/en_modl.shtm.

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 to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area 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.

FEMA ‘RIVERINE STRUCTURES FORM’
– MT-2 FORM 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

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

PAPERWORK REDUCTION ACT

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Flooding Source: Henderson Basin
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: Concrete Transition Structure

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

Location of Structure: Upstream end of the proposed improvements, approx 1,300 ft west of the Eq. D.B. Outfall Ch

Downstream Limit/Cross Section: HEC-RAS sta -27+90.28

Upstream Limit/Cross Section: HEC-RAS sta -27+00.00

2. Name of Structure: 8' X 6' RCB Channel #1

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

Location of Structure: Approx. 1,400 ft west of D.B outfall to 30' southeast of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 34+71.60

Upstream Limit/Cross Section: WSPGW sta 16+44.46

3. Name of Structure: RCB Transition Structure #1

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

Location of Structure: 30' southeast of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 35+01.60

Upstream Limit/Cross Section: WSPGW sta 34+71.60

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: Concrete Transition Structure

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Open Channel
- ☐ 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 706 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: 8'x6' RCB Channel #1

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 706 (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: Henderson Basin

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: RCB Transition Structure #1

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 706 (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:

Name of Structure:

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):
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.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. No. 3067-0148
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Flooding Source: Henderson Basin
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

4. **Name of Structure: 12'x4' RCB Channel**

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

Location of Structure: Intersection of Newport Drive and Racetrack Road

Downstream Limit/Cross Section: WSPGW sta 36+87.85

Upstream Limit/Cross Section: WSPGW sta 35+01.60

5. **Name of Structure: RCB Transition Structure #2**

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

Location of Structure: Northwest corner of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 37+17.85

Upstream Limit/Cross Section: WSPGW sta 36+87.85

6. **Name of Structure: 8'x6' RCB Channel #2**

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

Location of Structure: Northwest corner of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 37+97.01

Upstream Limit/Cross Section: WSPGW sta 37+17.85

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: 12'x4' RCB Channel

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 706 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: RCB Transition Structure #2

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 706 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: 8'x6' RCB Channel #2

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 706 (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:

Name of Structure:

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):
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.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

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Flooding Source: Henderson Basin
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

7. **Name of Structure: Lateral 1 - RCB Transition and 4'x4' RCB Channel**

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

Location of Structure: Northwest corner of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 37+97.01

Upstream Limit/Cross Section:

8. **Name of Structure: Lateral 2 - RCB Transition and 8'x4' RCB Channel**

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

Location of Structure: Northwest corner of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 37+97.01

Upstream Limit/Cross Section:

9. **Name of Structure: 24.5'x6' RCB Confluence Structure**

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

Location of Structure: Approx. 120 ft northwest of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 38+46.22

Upstream Limit/Cross Section: WSPGW sta 37+97.01

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: Lateral 1 - RCB Transition and 4'x4' RCB Channel

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 170 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: Lateral 2 - RCB Transition and 8'x4' RCB Channel

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 292 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: 24.5'x6' RCB Confluence Structure

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 1168 (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:

Name of Structure:

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):
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.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

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

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Flooding Source: Henderson Basin
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

10. **Name of Structure: RCB Transition Structure #3**

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

Location of Structure: 170 ft northwest of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 39+24.97

Upstream Limit/Cross Section: WSPGW sta 38+46.22

11. **Name of Structure: 14'x6' RCB Channel #1**

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

Location of Structure: 170 ft northwest of Newport/Racetrack to 590 ft northwest of Newport/Racetrack

Downstream Limit/Cross Section: WSPGW sta 42+85.72

Upstream Limit/Cross Section: WSPGW sta 39+24.97

12. **Name of Structure: C-1 Channel Transition #1**

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

Location of Structure: Approximately 570 ft south of Burkholder Blvd on the C-1 Channel

Downstream Limit/Cross Section: WSPGW sta 78+00.39

Upstream Limit/Cross Section: WSPGW sta 77+25.39

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: RCB Transition Structure #3

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 1168 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: 14'x6' RCB Channel #1

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Box Channel
- ☐ 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 1168 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: C-1 Channel Transition #1

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Open Channel
- ☐ 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 1931 (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:

Name of Structure:

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):
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.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

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Flooding Source: Henderson Basin
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

13. **Name of Structure: 21.25'x6' RCB Confluence Structure**

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

Location of Structure: Approximately 590 ft northwest of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 43+28.22

Upstream Limit/Cross Section: WSPGW sta 42+85.72

14. **Name of Structure: RCB Transition Structure #4**

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

Location of Structure: Approximately 650 ft northwest of Newport/Racetrack intersection

Downstream Limit/Cross Section: WSPGW sta 43+82.60

Upstream Limit/Cross Section: WSPGW sta 43+28.22

15. **Name of Structure: 14'x6' RCB Channel #2**

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

Location of Structure: 650 ft northwest of Newport/Racetrack to 300 ft south of Burkholder at the C-1 Channel

Downstream Limit/Cross Section: WSPGW sta 79+80.73

Upstream Limit/Cross Section: WSPGW sta 43+82.60

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: 21.25'x6' RCB Confluence Structure

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Open Channel
- ☐ 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 1168 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: RCB Transition Structure #4

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Open Channel
- ☐ 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 1168 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: 14'x6' RCB Channel #2

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Open Channel
- ☐ 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 1168 (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:

Name of Structure:

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):
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.

FEDERAL EMERGENCY MANAGEMENT AGENCY

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Flooding Source: Henderson Basin
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

16. **Name of Structure: 35'x9' Rectangular Channel**

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

Location of Structure: Approximately 500 ft south of Burkholder Blvd on the C-1 Channel

Downstream Limit/Cross Section: WSPGW sta 79+80.73

Upstream Limit/Cross Section: WSPGW sta 78+00.39

17. **Name of Structure: C-1 Channel Confluence Structure**

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

Location of Structure: Approximately 300 ft south of Burkholder Blvd on the C-1 Channel

Downstream Limit/Cross Section: WSPGW sta 80+83.23

Upstream Limit/Cross Section: WSPGW sta 79+80.73

18. **Name of Structure: C-1 Channel Transition #2**

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

Location of Structure: Approximately 200 ft south of Burkholder Blvd on the C-1 Channel

Downstream Limit/Cross Section: WSPGW sta 82+80.11

Upstream Limit/Cross Section: WSPGW sta 80+83.23

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: 35'x9' Rectangular Channel

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Open Channel
- ☐ 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 1931 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: C-1 Channel Confluence Structure

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Open Channel
- ☐ 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 2868 (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:

Name of Structure:

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):
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.

B. CHANNELIZATION

Flooding Source: Henderson Basin

Name of Structure: C-1 Channel Transition #2

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Reinforced Concrete Open Channel
- ☐ 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 2868 (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:

Name of Structure:

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

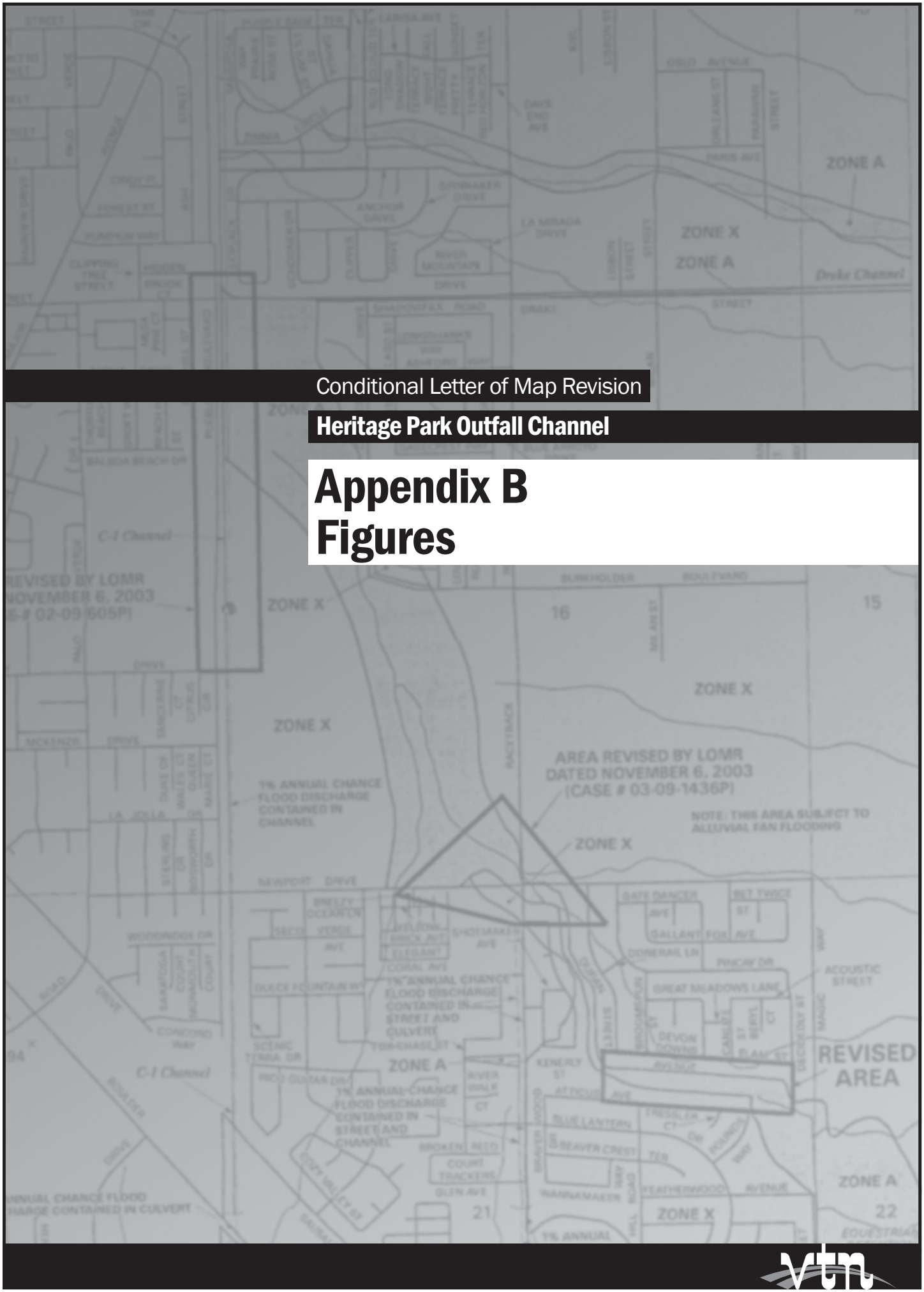
2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8):
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

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.

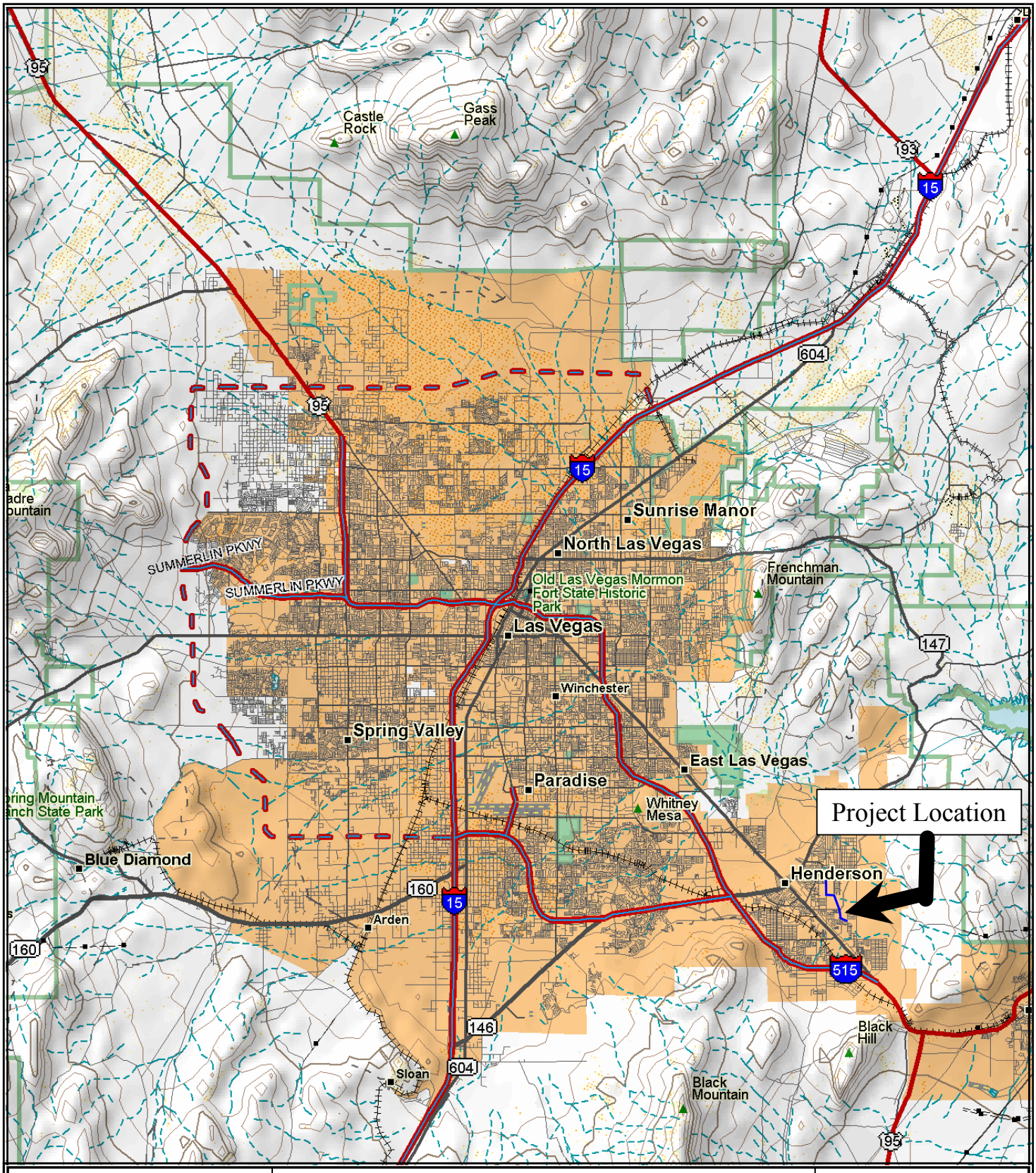


Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix B
Figures

HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)
VICINITY MAP
-FIGURE 1.0



Vicinity Map

Heritage Park Outfall Channel

(AKA Equestrian Detention Basin Outfall Channel)

Figure 1

9/26/07

2002 CCRFCD MASTER PLAN UPDATE FACILITIES MAP

- FIGURE F-22

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT

2002 LAS VEGAS VALLEY FLOOD CONTROL MASTER PLAN UPDATE

LEGEND

- Ultimate Development Boundary
- Existing Facilities
- Category A Proposed Facilities
- Category B Proposed Facilities
- Local Existing Facilities
- Local Proposed Facilities
- Detention Basin
- Culvert
- Bridge
- Pipeline
- Lined Channel
- Unlined Channel
- Dike
- Natural Wash
- ID-Mile Separator

N, W, E, S

0 1,000 2,000 3,000 4,000 5,000 Feet

SCALE: 1 inch = 3000 feet

US95 I-15 I-215

1	2			
3	4	5	6	
7	8	9	10	
11	12	13	14	
15	16	17	18	
19	20	21	22	
23	24	25	26	
27	28	29		

FLOOD CONTROL FACILITIES
FIGURE F-22

PBS&J

G.C. WALLACE, INC.

ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
C1BH		**C-1 CHANNEL - BOULDER HWY**						
0000	P1	Conc Chnl 30'W 6'D 2:1 SS	2140	3224	CP22	C1SDN3	3.19	1.00
0040	P1	3: 15' X 6' RCBC @ Horizon Dr	100	3194	CP21	C1SDN3	3.11	1.00
0042	P1	Conc Chnl 30'W 6'D 2:1 SS	1525	3194	CP21	C1SDN3	3.11	1.00
0071	E	10' X 4' RCBC @ Equestrian Dr	100	2842	CP20	C1SDN3	2.77	1.00
0071	P1	3: 14' X 6' RCBC @ Equestrian Dr	100	2842	CP20	C1SDN3	2.77	1.00
0073	P1	Conc Chnl 30'W 6'D 2:1 SS	2000	2842	CP20	C1SDN3	2.77	0.80
0111	P1	Conc Chnl 20'W 6'D 2:1 SS	1960	1937	CP17	C1SDN3	1.53	0.80
0148	E	5: 8' X 4' RCBC @ Robert Way	120	1832	CP16	C1SDN3	1.42	1.00
0150	E	Earth Chnl 80'-90'W 5'D 2:1 SS with Drop Structures	1745	1832	CP16	C1SDN3	1.42	1.30
0150	P0	Conc Chnl 40'W 4'D 2:1 SS	1745	1832	CP16	C1SDN3	1.42	1.30
C1CH		**C-1 CHANNEL**						
0040	P2	Conc Chnl 40'W 10'D 0:1 SS	4200	7324	CP61*	C1SDN4	11.92	1.00
0125	P2	Conc Chnl 40'W 10'D 0:1 SS	2100	7324	CP61*	C1SDN4	11.92	1.00
0159	E	Energy Dissipator		7324	CP61*	C1SDN4	11.92	
0161	E	Earth Chnl 30'-60'W 7'-20'D with Gabion 2:1 SS	2750	7324	CP61*	C1SDN4	11.92	2.00
0161	P0	Conc Chnl 40'W 8'D 0:1 SS	2750	7325	CP61*	C1SDN4	11.92	2.00
0213	E	Energy Dissipator		7324	CP61*	C1SDN4	11.92	
0215	E	2: 12' X 9' RCBC @ Lake Mead Dr	270	7324	CP61*	C1SDN4	11.92	3.20
0220	E	Conc Chnl 15'W 9'D 1:1 SS: West Floodwall	2560	7324	CP61*	C1SDN4	11.92	2.30
0269	E	Conc Chnl 15'W 7'D 2:1 SS: West Floodwall	1740	7324	CP61*	C1SDN4	11.92	2.30
0284	E	Conc Chnl 15'W 9'D 1:1 SS: West Floodwall	1760	7324	CP61*	C1SDN4	11.92	1.70
0335	E	Conc Chnl 50'W 12'D 0:1 SS	280	7324	CP61*	C1SDN4	11.92	1.20
0340	E	Conc Chnl 40-50'W 12'D 0:1 SS	300	7324	CP61*	C1SDN4	11.92	1.20
0346	E	Conc Chnl 40'W 6'D 2:1 SS: West Floodwall	290	7324	CP61	C1SDN4	11.92	1.20
0351	E	4: 12' X 7' RCBC @ Warm Springs Rd	100	7175	CP59	C1SDN4	11.25	1.00
0353	E	Conc Chnl 14.5'W 8'D 2:1 SS: West Floodwall	1245	6961	CPC1D	C1SDN4	10.44	0.84
0377	E	Conc Chnl 15'W 10'D 2:1 SS: West Floodwall	815	6961	CPC1D	C1SDN4	10.44	0.84
0392	E	Conc Chnl 50'W 14'D 0:1 SS	325	6961	CPC1D	C1SDN4	10.44	0.70
0398	E	Junction Structure	70	6961	CPC1D	C1SDN4	10.44	
0400	E	Conc Chnl 39.5'W 9'-14'D 0:1 SS	450	5919	CP51	C1SDN4	8.52	2.70
0408	E	Conc Chnl 25'W 9'D 2:1 SS	1650	5919	CP51	C1SDN4	8.52	2.00
0439	E	Single Span Bridge @ Burkholder Blvd	100	5919	CP51	C1SDN4	8.52	2.00
0441	E	Conc Chnl 25'W 9'D 2:1 SS	500	5666	CP27	C1SDN3	6.48	2.00
0455	E	Conc Chnl 25'W 7.5'D 2:1 SS	2695	5666	CP27	C1SDN3	6.48	2.60
0502	E	Conc Chnl 25'W 7'D 2:1 SS	1100	5666	CP27	C1SDN3	6.48	2.50
0523	E	Conc Chnl 39'W 8'D 0:1 SS with Junction Structure	310	5630	CP26	C1SDN3	6.33	2.00
0528	E	Conc Chnl 25'W 7'D 2:1 SS	1340	4876	CP23	C1SDN3	5.33	2.00
0554	E	3: 20' X 7' RCBC @ Boulder Hwy	350	4828	CPC1BH	C1SDN3	5.26	2.40
0561	P3	Conc Chnl 20'W 6'D 0:1 SS	1801	1765	CP14	C1SDN3	2.08	2.00
0600	E	3: 10' X 7' RCBC @ Horizon Dr	436	1765	CP14	C1SDN3	2.08	1.20
0603	P3	Conc Chnl 30'W 6'D 0:1 SS	520	1765	CP14	C1SDN3	2.08	5.34
0604	E	Bridge 36'W 8.5'D @ UPRR	50	1765	CP14	C1SDN3	2.08	1.00
0613	P3	Conc Chnl 12.5'W 6'D 2:1 SS	1470	1765	CP14	C1SDN3	2.08	2.40
0641	P3	Conc Chnl 12.5'W 5'D 2:1 SS	1645	1641	CP13	C1SDN3	1.84	2.70
0672	E	4: 10' X 5' RCBC @ Vermillion Dr	115	1641	CP13	C1SDN3	1.84	0.50
0674	E	Conc Chnl 25'W 6'D 2:1 SS	630	1641	CP13	C1SDN3	1.84	0.70
0686	E	NDOT Sediment Basin		1239	CP12	C1SDN3	1.43	
C1DC		**C-1 CHANNEL - DRAKE CHANNEL**						
0000	E	Conc Chnl 25'W 5'-14'D 0:1 SS	700	1778	CP55	C1SDN3	1.92	2.70
0013	E	Earth Chnl 10'W 5'D with Conc 2:1 SS	650	1778	CP55	C1SDN3	1.92	2.70
0013	P1	Conc Chnl 16'W 5'D 2:1 SS	650	1778	CP55	C1SDN3	1.92	2.70
0026	E	Conc Chnl 20.5'W 5'D 0:1 SS South Wall, 2:1 SS North Wall	300	1778	CP55	C1SDN3	1.92	2.70
0031	E	Conc Chnl 26'W 5'D 0:1 SS South Wall, 2:1 SS North Wall	750	1778	CP55	C1SDN3	1.92	2.70
0045	E	Junction Structure	200	1778	CP55	C1SDN3	1.92	
0049	E	2: 12' X 6' RCBC @ Racetrack Rd	92	1628	CP54	C1SDN3	1.69	0.50
0051	E	Earth Chnl 20'-50'W 20'-10'D 2:1 SS with 9'-12' Gabion Drop Structures	2640	1628	CP54	C1SDN3	1.69	0.50
0101	E	Earth Chnl 20'-50'W 20'-10'D 2:1 SS with 9'-12' Gabion Drop Structures	3660	1486	CP53	C1SDN3	1.44	0.50
0170	P1	Soil Cement Levee 7.5'	2950	1132	CP52	C1SDN3B	6.39	2.90
0226	E	Soil Cement Levee 5'	3800	1132	CP52	C1SDN3B	6.39	2.90
0298	E	48" RCPC Outlet	226	90	DB5	C1SDN3B	5.41	0.50
0302	E	20,789 cfs PMF Spillway		20789	C1-54	C1SDN3B	5.41	
0303	E	880 ac-ft East C-1 Detention Basin		3397	C1-54	C1SDN3B	5.41	

ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
C1E1		**C-1 CHANNEL - EQUESTRIAN TRIBUTARY 1**						
0000	P1	Energy Dissipator		688	CP30	C1SDN3B	1.21	
0002	P1	Conc Chnl 10'W 4.5'D 2:1 SS	2200	688	CP30	C1SDN3B	1.21	1.40
C1EQ		**C-1 CHANNEL - EQUESTRIAN D.B. OUTFALL**						
0000	P1	Conc Chnl 10'W 5.5'D 2:1 SS	3920	1097	CP48	C1SDN3	1.38	1.40
0074	E	9: 45° X 29" HERCP	220	679	CP46	C1SDN3B	7.82	0.50
0078	E	Grass Chnl 40'W 4.5'D 5:1 SS	1760	679	CP46	C1SDN3B	7.82	1.50
0112	E	Earth Chnl 45'-80'W 4'D 2:1 SS with Drop Structures	1445	679	CP46	C1SDN3B	7.82	1.40
0139	E	5' X 4' RCB	586	224	DB4	C1SDN3B	7.06	1.90
0151	E	Energy Dissipator		224	DB4	C1SDN3B	7.06	
0152	E	48" RCPC Outlet	325	224	DB4	C1SDN3B	7.06	0.40
0158	E	39,100 cfs PMF Spillway		39100	CP44	C1SDN3B	7.06	
0159	E	409 ac-ft Equestrian Detention Basin		5196	CP44	C1SDN3B	7.06	
0202	E	Conc Chnl 20'W 8.0'D 2:1 SS	5000	3115	CP38	C1SDN3B	4.35	2.40
0297	E	Rip Rap Levee 10'	9000	3115	CP38	C1SDN3B	3.49	2.00
C1FK		**C-1 CHANNEL - FOUR KIDS**						
0000	P2	10' X 5' RCB	770	935	CP72B	C1SDN3	1.00	2.50
0014	E	Earth Chnl 21'W 4'-5'D with Rock 0:1 SS	1280	935	CP72B	C1SDN3	1.00	1.80
0039	E	12' X 4' RCBC @ Eagle Rock Rd	70	935	CP72B	C1SDN3	1.00	2.70
0040	P1	Conc Chnl 10'W 4.5'D 2:1 SS	1750	935	CP72B	C1SDN3	1.00	2.70
0073	E	4: 6' X 3' RCBC @ Lake Mead Dr	160	721	CP72A	C1SDN3	0.78	2.00
0076	P1	Conc Chnl 10'W 5'D 0:1 SS	1400	721	CP72A	C1SDN3	0.78	3.00
C1GW		**C-1 CHANNEL - GREENWAY**						
0000	E	16' X 6' RCBC @ Pueblo Blvd	114	920	CP25	C1SDN3	1.01	1.00
0002	E	Conc Chnl 6'W 9.5'D 1:1 SS	1170	920	CP25	C1SDN3	1.01	0.40
0024	E	2: 12' X 4' RCBC @ Boulder Hwy	200	920	CP25	C1SDN3	1.01	0.40
0028	E	Conc Chnl 15'W 4'D 1:1 SS	490	920	CP25	C1SDN3	1.01	0.40
0037	E	2: 12' X 4' RCBC	40	920	CP25	C1SDN3	1.01	0.90
0038	E	Conc Chnl 15.3'W 4.8'D 1:1 SS	450	920	CP25	C1SDN3	1.01	0.70
0047	E	2: 12' X 4' RCBC @ Mona Ln	70	568	CP24	C1SDN3	0.63	0.60
0048	E	Conc Chnl 17'W 4'D 1:1 SS	685	568	CP24	C1SDN3	0.63	1.60
0061	E	2: 12' X 4' RCBC @ Greenway Rd	190	568	CP24	C1SDN3	0.63	1.00
0064	E	Earth Chnl 16'-20'W 6'-9'D 0:1 SS	300	568	CP24	C1SDN3	0.63	1.20
0064	P0	Conc Chnl 15'W 4'D 0:1 SS	300	568	CP24	C1SDN3	0.63	1.20
0070	E	2: 12' X 4' RCBC @ Van Wagenen Ave	85	568	CP24	C1SDN3	0.63	0.80
0072	E	Earth Chnl 28'W 3'-8'D 2:1 SS	470	568	CP24	C1SDN3	0.63	0.80
0072	P0	Conc Chnl 15'W 4.5'D 0:1 SS	470	568	CP24	C1SDN3	0.63	0.80
0081	E	3: 9.5' X 6.5' CMAP @ UPRR	50	568	CP24	C1SDN3	0.63	0.80
C1IT		**C-1 CHANNEL - ITHACA**						
0000	P1	72" RCP Outlet	6200	424	DB6	C1SDN3B	3.42	2.20
0117	P1	16,830 cfs PMF Spillway		16830	CP64	C1SDN3B	3.42	
0118	P1	310 ac-ft N.E. Detention Basin		1683	CP64	C1SDN3B	3.42	
0155	P1	Soil Cement Levee 11'	4000	1514	C1-65	C1SDN3B	2.54	3.00
0273	P1	Soil Cement Levee 11'	400	1514	C1-65	C1SDN3B	2.54	3.00
C1LM		**C-1 CHANNEL - LAKE MEAD**						
0000	P1	Conc Chnl 10'W 6'D 2:1 SS	2525	1385	CP71	C1SDN3	1.96	0.90
0048	P1	2: 11' X 6' RCBC @ Mohawk Dr	60	1385	CP71	C1SDN3	1.96	0.90
0049	P1	Conc Chnl 10'W 6'D 2:1 SS	1560	1385	CP71	C1SDN3	1.96	0.90
0079	P1	2: 11' X 6' RCBC @ Pawnee Ln	60	1385	CP71	C1SDN3	1.96	0.90
0083	P1	Conc Chnl 10'W 6'D 2:1 SS	570	1385	CP70	C1SDN3	1.77	0.90
0090	P1	2: 11' X 6' RCBC @ Navajo Dr	60	1305	CP70	C1SDN3	1.77	0.90
0092	P1	Conc Chnl 10'W 6'D 2:1 SS	325	1305	CP70	C1SDN3	1.77	0.90
0098	P1	2: 11' X 6' RCBC @ Shoshone Dr	60	1305	CP70	C1SDN3	1.77	0.90
0099	P1	Conc Chnl 10'W 6'D 2:1 SS	345	1305	CP70	C1SDN3	1.77	0.90
0105	P1	2: 11' X 6' RCBC @ Center St	100	1305	CP70	C1SDN3	1.77	0.90
0107	P1	Conc Chnl 10'W 6'D 2:1 SS	555	1305	CP70	C1SDN3	1.77	0.90
0118	P1	2: 11' X 6' RCBC @ Entrance	50	1305	CP70	C1SDN3	1.77	0.90
0119	P1	Conc Chnl 10'W 6'D 2:1 SS	295	1305	CP70	C1SDN3	1.77	0.90
0124	P1	2: 11' X 6' RCBC @ Entrance	50	1305	CP70	C1SDN3	1.77	0.90
0125	P1	Conc Chnl 10'W 6'D 2:1 SS	870	1305	CP70	C1SDN3	1.77	0.90
0142	P1	15' X 6' RCBC @ Warm Springs Rd	125	1054	CP69	C1SDN3	1.44	0.90
0144	P1	Conc Chnl 10'W 4.5'D 2:1 SS	655	682	CP67	C1SDN3	0.81	0.90
0156	P1	11' X 6' RCBC @ Ash St	60	682	CP67	C1SDN3	0.81	0.90
0158	P1	Conc Chnl 10'W 4.5'D 2:1 SS	1305	682	CP67	C1SDN3	0.81	0.90
0182	P1	11' X 6' RCBC @ Ivy St	60	682	CP67	C1SDN3	0.81	0.90
0184	P1	Conc Chnl 10'W 4.5'D 2:1 SS	900	682	CP67	C1SDN3	0.81	0.90

ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
LLMW		**LAKE LAS VEGAS - MAGIC WAY**						
0003	P0	Conc Chnl 10'W 6'D 2:1 SS	6670	1932	CP80	C1SDN3	3.52	3.50
0129	E	6: 8' X 3' RCBC	160	1842	CP79	C1SDN3	3.04	1.00
0132	P0	Conc Chnl 15'W 5'D 2:1 SS	3720	1564	CP77	C1SDN3	2.30	3.10
0203	E	Conc Chnl 35'W 5'-6'D 0.5:1 SS	3000	1515	C1-85	C1SDN3	2.06	3.10
PTBR		**PITTMAN WASH - BURNS**						
0029	E	Rip Rap Chnl 35'W 9'D 2:1 SS	2850	5448	CPBR160	PIT3SC	5.85	0.68
0029	P1	Rip Rap Chnl 60'W 9'D 3:1 SS	2850	5448	CPBR160	PIT3SC	5.85	0.68
0090	E	2: 24' X 8.5' RCAC @ Weisner Way	190	5448	CPBR160	PIT3SC	5.85	0.90
0091	E	Conc Chnl 25'W 9'D 2:1 SS	2570	5448	CPBR160	PIT3SC	5.85	1.10
0140	E	Conc Chnl 25'W 9'D 2:1 SS	1110	5254	CPBR150	PIT3SC	5.54	0.50
0160	E	Conc Chnl 10'W 8'D 2:1 SS	210	2881	CPBR090	PIT3SC	3.19	1.00
0163	E	Conc Chnl 20'W 8'D 0:1 SS	250	2881	CPBR090	PIT3SC	3.19	1.00
0164	P1	Add 4: 16' X 4' RCBC @ Boulder Hwy	330	2881	CPBR090	PIT3SC	3.19	1.50
0165	E	2: 6' X 4' RCBC @ Boulder Hwy	330	2881	CPBR090	PIT3SC	3.19	1.50
PTGB		**PITTMAN WASH - GIBSON**						
0058	P1	Conc Chnl 15'W 5.5'D 2:1 SS	1560	1532	CPBR080	PIT3SC	1.76	1.50
0087	P3	2: 10' X 6' RCB	660	1532	CPBR080	PIT3SC	1.76	0.50
0093	E	Earth/Conc Chnl 8'W 5'D 2:1 SS	550	1532	CPBR080	PIT3SC	1.76	1.50
0093	P1	Conc Chnl 30'W 5'D 0:1 SS	550	1532	CPBR080	PIT3SC	1.76	1.50
PTGL		**PITTMAN GAS LINE**						
0000	E	72" RCP	1675	678	CPPD030	PIT3SC	0.69	3.40
PTHR		**PITTMAN HORIZON RIDGE**						
0000	P1	Conc Chnl 15'W 5'D 2:1 SS	2300	1652	CPPD170	PIT3SC	1.49	3.00
0043	P1	2: 12' X 6' RCBC @ UPRR	100	1371	CPPD165	PIT3SC	1.25	2.00
0044	P1	Conc Chnl 15'W 5.5'D 2:1 SS	1250	1371	CPPD165	PIT3SC	1.25	1.20
0049	E	12' X 5' RCBC @ Lake Mead Dr	150	1345	CPPD160	PIT3SC	1.20	1.20
0067	E	8' X 5' RCB	1800	1345	CPPD160	PIT3SC	1.20	2.60
0104	P1	Conc Chnl 15'W 4.5'D 2:1 SS	1825	1345	CPPD160	PIT3SC	1.20	4.90
0139	E	36" RCP @ Horizon Ridge Pkwy	100	1065	CPPD135	PIT3SC	0.89	7.00
0139	P1	12' X 6' RCBC @ Horizon Ridge Pkwy	100	1065	CPPD135	PIT3SC	0.89	7.00
0140	P1	Conc Chnl 15'W 4'D 2:1 SS	3425	1065	CPPD135	PIT3SC	0.89	4.00
0203	P1	84" RCP Outlet	200	882	CPPD125	PIT3SC	0.72	4.00
0204	P1	882 cfs Spillway		882	CPPD125	PIT3SC	0.72	
0205	P1	2.5 ac-ft Pittman Horizon Ridge Debris Basin		882	CPPD125	PIT3SC	0.72	
0210	E	Natural Wash	2950	882	CPPD125	PIT3SC	0.72	7.00
PTIS		**PITTMAN WASH - INTERSTATE**						
0000	P1	Conc Chnl 30'W 6'D 2:1 SS	2100	4530	CPPD150	PIT3SC	5.90	3.00
0007	P1	4: 14' X 6' RCBC @ I-515	200	4530	CPPD150	PIT3SC	5.90	1.40
0008	P1	Conc Chnl 30'W 6.5'D 2:1 SS	150	4530	CPPD150	PIT3SC	5.90	1.40
0014	P1	4: 14' X 6' RCBC @ I-515	150	4530	CPPD150	PIT3SC	5.90	1.40
0015	P1	Conc Chnl 30'W 6.5'D 2:1 SS	250	4261	CPPD150	PIT3SC	5.24	1.40
0023	E	Conc Chnl 40'W 7'D 2:1 SS	110	3497	CPPD140	PIT3SC	3.68	3.00
0028	E	4: 8' X 8' RCBC @ I-515	350	3497	CPPD140	PIT3	3.68	2.80
0029	E	Conc Chnl 30'W 5'D 2:1 SS	1100	2520	CPPD070	PIT3	2.57	3.00
0050	E	Conc Chnl 30'W 5'D 2:1 SS	380	2520	CPPD070	PIT3SC	2.57	3.00
0055	E	2: 7' X 7' RCBC @ UPRR	1000	2520	CPPD070	PIT3SC	2.57	3.00
0056	E	Conc Chnl 30'W 5'D 2:1 SS	650	2520	CPPD070	PIT3SC	2.57	3.80
0068	E	Rip Rap Chnl 35'W 6'D 2:1 SS	1000	2520	CPPD070	PIT3SC	2.57	1.10
0087	E	Conc Chnl 35'W 6'D 2:1 SS	800	2380	CPPD060	PIT3SC	2.36	2.50
0102	E	Rip Rap Chnl 35'W 6'D 2:1 SS	3390	2380	CPPD060	PIT3SC	2.36	1.10
0166	E	2: 6' X 6' RCB	950	1365	CPPD045	PIT3SC	1.17	3.50
0184	E	Conc Chnl 9'W 4'D 3:1 SS	750	1962	CPPD050	PIT3SC	1.86	5.00
0197	E	3: 60" RCP @ Horizon Ridge Pkwy	150	681	CPPD030	PIT3SC	0.69	3.00
0198	E	Conc Chnl 10'W 4'D 2:1 SS	3150	681	CPPD030	PIT3SC	0.69	1.30

ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
PTPA		**PITTMAN PABCO**						
0000	P1	Conc Chnl 30'W 6.5'D 2:1 SS	12430	2251	CPLW120	PIT3SC	4.69	0.30
0235	E	10' X 5' RCBC @ Pabco	140	302	PABCODB	PIT3SC	1.28	2.30
0236	P1	Conc Chnl 12'W 3'D 2:1 SS	950	302	PABCODB	PIT3SC	1.28	1.70
0254	E	1: 10' X 6' RCBC @ Warm Springs	90	302	PABCODB	PIT3SC	1.28	1.70
0255	P1	Conc Chnl 12'W 3'D 2:1 SS	280	302	PABCODB	PIT3SC	1.28	1.70
0260	E	2: 6' X 4' RCBC @ Boulder Hwy	61	302	PABCODB	PIT3SC	1.28	1.70
0262	P1	Conc Chnl 12'W 3'D 2:1 SS	45	302	PABCODB	PIT3SC	1.28	1.70
0264	E	2: 6' X 4' RCBC Outlet	230	302	PABCODB	PIT3SC	1.28	
0265	P1	10,300 cfs PMF Spillway		10300	CPPA030	PIT3SC	1.28	
0266	P1	53 ac-ft Pabco Detention Basin		1026	CPPA030	PIT3SC	1.28	
PTPD		**PITTMAN PIONEER DETENTION**						
0000	P1	Conc Chnl 12'W 4'D 2:1 SS	500	668	CPPD145	PIT3SC	0.54	3.00
0010	E	2: 60" RCP @ UPRR	50	668	CPPD145	PIT3SC	0.54	1.50
0012	E	Rip Rap Chnl 18'W 4.3'D 2:1 SS	300	668	CPPD145	PIT3SC	0.54	3.30
0018	E	9' X 4' RCBC @ Las Palmas	100	668	CPPD145	PIT3SC	0.54	0.90
0020	E	Rip Rap Chnl 18'W 4.3'D 2:1 SS	2275	668	CPPD145	PIT3SC	1.00	3.60
0063	E	72" RCP	1650	556	PPD130	PIT3SC	0.40	2.80
PTRR		**PITTMAN RAILROAD**						
0000	P2	14' X 8' RCB	1070	1092	CPPD110	PIT3SC	1.57	1.40
0020	P2	Conc Chnl 14'W 6'D 0:1 SS	890	1092	CPPD110	PIT3SC	1.57	3.00
0027	P2	14' X 8' RCB	850	1092	CPPD110	PIT3SC	1.57	1.20
0035	P2	Conc Chnl 10'W 6'D 2:1 SS	5350	1092	CPPD110	PIT3SC	1.57	1.20
0115	P2	12' X 6' RCB	100	563	CPPD090	PIT3SC	0.81	1.30
0116	P2	Conc Chnl 10'W 5'D 2:1 SS	3850	563	CPPD090	PIT3SC	0.81	0.80
PTVW		**PITTMAN WASH - VAN WAGENEN**						
0000	P1	Conc Chnl 25'W 6'D 2:1 SS	1460	2848	CPBR090	PIT3	3.19	1.50
0025	E	12' X 8' RCB	1650	1160	CPBR030	PIT3SC	1.07	1.00
0055	E	12' X 6' RCB	2770	840	CPBR020	PIT3SC	0.07	1.00
0107	E	96" RCP	1260	840	CPBR020	PIT3	0.71	0.85
0130	E	90" RCP	750	840	CPBR020	PIT3	0.71	1.07
0144	E	8' X 5' RCBC @ Commercial Way	70	840	CPBR020	PIT3	0.71	1.32
0145	E	84" RCP	620	553	CPBR010	PIT3	0.46	1.32
0157	E	90" RCP	300	553	CPBR010	PIT3	0.46	1.29
0163	E	72" RCP	2030	444	PTVW0185	PIT3SC	7.66	0.95
0180	E	60" RCP	510	444	PTVW0185	PIT3SC	7.66	0.28
0183	E	60" RCP Outlet	150	444	PTVW0185	PIT3	7.66	
0184	E	35,500 cfs PMF Spillway		35500	CPPD190	PIT3	7.66	
0185	E	390 ac-ft Pioneer Detention Basin		5857	CPPD190	PIT3	7.66	
0186	E	6 Span Bridge 120'W 7'D @ UPRR	20	5857	CPPD190	PIT3	7.66	1.30
PTWH		**PITTMAN WEST HORIZON**						
0000	P1	Conc Chnl 12'W 5'D 2:1 SS	500	1365	CPPD045	PIT3	1.17	4.00
0010	P1	12' X 6' RCBC @ Horizon Dr	50	1365	CPPD045	PIT3	1.17	4.00
0011	P1	Conc Chnl 12'W 5'D 2:1 SS	6300	1365	CPPD045	PIT3	1.17	4.10

*The HEC-1 node shown identifies the controlling concentration point for the associated facility and is located upstream of this facility due to decreasing peak flow with increasing tributary area caused by storm distribution transitions, depth area reduction factors, or attenuation of flow from routing.
**As-built or design slopes were used when available. All other slopes are based on existing topography. The user should verify the facility slope listed prior to performing any facility specific analysis.

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT

2002 LAS VEGAS VALLEY FLOOD CONTROL MASTER PLAN UPDATE FACILITY INVENTORY FIGURE F-22

LEGEND

Street Name Designator — AA BB
Parent Stream Name
Stream Name
ID / River Mile — 00 00
Distance above confluence
With parent stream
Miles in tenths

Existing Facility ..... E
Proposed or Modified Facility ..... P
Contingency Level
Category B P0
Master Plan P1
Preliminary Design P2
Design P3

Bottom Width ..... W
Depth ..... D
Side Slope, H:V ..... SS

Construction Features

Cast in Place Concrete Pipe ..... CIPCP
Corrugated Metal Arch Pipe Culvert ..... CMAP
Corrugated Metal Pipe Culvert ..... CMP
High Density Polyethylene ..... HDPE
Helical Elliptical Reinforced Concrete Pipe ..... HERCP
Reinforced Concrete Arch Pipe ..... RCAC
Reinforced Concrete Box ..... RCB
Reinforced Concrete Box Culvert ..... RCBC
Reinforced Concrete Pipe ..... RCP
Reinforced Concrete Pipe Culvert ..... RCPC
Storm Sewer Pipe ..... SSP

PBS&J
G. C. WALLACE, INC.

CURRENT FEMA FIRM MAP

- FIGURE 2.0

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map is Universal Tranverse Mercator (UTM) zone 11. The **horizontal datum** is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the **FEMA Map Service Center** at the following phone numbers and Internet address for infomation on all related products available from FEMA;

Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

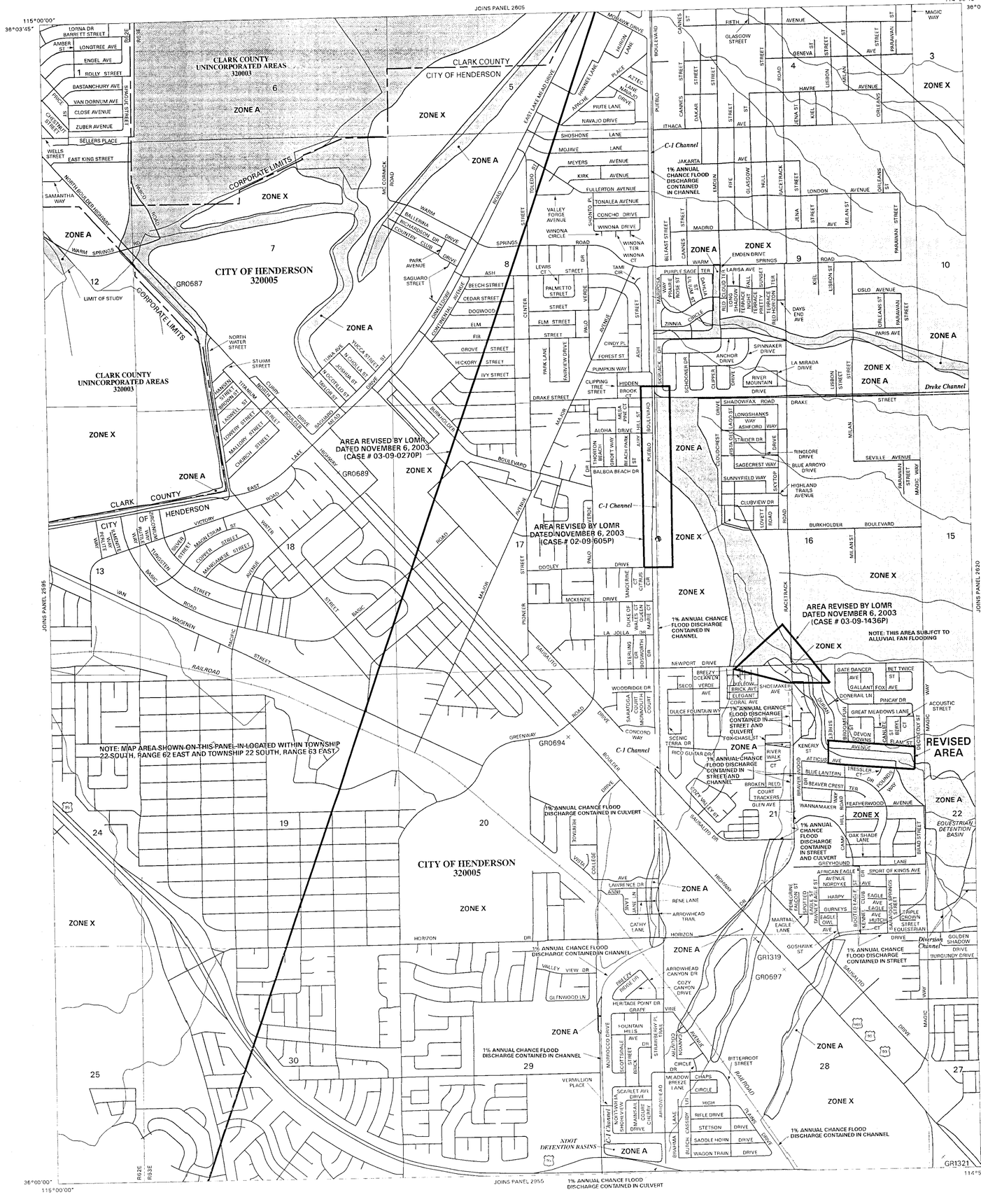
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.

This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).

This DFIRM reflects several innovative features. These include:
+ Southern Nevada GIS - Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.

+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.

DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceit/gismo/gismo.htm



LEGEND

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

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

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

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

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

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A)—(A) Cross Section Line
- (23)- - - -(23) Transect Line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT 5000-foot grid ticks
- DX5510 × Bench mark (see explanation in Notes to Users section of this FIRM panel).
- M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002, to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

PANEL 2615E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA
AND INCORPORATED AREAS

PANEL 2615 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HENDERSON, CITY OF	320005	2615	E
CLARK COUNTY UNINCORPORATED AREAS	320003	2615	E

REVISED TO REFLECT LOMR DATED JAN 16 2004

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

MAP NUMBER 32003C2615E

MAP REVISED: SEPTEMBER 27, 2002

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

FIGURE 2.0

EXISTING FLOOD ZONE EXHIBIT

- FIGURE 3.0



W.O.#: 6928

N W E S

0 150 300 600

Feet

AERIAL PHOTOGRAPHY
FLIGHT DATE: SPRING 2007

HERITAGE PARK OUTFALL CHANNEL CLOMR

EXISTING FLOOD ZONE EXHIBIT

Figure 3.0

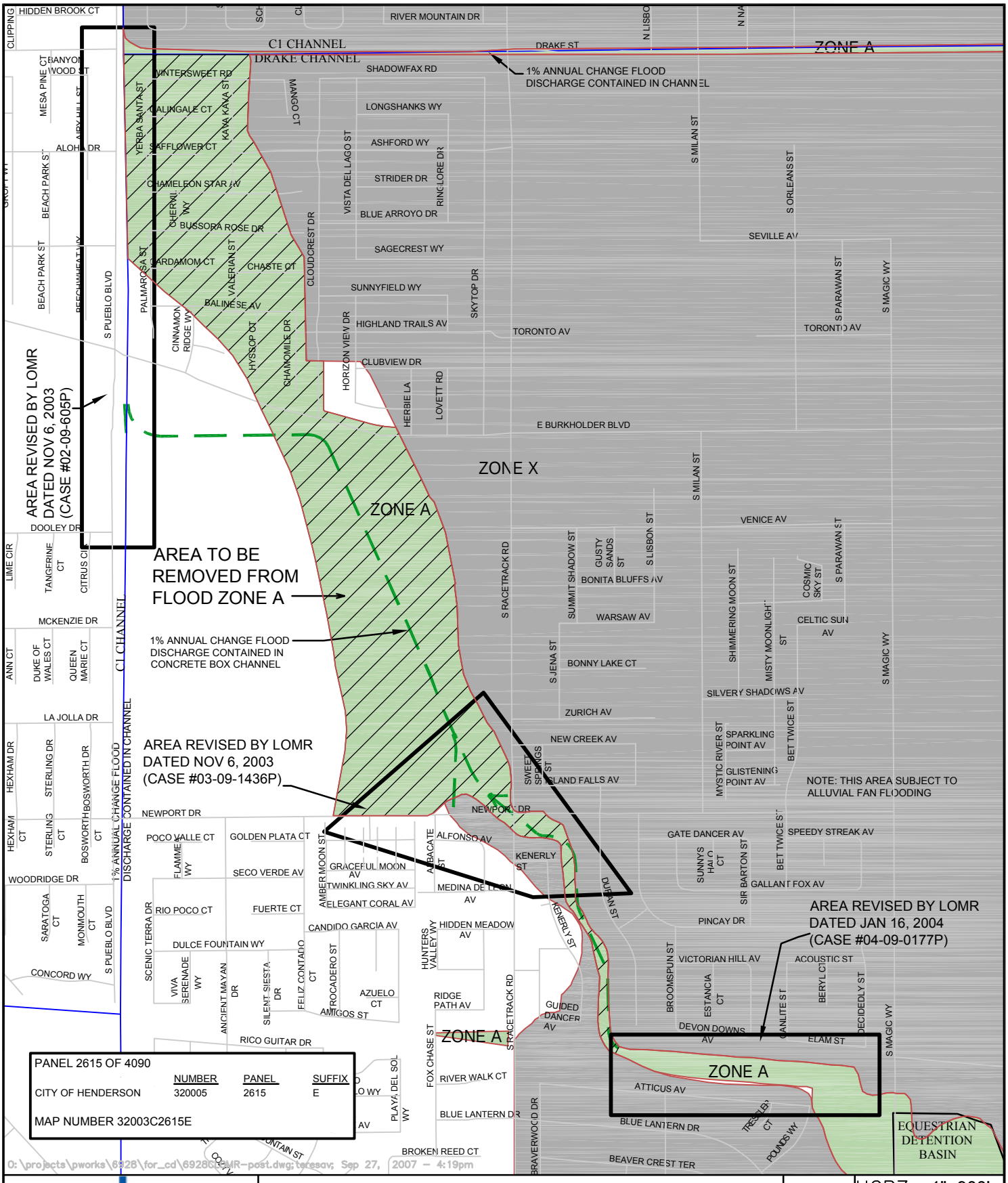
(702) 873-7550
www.vtnnv.com

This map is for planning purposes only.
No representation is made concerning the accuracy of the data delineated herein.

DATE: 9/27/2007;File: \\phoenix\dfs\gisroot\projects\pworks\6928\mxd\6928CLOMR.mxd;By: teresav

FEMA ANNOTATED FLOOD ZONE MAP

- FIGURE 3.1



www.vtnnv.com

FEMA ANNOTATED FLOOD ZONE MAP

SCALE	HORZ. 1"=900'
	VERT.
W.O. NO.	6928
DRAWN BY:	
DATE:	09/24/07

FIGURE 3.1

HERITAGE PARK OUTFALL CHANNEL CLOMR
PRE-PROJECT CONDITIONS WORK MAP
- FIGURE 3.2

LEGEND

- EXISTING FEMA FLOOD ZONE A
- PRE-PROJECT 100-YEAR FLOOD ZONE
- FEMA APPROVED 100-YEAR FLOW
- PRE-PROJECT HEC-RAS STATION

NORTH

GRAPHIC SCALE
150 0 75 150 300
(IN FEET)
1 inch = 150 ft.
(VERIFY SCALE – PLANS MAY HAVE BEEN REDUCED)

BROOMSPUN ST.
COLONEL CUP ST.
CANLITE ST.
DECIDEDLY ST.
S. MAGIC WY.
DEVON DOWNS AVE.
ELAM ST.
ATTICUS AVE.
CAMP HILL RD.
ZONE X
ZONE A
706 CFS
34+00
33+91.71
33+05.97
33+00
32+00
31+00
30+00
29+50.26
29+00
28+26.75
26+00
25+00
24+00
23+00
22+00
21+00
20+00
19+00
18+00
17+00
16+00
15+00
27+90.28
27+75
27+50
27+26.48
27+00
2020
2025
2030
2035
2040
2050
2052.91

VICINITY MAP



HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)
PRE-PROJECT CONDITIONS WORK MAP

FIGURE 3.2

HERITAGE PARK OUTFALL CHANNEL CLOMR
POST-PROJECT CONDITIONS WORK MAP
- FIGURE 3.3

LEGEND

- EXISTING FEMA FLOOD ZONE A
- EXISTING FEMA FLOOD ZONE TO BE REMOVED
- POST 100-YEAR FLOOD ZONE
- FEMA APPROVED 100-YEAR FLOW
- PROPOSED CONCRETE BOX CHANNEL
- PRE-PROJECT HEC-RAS STATION

NORTH

GRAPHIC SCALE
150 0 75 150 300
(IN FEET)
1 inch = 150 ft.
(VERIFY SCALE - PLANS MAY HAVE BEEN REDUCED)

AREA TO BE REMOVED FROM FLOOD ZONE A

1% ANNUAL CHANGE FLOOD DISCAHRGE CONTAINED IN CONCRETE BOX CHANNEL

8'x6' RCB

PROPOSED CONCRETE TRANSITION STRUCTURE

706 CFS

BROOMSPUN ST.

COLONEL CUP ST.

CANLITE ST.

DECIDEDLY ST.

S. MAGIC WY.

DEVON DOWNS AVE.

ELAM ST.

ATTICUS AVE.

CAMP HILL RD.

ZONE X

ZONE A

ZONE A

ZONE X

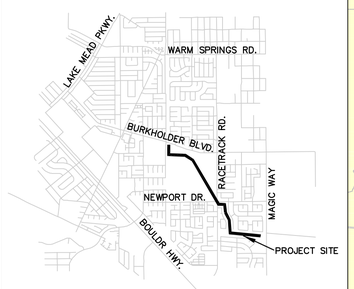
26+83.75 26+00 25+00 24+00 23+00 22+00 21+00 20+00 19+00 18+00 17+00 16+00 15+00

27+90.28 27+75 27+50 27+26.48 27+00

2015 2020 2025 2030 2035 2040 2050

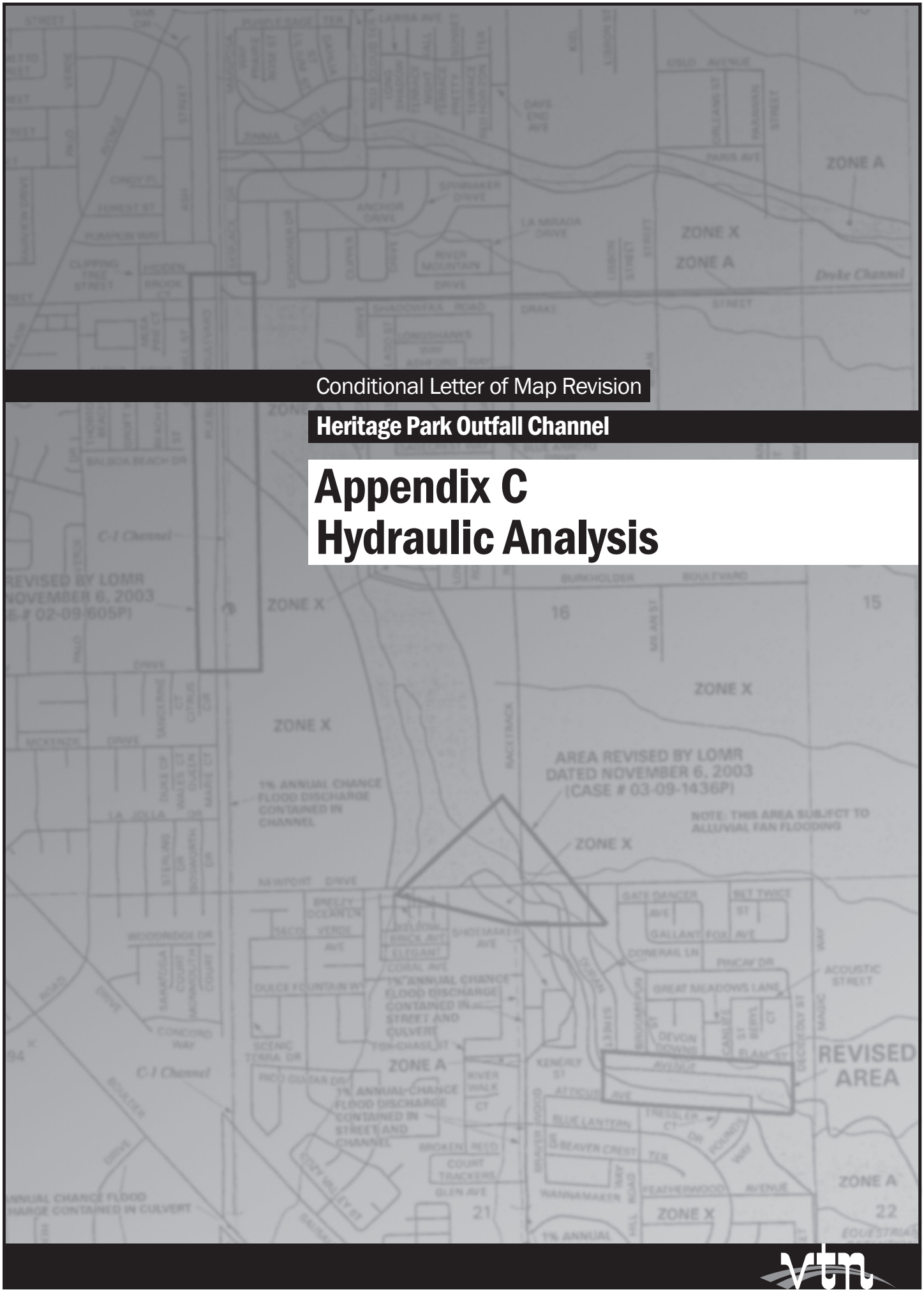
2052.91

VICINITY MAP



HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)
POST-PROJECT CONDITIONS WORK MAP

FIGURE 3.3



Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix C
Hydraulic Analysis

HERITAGE PARK OUTFALL CHANNEL CLOMR
PRE-PROJECT CONDITIONS: HEC-RAS OUTPUT

Equestrian.prj

Pre Project Conditions - FEMA Flow
HEC-RAS Summary

UESTRIAN DB OF Reach: 1 Profile: PF 1													
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Hydr Depth	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)	(ft/s)	(sq ft)	(ft)	
1	-1500	PF 1	706	2030	2031.91	1.36	2032.44	2034.41	0.030424	12.67	55.7	40.82	1.91
1	-1525	PF 1	706	2029.24	2031.28	1.21	2032	2033.56	0.032612	12.13	58.22	48.09	1.94
1	-1550	PF 1	706	2028.25	2032.12	1.91	2031.36	2032.38	0.002063	4.13	170.92	89.53	0.53
1	-1575	PF 1	706	2028.63	2031.73	1.39	2031.61	2032.27	0.006504	5.91	119.47	86.24	0.88
1	-1600	PF 1	706	2028	2031.5	1.33	2031.44	2032.09	0.007381	6.14	115	86.24	0.94
1	-1625	PF 1	706	2028	2031.35	1.34	2031.26	2031.9	0.006884	5.93	119.15	89.18	0.9
1	-1650	PF 1	706	2027.69	2031.07	1.23	2031.07	2031.69	0.008779	6.31	111.95	90.74	1
1	-1675	PF 1	706	2027.27	2030.86	1.83	2030.46	2031.46	0.005181	6.21	113.76	62.11	0.81
1	-1700	PF 1	706	2026.68	2030.91	1.79		2031.29	0.003377	4.89	144.51	80.87	0.64
1	-1725	PF 1	706	2026.25	2030.24	1.72	2030.24	2031.11	0.008469	7.5	94.18	54.77	1.01
1	-1750	PF 1	706	2025.67	2028.9	1.86	2029.51	2030.73	0.016232	10.85	65.05	35.06	1.4
1	-1775	PF 1	706	2025	2027.95	1.69	2028.68	2030.22	0.022224	12.07	58.48	34.63	1.64
1	-1800	PF 1	706	2024.22	2026.99	1.24	2027.83	2029.5	0.035119	12.72	55.49	44.59	2.01
1	-1825	PF 1	706	2022.29	2023.56	0.63	2024.39	2027.76	0.144048	16.45	42.92	68.62	3.67
1	-1850	PF 1	706	2019.79	2021.48	1.3	2022.91	2025.67	0.054704	16.41	43.01	33.12	2.54
1	-1875	PF 1	706	2019	2021.56	1.21	2022.36	2024.06	0.036248	12.69	55.63	45.9	2.03
1	-1900	PF 1	706	2019	2021.55	1.12	2021.99	2023.03	0.023793	9.75	72.44	64.81	1.62
1	-1925	PF 1	706	2018.98	2022.05	1.95	2021.33	2022.34	0.002172	4.26	165.71	85.12	0.54
1	-1950	PF 1	706	2018.37	2022.01	1.99		2022.28	0.002034	4.18	168.86	84.75	0.52
1	-1975	PF 1	706	2018	2021.44	1.35	2021.44	2022.14	0.008725	6.74	104.71	77.29	1.02
1	-2000	PF 1	706	2018	2021.02	1.27	2021.15	2021.88	0.011629	7.46	94.69	74.61	1.17
1	-2025	PF 1	706	2018	2020.34	1.17	2020.64	2021.5	0.017271	8.65	81.59	69.51	1.41
1	-2050	PF 1	706	2018.48	2020.74	1.51	2020.56	2021.28	0.005775	5.92	119.32	79.16	0.85
1	-2075	PF 1	706	2018	2020.41	1.37	2020.41	2021.09	0.00828	6.65	106.15	77.43	1
1	-2100	PF 1	706	2017.57	2019.97	1.28	2020.11	2020.83	0.011453	7.46	94.58	73.77	1.16
1	-2125	PF 1	706	2017.06	2019.73	1.28	2019.84	2020.55	0.01091	7.27	97.15	76.03	1.13
1	-2150	PF 1	706	2017.15	2019.84	1.56	2019.55	2020.3	0.004668	5.43	129.94	83.07	0.77
1	-2175	PF 1	706	2017	2019.48	1.29	2019.48	2020.13	0.008473	6.46	109.32	84.55	1
1	-2200	PF 1	706	2017	2019.43	1.51	2019.16	2019.88	0.004735	5.37	131.55	86.93	0.77
1	-2225	PF 1	706	2017	2019.13	1.33	2019.06	2019.72	0.007417	6.18	114.26	85.7	0.94
1	-2250	PF 1	706	2016.82	2018.84	1.32	2018.84	2019.51	0.008589	6.6	106.91	81.02	1.01
1	-2275	PF 1	706	2016.34	2018.82	1.54	2018.55	2019.28	0.004693	5.41	130.5	84.78	0.77
1	-2300	PF 1	706	2016	2018.68	1.49	2018.45	2019.15	0.005001	5.46	129.19	86.73	0.79
1	-2325	PF 1	706	2016	2018.33	1.29	2018.33	2018.97	0.008451	6.45	109.42	84.76	1
1	-2350	PF 1	706	2016	2018.26	1.43	2018.05	2018.74	0.005412	5.53	127.56	89	0.81
1	-2375	PF 1	706	2016	2018.21	1.59		2018.6	0.00381	4.97	142.16	89.5	0.69
1	-2400	PF 1	706	2015.94	2018.19	1.74		2018.49	0.002665	4.43	159.36	91.45	0.59
1	-2425	PF 1	706	2015.43	2017.9	1.91		2018.39	0.0039	5.66	124.79	65.5	0.72
1	-2450	PF 1	706	2014.88	2017.35	1.7	2017.35	2018.22	0.007955	7.49	94.31	55.33	1.01
1	-2475	PF 1	706	2014.14	2016.42	1.4	2016.81	2017.87	0.017118	9.69	72.86	52	1.44
1	-2500	PF 1	706	2013.58	2015.48	1.11	2016.03	2017.29	0.029011	10.8	65.38	59.04	1.81
1	-2525	PF 1	706	2013.04	2015.04	1.24	2015.48	2016.6	0.021551	10.02	70.44	56.91	1.59
1	-2550	PF 1	706	2012	2014.49	1.3	2014.96	2016.07	0.020631	10.08	70.07	54.01	1.56
1	-2575	PF 1	706	2011.77	2015.37	2.1	2014.85	2015.85	0.003349	5.55	127.21	60.46	0.67
1	-2600	PF 1	706	2011.26	2015.26	1.99		2015.76	0.003849	5.68	124.31	62.43	0.71
1	-2625	PF 1	706	2011.44	2015.23	1.99		2015.64	0.003168	5.19	136.14	68.25	0.65
1	-2650	PF 1	706	2012	2014.68	1.59	2014.68	2015.49	0.008041	7.22	97.8	61.48	1.01
1	-2675	PF 1	706	2012	2014.74	1.87	2014.32	2015.22	0.003887	5.59	126.31	67.62	0.72
1	-2700	PF 1	706	2011.49	2014.28	1.51	2014.28	2015.06	0.008304	7.08	99.77	65.98	1.01
1	-2730	PF 1	706	2011	2013.46	1.36	2013.76	2014.69	0.015062	8.9	79.36	58.23	1.34
1	-2750	PF 1	706	2010.23	2013.88	2.04	2013.4	2014.39	0.003683	5.74	122.99	60.16	0.71
1	-2775	PF 1	706	2010	2013.85	2.2		2014.29	0.002856	5.32	132.77	60.26	0.63
1	-2790.28	PF 1	706	2011	2013.67	1.95		2014.23	0.004174	5.96	118.5	60.86	0.75
1	-2791.78	PF 1	706	2010.2	2013.71	2.05		2014.2	0.003508	5.62	125.53	61.22	0.69
1	-2800	PF 1	706	2011	2013.54	1.86		2014.16	0.004945	6.29	112.33	60.47	0.81
1	-2804.37	PF 1	706	2011	2013.51	1.83		2014.14	0.005159	6.36	111.08	60.71	0.83
1	-2900	PF 1	706	2011	2012.76	1.48	2012.76	2013.51	0.008176	6.95	101.63	68.74	1.01
1	-2950.26	PF 1	706	2009	2011.39	1.34	2011.79	2012.84	0.01862	9.68	72.95	54.5	1.47
1	-3000	PF 1	706	2006	2007.08	0.97	2008.06	2010.95	0.074879	15.8	44.69	46.28	2.83
1	-3100	PF 1	706	2004	2007.45	2.19	2006.73	2007.84	0.002526	5.01	141.04	64.35	0.6
1	-3200	PF 1	706	2003.84	2006.56	1.6	2006.56	2007.38	0.008018	7.25	97.43	61.02	1.01
1	-3300	PF 1	706	2002.22	2004.29	1.2	2004.79	2005.99	0.02445	10.48	67.36	55.93	1.68
1	-3305.97	PF 1	706	2002.29	2004.39	1.3	2004.77	2005.77	0.017826	9.42	74.94	57.62	1.46
1	-3391.11	PF 1	706	2002.47	2004.43	1.5	2004.43	2005.18	0.008069	6.98	101.19	67.47	1
1	-3400	PF 1	706	2002.33	2004.17	1.39	2004.31	2005.09	0.010946	7.71	91.53	65.98	1.15
1	-3500	PF 1	706	2001	2003.27	1.57	2003.3	2004.11	0.008473	7.35	96.01	61.25	1.04
1	-3600	PF 1	706	1998	1999.4	1	2000.19	2002.2	0.051565	13.41	52.64	52.76	2.37
1	-3700	PF 1	706	1997.61	1999.72	1.57	1999.72	2000.52	0.008125	7.18	98.38	62.72	1.01
1	-3789.96	PF 1	706	1993	1994.84	1.36	1996	1998.75	0.04817	15.87	44.47	32.65	2.4
1	-3800	PF 1	706	1993	1995.1	1.28	1995.97	1998.02	0.039261	13.7	51.52	40.15	2.13
1	-3868.66	PF 1	706	1991.78	1994.04	1.35	1994.54	1995.73	0.020819	10.44	67.63	49.94	1.58
1	-3900	PF 1	706	1991	1993.38	1.36	1993.95	1995.24	0.022876	10.93	64.59	47.51	1.65
1	-4000	PF 1	706	1991	1993.82	2.01	1993.37	1994.34	0.003777	5.79	122.03	60.75	0.72
1	-4100	PF 1	706	1991	1992.98	1.59	1992.98	1993.78	0.007962	7.2	98.05	61.67	1.01
1	-4146.01	PF 1	706	1989.45	1991.76	1.43	1992.17	1993.2	0.016582	9.65	73.14	51.2	1.42
1	-4200	PF 1	706	1988.01	1990.9	1.4	1991.28	1992.28	0.016408	9.44	74.76	53.44	1.41
1	-4300	PF 1	706	1983.97	1987.92	2.61	1986.27	1988.03	0.00055	2.63	268.57	103.09	0.29

Pre Project Conditions - FEMA Flow
HEC-RAS Summary

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Hydr Depth	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)	(ft/s)	(sq ft)	(ft)	
1	-4399.05	PF 1	706	1982	1987.94	3.53		1987.98	0.000128	1.55	455.25	128.84	0.15
1	-4400	PF 1	706	1982	1987.94	3.53		1987.98	0.000129	1.55	454.75	128.72	0.15
1	-4423.9	PF 1	706	1982	1987.94	3.69		1987.98	0.000116	1.52	465.12	126.11	0.14
1	-4500	PF 1	706	1982	1987.94	4.01		1987.97	0.000067	1.22	577.97	144.27	0.11
1	-4528.19	PF 1	706	1982	1987.95	4.17		1987.96	0.000047	1.05	670.86	161.01	0.09
1	-4563.86	PF 1	706	1982	1987.94	4.08		1987.96	0.000065	1.22	580.65	142.15	0.11
1	-4596.68	PF 1	706	1982	1987.9	4.07		1987.96	0.000152	1.83	385.62	94.8	0.16
1	-4600	PF 1	706	1982	1987.9	4.29		1987.96	0.000147	1.86	379.53	88.39	0.16
1	-4607.48	PF 1	706	1981.83	1987.81	5.98	1983.96	1987.95	0.000088	2.97	237.65	39.75	0.21
1	-4608.44		Culvert										
1	-4834.44	PF 1	706	1979.5	1981.63	2.13	1981.63	1982.71	0.002217	8.33	84.76	39.76	1.01
1	-4895.41	PF 1	706	1975	1976.51	0.97	1977.75	1981.87	0.103841	18.58	38	39.11	3.32
1	-4900	PF 1	706	1975	1976.59	1.08	1977.77	1981.26	0.07927	17.35	40.7	37.71	2.94
1	-4925.31	PF 1	706	1974.32	1976.98	1.6	1977.82	1979.58	0.025813	12.94	54.55	34.03	1.8
1	-5000	PF 1	706	1973.32	1977.65	2.8	1977.27	1978.6	0.00479	7.85	89.97	32.17	0.83
1	-5071.59	PF 1	706	1972.69	1976.77	2.76	1976.77	1978.15	0.007061	9.44	74.81	27.06	1
1	-5100	PF 1	706	1972.26	1975.73	2.35	1976.28	1977.81	0.012965	11.57	60.99	25.91	1.33
1	-5144.1	PF 1	706	1972	1975.17	2.38	1975.7	1977.23	0.012805	11.53	61.24	25.72	1.32
1	-5200	PF 1	706	1971	1975.35	2.99	1975.35	1976.83	0.007141	9.78	72.19	24.16	1
1	-5300	PF 1	706	1970.29	1973.16	1.96	1973.93	1975.63	0.019101	12.62	55.94	28.5	1.59
1	-5400	PF 1	706	1969.13	1972.52	2.53	1972.72	1974.09	0.009083	10.05	70.27	27.76	1.11
1	-5500	PF 1	706	1968.03	1970.67	1.89	1971.28	1972.8	0.017411	11.73	60.19	31.85	1.5
1	-5600	PF 1	706	1967.07	1970.13	2.18	1970.25	1971.38	0.00833	8.95	78.85	36.24	1.07
1	-5629.37	PF 1	706	1966	1968.34	1.73	1969.11	1970.87	0.022937	12.77	55.29	31.89	1.71
1	-5700	PF 1	706	1965	1967.16	1.51	1967.8	1969.14	0.021416	11.28	62.59	41.48	1.62
1	-5745.97	PF 1	706	1964.6	1967.35	2.26	1967.35	1968.47	0.007155	8.48	83.28	36.86	0.99
1	-5800	PF 1	706	1964.11	1966.67	1.95	1966.89	1967.99	0.010122	9.21	76.68	39.35	1.16
1	-5862.57	PF 1	706	1963	1965.32	1.72	1965.86	1967.14	0.016639	10.81	65.32	38.08	1.45
1	-5900	PF 1	706	1962.74	1965.6	2.11	1965.6	1966.65	0.007299	8.22	85.93	40.7	1
1	-6000	PF 1	706	1961.71	1963.32	1.21	1963.92	1965.28	0.028031	11.23	62.88	52	1.8
1	-6100	PF 1	706	1959.94	1961.65	1.24	1962.05	1962.9	0.017263	8.97	78.68	63.45	1.42
1	-6200	PF 1	706	1958.33	1960.63	1.88	1961.14	1961.69	0.008642	8.26	85.44	45.45	1.06
1	-6300	PF 1	706	1956.86	1958.7	0.95	1959.15	1960.19	0.029615	9.79	72.14	76.31	1.77
1	-6400	PF 1	706	1955.39	1957.28	1.34	1957.47	1958.24	0.012053	7.88	89.59	67.09	1.2
1	-6500	PF 1	706	1953.82	1956.01	0.97	1956.01	1956.34	0.006418	4.61	153.04	158.58	0.83
1	-6600	PF 1	706	1952.4	1953.62	0.79	1954.1	1954.98	0.034353	9.38	75.27	95.51	1.86
1	-6700	PF 1	706	1951.01	1952.85	1.04	1952.85	1953.37	0.009123	5.81	121.57	117.4	1.01
1	-6800	PF 1	706	1950	1951.57	0.94	1951.71	1952.26	0.013723	6.67	105.82	112.55	1.21
1	-6900	PF 1	706	1948.8	1950.24	0.7	1950.34	1950.76	0.015273	5.78	122.13	174.66	1.22
1	-7000	PF 1	706	1947.3	1948.94	0.85	1949.01	1949.45	0.011521	5.7	123.81	146.42	1.09
1	-7100	PF 1	706	1945.88	1948	0.79	1948	1948.07	0.002409	2.47	349.67	444.75	0.49
1	-7200	PF 1	706	1944.59	1945.65	0.69	1946.14	1947.27	0.048228	10.22	69.06	99.56	2.16
1	-7300	PF 1	706	1942.8	1944.42	0.67	1944.42	1944.56	0.00527	3.32	243.96	364.52	0.71
1	-7400	PF 1	706	1940.97	1943.01	0.85	1943.01	1943.08	0.001984	2.24	342.61	405.33	0.45
1	-7428.56	PF 1	706	1940.61	1942.82	1.48	1942.82	1942.83	0.000093	0.54	1289.39	874.13	0.1
1	-7500	PF 1	706	1940.16	1941.81	1.15	1941.81	1941.83	0.000714	1.22	541.2	472.48	0.26
1	-7600	PF 1	706	1939.29	1940.93	1.33	1940.93	1940.96	0.000747	1.59	483.5	364.07	0.28
1	-7700	PF 1	706	1937	1939.7	1.18	1938.91	1939.78	0.001229	2.32	304.82	257.31	0.38
1	-7800	PF 1	706	1934.65	1938.28	2.21	1938.28	1939.42	0.007921	8.56	82.44	37.24	1.01
1	-7893.64	PF 1	706	1931.65	1933.15	1.11	1934.27	1937.45	0.068909	16.64	42.43	38.3	2.79
1	-7900	PF 1	706	1931.49	1933.14	1.16	1934.19	1936.9	0.056824	15.57	45.34	39.13	2.55
1	-8000	PF 1	706	1927.91	1930.41	1.74	1931.56	1933.05	0.023852	13.05	54.11	31.03	1.74
1	-8100	PF 1	706	1927.4	1930.83	1.14	1930.83	1931.4	0.00866	6.02	117.27	102.43	0.99
1	-8200	PF 1	706	1926.88	1930.11	1.01	1930.01	1930.49	0.006862	4.95	142.52	140.46	0.87
1	-8300	PF 1	706	1926.34	1929.68	1.18		1929.95	0.003943	4.15	170.28	144.16	0.67
1	-8400	PF 1	706	1925.84	1929.5	1.35		1929.65	0.001872	3.13	225.33	166.64	0.47
1	-8500	PF 1	706	1925.39	1928.95	1.08		1929.32	0.005939	4.9	145.3	134.46	0.82
1	-8600	PF 1	706	1924.92	1928.56	1.5	1928.1	1928.87	0.003337	4.48	157.48	104.66	0.64
1	-8700	PF 1	706	1924.32	1927.77	1.12	1927.77	1928.33	0.008967	6.02	117.28	105.02	1
1	-8774.45	PF 1	706	1924	1927.46	1.4	1927.11	1927.78	0.003715	4.51	156.37	111.55	0.67
1	-8800	PF 1	706	1924	1927.04	1.09	1927.04	1927.61	0.009292	6.05	116.66	106.66	1.02
1	-8900	PF 1	706	1921.29	1923.3	1.12	1924.05	1925.75	0.038855	12.55	56.27	50.46	2.09
1	-9000	PF 1	706	1915.74	1917.36	1.33	1918.45	1921.24	0.049493	15.81	44.67	33.7	2.42
1	-9089.63	PF 1	706	1914.2	1916.66	1.38	1917.04	1918.08	0.017071	9.54	74	53.77	1.43
1	-9100	PF 1	706	1914.03	1916.14	1.31	1916.63	1917.85	0.021964	10.5	67.22	51.15	1.61
1	-9192.13	PF 1	706	1912.77	1914.75	1.67	1915.09	1916.2	0.013607	9.68	72.91	43.54	1.32

EXISTING CONDITIONS - PRE-PROJECT
9 - 45" x 29" HERCP CULVERT SUMMARY

10/19/2007

Plan: Plan 17 EQUESTRIAN DB OF 1 RS: -4608.44 Culv Group: Culvert #1 Profile: PF 1			
Q Culv Group (cfs)	706	Culv Full Len (ft)	226
# Barrels	9	Culv Vel US (ft/s)	11.01
Q Barrel (cfs)	78.44	Culv Vel DS (ft/s)	11.01
E.G. US. (ft)	1987.95	Culv Inv El Up (ft)	1981.83
W.S. US. (ft)	1987.81	Culv Inv El Dn (ft)	1979.5
E.G. DS (ft)	1982.71	Culv Frctn Ls (ft)	3.21
W.S. DS (ft)	1981.63	Culv Exit Loss (ft)	1.09
Delta EG (ft)	5.24	Culv Entr Loss (ft)	0.94
Delta WS (ft)	6.18	Q Weir (cfs)	
E.G. IC (ft)	1988.26	Weir Sta Lft (ft)	
E.G. OC (ft)	1987.95	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	1984.25	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1981.92	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.42	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.42	Min El Weir Flow (ft)	1988.01

HEC-RAS Version 4.0 Beta
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

****

PROJECT DATA
Project Title: EQUESTRIAN CLOMR
Project File : EQUESTRIAN.prj
Run Date and Time: 9/28/2007 08:50:37

Project in English units

Project Description:
Equestrian Detention Outfall

****

PLAN DATA

Plan Title: Plan 20
Plan File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.p20

Geometry Title: PRE-PROJECT; PARK
Geometry File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g08

Flow Title : Neighborhood
Flow File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05

Plan Summary Information:
Number of: Cross Sections = 142 Multiple Openings = 0
Culverts = 1 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

****

FLOW DATA

Flow Title: Neighborhood
Flow File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05

Flow Data (cfs)

River	Reach	RS	PF 1
EQUESTRIAN DB OF1		-1500	706

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
EQUESTRIAN DB OF1		PF 1	Normal S = 0.0304	Normal S = 0.0137

****

GEOMETRY DATA

Geometry Title: PRE-PROJECT; PARK
Geometry File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g08

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1500

INPUT
Description:
Station Elevation Data   num=   102
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.2612043.135-142.2562043.134-140.475   2043-135.1042042.208-133.566   2042
-131.2242041.581-127.893   2041-126.2152040.707-122.378   2040-120.855 2039.74
-116.536   2039-115.2462038.777-110.674   2038-108.8942037.693 -104.82   2037
-101.912 2036.48 -99.111   2036-95.61842035.294-94.1404   2035 -93.7072034.921
-89.0945   2034-84.68812033.095-84.2205   2033-83.24232032.795-79.1597   2032
-74.13042031.295-71.4223   2031-70.12782030.912-68.05442030.724-67.54942030.637
-67.10112030.599 -66.8892030.593 -66.7222030.597-66.5035 2030.62-66.18342030.731
-65.67212030.831-64.71282030.957-64.5355   2031-61.65622031.283-59.26782031.469
-53.2934   2032-53.12672032.009-53.0267 2032.05-39.90362032.246 -36.3082032.159
-34.08492032.071-32.9996   2032 -32.4372031.809 -29.309   2031 -29.2332030.994
-29.19712030.991-26.30872030.733-23.26452030.479-19.0713 2030.28-17.48582030.194
-15.66542030.073-14.6993   2030-12.7716   2030-9.76562   2030-7.76299   2030
-7.71138   2030-5.951742030.182-4.223712030.383-2.640642030.604 -2.24682030.645
-1.902772030.651-.5626772030.569   02030.557 .1478562030.554 .6291052030.615
3.1228952030.7324.0218322030.8095.530625   20316.2684612031.209 8.29692   2032
10.706172032.39512.191112032.60913.80411   203317.203742033.29818.788332033.416
20.773072033.542 23.88432033.78424.787242033.78127.437922033.66733.43209   2034
35.482132034.48537.46578   203539.492592035.54441.45111   203643.923312036.594
45.55312   203746.454682037.23949.83693   203850.099752038.05650.811212038.228
51.96051 2038.4553.774492038.81554.98262   203956.810192039.15157.517462039.157
58.213942039.23858.34977 2039.25

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.261   .035-142.261   .02558.34977   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.26158.34977   25   25   25   .1   .3
Left Levee   Station=   -39.9   Elevation= 2032.25

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2034.41 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   2.49 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2031.91 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2032.44 * Flow Area (sq ft)   *   *   55.70 *   *
* E.G. Slope (ft/ft)   *0.030424 * Area (sq ft)   *   *   55.70 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   40.82 * Top Width (ft)   *   *   40.82 *   *
* Vel Total (ft/s)   *   12.67 * Avg. Vel. (ft/s)   *   *   12.67 *   *
* Max Chl Dpth (ft)   *   1.91 * Hydr. Depth (ft)   *   *   1.36 *   *
* Conv. Total (cfs)   * 4047.6 * Conv. (cfs)   *   * 4047.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   41.20 *   *
* Min Ch El (ft)   * 2030.00 * Shear (lb/sq ft)   *   *   2.57 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   32.54 *   *
* Frctn Loss (ft)   *   * Cum Volume (acre-ft)   *   1.41 *   20.54 *   2.94 *
* C & E Loss (ft)   *   * Cum SA (acres)   *   0.91 *   13.92 *   2.75 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1525

INPUT
Description:
Station Elevation Data   num=   94
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.2682042.509 -140.672042.565-140.6612042.565-140.1722042.508-138.4372042.353
-136.0812042.035-135.828   2042 -131.922041.303-130.192   2041-126.926 2040.42
-124.509   2040-119.4862039.115-118.823   2039-117.3562038.744 -113.05   2038
 -109.782037.423-107.337   2037-104.4682036.495-101.556   2036-100.0952035.738
-95.9636   2035-90.59542034.021-90.4798   2034-90.19082033.945-89.47542033.825
-84.4017   2033-82.45242032.609-80.83392032.358-78.2929   2032-77.29262031.875
-76.65292031.768-75.26332031.554-71.9249   2031-69.88522030.612-68.58372030.352
-66.7094   2030-66.0606   2030-65.5086   2030-64.62572030.283-62.1973   2031
-61.04192031.177-60.70242031.219-59.59252031.314-55.83922031.755-51.0886   2032
-48.8225   2032-44.1329   2032-43.40552031.689-41.7082   2031-39.28942030.127
 -38.949   2030-38.45352029.781 -38.3492029.763-38.23492029.757-37.95972029.759
-37.87532029.774-37.06812029.615-35.9814 2029.55-35.00932029.472-34.78982029.435
-34.68772029.384-33.78292029.256-33.64412029.249-33.59152029.239-29.36472029.276
-26.08912029.448-16.1598   2030-3.649712030.556-1.398832030.673   02030.762
2.2393232030.9043.711227   20314.592877 2031.126.4156132031.38310.19792   2032
13.961862032.62116.08633   203328.442932033.65535.07403   203435.807822034.174
39.27631   203541.515732035.55843.29516   203647.09778 2036.8847.58003   2037
48.374022037.15552.40611   203853.60807 2038.1355.190842038.27655.926252038.414
56.542912038.45557.725882038.51758.13948 2038.5558.350222038.577

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.268   .035-142.268   .02558.35022   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.26858.35022   25   25   .1   .3
Left Levee   Station= -44.13   Elevation=   2032

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2033.56	Element	Left OB	Channel	Right OB	
Vel Head (ft)	2.28	Wt. n-Val.		0.025		
W.S. Elev (ft)	2031.28	Reach Len. (ft)	25.00	25.00	0.00	
Crit W.S. (ft)	2032.00	Flow Area (sq ft)		58.25		
E.G. Slope (ft/ft)	*0.032553	Area (sq ft)		58.25		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	48.10	Top Width (ft)		48.10		
Vel Total (ft/s)	12.12	Avg. Vel. (ft/s)		12.12		
Max Chl Dpth (ft)	2.04	Hydr. Depth (ft)		1.21		
Conv. Total (cfs)	3913.0	Conv. (cfs)		3913.0		
Length Wtd. (ft)	25.00	Wetted Per. (ft)		48.49		
Min Ch El (ft)	2029.24	Shear (lb/sq ft)		2.44		
Alpha	1.00	Stream Power (lb/ft s)		29.59		
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	1.41	20.51	2.94	
C & E Loss (ft)	0.06	Cum SA (acres)	0.91	13.89	2.75	

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1550

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.274	2042.56	-140.1612	2042.424	-139.7242	2042.283	-139.7082	2042.283	-139.544	2042
-136.7242	2041.609	-132.788	2041	-130.6822	2040.615	-127.179	2040	-122.4662	2039.178
-121.471	2039	-120.7362	2038.886	-114.928	2038	-114.5712	2037.946	-110.9512	2037.383
-108.694	2037	-105.278	2036.45	-102.68	2036	-99.85222	2035.517	-96.8097	2035
-92.03772	2034.183	-91.0282	2034	-89.7979	2033.78	-85.4234	2033	-82.36152	2032.559
-81.45242	2032.449	-79.03392	2032.098	-78.3905	2032	-77.37562	2031.898	-76.74942	2031.845
-71.85162	2031.402	-68.36662	2031.082	-67.4322	2031	-63.7417	2030.48	-59.6808	2030
-56.38132	2029.439	-54.67532	2029.168	-54.2352	2029.272	-54.20922	2029.334	-53.98342	2029.478
-53.51852	2029.569	-52.90472	2029.583	-51.85882	2029.454	-51.37282	2029.403	-50.3982	2029.232
-50.22172	2029.194	-49.5825	2029	-49.17982	2028.906	-47.27332	2028.529	-45.75652	2028.405
-45.14262	2028.342	-44.88332	2028.308	-41.56342	2028.252	-38.68372	2028.502	-34.3191	2028.93
-33.7689	2029	-33.1132	2029.131	-30.1965	2030	-26.37862	2030.226	-26.30152	2030.226
-19.05272	2030.613	-18.85452	2030.541	-4.218522	2030.634	-.7453712	2030.754	02030.779	
4.6311172	2030.9295	.6368612	2030.9746	.108246	20317.002	3362031.187	7.914908	2031.4	
9.598696	203212.57	9942032.45	117.20134	203329.07	6382033.61	636.65795	2034		
40.348562	034.75741	.42886	203545.27	4232035.794	46.3264	203647.05	0282036.146		
51.34959	203752.80	7462037.30	355.35497	2037.674	57.3991	2038	57.901	2038.04	
58.350672	038.097								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.274	.035	-142.274	.025	58.35067	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.27	458.35067	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2032.38	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.26	Wt. n-Val.		0.025		
W.S. Elev (ft)	2032.12	Reach Len. (ft)	25.00	25.00	25.00	
Crit W.S. (ft)	2031.36	Flow Area (sq ft)		170.92		
E.G. Slope (ft/ft)	*0.002063	Area (sq ft)		170.92		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	89.53	Top Width (ft)		89.53		
Vel Total (ft/s)	4.13	Avg. Vel. (ft/s)		4.13		
Max Chl Dpth (ft)	3.86	Hydr. Depth (ft)		1.91		
Conv. Total (cfs)	15544.1	Conv. (cfs)		15544.1		
Length Wtd. (ft)	25.00	Wetted Per. (ft)		90.30		
Min Ch El (ft)	2028.25	Shear (lb/sq ft)		0.24		
Alpha	1.00	Stream Power (lb/ft s)		1.01		
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	1.41	20.44	2.94	
C & E Loss (ft)	0.03	Cum SA (acres)	0.91	13.85	2.75	

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1575

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.2812	041.543	-137.674	2041	-132.992	040.223	-131.734	2040	-127.9252	039.339
-125.838	2039	-119.672	038.027	-119.501	2038	-118.9032	037.909	-112.666	2037
-110.993	2036.76	-105.737	2036	-100.6422	035.238	-99.1234	2035	-93.51232	034.051
-93.2414	2034	-92.54072	033.878	-87.5038	2033	-84.04872	032.414	-81.5103	2032

-78.56932031.759-71.7086   2031-64.68592030.374-58.4664   2030-58.07792029.429
-57.7772   2029-56.71452028.874 -54.9742028.684 -54.8182028.675-53.22142028.646
-52.43732028.628-44.19542028.716-43.74682028.828-42.8585   2029-40.14672029.982
-40.1052   2030-38.92162030.123-30.5823   2031-29.1278   2031-25.9479   2031
-24.2293   2031-22.2955   2031-19.52372030.783-15.41682030.745-14.98692030.779
-14.15872030.793-13.79572030.785-13.70342030.785-13.21362030.754-12.9915 2030.72
 -12.6162030.565-1.124962030.491 -.230912030.569   02030.5883.2965732030.853
5.270041   20317.6132112031.5928.698822   203215.160432032.50221.74082   2033
28.439482033.36232.425752033.56233.989852033.619 34.52842033.60134.670142033.492
37.94581   203441.87897 2034.7743.09396   203547.622542035.89348.20878   2036
49.102872036.13755.58899   203756.50538 2037.2456.512832037.24357.017062037.409
 57.0616 2037.4257.784532037.59557.785942037.59757.801112037.61757.815512037.621
57.928362037.64657.951642037.64858.064452037.65558.122752037.65658.223872037.657
58.314522037.658

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.281   .035-142.281   .02558.31452   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.28158.31452   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2032.27 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.54 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2031.73 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2031.61 * Flow Area (sq ft)   *   * 119.47 *   *
* E.G. Slope (ft/ft)   *0.006504 * Area (sq ft)   *   * 119.47 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   86.24 * Top Width (ft)   *   *   86.24 *   *
* Vel Total (ft/s)   *   5.91 * Avg. Vel. (ft/s)   *   *   5.91 *   *
* Max Chl Dpth (ft)   *   3.10 * Hydr. Depth (ft)   *   *   1.39 *   *
* Conv. Total (cfs)   * 8754.5 * Conv. (cfs)   *   * 8754.5 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   87.28 *   *
* Min Ch El (ft)   * 2028.63 * Shear (lb/sq ft)   *   *   0.56 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   3.28 *   *
* Frctn Loss (ft)   *   0.17 * Cum Volume (acre-ft) *   1.41 *   20.36 *   2.94 *
* C & E Loss (ft)   *   0.00 * Cum SA (acres)   *   0.91 *   13.80 *   2.75 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1600

INPUT
Description:
Station Elevation Data   num=   100
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.2872040.843-141.5012040.759-141.4922040.757-141.3452040.725-141.3292040.724
-140.9442040.683-140.9362040.681-140.6882040.643-140.676 2040.64-140.1292040.505
-140.1122040.501 -138.482040.201-138.474 2040.2-137.126   2040-132.9932039.419
 -131.382039.207-129.929   2039-122.9152038.058-122.7952038.043-122.513   2038
-122.3352037.971-116.308   2037-111.3942036.196-110.179   2036-106.7992035.447
-104.027   2035-101.5542034.612-97.6174   2034-93.49152033.349-91.0638   2033
-88.83342032.639-84.7211   2032-75.73352031.137-74.2416   2031-72.45752030.802
-65.1648   2030 -65.0822029.976-62.6426   2029-56.17652028.078-55.4664   2028
-55.3938   2028-51.00752028.686-49.9677 2028.86-49.2178   2029-47.42042029.873
-47.0971   2030 -43.9142030.247-34.1454   2031-28.8967   2031-24.1364   2031
-10.6686 2030.07-9.70563   2030-9.423312029.941-8.316742029.857-8.252752029.761
-8.174282029.742-7.864222029.741-7.42446 2029.75 -6.2231 2029.81-5.453862029.828
-3.193622029.851-2.076262029.867-1.166612029.893   02029.9471.155898   2030
 3.487622030.4994.7374452030.8175.216611   20316.1990522031.3168.104875   2032
13.668822032.43921.01462   203322.29984   203322.616872032.857 22.93722032.633
23.338272032.64123.827392032.63924.227012032.64524.928812032.66526.685272032.725
 28.82872032.80633.78006   203335.581152033.37238.76359   203442.66583 2034.74
43.94832   203547.25335 2035.6349.21566   203653.235232036.51956.64665   2037
56.954232037.07556.954412037.075 56.99212037.12656.995032037.126 57.28292037.192
57.289822037.19357.593892037.21157.612642037.21157.958192037.21758.267942037.218

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.287   .035-142.287   .02558.26794   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.28758.26794   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2032.09 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.59 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2031.50 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2031.44 * Flow Area (sq ft)   *   * 115.00 *   *
* E.G. Slope (ft/ft)   *0.007381 * Area (sq ft)   *   * 115.00 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   86.24 * Top Width (ft)   *   *   86.24 *   *
* Vel Total (ft/s)   *   6.14 * Avg. Vel. (ft/s)   *   *   6.14 *   *
* Max Chl Dpth (ft)   *   3.50 * Hydr. Depth (ft)   *   *   1.33 *   *
* Conv. Total (cfs)   * 8217.6 * Conv. (cfs)   *   * 8217.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   87.23 *   *

* Min Ch El (ft)	* 2028.00	* Shear (lb/sq ft)	*	*	0.61	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	3.73	*	*		
* Frctn Loss (ft)	* 0.18	* Cum Volume (acre-ft)	*	1.41	*	20.29	*	2.94	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	*	0.91	*	13.75	*	2.75	*

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1625

INPUT
Description:
Station Elevation Data num= 121

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.294	2040.5	-139.5182	040.203	-139.5152	040.203	-139.0032	040.092	-139.0012	040.092
-138.137	2040	-134.8092	039.464	-131.888	2039	-128.2552	038.431	-125.573	2038
-120.8742	037.282	-119.033	2037	-114.8482	036.375	-112.312	2036	-109.8620	35.648
-105.484	2035	-104.1542	034.791	-98.9239	2034	-96.33542	033.566	-92.8248	2033
-87.3252	032.126	-86.5518	2032	-85.11362	031.794	-79.6584	2031	-76.24972	030.465
-71.9631	2030	-69.92112	029.263	-69.2087	2029	-68.30752	028.665	-66.5817	2028
-62.0481	2028	-59.4133	2028	-56.2262	2028.75	-55.62062	028.886	-55.1096	2029
-55.00192	029.066	-54.83262	029.091	-54.75572	029.112	-54.59512	029.167	-51.6201	2030
-51.13862	030.042	-50.93962	030.061	-47.03312	030.389	-45.9461	2030.49	-41.49412	030.825
-40.69382	030.899	-39.2967	2031	-36.5125	2031	-35.9417	2031	-30.6968	2031
-30.181	2031	-29.6396	2031	-29.1682	2031	-27.2879	2031	-26.8681	2031
-23.9542	2031	-23.7472	2031	-23.2098	2031	-20.46992	030.722	-18.66192	030.603
-18.28142	030.517	-17.60212	030.434	-16.17522	030.144	-15.84982	030.087	-15.4229	2030
-15.2218	2030	-14.7789	2030	-13.1705	2030	-12.7479	2030	-10.6775	2030
-9.257372	029.554	-8.89512	029.499	-7.900772	029.251	-7.562	029.152	-7.474572	029.116
-7.384372	029.093	-7.35422	029.075	-7.3294	2029.07	-7.24762	029.063	-7.242872	029.056
-7.237072	029.055	-7.214152	029.055	-7.181642	029.055	-7.09283	2029.06	-7.035972	029.061
-6.868882	029.063	-6.786282	029.064	-6.719042	029.066	-6.466422	029.078	-6.229422	029.094
-6.03248	2029.11	-5.032442	029.212	-4.255162	029.246	02	029.6653	.414118	2030
3.7388662	030.152	5.56635	20	315.8844072	031.0938	.0012542	031.5361	0.18128	2032
15.392922	032.21724	.408252	032.61830	.458312	032.88733	.04204	203	337.778942	033.999
37.78277	203	437.823182	034.009	42.04022	034.88542	.58107	203	543.068632	035.091
47.79948	203	648.57362	2036.085	0.798322	036.267	54.2813	2036.515	4.839862	036.556
54.92939	2036.585	5.858832	036.66957	.426452	036.68557	.758582	036.69258	.109152	036.696
58.221372	036.695								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.294	.035	-142.294	.02	558.22137	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-142.29 458.22137 25 25 25 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2031.90	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.55	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2031.35	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2031.26	* Flow Area (sq ft)	*	* 119.15	* *
* E.G. Slope (ft/ft)	*0.006884	* Area (sq ft)	*	* 119.15	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 89.18	* Top Width (ft)	*	* 89.18	* *
* Vel Total (ft/s)	* 5.93	* Avg. Vel. (ft/s)	*	* 5.93	* *
* Max Chl Dpth (ft)	* 3.35	* Hydr. Depth (ft)	*	* 1.34	* *
* Conv. Total (cfs)	* 8509.3	* Conv. (cfs)	*	* 8509.3	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 90.46	* *
* Min Ch El (ft)	* 2028.00	* Shear (lb/sq ft)	*	* 0.57	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 3.35	* *
* Frctn Loss (ft)	* 0.19	* Cum Volume (acre-ft)	* 1.41	* 20.22	* 2.94 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.91	* 13.70	* 2.75 *

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1650

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.32	040.157	-140.828	2040	-134.0620	39.064	-133.669	2039	-129.288	2038.23
-127.867	2038	-123.5582	037.269	-121.857	2037	-119.7532	036.698	-114.974	2036
-112.5942	035.663	-107.992	2035	-102.5792	034.183	-101.357	2034	-100.0622	033.794
-95.2359	2033	-91.35782	032.362	-89.1938	2032	-88.0532	031.811	-82.9322	2031
-80.45082	030.337	-79.0147	2030	-77.6689	2029.08	-77.4936	2029	-77.34242	028.938
-75.631	2028	-74.34362	027.831	-73.955	2027.69	-69.48322	027.724	-69.33742	027.732
-68.95562	027.742	-66.8884	2027.77	-66.33122	027.781	-65.56772	027.866	-63.4976	2028
-63.31992	028.133	-62.95042	028.443	-62.57452	028.854	-62.4065	2029	-62.27812	029.093
-60.6338	2030	-58.58752	030.184	-58.05152	030.232	-48.3308	2031	-46.7235	2031
-45.8934	2031	-44.9385	2031	-42.2592	2031	-40.3136	2031	-37.1779	2031
-35.4215	2031	-34.3702	2031	-17.44092	030.325	-11.2919	2030	-9.2222	029.178
-8.74169	2029	-4.942032	028.451	-1.561242	028.497	-1.506142	028.505	-.8811452	028.546
02	028.652	.0797832	028.662	.9748772	028.7392	.0374132	028.8692	.844485	2029
3.770298	2029.455	.015427	2030	6.5814552	030.7737	.091821	2031	7.8248322	031.198

10.054682031.74111.11249   203222.745312032.51733.68086   203335.172262033.328
38.29308   203441.15609 2034.6342.94591   203545.300882035.45547.043142035.779
49.98783   203650.15836   203650.98348   203651.130522036.01455.80463 2036.06
56.794912036.08157.840182036.09258.174792036.091

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
  -142.3   .035 -142.3   .02558.17479   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
        -142.358.17479   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2031.69 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.62 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2031.07 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2031.07 * Flow Area (sq ft)   *   * 111.95 *   *
* E.G. Slope (ft/ft)   *0.008779 * Area (sq ft)   *   * 111.95 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   90.74 * Top Width (ft)   *   *   90.74 *   *
* Vel Total (ft/s)   *   6.31 * Avg. Vel. (ft/s)   *   *   6.31 *   *
* Max Chl Dpth (ft)   *   3.38 * Hydr. Depth (ft)   *   *   1.23 *   *
* Conv. Total (cfs)   * 7535.1 * Conv. (cfs)   *   * 7535.1 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   92.91 *   *
* Min Ch El (ft)   * 2027.69 * Shear (lb/sq ft)   *   *   0.66 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   4.16 *   *
* Frctn Loss (ft)   *   0.17 * Cum Volume (acre-ft)   *   1.41 *   20.16 *   2.94 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   0.91 *   13.65 *   2.75 *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth. This indicates that there
         is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1675

INPUT
Description:
Station Elevation Data   num=   145
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.3072039.698-142.2562039.698 -142.22039.691-141.4882039.601-141.4752039.597
-141.2122039.534-141.187 2039.53-140.1082039.375-140.0942039.373-138.576 2039.24
-138.5682039.239-136.6372039.016-136.6362039.016-136.463   2039-136.3422038.972
-130.165   2038-127.3522037.545-124.142   2037-118.4052036.115-117.627   2036
-116.478 2035.83-114.9632035.595-111.263   2035-109.2422034.661 -105.2   2034
 -102.36 2033.53-99.2018   2033-94.55712032.235-93.1535   2032-90.06372031.475
-87.5251   2031-86.73792030.597 -85.927   2030-85.20162029.056 -85.157   2029
-85.10392028.909-84.0617   2028-83.57372027.756-82.60352027.536 -82.4922027.499
-81.66072027.391-81.47822027.324-79.3779 2027.34-79.30942027.344-79.13012027.349
-78.15922027.362-77.89752027.367-77.53892027.407-76.45752027.477 -76.1532027.527
-75.13582027.702-72.3408   2028-72.06292028.147-70.3396   2029-69.91162029.172
-69.70182029.225-69.02152029.368-68.68152029.475-67.72722029.826-67.1791   2030
-59.37392030.716-56.3593   2031-56.1946   2031 -52.841   2031-51.5785   2031
-49.3142   2031-47.8257   2031-45.1519   2031-44.8038   2031-42.0054   2031
-40.7108   2031-37.3739   2031-37.0677   2031-35.8482   2031-34.7335   2031
-30.0131   2031-28.91132030.963-25.45432030.875-22.73912030.779 -14.0992030.045
-13.80942030.025-13.69562030.016-13.64292030.011-13.5709   2030-13.52172029.975
-11.6603   2029-9.972932028.252-9.44346   2028-8.44358 2027.83-8.280162027.821
-8.091852027.814 -5.7462027.467 -5.23812027.407-4.72943 2027.36-4.045592027.315
-3.701632027.286-3.458762027.276 -3.11732027.272-2.740192027.272 -2.41682027.274
-2.219462027.278-2.120362027.283-2.002642027.295-1.307512027.336-.8785282027.366
-.6634432027.397-.5613542027.443   02027.556 .3592962027.6281.6583652027.977
1.751907   20281.8227672028.0373.843728   20295.549385 2029.825.871013   2030
7.9442522030.9548.033331   20318.3375322031.09111.15101   203226.130392032.633
33.281412032.87436.71986   203338.257872033.17343.44971   203445.979362034.506
48.34933   2035 49.88352035.11649.947612035.11549.987792035.11349.991892035.114
50.366322035.15550.410112035.15852.530742035.30553.06364 2035.28 53.18862035.293
53.763412035.35253.931192035.36154.451392035.388 55.61872035.43556.837942035.483
 57.97292035.52158.085352035.52558.222912035.53558.224942035.53558.252012035.542

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.307   .035-142.307   .02558.25201   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.30758.25201   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2031.46 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.60 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2030.86 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2030.46 * Flow Area (sq ft)   *   * 113.76 *   *
* E.G. Slope (ft/ft)   *0.005181 * Area (sq ft)   *   * 113.76 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *

```
* Top Width (ft)          *   62.11  * Top Width (ft)          *          *   62.11  *          *
* Vel Total (ft/s)        *    6.21  * Avg. Vel. (ft/s)       *          *    6.21  *          *
* Max Chl Dpth (ft)       *    3.59  * Hydr. Depth (ft)       *          *    1.83  *          *
* Conv. Total (cfs)       *  9808.2  * Conv. (cfs)            *          *  9808.2  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   65.12  *          *
* Min Ch El (ft)          * 2027.27  * Shear (lb/sq ft)       *          *    0.57  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    3.51  *          *
* Frctn Loss (ft)         *    0.10  * Cum Volume (acre-ft)   *    1.41  *   20.09  *    2.94  *
* C & E Loss (ft)         *    0.07  * Cum SA (acres)         *    0.91  *   13.61  *    2.75  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1700

INPUT
Description:
Station Elevation Data    num=     114
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.3142039.104-141.9812039.109-141.9722039.108-141.127    2039-136.8252038.282
-135.103    2038-129.191 2037.19-127.847    2037-126.7922036.845-120.8582036.021
 -120.71    2036-119.9412035.885-114.015    2035-108.9852034.219-107.653    2034
-107.0192033.895 -101.61    2033-98.0814 2032.41-95.4715    2032-93.29772031.624
-90.0633    2031-89.78532030.055-89.6582    2030-89.46582029.452-89.2922    2029
-89.17652028.545-88.99282028.108-88.9149    2028-88.86212027.931-88.5596    2027
-88.4673    2027-88.4334    2027-87.6331    2027-79.15642027.711  -77.942027.808
-77.72272027.822-77.61172027.833-76.3519    2028-76.22062028.092-74.8813    2029
-73.30012029.617-72.0409    2030-67.96272030.149-67.83512030.152-64.07652030.239
-62.5929  2030.3 -58.8472030.443-44.35682030.974-43.6216    2031-43.3012    2031
-36.1934    2031-32.0919    2031-30.9536    2031-29.6346    2031-29.5108    2031
-29.2715    2031-28.69722030.955-25.73822030.711-23.67372030.519-17.4105    2030
-16.88152029.762 -14.846    2029-14.06432028.635-12.3696    2028-10.1253 2027.09
-9.91048    2027-9.844242026.988-7.773712026.795-7.382982026.775-3.578612026.687
 -3.12292026.681-2.569262026.678-2.021252026.678-1.559592026.682-1.19764 2026.69
-.7809782026.707-.1696822026.797       02026.829 .900079    20271.3211362027.303
2.258151    2028 3.111332028.6293.589581    20295.0851782029.9895.106313    2030
8.558848  2030.98.929314    203111.92212 2031.3512.760732031.45914.087942031.612
17.13408    203220.259472032.13921.774942032.20231.054232032.40332.041172032.466
36.210852032.77238.86683    203345.103492033.88645.90857    203446.52653  2034.1
48.835272034.45853.25048    203554.447032035.04154.457722035.04254.729012035.061
54.749252035.06655.062842035.14255.354392035.15556.461512035.20356.549212035.212
56.746962035.23256.921862035.243 57.1741 2035.2658.338672035.302

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.314    .035-142.314    .02558.33867    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.31458.33867               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)          * 2031.29  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.37  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2030.91  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *          *  144.51  *          *
* E.G. Slope (ft/ft)      *0.003377  * Area (sq ft)          *          *  144.51  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   80.87  * Top Width (ft)        *          *   80.87  *          *
* Vel Total (ft/s)        *    4.89  * Avg. Vel. (ft/s)      *          *    4.89  *          *
* Max Chl Dpth (ft)       *    4.24  * Hydr. Depth (ft)      *          *    1.79  *          *
* Conv. Total (cfs)       * 12148.4  * Conv. (cfs)           *          * 12148.4  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)      *          *   85.91  *          *
* Min Ch El (ft)          * 2026.68  * Shear (lb/sq ft)      *          *    0.35  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    1.73  *          *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)   *    1.41  *   20.02  *    2.94  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)         *    0.91  *   13.56  *    2.75  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1725

INPUT
Description:
Station Elevation Data    num=     159
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -142.322038.626-141.9832038.629-141.3662038.531-137.392    2038-136.7752037.925
-133.4972037.467-132.0982037.284-130.7152037.082-130.173    2037-125.469 2036.29
-123.527    2036-121.1942035.656  -116.9    2035-112.5332034.301-110.575    2034
```

-109.1282033.759 -104.3   2033-99.38882032.133-98.6419   2032-96.89882031.696
-94.92852031.301-93.5322   2031-92.74952030.798-90.5347 2030.04-90.43892030.008
-90.42882030.004-90.4224   2030 -90.422029.997 -90.3542029.907-89.78442029.092
-89.6869   2029-89.6462 2028.94-88.9794   2028-88.6824 2027.61-88.2658   2027
-85.5615   2027-84.4889   2027-81.53412027.525-80.1889 2027.75-79.60952027.843
-78.6022   2028-78.02432028.547-77.25972028.969-77.2272 2028.99-77.1907   2029
-71.40562029.889 -70.842   2030-66.37122030.161-62.22322030.304-56.80012030.478
 -56.5452030.483-56.03152030.506-54.69052030.599-53.31292030.676-52.96342030.693
-52.50162030.706-51.9083 2030.72-51.59182030.726-51.52182030.728 -51.3252030.754
-51.00672030.774-50.88322030.772-49.8921 2030.73-49.53272030.717-49.29642030.715
-48.38482030.711-46.62962030.708-46.60492030.679 -46.5842030.669-46.07082030.639
-45.75282030.606-45.56292030.596-45.19762030.589-44.62192030.587-44.21072030.579
-43.59072030.584 -43.3862030.576-43.24952030.563-39.12412030.446-38.61612030.456
-37.8658 2030.46-37.20852030.475-36.8539 2030.48 -36.4842030.478-35.75322030.492
-35.33952030.514-35.0491 2030.56-34.75012030.587-34.20712030.614-33.65442030.632
-33.28742030.647-32.68142030.681 -32.4232030.691 -32.1422030.697-31.79952030.698
-29.18942030.687 -28.9822030.685-28.87332030.681-28.70062030.654-28.4583 2030.63
-28.29422030.626-27.93062030.635-27.69112030.639-27.37662030.636-27.00942030.628
-26.63462030.617-25.48282030.577 -24.4152030.534-23.05082030.469-20.68652030.321
-19.36262030.247-13.8714   2030-13.22422029.889-10.7884   2029-9.623442028.512
-8.52232   2028-7.166632027.413-6.28148   2027-6.115982026.659-5.73493 2026.51
-4.924222026.362-4.165282026.292-4.022062026.284 -2.62762026.252-2.46056 2026.25
-2.257632026.249-2.056762026.249-1.88754 2026.25-1.754882026.253-1.602152026.259
-1.378082026.292-.9041272026.382   0 2026.53 .1334272026.5512.774007   2027
3.2357722027.3674.157831   20284.7877232028.4885.528466   20296.5579472029.616
7.283088   20307.399833 2030.0313.81127   203119.783182031.29121.289252031.364
22.655312031.423 27.00572031.62727.81368 2031.6629.987292031.72331.674472031.786
34.029242031.88536.51522   203238.760272032.25444.01895   203346.191392033.416
50.28986   203450.783632034.06358.01715   203558.327772035.011

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
 -142.32   .035 -142.32   .02558.32777   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -142.3258.32777   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2031.11 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.87 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2030.24 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2030.24 * Flow Area (sq ft)   *   *   94.18 *   *
* E.G. Slope (ft/ft)   *0.008469 * Area (sq ft)   *   *   94.18 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   54.77 * Top Width (ft)   *   *   54.77 *   *
* Vel Total (ft/s)   *   7.50 * Avg. Vel. (ft/s)   *   *   7.50 *   *
* Max Chl Dpth (ft)   *   3.99 * Hydr. Depth (ft)   *   *   1.72 *   *
* Conv. Total (cfs)   * 7671.5 * Conv. (cfs)   *   * 7671.5 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   58.70 *   *
* Min Ch El (ft)   * 2026.25 * Shear (lb/sq ft)   *   *   0.85 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   6.36 *   *
* Frctn Loss (ft)   *   0.21 * Cum Volume (acre-ft) *   1.41 *   19.95 *   2.94 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   0.91 *   13.53 *   2.75 *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth. This indicates that there
         is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1750

INPUT
Description:
Station Elevation Data   num=   127
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.3272037.701-142.3132037.701 -141.672037.708-139.5482037.601 -139.192037.576
-138.0162037.448-136.1362037.273-134.055   2037-128.5812036.133-127.703   2036
-125.8852035.706-121.383   2035-119.2732034.667 -114.92   2034-109.7382033.207
-108.411   2033-107.4872032.816-102.657   2032-101.7192031.811-98.7723 2031.24
-98.2408 2031.14-97.4461   2031-96.63922030.854-91.8549   2030-90.35412029.271
-89.6299   2029-89.41622028.882 -87.953   2028-87.51582027.774-86.2499   2027
-85.77252026.806-85.3889 2026.69-81.20192026.624-81.11682026.647-79.88632026.707
-79.49942026.737-78.71032026.924-78.2728   2027-77.7804 2027.53-77.43292027.831
-77.2571   2028-76.27722028.934-76.2047   2029-76.02652029.015-75.77292029.035
-62.9567   2030-62.45582030.066-61.24812030.143-60.77922030.134-57.6281   2030
-56.50732029.968-54.54332029.917-53.67452029.908-50.70062029.895-45.31742029.886
-45.01372029.886-44.13092029.876-37.98042029.842 -36.2092029.914-34.17612029.976
-33.4802   2030 -32.8752030.025-31.20212030.118-30.48862030.146-29.71282030.163
-28.76722030.165-21.56162030.136-20.98892030.129-20.68882030.118-20.21192030.044
-19.7537   2030-18.3725   2030-17.6728   2030 -17.4252030.004-16.9724   2030
-16.37422029.939-14.9473 2029.69-11.7631   2029-10.46662028.731-7.31478   2028
-6.911142027.896-4.89974   2027-3.234592026.343-2.46001   2026 -.805962025.672
-.6378582025.683   02025.7581.3439192025.9172.311248   20264.2272852026.358
8.916181   20279.4188112027.5079.841789   202810.430252028.59510.72442   2029
10.870472029.198 11.671   203017.598692030.514 18.06482030.54618.391482030.557

19.231852030.56419.649252030.57322.641052030.61223.806762030.63424.682242030.661
25.297912030.68726.552672030.76928.750322030.89131.06146   203131.67757 2031.04
 34.64642031.17734.796782031.18535.53165 2031.2340.631012031.45847.15505   2032
47.907632032.08648.12263 2032.1148.434822032.13850.295022032.31951.611682032.437
52.349922032.473 53.60052032.63254.316352032.69454.710012032.714 54.98382032.699
56.547682032.55858.223122032.546

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.327   .035-142.327   .025 53.6005   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.327 53.6005   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2030.73 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.83 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2028.90 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2029.51 * Flow Area (sq ft)   *   *   65.05 *   *
* E.G. Slope (ft/ft)   *0.016232 * Area (sq ft)   *   *   65.05 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   35.06 * Top Width (ft)   *   *   35.06 *   *
* Vel Total (ft/s)   *   10.85 * Avg. Vel. (ft/s)   *   *   10.85 *   *
* Max Chl Dpth (ft)   *   3.23 * Hydr. Depth (ft)   *   *   1.86 *   *
* Conv. Total (cfs)   * 5541.4 * Conv. (cfs)   *   * 5541.4 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   37.91 *   *
* Min Ch El (ft)   * 2025.67 * Shear (lb/sq ft)   *   *   1.74 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   18.87 *   *
* Frctn Loss (ft)   *   0.29 * Cum Volume (acre-ft) *   1.41 *   19.90 *   2.94 *
* C & E Loss (ft)   *   0.10 * Cum SA (acres)   *   0.91 *   13.50 *   2.75 *
****

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
         additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1775

INPUT
Description:
Station Elevation Data   num=   138
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.333   2037-142.294   2037-141.6242036.858-140.8132036.814-140.0092036.781
-139.7322036.767 -139.482036.751-138.954 2036.71-137.6292036.621-134.2232036.369
-129.034   2036-125.643 2035.56-121.334   2035-114.5542034.101-113.789   2034
-112.6362033.848-106.792   2033-105.1852032.736-100.836   2032-98.34512031.553
-95.3548   2031-90.68632030.135-89.9611   2030-86.26972029.128-85.7658   2029
-83.76742028.019 -83.73   2028-83.65782027.961-81.7801   2027-80.45462026.393
-79.6384   2026-79.4114   2026-78.8659   2026-77.13112026.273-72.8035   2027
-72.38292027.781-72.1716   2028 -71.8752028.269-71.63452028.332-70.6494   2029
-70.00232029.055-68.16062029.132-66.25262029.196-64.37022029.229-63.68542029.255
-62.9623 2029.3-62.60262029.304-62.08682029.299-61.42362029.285-57.99412029.201
-55.34112029.154-52.86522029.086-51.20052029.051-51.18992029.051 -48.9892029.029
-48.95062029.027-48.73592029.021-48.6939 2029.02-48.67542029.019-48.61182029.019
-48.49682029.019-45.8788 2029.02 -45.859 2029.02-45.72142029.019-45.68182029.021
-45.63632029.022 -45.5952029.023-45.47562029.028-45.4149 2029.03-36.70352029.094
-36.57182029.099-36.45452029.099-26.47952029.279-24.42742029.307-23.6809 2029.3
-23.16472029.284-19.95072029.078-18.0227   2029-17.14882028.865-16.50372028.731
-12.90732028.083-12.52962028.014-12.4636   2028-9.927052027.434-8.51522   2027
-7.637182026.604-5.94914   2026-4.718832025.501-2.98361   2025-2.03967   2025
-.539061   2025-.5299352025.001   02025.0462.5235632025.2627.412665   2026
8.858536 2026.569.451361   202710.315322027.54711.02176   202811.749862028.487
12.250052028.67813.31825   202915.565532029.15718.139412029.26422.692852029.537
24.308362029.59828.125942029.78129.538572029.85329.855242029.86930.473672029.908
30.601232029.91530.671942029.917 30.76622029.91830.935882029.91931.211182029.917
31.501872029.91531.629622029.91231.64713 2029.9131.660382029.89431.695042029.884
32.456992029.95232.475242029.95133.39433   203041.246112030.32145.895222030.645
46.797422030.69947.759342030.76150.72546   203151.507812031.09553.050772031.226
53.540522031.23754.168282031.20456.213572031.004 56.21772031.00456.230542031.003
56.890382031.03957.290212031.37758.250822031.697

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.333   .035-142.333   .02558.25082   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.33358.25082   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2030.22 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   2.26 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2027.95 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2028.68 * Flow Area (sq ft)   *   *   58.48 *   *
* E.G. Slope (ft/ft)   *0.022224 * Area (sq ft)   *   *   58.48 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *

* Top Width (ft)	*	34.63	* Top Width (ft)	*		*	34.63	*		*	
* Vel Total (ft/s)	*	12.07	* Avg. Vel. (ft/s)	*		*	12.07	*		*	
* Max Chl Dpth (ft)	*	2.95	* Hydr. Depth (ft)	*		*	1.69	*		*	
* Conv. Total (cfs)	*	4735.8	* Conv. (cfs)	*		*	4735.8	*		*	
* Length Wtd. (ft)	*	25.00	* Wetted Per. (ft)	*		*	36.78	*		*	
* Min Ch El (ft)	*	2025.00	* Shear (lb/sq ft)	*		*	2.21	*		*	
* Alpha	*	1.00	* Stream Power (lb/ft s)	*		*	26.64	*		*	
* Frctn Loss (ft)	*	0.47	* Cum Volume (acre-ft)	*	1.41	*	19.87	*	2.94	*	
* C & E Loss (ft)	*	0.04	* Cum SA (acres)	*	0.91	*	13.48	*	2.75	*	

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1800

INPUT
Description:
Station Elevation Data num= 139

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.34	2037	-142.319	2037	-139.1162	2036.324	-135.2462	2036.112	-132.512	2036
-131.6032	2035.863	-125.808	2035	-123.0652	2034.614	-118.762	2034	-111.8332	2033.021
-111.69	2033	-111.6632	2032.996	-110.8192	2032.877	-105.5272	2032.121	-104.702	2032
-104.4152	2031.947	-98.7739	2031	-96.40342	2030.607	-92.6831	2030	-89.93962	2029.358
-88.8683	2029.1	-88.0569	2029	-87.78182	2028.838	-86.5772	2028	-81.67312	2027.391
-81.39212	2027.382	-80.87962	2027.451	-80.72982	2027.445	-79.1793	2027	-76.77622	2026.414
-74.63882	2026.339	-74.0383	2026.35	-73.76852	2026.303	-73.68662	2026.278	-73.65942	2026.252
-73.42492	2026.143	-72.00612	2026.145	-70.26632	2026.313	-68.63612	2026.452	-67.33522	2026.574
-66.6012	2026.683	-65.4972	2026.824	-64.5289	2026.89	-64.4612	2026.891	-64.45012	2026.888
-63.8492	2027	-62.74012	2027.286	-59.83	2028	-59.70792	2028.022	-59.56542	2028.016
-59.2994	2028	-58.44422	2027.907	-56.4192	2027.814	-51.51722	2027.713	-47.59542	2027.652
-46.08542	2027.597	-41.21232	2027.355	-36.06262	2027.357	-35.74872	2027.353	-35.1945	2027.36
-33.58572	2027.368	-30.09672	2027.329	-28.99082	2027.325	-26.93482	2027.285	-25.9977	2027.27
-23.79222	2027.265	-22.6501	2027.22	-21.11692	2027.102	-20.0845	2027	-18.4925	2026.81
-16.75132	2026.585	-13.2843	2026	-11.08442	2025.144	-10.6582	2025	-5.71782	2024.324
-5.523922	2024.308	-4.283342	2024.257	-4.116682	2024.245	-4.082242	2024.234	-3.557772	2024.217
-3.428862	2024.222	-3.261832	2024.231	-3.14562	2024.248	-3.001822	2024.258	-2.384012	2024.281
-2.036512	2024.297	-1.753282	2024.318	-1.207182	2024.385	0	2024.524	1.632616	2024.713
3.77333	2025	5.718366	2025.666	19939	2026	9.2253082	2026.928	9.399814	2027
9.451243	2027.025	9.503698	2027.039	10.98485	2027.687	13.79264	2028	15.08815	2028.073
15.16416	2028.076	15.32219	2028.077	16.78543	2028.225	17.52452	2028.219	20.89036	2028.5
21.60749	2028.537	22.37209	2028.561	22.76367	2028.566	23.71937	2028.567	25.02695	2028.561
25.68994	2028.548	26.30363	2028.524	26.87011	2028.489	27.36664	2028.451	28.12828	2028.358
29.24429	2028.315	30.45487	2028.301	30.84743	2028.293	31.35463	2028.28	31.44642	2028.272
31.67002	2028.231	31.80662	2028.214	31.89808	2028.212	32.05156	2028.216	32.86485	2028.262
35.74651	2028.448	36.08146	2028.456	36.45965	2028.476	40.10226	2029	46.29504	2029.959
46.58597	2030	52.15117	2030.782	53.48677	2030.926	53.90594	2030.923	54.61692	2031
55.38928	2031	56.27757	2031	57.28383	2031	58.27851	2031.331		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.34	.035	-142.34	.02	558.27851	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
-142.3458	27851	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	*	2029.50	* Element	*	Left OB	*	Channel	*	Right OB	*	
* Vel Head (ft)	*	2.51	* Wt. n-Val.	*		*	0.025	*		*	
* W.S. Elev (ft)	*	2026.99	* Reach Len. (ft)	*	25.00	*	25.00	*	25.00	*	
* Crit W.S. (ft)	*	2027.83	* Flow Area (sq ft)	*		*	55.49	*		*	
* E.G. Slope (ft/ft)	*	0.035119	* Area (sq ft)	*		*	55.49	*		*	
* Q Total (cfs)	*	706.00	* Flow (cfs)	*		*	706.00	*		*	
* Top Width (ft)	*	44.59	* Top Width (ft)	*		*	44.59	*		*	
* Vel Total (ft/s)	*	12.72	* Avg. Vel. (ft/s)	*		*	12.72	*		*	
* Max Chl Dpth (ft)	*	2.77	* Hydr. Depth (ft)	*		*	1.24	*		*	
* Conv. Total (cfs)	*	3767.4	* Conv. (cfs)	*		*	3767.4	*		*	
* Length Wtd. (ft)	*	25.00	* Wetted Per. (ft)	*		*	45.45	*		*	
* Min Ch El (ft)	*	2024.22	* Shear (lb/sq ft)	*		*	2.68	*		*	
* Alpha	*	1.00	* Stream Power (lb/ft s)	*		*	34.05	*		*	
* Frctn Loss (ft)	*	0.69	* Cum Volume (acre-ft)	*	1.41	*	19.84	*	2.94	*	
* C & E Loss (ft)	*	0.03	* Cum SA (acres)	*	0.91	*	13.46	*	2.75	*	

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1825

INPUT
Description:
Station Elevation Data num= 146

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.346	2037	-142.343	2037	-140.8612	2036.687	-140.7492	2036.678	-138.736	2036
-136.7172	2035.617	-134.752	2035.282	-134.215	2035.14	-133.987	2035	-130.5522	2034.434

-127.978   2034-123.8892033.319 -122.12   2033-121.6532032.914-116.571   2032
-113.2842031.401-110.912   2031-107.8942030.436-105.458   2030-102.9962029.508
-100.249   2029-97.87232028.501-95.0661   2028-91.43572027.342-89.2095   2027
-88.40532026.899-87.44142026.824 -86.7312026.806-86.2092 2026.83-85.27472026.954
-84.8156   2027-84.15172027.059-83.10792027.085-82.6917 2027.07-82.37862027.038
-82.2057   2027-81.10262026.396-80.3731   2026-79.15932025.308-78.5805   2025
-77.13282024.154-76.8628   2024-76.61772023.861-74.7197   2023-69.80062022.493
-68.84162022.479 -66.773 2022.47-65.86032022.395-65.39522022.363 -64.932022.343
-64.21952022.324 -63.122 2022.3-62.68362022.295-62.36882022.294-60.45142022.312
 -59.5512022.328-58.95832022.344 -57.7652022.385-57.18912022.409 -55.9352022.511
-54.41712022.645-53.08232022.848-52.3633 2022.93-52.23022022.935-52.06022022.944
-51.3094   2023-48.96742023.123-47.61552023.219-46.69492023.251-45.0553   2023
-43.2207   2023-42.9609   2023-42.0391   2023-41.9048   2023-41.4294   2023
 -41.063   2023-40.9222   2023-36.90882023.286-34.79362023.281-33.90112023.293
-32.46462023.335-31.50962023.339-27.35042023.317-26.2182 2023.32-25.54522023.103
-25.31912023.078-24.7231 2023.05-24.64732023.049 -24.5522023.047-24.43622023.051
-23.21362023.007-22.9393   2023-21.8334   2023-21.6915   2023-17.3873   2023
-15.8946   2023-15.2674   2023-11.7332   2023-10.2854   2023-7.836162023.458
-7.772552023.465-6.655532023.693-6.500892023.682 -2.128   2024   02023.919
3.7259712023.777 4.920072023.8225.7448092023.8836.774657   20246.8820862024.031
9.499689   202510.93743 2025.611.778372025.82412.27904   202613.047092026.262
14.299132026.71815.01026   202716.104642027.15816.662172027.21817.619642027.281
17.929332027.31118.094092027.352 20.76412027.32220.777582027.27120.896662027.223
21.540692027.219 21.80062027.21321.945962027.20321.998172027.19222.655742027.183
24.845032027.30129.943272027.56531.23188 2027.6232.200422027.65633.128332027.679
37.86465   202838.620252028.12143.56652   202945.086462029.28449.03102   2030
 51.03332030.37755.00216   203157.26827   203157.74985   203158.304152030.956
58.305152030.956

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.346   .035-142.346   .02558.30515   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.34658.30515   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2027.76 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   4.20 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2023.56 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2024.39 * Flow Area (sq ft)   *   *   42.92 *   *
* E.G. Slope (ft/ft)   *0.144048 * Area (sq ft)   *   *   42.92 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   68.62 * Top Width (ft)   *   *   68.62 *   *
* Vel Total (ft/s)   *   16.45 * Avg. Vel. (ft/s)   *   *   16.45 *   *
* Max Chl Dpth (ft)   *   1.26 * Hydr. Depth (ft)   *   *   0.63 *   *
* Conv. Total (cfs)   * 1860.2 * Conv. (cfs)   *   * 1860.2 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   68.93 *   *
* Min Ch El (ft)   * 2022.29 * Shear (lb/sq ft)   *   *   5.60 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   92.11 *   *
* Frctn Loss (ft)   *   1.57 * Cum Volume (acre-ft)   *   1.41 *   19.81 *   2.94 *
* C & E Loss (ft)   *   0.17 * Cum SA (acres)   *   0.91 *   13.43 *   2.75 *
****

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1850

INPUT
Description:
Station Elevation Data   num=   139
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.353 2036.23-142.329 2036.23-142.3052036.232-141.618   2036-139.4992035.598
 -138.242035.433-135.498   2035 -132.142034.248-130.892   2034-130.3962033.909
-125.169   2033-119.4822032.012-119.415   2032-119.3182031.982 -113.45   2031
-110.9612030.544-107.825   2030 -104.792029.371 -103.02   2029-100.9042028.559
-98.0777   2028-93.69822027.129-93.0442   2027-92.32362026.869-91.42162026.683
-88.4293   2026-85.60632025.258-84.7138   2025-83.08042024.529-81.0774   2024
-78.90692023.003-78.8985   2023-77.71462022.034-77.6412   2022-76.63872021.665
-76.30762021.547-75.70282021.307 -75.046   2021-73.1633 2020.36-72.0755   2020
-71.91592019.975-70.70122019.824-70.23812019.821-54.8486 2019.79-53.30952019.927
-52.4172   2020 -49.9952020.367 -47.9942020.661 -47.6592020.697-47.25682020.721
-46.97932020.751 -45.799   2021-43.3824 2021.43 -40.0842021.913-39.75712021.964
-39.62172021.984-39.4608   2022-35.17622022.423-34.94062022.445-34.77352022.456
-34.51022022.459-33.29972022.604-30.0896   2023-26.73722022.604-26.21452022.586
-26.15692022.579-21.86252022.551 -21.5782022.638 -20.9382022.735-19.42362022.899
-18.5845   2023-16.7141   2023 -15.305   2023-13.4352   2023-12.8303   2023
-12.2076   2023 -11.862   2023-9.45262   2023-9.36931   2023 -8.9138   2023
-8.20337   2023-7.71543   2023-6.133232022.982-5.927762022.961-5.908162022.826
       02022.8443.2167412022.8545.779499   20236.9624712023.441 8.0614   2024
8.8175962024.448 9.6935   2025 12.5451 2025.9812.59951   202612.60327   2026
12.613522026.00413.086982026.06813.839222026.13115.921892026.23718.243382026.316
 18.54912026.30118.857922026.29518.983842026.28719.086952026.27319.229862026.237

19.264972026.22219.337912026.21219.538182026.22119.806592026.22920.242582026.235
22.311392026.25122.461882026.25422.670432026.26324.122382026.33825.814062026.418
27.86436 2026.5232.797472026.78434.834392026.90536.32972   202736.957042027.118
41.87353   2028 43.04582028.22543.926432028.39946.59165   202949.504912029.698
50.84414   203051.805892030.20851.890192030.28752.070832030.32352.734642030.387
54.454072030.52654.74717 2030.5455.015142030.55955.259772030.56655.559382030.542
56.441982030.637 56.44842030.63858.31017 2030.4958.321692030.489

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.353   .035-142.353   .02556.44198   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.35356.44198   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2025.65 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   4.17 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2021.49 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2022.91 * Flow Area (sq ft)   *   *   43.09 *   *
* E.G. Slope (ft/ft)   *0.054427 * Area (sq ft)   *   *   43.09 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   33.14 * Top Width (ft)   *   *   33.14 *   *
* Vel Total (ft/s)   *   16.38 * Avg. Vel. (ft/s)   *   *   16.38 *   *
* Max Chl Dpth (ft)   *   1.69 * Hydr. Depth (ft)   *   *   1.30 *   *
* Conv. Total (cfs)   * 3026.2 * Conv. (cfs)   *   * 3026.2 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   33.55 *   *
* Min Ch El (ft)   * 2019.79 * Shear (lb/sq ft)   *   *   4.36 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   71.51 *   *
* Frctn Loss (ft)   *   2.09 * Cum Volume (acre-ft) *   1.41 *   19.78 *   2.94 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   0.91 *   13.40 *   2.75 *
****

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1875

INPUT
Description:
Station Elevation Data   num=   114
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.3542035.522-142.3232035.523-142.2962035.523-142.2792035.523 -139.79 2035.18
-139.4912035.166-138.9122035.158 -138.62035.143-138.021   2035-135.0212034.456
-132.664   2034-130.9022033.684-126.851   2033-123.9742032.483-121.275   2032
 -119.222031.632-115.584   2031-112.9432030.533-109.967   2030-106.5862029.306
-105.082   2029-100.4482028.049-100.207   2028-99.89342027.932-94.8277   2027
-90.66042026.298-89.1183   2026 -87.5482025.567-85.7555   2025-82.42932024.057
-82.2489   2024-81.78692023.866-78.6457   2023-78.4548 2022.6-76.4992   2022
-75.4138 2021.02-75.3897   2021 -75.347 2020.97-74.2907   2020-70.85132019.736
-63.99222019.551-63.98622019.556-63.92342019.568-61.1132   2019 -59.373   2019
-58.3408   2019 -57.772019.106-53.1368   2020-48.71212020.935-48.4145   2021
-47.85792021.041 -47.2042021.078-44.62682021.146-41.65372021.257-38.3736   2021
-28.62482021.927-28.60582021.921-28.4027 2021.98-28.39332021.979-28.2614   2022
-28.1265   2022-27.5114   2022-25.91242022.117-23.70972022.228-22.88462022.256
-21.11492022.293 -19.513 2022.31-18.4763 2022.31-18.17442022.299-17.60332022.215
-16.5938   2022-16.37432021.964-14.77972021.772-14.58762021.773-11.91942021.517
-11.61242021.483-11.17472021.453-11.10712021.469-11.08252021.496-10.75132021.525
-6.91009 2021.69-6.39531 2021.71-4.501992021.811-1.64792   2022-1.578822022.008
       02022.211 .3577282022.2574.752805   2023 6.629512023.7646.9497462023.802
7.629095   20248.2725932024.2269.7893882024.83610.079822024.95910.17996   2025
22.827582025.73227.45249   202627.983712026.049 30.43982026.24733.621232026.493
35.796442026.676 38.3512   202739.838242027.21645.26952   202848.077782028.419
 51.9215   2029 56.58992029.73456.623332029.73957.972012029.99757.98821   2030
58.236952030.02758.254182030.029 58.31622030.02458.319152030.023

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.354   .035-142.354   .02558.31915   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.35458.31915   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2024.05 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   2.49 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2021.56 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2022.36 * Flow Area (sq ft)   *   *   55.79 *   *
* E.G. Slope (ft/ft)   *0.036056 * Area (sq ft)   *   *   55.79 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   46.06 * Top Width (ft)   *   *   46.06 *   *
* Vel Total (ft/s)   *   12.65 * Avg. Vel. (ft/s)   *   *   12.65 *   *
* Max Chl Dpth (ft)   *   2.56 * Hydr. Depth (ft)   *   *   1.21 *   *
* Conv. Total (cfs)   * 3718.0 * Conv. (cfs)   *   * 3718.0 *   *

* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 47.00	* *
* Min Ch El (ft)	* 2019.00	* Shear (lb/sq ft)	*	* 2.67	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 33.81	* *
* Frctn Loss (ft)	* 1.10	* Cum Volume (acre-ft)	* 1.41	* 19.75	* 2.94 *
* C & E Loss (ft)	* 0.50	* Cum SA (acres)	* 0.91	* 13.37	* 2.75 *

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1900

INPUT
Description:
Station Elevation Data num= 104

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3422035.139	-142.2452035.135	-139.789 2034.64	-138.9912034.548	-134.811	2034				
-130.7172033.197	-129.047	2033	-125.1722032.169	-124.255	2032	-123.8692031.933			
-118.305	2031	-112.722 2030.05	-112.5642030.024	-112.429	2030	-112.2952029.975			
-106.919	2029	-103.2072028.313	-101.597	2028	-98.97282027.492	-96.4613	2027		
-94.19272026.599	-91.1489	2026	-88.78442025.543	-85.9297	2025	-81.15072024.087			
-80.7489	2024	-80.31782023.894	-77.40512023.286	-76.0648	2023	-75.8261 2022.14			
-75.7991	2022	-75.52272021.027	-75.5183	2021	-75.50082020.969	-75.0784	2020		
-72.77272019.764	-72.43242019.739	-71.8528 2019.71	-71.34612019.692	-63.0884	2019				
-54.37982019.951	-54.33932019.953	-53.8642	2020	-49.36442020.657	-49.06522020.665				
-48.80422020.651	-48.63192020.578	-46.5242020.478	-43.47822020.661	-37.4353	2021				
-34.9738	2021	-34.1641	2021	-22.4553	2021	-21.9386	2021	-18.4236	2021
-18.2448	2021	-16.79242021.159	-16.24952021.144	-15.5832021.194	-14.07092021.269				
-13.2103 2021.32	-12.86712021.348	-6.42397	2022	-6.028472022.129	-3.79311	2023			
-3.682962023.158	-3.314422023.222	-1.34252023.324	02023.374	.5750132023.396					
1.2301692023.404	1.5044612023.384	2.8608612023.201	3.8337742023.105	4.3928722023.269					
5.2782322023.127	5.4019172023.172	6.1149082023.227	6.7789682023.481	7.2783282023.677					
7.921235	2024	8.338142024.064	12.70669	2025	14.63522025.083	16.387432025.165			
22.270052025.435	34.58223	202639.040732026.479	43.33145	202747.722692027.804					
48.245392027.907	48.74528	202852.87693	2028.7953.99361	202954.377422029.072					
54.377772029.072	55.030842029.259	55.032852029.259	55.826672029.427	55.828372029.427					
56.177752029.465	56.186282029.466	57.08392029.511	58.23942029.582						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.342	.035	-142.342	.025	58.2394	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.342	58.2394	25	25	25 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2023.02	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.47	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2021.55	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2021.99	* Flow Area (sq ft)	*	* 72.60	* *
* E.G. Slope (ft/ft)	*0.023626	* Area (sq ft)	*	* 72.60	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 64.84	* Top Width (ft)	*	* 64.84	* *
* Vel Total (ft/s)	* 9.72	* Avg. Vel. (ft/s)	*	* 9.72	* *
* Max Chl Dpth (ft)	* 2.55	* Hydr. Depth (ft)	*	* 1.12	* *
* Conv. Total (cfs)	* 4593.2	* Conv. (cfs)	*	* 4593.2	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 66.11	* *
* Min Ch El (ft)	* 2019.00	* Shear (lb/sq ft)	*	* 1.62	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 15.75	* *
* Frctn Loss (ft)	* 0.72	* Cum Volume (acre-ft)	* 1.41	* 19.72	* 2.94 *
* C & E Loss (ft)	* 0.31	* Cum SA (acres)	* 0.91	* 13.34	* 2.75 *

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1925

INPUT
Description:
Station Elevation Data num= 99

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.332035.918	-142.3212035.917	-141.4182035.735	-140.5492035.461	-135.993	2034				
-131.6972033.214	-130.545	2033	-126.1742032.189	-125.18	2032	-120.2112031.075			
-119.818	2031	-119.6892030.976	-114.526	2030	-111.6682029.462	-109.8672029.113			
-109.233	2029	-107.9422028.744	-104.04	2028	-102.2552027.653	-98.8772	2027		
-95.7152026.367	-93.7497	2026	-90.75212025.396	-88.722	2025	-86.4608 2024.56			
-83.3346	2024	-79.68942023.357	-77.3052	2023	-77.23022022.634	-76.8767	2022		

-76.68132021.517-76.4292   2021-76.08122020.137-75.9894   2020 -75.452019.859
 -75.2742019.793-75.23732019.767-74.59322019.556-72.7621   2019-72.57262018.981
-71.1134   2019-62.8437   2019-52.66572019.759-49.5726   2020-48.62642020.043
-48.44472020.046-45.35332020.161-45.04422020.165-40.49762020.351-38.39562020.428
-28.33582020.481-27.71852020.433-27.00392020.414-26.55852020.417-26.25822020.414
-25.93362020.394-25.27062020.418-25.23712020.444-25.08252020.457-24.78692020.469
-24.39362020.479-20.31112020.387-19.61392020.337-15.7669   2020-9.23745   2020
 -7.8374   2020-7.55332   2020-7.34061   2020-6.02456   2020-5.78771   2020
-5.493192020.027-5.335542020.056-2.56035 2020.51-.6060432020.879-.127735   2021
      02021.0154.4880762021.5587.902814 2021.91 7.932062021.8967.9922842021.895
8.0471252021.9098.157803   20228.2336852022.0739.253572   20239.7799132023.462
10.24712   202416.008542024.60921.45665   2025 23.56062025.09236.79843   2026
39.001882026.32743.34631   202745.61799 2027.3549.84865   202852.161982028.456
55.599492028.96855.80473   202955.80632   202958.159642029.145

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
 -142.33   .035 -142.33   .02558.15964   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -142.3358.15964   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2022.34 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.28 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2022.05 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2021.33 * Flow Area (sq ft)   *   * 165.71 *   *
* E.G. Slope (ft/ft)   *0.002172 * Area (sq ft)   *   * 165.71 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   85.12 * Top Width (ft)   *   *   85.12 *   *
* Vel Total (ft/s)   *   4.26 * Avg. Vel. (ft/s)   *   *   4.26 *   *
* Max Chl Dpth (ft)   *   3.07 * Hydr. Depth (ft)   *   *   1.95 *   *
* Conv. Total (cfs)   * 15147.2 * Conv. (cfs)   *   * 15147.2 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   86.89 *   *
* Min Ch El (ft)   * 2018.98 * Shear (lb/sq ft)   *   *   0.26 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   1.10 *   *
* Frctn Loss (ft)   *   0.05 * Cum Volume (acre-ft) *   1.41 *   19.65 *   2.94 *
* C & E Loss (ft)   *   0.00 * Cum SA (acres)   *   0.91 *   13.30 *   2.75 *
****

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1950

INPUT
Description:
Station Elevation Data   num=   106
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.3192034.714-142.2472034.717-140.382   2034-135.212 2033.2-134.006   2033
-129.8532032.285-128.7812032.118-128.144   2032 -126.642031.723-122.622   2031
-119.1262030.361-117.152   2030-112.6132029.167-111.691   2029-111.1922028.906
-106.261   2028-102.2122027.235 -100.92   2027 -96.5762026.176-95.6492   2026
-94.3431 2025.74-90.2731   2025-88.68162024.663-84.9651   2024 -81.0962023.449
-77.8634   2023-77.46672022.774 -76.319   2022-75.97252021.442-75.6107   2021
-75.42252020.502 -74.986   2020-73.43132019.623-70.9961   2019-69.8298 2018.89
-68.18812018.677-67.65432018.632-66.10152018.548-65.83542018.528-65.48642018.471
-64.48582018.371-60.85162018.418-60.62932018.467-60.54862018.643-59.98732018.742
-58.2585   2019-49.71582019.899-48.4783   2020-42.27912020.417-39.82582020.564
-39.31832020.593-38.30112020.665 -37.9442020.698-32.3848 2020.64 -32.1232020.662
-31.74582020.674-31.14382020.678-30.40792020.673-29.66412020.661-29.02192020.642
-28.44442020.613-27.83582020.568-23.77512020.186-23.53322020.175-22.68342020.124
-22.28762020.091-21.53062020.085-19.45132020.106-17.88332020.083-15.55482020.002
-15.4986   2020-12.4413   2020-5.07057   2020-3.360322020.279-.604521   2021
       0   2021 .280092   2021 .567611   20212.095741   20213.879506   2021
7.059446   20217.3702862021.2828.404664   20229.1566572022.5069.749907   2023
11.205852023.82411.40346   202415.145092024.21619.148282024.41925.708922024.748
30.09716   202531.329712025.11240.21735   202641.715442026.275 45.6277   2027
46.670362027.19350.91859   202853.345152028.379 53.38422028.38355.320532028.566
55.342492028.56855.914512028.60655.924022028.60756.132072028.62957.351522028.808
58.092112028.917

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.319   .035-142.319   .02558.09211   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.31958.09211   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2022.28 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.27 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2022.01 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 168.86 *   *
* E.G. Slope (ft/ft)   *0.002034 * Area (sq ft)   *   * 168.86 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   84.75 * Top Width (ft)   *   *   84.75 *   *

```
* Vel Total (ft/s)       *    4.18  * Avg. Vel. (ft/s)       *          *    4.18  *          *
* Max Chl Dpth (ft)      *    3.64  * Hydr. Depth (ft)       *          *    1.99  *          *
* Conv. Total (cfs)      * 15652.6  * Conv. (cfs)            *          * 15652.6  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   86.70  *          *
* Min Ch El (ft)         * 2018.37  * Shear (lb/sq ft)       *          *    0.25  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.03  *          *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   *    1.41  *   19.55  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)         *    0.91  *   13.25  *    2.75  *
*****************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1975

INPUT
Description:
Station Elevation Data    num=     100
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************
-142.3072033.823-142.2872033.823-142.1952033.823 -140.412033.668-138.7642033.512
 -137.582033.439-136.9242033.378-134.244    2033-131.0562032.356-129.126    2032
-128.0822031.807-123.838    2031 -122.412030.737 -118.52    2030-116.9132029.703
-113.158    2029-110.4372028.488-107.907    2028-102.8732027.018-102.776    2027
-98.58012026.196-97.5571    2026 -97.5192025.993 -92.114    2025-88.32632024.331
-86.5166    2024-85.18852023.769-81.1746    2023-76.10932022.215-74.2117    2022
-70.25262021.476 -68.027    2021-66.17872020.316-65.4241    2020-65.09992019.865
-62.7318    2019-59.50242018.442-57.8722    2018-56.8022    2018-55.3406    2018
-54.89572018.091-49.5438    2019-47.19852019.537-47.04892019.537-45.8876    2020
-42.63182020.255-42.10182020.286 -41.1782020.323-40.3662 2020.34-39.30432020.352
-37.23362020.358-35.99082020.343-35.71932020.346-35.60372020.343-34.8957 2020.37
-28.5452    2020-12.36412020.684-11.56932020.703-10.99582020.719-9.573452020.754
-7.786232020.812-6.679182020.846-6.308122020.855-5.980052020.862-4.563142020.887
 -4.4013 2020.89-4.287422020.893-4.226332020.894-4.142162020.892-4.040622020.892
-3.676362020.891-3.352082020.886-3.231222020.885-3.131342020.887-2.867582020.891
-2.637982020.875       0 2020.883.8602392020.8886.623309    20216.9396092021.262
8.138368    20229.475868 2022.739.929945    202311.081262023.25213.761482023.562
14.566582023.66616.81291    202423.605882024.35835.60689    202537.102062025.272
 40.20622025.74941.449542025.94641.78279    202642.436252026.10847.30086    2027
52.178892027.975 52.2814    202852.811222028.05552.918532028.07158.08537 2028.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-142.307    .035-142.307    .02558.08537    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.30758.08537               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2022.14  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.71  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2021.44  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2021.44  * Flow Area (sq ft)     *          *  104.71  *          *
* E.G. Slope (ft/ft)     *0.008725  * Area (sq ft)          *          *  104.71  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   77.29  * Top Width (ft)        *          *   77.29  *          *
* Vel Total (ft/s)       *    6.74  * Avg. Vel. (ft/s)      *          *    6.74  *          *
* Max Chl Dpth (ft)      *    3.44  * Hydr. Depth (ft)      *          *    1.35  *          *
* Conv. Total (cfs)      *  7558.1  * Conv. (cfs)           *          *  7558.1  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   78.23  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)      *          *    0.73  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.92  *          *
* Frctn Loss (ft)        *    0.22  * Cum Volume (acre-ft)   *    1.41  *   19.47  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.91  *   13.20  *    2.75  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2000

INPUT
Description:
Station Elevation Data    num=      90
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************
-142.2952033.469-142.2352033.468-142.1832033.468-136.8292033.004-136.785    2033
-136.6742032.982 -135.492032.792-130.521    2032-130.1742031.939-124.291    2031
-121.1182030.411-119.068    2030-116.3452029.466-114.058    2029-112.9112028.773
-109.072    2028-105.2652027.292-103.711    2027-101.7392026.631-98.3498    2026
-93.73642025.138-92.9889    2025-91.93932024.804-87.6703    2024-85.02562023.508
-82.1189    2023-81.42122022.869-79.31032022.531-76.1065    2022-73.25212021.592
```

-71.80042021.422-69.73332021.135-67.6208   2021-65.03392020.871-57.8604   2020
-56.62782019.099-56.5199   2019-56.35632018.874 -55.022   2018-47.6472   2018
-46.5153   2018-46.05012018.099-44.6279 2018.35 -43.1712018.578-41.1827   2019
 -30.3792019.869-29.04312019.944-28.2975   2020-27.91822020.011-27.35272020.016
-26.57362020.001-25.63362020.003 -24.698   2020-22.23522019.989-19.43782019.938
-18.47372019.931 -17.5592019.947-16.61822019.983-16.2897   2020-9.345542020.304
-6.513662020.416-4.032482020.494-1.657822020.547   02020.5724.2023892020.638
6.671445   20218.0115262021.7618.388204   20229.1033222022.42910.05721   2023
11.479932023.284 16.272   202424.012212024.32533.524812024.52338.32729   2025
 41.6044 2025.6443.52592   202646.635812026.58748.59024   202749.364512027.156
53.22828   202854.35386   202854.35534   202854.528922028.25855.211782028.365
55.366542028.38956.658792028.54956.936162028.58357.274322028.62558.078632028.743

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.295   .035-142.295   .02558.07863   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.29558.07863   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2021.88 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.86 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2021.02 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2021.15 * Flow Area (sq ft)   *   *   94.69 *   *
* E.G. Slope (ft/ft)   *0.011629 * Area (sq ft)   *   *   94.69 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   74.61 * Top Width (ft)   *   *   74.61 *   *
* Vel Total (ft/s)   *   7.46 * Avg. Vel. (ft/s)   *   *   7.46 *   *
* Max Chl Dpth (ft)   *   3.02 * Hydr. Depth (ft)   *   *   1.27 *   *
* Conv. Total (cfs)   * 6546.8 * Conv. (cfs)   *   * 6546.8 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   75.48 *   *
* Min Ch El (ft)   * 2018.00 * Shear (lb/sq ft)   *   *   0.91 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   6.79 *   *
* Frctn Loss (ft)   *   0.25 * Cum Volume (acre-ft) *   1.41 *   19.42 *   2.94 *
* C & E Loss (ft)   *   0.02 * Cum SA (acres)   *   0.91 *   13.16 *   2.75 *
****

Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2025

INPUT
Description:
Station Elevation Data   num=   93
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.2842033.114-142.1842033.113-142.1712033.113-140.864   2033-139.326   2033
-138.926   2033-137.812   2033-135.918   2033-135.769   2033-134.8392032.814
-134.3942032.754-133.9572032.761-131.5382032.287 -131.382032.267-130.207   2032
-126.8612031.293-125.504   2031-124.1112030.719 -120.65   2030-116.5912029.197
-115.516   2029-114.8592028.874-110.541   2028-108.0852027.529-105.245   2027
-101.4172026.264-100.023   2026-99.56282025.914-94.7671   2025-92.89922024.651
-89.5396   2024-84.84522023.164-83.8673   2023-81.69932022.584-78.0974   2022
-74.94522021.444-72.1843   2021-67.28682020.635-58.9935   2020-56.40272019.141
-56.0012   2019-55.72772018.939 -55.6392018.924-49.1999   2018-42.8266   2018
-40.3401   2018-36.50052018.622-34.3783   2019-33.38962019.035-33.25212019.036
 -32.0842019.081-30.83852019.121-26.71482019.229-23.24872019.254-22.74042019.261
-21.89862019.281-19.68552019.327-18.42152019.355-16.82572019.395-14.96032019.445
-10.7345 2019.56-8.326612019.621   02019.8455.750599   20206.5762372020.735
6.922939   20217.2384692021.447 7.96012   2022 8.450932022.4239.237174   2023
15.449522023.79616.554172023.84316.951922023.87117.56357 2023.87 18.4762023.928
19.157022023.91719.692692023.89619.969252023.86724.483842023.69729.93166   2024
 33.48492024.46736.278692024.72838.77658   202542.495152025.41646.86977   2026
 50.05182026.52151.88755   202754.001722027.43954.065452027.43255.248412027.697
57.731932028.22758.016492028.28858.098842028.314

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.284   .035-142.284   .02558.09884   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.28458.09884   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2021.50 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.16 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2020.34 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2020.64 * Flow Area (sq ft)   *   *   81.59 *   *
* E.G. Slope (ft/ft)   *0.017271 * Area (sq ft)   *   *   81.59 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   69.51 * Top Width (ft)   *   *   69.51 *   *
* Vel Total (ft/s)   *   8.65 * Avg. Vel. (ft/s)   *   *   8.65 *   *
* Max Chl Dpth (ft)   *   2.34 * Hydr. Depth (ft)   *   *   1.17 *   *
* Conv. Total (cfs)   * 5372.1 * Conv. (cfs)   *   * 5372.1 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   69.98 *   *
* Min Ch El (ft)   * 2018.00 * Shear (lb/sq ft)   *   *   1.26 *   *

* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 10.88	*	*		
* Frctn Loss (ft)	* 0.35	* Cum Volume (acre-ft)	* 1.41	* 19.37	* 2.94	*		
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	* 0.91	* 13.12	* 2.75	*		

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2050

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.272	2033.063	-138.638	2033	-137.801	2032.831	-137.562	2032.809	-137.158	2032.764
-136.331	2032.609	-136.209	2032.615	-135.265	2032.48	-134.845	2032.445	-132.128	2032
-131.621	2031.91	-130.879	2031.77	-128.019	2031.21	-127.031	2031	-121.998	2030.008
-121.961	2030	-121.932	2029.994	-116.997	2029	-112.732	2028.141	-111.982	2028
-111.474	2027.903	-106.817	2027	-101.772	2026.041	-101.564	2026	-99.157	2025.562
-96.028	2025	-91.029	2024.111	-90.4256	2024	-89.7114	2023.87	-84.8313	2023
-81.6832	2022.436	-79.3977	2022	-77.7751	2021.717	-76.6218	2021.419	-74.8177	2021
-72.0496	2020.217	-71.2754	2020	-66.6783	2019.664	-62.1443	2019.346	-59.8309	2019.19
-57.6054	2019	-56.6567	2018.933	-55.0376	2018.79	-54.7566	2018.735	-52.5799	2018.609
-50.1612	2018.626	-50.0193	2018.656	-49.6402	2018.686	-48.6155	2018.734	-48.1139	2018.763
-48.0472	2018.793	-47.9265	2018.808	-47.5749	2018.82	-47.1029	2018.811	-46.8561	2018.811
-44.1295	2018.742	-37.5284	2019	-27.1824	2018.475	-25.8514	2018.583	-25.1237	2018.664
-24.2729	2018.888	-23.6724	2019	-14.2964	2019.344	-5.00044	2019.679	0	2019.86
3.8516	2020	4.773934	2020.51	5.84529	2020	16.6352	112021.4	127.7441	12 2022
11.08488	2022.386	13.13488	2022.484	15.0447	2022.593	21.28886	2023	26.17433	2023.259
33.09933	2023.675	35.74115	2023.831	38.34481	2024	41.52538	2024.544	44.05	2025
45.25574	2025.179	49.11367	2026	50.97117	2026.355	54.20389	2027	55.29242	2027.345
56.0517	2027.486	57.4655	2027.755	58.12719	2027.803				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.272	.035	-142.272	.025	58.12719	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
-142.272	58.12719		25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2021.28	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.54	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2020.74	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2020.56	* Flow Area (sq ft)	*	* 119.32	* *
* E.G. Slope (ft/ft)	*0.005775	* Area (sq ft)	*	* 119.32	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 79.16	* Top Width (ft)	*	* 79.16	* *
* Vel Total (ft/s)	* 5.92	* Avg. Vel. (ft/s)	*	* 5.92	* *
* Max Chl Dpth (ft)	* 2.26	* Hydr. Depth (ft)	*	* 1.51	* *
* Conv. Total (cfs)	* 9289.9	* Conv. (cfs)	*	* 9289.9	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 79.60	* *
* Min Ch El (ft)	* 2018.48	* Shear (lb/sq ft)	*	* 0.54	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 3.20	* *
* Frctn Loss (ft)	* 0.17	* Cum Volume (acre-ft)	* 1.41	* 19.31	* 2.94 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.91	* 13.08	* 2.75 *

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2075

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.262	032.806	-142.254	2032.806	-142.149	2032.811	-138.275	2032.253	-136.836	2032
-135.225	2031.693	-131.807	2031	-129.792	2030.612	-126.777	2030	-123.696	2029.434
-121.176	2029	-117.347	2028.363	-115.092	2028	-114.484	2027.899	-108.928	2027
-105.572	026.354	-103.657	2026	-99.8083	2025.24	-98.5729	2025	-93.7925	2024.057
-93.5045	2024	-92.4962	2023.802	-88.293	2023	-83.4993	2022.151	-82.5763	2022
-81.3586	2021.821	-75.765	2021	-71.8192	2020.08	-70.4232	2020	-67.9162	2019.662
-66.0151	2019.486	-65.5868	2019.463	-64.4294	2019	-64.2275	2019	-63.1535	2019
-62.8411	2019	-58.0176	2019	-57.11	2019	-56.9117	2019	-51.8264	2019
-49.4899	2019	-49.2766	2019	-45.5839	2019	-37.0808	2019	-29.6754	2018.437
-24.9925	2018	-23.037	2018	-22.004	2018	-20.7727	2018	-14.9888	2018.925
-14.4841	2019	-7.067192	2019.297	0	2019.771	3.40929	2020	5.118398	2020.85
5.413903	2021	7.158574	2021.999	7.160525	2022	7.184076	2022.001	7.216157	2022.003
7.409994	2022.011	29.99083	2023	33.89085	2023.446	38.32705	2024	42.07511	2024.652
44.17972	2025	47.10695	2025.495	49.96383	2026	52.26138	2026.527	55.43693	2027
55.87979	2027	55.88921	2027	56.94963	2027	56.97376	2027	58.15554	2027.095

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.26	.035	-142.26	.025	58.15554	.035

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.2658.15554               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2021.09  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.69  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2020.41  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2020.41  * Flow Area (sq ft)     *          *  106.15  *          *
* E.G. Slope (ft/ft)     *0.008280  * Area (sq ft)          *          *  106.15  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   77.43  * Top Width (ft)        *          *   77.43  *          *
* Vel Total (ft/s)       *    6.65  * Avg. Vel. (ft/s)      *          *    6.65  *          *
* Max Chl Dpth (ft)      *    2.40  * Hydr. Depth (ft)      *          *    1.37  *          *
* Conv. Total (cfs)      *  7758.9  * Conv. (cfs)           *          *  7758.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   77.84  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)      *          *    0.70  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.69  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *    1.41  *   19.24  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.91  *   13.03  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2100

INPUT
Description:
Station Elevation Data    num=     102
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************
-142.249 2032.12-142.222 2032.12-142.2062032.121-141.369    2032-138.541 2031.63
-136.5732031.443-133.5052031.096-132.775    2031-132.262 2030.92-127.466    2030
-127.1372029.937-122.324    2029 -121.142028.774-117.085    2028-112.1452027.123
-111.478    2027-110.6522026.847-105.875    2026-103.9762025.652-100.525    2025
-96.96722024.318-95.2575    2024-91.2183 2023.23-89.9847    2023-86.58132022.341
-84.7706    2022 -83.3792021.727-79.6322    2021-76.12112020.309-75.11462020.117
-74.4189    2020-72.80062019.672-69.4768    2019-68.87522018.933-65.79182018.783
 -64.4182018.736-58.89162018.742-58.84272018.751-58.34252018.766-57.68662018.774
 -53.6962018.807-52.01682018.826-49.13662018.867-47.85472018.888-47.23352018.894
-46.30312018.918-44.0797    2019-38.8833    2019-37.0414    2019  -35.15    2019
-33.7366    2019 -21.0682018.248-20.63312018.225-20.36812018.215-17.0207    2018
-16.68672017.937-16.66672017.776-16.01122017.664-16.00492017.623 -13.0582017.573
-12.4696 2017.62-9.801762017.793-9.307572017.877-8.02552    2018-3.35264 2018.96
 -3.1123    2019-2.849762019.086-.398428    2020       02020.1461.0472492020.529
 2.56771    20215.2959992021.7795.9376352021.9136.1385432021.9636.6002912021.976
7.3546812021.6157.8525572021.6069.1966742021.75311.07221    202215.26649 2022.15
36.20401    202338.155342023.338 41.6977    202444.620222024.562  47.014    2025
49.378832025.46152.08158    202653.663012026.31854.285682026.23854.298582026.241
55.569362026.496 55.58352026.49756.112892026.54656.15162 2026.55 56.94222026.634
 56.95062026.63757.081572026.67657.249762026.69457.894862026.76557.921222026.766
57.983252026.76858.183892026.764

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-142.249    .035-142.249    .02558.18389    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.24958.18389               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2020.83  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.87  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2019.97  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2020.11  * Flow Area (sq ft)     *          *   94.58  *          *
* E.G. Slope (ft/ft)     *0.011453  * Area (sq ft)          *          *   94.58  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   73.77  * Top Width (ft)        *          *   73.77  *          *
* Vel Total (ft/s)       *    7.46  * Avg. Vel. (ft/s)      *          *    7.46  *          *
* Max Chl Dpth (ft)      *    2.39  * Hydr. Depth (ft)      *          *    1.28  *          *
* Conv. Total (cfs)      *  6597.0  * Conv. (cfs)           *          *  6597.0  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   74.40  *          *
* Min Ch El (ft)         * 2017.57  * Shear (lb/sq ft)      *          *    0.91  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.79  *          *
* Frctn Loss (ft)        *    0.24  * Cum Volume (acre-ft)  *    1.41  *   19.19  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.91  *   12.99  *    2.75  *
*************************************************************************************************

Note:    Program found supercritical flow starting at this cross section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
```

REACH: 1 RS: -2125

INPUT
Description:
Station Elevation Data num= 155

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.2362031.701	-141.8822031.665	-141.3882031.615	-139.9352031.494	-139.02	2031.4				
-138.739	2031.34	-138.4572031.165	-138.2092031.118	-137.7392031.088	-136.4922031.034				
-136.121	2031	-134.8972030.792	-130.413	2030	-126.379	2029.24	-125.134	2029	
-123.856	2028.77	-119.6	2028	-115.1992027.223	-114.269	2027.07	-113.876	2027	
-108.2832026.005	-108.257	2026	-108.2452025.998	-108.1672025.983	-102.837	2025			
-101.8652024.821	-97.3891	2024	-94.64022023.494	-91.9903	2023	-87.24122022.132			
-86.4949	2022	-85.06772021.766	-80.5431	2021	-76.6426	2020.36	-74.5226	2020	
-72.09962019.608	-68.6203	2019	-67.08782018.875	-65.96112018.723	-65.04962018.636				
-63.98782018.495	-63.51162018.441	-62.05232018.371	-61.40222018.348	-58.78672018.351					
-58.76362018.356	-58.52682018.363	-58.21642018.366	-56.32782018.382	-55.53312018.391					
-54.17	2018.41	-53.5633	2018.42	-53.26932018.423	-52.8292018.434	-50.91572018.505			
-50.26062018.524	-49.5852018.534	-46.35892018.562	-44.07392018.574	-43.44442018.582					
-41.42882018.624	-41.0969	2018.63	-40.41772018.642	-39.31032018.655	-38.3124	2018.67			
-36.59882018.703	-35.87672018.712	-35.1004	2018.72	-34.48162018.724	-34.14572018.729				
-33.83482018.736	-33.46932018.747	-33.22232018.753	-32.7582	2018.76	-32.2829	2018.77			
-31.74862018.778	-31.50512018.783	-31.45392018.786	-31.39032018.796	-31.2952018.802					
-31.08272018.808	-30.72592018.813	-29.87742018.823	-29.54532018.829	-29.30872018.834					
-29.0862	2018.84	-28.78272018.837	-28.71582018.834	-28.53352018.827	-28.24072018.818				
-27.86872018.809	-27.47132018.803	-26.7752018.794	-26.52562018.789	-26.34232018.783					
-26.14872018.774	-25.71162018.761	-24.76992018.728	-24.19792018.699	-23.59822018.657					
-21.89142018.573	-20.16382018.455	-12.5521	2018	-11.65772017.849	-11.62432017.846				
-8.595732017.374	-8.08368	2017.28	-7.77433	2017.21	-7.566462017.147	-7.452622017.124			
-7.30332017.106	-7.244592017.095	-7.242562017.079	-7.175912017.068	-7.175272017.063					
-6.875612017.058	-6.815772017.063	-6.544492017.081	-6.494232017.089	-6.159872017.121					
-6.030722017.138	-5.861422017.169	-5.53555	2017.21	-3.295812017.599	-.867356	2018			
02018.2841.515174	2018.781.995361	20192.5956932019.3583.653104	2020						
4.073206	2020.225.388734	20218.481772	2021.59.9164242021.63511.985672021.859						
13.94001	202217.634922022.13321.234452022.27337.12452	202337.375912023.046							
42.73	202445.625762024.53248.24586	202552.667632025.85553.43669	2026						
53.58542026.01453.586362026.01455.385872026.20655.388592026.20755.688462026.296									
55.762212026.30457.454192026.48957.47104	2026.4957.646092026.49658.212242026.485								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.236	.035	-142.236	.02558.21224	.035	

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-142.23658.21224		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2020.55	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.82	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2019.73	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2019.84	* Flow Area (sq ft)	*	* 97.15	* *
* E.G. Slope (ft/ft)	*0.010910	* Area (sq ft)	*	* 97.15	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 76.03	* Top Width (ft)	*	* 76.03	* *
* Vel Total (ft/s)	* 7.27	* Avg. Vel. (ft/s)	*	* 7.27	* *
* Max Chl Dpth (ft)	* 2.67	* Hydr. Depth (ft)	*	* 1.28	* *
* Conv. Total (cfs)	* 6759.2	* Conv. (cfs)	*	* 6759.2	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 76.70	* *
* Min Ch El (ft)	* 2017.06	* Shear (lb/sq ft)	*	* 0.86	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 6.27	* *
* Frctn Loss (ft)	* 0.28	* Cum Volume (acre-ft)	* 1.41	* 19.13	* 2.94 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.91	* 12.94	* 2.75 *

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2150

INPUT
Description:
Station Elevation Data num= 109

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.2232031.334	-140.5032031.161	-140.3842031.149	-138.603	2031	-133.092030.117				
-132.237	2030	-131.6032029.836	-131.2782029.771	-126.504	2029	-126.4782028.996			
-126.4652028.994	-126.372028.977	-122.6042028.325	-121.0382028.037	-120.829	2028				
-120.6012027.959	-115.37	2027	-111.852026.364	-109.847	2026	-105.8122025.224			
-104.629	2025	-99.89962024.089	-99.4254	2024	-94.28992023.009	-94.2433	2023		
-94.1885	2022.99	-89.0178	2022	-87.8112021.774	-83.2685	2021	-79.15742020.321		
-77.1929	2020	-74.13562019.591	-69.4914	2019	-61.10382018.195	-60.83762018.175			
-60.64562018.164	-59.0162	2018	-57.4306	2018	-55.9971	2018	-54.60732018.017		
-51.76452018.059	-46.88232018.154	-44.8253	2018.18	-42.61352018.201	-40.85072018.214				
-39.89372018.228	-39.00792018.247	-37.96662018.279	-37.26282018.297	-35.94072018.317					
-34.58662018.345	-33.06432018.367	-32.37062018.382	-32.2249	2018.39	-32.04352018.418				
-31.77222018.435	-31.16732018.452	-30.15092018.467	-27.73342018.496	-26.78722018.512					
-26.11312018.527	-25.47942018.544	-24.61472018.536	-24.4242018.526	-23.90482018.507					
-23.07052018.481	-22.01082018.456	-20.87842018.438	-18.89482018.413	-18.18442018.398					
-17.66192018.381	-17.11042018.357	-15.8652	2018.32	-13.18242018.226	-11.55272018.142				
-9.844132018.024	-9.36363	2018	-4.151062017.205	-1.891562017.151	02017.388				
3.537841	2017.834.863621	20185.9789522018.9016.097659	20197.0438482019.789						
7.280115	20207.5551072020.214	8.42141	202111.804972021.54114.809242021.805						

17.49164   202219.873932022.09924.354992022.27734.512782022.86335.081172022.894
35.958752022.94736.83669   202337.585212023.10943.35014   202448.642862024.937
49.04051   202549.405642025.06254.02213   202655.05735   202657.013512026.213
57.020862026.21457.308922026.22457.571562026.21958.195732026.207

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.223   .035-142.223   .02558.19573   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.22358.19573   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2020.30 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.46 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2019.84 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2019.55 * Flow Area (sq ft)   *   * 129.94 *   *
* E.G. Slope (ft/ft)   *0.004668 * Area (sq ft)   *   * 129.94 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   83.07 * Top Width (ft)   *   *   83.07 *   *
* Vel Total (ft/s)   *   5.43 * Avg. Vel. (ft/s)   *   *   5.43 *   *
* Max Chl Dpth (ft)   *   2.69 * Hydr. Depth (ft)   *   *   1.56 *   *
* Conv. Total (cfs)   * 10333.1 * Conv. (cfs)   *   * 10333.1 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   83.96 *   *
* Min Ch El (ft)   * 2017.15 * Shear (lb/sq ft)   *   *   0.45 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   2.45 *   *
* Frctn Loss (ft)   *   0.15 * Cum Volume (acre-ft) *   1.41 *   19.07 *   2.94 *
* C & E Loss (ft)   *   0.02 * Cum SA (acres)   *   0.91 *   12.90 *   2.75 *
****

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2175

INPUT
Description:
Station Elevation Data   num=   108
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
 -142.21 2030.92-141.126 2030.8-141.0752030.794-139.7792030.645-139.7072030.636
-134.652   2030-133.2532029.767-129.105   2029-126.6632028.547-124.2362028.083
-123.834   2028-122.8082027.813-118.483   2027-113.5912026.233-112.351   2026
-111.585 2025.87-106.404   2025-103.9782024.548-101.053   2024-98.53092023.527
-95.7101   2023-91.45522022.216-90.3077   2022-89.20642021.797-87.78962021.536
-84.9139   2021 -81.3712020.368-79.3439   2020-74.43752019.203-73.1087   2019
-72.2887   2019-72.0237   2019-70.5588   2019-64.8174   2019-63.6663   2019
-63.0687   2019-61.6502   2019-55.77632018.465-51.2618 2018.06-50.4827   2018
-49.3652   2018-48.7698   2018-46.4073   2018-34.0875   2018-33.5023   2018
-32.9584   2018-32.6968 2018.04-32.24942018.069-31.25182018.097-29.57582018.121
-25.58952018.169-24.02912018.195-22.91752018.219-21.87262018.248-20.44672018.235
-20.13232018.219-19.27612018.186-17.90032018.144-16.15292018.102-14.28562018.072
-11.01462018.033-9.843172018.008-9.61119   2018-7.588082017.705-2.72204   2017
-1.70887   2017   0   2017 .487735   2017 3.545552017.4576.184544   2018
7.0442022018.4957.698636   20198.9247822019.8129.187682   20209.6280322020.248
10.63052   202116.152782021.52517.782822021.69720.32174   202226.869472022.412
36.75497   202340.101942023.43244.62345   202448.977392024.69750.83465   2025
51.19637 2025.0654.261612025.60555.035112025.75855.908752025.85856.08141 2025.87
56.192922025.87556.231322025.87856.234272025.88756.294352025.90156.394572025.908
56.569822025.91856.662612025.93156.686552025.93756.854082025.94156.871572025.943
56.891432025.94456.910742025.94556.973162025.94557.087242025.94657.087382025.946
57.091262025.94657.241622025.94358.178162025.927

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
 -142.21   .035 -142.21   .02558.17816   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -142.2158.17816   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2020.13 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.65 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2019.48 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2019.48 * Flow Area (sq ft)   *   * 109.32 *   *
* E.G. Slope (ft/ft)   *0.008473 * Area (sq ft)   *   * 109.32 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   84.55 * Top Width (ft)   *   *   84.55 *   *
* Vel Total (ft/s)   *   6.46 * Avg. Vel. (ft/s)   *   *   6.46 *   *
* Max Chl Dpth (ft)   *   2.48 * Hydr. Depth (ft)   *   *   1.29 *   *
* Conv. Total (cfs)   * 7669.7 * Conv. (cfs)   *   * 7669.7 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   85.25 *   *
* Min Ch El (ft)   * 2017.00 * Shear (lb/sq ft)   *   *   0.68 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   4.38 *   *
* Frctn Loss (ft)   *   0.16 * Cum Volume (acre-ft) *   1.41 *   19.00 *   2.94 *
* C & E Loss (ft)   *   0.06 * Cum SA (acres)   *   0.91 *   12.85 *   2.75 *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2200

INPUT
Description:
Station Elevation Data num= 113

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.197	2029.921	-142.171	2029.918	-142.109	2029.912	-142.081	2029.909	-142.025	2029.905
-142.005	2029.904	-141.947	2029.901	-141.927	2029.901	-141.842	2029.899	-141.834	2029.899
-141.807	2029.898	-141.793	2029.896	-141.709	2029.884	-141.687	2029.882	-141.502	2029.871
-141.49	2029.87	-141.377	2029.859	-141.373	2029.858	-141.331	2029.84	-141.325	2029.839
-141.248	2029.826	-141.217	2029.824	-140.564	2029.778	-140.547	2029.776	-140.072	2029.727
-140.055	2029.724	-139.334	2029.629	-139.293	2029.624	-133.578	2029	-132.32	2028.798
-127.033	2028	-124.344	2027.562	-120.804	2027	-118.575	2026.616	-114.919	2026
-110.953	2025.307	-109.177	2025	-104.219	2024.121	-103.568	2024	-98.896	2023.164
-98.0252	2023	-93.2627	2022.121	-92.6172	2022	-91.8938	2021.867	-87.2605	2021
-84.7759	2020.573	-81.3374	2020	-79.4412	2019.683	-75.9064	2019.12	-75.1972	2019
-73.8024	2018.943	-49.5969	2018	-38.6113	2017.727	-35.2053	2017.647	-33.1552	2017.6
-21.0231	2017.562	-20.5596	2017.59	-18.8233	2017.659	-18.1234	2017.709	-17.6478	2017.766
-17.296	2017.88	-16.8734	2017.856	-16.5383	2017.833	-15.8071	2017.776	-15.3483	2017.777
-14.7749	2017.735	-13.0891	2017.63	-12.7882	2017.615	-11.4118	2017.543	-3.72771	2017
0	20171.53	9489	20171.83	3045	20175.39	38542	2017.7	666.4	40764	2018
7.240929	2018.488	.205366	2019	8.649742	2019.214	10.08841	2020	10.82102	2020.371
12.01488	2021	12.81552	2021.433	13.06863	2021.451	13.22504	2021.418	.37162	2022
18.74129	2022	21.717	2022	37.71442	2022.932	38.76264	2023	39.14462	2023.064
40.26403	2023.269	44.11292	2024	46.36293	2024.455	49.08379	2025	49.58236	2025.057
50.72783	2025.136	51.46762	2025.169	51.72235	2025.191	51.74189	2025.254	52.14051	2025.341
52.80539	2025.395	3.968062	2025.456	54.58362	2025.541	54.74243	2025.585	5.85392	2025.61
55.96996	2025.623	56.10167	2025.631	56.22976	2025.633	56.64391	2025.632	57.40076	2025.641
57.40163	2025.641	57.42741	2025.645	8.151622	2025.628				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.197	.035	-142.197	.025	58.15162	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-142.19758.15162 25 25 25 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2019.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.		0.025	
W.S. Elev (ft)	2019.43	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2019.16	Flow Area (sq ft)		131.55	
E.G. Slope (ft/ft)	0.004735	Area (sq ft)		131.55	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	86.93	Top Width (ft)		86.93	
Vel Total (ft/s)	5.37	Avg. Vel. (ft/s)		5.37	
Max Chl Dpth (ft)	2.43	Hydr. Depth (ft)		1.51	
Conv. Total (cfs)	10260.1	Conv. (cfs)		10260.1	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		87.52	
Min Ch El (ft)	2017.00	Shear (lb/sq ft)		0.44	
Alpha	1.00	Stream Power (lb/ft s)		2.38	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	1.41	18.93	2.94
C & E Loss (ft)	0.01	Cum SA (acres)	0.91	12.80	2.75

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2225

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.184	2029.632	-142.089	2029.631	-142.063	2029.626	-141.967	2029.606	-141.927	2029.602
-141.322	2029.535	-141.304	2029.534	-140.879	2029.501	-140.868	2029.501	-140.472	2029.482
-140.461	2029.482	-139.91	2029.471	-139.907	2029.471	-139.737	2029.463	-139.73	2029.462
-139.218	2029.389	-139.208	2029.388	-138.132	2029.324	-138.126	2029.323	-137.473	2029.26
-137.472	2029.259	-137.234	2029.16	-137.233	2029.16	-136.795	2029.086	-136.792	2029.086
-135.579	2029	-132.832	2028.543	-129.206	2028	-123.349	2027.034	-123.127	2027
-123.027	2026.984	-117.024	2026	-111.619	2025.116	-110.957	2025	-109.641	2024.762
-105.315	2024	-102.532	2023.487	-99.9016	2023	-98.005	2022.67	-94.3582	2022
-91.4716	2021.496	-88.7663	2021	-85.7269	2020.467	-83.1311	2020	-78.1804	2019.241
-76.7045	2019	-75.4709	2018.782	-75.3769	2018.782	-75.3517	2018.787	-70.4015	2018.769
-69.4032	2018.732	-66.1184	2018.605	-49.3702	2018	-46.8228	2017.936	-8.21179	2017
-3.25209	2017	0	20171.98	9913	2017	3.686062	2017.411	6.162466	2018
7.165674	2018.527	.998346	20199.52	6755	2019.81	9.84046	2020	10.06349	2020.125
11.69856	2021	20.92476	2021.791	23.42868	2022	24.80558	2022	27.76932	2022
29.48646	2022	30.98551	2022	32.89685	2022	38.50803	2022.804	39.89475	2023
41.06355	2023.174	1.831692	2023.278	46.18979	2024	50.79962	2024.867	51.05591	2024.925

51.40986   2025 52.50462025.15152.798312025.22454.853762025.27955.068352025.303
55.311912025.31855.548772025.32156.31466 2025.3257.714272025.33657.715882025.336
57.763562025.33558.093312025.329

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.184   .035-142.184   .02558.09331   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.18458.09331   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2019.72 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.59 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2019.13 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2019.06 * Flow Area (sq ft)   *   * 114.26 *   *
* E.G. Slope (ft/ft)   *0.007417 * Area (sq ft)   *   * 114.26 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   85.70 * Top Width (ft)   *   *   85.70 *   *
* Vel Total (ft/s)   *   6.18 * Avg. Vel. (ft/s)   *   *   6.18 *   *
* Max Chl Dpth (ft)   *   2.12 * Hydr. Depth (ft)   *   *   1.33 *   *
* Conv. Total (cfs)   * 8197.7 * Conv. (cfs)   *   * 8197.7 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   86.16 *   *
* Min Ch El (ft)   * 2017.00 * Shear (lb/sq ft)   *   *   0.61 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   3.79 *   *
* Frctn Loss (ft)   *   0.20 * Cum Volume (acre-ft) *   1.41 *   18.86 *   2.94 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   0.91 *   12.75 *   2.75 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2250

INPUT
Description:
Station Elevation Data   num=   92
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.1672029.335-142.0562029.334-141.9232029.333-141.909 2029.33-141.7022029.287
-141.6832029.285-140.5322029.159-140.5272029.159-139.7332029.097-139.7312029.097
-138.9962029.063-138.9952029.063 -137.982029.043-137.9792029.043-137.6672029.028
-137.6662029.028 -137.47   2029-134.0092028.463-130.995   2028-129.1532027.703
-124.963   2027-121.8682026.493-118.875   2026-115.9972025.521-112.759   2025
 -110.042024.545-106.724   2024-104.2412023.573-101.151   2023-100.394 2022.86
-95.6329   2022-91.3665 2021.23-90.0544   2021-89.08742020.837 -84.068   2020
-82.28792019.756-76.6235   2019-75.77822018.823-71.8111   2018-68.2355   2018
-65.1095   2018-60.4001   2018-54.0212   2018-52.8088   2018-51.8406   2018
-51.30562017.918-50.89212017.862-47.79672017.398-46.81642017.298-46.04852017.235
-45.39492017.156-44.67972017.146-43.99682017.059-42.63392017.089-41.33582017.173
-39.30082017.247-38.62532017.285-38.52892017.323-27.98392017.356-22.14572017.223
-17.79762017.115-13.3806   2017-12.43782016.815-3.895332016.922-3.847592016.959
-3.58513   2017-.3172932017.525   02017.5722.900259   20185.5582992018.976
5.621325   20195.676773 2019.028.472083   202010.363262020.68211.27952   2021
12.449022021.05222.987472021.48934.05772 2021.9535.26942   202235.68512 2022.06
41.70604   202346.137852023.65248.26303 2023.98 48.3767   202449.835362024.239
54.44552   202554.522162025.00554.86779 2025.01 55.98542025.00758.027782025.031
58.030132025.03158.05532 2025.03

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.167   .035-142.167   .02558.05532   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.16758.05532   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2019.51 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.68 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2018.84 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2018.84 * Flow Area (sq ft)   *   * 106.91 *   *
* E.G. Slope (ft/ft)   *0.008589 * Area (sq ft)   *   * 106.91 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   81.02 * Top Width (ft)   *   *   81.02 *   *
* Vel Total (ft/s)   *   6.60 * Avg. Vel. (ft/s)   *   *   6.60 *   *
* Max Chl Dpth (ft)   *   2.02 * Hydr. Depth (ft)   *   *   1.32 *   *
* Conv. Total (cfs)   * 7618.0 * Conv. (cfs)   *   * 7618.0 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   81.44 *   *
* Min Ch El (ft)   * 2016.82 * Shear (lb/sq ft)   *   *   0.70 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   4.65 *   *
* Frctn Loss (ft)   *   0.16 * Cum Volume (acre-ft) *   1.41 *   18.79 *   2.94 *
* C & E Loss (ft)   *   0.07 * Cum SA (acres)   *   0.91 *   12.70 *   2.75 *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth. This indicates that there
         is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2275

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.145	2029.038	-141.771	2029.034	-141.757	2029.034	-141.756	2029.034	-141.591	2029
-136.922	2028.419	-133.766	2028	-129.931	2027.304	-128.366	2027	-122.852	2026.031
-122.666	2026	-122.563	2025.984	-118.621	2025.416	-116.027	2025.042	-115.734	2025
-110.746	2024.293	-108.775	2024	-103.295	2023.091	-102.767	2023	-101.769	2022.833
-97.0763	2022	-94.5942	2021.581	-91.1153	2021	-85.1733	2020.026	-85.0169	2020
-84.6377	2019.942	-78.562	2019	-76.8946	2018.731	-72.8774	2018	-51.0174	2017.178
-46.2632	2017	-46.0595	2017	-46.0377	2017	-32.8834	2017	-32.6869	2017
-27.3547	2017	-27.1541	2017	-24.8389	2017	-18.7761	2017	-17.9549	2016.93
-16.7565	2016.721	-16.4093	2016.604	-16.0992	2016.536	-15.8676	2016.515	-15.0121	2016.465
-14.7546	2016.44	-14.2622	2016.343	-10.6652	2016.388	-10.6451	2016.404	-10.4707	2016.431
-10.4009	2016.477	-9.32666	2016.698	-8.74903	2016.796	-6.90172	2017	-6.89926	2017
-6.88522	2017.001	0	2017.554	5.559669	2018	6.434736	2018.399	7.717485	2019
8.779147	2019.516	9.930632	2020	11.45848	2020.686	12.15888	2021	16.94313	2021.22
34.38989	2022	36.54712	2022.264	42.94725	2023	46.31195	2023.415	51.17529	2024
52.76844	2024.146	53.41813	2024.221	54.44727	2024.391	54.72517	2024.489	54.8508	2024.5
55.53192	2024.527	56.22262	2024.563	58.09558	2024.676	58.10868	2024.676	58.11952	2024.676
58.12086	2024.676								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.145	.035	-142.145	.025	58.12086	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff	Contr.	Expan.
-142.145	58.12086		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2019.28	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.45	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2018.82	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2018.55	* Flow Area (sq ft)	*	* 130.50	* *
* E.G. Slope (ft/ft)	*0.004693	* Area (sq ft)	*	* 130.50	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 84.78	* Top Width (ft)	*	* 84.78	* *
* Vel Total (ft/s)	* 5.41	* Avg. Vel. (ft/s)	*	* 5.41	* *
* Max Chl Dpth (ft)	* 2.48	* Hydr. Depth (ft)	*	* 1.54	* *
* Conv. Total (cfs)	* 10305.5	* Conv. (cfs)	*	* 10305.5	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 85.22	* *
* Min Ch El (ft)	* 2016.34	* Shear (lb/sq ft)	*	* 0.45	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 2.43	* *
* Frctn Loss (ft)	* 0.12	* Cum Volume (acre-ft)	* 1.41	* 18.73	* 2.94 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.91	* 12.66	* 2.75 *

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2300

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.123	2028.545	-141.918	2028.546	-139.331	2028.411	-138.95	2028.41	-138.634	2028.407
-138.452	2028.399	-134.809	2028.042	-134.438	2028	-131.374	2027.427	-129.119	2027
-125.661	2026.383	-123.904	2026.061	-123.552	2026	-121.605	2025.694	-117.273	2025
-114.334	2024.549	-110.787	2024	-108.163	2023.586	-104.486	2023	-101.302	2022.393
-99.2989	2022	-98.7657	2021.896	-94.1826	2021	-89.438	2020.06	-89.1216	2020
-87.7436	2019.827	-81.3276	2019	-78.3667	2018.613	-73.6049	2018	-56.7512	2017.366
-46.9999	2017	-44.8896	2017	-43.1238	2017	-41.4233	2017	-39.1255	2017
-37.3174	2017	-36.8145	2017	-23.4123	2016.269	-20.4133	2016.104	-19.7326	2016.066
-18.4562	2016	-18.3611	2016	-16.0372	2016	-13.3491	2016.551	-11.2869	2017
0	2017.624	1.833075	2017.725	6.440048	2018	7.166923	2018.304	8.365707	2019
8.820959	2019.234	10.10839	2020	10.98528	2020.548	11.80248	2021	11.97875	2021
12.36246	2021	14.50717	2021	19.67825	2021	28.84079	2021.63	30.30221	2021.699
32.86	2021.847	33.45614	2021.888	35.77612	2022	43.41711	2022.824	44.82804	2023
47.93775	2023.362	52.70544	2024	52.71987	2024.001	54.17904	2024.078	58.13573	2024.316
58.16342	2024.316	58.18625	2024.315	58.18641	2024.315				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.123	.035	-142.123	.025	58.18641	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff	Contr.	Expan.
-142.123	58.18641		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2019.15	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.46	* Wt. n-Val.	*	* 0.025	* *

* W.S. Elev (ft)	* 2018.68	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2018.45	* Flow Area (sq ft)	*	* 129.19	* *
* E.G. Slope (ft/ft)	*0.005001	* Area (sq ft)	*	* 129.19	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 86.73	* Top Width (ft)	*	* 86.73	* *
* Vel Total (ft/s)	* 5.46	* Avg. Vel. (ft/s)	*	* 5.46	* *
* Max Chl Dpth (ft)	* 2.68	* Hydr. Depth (ft)	*	* 1.49	* *
* Conv. Total (cfs)	* 9983.5	* Conv. (cfs)	*	* 9983.5	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 87.14	* *
* Min Ch El (ft)	* 2016.00	* Shear (lb/sq ft)	*	* 0.46	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 2.53	* *
* Frctn Loss (ft)	* 0.16	* Cum Volume (acre-ft)	* 1.41	* 18.65	* 2.94 *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.91	* 12.61	* 2.75 *

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2325

INPUT
Description:
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.101	2028.031	-141.502	2028	-134.507	2027.29	-134.316	2027.289	-134.157	2027.285
-132.506	2027	-129.139	2026.426	-126.691	2026	-124.798	2025.685	-120.67	2025
-115.342	2024.112	-114.656	2024	-112.166	2023.581	-109.405	2023.109	-108.725	2023
-108.325	2022.931	-102.65	2022	-100.221	2021.592	-96.6496	2021	-92.2043	2020.239
-90.7915	2020	-90.2737	2019.933	-89.7432	2019.871	-88.9233	2019.768	-82.4317	2019
-81.8152	2018.923	-79.8024	2018.654	-75.1613	2018	-62.0098	2017.493	-59.7424	2017.422
-57.0774	2017.355	-54.8082	2017.315	-45.5867	2017	-44.877	2017	-43.7298	2017
-42.5258	2017	-39.4902	2017	-39.2629	2017	-35.1507	2016.649	-26.8476	2016
-21.4617	2016	-20.0507	2016	-19.2907	2016.155	-15.4363	2017	-4.30425	2017
0	2017	3.090245	2017	4.25066	2017	4.754236	2017	5.8534762	2017.574
6.663273	2018	7.1957722	2018.281	8.597715	2019	9.3175062	2019.395	10.628	2020
10.758582	2020.065	10.782732	2020.066	10.802022	2020.061	10.807342	2020.043	11.021762	2020.035
11.454892	2020.067	12.187362	2020.124	23.05029	2021	33.20192	2021.697	38.34293	2022
41.110062	2022.324	41.821642	2022.417	44.11415	2022.694	55.536672	2022.872	46.77594	2023
55.517172	2023.672	55.832282	2023.701	56.379442	2023.763	56.936632	2023.836	57.119992	2023.866
57.205672	2023.884	57.338092	2023.898	57.571592	2023.917	57.606962	2023.922	57.695832	2023.928
57.825222	2023.938	57.893372	2023.941	57.961682	2023.944	58.020982	2023.948	58.043262	2023.951
58.175562	2023.949	58.214182	2023.949						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.101	.035	-142.101	.025	58.21418	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.10158.21418		25	25	25 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2018.97	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.65	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2018.33	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2018.33	* Flow Area (sq ft)	*	* 109.42	* *
* E.G. Slope (ft/ft)	*0.008451	* Area (sq ft)	*	* 109.42	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 84.76	* Top Width (ft)	*	* 84.76	* *
* Vel Total (ft/s)	* 6.45	* Avg. Vel. (ft/s)	*	* 6.45	* *
* Max Chl Dpth (ft)	* 2.33	* Hydr. Depth (ft)	*	* 1.29	* *
* Conv. Total (cfs)	* 7679.8	* Conv. (cfs)	*	* 7679.8	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 85.28	* *
* Min Ch El (ft)	* 2016.00	* Shear (lb/sq ft)	*	* 0.68	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.37	* *
* Frctn Loss (ft)	* 0.17	* Cum Volume (acre-ft)	* 1.41	* 18.58	* 2.94 *
* C & E Loss (ft)	* 0.05	* Cum SA (acres)	* 0.91	* 12.56	* 2.75 *

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2350

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.079	2027.394	-138.437	2027.283	-138.434	2027.283	-137.056	2027.232	-137.054	2027.232
-135.547	2027.161	-135.546	2027.161	-134.531	2027.084	-133.804	2027	-130.696	2026.382
-128.781	2026	-127.947	2025.84	-123.625	2025	-119.916	2024.297	-118.146	2024
-114.184	2023.312	-112.247	2023	-109.626	2022.565	-106.163	2022	-100.852	2021.121
-100.117	2021	-97.2987	2020.53	-94.0683	2020	-91.2499	2019.623	-86.7375	2019
-85.8084	2018.906	-77.2994	2018	-74.5328	2017.032	-74.4384	2017	-74.4295	2017

-73.9087   2017-55.8747   2017-52.2355   2017-51.34432016.962-51.17212016.955
-48.95022016.853-36.99982016.304-30.6741   2016-23.7481   2016-23.2806   2016
 -21.3772016.293-18.94962016.599-17.7231   2017-16.1116   2017-15.2549   2017
-14.8482   2017-14.7086   2017-13.2838   2017 -12.99   2017-11.4701   2017
-11.0702   2017-1.93037   2017-.151055   2017   0   20174.108562   2017
6.293607   20177.0878652017.359 8.63777   2018 9.832032018.526 10.8732   2019
13.630412019.87414.05392   202015.726742020.09934.37738   202140.824462021.579
44.06134   202246.44358 2022.4249.92291   202350.506662023.06152.655342023.234
52.980872023.28253.798652023.33354.989242023.43355.616362023.461 56.2452023.481
56.790652023.52156.995642023.54858.213042023.53558.236112023.534

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.079   .035-142.079   .02558.23611   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.07958.23611   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2018.74 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.48 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2018.26 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2018.05 * Flow Area (sq ft)   *   * 127.56 *   *
* E.G. Slope (ft/ft)   *0.005412 * Area (sq ft)   *   * 127.56 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   89.00 * Top Width (ft)   *   *   89.00 *   *
* Vel Total (ft/s)   *   5.53 * Avg. Vel. (ft/s)   *   *   5.53 *   *
* Max Chl Dpth (ft)   *   2.26 * Hydr. Depth (ft)   *   *   1.43 *   *
* Conv. Total (cfs)   * 9596.6 * Conv. (cfs)   *   * 9596.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   89.58 *   *
* Min Ch El (ft)   * 2016.00 * Shear (lb/sq ft)   *   *   0.48 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   2.66 *   *
* Frctn Loss (ft)   *   0.11 * Cum Volume (acre-ft) *   1.41 *   18.52 *   2.94 *
* C & E Loss (ft)   *   0.03 * Cum SA (acres)   *   0.91 *   12.51 *   2.75 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2375

INPUT
Description:
Station Elevation Data   num=   103
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.0732026.721-142.0722026.721-138.4382026.235 -136.58   2026-133.9482025.583
-130.125   2025-128.8632024.823-123.291   2024-121.7712023.779-116.598   2023
-115.6242022.859-109.917   2022-105.115 2021.29-103.268   2021-98.30512020.274
-96.5878   2020-93.06022019.628-89.15142019.233-87.0351   2019-85.86872018.886
-84.87292018.801-79.20572018.279-76.2258   2018-75.4553 2017.81 -73.972   2017
-70.53972016.831-66.7558 2016.901-64.97582016.939-63.84572016.977-63.3864   2017
-62.8893   2017-61.1239   2017-59.15522016.981-59.11542016.981-58.94542016.979
-58.90642016.978-58.87922016.977-58.82382016.974-58.7548 2016.97-58.71092016.967
-58.68742016.966-56.63572016.925-55.19212016.887-54.72122016.871 -52.2432016.764
-49.72562016.649-46.49812016.512-36.4079   2016 -33.078   2016-22.7846   2016
-15.65812016.388-13.74682016.496-13.52692016.506-12.31372016.592 -10.4662016.736
-9.857272016.774-8.99574 2016.82-8.628872016.841-8.358822016.862-8.244132016.868
-8.067172016.875-7.823692016.882-7.372272016.893 -5.53752016.844-5.526622016.841
-5.362442016.797-5.323912016.614-5.230022016.602-3.645972016.528-3.32839 2016.5
-.4563232016.439   02016.472 .2057242016.487 4.618792016.756 8.54834   2017
 10.33582017.828 10.6386   201811.158432018.30412.39488   201913.988712019.733
14.48634   2020 27.5035 2020.5528.43205202 0.58728.858272020.59829.697512020.602
30.310312020.61431.982332020.663 33.12232020.70233.704422020.72634.167922020.752
35.170782020.81436.893262020.76736.901632020.75838.82706   202144.720542021.741
46.80458   202250.655282022.56753.97591   202354.528312023.01855.560322023.094
55.948032023.14658.25051 2023.1258.25804 2023.12

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.073   .035-142.073   .02558.25804   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.07358.25804   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2018.60 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.38 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2018.21 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 142.16 *   *
* E.G. Slope (ft/ft)   *0.003810 * Area (sq ft)   *   * 142.16 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   89.50 * Top Width (ft)   *   *   89.50 *   *
* Vel Total (ft/s)   *   4.97 * Avg. Vel. (ft/s)   *   *   4.97 *   *
* Max Chl Dpth (ft)   *   2.21 * Hydr. Depth (ft)   *   *   1.59 *   *
* Conv. Total (cfs)   * 11438.3 * Conv. (cfs)   *   * 11438.3 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   90.26 *   *
* Min Ch El (ft)   * 2016.00 * Shear (lb/sq ft)   *   *   0.37 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   1.86 *   *
* Frctn Loss (ft)   *   0.08 * Cum Volume (acre-ft) *   1.41 *   18.44 *   2.94 *

```
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *    0.91  *   12.46  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2400

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.0842026.006-142.042    2026-141.451 2025.91-135.421    2025-132.8812024.679
-128.7412024.098-128.019    2024-127.5242023.936-119.266    2023-118.7052022.929
-111.133    2022-106.7482021.331-104.782    2021-98.16472020.044-97.8353    2020
-97.71172019.983-90.0287    2019-83.40092018.448-79.39412018.208-77.69532018.089
-76.5634    2018-74.48032017.832-68.34432017.313-64.6888    2017-60.40372016.626
-49.84322016.059-49.13852016.012-49.1026 2016.01-49.01472016.005 -48.9722016.003
-48.95632016.004-48.94892016.004-48.94422016.004-48.94162016.004-48.93822016.004
-48.92482016.004-48.6649    2016-46.93992015.985  -39.842015.939-37.6782    2016
-35.9591    2016-24.8879    2016-24.4031    2016-21.91052016.062-19.5742    2016
 -4.0087    2016-3.53073    2016-3.35587    2016       02016.2631.1299462016.352
9.878996    201711.765722017.93611.92067    201812.161662018.10914.03082    2019
 23.49952019.85825.11959    202025.52364    202032.17784    202034.62252    2020
34.93451    2020 35.2036    202035.506192020.04241.82622    202145.146932021.502
48.30624    202249.67987  2022.2 50.26422022.27655.27969    202356.003632022.979
56.791932022.95656.916412022.95356.951272022.95258.05429 2022.9258.279982022.913

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.084    .035-142.084    .02555.27969    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.08455.27969               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2018.49  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.30  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2018.19  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  159.36  *          *
* E.G. Slope (ft/ft)     *0.002665  * Area (sq ft)          *          *  159.36  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   91.45  * Top Width (ft)        *          *   91.45  *          *
* Vel Total (ft/s)       *    4.43  * Avg. Vel. (ft/s)      *          *    4.43  *          *
* Max Chl Dpth (ft)      *    2.25  * Hydr. Depth (ft)      *          *    1.74  *          *
* Conv. Total (cfs)      * 13676.4  * Conv. (cfs)           *          * 13676.4  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   91.84  *          *
* Min Ch El (ft)         * 2015.94  * Shear (lb/sq ft)      *          *    0.29  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.28  *          *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)  *    1.41  *   18.35  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.91  *   12.40  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2425

INPUT
Description:
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.0962024.558-137.3682024.471-135.5292024.409-122.0262024.095-119.6982024.031
 -118.79    2024-118.2972023.965-118.2372023.963-117.5262023.884-117.2862023.884
-116.9082023.874-116.8042023.891-116.5632023.888-116.2212023.878-115.9492023.866
-115.1892023.832-114.3372023.797-108.3812023.592-105.6432023.491-104.0682023.426
-98.1024    2023-93.57252022.704-93.51682022.646-85.1533    2022-83.27412021.829
 -82.7162021.821 -82.3482021.794-81.30642021.671-78.43232021.305-76.0349 2021.23
-75.28342021.186-73.47352021.042-73.1631    2021-70.8467 2020.66-69.67212020.521
-67.0718    2020-64.86252019.704-60.6217 2019.01-60.57612019.003-60.5528    2019
 -58.9832018.855-58.32272018.834-58.1522 2018.82-56.56842018.604-55.67952018.499
-53.1221    2018-52.44372017.586-51.4205    2017-49.69482016.002-49.6909    2016
-49.68712015.999-48.86712015.903-47.81662015.823-46.81072015.761-45.59382015.612
-44.8249 2015.57-43.9705 2015.53-43.57212015.505-43.35852015.497-43.01912015.491
-40.77372015.463-39.86142015.455-36.58362015.433-27.26472015.697-27.04372015.734
 -25.8612015.818-25.40892015.871-25.18722015.959-24.8777    2016-24.7818    2016
-24.5521    2016-17.8131    2016 -15.709    2016-13.5954    2016-2.55368    2016
-.957367    2016-.397845    2016       0    2016 .493438    20161.092694    2016
2.398657    20165.365632    2016 7.107042016.4549.967904    201712.275882017.818
12.90054    201816.653782018.61718.94975    201922.960532019.22935.88189    2020
39.337122020.495 41.84652020.78943.44988    202144.732462021.21148.60596    2022
50.290142022.35552.46328    202352.48349    202352.494462022.99956.520552022.882
58.301842022.831

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.096    .035-142.096    .02552.46328    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.09652.46328               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2018.39  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.50  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2017.90  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  124.79  *          *
* E.G. Slope (ft/ft)     *0.003900  * Area (sq ft)          *          *  124.79  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   65.50  * Top Width (ft)        *          *   65.50  *          *
* Vel Total (ft/s)       *    5.66  * Avg. Vel. (ft/s)      *          *    5.66  *          *
* Max Chl Dpth (ft)      *    2.46  * Hydr. Depth (ft)      *          *    1.91  *          *
* Conv. Total (cfs)      * 11304.9  * Conv. (cfs)           *          * 11304.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   66.32  *          *
* Min Ch El (ft)         * 2015.43  * Shear (lb/sq ft)      *          *    0.46  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.59  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *    1.41  *   18.27  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *    0.91  *   12.36  *    2.75  *
*********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2450

INPUT
Description:
Station Elevation Data    num=     120
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -142.14    2024-136.3212023.173-133.983    2023-116.1712022.148-115.0882022.099
-114.5162022.076-114.1372022.065-113.8552022.058-112.576    2022-111.7372021.915
-110.3032021.847-108.9182021.826-105.7342021.826-103.0452021.858-101.7632021.838
-100.5322021.811-87.99412021.948-87.93972021.947 -87.8922021.948 -86.4632021.964
-85.7645    2022-85.27722022.014-83.40052022.083-81.70442022.116-79.57462022.128
-73.30912022.131 -70.5622022.124-68.8705 2022.13-64.76372022.103-64.31072022.094
-61.44422022.006-61.2357    2022-60.93272021.918 -57.165    2021-57.01392020.976
 -52.3092020.251-50.7825    2020-49.70132019.765-49.32852019.704-48.65212019.585
-45.7654    2019   -42.92018.123-42.5573    2018-41.04122017.488 -39.935    2017
-39.38672016.748-38.94492016.598 -38.7182016.565-38.48232016.595 -38.0252016.536
 -37.381 2016.44 -36.8752016.416-36.48932016.353-34.9704    2016-33.38972015.034
  -33.33    2015 -33.314    2015-32.29222014.895 -28.9622014.878-28.33292014.883
-27.78872014.897-26.13172014.983 -25.682    2015-24.0106 2015.09-23.8148  2015.1
-23.60372015.111-22.31622015.201-15.18842015.587-14.54632015.631-13.86952015.673
 -13.4352015.681-12.37442015.755-12.1397 2015.78-11.6268 2015.86-11.56972015.863
-10.92112015.857 -10.8062015.857-10.28342015.834-9.43048 2015.75-8.663662015.603
-8.304762015.571-7.735712015.533-7.05953  2015.5-6.347292015.478-5.62614 2015.47
-4.528912015.469-4.398742015.463-2.234892015.467-1.627492015.552-1.525832015.606
-1.27127 2015.63-1.03188 2015.64-.7398662015.646       02015.652 .8229582015.659
 3.251782015.699 5.735542015.7517.2294952015.7927.996731 2015.8211.59209    2016
12.299872016.28513.80098    201714.952432017.49515.94837    201820.799382018.974
20.88994    201921.203472019.01840.51964    202040.911962020.07741.558662020.211
43.539922020.67144.90902    202145.224382021.074 49.0909    2022 52.55582022.852
53.15871    2023 53.59812022.984 53.74812022.97856.629232022.87958.226792022.824

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -142.14    .035-61.4442    .02553.15871    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -61.444253.15871               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2018.22  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.87  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2017.35  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2017.35  * Flow Area (sq ft)     *          *   94.31  *          *
* E.G. Slope (ft/ft)     *0.007955  * Area (sq ft)          *          *   94.31  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   55.33  * Top Width (ft)        *          *   55.33  *          *
* Vel Total (ft/s)       *    7.49  * Avg. Vel. (ft/s)      *          *    7.49  *          *
* Max Chl Dpth (ft)      *    2.47  * Hydr. Depth (ft)      *          *    1.70  *          *
* Conv. Total (cfs)      *  7915.8  * Conv. (cfs)           *          *  7915.8  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   56.20  *          *
* Min Ch El (ft)         * 2014.88  * Shear (lb/sq ft)      *          *    0.83  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.24  *          *
* Frctn Loss (ft)        *    0.20  * Cum Volume (acre-ft)  *    1.41  *   18.21  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.91  *   12.32  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION
```

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2475

INPUT
Description:
Station Elevation Data num= 134

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.192	2024.111	-141.908	2024.109	-141.603	2024	-140.176	2024	-140.159	2024
-138.751	2024	-137.867	2024	-135.516	2024	-133.139	2024	-132.251	2024
-131.438	2024	-130.812	2024	-127.645	2024	-125.916	2024	-125.779	2024
-125.351	2024	-124.395	2024	-123.94	2024	-123.878	2024	-123.406	2023.942
-121.694	2023.765	-114.508	2023	-109.605	2022.208	-108.083	2022	-107.205	2021.875
-105.181	2021.658	-103.856	2021.526	-102.604	2021.385	-101.945	2021.3	-100.035	2021
-97.4418	2020.595	-93.9884	2020.063	-93.5585	2020	-93.1918	2019.93	-90.1688	2019.379
-89.569	2019.286	-89.0892	2019.228	-88.6642	2019.189	-88.317	2019.167	-88.0427	2019.159
-87.8151	2019.166	-87.5923	2019.183	-87.1431	2019.23	-86.8958	2019.206	-86.4876	2019.208
-86.0757	2019.238	-85.5265	2019.275	-84.7355	2019.295	-82.5881	2019.489	-81.9697	2019.523
-81.2262	2019.532	-80.4199	2019.525	-79.322	2019.503	-77.5198	2019.434	-75.2204	2019.349
-68.1211	2019	-66.3726	2018.926	-66.1345	2018.922	-66.0128	2018.916	-64.9828	2018.837
-61.2481	2018.724	-59.6552	2018.656	-52.5993	2018	-50.8239	2017.843	-49.8543	2017.707
-48.2432	2017.485	-45.2248	2017	-44.5835	2016.873	-43.1608	2016.51	-41.4768	2016
-37.682	2015.139	-37.1556	2015	-30.6956	2014.287	-30.1822	2014.297	-29.8349	2014.245
-29.7232	2014.219	-29.6712	2014.19	-29.6022	2014.185	-29.3627	2014.18	-29.1151	2014.168
-29.0343	2014.162	-29.0098	2014.155	-28.8497	2014.139	-28.3336	2014.136	-28.2362	2014.137
-28.1518	2014.139	-27.8951	2014.152	-27.6811	2014.16	-26.5455	2014.191	-26.2481	2014.2
-25.4644	2014.229	-25.1308	2014.247	-22.2473	2014.442	-21.4561	2014.474	-21.0163	2014.495
-20.3579	2014.531	-18.6755	2014.486	-18.1865	2014.491	-17.5957	2014.511	-16.7855	2014.548
-14.1731	2014.686	-12.6323	2014.781	-11.3477	2014.879	-9.8702	2015	-.468522	2015.504
02	015.529	2.691418	2015.675	4.385752	2015.772	8.298864	2016	10.0212	2016.83
10.3621	1	2017	12.8831	2.38126	2018	19.6030	82018.7	0121.7728	7 2019
33.3904	52019.598	37.1510	42019.796	39.1216	22019.794	39.1367	2019.774	39.2709	92019.764
41.1539	2020	42.5861	12020.179	44.5757	32020.425	48.3833	52020.885	49.1749	9 2021
49.7182	021.145	50.5347	92021.425	51.4225	72021.715	52.3014	4	2022	53.3742
72022.173									
55.4167	42022.476	58.1123	62022.786	58.1152	022.786	58.1517	42022.787		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.192	.035	-81.9697	.025	58.15174	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-81.96975	8.15174	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2017.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.46	Wt. n-Val.		0.025	
W.S. Elev (ft)	2016.42	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2016.81	Flow Area (sq ft)		72.86	
E.G. Slope (ft/ft)	0.017118	Area (sq ft)		72.86	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	52.00	Top Width (ft)		52.00	
Vel Total (ft/s)	9.69	Avg. Vel. (ft/s)		9.69	
Max Chl Dpth (ft)	2.28	Hydr. Depth (ft)		1.40	
Conv. Total (cfs)	5396.1	Conv. (cfs)		5396.1	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		52.39	
Min Ch El (ft)	2014.14	Shear (lb/sq ft)		1.49	
Alpha	1.00	Stream Power (lb/ft s)		14.40	
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	1.41	18.16	2.94
C & E Loss (ft)	0.06	Cum SA (acres)	0.91	12.29	2.75

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2500

INPUT
Description:
Station Elevation Data num= 117

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.215	2025.307	-139.708	2025	-137.899	2024.825	-137.484	2024.836	-137.184	2024.828
-136.961	2024.825	-136.334	2024.841	-135.722	2024.785	-135.233	2024.746	-132.566	2024.608
-131.034	2024.496	-129.403	2024.427	-127.333	2024.373	-123.831	2024.046	-123.788	2024.043
-123.756	2024.04	-123.505	2024	-122.648	2023.915	-121.577	2023.816	-113.033	2023
-109.011	2022.667	-106.622	2022.453	-101.857	2022	-99.4042	2021.793	-98.7856	2021.763
-97.4943	2021.748	-93.3376	2021.764	-92.4134	2021.701	-92.2424	2021.682	-92.0736	2021.65
-91.4772	2021.614	-90.6013	2021.524	-89.5657	2021.384	-88.0288	2021.103	-87.3926	2021
-86.9438	2020.915	-81.2587	2020	-80.8018	2019.924	-75.0488	2019	-70.8649	2018.4
-68.5463	2018	-64.6982	2017.403	-62.6328	2017	-60.5743	2016.61	-57.668	2016
-56.4417	2015.847	-54.6243	2015.667	-46.9941	2015	-44.6836	2014.681	-43.8027	2014.59
-40.7726	2014.375	-39.1125	2014.2	-37.2312	2014.045	-36.765	2014	-35.8881	2013.959
-35.0987	2013.906	-34.3386	2013.811	-33.8871	2013.662	-32.7442	2013.582	-30.9429	2013.65
-30.7317	2013.75	-28.903	2014	-26.7346	2014.107	-21.4054	2014.248	-20.8924	2014.233

-19.97342014.231-17.83952014.251-15.49562014.045 -15.413   2014 -11.781   2014
-11.6796   2014-11.45112014.025-11.43092014.026-11.40832014.026-11.39982014.024
-11.19752014.027   02014.6855.351444   20157.3163492015.786 7.83668   2016
 8.34381 2016.21 10.2726   201711.481242017.51112.72288   201820.001382018.484
20.473362018.50621.854112018.53822.47824 2018.5623.057292018.59124.154792018.667
24.365112018.67724.859922018.68726.387782018.70627.338222018.71327.511222018.713
28.44904 2018.7129.526412018.70130.660392018.63831.234062018.58631.848982018.505
32.463572018.45932.854952018.44133.262712018.42933.653052018.42434.006632018.427
34.313212018.43734.889652018.47538.774572018.65639.664762018.70941.639422018.858
43.24331   201948.694422019.74450.35817   202051.13959 2020.13 51.82512020.232
57.58298   202158.10184 2021.05

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.215   .035-93.3376   .02526.38778   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -93.337626.38778   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2017.29 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.81 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2015.48 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2016.03 * Flow Area (sq ft)   *   *   65.38 *   *
* E.G. Slope (ft/ft)   *0.029011 * Area (sq ft)   *   *   65.38 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   59.04 * Top Width (ft)   *   *   59.04 *   *
* Vel Total (ft/s)   *   10.80 * Avg. Vel. (ft/s)   *   *   10.80 *   *
* Max Chl Dpth (ft)   *   1.90 * Hydr. Depth (ft)   *   *   1.11 *   *
* Conv. Total (cfs)   * 4145.0 * Conv. (cfs)   *   * 4145.0 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   59.34 *   *
* Min Ch El (ft)   * 2013.58 * Shear (lb/sq ft)   *   *   2.00 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   21.55 *   *
* Frctn Loss (ft)   *   0.55 * Cum Volume (acre-ft) *   1.41 *   18.12 *   2.94 *
* C & E Loss (ft)   *   0.04 * Cum SA (acres)   *   0.91 *   12.26 *   2.75 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2525

INPUT
Description:
Station Elevation Data   num=   139
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.3052030.136 -142.32030.144-139.251   2028-138.0412027.687-135.054   2027
-133.0562026.595-130.5662026.031-130.391   2026-129.0542025.835-127.0542025.615
-122.6732025.173-121.627   2025-120.8652024.892-115.411   2024-111.9062023.261
-110.891   2023-109.4642022.845-108.9532022.803-107.8232022.684-104.3832022.308
-101.475   2022-99.33422021.824-88.1188   2021 -82.8222020.413-81.29262020.235
-80.23882020.135-78.6848   2020-75.65542019.698-74.7768 2019.59-69.7818   2019
-66.83722018.531-66.04552018.414 -65.422018.347 -64.8732018.303-64.45612018.287
-63.95792018.286-63.24132018.164-63.16082018.157-61.9133   2018-60.87242017.843
-60.52862017.787-59.77332017.682-58.97712017.526-58.2468 2017.39-57.71682017.275
-56.90312017.072-56.6179   2017-56.30122016.927-55.09682016.651-52.0955   2016
-50.06212015.521-49.0684   2015-48.21972014.594-46.35542014.552-46.14972014.533
-43.7867   2014-39.05782013.286-38.47832013.273-37.99122013.212-36.9992 2013.13
-36.89482013.116-36.83982013.103-36.80212013.098-36.67362013.092-36.46552013.086
-36.1279 2013.08-36.02772013.077-35.94552013.073-35.88562013.069 -35.8282013.062
-35.7938 2013.05-35.70722013.044-35.57072013.049-35.55472013.057-35.36552013.083
-35.19492013.118-35.10242013.129-35.03582013.132-31.17782013.191-30.05342013.198
 -29.1342013.189-27.6064 2013.14-27.0064 2013.13-26.92892013.129-26.16912013.153
-26.05292013.147-25.94932013.139-25.81552013.121-25.73822013.115-25.62642013.113
-25.48832013.113-25.19452013.116-24.86842013.122 -24.7692013.123-23.2825 2013.16
-18.59042013.427-15.9153 2013.55-14.07092013.643-7.75448   2014-2.824052014.285
       02014.4784.144015 2014.764.9249542014.8117.663423   20158.1413412015.158
11.03091   201612.795142016.44414.93004   201717.290592017.19818.649222017.292
19.781972017.35220.723292017.38922.481742017.44323.870012017.43825.209242017.424
25.454122017.42826.313382017.46728.777592017.59731.428842017.72637.55482   2018
39.505232018.23540.912452018.41743.476022018.72345.63113   2019 45.7672019.009
48.361992019.16848.937732019.17451.039262019.29552.308862019.39554.401972019.622
 54.58572019.66454.786922019.68356.020512019.75756.280582019.79756.364592019.805
 56.48532019.81156.614852019.81856.776052019.81958.147422019.833

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.305   .035-142.305   .02558.14742   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.30558.14742   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2016.60 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.56 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2015.04 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2015.48 * Flow Area (sq ft)   *   *   70.44 *   *
* E.G. Slope (ft/ft)   *0.021551 * Area (sq ft)   *   *   70.44 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *

* Top Width (ft)	* 56.91	* Top Width (ft)	*	* 56.91	*	*		
* Vel Total (ft/s)	* 10.02	* Avg. Vel. (ft/s)	*	* 10.02	*	*		
* Max Chl Dpth (ft)	* 1.99	* Hydr. Depth (ft)	*	* 1.24	*	*		
* Conv. Total (cfs)	* 4809.1	* Conv. (cfs)	*	* 4809.1	*	*		
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 57.21	*	*		
* Min Ch El (ft)	* 2013.04	* Shear (lb/sq ft)	*	* 1.66	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 16.60	*	*		
* Frctn Loss (ft)	* 0.62	* Cum Volume (acre-ft)	*	1.41	*	18.08	*	2.94 *
* C & E Loss (ft)	* 0.08	* Cum SA (acres)	*	0.91	*	12.23	*	2.75 *

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2550

INPUT
Description:
Station Elevation Data num= 116

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.319	2030.153	-139.576	2030.009	-139.508	2030	-135.348	2029.028	-135.249	2029
-135.116	2028.958	-131.776	2028	-129.685	2027.403	-128.348	2027	-125.395	2026.15
-124.892	2026	-124.447	2025.882	-121.354	2025	-120.432	2024.765	-117.709	2024
-116.033	2023.594	-113.725	2023	-110.751	2022.33	-109.518	2022	-104.344	2021.633
-95.7155	2021	-90.39372	2020.581	-89.9262	2020.55	-89.46182	2020.531	-88.19282	2020.497
-87.69562	2020.489	-87.43992	2020.491	-86.95472	2020.539	-85.00542	2020.697	-84.6912	2020.731
-84.02562	2020.876	-83.14462	2020.967	-83.13232	2020.965	-82.2459	2021	-81.84432	2021.066
-80.54682	2021.122	-80.43822	2021.138	-79.2754	2021	-79.2556	2021	-76.4154	2020
-75.66152	2019.942	-74.31282	2019.764	-70.69242	2019.389	-68.3458	2019	-66.10012	2018.663
-62.30292	2018.105	-61.7592	2018	-61.34992	2017.899	-59.98062	2017.562	-58.22082	2017.149
-57.5637	2017	-57.11382	2016.884	-53.4183	2016	-52.721	2015.76	-49.8938	2015
-49.2752	2014.574	-48.1692	2014	-47.17952	2013.379	-46.2864	2013	-41.02752	2012.094
-40.5481	2012	-37.4296	2012	-35.9149	2012	-34.4448	2012	-33.68382	2012.113
-33.37942	2012.147	-31.89542	2012.295	-25.1165	2013	-21.79012	2013.276	-19.55142	2013.481
-18.59142	2013.556	-17.6282	2013.62	-14.98472	2013.778	-14.63122	2013.796	-14.34052	2013.807
-13.92722	2013.819	-13.82232	2013.815	-13.8079	2013.74	-13.61332	2013.714	-12.9587	2013.7
-11.68052	2013.702	-10.01742	2013.716	-8.34242	2013.738	-7.000412	2013.763	-5.93158	2013.79
02	2013.969	1.04134	2014	5.962278	2014.628	8.292632	2014.919	8.811322	2015
10.70739	2015.482	12.63984	2015.957	12.77758	2016	13.44872	2016.063	13.60752	2016.075
14.22203	2016.116	15.65502	2016.207	19.14179	2016.439	27.40237	2017	27.97227	2017
28.74789	2017	31.55671	2017	31.99533	2017	32.98962	2017	33.14506	2017
33.51255	2017.036	41.08717	2018	46.20997	2018.705	48.35847	2019	50.89823	2019.153
51.80547	2019.291	52.09851	2019.325	2.519592	2019.339	52.97152	2019.364	53.04329	2019.365
58.34965	2019.418								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.319	.035	-80.5468	.025	58.34965	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-80.54685	8.34965		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2016.07	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (ft)	* 1.58	* Wt. n-Val.	*	* 0.025 *	*
* W.S. Elev (ft)	* 2014.49	* Reach Len. (ft)	* 25.00 *	* 25.00 *	* 25.00 *
* Crit W.S. (ft)	* 2014.96	* Flow Area (sq ft)	*	* 70.07 *	*
* E.G. Slope (ft/ft)	*0.020631	* Area (sq ft)	*	* 70.07 *	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00 *	*
* Top Width (ft)	* 54.01	* Top Width (ft)	*	* 54.01 *	*
* Vel Total (ft/s)	* 10.08	* Avg. Vel. (ft/s)	*	* 10.08 *	*
* Max Chl Dpth (ft)	* 2.49	* Hydr. Depth (ft)	*	* 1.30 *	*
* Conv. Total (cfs)	* 4915.3	* Conv. (cfs)	*	* 4915.3 *	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 54.66 *	*
* Min Ch El (ft)	* 2012.00	* Shear (lb/sq ft)	*	* 1.65 *	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 16.64 *	*
* Frctn Loss (ft)	* 0.53	* Cum Volume (acre-ft)	* 1.41 *	18.04 *	2.94 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.91 *	12.20 *	2.75 *

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2575

INPUT
Description:
Station Elevation Data num= 94

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.292	2030.683	-141.264	2030.629	-140.371	2030.513	-140.239	2030.412	-138.164	2030.09
-137.742	2030	-135.722	2029.368	-134.515	2029	-133.624	2028.69	-131.514	2028
-128.672	2027.165	-128.176	2027	-125.672	2026.214	-124.979	2026	-122.044	2025.096
-121.743	2025	-118.502	2024.011	-118.467	2024	-118.019	2023.864	-115.204	2023
-114.276	2022.725	-111.901	2022	-105.312	2021.072	-104.739	2021	-101.612	2020.811
-96.6316	2020.55	-94.80522	2020.441	-92.99212	2020.315	-89.21132	2020.023	-89.10092	2020.016
-88.874	2020	-82.9335	2019.77	-75.09962	2019.493	-65.8421	2019	-61.07932	2018.256
-59.224	2018	-57.32012	2017.505	-55.2886	2017	-52.76662	2016.359	-51.2836	2016
-50.9965	2015.92	-48.2811	2015	-47.44412	2014.176	-47.3076	2014	-47.14282	2013.797
-46.5092	2013	-45.0227	2012.59	-43.8678	2012	-42.25442	2011.903	-41.07572	2011.768

-35.81072011.786-35.3357   2012-32.52242012.443-27.4063   2013-23.27692013.141
-17.15862013.356 -5.82612013.777-4.028322013.844-2.650182013.899-1.81709 2013.93
-1.424252013.944-1.021812013.958 -.476082013.966-.4685762013.966-.4358232013.966
-.3801382013.968   02013.986 .293042   2014 .457523   2014 .984399   2014
2.181943   20142.640252   20142.831692   20143.853142   20148.051115   2014
9.0859092014.49510.29075   201511.416082015.52212.54795   201614.55955   2016
15.11629   201619.68022   201622.62945   201625.54612   2016 30.55382016.376
35.063332016.72838.56611   201743.610492017.78245.02454   201845.416132018.069
50.01232   201951.911542018.98354.289292018.96158.551872019.003

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
 -142.29   .035 -142.29   .02558.55187   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -142.2958.55187   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2015.85 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.48 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2015.37 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2014.85 * Flow Area (sq ft)   *   * 127.21 *   *
* E.G. Slope (ft/ft)   *0.003349 * Area (sq ft)   *   * 127.21 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   60.46 * Top Width (ft)   *   *   60.46 *   *
* Vel Total (ft/s)   *   5.55 * Avg. Vel. (ft/s)   *   *   5.55 *   *
* Max Chl Dpth (ft)   *   3.60 * Hydr. Depth (ft)   *   *   2.10 *   *
* Conv. Total (cfs)   * 12200.1 * Conv. (cfs)   *   * 12200.1 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   62.06 *   *
* Min Ch El (ft)   * 2011.77 * Shear (lb/sq ft)   *   *   0.43 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   2.38 *   *
* Frctn Loss (ft)   *   0.09 * Cum Volume (acre-ft) *   1.41 *   17.98 *   2.94 *
* C & E Loss (ft)   *   0.00 * Cum SA (acres)   *   0.91 *   12.16 *   2.75 *
****

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2600

INPUT
Description:
Station Elevation Data   num=   95
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
 -142.25   2032-142.126   2032 -142.02   2032-141.705   2032-141.243   2032
-140.979   2032-140.451   2032-137.3422031.169-136.944   2031-135.9552030.582
-134.481   2030 -132.442029.148-132.073   2029-131.9122028.932 -129.57   2028
-127.968 2027.36-127.135   2027   -1252026.131 -124.68   2026-122.7612025.381
-121.673   2025-120.3972024.605-118.509   2024-116.2192023.285-115.4882023.047
-115.344   2023-114.4782022.731-112.215   2022-111.7032021.851-109.092   2021
 -105.172020.524-103.7522020.388-99.4889   2020-89.60062019.721-66.6489   2019
-59.19812018.211-58.68812018.162-58.22162018.127-56.8783   2018-55.8884 2017.78
-54.78632017.527-52.2133   2017-50.4598 2016.65-47.3734   2016-46.70442015.398
-46.5572   2015-46.51872014.828-46.2312 2014.04-46.2061   2014-46.20272013.992
-45.7471   2013-45.74032012.988-45.1445   2012-44.18072011.797-43.05442011.618
-41.80032011.479-41.47442011.452-39.00262011.304-38.60622011.258-36.83552011.265
-36.62082011.361-36.30192011.412 -36.0052011.527-34.89512011.719-33.0656   2012
-30.65242012.889-30.2792   2013-27.41982013.089-12.96832013.528 -8.02512013.672
-3.910732013.663-3.79834 2013.65-3.248672013.649-2.504052013.657 -1.86562013.668
-.9949852013.659-.6275062013.647   02013.6441.4701092013.6393.5803682013.766
7.446778   20148.7617322014.52610.27882   201520.512422015.47431.19498   2016
33.450442016.26638.40538   201741.078142017.45444.51415   201848.300422018.676
50.31651   201952.813452018.97754.68033 2018.9656.982262018.938 58.75412018.921

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
 -142.25   .035 -142.25   .02550.31651   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -142.2550.31651   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2015.76 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.50 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2015.26 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 124.31 *   *
* E.G. Slope (ft/ft)   *0.003849 * Area (sq ft)   *   * 124.31 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   62.43 * Top Width (ft)   *   *   62.43 *   *
* Vel Total (ft/s)   *   5.68 * Avg. Vel. (ft/s)   *   *   5.68 *   *
* Max Chl Dpth (ft)   *   4.00 * Hydr. Depth (ft)   *   *   1.99 *   *
* Conv. Total (cfs)   * 11379.5 * Conv. (cfs)   *   * 11379.5 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   65.04 *   *
* Min Ch El (ft)   * 2011.26 * Shear (lb/sq ft)   *   *   0.46 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   2.61 *   *
* Frctn Loss (ft)   *   0.09 * Cum Volume (acre-ft) *   1.41 *   17.91 *   2.94 *
* C & E Loss (ft)   *   0.02 * Cum SA (acres)   *   0.91 *   12.13 *   2.75 *

****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2625

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-141.993	2032	-139.358	2032	-138.693	2032	-137.337	2031	477-135.998	2031
-134.863	2030	567-133.393	2030	-131.853	2029	408-130.728	2029	-129.938	2028
-128.136	2028	-126.202	2027	241 -125.56	2027	-125.016	2026	794-123.066	2026
-122.034	2025	611-120.473	2025	-118.242	2024	126-117.925	2024	-117.692	2023
-115.272	2023	-113.718	2022	404 -112.63	2022	-111.997	2021	764-110.019	2021
-109.988	2021	-109.891	2020	964-107.306	2020	-105.807	2019	881-104.035	2019
-101.045	2019	591-99.6385	2019	56 -97.5492	2019	546 -96.706	2019	518-95.7952	2019
-94.7574	2019	401-92.2708	2019	249-87.8466	2019	-85.0914	2019	-79.5395	2019
-75.8303	2019	-75.4263	2019	-66.186	2019	-65.2882	2019	-58.9198	2018
53 -52.2222	2018	-50.5004	2017	627-47.6303	2017	-45.251	2016	49-43.0557	2016
-41.6092	2015	568-40.4914	2015	255-40.0707	2015	-39.7367	2014	071-39.7069	2014
-39.6789	2013	919-39.3098	2013	-39.2959	2012	961 -38.756	2012	-37.3593	2011
72 -36.0212	2011	546-35.7756	2011	499-35.2344	2011	438-30.4822	2011	538-30.1745	2011
589 -28.7211	2011	731-28.0577	2012	-24.3582	2012	522-19.3299	2012	994-19.2738	2013
-14.7396	2013	-8.92496	2013	-7.7264	2013	-5.52338	2013	-5.01682	2013
-3.65262	2013	206-3.627592	2013	202	02013	3211	5011622	013	37112
70597	2014	16.343292	2014	323 17.49692	2014	397 25.8224	2015	26	433132
015	06534	42366	2016	39.986432	2016	993 40.029	2017	40	150522
017	02245	51675	2018	47.18132	2018	313	50.85612	2019	52.4512
018	98452	971762	2018	97952	971982	2018	97955	088632	2018
955	57.09512	2018	93357	978532	2018	93358	310712	2018	93458
460362	2018	93258	886652	2018	928				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-141.993	.035	-66.186	.025	50.85612	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-66.18	650.85612	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2015.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.		0.025	
W.S. Elev (ft)	2015.23	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		136.14	
E.G. Slope (ft/ft)	0.003168	Area (sq ft)		136.14	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	68.25	Top Width (ft)		68.25	
Vel Total (ft/s)	5.19	Avg. Vel. (ft/s)		5.19	
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)		1.99	
Conv. Total (cfs)	12543.1	Conv. (cfs)		12543.1	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		70.54	
Min Ch El (ft)	2011.44	Shear (lb/sq ft)		0.38	
Alpha	1.00	Stream Power (lb/ft s)		1.98	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	1.41	17.84	2.94
C & E Loss (ft)	0.04	Cum SA (acres)	0.91	12.09	2.75

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2650

INPUT
Description:
Station Elevation Data num= 98

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-141.735	2032	-139.695	2032	-137.871	2032	-137.69	2032	-137.354	2032
-136.294	2031	531-135.071	2031	-133.888	2030	539-132.616	2030	-131.467	2029
513 -130.272	2029	-129.414	2028	644-127.915	2028	-126.802	2027	555-125.473	2027
-123.947	2026	372-123.073	2026	-121.344	2025	306 -120.57	2025	-120.004	2024
767 -118.111	2024	-117.772	2023	861-115.566	2023	-114.420	2022	521-112.982	2022
-112.303	2021	754-110.284	2021	-108.396	2020	235-107.675	2020	-106.812	2019
577 -105.203	2019	-102.963	2018	888 -101.812	2018	845-100.918	2018	823-100.121	2018
813 -98.6743	2018	8-98.00342	2018	785-94.65962	2018	671-93.10462	2018	627-91.53682	2018
597 -89.97612	2018	585-87.5038	2018	58-87.04942	2018	571-82.93262	2018	619-82.88022	2018
669 -80.0958	2019	-76.6677	2019	-66.1626	2019	-59.24242	2018	389-55.5423	2018
-49.30732	2017	411-44.9343	2017	-42.33172	2016	321-41.0713	2016	-38.14972	2015
257 -37.1642	2015	-35.31332	2014	536-32.9943	2014	-31.84892	2013	567-30.3952	2013
-29.1772	2012	467-28.1192	2012	-20.4689	2012	-18.8506	2012	-18.6785	2012
-18.5394	2012	-18.4013	2012	-16.2194	2012	12-15.92182	2012	136	02012
974 .496214	2013	1.29473	2013	2.823131	2013	8.7529022	2013	47914	54001
2014	25.861442	2014	69530	70447	2015	32.50422	2015	24237	41516
2016	41.346512	2016	666	43.25423	2017	44.628452	2017	26647	56376
2017	8648	24799	2017	49.206172	2018	214	52.47721	2019	53.434272
2018	99454	07642	2018	99 55.28752	2018	98256	116662	2018	977
56.211192	2018	97356	639792	2018	954	56.642	2018	95457	088452
2018	94858	210862	2018	931	58.21122	2018	93158	342612	2018
929	58.93242	2018	917						

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-141.735    .035-66.1626    .02552.47721    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -66.162652.47721               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2015.49  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.81  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2014.68  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2014.68  * Flow Area (sq ft)     *          *   97.80  *          *
* E.G. Slope (ft/ft)     *0.008041  * Area (sq ft)          *          *   97.80  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   61.48  * Top Width (ft)        *          *   61.48  *          *
* Vel Total (ft/s)       *    7.22  * Avg. Vel. (ft/s)      *          *    7.22  *          *
* Max Chl Dpth (ft)      *    2.68  * Hydr. Depth (ft)      *          *    1.59  *          *
* Conv. Total (cfs)      *  7873.2  * Conv. (cfs)           *          *  7873.2  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   62.05  *          *
* Min Ch El (ft)         * 2012.00  * Shear (lb/sq ft)      *          *    0.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.71  *          *
* Frctn Loss (ft)        *    0.14  * Cum Volume (acre-ft)  *    1.41  *   17.77  *    2.94  *
* C & E Loss (ft)        *    0.10  * Cum SA (acres)        *    0.91  *   12.05  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2675

INPUT
Description:
Station Elevation Data    num=     142
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
-141.478    2032-140.787    2032-139.936    2032-138.7832031.546-137.365    2031
-135.7532030.345-134.831    2030-132.4052029.054-132.255    2029-132.1112028.945
-130.5072028.388-129.557    2028-127.9342027.395-126.903    2027-125.3112026.395
-124.298    2026-123.2452025.607-121.591    2025-119.9212024.364 -118.97    2024
-117.5422023.464-116.272    2023-115.3442022.676  -113.6    2022-112.4452021.552
-111.165    2021-108.7712020.149-108.368    2020-107.4712019.659-105.855    2019
-91.97962018.196-87.7722 2018.07-87.29892018.047 -86.8352018.023-86.80452018.022
 -86.7812018.022  -86.762018.021-86.7218 2018.021-86.70412018.021-86.61592018.018
-86.57492018.017-86.53352018.016-86.49232018.015-86.42712018.015-86.41512018.015
-86.30652018.016-86.30512018.018-86.21442018.028-86.16112018.033-86.07672018.045
-84.7022    2018-83.6379    2018-83.0283    2018-82.1536    2018-80.5699    2018
 -80.4872018.002-80.48462018.003-80.47892018.003-80.47442018.004-80.47142018.003
-73.05042018.898-72.99312018.897-72.92422018.898  -72.892018.898 -72.851  2018.9
-72.65162018.904-72.57492018.906-72.53152018.914-72.48962018.918-72.45882018.918
-72.41412018.919-72.28622018.918-72.08692018.915-71.94062018.912-71.8755 2018.91
 -71.8162018.907-71.4943 2018.89-71.24912018.879-70.71632018.858-70.44122018.848
-70.30912018.841-69.56882018.805-69.18222018.784-68.82662018.761-67.99522018.693
-67.41492018.659-65.48132018.607-64.80982018.595-63.65812018.591-55.4598 2018.12
-55.2225 2018.11-53.4811    2018-49.17722017.538-44.3572    2017-39.21682016.144
-38.3454    2016-36.5874 2015.55-34.85982015.134-34.2557    2015-33.46352014.788
  -30.51    2014-28.07422013.317-27.1349    2013-25.62592012.519-25.19072012.342
-24.1328    2012-23.3923    2012-21.2834    2012-20.9284    2012-20.2193    2012
-19.70472012.026 -19.1152012.107-18.91122012.193-8.842132012.244-3.151122012.078
-.342344    2012       0    20122.897662    20123.325622    2012 5.239212012.309
  6.04452012.3526.9972072012.43712.99733    201313.042812013.01128.08326    2014
 28.47942013.99228.64565    201432.003422014.39632.812022014.43833.23246 2014.49
33.768382014.59135.35853    201536.469632015.25939.90495    201641.422452016.362
44.01831    201746.958442017.692 48.2465    201849.905492018.38552.44697    2019
56.334062018.97259.33662 2018.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-141.478    .035-73.0504    .02552.44697    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -73.050452.44697               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2015.22  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.49  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2014.74  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2014.32  * Flow Area (sq ft)     *          *  126.31  *          *
* E.G. Slope (ft/ft)     *0.003887  * Area (sq ft)          *          *  126.31  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   67.62  * Top Width (ft)        *          *   67.62  *          *
* Vel Total (ft/s)       *    5.59  * Avg. Vel. (ft/s)      *          *    5.59  *          *
```

* Max Chl Dpth (ft)	* 2.74	* Hydr. Depth (ft)	*	* 1.87	*	*
* Conv. Total (cfs)	* 11323.3	* Conv. (cfs)	*	* 11323.3	*	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 68.19	*	*
* Min Ch El (ft)	* 2012.00	* Shear (lb/sq ft)	*	* 0.45	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 2.51	*	*
* Frctn Loss (ft)	* 0.14	* Cum Volume (acre-ft)	* 1.41	* 17.71	* 2.94	*
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	* 0.91	* 12.02	* 2.75	*

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2700

INPUT
Description:
Station Elevation Data num= 122

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-141.071	2032	-140.1392	031.702	-137.99	2031	-135.405	2030.16	-134.965	2030
-132.2282	029.048	-132.092	2029	-131.8192	028.897	-129.24	2028	-128.2072	027.587
-126.63	2027	-125.2842	026.495	-123.922	2026	-122.396	2025.42	-121.331	2025
-120.1492	024.557	-118.621	2024	-117.061	2023.4	-115.955	2023	-113.82	022.191
-113.266	2022	-112.232	021.617	-110.676	2021	-109.862	020.684	-108.093	2020
-106.4892	019.294	-105.748	2019	-103.5542	018.305	-103.4482	018.312	-100.2962	018.699
-99.02322	018.715	-98.4378	2018.72	-70.5839	2018	-68.28842	018.277	-67.88122	018.271
-67.39132	018.272	-67.14812	018.277	-66.87052	018.292	-65.4539	2018.32	-64.90842	018.336
-64.60012	018.389	-64.3022	018.414	-64.08332	018.421	-63.76592	018.422	-62.85652	018.415
-61.442	018.396	-60.40012	018.375	-59.9374	2018.36	-59.51432	018.342	-57.22842	018.218
-55.48512	018.141	-51.9561	2018	-49.87922	017.758	-45.93232	017.307	-45.25542	017.217
-43.485	2017	-42.53052	016.871	-35.108	2016	-32.7873	2015.33	-31.652	2015
-29.15732	014.228	-28.3586	2014	-27.27782	013.648	-25.81132	013.154	-25.3949	2013
-24.3052	012.95	-23.85792	012.932	-16.00442	012.575	-14.10432	012.512	-11.37362	012.429
-8.265272	012.343	-6.368842	012.306	-3.50183	012.25	0	2012.1263.571764		2012
4.972468	2011.76	6.39544	2011.56	7.121732	011.488	10.93152	2011.498	12.14961	2012
12.24116	2012.04	114.22708	201	314.848462	013.27615	393.872	013.42416	335.152	013.558
16.536672	013.613	16.638322	013.628	18.246272	013.679	18.731852	013.677	19.364972	013.656
20.160072	013.616	22.581942	013.475	26.709012	013.271	28.439962	013.162	28.686472	013.144
28.799892	013.134	30.92382	013.093	31.051862	013.098	31.155182	013.099	31.195022	013.101
31.234732	013.106	31.3082	2013.123	1.769782	013.262	35.38584	201	438.680482	014.722
39.94346	201	543.226852	015.733	44.41349	201	646.421632	016.438	48.59175	2017
50.425322	017.454	52.50932	201	855.715062	018.701	56.12182	018.774	57.38616	2019
58.222082	018.994	59.06572	018.988	59.446212	018.985	60.449242	018.977	62.105932	018.963
62.213242	018.962	62.274432	018.961						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-141.071	.035	-64.6001	.025	57.38616	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-64.60015	7.38616	30	30	30 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2015.06	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.78	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2014.28	* Reach Len. (ft)	* 30.00	* 30.00	* 30.00 *
* Crit W.S. (ft)	* 2014.28	* Flow Area (sq ft)	*	* 99.77	* *
* E.G. Slope (ft/ft)	*0.008304	* Area (sq ft)	*	* 99.77	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 65.98	* Top Width (ft)	*	* 65.98	* *
* Vel Total (ft/s)	* 7.08	* Avg. Vel. (ft/s)	*	* 7.08	* *
* Max Chl Dpth (ft)	* 2.79	* Hydr. Depth (ft)	*	* 1.51	* *
* Conv. Total (cfs)	* 7747.5	* Conv. (cfs)	*	* 7747.5	* *
* Length Wtd. (ft)	* 30.00	* Wetted Per. (ft)	*	* 66.81	* *
* Min Ch El (ft)	* 2011.49	* Shear (lb/sq ft)	*	* 0.77	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 5.48	* *
* Frctn Loss (ft)	* 0.24	* Cum Volume (acre-ft)	* 1.41	* 17.64	* 2.94 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.91	* 11.98	* 2.75 *

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2730

INPUT
Description:
Station Elevation Data num= 131

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-167.0982	032.825	-166.4532	032.645	-166.0312	032.541	-164.085	2032	-161.4212	031.236
-160.599	2031	-160.0632	030.851	-157.2820	30.035	-157.166	2030	-157.1320	29.987

-154.044   2029-152.6652028.487-151.325   2028 -150.182027.545-148.769   2027
-147.598 2026.54-146.098   2026-144.6082025.402-143.566   2025-142.2592024.476
-140.918   2024-138.7572023.142-138.382   2023-136.866 2022.44-135.694   2022
-135.5092021.924-134.8772021.686-132.863   2021-131.5672020.563-129.929   2020
-127.3752019.126-127.012   2019-121.5512018.862-111.0752018.625-108.5482018.574
-99.14062018.598-98.2381 2018.6-91.96172018.569-88.87352018.585-88.7207 2018.58
-83.19762018.592-83.11862018.595-82.03542018.606-80.76412018.613-77.35582018.914
-77.18582018.958-76.7358   2019-76.2795   2019-76.0415   2019-74.4653   2019
-73.7379   2019 -70.247   2019-68.72022018.818-68.32852018.755-66.23192018.455
-63.2806   2018   -62.42017.872-57.5935   2017 -54.6282016.847-46.63172016.447
-39.4095 2016.03-39.18112016.018-38.9031   2016-38.79652015.975-34.9518   2015
-31.17122014.046-30.9775   2014-30.88122013.976-28.6405 2013.39 -27.154   2013
-22.72822012.049-21.66632012.032-20.41342012.034-19.25652012.052-17.88932012.117
-17.53172012.176-12.66512012.242-7.87953   2012-7.682482011.964-7.583752011.957
-7.391222011.946-6.847052011.857-5.158142011.584 -1.324   2011-.978592   2011
-.290936   2011   0   2011 .77508   20112.523273   20114.360954   2011
6.434451   20116.650157   20117.1605472011.10810.05987   201210.711632012.181
12.626422012.29813.271982012.319 14.76522012.48715.644072012.56917.000482012.671
17.312472012.70317.438162012.72717.547262012.766 17.7712012.79317.876912012.801
19.424392012.82820.855612012.75921.193852012.73621.706582012.679 22.75382012.647
23.65355 2012.5924.85556 2012.4825.869772012.42625.992422012.44426.319762012.598
26.33439 2012.7 27.5137   201328.673122013.28531.44015   201432.603622014.301
35.30573   201538.396542015.80539.14032   2016 39.4114 2016.07 42.9968   2017
43.901062017.23346.94737   201848.271012018.33852.24606   201955.586412018.977
57.814182018.962

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-167.098   .035 -70.247   .02552.24606   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -70.24752.24606   20   20   30   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2014.69 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.23 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2013.46 * Reach Len. (ft)   *   20.00 *   20.00 *   30.00 *
* Crit W.S. (ft)   * 2013.76 * Flow Area (sq ft)   *   *   79.36 *   *
* E.G. Slope (ft/ft)   *0.015062 * Area (sq ft)   *   *   79.36 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   58.23 * Top Width (ft)   *   *   58.23 *   *
* Vel Total (ft/s)   *   8.90 * Avg. Vel. (ft/s)   *   *   8.90 *   *
* Max Chl Dpth (ft)   *   2.46 * Hydr. Depth (ft)   *   *   1.36 *   *
* Conv. Total (cfs)   * 5752.5 * Conv. (cfs)   *   * 5752.5 *   *
* Length Wtd. (ft)   *   20.00 * Wetted Per. (ft)   *   *   58.92 *   *
* Min Ch El (ft)   * 2011.00 * Shear (lb/sq ft)   *   *   1.27 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   11.27 *   *
* Frctn Loss (ft)   *   0.33 * Cum Volume (acre-ft) *   1.41 *   17.58 *   2.94 *
* C & E Loss (ft)   *   0.05 * Cum SA (acres)   *   0.91 *   11.94 *   2.75 *
****

Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2750

INPUT
Description:
Station Elevation Data   num=   127
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-175.897 2032.8-175.689 2032.76-175.6672032.765-172.975   2032-171.8212031.667
-169.382   2031-168.8822030.858 -165.85   2030-163.5962029.362-162.361   2029
-161.8842028.818 -161.572028.653-159.631   2028-158.7862027.677 -157.02   2027
-156.3742026.747-154.447   2026-153.8152025.756-151.862   2025-151.2572024.762
-149.316   2024-146.8582023.061-146.699   2023-146.5252022.932-145.3142022.465
-144.4392022.108-144.173   2022-142.0462021.146-141.686   2021-141.2842020.832
-139.254   2020-137.3232019.258-136.266   2019-134.775   2019-120.012   2019
-118.825   2019-117.842   2019-116.177   2019-114.867   2019-114.097   2019
 -109.92   2019-108.808   2019-107.354   2019-102.651   2019-99.97432018.867
-91.4038 2018.82-91.15422018.853-89.5631   2019-89.4623   2019-89.3974   2019
-87.9956   2019-87.7415   2019-84.2498   2019-83.9068   2019-83.4038   2019
-81.1567   2019 -81.049   2019-80.8521   2019-80.1933   2019-80.12172018.997
 -80.1152018.997-79.4222 2018.93-79.04092018.924-78.87612018.919-78.77152018.913
-78.19322018.873 -76.706 2018.78-70.39172018.363-64.9719   2018-59.93372017.446
-56.2212   2017-50.87152016.634-42.2756   2016-37.6909 2015.17 -36.78   2015
-36.01562014.889-31.9466   2014-28.27812013.203-27.3184   2013-26.43492012.809
 -22.704   2012-19.49962011.775-17.94672011.676 -12.329 2011.29 -11.3042011.214
-10.44882011.239 -10.4142011.252-10.07012011.261-9.533222011.264-8.998952011.261
-6.92898   2011-2.729432010.478-2.107172010.441-1.725862010.432-.257224 2010.23
       0 2010.242.4400012010.3332.7002742010.3643.750665   20115.1677092011.988
5.177078   2012 5.223382012.003 12.9692012.14115.86943   201216.364852011.813
22.26227   201222.34539   201222.39469   201225.034932012.84425.51587   2013
26.189462013.17529.20902   201431.658872014.72532.73556   201533.929282015.299
36.56068   201638.302892016.43440.39241   201742.28286 2017.4944.03857   2018
 46.28472018.67747.46563   2019 48.72312018.98848.729692018.98849.362532018.983
53.514422018.94856.268262018.924

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val

```
**********************************************
-175.897    .035-79.0409    .02547.46563    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -79.040947.46563               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2014.39  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.51  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2013.88  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2013.40  * Flow Area (sq ft)     *          *  122.99  *          *
* E.G. Slope (ft/ft)     *0.003683  * Area (sq ft)          *          *  122.99  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   60.16  * Top Width (ft)        *          *   60.16  *          *
* Vel Total (ft/s)       *    5.74  * Avg. Vel. (ft/s)      *          *    5.74  *          *
* Max Chl Dpth (ft)      *    3.65  * Hydr. Depth (ft)      *          *    2.04  *          *
* Conv. Total (cfs)      * 11633.2  * Conv. (cfs)           *          * 11633.2  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   61.27  *          *
* Min Ch El (ft)         * 2010.23  * Shear (lb/sq ft)      *          *    0.46  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.65  *          *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)  *    1.41  *   17.53  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.91  *   11.91  *    2.75  *
************************************************************************************************

Note:    Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2775

INPUT
Description:
Station Elevation Data    num=     105
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-185.3822032.268-184.6182032.121-184.6152032.122-184.185    2032-181.1092031.111
-180.749    2031-180.6432030.967-179.847 2030.73-177.445    2030-174.3912029.144
  -173.9    2029-171.4322028.056-171.4112028.045-171.277    2028-168.7652027.039
-168.664    2027 -166.362026.099 -166.09    2026-163.9612025.199-163.437    2025
-163.1432024.889-161.8512024.382-160.835    2024-158.2872023.027-158.218    2023
-156.0112022.158-155.593    2022-155.5752021.993-155.4452021.942    -153    2021
-152.267 2020.71-150.442    2020-148.9812019.824-148.8562019.823-145.218 2019.46
-139.898 2019.53-138.2442019.571-137.9552019.587-137.9472019.599-133.8022019.585
-132.255 2019.54-125.4882019.333-115.295    2019-108.905 2018.67-108.4912018.664
-106.371 2018.64-104.6832018.643-104.3532018.639-103.055 2018.61 -99.3562018.519
-96.81342018.467-94.68282018.433-92.74872018.417-89.5149 2018.36-86.14162018.293
-80.98712018.183-72.7863    2018-72.77132017.999-72.76322017.999 -69.4962017.825
-67.3247 2017.73-64.68072017.607-60.75262017.409-51.8476    2017-44.80852016.276
-43.09912016.096-42.80632016.064-42.2502    2016-40.2778 2015.68-36.1906    2015
-35.29022014.831-31.5836    2014-27.52182013.095-27.0892    2013-26.82452012.939
 -22.745    2012 -16.0332011.403-11.7784    2011-9.593522010.556-6.50985    2010
-2.17762    2010-2.12616    2010-2.101872010.029-1.20254    2011       02011.051
15.751792011.72522.35754    201224.553962012.55326.20628    201327.42256 2013.34
29.90913    201431.486572014.40333.81311    201535.00459 2015.3337.64273    2016
38.732852016.30341.48923    201744.768622017.85345.34332    201846.43989 2018.24
50.81053    201951.808072018.97752.51102 2018.9653.979242018.93656.199532018.899

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-185.382    .035-133.802    .02550.81053    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -133.80250.81053            15.28   15.28   15.28             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2014.29  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.44  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2013.85  * Reach Len. (ft)       *   15.28  *   15.28  *   15.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  132.77  *          *
* E.G. Slope (ft/ft)     *0.002856  * Area (sq ft)          *          *  132.77  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   60.26  * Top Width (ft)        *          *   60.26  *          *
* Vel Total (ft/s)       *    5.32  * Avg. Vel. (ft/s)      *          *    5.32  *          *
* Max Chl Dpth (ft)      *    3.85  * Hydr. Depth (ft)      *          *    2.20  *          *
* Conv. Total (cfs)      * 13209.9  * Conv. (cfs)           *          * 13209.9  *          *
* Length Wtd. (ft)       *   15.28  * Wetted Per. (ft)      *          *   61.31  *          *
* Min Ch El (ft)         * 2010.00  * Shear (lb/sq ft)      *          *    0.39  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.05  *          *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)  *    1.41  *   17.46  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.91  *   11.87  *    2.75  *
************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2790.28

INPUT
Description:
```

Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-191.651	2032	-191.352	2031.905	-188.55	2031	-188.084	2030.847	-182.119	2029
-180.244	2028.374	-179.073	2028	-178.156	2027.716	-175.887	2027	-173.655	2026.24
-172.908	2026	-172.352	2025.817	-170.818	2025.281	-167.273	2024	-165.659	2023.46
-164.748	2023.132	-164.362	2023	-164.005	2022.879	-163.202	2022.589	-161.567	2022
-159.868	2021.394	-158.814	2021	-157.506	2020.753	-157.355	2020.734	-155.166	2020.538
-145.515	2019.3	-136.96	2019	-135.679	2019	-135.157	2019	-128.733	2019
-127.166	2019	-126.001	2019	-125.003	2019	-120.399	2019	-116.322	2019
-111.383	2018.813	-109.732	2018.758	-102.259	2018.492	-99.593	2018.402	-96.152	2018.304
-92.753	2018.189	-84.462	2018	-73.097	2017.704	-71.885	2017.669	-71.247	2017.653
-68.068	2017.577	-63.153	2017.45	-61.022	2017.391	-55.212	2017.166	-54.362	2017.138
-51.103	2017	-47.752	2016.643	-41.806	2016	-37.597	2015.225	-29.981	2014
-27.412	2013.245	-26.496	2013	-25.972	2012.869	-22.859	2012	-19.198	2011.696
-9.805	2011	-8.29	2011	-2.977	2011	-1.174	2011	-.368	2011
0	2011.015	3.582	2011.166	23.916	2012	25.809	2012.347	28.825	2013
31.304	2013.532	33.565	2014	42.447	2015.931	42.74	2016	42.982	2016.056
47.997	2017	49.922	2017.344	53.174	2018	54.451	2018.166	58.428	2018.982

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-191.651	.035	-116.322	.025	58.428	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff	Contr.	Expan.
-116.322	58.428	1.5	1.5	1.5		.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2014.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.		0.025	
W.S. Elev (ft)	2013.67	Reach Len. (ft)	1.50	1.50	1.50
Crit W.S. (ft)		Flow Area (sq ft)		118.50	
E.G. Slope (ft/ft)	0.004174	Area (sq ft)		118.50	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	60.86	Top Width (ft)		60.86	
Vel Total (ft/s)	5.96	Avg. Vel. (ft/s)		5.96	
Max Chl Dpth (ft)	2.67	Hydr. Depth (ft)		1.95	
Conv. Total (cfs)	10927.9	Conv. (cfs)		10927.9	
Length Wtd. (ft)	1.50	Wetted Per. (ft)		61.32	
Min Ch El (ft)	2011.00	Shear (lb/sq ft)		0.50	
Alpha	1.00	Stream Power (lb/ft s)		3.00	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	1.41	17.41	2.94
C & E Loss (ft)	0.02	Cum SA (acres)	0.91	11.85	2.75

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2791.78

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-192.023	2032	-191.652	2031.881	-188.921	2031	-188.632	2030.907	-186.768	2030.305
-185.921	2030.042	-185.781	2030	-185.105	2029.788	-182.517	2029	-179.852	2028.109
-179.508	2028	-179.239	2027.917	-176.332	2027	-174.533	2026.387	-173.329	2026
-172.626	2025.77	-170.469	2025	-168.111	2024.191	-167.632	2024	-166.572	2023.646
-165.294	2023.186	-164.753	2023	-164.252	2022.83	-163.126	2022.424	-161.95	2022
-159.304	2021.057	-159.144	2021	-159.072	2020.974	-159.041	2020.966	-158.979	2020.949
-156.279	2020	-150.602	2019.571	-149.377	2019.464	-148.693	2019.4	-146.295	2019.219
-145.982	2019.199	-145.772	2019.19	-145.057	2019.177	-144.258	2019.16	-143.882	2019.15
-136.234	2019.019	-136.196	2019.018	-134.94	2019	-128.925	2019	-127.814	2019
-126.855	2019	-126.122	2019	-122.832	2019	-116.237	2019	-108.246	2018.697
-105.572	2018.608	-99.57772	2018.395	-97.43872	2018.322	-93.53822	2018.212	-91.17152	2018.132
-85.3943	2018	-69.56942	2017.588	-68.55772	2017.559	-68.02522	2017.545	-65.37042	2017.482
-61.26572	2017.376	-59.4862	2017.327	-53.05832	2017.077	-52.66152	2017.064	-51.1424	2017
-49.57952	2016.833	-41.8709	2016	-35.51842	2015.059	-35.108	2015	-34.97962	2014.979
-29.8665	2014	-26.81732	2013.105	-26.4272	2013	-26.20232	2012.944	-22.8219	2012
-20.23672	2011.785	-9.63734	2011	-9.170522	2010.943	-8.999792	2010.927	-5.468172	2010.501
-4.59462	2010.376	-4.268712	2010.341	-3.300122	2010.268	-3.14368	2010.25	-2.757742	2010.236
-2.36882	2010.214	-2.117072	2010.195	-.5235952	2010.294	-.145086	2011	0	2011.006
11.21882	2011.47823	95583	2012	26.51298	2012.46928	96547	2013	30.98194	2013.433
33.72343	2014	34.28975	2014.124	35.57185	2014.401	38.40697	2015	41.52732	2015.679
42.65331	2015.915	43.09034	2016	44.69799	2016.264	45.4141	2016.394	8.65665	2017
49.74312	2017.195	53.74166	2018	53.83924	2018.013	54.19815	2018.086	54.71038	2018.192
54.83093	2018.216	54.90061	2018.235	8.68188	2018.985	8.69717	2018.984	58.70919	2018.978

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-192.023	.035	-192.023	.025	58.70919	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff	Contr.	Expan.
-192.023	58.70919	8.22	8.22	8.22		.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2014.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.		0.025	
W.S. Elev (ft)	2013.71	Reach Len. (ft)	8.22	8.22	8.22

* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	*	125.53	*	*		
* E.G. Slope (ft/ft)	*0.003508	* Area (sq ft)	*	*	125.53	*	*		
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	*	706.00	*	*		
* Top Width (ft)	* 61.22	* Top Width (ft)	*	*	61.22	*	*		
* Vel Total (ft/s)	* 5.62	* Avg. Vel. (ft/s)	*	*	5.62	*	*		
* Max Chl Dpth (ft)	* 3.52	* Hydr. Depth (ft)	*	*	2.05	*	*		
* Conv. Total (cfs)	* 11920.5	* Conv. (cfs)	*	*	11920.5	*	*		
* Length Wtd. (ft)	* 8.22	* Wetted Per. (ft)	*	*	62.16	*	*		
* Min Ch El (ft)	* 2010.20	* Shear (lb/sq ft)	*	*	0.44	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	2.49	*	*		
* Frctn Loss (ft)	* 0.03	* Cum Volume (acre-ft)	*	1.41	*	17.41	*	2.94	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	*	0.91	*	11.85	*	2.75	*

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2800

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-195.975	2032	-194.813	2031.63	1-192.859	2031	-187.295	2029.17	2-186.738	2029
-186.424	2028.895	-183.73	2028	-182.797	2027.687	-180.744	2027	-178.243	2026.146
-177.79	2026	-173.265	2024.519	-171.781	2024	-171.092	2023.752	-168.902	2023
-166.874	2022.312	-166.009	2022	-164.091	2021.351	-163.098	2021	-159.487	2020.537
-156.572	2020.435	-152.454	2020.306	-151.423	2020.283	-151.364	2020.295	-140.266	2019.997
-120.019	2019.095	-117.875	2019	-117.487	2018.989	-117.481	2018.989	-116.012	2018.951
-114.434	2018.892	-112.142	2018.813	-88.124	2018	-82.378	2017.856	-78.263	2017.758
-68.292	2017.568	-62.035	2017.416	-59.894	2017.375	-58.515	2017.311	-53.922	2017.133
-51.292	2017.018	-50.923	2017	-49.656	2016.891	-40.112	2016	-36.669	2015.429
-32.575	2014.699	-28.704	2014	-26.077	2013.379	-24.676	2013	-23.944	2012.793
-21.802	2012	-11.495	2011.199	-9.832	2011.073	-8.702	2011	-5.884	2011
-2.882	2011	-.273	2011	0	2011	2.224	2011	6.205	2011.167
14.931	2011.513	25.621	2012	28.095	2012.487	30.847	2013	34.520	13.691
36.153	2014	43.703	2015.37	46.901	2016	47.996	2016.18	48.522	2016.278
53.265	2017	57.537	2017.621	59.854	2018	60.906	2018.209	61.507	2018.363
61.722	2018.267	61.979	2018.372						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-195.975	.035	-68.29	.025	61.979	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-68.29	61.979	4.37	4.37	4.37	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2014.16	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (ft)	* 0.61	* Wt. n-Val.	*		*	0.025	*		*
* W.S. Elev (ft)	* 2013.54	* Reach Len. (ft)	*	4.37	*	4.37	*	4.37	*
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*		*	112.33	*		*
* E.G. Slope (ft/ft)	*0.004945	* Area (sq ft)	*		*	112.33	*		*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*		*	706.00	*		*
* Top Width (ft)	* 60.47	* Top Width (ft)	*		*	60.47	*		*
* Vel Total (ft/s)	* 6.29	* Avg. Vel. (ft/s)	*		*	6.29	*		*
* Max Chl Dpth (ft)	* 2.54	* Hydr. Depth (ft)	*		*	1.86	*		*
* Conv. Total (cfs)	* 10039.5	* Conv. (cfs)	*		*	10039.5	*		*
* Length Wtd. (ft)	* 4.37	* Wetted Per. (ft)	*		*	60.92	*		*
* Min Ch El (ft)	* 2011.00	* Shear (lb/sq ft)	*		*	0.57	*		*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	3.58	*		*
* Frctn Loss (ft)	* 0.02	* Cum Volume (acre-ft)	*	1.41	*	17.39	*	2.94	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.91	*	11.84	*	2.75	*

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2804.37

INPUT
Description:
Station Elevation Data num= 85

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-197.922	2032	-196.372	2031.508	-194.8	2031	-189.672	2029.316	-188.677	2029
-188.016	2028.778	-185.721	2028	-185.346	2027.867	-182.786	2027	-182.427	2026.88
-179.784	2026	-174.245	2024.134	-173.857	2024	-173.731	2023.956	-170.946	2023
-168.166	2022.057	-168.009	2022	-166.332	2021.432	-164.934	2021	-163.822	2020.927
-163.782	2020.926	-163.052	2020.914	-162.869	2020.905	-162.57	2020.89	-162.255	2020.876
-157.606	2020.677	-119.547	2019	-117.755	2018.945	-117.472	2018.938	-109.835	2018.718
-109.683	2018.717	-81.481	2018	-81.416	2018	-79.68	2018	-71.782	2017.808
-67.621	2017.729	-67.023	2017.701	-65.031	2017.624	-63.892	2017.574	-62.406	2017.501
-60.505	2017.397	-58.269	2017.266	-54.06	2017	-50.353	2016.824	-45.498	2016.468
-43.296	2016.326	-42.052	2016.241	-39.274	2016	-37.841	2015.745	-28.184	2014
-26.004	2013.485	-23.813	2013	-22.547	2012.496	-21.21	2012	-17.423	2011.706
-16.812	2011.659	-12.257	2011.365	-8.413	2011.097	-7.775	2011.053	-7.511	2011.036
-7.408	2011.029	-6.701	2011	-6.243	2011	-4.106	2011	-1.018	2011
0	2011	.34	2011	3.86	2011	9.612	2011.228	26.556	2012
26.853	2012.058	31.907	2013	33.397	2013.282	37.242	2014	44.503	2015.318

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  48.692    2016  54.0212016.737  55.749    2017  58.0912017.341  62.669    2018
  62.8912018.057  62.9252018.042  63.4512018.256  63.5792018.308   63.592018.312

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-197.922    .035 -81.481    .025   63.59    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -81.481   63.59            95.63   95.63   95.63             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2014.14  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.63  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2013.51  * Reach Len. (ft)       *   95.63  *   95.63  *   95.63  *
* Crit W.S. (ft)          *         * Flow Area (sq ft)      *          *  111.08  *          *
* E.G. Slope (ft/ft)      *0.005159  * Area (sq ft)           *          *  111.08  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   60.71  * Top Width (ft)         *          *   60.71  *          *
* Vel Total (ft/s)        *    6.36  * Avg. Vel. (ft/s)       *          *    6.36  *          *
* Max Chl Dpth (ft)       *    2.51  * Hydr. Depth (ft)       *          *    1.83  *          *
* Conv. Total (cfs)       *  9829.4  * Conv. (cfs)            *          *  9829.4  *          *
* Length Wtd. (ft)        *   95.63  * Wetted Per. (ft)       *          *   61.14  *          *
* Min Ch El (ft)          * 2011.00  * Shear (lb/sq ft)       *          *    0.59  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    3.72  *          *
* Frctn Loss (ft)         *    0.61  * Cum Volume (acre-ft)   *    1.41  *   17.38  *    2.94  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *    0.91  *   11.83  *    2.75  *
*************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2900

INPUT
Description:
Station Elevation Data    num=     105
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-216.7872016.988-216.2682016.946-215.8432016.932-215.2532016.947-214.599    2017
-211.2472017.296-210.9982017.327-210.6722017.351-209.4282017.429-205.6492017.393
-205.4062017.384-204.7452017.307 -202.012017.155-201.7632017.134-200.5752017.077
-198.347    2017-186.1762016.433-183.2382016.221-182.6032016.177-181.1462016.096
-180.872 2016.07-177.998    2016-177.919    2016 -177.84    2016 -177.642015.999
 -177.622015.999-175.7042015.987-175.6642015.987-173.6472015.966-173.5372015.965
-161.1112015.874-158.1332015.852-156.3692015.842-155.7642015.838 -151.38    2016
-151.052    2016-148.575    2016-146.263    2016 -145.32    2016-140.595    2016
-139.516    2016-136.465    2016-134.465    2016-132.944    2016-125.048    2016
-124.538    2016-124.144    2016-123.337    2016-113.821    2016-113.437    2016
-113.159    2016-112.4312015.981-110.5722015.933-109.7172015.899-109.0992015.875
  -59.442014.496 -58.503  2014.5 -57.642 2014.51 -57.0962014.512 -55.7692014.481
 -55.4422014.479 -54.7332014.508 -54.2642014.561 -53.4782014.595 -51.9412014.581
 -49.7872014.532 -43.2132014.362 -39.1512014.275 -37.6822014.237 -36.3882014.176
 -33.174    2014  -29.262013.455 -27.6112013.207  -25.96    2013 -15.3432012.003
  -15.342012.002 -15.3292012.002 -15.3282012.003 -15.3252012.003  -15.31    2012
 -13.6932011.435 -12.725    2011 -10.973    2011  -7.579    2011       0    2011
  28.388    2011  35.119    2011  35.189    2011  35.335    2011  37.547    2011
  39.4032011.418  41.974    2012   42.912012.207  46.377    2013  50.3252013.886
  50.908    2014  52.3512014.299  53.4192014.473  55.4712014.843  61.573    2016
  62.602 2016.19  67.077    2017  68.5622017.331   70.432017.921  70.5182017.949

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-216.787    .035-113.821    .025  70.518    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -113.821  70.518           50.262  50.262  50.262             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2013.51  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.75  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2012.76  * Reach Len. (ft)       *   50.26  *   50.26  *   50.26  *
* Crit W.S. (ft)          * 2012.76  * Flow Area (sq ft)     *          *  101.63  *          *
* E.G. Slope (ft/ft)      *0.008176  * Area (sq ft)           *          *  101.63  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   68.74  * Top Width (ft)         *          *   68.74  *          *
* Vel Total (ft/s)        *    6.95  * Avg. Vel. (ft/s)       *          *    6.95  *          *
* Max Chl Dpth (ft)       *    1.76  * Hydr. Depth (ft)       *          *    1.48  *          *
* Conv. Total (cfs)       *  7807.7  * Conv. (cfs)            *          *  7807.7  *          *
* Length Wtd. (ft)        *   50.26  * Wetted Per. (ft)       *          *   69.16  *          *
* Min Ch El (ft)          * 2011.00  * Shear (lb/sq ft)       *          *    0.75  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    5.21  *          *
* Frctn Loss (ft)         *    0.41  * Cum Volume (acre-ft)   *    1.41  *   17.14  *    2.94  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *    0.91  *   11.69  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
```

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2950.26

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-44.8022013.299	-44.2772013.298	-44.0492013.302	-44.0482013.302	-43.9222013.311					
-43.6262013.317	-43.6252013.317	-39.9312013.378	-39.5912013.387	-39.2672013.389					
-37.9812013.389	-35.7552013.387	-35.3232013.384	-33.82013.365	-33.032013.354					
-32.5782013.344	-29.6242013.244	-29.2012013.174	-28.2092013.102	-26.132	2013				
-22.92012.417	-20.585	2012	-16.7292011.322	-14.982	2011	-10.632	2010.61		
-10.6222010.613	-9.9712010.663	-9.5032010.676	-9.092010.681	-8.4372010.683					
-8.262010.688	-8.1482010.696	-8.0512010.713	-7.5852010.703	-7.402	2010.69				
-7.2472010.681	-7.0332010.669	-6.832010.662	-6.4512010.649	-5.4662010.613					
-3.2672010.524	0	2010.39	3.1252010.261	29.2162009.203	31.3492009.113				
32.0452009.085	32.6132009.062	34.389	2009	34.866	2009	35.109	2009		
35.5552009.896	35.967	2011	36.5852011.201	36.9582011.278	40.048	2012			
41.004 2012.18	44.797	2013	46.8342013.434	49.409	2014	57.1492015.476			
59.716	2016	60.7092016.187	64.842	2017	66.6722017.415	69.208	2018		
69.3152018.003	69.4612018.008								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-44.802	.035	-33.8	.025	69.461	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-33.8 69.461 49.74 49.74 49.74 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2012.84	Element	Left OB	Channel / Right OB
Vel Head (ft)	1.45	Wt. n-Val.		0.025
W.S. Elev (ft)	2011.39	Reach Len. (ft)	49.74	49.74 / 49.74
Crit W.S. (ft)	2011.79	Flow Area (sq ft)		72.95
E.G. Slope (ft/ft)	0.018620	Area (sq ft)		72.95
Q Total (cfs)	706.00	Flow (cfs)		706.00
Top Width (ft)	54.50	Top Width (ft)		54.50
Vel Total (ft/s)	9.68	Avg. Vel. (ft/s)		9.68
Max Chl Dpth (ft)	2.38	Hydr. Depth (ft)		1.34
Conv. Total (cfs)	5173.9	Conv. (cfs)		5173.9
Length Wtd. (ft)	49.74	Wetted Per. (ft)		55.97
Min Ch El (ft)	2009.00	Shear (lb/sq ft)		1.52
Alpha	1.00	Stream Power (lb/ft s)		14.66
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	1.41	17.04 / 2.94
C & E Loss (ft)	0.07	Cum SA (acres)	0.91	11.62 / 2.75

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3000

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-43.4692012.621	-43.4612012.621	-43.4592012.621	-38.5952012.052	-38.01	2012				
-35.2972011.643	-33.7872011.482	-33.0692011.441	-31.9672011.439	-31.7132011.429					
-29.194	2011	-23.3922009.725	-21.242	2009	-19.8322008.476	-18.505	2008		
-17.7332007.727	-15.766	2007	-14.2832006.654	-12.0692006.457	-7.9542006.127				
-7.4842006.077	-6.586	2006	-2.324	2006	0	2006	2.711	2006	
2.948	2006	8.069	2006	8.42	2006	14.301	2006	15.978	2006
27.623	2006	28.378	2006	29.1782006.503	29.871	2007	34.9422007.883		
35.596	2008	36.3262008.134	40.0062008.786	40.5422008.889	41.103	2009			
41.8652009.182	48.104	2011	48.997 2011.26	51.576	2012	53.2122012.485			
54.988	2013	57.3032013.782	57.881	2014	58.112014.091	63.242	2016		
65.7352016.939	65.878	2017	67.0512017.619	67.4012017.607	67.574	2017.6			

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-43.469	.035	-43.469	.025	67.574	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-43.469 67.574 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2010.95	Element	Left OB	Channel / Right OB
Vel Head (ft)	3.88	Wt. n-Val.		0.025

```
* W.S. Elev (ft)         * 2007.08  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 2008.06  * Flow Area (sq ft)      *          *   44.69  *          *
* E.G. Slope (ft/ft)     *0.074879  * Area (sq ft)           *          *   44.69  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   46.28  * Top Width (ft)         *          *   46.28  *          *
* Vel Total (ft/s)       *   15.80  * Avg. Vel. (ft/s)       *          *   15.80  *          *
* Max Chl Dpth (ft)      *    1.08  * Hydr. Depth (ft)       *          *    0.97  *          *
* Conv. Total (cfs)      *  2580.0  * Conv. (cfs)            *          *  2580.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *          *   46.68  *          *
* Min Ch El (ft)         * 2006.00  * Shear (lb/sq ft)       *          *    4.48  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   70.71  *          *
* Frctn Loss (ft)        *    1.65  * Cum Volume (acre-ft)   *    1.41  *   16.98  *    2.94  *
* C & E Loss (ft)        *    0.24  * Cum SA (acres)         *    0.91  *   11.56  *    2.75  *
*****************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -3100

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -40.6862010.392 -39.082 2010.39 -37.6642010.389 -37.3612010.362 -37.0412010.312
 -36.4892010.253 -35.3482010.097  -34.072009.868 -31.0772009.444 -30.6442009.344
 -28.269    2009 -25.4652008.339 -24.007    2008  -22.122007.521 -20.564    2007
 -19.6122006.333  -19.05    2006 -17.7552005.779 -15.9942005.519 -15.7012005.533
 -15.5612005.565       02004.171   1.907    2004  27.4732005.481  30.4022005.682
  31.9272005.835  33.914    2006  35.3232006.226  40.227    2007  40.9632007.127
  45.029    2008  48.9162008.862  49.541    2009   50.952009.373   57.58    2011
  58.8762011.399  60.829    2012  62.4462012.481  64.133    2013  66.1272013.626
  67.582    2014  68.4942014.459  69.5982014.909  69.7372014.907

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 -40.686    .035 -40.686    .025  69.737    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -40.686  69.737             100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2007.84  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.39  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2007.45  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 2006.73  * Flow Area (sq ft)     *          *  141.04  *          *
* E.G. Slope (ft/ft)     *0.002526  * Area (sq ft)          *          *  141.04  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   64.35  * Top Width (ft)        *          *   64.35  *          *
* Vel Total (ft/s)       *    5.01  * Avg. Vel. (ft/s)      *          *    5.01  *          *
* Max Chl Dpth (ft)      *    3.45  * Hydr. Depth (ft)      *          *    2.19  *          *
* Conv. Total (cfs)      * 14047.2  * Conv. (cfs)           *          * 14047.2  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   65.02  *          *
* Min Ch El (ft)         * 2004.00  * Shear (lb/sq ft)      *          *    0.34  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.71  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)   *    1.41  *   16.76  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)         *    0.91  *   11.44  *    2.75  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -3200

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -37.978 2009.35 -37.1012009.313 -36.3492009.281 -36.325 2009.28 -33.9032009.193
 -30.9422009.087 -30.9352009.087 -30.3932009.064 -28.851    2009 -26.5162008.516
 -24.188    2008 -19.3082007.019 -19.217    2007 -19.0842006.973 -14.498    2006
       02004.828   2.4652004.629   7.9622004.283    12.6    2004  12.6442003.998
  12.7252003.976  20.1832003.844  20.863    2004  29.0812004.899  40.214    2006
  41.0822006.134  46.718    2007  48.5742007.361  51.915    2008  54.7892008.646
  56.356    2009  65.5812010.583  67.3842010.888  67.984    2011  72.6412011.994
   72.652011.996  72.6572011.997  72.6582011.997  72.6592011.997

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 -37.978    .035 -37.978    .025  72.659    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -37.978  72.659              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2007.38  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.82  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2006.56  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 2006.56  * Flow Area (sq ft)     *          *   97.43  *          *
* E.G. Slope (ft/ft)     *0.008018  * Area (sq ft)          *          *   97.43  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   61.02  * Top Width (ft)        *          *   61.02  *          *
* Vel Total (ft/s)       *    7.25  * Avg. Vel. (ft/s)      *          *    7.25  *          *
* Max Chl Dpth (ft)      *    2.72  * Hydr. Depth (ft)      *          *    1.60  *          *
* Conv. Total (cfs)      *  7884.6  * Conv. (cfs)           *          *  7884.6  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   61.33  *          *
* Min Ch El (ft)         * 2003.84  * Shear (lb/sq ft)      *          *    0.80  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.76  *          *
* Frctn Loss (ft)        *    0.56  * Cum Volume (acre-ft)  *    1.41  *   16.49  *    2.94  *
* C & E Loss (ft)        *    0.09  * Cum SA (acres)        *    0.91  *   11.29  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3300

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
  -39.37 2009.09 -38.5682009.064 -36.532    2009 -35.9072008.888 -31.502    2008
 -27.5622007.087  -27.24    2007 -26.5022006.821 -24.8982006.439 -22.971    2006
 -20.1172005.351  -14.21    2004 -11.6162003.216 -10.828    2003   -7.232002.574
  -6.4182002.456  -5.7732002.385  -4.6422002.289  -4.3992002.263  -3.8622002.225
  -3.7622002.223  -3.2282002.217       0 2002.23   2.9252002.241   3.0372002.247
   3.9172002.315   4.661 2002.37   5.0472002.415    5.262002.434   6.817 2002.52
   7.4242002.549   8.2442002.578   9.9172002.659  11.4552002.743  12.0922002.792
  12.4842002.842   13.062002.943   13.652002.991  13.788    2003  15.0092003.049
   20.572003.264  27.6782003.525  39.221    2004  42.9092004.836  48.369    2006
   53.362006.831  54.2032006.974   54.34    2007  54.7182007.064  60.757    2008
  62.5422008.294  64.6282008.702  66.232    2009  67.6152009.536  69.043 2009.54
  69.5282009.542

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
  -39.37    .035  -39.37    .025  69.528    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -39.37  69.528             5.97    5.97    5.97             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2005.99  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.71  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2004.29  * Reach Len. (ft)       *    5.97  *    5.97  *    5.97  *
* Crit W.S. (ft)         * 2004.79  * Flow Area (sq ft)     *          *   67.36  *          *
* E.G. Slope (ft/ft)     *0.024450  * Area (sq ft)          *          *   67.36  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   55.93  * Top Width (ft)        *          *   55.93  *          *
* Vel Total (ft/s)       *   10.48  * Avg. Vel. (ft/s)      *          *   10.48  *          *
* Max Chl Dpth (ft)      *    2.07  * Hydr. Depth (ft)      *          *    1.20  *          *
* Conv. Total (cfs)      *  4515.1  * Conv. (cfs)           *          *  4515.1  *          *
* Length Wtd. (ft)       *    5.97  * Wetted Per. (ft)      *          *   56.24  *          *
* Min Ch El (ft)         * 2002.22  * Shear (lb/sq ft)      *          *    1.83  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   19.16  *          *
* Frctn Loss (ft)        *    1.30  * Cum Volume (acre-ft)  *    1.41  *   16.30  *    2.94  *
* C & E Loss (ft)        *    0.09  * Cum SA (acres)        *    0.91  *   11.16  *    2.75  *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Program found supercritical flow starting at this cross section.

CROSS SECTION
```

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3305.97

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-40.047	2009.084	-38.606	2009.039	-37.378	2009	-33.494	2008.306	-31.977	2008
-30.622	2007.685	-28.071	2007	-25.154	2006.293	-23.993	2006	-22.712	2005.665
-15.793	2004	-14.786	2003.718	-12.17	2003	-10.265	2002.774	-9.169	2002.615
-8.2982	2002.519	-6.771	2002.39	-6.4442	2002.355	-5.7192	2002.303	-5.5842	2002.301
-4.8632	2002.294		2002.312	3.4412	2002.325	3.5932	2002.334	4.7792	2002.425
5.7842	2002.499	6.3062	2002.561	6.5932	2002.585	8.6932	2002.702	9.5132	2002.741
10.62	2002.78	12.877	2002.889	14.897	2003	15.375	2003.02	38.486	2004
44.056	2005.281	47.363	2006	48.704	2006.239	53.371	2007	59.897	2007.867
60.787	2008	61.252	2008.091	66.145	2009	67.124	2009.379	68.705	2009.384
69.032	2009.385								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-40.047	.035	-40.047	.025	69.03	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
-40.047	69.03	85.14	85.14	85.14	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2005.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.38	Wt. n-Val.		0.025	
W.S. Elev (ft)	2004.39	Reach Len. (ft)	85.14	85.14	85.14
Crit W.S. (ft)	2004.77	Flow Area (sq ft)		74.94	
E.G. Slope (ft/ft)	0.017826	Area (sq ft)		74.94	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	57.62	Top Width (ft)		57.62	
Vel Total (ft/s)	9.42	Avg. Vel. (ft/s)		9.42	
Max Chl Dpth (ft)	2.10	Hydr. Depth (ft)		1.30	
Conv. Total (cfs)	5287.8	Conv. (cfs)		5287.8	
Length Wtd. (ft)	85.14	Wetted Per. (ft)		57.93	
Min Ch El (ft)	2002.29	Shear (lb/sq ft)		1.44	
Alpha	1.00	Stream Power (lb/ft s)		13.56	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	1.41	16.29	2.94
C & E Loss (ft)	0.10	Cum SA (acres)	0.91	11.15	2.75

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3391.11

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-35.526	2008.115	-34.624	2008	-32.582	2007.632	-27.554	2007	-25.972	2006.517
-23.519	2006	-20.342	2005.35	-14.416	2004	-12.393	2003.612	-9.253	2003
-8.1852	2002.847	-7.7632	2002.765	-7.4062	2002.733	-6.7212	2002.703	-4.82	2002.635
-4.4892	2002.619	-4.3852	2002.607		2002.563	9.7282	2002.466	10.499	2002.476
12.599	2002.524	13.662	2002.543	15.036	2002.562	15.465	2002.565	16.829	2002.571
17.534	2002.579	18.491	2002.596	20.757	2002.645	22.268	2002.67	26.729	2002.728
27.244	2002.736	38.415	2002.948	41.465	2003	41.644	2003.02	46.974	2003.786
48.418	2003.991	48.459	2004	58.765	2005.622	61.285	2006	65.926	2006.313
68.685	2006.475	71.699	2006.689	72.229	2006.703	73.439	2006.792	74.313	2006.84
74.384	2006.845	74.777	2006.865	75.062	2006.883	75.311	2006.896	75.416	2006.904
75.496	2006.908	75.615	2006.911	75.933	2006.915	75.996	2006.917	76.185	2006.936
76.236	2006.938	76.285	2006.936	76.389	2006.925	76.392	2006.925	76.488	2006.915
76.528	2006.91	76.743	2006.89	76.772	2006.888	76.929	2007.029		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-35.526	.035	-35.526	.025	76.929	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
-35.526	76.929	8.89	8.89	8.89	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2005.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.76	Wt. n-Val.		0.025	
W.S. Elev (ft)	2004.43	Reach Len. (ft)	8.89	8.89	8.89
Crit W.S. (ft)	2004.43	Flow Area (sq ft)		101.19	
E.G. Slope (ft/ft)	0.008069	Area (sq ft)		101.19	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	67.47	Top Width (ft)		67.47	
Vel Total (ft/s)	6.98	Avg. Vel. (ft/s)		6.98	
Max Chl Dpth (ft)	1.96	Hydr. Depth (ft)		1.50	
Conv. Total (cfs)	7859.4	Conv. (cfs)		7859.4	
Length Wtd. (ft)	8.89	Wetted Per. (ft)		67.75	
Min Ch El (ft)	2002.47	Shear (lb/sq ft)		0.75	
Alpha	1.00	Stream Power (lb/ft s)		5.25	

```
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)   *    1.41  *   16.12  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.91  *   11.03  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3400

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -33.556 2007.91 -33.553 2007.91 -33.551 2007.91 -33.3932007.892  -33.252007.869
 -33.0022007.833 -32.988 2007.82 -32.4212007.754 -31.8312007.705 -30.6492007.591
 -25.666    2007 -25.2212006.898 -22.182    2006 -17.2192004.928 -12.694    2004
 -10.1522003.537  -8.5922003.267  -7.101    2003  -6.5212002.927  -4.2522002.602
  -3.9522002.544  -3.6992002.521  -3.2122002.499  -1.8482002.451  -1.626 2002.44
  -1.5532002.431       02002.415   8.4752002.331   9.0232002.338  10.5152002.372
  11.2692002.386  12.2462002.399  12.5512002.401  13.5212002.406  14.0222002.411
  14.7022002.424  16.3112002.459  17.3852002.476  20.5542002.517  20.9212002.523
  28.8582002.674  31.2082002.714  38.1272002.821  46.849    2003  47.6442003.166
  51.404    2004  53.1982004.285  58.1332005.071  63.896    2006  67.2972006.251
  70.4422006.424  70.6982006.441  72.1092006.516   73.132006.579  74.0312006.626
  74.4112006.656  74.6982006.669  75.1242006.678  76.2672006.695  76.4942006.703
  77.1772006.769  77.3572006.777  77.536 2006.77   77.912006.732  77.9192006.731
  78.2642006.693   78.412006.677  78.5082006.668   78.59 2006.66  78.5922006.662

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 -33.556    .035 -33.556    .025  78.592    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -33.556  78.592              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)          * 2005.09  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.92  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2004.17  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 2004.31  * Flow Area (sq ft)      *          *   91.53  *          *
* E.G. Slope (ft/ft)      *0.010946  * Area (sq ft)           *          *   91.53  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   65.98  * Top Width (ft)         *          *   65.98  *          *
* Vel Total (ft/s)        *    7.71  * Avg. Vel. (ft/s)       *          *    7.71  *          *
* Max Chl Dpth (ft)       *    1.84  * Hydr. Depth (ft)       *          *    1.39  *          *
* Conv. Total (cfs)       *  6748.1  * Conv. (cfs)            *          *  6748.1  *          *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)       *          *   66.25  *          *
* Min Ch El (ft)          * 2002.33  * Shear (lb/sq ft)       *          *    0.94  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    7.28  *          *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)   *    1.41  *   16.10  *    2.94  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)         *    0.91  *   11.01  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3500

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -25.2172007.257 -25.1022007.254 -24.9752007.251 -24.702 2007.24 -24.5552007.234
 -24.0892007.203 -23.3222007.152 -23.0362007.139 -21.6792007.074 -21.5762007.071
 -20.1252007.032   -20.12007.031 -19.449    2007 -16.2212006.319  -14.75    2006
   -7.082004.366  -5.394    2004  -3.4142003.595  -1.9232003.317   -.244    2003
       02002.965   1.8572002.703   3.7962002.461   4.9892002.252   6.205    2002
   7.5592001.916   8.9852001.811  12.0332001.627  13.2862001.562  14.373 2001.52
  15.3292001.504  18.9742001.514  19.3892001.474  20.0152001.462  20.6942001.434
  21.0992001.411  24.0022001.432  24.4872001.358  29.558 2001.36  32.545 2001.26
  33.5632001.199  36.199    2001  38.722    2001  40.941    2001  45.2212001.449
  50.6642001.451  52.561    2002  53.3562002.132  54.8932002.401  56.8332002.743
  57.4542002.798  57.8662002.853   58.25    2003  62.7692003.925  62.9482003.953
    63.1    2004   67.592004.327  71.1882004.595  71.8292004.638  72.3212004.681
  72.6932004.699  73.1762004.711  73.865 2004.72  75.9792004.734  79.598 2004.77
  83.487  2004.8  83.7222004.787

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 -25.217    .035 -25.217    .025  83.722    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
       -25.217  83.722              100     100     100            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2004.11  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.84  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2003.27  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 2003.30  * Flow Area (sq ft)     *          *   96.01  *          *
* E.G. Slope (ft/ft)     *0.008473  * Area (sq ft)          *          *   96.01  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   61.25  * Top Width (ft)        *          *   61.25  *          *
* Vel Total (ft/s)       *    7.35  * Avg. Vel. (ft/s)      *          *    7.35  *          *
* Max Chl Dpth (ft)      *    2.27  * Hydr. Depth (ft)      *          *    1.57  *          *
* Conv. Total (cfs)      *  7669.8  * Conv. (cfs)           *          *  7669.8  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   61.62  *          *
* Min Ch El (ft)         * 2001.00  * Shear (lb/sq ft)      *          *    0.82  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.06  *          *
* Frctn Loss (ft)        *    0.96  * Cum Volume (acre-ft)  *    1.41  *   15.88  *    2.94  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.91  *   10.87  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3600

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -34.5182005.524 -32.9772005.549 -32.7042005.488 -32.6772005.474 -32.4972005.465
 -31.9772005.419 -30.8592005.245   -30.42005.148 -28.9142004.894  -26.05 2004.56
 -24.7112004.384 -24.1042004.336 -22.592    2004 -22.052    2004 -20.513    2004
  -19.84    2004  -19.67    2004 -19.163    2004 -17.875 2003.37 -17.072    2003
 -16.1232002.669 -14.282    2002 -12.4472001.312 -11.8342001.105 -11.507    2001
  -4.782 1999.49  -3.045    1999       01998.907   4.3791998.773   7.3341998.687
  13.6871998.535  17.0631998.433  20.9691998.331  27.9391998.119  32.191    1998
  35.819    1998  45.244    1998  45.7021998.193  47.473    1999  50.3182000.411
  51.632    2001  55.3892001.441  58.844    2002  66.052 2002.54  70.446    2003
    70.7    2003  73.457    2003  73.868    2003  77.4822003.239

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 -34.518    .035 -34.518    .025  77.482    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -34.518  77.482              100     100     100            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2002.20  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.79  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1999.40  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 2000.19  * Flow Area (sq ft)     *          *   52.64  *          *
* E.G. Slope (ft/ft)     *0.051565  * Area (sq ft)          *          *   52.64  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   52.76  * Top Width (ft)        *          *   52.76  *          *
* Vel Total (ft/s)       *   13.41  * Avg. Vel. (ft/s)      *          *   13.41  *          *
* Max Chl Dpth (ft)      *    1.40  * Hydr. Depth (ft)      *          *    1.00  *          *
* Conv. Total (cfs)      *  3109.1  * Conv. (cfs)           *          *  3109.1  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   53.14  *          *
* Min Ch El (ft)         * 1998.00  * Shear (lb/sq ft)      *          *    3.19  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   42.77  *          *
* Frctn Loss (ft)        *    1.72  * Cum Volume (acre-ft)  *    1.41  *   15.71  *    2.94  *
* C & E Loss (ft)        *    0.20  * Cum SA (acres)        *    0.91  *   10.74  *    2.75  *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3700

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -46.2752004.193 -46.0382004.186 -45.7012004.176   -45.72004.176 -43.2982004.106
 -43.0042004.097 -39.683    2004 -39.2482003.909  -35.83    2003 -34.534 2002.64
 -32.397    2002 -30.6492001.539 -28.525    2001 -21.0941999.114 -20.623    1999
 -20.3861998.941 -16.518    1998 -15.6951997.744  -15.011997.636 -14.6841997.613
 -14.4411997.622 -14.034    1998  -14.031998.038 -13.6411998.179 -13.3611998.406
  -13.281998.416 -13.1121998.416 -12.7271998.402 -10.9371998.308  -5.629    1998
  -4.5081997.892   -3.491997.829  -1.7931997.763       01997.711    .2091997.706
```

```
    .7751997.682  15.253    1998  22.6481997.618  29.166    1998  30.3751998.228
  32.6821998.623  34.966    1999    40.31999.908  42.9632000.338  46.302    2001
  50.2392001.786  51.418    2002  54.1832002.548  56.524    2003  60.7082003.703
  62.633    2004  63.3592003.994  63.4622003.993   63.54 2003.99  63.5682003.989
   64.132003.984  64.4922003.982  64.5342003.981

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -46.275    .035 -46.275    .025  64.534    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -46.275  64.534            89.64   89.64   89.64             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2000.52  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.80  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1999.72  * Reach Len. (ft)      *   89.64  *   89.64  *   89.64  *
* Crit W.S. (ft)         * 1999.72  * Flow Area (sq ft)    *          *   98.38  *          *
* E.G. Slope (ft/ft)     *0.008125  * Area (sq ft)         *          *   98.38  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   62.72  * Top Width (ft)       *          *   62.72  *          *
* Vel Total (ft/s)       *    7.18  * Avg. Vel. (ft/s)     *          *    7.18  *          *
* Max Chl Dpth (ft)      *    2.11  * Hydr. Depth (ft)     *          *    1.57  *          *
* Conv. Total (cfs)      *  7832.6  * Conv. (cfs)          *          *  7832.6  *          *
* Length Wtd. (ft)       *   89.64  * Wetted Per. (ft)     *          *   63.46  *          *
* Min Ch El (ft)         * 1997.61  * Shear (lb/sq ft)     *          *    0.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.64  *          *
* Frctn Loss (ft)        *    0.57  * Cum Volume (acre-ft)  *    1.41  *   15.54  *    2.94  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.91  *   10.60  *    2.75  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3789.96

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
 -41.3892003.701 -39.236    2003 -35.7422002.231 -35.345    2002 -32.3752001.658
 -31.4742001.577 -30.3822001.493  -29.662001.452 -27.137    2001 -21.8371999.246
 -21.027    1999 -20.9081998.934 -19.493    1998 -18.4691997.399 -17.887    1997
 -17.0861996.508 -16.194    1996 -12.6781994.674 -11.029    1994 -10.1361993.752
  -7.475    1993   -.068    1993       0    1993   3.912    1993   8.688    1993
  10.6281993.359  14.027    1994  15.1191994.361  17.1061994.445   20.141994.933
  21.3071995.151  22.0851995.313  22.3851995.353  24.9991995.618  25.0681995.489
  25.0771995.472  25.1541995.466  25.4931995.475  27.7571995.539  28.6691995.598
  32.267    1996   36.931996.729  37.798    1997   38.51 1997.26  40.506    1998
  42.8781998.774  43.523    1999  46.1381999.885  49.385    2001  50.4672001.364
  52.226    2002  54.2842002.677  55.213    2003  55.9292003.129  59.7882003.765
  60.794    2004   61.052003.992  61.125 2003.99  61.5482003.965  61.6152003.962
  62.2272003.949  62.3692003.946  63.5132003.913  64.0822003.896   64.972003.877
  65.755 2003.86  66.2712003.846  67.1092003.824    67.62003.814  69.1652003.782
  69.2342003.781  69.4182003.778

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -41.389    .035 -41.389    .025  60.794    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -41.389  60.794            10.04   10.04   10.04             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1998.75  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.91  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1994.84  * Reach Len. (ft)      *   10.04  *   10.04  *   10.04  *
* Crit W.S. (ft)         * 1996.00  * Flow Area (sq ft)    *          *   44.47  *          *
* E.G. Slope (ft/ft)     *0.048170  * Area (sq ft)         *          *   44.47  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   32.65  * Top Width (ft)       *          *   32.65  *          *
* Vel Total (ft/s)       *   15.87  * Avg. Vel. (ft/s)     *          *   15.87  *          *
* Max Chl Dpth (ft)      *    1.84  * Hydr. Depth (ft)     *          *    1.36  *          *
* Conv. Total (cfs)      *  3216.7  * Conv. (cfs)          *          *  3216.7  *          *
* Length Wtd. (ft)       *   10.04  * Wetted Per. (ft)     *          *   33.13  *          *
* Min Ch El (ft)         * 1993.00  * Shear (lb/sq ft)     *          *    4.04  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   64.09  *          *
* Frctn Loss (ft)        *    1.46  * Cum Volume (acre-ft)  *    1.41  *   15.39  *    2.94  *
* C & E Loss (ft)        *    0.31  * Cum SA (acres)        *    0.91  *   10.51  *    2.75  *
**********************************************************************************************
```

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3800

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-40.865	2001.845	-36.839	2001	-27.209	1999.955	-22.927	1999	-20.566	1998.168
-20.019	1998	-19.668	1997.872	-17.483	1997	-17.421	1996.976	-17.064	1996.833
-15.15	1996	-11.584	1994.749	-9.302	1994	-8.578	1993.689	-7.002	1993
0	1993	1.908	1993	8.952	1993	10.619	1993.694	11.442	1994
11.895	1994.06	19.961	1994.886	20.169	1994.513	20.194	1994.464	20.425	1994.447
21.435	1994.478	22.193	1994.503	22.502	1994.525	31.136	1995.508	34.306	1995.741
35.262	1996	37.775	1996.753	38.459	1997	40.871	1997.947	41.012	1998
41.168	1998.052	42.714	1998.632	43.765	1999	44.198	1999.147	44.785	1999.324
50.496	2001	53.421	2001.831	54.003	2002	54.629	2002.181	57.369	2003
58.616	2003.358	61.345	2004	62.669	2003.961	63.051	2003.95	63.382	2003.93
63.514	2003.922	63.987	2003.913	64.228	2003.908	65.092	2003.882	65.85	2003.86
66.472	2003.847	67.435	2003.826	67.738	2003.818	68.719	2003.791	68.907	2003.787
69.609	2003.773								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-40.865	.035	-40.865	.025	61.345	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-40.865	61.345	68.66	68.66	68.66	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1998.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.93	Wt. n-Val.		0.025	
W.S. Elev (ft)	1995.10	Reach Len. (ft)	68.66	68.66	68.66
Crit W.S. (ft)	1995.97	Flow Area (sq ft)		51.42	
E.G. Slope (ft/ft)	0.039484	Area (sq ft)		51.42	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	40.12	Top Width (ft)		40.12	
Vel Total (ft/s)	13.73	Avg. Vel. (ft/s)		13.73	
Max Chl Dpth (ft)	2.10	Hydr. Depth (ft)		1.28	
Conv. Total (cfs)	3553.0	Conv. (cfs)		3553.0	
Length Wtd. (ft)	68.66	Wetted Per. (ft)		41.03	
Min Ch El (ft)	1993.00	Shear (lb/sq ft)		3.09	
Alpha	1.00	Stream Power (lb/ft s)		42.42	
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	1.41	15.38	2.94
C & E Loss (ft)	0.30	Cum SA (acres)	0.91	10.50	2.75

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3868.66

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-49.415	1999.123	-47.722	1999.112	-47.518	1999.11	-47.36	1999	-46.461	1998.604
-44.827	1998	-42.427	1997.112	-42.159	1997	-41.941	1996.909	-39.283	1996
-31.781	1994.909	-25.785	1994	-23.636	1993.702	-15.398	1993	-12.981	1992.884
-9.227	1992.745	-5.465	1992.598	0	1992.369	4.876	1992.165	10.279	1992
11.291	1991.779	11.581	1991.802	14.092	1992	15.881	1991.806	16.629	1992
18.506	1992.441	20.716	1993	21.634	1993.271	23.174	1993.778	23.815	1994
25.745	1994.609	29.93	1996	32.145	1996.705	33.126	1997	33.541	1997.133
36.185	1998	39.166	1998.936	39.361	1999	40.523	1999.375	45.555	2001
48.198	2001.878	48.557	2002	49.115	2002.165	52.288	2003	53.732	2003.328
56.57	2004	57.001	2004	58.9	2004	59.343	2003.955	60.008	2003.888
60.856	2003.857	61.505	2003.833	61.563	2003.827	61.706	2003.813	61.813	2003.81
62.182	2003.801	62.306	2003.798	62.317	2003.797				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-49.415	.035	-49.415	.025	56.57	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-49.415	56.57	21.34	21.34	21.34	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 1995.73	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.69	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 1994.03	* Reach Len. (ft)	* 21.34	* 21.34	* 21.34 *
* Crit W.S. (ft)	* 1994.54	* Flow Area (sq ft)	*	* 67.58	* *
* E.G. Slope (ft/ft)	*0.020870	* Area (sq ft)	*	* 67.58	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 49.93	* Top Width (ft)	*	* 49.93	* *
* Vel Total (ft/s)	* 10.45	* Avg. Vel. (ft/s)	*	* 10.45	* *
* Max Chl Dpth (ft)	* 2.25	* Hydr. Depth (ft)	*	* 1.35	* *
* Conv. Total (cfs)	* 4887.1	* Conv. (cfs)	*	* 4887.1	* *
* Length Wtd. (ft)	* 21.34	* Wetted Per. (ft)	*	* 50.35	* *
* Min Ch El (ft)	* 1991.78	* Shear (lb/sq ft)	*	* 1.75	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 18.27	* *
* Frctn Loss (ft)	* 1.92	* Cum Volume (acre-ft)	* 1.41	* 15.29	* 2.94 *
* C & E Loss (ft)	* 0.37	* Cum SA (acres)	* 0.91	* 10.43	* 2.75 *

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3900

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-53.257	1998.842	-52.951	1998.841	-52.86	1998.799	-50.435	1998	-50.178	1997.916
-49.427	1997.675	-47.263	1997	-46.448	1996.746	-43.785	1996	-38.747	1995.138
-32.051	1994	-27.172	1993.165	-26.297	1993	-13.571	1992.033	-12.808	1992
-6.861	1992	-2.122	1992	-1.265	1992	-.745	1992	-.5121	991.993
-.2971	991.969	0	1991.941	2.9481	991.653	7.2911	991.208	7.692	1991.16
7.8921	991.133	8.597	1991	9.276	1991	13.939	1991	15.098	1991.671
17.678	1992.82	17.994	1993	18.225	1993.086	20.879	1994	25.961	1995.737
26.713	1996	28.081	1996.524	29.388	1997	30.744	1997.511	32.133	1998
33.385	1998.443	34.9	1999	37.556	2000.008	40.786	2001	43.194	2001.521
45.245	2002	48.535	2002.669	50.23	2003	54.802	2003.902	55.299	2004
55.32	2003.996	56.617	2003.863	57.631	2003.761				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-53.257	.035	-53.257	.025	57.631	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-53.257	57.631	100	100	100 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 1995.24	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.86	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 1993.38	* Reach Len. (ft)	* 100.00	* 100.00	* 100.00 *
* Crit W.S. (ft)	* 1993.95	* Flow Area (sq ft)	*	* 64.53	* *
* E.G. Slope (ft/ft)	*0.022944	* Area (sq ft)	*	* 64.53	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 47.50	* Top Width (ft)	*	* 47.50	* *
* Vel Total (ft/s)	* 10.94	* Avg. Vel. (ft/s)	*	* 10.94	* *
* Max Chl Dpth (ft)	* 2.38	* Hydr. Depth (ft)	*	* 1.36	* *
* Conv. Total (cfs)	* 4660.9	* Conv. (cfs)	*	* 4660.9	* *
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	* 48.16	* *
* Min Ch El (ft)	* 1991.00	* Shear (lb/sq ft)	*	* 1.92	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 21.00	* *
* Frctn Loss (ft)	* 0.47	* Cum Volume (acre-ft)	* 1.41	* 15.25	* 2.94 *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.91	* 10.40	* 2.75 *

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4000

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-56.177	1997.704	-55.506	1997.71	-55.333	1997.712	-54.729	1997.504	-53.783	1997.228
-52.839	1997	-51.261	1996.642	-48.315	1996	-38.643	1994.655	-33.961	1994
-32.577	1993.614	-30.265	1993	-26.342	1992.145	-25.595	1992	-24.722	1992
-24.719	1992	-24.71	1992	-24.132	1992	-19.383	1991.784	-2.54	1991
0	1991	2.212	1991	7.855	1991	8.11991	.021	11.061	991.291
18.401	1992	22.592	1992.907	23.09	1993	23.649	1993.102	28.377	1994
35.744	1995.4	38.484	1996	39.552	1996.413	40.806	1997	41.815	1997.482
42.832	1998	44.642	1998.892	44.869	1999	48.509	2000.814	48.806	2000.954
48.9	2001	49.195	2001.148	50.946	2002	51.722	2002.182	51.764	2002.191
54.321	2002.762	54.332	2002.764	54.468	2002.783	54.558	2002.793	54.892	2002.831
55.094	2002.821								

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -56.177    .035 -56.177    .025  55.094    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -56.177  55.094              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1994.34  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.52  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1993.82  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1993.37  * Flow Area (sq ft)     *          *  122.03  *          *
* E.G. Slope (ft/ft)     *0.003777  * Area (sq ft)          *          *  122.03  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   60.75  * Top Width (ft)        *          *   60.75  *          *
* Vel Total (ft/s)       *    5.79  * Avg. Vel. (ft/s)      *          *    5.79  *          *
* Max Chl Dpth (ft)      *    2.82  * Hydr. Depth (ft)      *          *    2.01  *          *
* Conv. Total (cfs)      * 11488.2  * Conv. (cfs)           *          * 11488.2  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   61.22  *          *
* Min Ch El (ft)         * 1991.00  * Shear (lb/sq ft)      *          *    0.47  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.72  *          *
* Frctn Loss (ft)        *    0.53  * Cum Volume (acre-ft)  *    1.41  *   15.04  *    2.94  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.91  *   10.28  *    2.75  *
************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4100

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -51.3991996.427 -46.993    1996 -40.9391995.006  -39.23 1994.71  -35.93    1994
 -34.5541993.665 -31.618    1993 -31.4771992.965 -27.178    1992 -17.5241991.173
 -15.291    1991 -11.585    1991       0    1991  15.311    1991  15.851    1991
  16.893    1991  16.963    1991  17.157    1991  18.6741991.215  24.4531991.914
  25.148    1992  28.0881992.594  30.265    1993  32.5881993.431   35.95    1994
   41.121995.404  43.822    1996  45.1711996.589  46.231    1997  48.3831997.933
  48.553    1998  50.7351998.895  50.998    1999  51.2941999.159  55.222    2001
  56.1762001.509  57.532    2002  58.6162002.008   58.88 2002.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -51.399    .035 -51.399    .025   58.88    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -51.399   58.88             46.01   46.01   46.01             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1993.78  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.81  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1992.98  * Reach Len. (ft)       *   46.01  *   46.01  *   46.01  *
* Crit W.S. (ft)         * 1992.98  * Flow Area (sq ft)     *          *   98.05  *          *
* E.G. Slope (ft/ft)     *0.007962  * Area (sq ft)          *          *   98.05  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   61.67  * Top Width (ft)        *          *   61.67  *          *
* Vel Total (ft/s)       *    7.20  * Avg. Vel. (ft/s)      *          *    7.20  *          *
* Max Chl Dpth (ft)      *    1.98  * Hydr. Depth (ft)      *          *    1.59  *          *
* Conv. Total (cfs)      *  7912.0  * Conv. (cfs)           *          *  7912.0  *          *
* Length Wtd. (ft)       *   46.01  * Wetted Per. (ft)      *          *   61.98  *          *
* Min Ch El (ft)         * 1991.00  * Shear (lb/sq ft)      *          *    0.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.66  *          *
* Frctn Loss (ft)        *    0.36  * Cum Volume (acre-ft)  *    1.41  *   14.79  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.91  *   10.14  *    2.75  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4146.01

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
*****************************************************************************
 -50.8891995.242   -50.71995.232 -50.5891995.225 -48.446  1995.1 -48.437  1995.1
 -45.5471994.901 -42.6111994.641 -40.8221994.461 -37.114    1994 -32.7921993.033
 -32.663    1993 -32.4061992.937 -28.745    1992  -28.331991.951 -27.9231991.912
 -26.0641991.721 -19.321    1991 -14.8961990.744  -5.8861990.195  -1.6921989.963
       01989.874   1.781 1989.78   8.3371989.449  13.9291989.523  14.0221989.526
  14.272 1989.52  14.3951989.506  16.5531989.516  16.6141989.537  16.8131989.556
  17.5371989.598  17.6661989.613  21.085    1991  21.1321991.011  22.3171991.251
  25.997    1992  31.5851992.999  31.593    1993  31.5981993.001  31.6331993.007
  36.7781993.956  37.043    1994  38.5061994.336  45.843    1996  46.3111996.226
  48.011    1997  48.5621997.266   50.17    1998  50.9871998.377  52.381    1999
  54.0141999.745  56.725    2001  57.6662001.443  58.872    2002

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 -50.889    .035 -50.889    .025  58.872    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -50.889  58.872             53.99   53.99   53.99             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 1993.20  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.45  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1991.76  * Reach Len. (ft)       *   53.99  *   53.99  *   53.99  *
* Crit W.S. (ft)         * 1992.17  * Flow Area (sq ft)     *          *   73.14  *          *
* E.G. Slope (ft/ft)     *0.016582  * Area (sq ft)          *          *   73.14  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   51.20  * Top Width (ft)        *          *   51.20  *          *
* Vel Total (ft/s)       *    9.65  * Avg. Vel. (ft/s)      *          *    9.65  *          *
* Max Chl Dpth (ft)      *    2.31  * Hydr. Depth (ft)      *          *    1.43  *          *
* Conv. Total (cfs)      *  5482.7  * Conv. (cfs)           *          *  5482.7  *          *
* Length Wtd. (ft)       *   53.99  * Wetted Per. (ft)      *          *   51.63  *          *
* Min Ch El (ft)         * 1989.45  * Shear (lb/sq ft)      *          *    1.47  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   14.15  *          *
* Frctn Loss (ft)        *    0.51  * Cum Volume (acre-ft)  *    1.41  *   14.70  *    2.94  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *    0.91  *   10.08  *    2.75  *
*****************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Program found supercritical flow starting at this cross section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4200

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 -50.8841994.595  -50.361994.574 -50.1661994.566 -49.042 1994.51 -48.0931994.463
 -47.8841994.451 -47.2391994.414 -45.0891994.291 -44.9461994.283 -44.9191994.282
 -40.431    1994 -39.3191993.819 -36.8691993.416 -34.443    1993 -32.2591992.491
 -30.279    1992 -28.8271991.604 -26.956    1991  -17.641989.126 -17.002    1989
 -16.915 1988.98 -16.6611988.926 -15.149 1988.64 -11.9031988.024 -11.898 1988.02
  -11.891988.018 -11.8521988.014 -11.8391988.014 -11.8341988.014  -11.831988.014
 -11.8261988.015 -11.8251988.017 -11.7691988.047 -11.5531988.009 -11.0521988.178
 -10.024    1989       0    1989   2.248    1989    2.71    1989   6.1621989.179
  12.5641989.717  16.3991990.005  20.2411990.299  23.6921990.554  27.932    1991
  31.4781991.639  33.564    1992  34.7151992.209  39.097    1993  40.3341993.229
  44.787    1994  47.4941994.858   50.69    1996  51.7751996.569  52.665    1997
  53.986 1997.68  54.697    1998  56.2011998.788  56.644    1999  59.3552000.205
  61.067    2001  62.3422001.458  62.396 2001.48  62.9962001.729  63.0372001.744
  63.2852001.828  63.3232001.835    63.52001.865  63.5352001.865  63.6742001.864
  64.327 2001.86  64.7342001.858

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 -50.884    .035 -50.884    .025  64.734    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -50.884  64.734              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 1992.28  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.38  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1990.90  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1991.28  * Flow Area (sq ft)     *          *   74.76  *          *
* E.G. Slope (ft/ft)     *0.016408  * Area (sq ft)          *          *   74.76  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   53.44  * Top Width (ft)        *          *   53.44  *          *
* Vel Total (ft/s)       *    9.44  * Avg. Vel. (ft/s)      *          *    9.44  *          *
* Max Chl Dpth (ft)      *    2.89  * Hydr. Depth (ft)      *          *    1.40  *          *
* Conv. Total (cfs)      *  5511.6  * Conv. (cfs)           *          *  5511.6  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   54.12  *          *
* Min Ch El (ft)         * 1988.01  * Shear (lb/sq ft)      *          *    1.41  *          *
```

* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 13.36	*	*		
* Frctn Loss (ft)	* 0.89	* Cum Volume (acre-ft)	* 1.41	* 14.61	* 2.94	*		
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.91	* 10.01	* 2.75	*		

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4300

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-42.347	1993.595	-40.119	1993.819	-40.111	1994	-37.091	1993.182	-36.407	1993
-35.133	1992.371	-34.261	1992	-33.645	1991.762	-31.667	1991	-29.491	1990.228
-25.871	1989.098	-25.577	1989	-25.371	1988.934	-22.866	1988	-21.924	1987.645
-20.511	1987	-17.118	1986.378	-14.786	1986	-8.773	1985.182	-8.234	1985.15
-7.503	1985.123	-5.143	1985.062	-4.739	1985.032	-2.539	1984.833	-.539	1984.638
01	1984.578	1.195	1984.445	4.232	1984	5.994	1983.965	8.22	1984
11.133	1984	11.406	1984	11.672	1984.012	16.503	1984.243	34.171	1984.933
41.142	1985.23	42.838	1985.272	48.217	1985.385	53.753	1985.485	56.723	1985.558
59.434	1985.635	62.324	1985.729	70.364	1986	71.507	1986.263	72.181	1986.368
75.632	1987	77.386	1987.439	80.134	1987.863	80.904	1988	82.607	1988.418
83.369	1988.585	83.756	1988.639	84.331	1988.732	85.521	1989	88.174	1989.636
93.747	1991	96.284	1991.972	96.358	1992	96.462	1992.039	98.748	1993
99.676	1993.362	101.364	1994	103.215	1994.743	106.496	1996	109.011	1996.939
109.172	1997	110.451	997.465	111.816	1998	113.309	1998.735	113.443	1998.741
113.487	1998.736								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-42.347	.035	-40.111	.025	113.487	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-40.111 113.487 99.05 99.05 99.05 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 1988.03	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.11	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 1987.92	* Reach Len. (ft)	* 99.05	* 99.05	* 99.05 *
* Crit W.S. (ft)	* 1986.27	* Flow Area (sq ft)	*	* 268.57	* *
* E.G. Slope (ft/ft)	*0.000550	* Area (sq ft)	*	* 268.57	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 103.09	* Top Width (ft)	*	* 103.09	* *
* Vel Total (ft/s)	* 2.63	* Avg. Vel. (ft/s)	*	* 2.63	* *
* Max Chl Dpth (ft)	* 3.95	* Hydr. Depth (ft)	*	* 2.61	* *
* Conv. Total (cfs)	* 30101.2	* Conv. (cfs)	*	* 30101.2	* *
* Length Wtd. (ft)	* 99.05	* Wetted Per. (ft)	*	* 103.71	* *
* Min Ch El (ft)	* 1983.97	* Shear (lb/sq ft)	*	* 0.09	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 0.23	* *
* Frctn Loss (ft)	* 0.02	* Cum Volume (acre-ft)	* 1.41	* 14.21	* 2.94 *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.91	* 9.83	* 2.75 *

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4399.05

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-29.507	1991.274	-27.689	1991.06	-27.182	1991	-25.129	1990.493	-20.683	1989.379
-19.832	1989.158	-19.252	1989	-19.15	1988.97	-15.936	1988	-14.491	1987.553
-12.503	1987	-10.639	1986.491	-8.944	1986	-4.765	1985.295	-1.365	1984.728
01	1984.513	3.272	1984	4.697	1984	5.836	1984	10.043	1983.886
10.338	1984	10.61	1984	13.619	1984	15.893	1984	16.315	1984
17.129	1983.709	19.355	1983	23.949	1982.372	26.848	1982	28.051	1982
29.751	1982	40.968	1982.771	44.105	1983	44.627	1983.314	45.639	1984
47.862	1984	48.038	1984	48.268	1984	48.588	1984	48.975	1984
57.695	1984	57.714	1984	57.717	1984	57.731	1984	65.578	1984
67.078	1984	67.962	1984	68.168	1984	95.137	1985.501	97.511	1985.624
100.262	1985.762	100.986	1985.795	101.373	1985.809	101.783	1985.819	102.278	1985.792
102.346	1985.794	104.822	1986	105.992	1986.308	108.653	1987	112.281	1987.771
113.346	1988	113.716	1988.037	114.292	1988.132	115.181	1988.327	115.388	1988.413
115.405	1988.419	115.723	1988.522						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-29.507	.035	-29.507	.025	115.723	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

```
       -29.507 115.723              .95     .95     .95             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1987.98  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)       *    0.95  *    0.95  *    0.95  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  455.25  *          *
* E.G. Slope (ft/ft)     *0.000128  * Area (sq ft)          *          *  455.25  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  128.84  * Top Width (ft)        *          *  128.84  *          *
* Vel Total (ft/s)       *    1.55  * Avg. Vel. (ft/s)      *          *    1.55  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)      *          *    3.53  *          *
* Conv. Total (cfs)      * 62352.0  * Conv. (cfs)           *          * 62352.0  *          *
* Length Wtd. (ft)       *    0.95  * Wetted Per. (ft)      *          *  130.14  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)      *          *    0.03  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.04  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    1.41  *   13.39  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.91  *    9.57  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -4400

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -29.353 1991.25 -27.9711991.087 -27.231    1991 -24.2321990.259 -19.204    1989
 -17.9521988.646 -15.809    1988 -15.1251987.788 -12.292    1987  -9.6361986.275
  -8.688    1986  -6.3491985.605  -4.4471985.288       0 1984.59   3.5271984.037
   3.6841984.011   3.753    1984   3.7821983.998  10.7021983.811  11.195    1984
  11.646    1984  12.952    1984  15.568    1984  16.054    1984  16.4091983.873
  19.152    1983   24.811982.226  26.573    1982  27.304    1982  29.935    1982
  38.4681982.587  44.134    1983  45.0781983.568  45.716    1984  47.118    1984
  47.636    1984  47.817    1984  56.489    1984  58.367    1984  65.199    1984
  65.452    1984  67.231    1984  67.701    1984  88.9621985.183  92.8481985.384
  97.351 1985.61  98.5361985.665  99.1691985.688  99.8411985.704 100.6511985.659
 100.7621985.663 104.816    1986 105.5271986.187 108.652    1987 112.9131987.906
 113.353    1988 113.5051988.015 114.0941988.112 115.0041988.312 115.215  1988.4
 115.2321988.405 115.5621988.513

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -29.353    .035 -29.353    .025 115.562    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -29.353 115.562             23.9    23.9    23.9             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1987.98  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)       *   23.90  *   23.90  *   23.90  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  454.75  *          *
* E.G. Slope (ft/ft)     *0.000129  * Area (sq ft)          *          *  454.75  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  128.72  * Top Width (ft)        *          *  128.72  *          *
* Vel Total (ft/s)       *    1.55  * Avg. Vel. (ft/s)      *          *    1.55  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)      *          *    3.53  *          *
* Conv. Total (cfs)      * 62278.4  * Conv. (cfs)           *          * 62278.4  *          *
* Length Wtd. (ft)       *   23.90  * Wetted Per. (ft)      *          *  130.02  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)      *          *    0.03  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.04  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    1.41  *   13.38  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.91  *    9.57  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -4423.9

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -26.425 1990.43 -26.4131990.429 -26.4061990.428 -26.3731990.423 -26.2961990.413
 -24.5421990.149 -23.6661989.999 -23.2191989.887 -20.019    1989 -17.5241988.389
 -15.918    1988 -14.4261987.631 -11.845    1987  -8.7681986.256  -7.714    1986
       01984.731    .9761984.571   4.093    1984  17.7951983.003  17.833    1983
  22.6491982.396  23.9361982.292  25.0911982.227  26.1161982.113  26.6021982.138
  28.747    1982  29.666    1982   30.42    1982  32.966    1982  34.554    1982
  35.298    1982  38.7861982.266  38.8871982.206  39.9261982.169  40.4961982.364
  41.0081982.412  41.3741982.486  42.539    1983  43.9961983.649  44.9531983.705
  45.6811983.724  46.1781983.702  47.2271983.931  47.5891983.907  47.6061983.872
  60.5571983.843  61.6411983.886  62.3461983.906  62.4461983.894  66.7131983.917
  68.178 1983.97  69.109    1984  70.417    1984  73.514    1984  76.114    1984
```

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   78.37    1984  79.475    1984  79.731    1984  96.3281985.637 100.341    1986
 103.3251986.509 105.809    1987 108.4071987.527 110.706    1988 110.8541988.062
 110.8561988.063 111.5091988.274

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -26.425    .035 -26.425    .025 111.509    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -26.425 111.509             76.1    76.1    76.1             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**************************************************************************************************
* E.G. Elev (ft)         * 1987.98  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)       *   76.10  *   76.10  *   76.10  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  465.12  *          *
* E.G. Slope (ft/ft)     *0.000116  * Area (sq ft)          *          *  465.12  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  126.11  * Top Width (ft)        *          *  126.11  *          *
* Vel Total (ft/s)       *    1.52  * Avg. Vel. (ft/s)      *          *    1.52  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)      *          *    3.69  *          *
* Conv. Total (cfs)      * 65597.5  * Conv. (cfs)           *          * 65597.5  *          *
* Length Wtd. (ft)       *   76.10  * Wetted Per. (ft)      *          *  127.25  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)      *          *    0.03  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.04  *          *
* Frctn Loss (ft)        *    0.01  * Cum Volume (acre-ft)  *    1.41  *   13.13  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.91  *    9.50  *    2.75  *
**************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4500

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -37.587 1989.13 -37.4221989.124 -37.1691989.117  -34.821989.041 -33.559    1989
 -32.0751988.556 -30.315    1988 -27.0811987.113   -26.7    1987 -26.3891986.919
 -23.7021986.421 -21.784 1986.07 -21.357    1986 -13.4951984.698 -11.8541984.342
 -11.4931984.268 -10.196    1984  -4.6471983.558       01983.954     .54    1984
  11.133 1983.33  14.019    1983  17.013    1983  18.577    1983  20.847    1983
  26.938    1983  28.8071982.614  31.609    1982  36.731    1982  51.107    1982
  51.2041982.038  52.912    1983  61.1661983.224  79.9591983.733  82.6621983.803
  91.176    1984  99.4211985.303 104.077    1986 108.0991986.764 109.114    1987
 110.1921987.147 112.1831987.469 113.0471987.657 113.3541987.743 114.1141987.829
 114.1581987.842

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -37.587    .035 -37.587    .025 114.158    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -37.587 114.158            28.19   28.19   28.19             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**************************************************************************************************
* E.G. Elev (ft)         * 1987.97  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.02  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)       *   28.19  *   28.19  *   28.19  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  577.97  *          *
* E.G. Slope (ft/ft)     *0.000067  * Area (sq ft)          *          *  577.97  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  144.27  * Top Width (ft)        *          *  144.27  *          *
* Vel Total (ft/s)       *    1.22  * Avg. Vel. (ft/s)      *          *    1.22  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)      *          *    4.01  *          *
* Conv. Total (cfs)      * 86140.7  * Conv. (cfs)           *          * 86140.7  *          *
* Length Wtd. (ft)       *   28.19  * Wetted Per. (ft)      *          *  145.56  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)      *          *    0.02  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.02  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    1.41  *   12.22  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.91  *    9.26  *    2.75  *
**************************************************************************************************

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4528.19

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -66.0061989.243 -65.7441989.232 -65.7141989.231 -64.2091989.178  -63.921989.168
 -60.076 1989.07  -57.33    1989 -55.2651988.458 -54.3491988.198 -53.557    1988
```

```
 -52.1531987.604 -49.884    1987 -47.4811986.541 -44.501    1986 -35.3331984.543
 -31.575    1984 -31.4571983.988 -28.5311983.726 -27.6471983.647 -25.9511983.433
 -21.6391983.175 -20.1971983.071 -19.8031983.038 -19.347    1983  -18.38    1983
 -17.932    1983 -16.1461983.565 -14.585    1984 -13.521    1984 -12.784    1984
  -9.948    1984   -8.57    1984   -7.92    1984       01983.559   3.9031983.342
   5.096 1983.28   7.2451983.182   8.816    1983  15.549    1983  16.713    1983
  18.415    1983  18.653    1983  19.3821982.842  22.829    1982  27.866    1982
  35.417    1982  43.447    1982  43.469    1982  45.2021982.183  45.6581982.197
  46.6491982.211  47.6071982.241  49.9771982.325  52.6771982.431  59.2261982.703
   66.19    1983  67.7711983.123  83.205    1984  85.6671984.362  90.9581985.047
  94.6511985.565  97.4241985.935  97.881    1986  98.6641986.133 103.406    1987
  104.911987.283 105.6851987.468 107.5361987.655 107.6391987.682

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -66.006    .035 -66.006    .025 107.639    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -66.006 107.639            35.67   35.67   35.67             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1987.96  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.02  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1987.95  * Reach Len. (ft)       *   35.67  *   35.67  *   35.67  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          *  670.86  *          *
* E.G. Slope (ft/ft)     *0.000047  * Area (sq ft)           *          *  670.86  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *  161.01  * Top Width (ft)         *          *  161.01  *          *
* Vel Total (ft/s)       *    1.05  * Avg. Vel. (ft/s)       *          *    1.05  *          *
* Max Chl Dpth (ft)      *    5.95  * Hydr. Depth (ft)       *          *    4.17  *          *
* Conv. Total (cfs)      *102687.1  * Conv. (cfs)            *          *102687.1  *          *
* Length Wtd. (ft)       *   35.67  * Wetted Per. (ft)       *          *  162.33  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)       *          *    0.01  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.01  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)   *    1.41  *   11.81  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.91  *    9.16  *    2.75  *
*************************************************************************************************

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4563.86

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -78.2661989.083 -76.8041989.075 -76.7321989.069 -76.3841989.041 -76.361 1989.04
 -76.2921989.039 -76.2891989.039 -76.2121989.035 -75.488    1989 -75.4321988.989
 -72.117  1988.4 -69.602    1988 -64.1061987.242 -62.066    1987 -60.2651986.709
 -57.6431986.304  -56.03    1986 -52.8661985.512 -50.343 1985.17 -46.4611984.644
 -41.129    1984 -33.9471983.342 -32.1431983.138 -30.799    1983 -30.0561982.945
 -28.4281982.841 -26.6841982.741 -25.9691982.695  -23.971982.599 -21.344 1982.59
 -21.3091982.618 -20.9791982.646 -17.8691982.763 -17.2221982.826 -16.2231982.864
 -13.928    1983 -12.2111983.061 -11.8241983.059  -9.5671983.008  -9.257    1983
   -7.111982.648  -4.3231982.001  -2.5661982.129  -1.1331982.208       01982.297
    .5811982.343     .791982.399  14.0531982.313  14.4751982.297  15.5171982.274
  19.2961982.131  21.6711982.053  23.2611982.008  24.2751982.049  27.2481982.252
  30.7721982.476  35.2981982.302  35.4531982.258  35.8881982.222    36.51982.203
  37.1041982.211  42.424    1983  44.1191983.305  45.7411983.641  47.0361983.909
  47.369    1984  52.9071985.018  54.9671985.306  61.091    1986  69.0831986.607
  72.517    1987  72.991    1987

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -78.266    .035 -78.266    .025  72.991    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -78.266  72.991            32.82   32.82   32.82             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1987.96  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.02  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)       *   32.82  *   32.82  *   32.82  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          *  580.65  *          *
* E.G. Slope (ft/ft)     *0.000065  * Area (sq ft)           *          *  580.65  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *  142.15  * Top Width (ft)         *          *  142.15  *          *
* Vel Total (ft/s)       *    1.22  * Avg. Vel. (ft/s)       *          *    1.22  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)       *          *    4.08  *          *
* Conv. Total (cfs)      * 87448.7  * Conv. (cfs)            *          * 87448.7  *          *
* Length Wtd. (ft)       *   32.82  * Wetted Per. (ft)       *          *  143.96  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)       *          *    0.02  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.02  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)   *    1.41  *   11.30  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.91  *    9.04  *    2.75  *
*************************************************************************************************
```

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4596.68

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-57.0931988.712	-56.858	1988.7	-56.4961988.686	-56.061988.673	-55.5911988.661				
-54.5441988.515	-51.554	1988.08	-50.829	1988	-49.9991987.877	-49.7741987.851			
-49.211987.815	-48.9131987.777	-46.9491987.456	-43.942	1987	-41.8141986.721				
-36.557	1986	-34.0441984.822	-32.046	1984	-30.3931983.234	-29.883	1983		
-29.6661982.897	-29.0911982.645	-27.8451982.118	-27.483	1982	-26.0331982.275				
-24.3991982.498	-22.535	1982.69	-21.9431982.728	-21.6291982.751	-21.3651982.768				
-20.9581982.798	-20.6251982.816	-20.2281982.848	-20.1791982.861	-17.1041982.841					
-17.0061982.837	-16.7641982.832	-15.8881982.798	-15.337	1982.78	-14.969	1982.77			
-13.731	1982.75	-13.1851982.738	-11.9451982.704	-11.55	1982.69	-6.7731982.587			
01982.449	.1271982.446	1.31982.425	3.5671982.392	4.5981982.375					
5.5731982.355	7.7061982.304	10.621982.244	19.3071982.082	23.463	1982				
26.073	1982.63	28.595	1983	28.6071983.005	28.621983.013	30.324	1984		
33.4831985.432	34.15	1985.73	34.3221985.788	34.923	1986	37.5661986.842			
38.041	1987	39.581	1987	40.588	1987	41.02	1987	42.389	1987
43.226	1987	43.681	1987	43.894	1987	44.059	1987	44.334	1987
44.479	1987	44.628	1987						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-57.093	.035	-57.093	.025	44.628	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-57.093	44.628	3.32	3.32	3.32	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1987.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.025	
W.S. Elev (ft)	1987.90	Reach Len. (ft)	3.32	3.32	3.32
Crit W.S. (ft)		Flow Area (sq ft)		385.62	
E.G. Slope (ft/ft)	0.000152	Area (sq ft)		385.62	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	94.80	Top Width (ft)		94.80	
Vel Total (ft/s)	1.83	Avg. Vel. (ft/s)		1.83	
Max Chl Dpth (ft)	5.90	Hydr. Depth (ft)		4.07	
Conv. Total (cfs)	57241.2	Conv. (cfs)		57241.2	
Length Wtd. (ft)	3.32	Wetted Per. (ft)		97.70	
Min Ch El (ft)	1982.00	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.07	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	1.41	10.93	2.94
C & E Loss (ft)	0.00	Cum SA (acres)	0.91	8.95	2.75

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4600

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-53.3111988.592	-52.9751988.575	-52.4581988.556	-51.8341988.537	-51.163	1988.52				
-49.6631988.312	-47.503	1988	-43.178	1987.36	-41.077	1987	-36.3791986.072		
-36.163	1986	-33.031984.499	-32.4591984.248	-32.018	1984	-30.4731983.276			
-29.89	1983	-29.5971982.866	-27.958	1982	-27.7721982.117	-27.3431982.283			
-26.1741982.505	-25.061982.658	-23.7911982.788	-23.3891982.815	-23.1761982.831					
-22.9971982.842	-22.7211982.863	-22.4951982.875	-22.2261982.896	-22.1931982.905					
-20.1141982.892	-20.0481982.889	-19.8851982.886	-19.2941982.863	-18.9241982.851					
-18.6761982.844	-17.8441982.831	-17.4771982.822	-16.646	1982.8	-16.381	1982.79			
-13.1921982.721	-8.6221982.628	-7.8481982.615	-6.3581982.593	-5.6821982.582					
-5.0431982.568	-3.6491982.535	-1.751982.496	01982.464	3.8691982.392					
17.5221982.122	23.809	1982	24.5441982.134	29.24	1983	30.7421983.598			
31.494	1984	32.7081984.986	34.624	1986	36.321986.547	36.8621986.635			
37.3871986.634	38.0811986.538	38.531986.547	39.3371986.639	41.4571986.982					
41.558	1987	41.56	1987						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-53.311	.035	-53.311	.025	41.56	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-53.311	41.56	7.44	7.44	7.44	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1987.96	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.05	Wt. n-Val.		0.025		
W.S. Elev (ft)	1987.90	Reach Len. (ft)	7.44	7.44	7.44	
Crit W.S. (ft)		Flow Area (sq ft)		379.53		
E.G. Slope (ft/ft)	0.000147	Area (sq ft)		379.53		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	88.39	Top Width (ft)		88.39		
Vel Total (ft/s)	1.86	Avg. Vel. (ft/s)		1.86		
Max Chl Dpth (ft)	5.90	Hydr. Depth (ft)		4.29		
Conv. Total (cfs)	58211.2	Conv. (cfs)		58211.2		
Length Wtd. (ft)	7.44	Wetted Per. (ft)		91.55		
Min Ch El (ft)	1982.00	Shear (lb/sq ft)		0.04		
Alpha	1.00	Stream Power (lb/ft s)		0.07		
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	1.41	10.91	2.94	
C & E Loss (ft)	0.01	Cum SA (acres)	0.91	8.94	2.75	

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4607.48

INPUT
Description:
Station Elevation Data num= 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-47.39	1987	-47.39	1981.83	-7.64	1981.83	-7.64	1987

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-47.39	.035	-47.39	.013	-7.64	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-47.39	-7.64	227	227	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1987.95	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.14	Wt. n-Val.		0.013		
W.S. Elev (ft)	1987.81	Reach Len. (ft)	227.00	227.00	227.00	
Crit W.S. (ft)	1983.96	Flow Area (sq ft)		237.65		
E.G. Slope (ft/ft)	0.000088	Area (sq ft)		237.65		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	39.75	Top Width (ft)		39.75		
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)		2.97		
Max Chl Dpth (ft)	5.98	Hydr. Depth (ft)		5.98		
Conv. Total (cfs)	75087.8	Conv. (cfs)		75087.8		
Length Wtd. (ft)	227.00	Wetted Per. (ft)		51.71		
Min Ch El (ft)	1981.83	Shear (lb/sq ft)		0.03		
Alpha	1.00	Stream Power (lb/ft s)		0.08		
Frctn Loss (ft)		Cum Volume (acre-ft)	1.41	10.85	2.94	
C & E Loss (ft)		Cum SA (acres)	0.91	8.93	2.75	

CULVERT

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4608.44

INPUT
Description:
Distance from Upstream XS = 1
Deck/Roadway Width = 225
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
-47.39	1988	1987	-7.64	1988	1987

Upstream Bridge Cross Section Data
Station Elevation Data num= 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-47.39	1987	-47.39	1981.83	-7.64	1981.83	-7.64	1987

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-47.39	.035	-47.39	.013	-7.64	.035

Bank Sta: Left	Right	Coeff Contr.	Expan.
-47.39	-7.64	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

```
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
**********************************************
   56.18    1988    1983   95.94    1988    1983

Downstream Bridge Cross Section Data
Station Elevation Data    num=     211
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001990.137-399.6361990.136-399.5351990.136-399.2651990.138-399.0771990.139
 -397.771990.152-390.2471990.141-383.3391990.136-379.7831990.136-378.6481990.137
-377.9781990.138-375.7731990.142-375.7421990.142-375.7361990.143-375.6241990.143
-375.2821990.144-374.7761990.146-370.0061990.165-369.9081990.166-369.4971990.166
-368.7911990.168-368.5561990.169-368.5461990.169 -368.491990.169-368.4481990.168
-368.2031990.168 -367.621990.168-367.6171990.168-367.5831990.167-367.5721990.167
-367.4211990.166-367.0991990.164-367.0981990.164-367.0691990.163-367.0641990.163
-366.9351990.161-366.6671990.157-366.5391990.155-365.9441990.149-364.7921990.136
-363.501 1990.12-353.807    1990-352.466    1990-348.345    1990-348.339    1990
-348.1671989.991-348.0651989.979 -339.56    1989-339.1261988.959-338.7631988.886
-336.3941988.762 -335.351988.697-334.7881988.639-333.8071988.605-332.2841988.611
-331.2631988.616-329.8011988.625-327.679 1988.64-324.8411988.658 -321.331988.674
-317.3851988.682-313.655 1988.68 -310.891988.666-309.5551988.642-309.2421988.616
-308.7941988.579-305.1131988.673-294.3621988.953-292.339    1989-287.6181989.287
-284.6261989.442-283.2681989.489-282.503  1989.5-281.6291989.508-264.265    1990
-257.9321990.378 -249.581990.876-247.2221990.927-243.0771990.996-242.784    1991
 -240.19    1991-238.039    1991-237.8741990.964-235.2811990.953-232.6651990.948
-229.9531990.951-227.1251990.961-226.657    1991-221.382    1991-221.032    1991
-220.338 1990.96 -219.86 1990.97-208.4451990.622 -205.98 1990.48 -173.671988.615
-164.1651988.169-163.9631988.122 -163.811988.148-163.792 1988.15-163.008    1988
-162.6281987.913 -159.13    1987-155.1211986.188-154.233    1986-146.1651985.122
-145.129    1985-145.0071984.992-143.8251984.884-143.2261984.789-142.8591984.617
-142.671 1984.53-142.368 1984.51-141.6361984.509-140.1871984.536-133.6741984.696
-120.978    1985-117.8711985.072-108.2791985.287-104.032 1985.38-103.0881985.396
-102.5181985.402-102.3781985.403 -102.351985.403-101.9581985.406-101.9471985.406
-101.8311985.406-101.8291985.406-101.8061985.406-101.4641985.407-101.4521985.407
-101.2931985.406-101.2911985.406-101.2591985.406-100.8111985.406-100.7761985.406
-100.1771985.406 -100.171985.406-100.0481985.406 -98.5651985.407 -93.2041985.411
 -91.8331985.412 -87.4361985.414  -82.911985.417 -81.5421985.417 -81.4681985.417
 -81.2291985.417 -81.1951985.417 -81.1191985.417 -79.5481985.417 -78.5911985.417
 -76.0691985.417 -72.1351985.413 -69.5111985.407 -66.2271985.394 -65.5811985.388
 -64.2351985.366 -63.1731985.355  -61.791985.345 -61.2611985.338 -58.429 1985.29
 -57.7561985.281 -56.2131985.267 -54.4591985.259 -50.5751985.283 -48.0241985.274
 -46.2371985.271 -44.2781985.273 -41.6861985.279 -40.8971985.279 -39.3391985.273
 -38.1981985.265 -33.758  1985.2 -24.605 1985.07  -21.47    1985 -19.9091984.631
 -18.7541984.371 -18.2481984.257 -18.2061984.251 -16.649    1984  48.6351983.683
   48.721983.675  48.768 1983.67  48.9541983.654  49.1911983.634  50.2391983.562
  50.8741983.519  52.0461983.446  55.1051983.257  55.1471983.255  55.1551983.254
  55.3121983.244   56.18    1983   56.18  1979.5   95.94  1979.5   95.94    1983
  99.8141983.642 101.8241983.709 103.852 1983.73 108.3081983.774 108.6061983.785
 115.8181983.844 116.0741983.846 116.0761983.869 120.218 1983.93 120.2571983.929
 127.4951983.943 127.7111983.943 134.3671983.943 134.4621983.943 134.6161983.944
     1401983.937

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    -400    .035   56.18    .013   95.94    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
          56.18   95.94             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1       Ellipse    2.42    3.75
FHWA Chart # 29- Horizontal Ellipse; Concrete
FHWA Scale # 1 - Square edge with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  1     226     .013     .013        0                  .5               1
Number of Barrels =  9
Upstream   Elevation =  1981.83
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.
  -45.19  -40.77  -36.35  -31.93  -27.51  -23.09  -18.67  -14.25   -9.83
Downstream Elevation =  1979.5
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.
   58.38    62.8   67.22   71.64   76.06   80.48    84.9   89.32   93.74

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1
*********************************************************************
* Q Culv Group (cfs)     *  706.00  * Culv Full Len (ft)     *  226.00  *
* # Barrels              *       9  * Culv Vel US (ft/s)     *   11.01  *
* Q Barrel (cfs)         *   78.44  * Culv Vel DS (ft/s)     *   11.01  *
* E.G. US. (ft)          * 1987.95  * Culv Inv El Up (ft)    * 1981.83  *
* W.S. US. (ft)          * 1987.81  * Culv Inv El Dn (ft)    * 1979.50  *
* E.G. DS (ft)           * 1982.71  * Culv Frctn Ls (ft)     *    3.21  *
```

```
* W.S. DS (ft)           * 1981.63  * Culv Exit Loss (ft)    *    1.09  *
* Delta EG (ft)          *    5.24  * Culv Entr Loss (ft)    *    0.94  *
* Delta WS (ft)          *    6.18  * Q Weir (cfs)           *          *
* E.G. IC (ft)           * 1988.26  * Weir Sta Lft (ft)      *          *
* E.G. OC (ft)           * 1987.95  * Weir Sta Rgt (ft)      *          *
* Culvert Control        *  Outlet  * Weir Submerg           *          *
* Culv WS Inlet (ft)     * 1984.25  * Weir Max Depth (ft)    *          *
* Culv WS Outlet (ft)    * 1981.92  * Weir Avg Depth (ft)    *          *
* Culv Nml Depth (ft)    *    2.42  * Weir Flow Area (sq ft) *          *
* Culv Crt Depth (ft)    *    2.42  * Min El Weir Flow (ft)  * 1988.01  *
*********************************************************************

Note:    The normal depth exceeds the height of the culvert.  The program assumes that the normal
         depth is equal to the height of the culvert.
Note:    Culvert critical depth exceeds the height of the culvert.
Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note:    The culvert inlet is submerged and the culvert flows full over part or all of its length.  Therefore,
         the culvert inlet equations are not valid and the supercritical result has been discarded.  The
         outlet answer will be used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -4834.44

INPUT
Description:
Station Elevation Data    num=     211
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001990.137-399.6361990.136-399.5351990.136-399.2651990.138-399.0771990.139
 -397.771990.152-390.2471990.141-383.3391990.136-379.7831990.136-378.6481990.137
-377.9781990.138-375.7731990.142-375.7421990.142-375.7361990.143-375.6241990.143
-375.2821990.144-374.7761990.146-370.0061990.165-369.9081990.166-369.4971990.166
-368.7911990.168-368.5561990.169-368.5461990.169 -368.491990.169-368.4481990.168
-368.2031990.168 -367.621990.168-367.6171990.168-367.5831990.167-367.5721990.167
-367.4211990.166-367.0991990.164-367.0981990.164-367.0691990.163-367.0641990.163
-366.9351990.161-366.6671990.157-366.5391990.155-365.9441990.149-364.7921990.136
-363.501 1990.12-353.807    1990-352.466    1990-348.345    1990-348.339    1990
-348.1671989.991-348.0651989.979 -339.56    1989-339.1261988.959-338.7631988.886
-336.3941988.762 -335.351988.697-334.7881988.639-333.8071988.605-332.2841988.611
-331.2631988.616-329.8011988.625-327.679 1988.64-324.8411988.658 -321.331988.674
-317.3851988.682-313.655 1988.68 -310.891988.666-309.5551988.642-309.2421988.616
-308.7941988.579-305.1131988.673-294.3621988.953-292.339    1989-287.6181989.287
-284.6261989.442-283.2681989.489-282.503  1989.5-281.6291989.508-264.265    1990
-257.9321990.378 -249.581990.876-247.2221990.927-243.0771990.996-242.784    1991
 -240.19    1991-238.039    1991-237.8741990.964-235.2811990.953-232.6651990.948
-229.9531990.951-227.1251990.961-226.657    1991-221.382    1991-221.032    1991
-220.338 1990.96 -219.86 1990.97-208.4451990.622 -205.98 1990.48 -173.671988.615
-164.1651988.169-163.9631988.122 -163.811988.148-163.792 1988.15-163.008    1988
-162.6281987.913 -159.13    1987-155.1211986.188-154.233    1986-146.1651985.122
-145.129    1985-145.0071984.992-143.8251984.884-143.2261984.789-142.8591984.617
-142.671 1984.53-142.368 1984.51-141.6361984.509-140.1871984.536-133.6741984.696
-120.978    1985-117.8711985.072-108.2791985.287-104.032 1985.38-103.0881985.396
-102.5181985.402-102.3781985.403 -102.351985.403-101.9581985.406-101.9471985.406
-101.8311985.406-101.8291985.406-101.8061985.406-101.4641985.407-101.4521985.407
-101.2931985.406-101.2911985.406-101.2591985.406-100.8111985.406-100.7761985.406
-100.1771985.406 -100.171985.406-100.0481985.406 -98.5651985.407 -93.2041985.411
 -91.8331985.412 -87.4361985.414  -82.911985.417 -81.5421985.417 -81.4681985.417
 -81.2291985.417 -81.1951985.417 -81.1191985.417 -79.5481985.417 -78.5911985.417
 -76.0691985.417 -72.1351985.413 -69.5111985.407 -66.2271985.394 -65.5811985.388
 -64.2351985.366 -63.1731985.355  -61.791985.345 -61.2611985.338 -58.429 1985.29
 -57.7561985.281 -56.2131985.267 -54.4591985.259 -50.5751985.283 -48.0241985.274
 -46.2371985.271 -44.2781985.273 -41.6861985.279 -40.8971985.279 -39.3391985.273
 -38.1981985.265 -33.758  1985.2 -24.605 1985.07  -21.47    1985 -19.9091984.631
 -18.7541984.371 -18.2481984.257 -18.2061984.251 -16.649    1984  48.6351983.683
   48.721983.675  48.768 1983.67  48.9541983.654  49.1911983.634  50.2391983.562
  50.8741983.519  52.0461983.446  55.1051983.257  55.1471983.255  55.1551983.254
  55.3121983.244   56.18    1983   56.18  1979.5   95.94  1979.5   95.94    1983
  99.8141983.642 101.8241983.709 103.852 1983.73 108.3081983.774 108.6061983.785
 115.8181983.844 116.0741983.846 116.0761983.869 120.218 1983.93 120.2571983.929
 127.4951983.943 127.7111983.943 134.3671983.943 134.4621983.943 134.6161983.944
     1401983.937

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    -400    .035   56.18    .013   95.94    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          56.18   95.94             60.97   60.97   60.97             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1982.71  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.08  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1981.63  * Reach Len. (ft)        *   60.97  *   60.97  *   60.97  *
* Crit W.S. (ft)         * 1981.63  * Flow Area (sq ft)      *          *   84.76  *          *
* E.G. Slope (ft/ft)     *0.002217  * Area (sq ft)           *          *   84.76  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   39.76  * Top Width (ft)         *          *   39.76  *          *
* Vel Total (ft/s)       *    8.33  * Avg. Vel. (ft/s)       *          *    8.33  *          *
* Max Chl Dpth (ft)      *    2.13  * Hydr. Depth (ft)       *          *    2.13  *          *
* Conv. Total (cfs)      * 14993.0  * Conv. (cfs)            *          * 14993.0  *          *
```

```
* Length Wtd. (ft)       *   60.97  * Wetted Per. (ft)       *          *   44.02  *          *
* Min Ch El (ft)         * 1979.50  * Shear (lb/sq ft)       *          *    0.27  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.22  *          *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)   *    1.41  *   10.01  *    2.94  *
* C & E Loss (ft)        *    0.22  * Cum SA (acres)         *    0.91  *    8.72  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -4895.41

INPUT
Description:
Station Elevation Data    num=     261
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001989.153-389.831    1989-388.3961988.844-387.4381988.756 -386.63 1988.74
-386.3521988.717-386.2351988.708-380.7281988.263-379.4011988.399-378.0571988.315
-376.6741988.229-375.6961988.173-375.4591988.164-375.2191988.159-375.1551988.157
-374.8531988.131-374.6451988.112-374.6031988.103-374.3271988.089-374.2051988.081
-374.1391988.074-374.025 1988.07-373.8481988.071-373.7291988.072-373.5581988.073
-373.3111988.075-372.9811988.077-372.5721988.079-372.1121988.079-371.6771988.079
-371.3551988.078  -371.21988.075-371.1631988.072-371.1111988.067-370.6821988.078
 -369.431988.111 -368.811988.125 -368.271988.136-367.891 1988.14-367.6611988.142
-367.3911988.143    -3661988.167-365.737 1988.17-365.5311988.172-365.2261988.174
-364.6761988.177-363.8371988.184-362.6631988.195-358.396 1988.27 -358.381988.278
-356.5181988.328-355.9231988.347-325.257    1989-305.5011989.401-302.4011989.415
-301.4361989.423-300.4161989.437-299.3181989.462-298.059  1989.5-296.5111989.556
 -287.791989.908-287.3721989.925-287.0691989.931-286.4191989.944-286.3911989.945
-286.2691989.946-285.899 1989.95-285.7541989.953-284.3821989.838-284.2011989.823
-282.8451989.759-280.7631989.719 -277.711989.709-273.9541989.724 -269.991989.754
-266.3541989.795-262.928 1989.85-259.2711989.931-256.689    1990-254.0371990.071
 -253.811990.076 -215.06    1991-214.5571990.751-211.1511989.065-206.666    1988
 -206.051987.833-203.457    1987-202.2941986.692-199.928    1986-197.0361985.197
-196.378    1985-195.3591984.886-187.871    1984-187.153    1984-183.495    1984
-169.6771984.297-169.0511984.309-166.5321984.355-162.2711984.428-160.8951984.455
 -159.141984.493-157.201 1984.54-153.0111984.643-151.9771984.664-151.6421984.674
-150.6391984.715-149.8271984.728-149.5031984.733-148.4641984.739-147.2471984.741
-145.9631984.739-143.5591984.735-141.4951984.731-138.9011984.727-138.0321984.724
-137.0611984.717 -134.58 1984.69-133.1921984.677-131.9391984.671-131.4611984.672
-130.4831984.671-129.688 1984.67 -127.241984.672-125.9971984.676-125.5441984.673
-124.5121984.667-124.3971984.666-124.2631984.666-122.901 1984.66-119.5571984.642
-118.9711984.638-111.0091984.647-107.4751984.651-105.4471984.643  -99.031984.648
 -98.6431984.648 -93.0291984.648 -91.6051984.653 -89.836 1984.65 -87.1611984.646
 -84.2991984.635 -83.5751984.659 -83.4611984.688 -79.2161984.733 -78.1231984.725
 -74.819  1984.7 -73.0641984.691 -71.734 1984.69 -70.8521984.695 -70.2561984.701
  -69.781984.703 -69.3961984.703 -68.9911984.703 -68.9531984.704  -65.891984.704
 -65.6791984.701 -65.3671984.699 -64.9411984.697 -63.8251984.693   -62.61984.687
  -61.841984.682 -61.654 1984.68 -59.2821984.626 -58.2091984.598 -55.6251984.539
 -53.2091984.475 -50.3281984.399 -44.359 1984.24 -43.3681984.213 -35.955    1984
 -34.3781983.376 -33.346    1983 -30.9221982.141 -30.577    1982 -30.5241981.981
 -29.8391981.738 -28.2971981.165 -27.765    1981 -26.6351980.664 -24.566    1980
 -22.8231979.547 -20.877    1979 -19.2911978.583 -17.234    1978  -9.1421977.301
  -6.221    1977  -4.6251976.615  -2.024    1976       01975.746   3.5061975.306
   5.1131975.017   5.215    1975   8.461    1975   9.218    1975  11.6711975.176
  12.1671975.234  12.2331975.231  12.2581975.209  13.9451975.194    15.21975.283
  15.3531975.306  17.9041975.535  22.861    1976  26.294    1976  26.904    1976
  27.6531975.688  29.078    1975  29.294    1975  29.336    1975  29.385    1975
  30.482    1975  31.8761975.522  33.229    1976  34.8121976.491  37.085    1977
  39.6411977.857  40.062    1978  40.6461978.271  42.268    1979  43.8091979.723
  44.446    1980  46.2261980.808  46.679    1981  47.4521981.194  51.016    1982
  54.398  1982.7  56.047    1983  60.1611983.455   62.641983.708  64.3931983.825
  66.3931983.957  66.5351983.972  66.5491983.973  66.5731983.975  66.625 1983.98
  66.6821983.982  66.7091983.983  66.7311983.985  66.7971983.988  67.0931983.966
  67.1911983.959  90.1921983.144  94.242    1983  99.0921983.226 102.2341983.372
 110.2771983.747 110.8661983.698 110.9171983.703 111.2251983.732 111.6921983.713
 112.1551983.732  115.491983.707 122.1661983.857 122.4291983.859 125.2561983.971
 125.3181983.973 125.3711983.976 125.978    1984 137.709    1984 138.539    1984
     140    1984

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035  -65.89    .025  66.393    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -65.89  66.393             4.59    4.59    4.59            .1       .3
Left Levee      Station=  -65.89      Elevation=  1984.7
Right Levee     Station=  66.393      Elevation=1983.957

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1981.87  * Element               *  Left OB *  Channel * Right OB *
```

```
* Vel Head (ft)          *    5.36  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 1976.51  * Reach Len. (ft)        *    4.59  *    4.59  *    4.59  *
* Crit W.S. (ft)         * 1977.75  * Flow Area (sq ft)      *          *   38.00  *          *
* E.G. Slope (ft/ft)     *0.103841  * Area (sq ft)           *          *   38.00  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   39.11  * Top Width (ft)         *          *   39.11  *          *
* Vel Total (ft/s)       *   18.58  * Avg. Vel. (ft/s)       *          *   18.58  *          *
* Max Chl Dpth (ft)      *    1.51  * Hydr. Depth (ft)       *          *    0.97  *          *
* Conv. Total (cfs)      *  2190.9  * Conv. (cfs)            *          *  2190.9  *          *
* Length Wtd. (ft)       *    4.59  * Wetted Per. (ft)       *          *   39.76  *          *
* Min Ch El (ft)         * 1975.00  * Shear (lb/sq ft)       *          *    6.19  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *  115.10  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)   *    1.41  *    9.93  *    2.94  *
* C & E Loss (ft)        *    0.43  * Cum SA (acres)         *    0.91  *    8.67  *    2.75  *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -4900

INPUT
Description:
Station Elevation Data    num=     228
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001988.654-395.7571988.185-394.037    1988-390.8241987.909-388.8361987.876
-386.4711987.873-383.3521987.909-379.6811987.974-378.353    1988-373.507 1988.15
 -365.981988.392-336.282    1989-325.668 1989.55-311.3381989.541-299.9361989.767
-294.1221989.787-292.3271989.801-290.4371989.826-288.4131989.872-286.0991989.942
-284.462    1990-281.2651989.888-269.1511989.711-266.2311989.755-261.2461989.713
-256.1491989.626-252.1441989.528-249.1431989.422 -245.811989.292-234.4851990.616
-231.9111990.677-229.919 1990.73-227.7361990.781-218.484    1991-217.6591990.595
-213.5321988.571-212.879    1988-212.5111987.918-212.2071987.851-209.156    1987
-205.2141986.036-205.073    1986-204.9981985.979-201.495    1985-201.1581984.968
 -200.611984.909-194.355 1984.22-192.474    1984-186.994    1984-185.362    1984
-182.4251984.054-181.9641984.062-175.5081984.173-173.4411984.214-170.8151984.271
-167.928 1984.34-161.746 1984.49-160.2311984.522 -159.741984.536-158.2771984.595
-157.0961984.613-156.6241984.621-155.262 1984.63-155.116 1984.63-154.6281984.631
-153.3571984.633-151.5071984.632-148.0611984.626 -145.121984.622-141.4481984.619
-140.2231984.615 -138.861984.606-135.389 1984.57-133.4581984.552-131.7221984.544
-131.3341984.545-129.9811984.545-129.3361984.544-127.3471984.547-125.9481984.551
-125.6321984.552-125.0681984.549-125.0071984.549 -124.421984.545-123.5891984.541
-123.431 1984.54-123.388 1984.54-121.3831984.533-116.4991984.508 -116.041984.506
-106.9521984.521-106.5251984.519-104.178 1984.51 -99.0831984.517 -98.7731984.517
 -94.269 1984.52 -92.3331984.528  -92.321984.528 -88.7061984.524 -86.3661984.516
 -85.3981984.548 -85.2461984.587 -79.6131984.648 -78.1741984.638 -73.8481984.607
 -71.5671984.596 -69.8451984.596 -68.7061984.603 -67.9391984.611 -67.3261984.614
 -66.8341984.615 -66.3141984.614 -66.2641984.615 -62.3531984.617 -62.0841984.614
 -61.6891984.611 -61.1471984.608 -59.7341984.604 -58.1871984.597  -57.231984.592
 -56.9961984.589 -54.0241984.521 -52.6851984.486 -49.4781984.413 -46.4981984.333
 -42.9711984.238  -39.491984.145 -34.5591984.013 -34.115    1984 -34.0171983.961
 -31.412    1983 -30.2841982.596 -28.436    1982 -27.6411981.702 -25.411    1981
 -23.2741980.356 -21.965    1980 -18.6371979.023 -18.556    1979 -18.5421978.996
 -15.072    1978 -13.7441977.884 -12.8311977.789  -9.7191977.486  -5.9731977.132
  -5.7891977.118  -5.6061977.108  -5.4361977.107  -4.623    1977  -4.3521976.925
  -1.3791976.106  -1.044    1976       01975.818   2.2451975.427   4.856    1975
   5.108    1975   5.567    1975   6.205    1975  11.764    1975  14.6091975.272
  17.3291975.522  19.306 1975.68  20.4271975.759  20.7821975.804  22.323    1976
  24.818    1976   25.35    1976  25.5271975.606  26.806    1975  28.121    1975
  28.368    1975  28.666    1975  29.224    1975  31.7151975.924  31.934    1976
  32.195 1976.08  33.4331976.355  36.642    1977  38.3531977.512  38.835 1977.68
  39.3291977.895   39.57    1978  40.1281978.242  41.741    1979  41.8421979.039
  41.975 1979.09  43.9611979.965  44.041    1980  44.5151980.191  46.1491980.999
  46.151    1981  46.3441981.051  47.661 1981.37  50.463    1982  54.0971982.748
  55.358    1983  57.5851983.287  58.7131983.411  64.274    1984  64.356    1984
  64.383    1984  64.422    1984  64.517    1984  66.077    1984  67.467    1984
  71.2891983.873  71.3461983.871  73.1751983.834  91.7341983.155  95.976    1983
 100.9951983.241 103.2761983.351 109.4661983.649 110.2961983.582 110.3681983.589
 110.6011983.612 111.2851983.587 111.6711983.603 116.4621983.585 122.0131983.733
 122.5011983.739 124.9631983.847 125.2821983.861 125.555 1983.88 128.337    1984
 137.686    1984  138.68    1984     140    1984

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    -400    .035  -39.49    .025  66.077    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -39.49  66.077             25.31   25.31   25.31             .1       .3
Left Levee      Station=  -39.49      Elevation= 1984.15
Right Levee     Station=  66.077      Elevation=    1984

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1981.25  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.66  * Wt. n-Val.            *          *   0.025  *          *
```

* W.S. Elev (ft)	* 1976.59	* Reach Len. (ft)	* 25.31	* 25.31	* 25.31 *
* Crit W.S. (ft)	* 1977.77	* Flow Area (sq ft)	*	* 40.73	* *
* E.G. Slope (ft/ft)	*0.079055	* Area (sq ft)	*	* 40.73	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 37.72	* Top Width (ft)	*	* 37.72	* *
* Vel Total (ft/s)	* 17.33	* Avg. Vel. (ft/s)	*	* 17.33	* *
* Max Chl Dpth (ft)	* 1.59	* Hydr. Depth (ft)	*	* 1.08	* *
* Conv. Total (cfs)	* 2511.0	* Conv. (cfs)	*	* 2511.0	* *
* Length Wtd. (ft)	* 25.31	* Wetted Per. (ft)	*	* 38.57	* *
* Min Ch El (ft)	* 1975.00	* Shear (lb/sq ft)	*	* 5.21	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 90.35	* *
* Frctn Loss (ft)	* 0.41	* Cum Volume (acre-ft)	* 1.41	* 9.92	* 2.94 *
* C & E Loss (ft)	* 0.21	* Cum SA (acres)	* 0.91	* 8.67	* 2.75 *

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4925.31

INPUT
Description:
Station Elevation Data num= 291

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001988.832	-391.5841988.711	-383.3421988.593	-378.0031988.679	-377.137 1988.69					
-373.8751988.714	-373.361988.721	-372.7761988.709	-371.8151988.697	-369.8491988.692					
-367.6851988.676	-365.88 1988.67	-356.0521988.669	-355.3421988.673	-354.4141988.684					
-353.341988.702	-352.3251988.724	-350.5751988.778	-349.0311988.818	-342.8731988.948					
-340.622	1989	-339.6831989.044	-339.4851989.048	-298.45	1990	-295.5061989.658			
-276.68	1988	-276.4281987.923	-273.205	1987	-272.5741986.804	-269.67	1986		
-267.0071985.391	-265.369	1985	-261.131 1984.02	-261.039	1984	-260.929 1983.99			
-249.987	1983	-248.746	1983	-247.868	1983	-235.9041983.273	-223.0131983.568		
-217.583 1983.69	-215.0521983.744	-213.4161983.775	-209.3421983.851	-208.4681983.869					
-207.8991983.884	-207.5141983.896	-206.9711983.916	-206.7861983.924	-202.7991983.946					
-202.7411983.943	-202.7291983.941	-202.7091983.941	-202.653 1983.94	-202.464 1983.94					
-202.1251983.937	-202.1061983.937	-201.9081983.937	-201.8521983.937	-201.6721983.934					
-201.5941983.933	-201.5221983.933	-201.4531983.933	-201.0861983.935	-200.9581983.935					
-200.8981983.936	-200.841983.935	-200.7871983.934	-200.7531983.933	-200.6911983.932					
-200.3821983.929	-200.2661983.928	-199.5581983.928	-199.3351983.927	-199.1281983.926					
-198.8991983.925	-198.7561983.925	-198.6221983.926	-198.5181983.927	-198.381983.929					
-198.329 1983.93	-198.254 1983.93	-198.0961983.929	-197.7021983.928	-197.4991983.927					
-196.1221983.893	-196.0911983.892	-192.7981983.915	-192.7471983.915	-188.2151983.927					
-188.0831983.925	-178.7931983.934	-178.5451983.934	-170.9711983.942	-170.9261983.942					
-161.3431983.961	-161.2851983.962	-158.031983.957	-157.9781983.957	-157.785 1983.96					
-157.4331983.964	-153.521983.945	-153.271983.948	-153.2361983.948	-152.2471983.949					
-152.1741983.949	-152.1691983.949	-152.1351983.952	-151.8871983.948	-151.8481983.947					
-151.8271983.947	-151.7111983.946	-151.4571983.946	-151.2591983.945	-150.4341983.928					
-150.4211983.928	-150.3771983.927	-138.0651983.832	-133.1631983.799	-129.791 1983.79					
-127.5691983.796	-124.967 1983.82	-123.7371983.815	-121.0671983.805	-117.24 1983.8					
-111.046	1984	-99.926	1984	-99.392	1984	-85.8081984.171	-82.3541984.155		
-79.2421984.139	-72.3111984.105	-68.2881984.095	-67.2161984.092	-65.8631984.095					
-63.4531984.101	-62.0471984.113	-61.0051984.121	-59.3741984.142	-58.081984.152					
-57.0461984.156	-55.9611984.157	-55.858 1984.16	-50.6151984.174	-47.8961984.182					
-47.724 1984.18	-47.6921984.179	-47.361984.175	-46.575 1984.17	-45.5071984.168					
-42.7461984.164	-39.7731984.157	-39.2011984.155	-37.957 1984.15	-37.821984.149					
-37.6861984.147	-37.5171984.145	-35.81984.106	-32.0031984.019	-31.8661984.016					
-31.279	1984	-30.182 1983.68	-28.926 1983.48	-26.168	1983	-25.4711982.873			
-25.017 1982.78	-21.437	1982	-18.908 1981.28	-17.982	1981	-17.5041980.857			
-14.267	1980	-11.2651979.178	-10.524	1979	-9.7021978.855	-4.669	1978		
-1.8491977.205	-1.3951977.087	-1.074	1977	0 1976.74	2.4141976.155				
3.0081976.014	3.066	1976	3.1031975.992	7.423	1975	10.517 1974.55			
12.3111974.355	12.451974.331	12.5731974.317	14.726 1974.33	14.751974.341					
15.0691974.361	15.6311974.383	16.1281974.397	16.3351974.408	16.5081974.428					
16.6721974.434	17.3561974.442	17.8851974.443	18.3251974.435	19.891 1974.53					
20.0061974.631	20.3331974.754	21.4131974.928	21.693	1975	23.3581975.302				
27.728	1976	28.94 1976.32	29.1831976.339	33.148	1977	35.0141977.659			
35.878	1978	37.5671978.705	38.396	1979	39.451979.377	41.078	1980		
42.483 1980.52	43.74	1981	46.5471981.845	47.07	1982	51.775 1982.76			
53.304	1983	53.7841983.048	54.891983.118	55.0211983.123	55.8231983.157				
56.0261983.166	57.9321983.218	58.421983.231	59.1951983.263	59.8261983.289					
60.2941983.317	61.213 1983.37	63.2231983.504	63.887 1983.54	64.971983.581					
65.9461983.608	65.9671983.608	66.3721983.615	66.7491983.618	67.0971983.616					
67.7541983.604	68.0331983.594	68.2281983.576	68.3631983.473	68.5121983.439					
68.8311983.416	69.3771983.408	69.6541983.405	70.1661983.398	70.4941983.388					
71.2251983.399	71.429 1983.39	71.4881983.387	72.271 1983.41	72.8861983.438					
73.9251983.537	74.5131983.563	74.7391983.567	74.7581983.567	75.0051983.566					
79.2111983.472	79.4791983.466	82.0561983.418	84.0571983.381	86.0311983.342					
87.7121983.308	91.914 1983.21	92.2751983.199	92.6131983.188	94.9191983.144					
95.0521983.139	95.319 1983.13	98.0851983.087	102.8991983.012	103.174	1983				
103.4791983.017	103.78	1983	106.8011982.943	106.8311982.942	108.725 1982.93				
119.779	1983	120.5211983.011	120.6321983.017	122.4351983.083	122.7351983.103				
124.6561983.231	126.1321983.366	135.763	1984	137.342	1984	139.225	1984		
140	1984								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-400	.035	-39.773	.025	63.223	.035

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -39.773  63.223            74.69   74.69   74.69             .1       .3
Left Levee      Station=  -39.77      Elevation= 1984.16
Right Levee     Station=   63.22      Elevation=  1983.5

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1979.58  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.60  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1976.98  * Reach Len. (ft)       *   74.69  *   74.69  *   74.69  *
* Crit W.S. (ft)         * 1977.82  * Flow Area (sq ft)     *          *   54.55  *          *
* E.G. Slope (ft/ft)     *0.025823  * Area (sq ft)          *          *   54.55  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   34.03  * Top Width (ft)        *          *   34.03  *          *
* Vel Total (ft/s)       *   12.94  * Avg. Vel. (ft/s)      *          *   12.94  *          *
* Max Chl Dpth (ft)      *    2.66  * Hydr. Depth (ft)      *          *    1.60  *          *
* Conv. Total (cfs)      *  4393.4  * Conv. (cfs)           *          *  4393.4  *          *
* Length Wtd. (ft)       *   74.69  * Wetted Per. (ft)      *          *   34.58  *          *
* Min Ch El (ft)         * 1974.32  * Shear (lb/sq ft)      *          *    2.54  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   32.92  *          *
* Frctn Loss (ft)        *    1.06  * Cum Volume (acre-ft)  *    1.41  *    9.89  *    2.94  *
* C & E Loss (ft)        *    0.62  * Cum SA (acres)        *    0.91  *    8.64  *    2.75  *
**********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5000

INPUT
Description:
Station Elevation Data    num=     368
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001984.489-398.9791984.464-398.6421984.456-397.1951984.405-394.0021984.294
-393.5851984.299-393.2231984.288-392.9531984.276-392.7561984.269-392.5981984.268
  -392.31984.273 -391.521984.308-391.3771984.304-389.8951984.265-386.3551984.495
 -385.151984.573-384.1521984.596-382.4021984.716-378.262    1985-377.7431985.665
-377.261    1986-376.3211986.525-375.469 1986.23-373.5781986.437-373.2971986.458
-373.1151986.472-372.4791986.521-371.802 1986.55-371.564 1986.56-366.0331986.858
-365.6891986.866-365.3481986.866 -362.671986.986-362.6331986.985-360.7611986.973
-360.6851986.966-359.4791986.789-358.685 1986.65-357.2111986.279 -355.78    1986
-355.123 1985.89-350.593    1985-349.8031984.888-348.8881984.713-347.0261984.364
-345.333    1984-340.3171983.531-334.146    1983-318.784    1983-313.617    1983
-313.3411983.003 -313.341983.003-306.9941983.078-297.978    1983-257.9811983.221
-257.1391983.185-256.9661983.156-256.6831983.147-255.8761983.142-253.1721983.134
-248.3091983.098-248.0271983.096-245.1951983.097-244.394 1983.09-241.8091983.055
-240.6811983.043-239.6611983.038-238.6611983.039-238.464 1983.04  -233.41983.067
-231.6871983.074-231.5591983.074-230.7071983.075-229.8711983.065-229.1111983.053
-228.6181983.034-227.7271983.019-225.816    1983-222.9021982.902-222.7161982.896
-221.1841982.874 -221.051982.877-212.9111982.849 -212.621982.848-211.7241982.872
-211.4141982.886-211.3231982.888-211.2051982.887 -211.041982.881-210.525 1982.86
-207.8251982.838-207.7621982.838-205.4741982.799-205.4011982.798 -203.041982.773
-201.5771982.771 -200.061982.786-198.5081982.826-195.4271982.938-194.277 1982.97
-193.083 1982.98-193.0641982.981-193.0051982.985 -192.981982.986 -192.961982.987
-192.9441982.988 -192.921982.988-192.8891982.989-192.874 1982.99-192.8481982.991
-192.8411982.991-192.8371982.992-192.8321982.992 -192.831982.992-192.8021982.992
-192.7731982.992-192.705 1982.99  -192.71982.989-192.6891982.989-192.6731982.989
-192.6561982.989-190.3031982.971-184.9361982.932-184.8541982.932-184.7881982.934
-184.6441982.939 -184.41 1982.94-184.3331982.932-184.2911982.929-184.0951982.924
-183.8991982.921 -183.571982.913-180.526 1982.87-178.3551982.884-177.8531982.873
-177.6961982.867-177.3061982.849-177.2941982.849-175.8681982.849-175.7771982.846
-174.507 1982.83-168.6271982.719-166.0581982.651-164.5341982.628-164.1641982.621
-163.9781982.624-163.8531982.617 -163.851982.617-163.8081982.599-163.3081982.574
 -162.691982.549-162.6271982.536-160.096 1982.48-157.6141982.526-157.2321982.531
-156.5251982.542-153.4871982.576 -152.56 1982.58 -141.261982.587-140.338 1982.59
-139.8821982.603-138.192 1982.66-137.6231982.673-136.2121982.689-136.1811982.689
-135.1171982.698-129.8391982.696-129.8121982.695 -129.711982.692 -129.53 1982.69
-129.4551982.691 -129.361982.692-129.2871982.693-129.0891982.696-121.5251982.549
  -121.41982.542-121.0091982.537-120.2851982.526-116.9631982.434-116.5291982.415
-116.337 1982.41-115.4271982.401 -113.591982.391-112.2121982.387-111.349 1982.39
-110.0441982.389-109.5531982.394-108.982 1982.41-108.1931982.444-107.6611982.462
-102.9231982.441-102.2391982.432-101.6351982.415-101.1071982.391-100.6621982.365
 -95.938    1982 -93.987    1982 -91.593    1982 -86.204    1982 -83.799    1982
 -81.807    1982 -77.6831981.887 -77.1181981.924 -76.8291981.989 -76.737    1982
 -75.8891982.078 -73.6331982.244 -73.5221982.243 -70.8211982.396 -70.0291982.457
 -69.4871982.531 -69.3321982.561 -69.2411982.598 -68.6291982.693 -68.0031982.749
 -67.8441982.791  -67.741982.797 -67.6691982.799 -67.5761982.798 -67.4761982.796
 -67.3291982.793 -66.946 1982.77 -66.8041982.758 -66.6971982.754 -66.518 1982.75
 -66.1051982.744 -65.8721982.738 -65.766 1982.73 -65.6311982.709 -65.4981982.698
 -64.5231982.663  -62.921982.614 -62.5421982.598 -59.0971982.428 -58.933 1982.42
 -58.8921982.419 -58.3221982.404 -58.0581982.397 -57.6951982.389 -57.1131982.368
 -56.3041982.335 -55.0891982.297 -54.8051982.291 -54.2141982.284 -52.2641982.269
   -52.11982.273 -49.1431982.398 -47.7491982.447 -46.299 1982.49 -44.8561982.533
```

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 -44.298 1982.55 -42.2271982.647 -41.273 1982.71 -41.1161982.727 -41.0971982.739
 -41.0571982.773 -40.9171982.785  -40.361982.823 -39.7711982.859  -39.361982.861
 -39.3171982.861 -39.0261982.862   -38.81982.864 -38.7951982.863 -38.7881982.862
 -38.7871982.862 -38.777 1982.86 -38.7051982.858 -37.8361982.844 -37.648 1982.84
 -37.5211982.835 -37.4021982.828 -37.2721982.807 -36.9911982.761 -36.8511982.717
 -36.449 1982.65 -35.9851982.596 -33.3111982.328 -32.1851982.458 -32.0621982.463
 -29.723    1982 -28.2071981.666 -24.963    1981 -21.9511980.558 -18.572    1980
 -15.5391979.718 -12.7561979.444  -7.239    1979  -1.7951978.017  -1.7731978.014
  -1.7531978.012  -1.7371978.009  -1.7281978.006  -1.714    1978   -.3131977.045
   -.251    1977   -.0551976.879       01976.844   1.363    1976   3.1261975.664
   9.691    1975   9.9541974.946  10.0581974.916  11.3621974.559  12.813    1974
  15.4571973.742  17.6351973.557  18.3091973.514  19.3181973.466  19.4971973.446
  20.3091973.398  20.5661973.368  20.7351973.357  20.977 1973.35   21.391973.341
  21.4061973.335  22.1581973.317  22.3121973.329  23.1131973.416  23.9341973.484
  24.1431973.529  24.8351973.803   25.38    1974  26.4771974.944  26.547    1975
  26.6291975.063  27.698    1976  28.0531976.173  29.612    1977  30.4241977.384
  31.731    1978  33.7881978.951  33.891    1979  33.9921979.048    36.4    1980
  37.3711980.293  37.8681980.356  41.6631980.728  44.203    1981  46.811    1981
  48.127    1981   60.611981.039  64.9861981.053  70.224 1981.07  71.2671981.022
  72.052    1981  74.046    1981  74.579    1981  92.625    1981 100.054    1981
 101.038    1981  105.44    1981 105.516    1981 106.981    1981 107.0391981.001
 110.3271981.031 111.1171981.045 111.3341981.064 114.8141981.046 123.468    1981
 125.383    1981 129.593    1981 130.824    1981 131.666    1981  137.68    1981
 138.475    1981 138.535    1981     140    1981

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035  -40.36    .025  44.203    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -40.36  44.203            71.59   71.59   71.59            .1       .3
Left Levee      Station=  -40.36      Elevation= 1982.82
Right Levee     Station=    44.2      Elevation=    1981

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1978.60  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.96  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1977.65  * Reach Len. (ft)       *   71.59  *   71.59  *   71.59  *
* Crit W.S. (ft)         * 1977.27  * Flow Area (sq ft)     *          *   89.97  *          *
* E.G. Slope (ft/ft)     *0.004790  * Area (sq ft)          *          *   89.97  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   32.17  * Top Width (ft)        *          *   32.17  *          *
* Vel Total (ft/s)       *    7.85  * Avg. Vel. (ft/s)      *          *    7.85  *          *
* Max Chl Dpth (ft)      *    4.33  * Hydr. Depth (ft)      *          *    2.80  *          *
* Conv. Total (cfs)      * 10200.5  * Conv. (cfs)           *          * 10200.5  *          *
* Length Wtd. (ft)       *   71.59  * Wetted Per. (ft)      *          *   34.15  *          *
* Min Ch El (ft)         * 1973.32  * Shear (lb/sq ft)      *          *    0.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.18  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)  *    1.41  *    9.77  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *    0.91  *    8.59  *    2.75  *
************************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.
Note:    Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5071.59

INPUT
Description:
Station Elevation Data    num=     348
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001983.781-395.8161983.809-388.6911983.851-385.8731983.854-382.3221983.859
-379.0611983.855-376.7941983.846-376.1461983.844-375.8151983.843-373.8861983.831
-373.3011983.827-369.8861983.799-369.2581983.801-368.385 1983.79-368.334 1983.79
-367.921 1983.78-355.3181983.646-350.5961983.695-348.2991983.713-346.9081983.725
-343.2011983.764-341.5161983.782-340.4531983.787-337.0461983.813-335.2381983.825
-334.9881983.825-334.483 1983.83-334.0461983.835-333.8061983.836-333.1411983.839
-332.888 1983.84-331.4861983.853-330.5481983.862-329.6141983.872-329.4771983.873
-329.2671983.876-328.7961983.881-324.7471983.846-324.1551983.841-322.7291983.829
-321.9321983.822-321.8221983.814-321.5041983.805-321.0371983.797-320.549 1983.79
-319.8811983.781 -319.661983.778 -319.461983.773-319.1571983.763-319.0611983.756
-319.0051983.752-318.5551983.738-318.0791983.719-317.7341983.702-316.8071983.671
-314.4581983.604-313.4761983.574-313.1511983.559-312.2351983.504-303.445    1983
-291.7221982.701-290.4081982.713-289.8711982.713-289.5961982.715-289.308 1982.72
 -288.591982.734-288.2571982.738 -287.781982.742-287.2961982.742-284.3211982.661
-284.2791982.655-284.1341982.648-283.5131982.626 -282.771982.596-282.3061982.567
-281.6761982.539-276.4751982.345-276.4221982.343-275.431  1982.3-273.2181982.196
-271.9671982.163-268.424    1982-268.2221981.975-265.5051981.631-262.8771981.399
 -259.671981.073-258.988    1981-257.8491980.808 -253.75    1980 -252.381979.733
-247.9931979.004-247.972    1979 -247.97    1979-247.967    1979-241.516    1978
-238.2851977.402-236.092    1977-231.7571976.173-230.926    1976-226.7521975.167
-225.937    1975 -222.591974.293-221.192    1974-220.749    1974-215.171    1974
 -209.09    1974-206.2511974.739-205.273    1975-201.5961975.986-201.541    1976
-201.4931976.013 -197.79    1977-195.3681977.646-194.109    1978-191.5621978.683
-190.426    1979-187.7041979.737 -186.77    1980-184.2791980.652-183.147    1981
-176.6241981.784-175.7221981.834-173.317    1982-173.257    1982-172.259    1982
-172.022    1982-169.427    1982-166.966    1982-165.207    1982-163.967    1982
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-158.113    1982-157.5431981.764 -157.491981.742-151.2271981.318-149.7581981.267
-149.6721981.259-149.4931981.247-149.4861981.244-146.8381981.208-146.6971981.213
  -146.31981.217-145.4681981.243-145.4381981.249-145.3131981.254-144.9811981.264
-144.6671981.276 -144.571981.278-144.3711981.277-143.2851981.292 -142.431981.312
-141.5541981.347-140.885 1981.36 -140.751981.369-139.468  1981.4-138.7431981.418
-134.867 1981.35-129.9621981.264-124.8651981.159 -120.861981.069-118.967    1981
-114.9181980.877-114.7121980.871-114.3711980.862-101.7611980.492-101.0781980.472
 -99.8721980.427 -98.7431980.389 -95.8331980.302  -95.161980.279 -94.9161980.273
 -94.7511980.271 -94.4591980.271 -92.7541980.257 -91.7741980.253 -91.6911980.254
 -91.6081980.263 -91.4211980.273  -90.941980.289 -90.6211980.293   -90.31980.292
 -90.0021980.287 -89.3091980.266  -89.171980.264 -89.0861980.266  -89.011980.286
 -88.6451980.338 -88.3141980.369 -88.2721980.371 -87.9721980.385 -87.4971980.371
 -87.2781980.373 -87.029 1980.37 -86.7791980.362 -86.3751980.342 -85.9321980.311
 -85.2161980.224 -85.1331980.221 -85.0381980.225 -84.6341980.259 -83.1851980.406
 -80.8741980.757 -80.8551980.759 -80.1381980.833 -80.0251980.831 -79.783 1980.85
 -77.896    1981 -77.7491981.007 -75.6331981.126   -75.61981.126 -75.1291981.129
 -75.0831981.129 -74.4871981.121 -74.2171981.116 -71.5231981.067 -70.2631981.052
 -67.2011981.017 -66.329    1981 -66.1141980.985 -65.728    1981  -64.43    1981
 -63.571    1981 -61.905    1981 -56.2061981.986 -56.133    1982 -56.025    1982
 -55.932    1982 -55.727    1982 -55.147    1982 -46.254    1982 -46.175    1982
 -44.9561981.917 -32.893    1981 -25.7151980.077 -25.7061980.076 -25.052    1980
 -21.9861979.416 -19.886    1979 -18.8251978.758 -15.825    1978 -14.8051977.304
  -14.37    1977 -13.7841976.391 -13.139    1976 -12.144 1975.56 -10.458    1975
  -8.6691974.296  -7.755    1974  -6.9251973.698  -5.161    1973  -4.0451972.892
  -2.2721972.772  -1.5341972.739   -.7251972.717       01972.703    .7391972.689
   4.6161972.804   4.974    1973   7.145 1973.98   7.182    1974   7.3381974.073
   9.723    1975  11.3391975.826  11.618    1976  11.976  1976.2  13.306    1977
  15.131977.957  15.1761977.977   15.23    1978  15.4261978.106  16.996    1979
  17.339  1979.2  18.832    1980  20.451 1980.84  20.636    1981  20.637    1981
  20.645    1981  24.382    1981  31.5871980.929  32.1171980.964  32.2611980.975
  32.3181980.979  32.4381980.983  32.4571980.984  32.4711980.984  32.4791980.985
  32.5391980.985  32.5641980.986  32.5871980.986  32.6041980.985  32.6171980.985
  32.6351980.984  32.6471980.984  32.6691980.983  32.7021980.983  32.7571980.982
  32.8031980.981  32.837 1980.98  32.8941980.978  32.9411980.976  33.0651980.971
   33.09 1980.97  33.2111980.967  33.3711980.963  34.0611980.958  42.3291980.892
  43.8331980.833  47.0781980.786   48.161980.761  49.6291980.721  50.399 1980.71
  55.4861980.638   61.31 1980.52  66.222 1980.43  69.0871980.376  69.8821980.358
  73.2761980.311  74.307 1980.29  75.6661980.244  77.3951980.173  79.2611980.086
  80.848    1980  80.907    1980  89.205    1980  90.1231980.147  90.2231980.151
  90.2991980.153  92.7041980.232  96.5151980.549 102.108    1981 105.232    1981
 107.813    1981 108.8391980.965 109.3871980.935 109.5791980.909 110.0971980.887
 112.0041980.828 113.881 1980.75 121.958 1980.79 122.1251980.813 122.536 1980.83
 123.6041980.854  124.921980.892 127.2181980.976 127.771    1981 137.352    1981
 138.778    1981 139.2611980.928     1401980.836

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-329.267    .025  20.636    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -329.267  20.636            28.41   28.41   28.41            .1       .3
Left Levee      Station=  -46.25      Elevation=    1982
Right Levee     Station=   20.64      Elevation=    1981

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1978.15  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.38  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1976.77  * Reach Len. (ft)      *   28.41  *   28.41  *   28.41  *
* Crit W.S. (ft)         * 1976.77  * Flow Area (sq ft)    *          *   74.81  *          *
* E.G. Slope (ft/ft)     *0.007061  * Area (sq ft)         *          *   74.81  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   27.06  * Top Width (ft)       *          *   27.06  *          *
* Vel Total (ft/s)       *    9.44  * Avg. Vel. (ft/s)     *          *    9.44  *          *
* Max Chl Dpth (ft)      *    4.08  * Hydr. Depth (ft)     *          *    2.76  *          *
* Conv. Total (cfs)      *  8401.6  * Conv. (cfs)          *          *  8401.6  *          *
* Length Wtd. (ft)       *   28.41  * Wetted Per. (ft)     *          *   28.81  *          *
* Min Ch El (ft)         * 1972.69  * Shear (lb/sq ft)     *          *    1.14  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   10.80  *          *
* Frctn Loss (ft)        *    0.20  * Cum Volume (acre-ft)  *    1.41  *    9.64  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.91  *    8.54  *    2.75  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -5100

INPUT
Description:
Station Elevation Data    num=     409
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
    -4001984.407-385.663 1984.23-381.2971984.177-376.2751984.114-372.3991984.066
-371.2361984.051-368.2041984.011-367.9191984.004-367.738    1984-367.194 1983.99
```

```
-367.1491983.988 -366.92 1983.98-364.7761983.883-362.5211983.809-359.5111983.682
 -357.191983.584-350.0811983.355-349.7491983.345-343.2981983.099-342.8461983.089
-338.716    1983-328.5531982.572-327.4661982.533-325.9961982.495-324.3891982.463
-320.8561982.409-320.2521982.386-319.4951982.335-316.4081982.095-315.182    1982
 -300.971981.328-296.374 1981.11-294.232    1981 -293.171980.928-285.9471980.471
-284.1871980.369-283.4431980.334-282.9851980.319-281.9171980.293-281.3731980.284
-281.0881980.285-280.7961980.292-280.5211980.305-280.3041980.321-280.189 1980.34
 -280.181980.389-278.7471980.431-278.1641980.459-277.7261980.496 -277.641980.509
-276.9291980.615-276.6541980.602-276.1421980.642-275.8881980.675 -273.521980.978
-273.4961980.978-273.292    1981-273.2711981.001-273.271    1981-265.0021980.076
-264.141    1980-257.3111979.434-256.9441979.414-256.7281979.399-255.9871979.346
-255.1321979.292-254.7411979.261 -254.461979.226-254.2231979.203-253.8811979.179
-253.7821979.175-253.5691979.178-251.6411979.216-251.6171979.216 -251.271979.228
-250.9941979.231-250.234 1979.24-248.8221979.306-247.9491979.362-245.9091979.493
-244.921 1979.53-241.192  1979.8-238.962    1980 -235.911980.842-235.4161980.977
-235.351    1981-235.315    1981-235.287    1981-234.871    1981-232.396    1981
-227.929    1981-227.406    1981-227.0951980.976-225.1621980.812-211.979    1980
-208.1131979.411-204.501    1979-204.0621978.934  -199.4    1978-198.8381977.886
-195.256    1977-195.1451976.978-194.2541976.818-189.9661976.046-189.563    1976
-187.8221975.654 -184.24    1975-183.7931974.933 -182.591974.789-179.5061974.448
 -178.761974.343-176.8971974.151-176.5081974.116-175.198    1974-174.741    1974
-173.845    1974 -173.19    1974-172.9541974.093-172.4671974.264-171.0251974.769
-170.368    1975-168.6391975.646-167.644    1976-166.3421976.477-164.927    1977
-163.9651977.356-163.5411977.511-162.206    1978-160.321 1978.64-160.146  1978.7
 -159.31    1979-158.0111979.473-156.9621979.854-156.561    1980-156.1041980.169
-155.7821980.289-154.0551980.896-153.758    1981-151.394    1981-150.291    1981
-149.408    1981-148.997    1981-137.9411980.664-136.6681980.709-132.131 1980.85
-130.9731980.881-130.3211980.904-129.6861980.926-129.531 1980.93-129.4741980.931
-129.3081980.931-128.8911980.936-128.7421980.939 -128.71 1980.94-128.676 1980.94
-128.5281980.942-128.4081980.942 -128.291980.942-128.185 1980.94-128.0921980.937
-128.0351980.934-128.0191980.934 -127.921980.927-127.8491980.924-127.7511980.922
-127.617 1980.92-127.5641980.916-127.4371980.906-127.3561980.901-127.2351980.896
-127.077 1980.89-126.8941980.885-126.7061980.882-126.1691980.852 -126.051980.845
-125.8511980.835-119.6941980.567-118.3311980.504-117.4191980.458-116.8951980.435
-114.6951980.342  -113.11980.265-110.8511980.188-109.1211980.103-108.5531980.076
-108.3131980.062-108.1321980.053-108.1151980.051 -107.561980.033-107.0091980.024
-106.7881980.036     -981980.081 -93.916    1980 -93.6191979.985 -93.3271979.951
 -92.802 1979.86 -92.6651979.788 -91.6241979.704 -91.4961979.649 -91.1521979.611
  -90.381979.555 -90.3041979.544  -90.151979.539 -89.8551979.533 -89.471 1979.53
 -89.0691979.529 -88.7041979.534 -88.1631979.549 -87.7131979.574 -87.1341979.616
 -84.1051979.783 -82.978 1979.86 -81.7961979.963 -81.646    1980  -76.071980.346
 -72.9171980.542 -68.3851980.833 -65.678    1981 -64.6141981.102 -60.0331981.303
 -59.9791981.304 -57.9641981.406 -57.141 1981.46 -56.3321981.506 -56.1591981.528
 -55.6951981.656   -55.61981.669  -54.881981.697  -54.181981.717 -53.8551981.724
 -53.5711981.726 -53.3391981.724 -53.156 1981.72 -51.955 1981.67 -51.3431981.631
 -51.0281981.603 -50.4051981.556 -49.7481981.521  -48.751981.454 -46.7631981.354
 -40.7191981.004 -40.653    1981 -40.565 1980.99 -31.512    1980  -28.091979.125
  -27.55    1979 -26.951 1978.74 -24.926    1978 -23.8791977.331 -23.247    1977
 -22.6751976.698 -21.463    1976 -20.5561975.481 -19.751    1975 -19.1531974.643
 -18.027    1974 -17.2661973.546 -16.316    1973 -13.9141972.775 -11.9241972.589
   -11.91972.574  -9.2941972.334  -8.614 1972.29  -8.3281972.278  -8.0151972.271
  -7.4441972.261  -5.9121972.307   -5.731972.403  -4.6561972.555  -2.9351972.962
  -2.9191972.966  -2.784    1973  -2.4441973.107       01973.821    .613    1974
    3.421974.925   3.5571974.972   3.617    1975   3.7641975.078   5.382    1976
   6.6151976.668   7.142    1977   7.5991977.238   8.945    1978   9.6921978.427
  10.599    1979  12.1271979.843  12.429    1980  15.1561980.198  16.153 1980.27
  17.9281980.392  21.5871980.513  22.1481980.544  22.5581980.558  22.7951980.564
  24.5571980.587  25.2881980.596   25.941980.599  26.4381980.594  26.8111980.582
  27.3251980.556  27.6611980.545  28.2991980.533  29.211 1980.52  30.7391980.498
  32.0231980.477  32.9391980.456  34.462  1980.4  35.714 1980.36  38.9391980.223
  39.5951980.207  41.0561980.181  42.6271980.154  45.7381980.076  46.5311980.057
  47.0471980.055  48.561    1980  61.703    1980  68.887    1980  71.623    1980
  72.214    1980  74.615    1980  78.173    1980  79.502    1980  79.831    1980
  80.016    1980  83.7231980.467  85.1991980.679  86.4781980.822  86.7941980.846
  86.9691980.866  87.5131980.892  87.5221980.893  88.0291980.967  88.056 1980.97
  88.0571980.971  88.1391980.978  88.2071980.983   88.221980.984  88.2571980.987
  88.2931980.987  88.2981980.987  88.3091980.984  88.3171980.984  88.3441980.983
  88.3951980.982  88.5371980.981  88.6251980.981  88.6271980.978  88.6361980.976
  88.6591980.973  88.7021980.969  88.7741980.965  88.8751980.961  90.0711980.938
  90.2371980.935  93.8941980.781  94.4631980.749  95.3691980.596  95.7651980.592
  96.0541980.588 101.2731980.527 104.234 1980.82  105.421980.967 105.4411980.969
 105.727    1981 106.318    1981 107.039    1981 107.429    1981  109.511980.819
 111.7731980.686 113.1131980.635 114.0821980.603 114.4121980.585 114.5281980.569
 114.8411980.556 116.0021980.522 117.1571980.475  122.261980.512 122.3681980.527
 122.6341980.538 123.3281980.555 124.1891980.582 125.7081980.641 127.0641980.703
 129.1251980.825  130.531980.885 133.2621980.966 134.6671980.997 134.6791980.997
  134.681980.997 134.6871980.997  134.691980.998 134.6911980.998 134.7041980.998
 134.7051980.998 134.7081980.998 134.7111980.998 134.7161980.997 134.7211980.996
 134.7281980.996 134.7291980.995 134.773 1980.99 134.918    1981 135.912    1981
 136.202    1981  136.781980.953 137.2951980.889     1401980.463

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             44.1    44.4    44.1             .1       .3
Left Levee      Station=  -54.88      Elevation=  1981.7
Right Levee     Station=   88.06      Elevation= 1980.97

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1977.81  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.08  * Wt. n-Val.            *          *   0.025  *          *
```

* W.S. Elev (ft)	* 1975.73	* Reach Len. (ft)	*	44.10	*	44.40	*	44.10	*
* Crit W.S. (ft)	* 1976.28	* Flow Area (sq ft)	*		*	60.99	*		*
* E.G. Slope (ft/ft)	*0.012965	* Area (sq ft)	*		*	60.99	*		*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*		*	706.00	*		*
* Top Width (ft)	* 25.91	* Top Width (ft)	*		*	25.91	*		*
* Vel Total (ft/s)	* 11.57	* Avg. Vel. (ft/s)	*		*	11.57	*		*
* Max Chl Dpth (ft)	* 3.47	* Hydr. Depth (ft)	*		*	2.35	*		*
* Conv. Total (cfs)	* 6200.4	* Conv. (cfs)	*		*	6200.4	*		*
* Length Wtd. (ft)	* 44.40	* Wetted Per. (ft)	*		*	27.27	*		*
* Min Ch El (ft)	* 1972.26	* Shear (lb/sq ft)	*		*	1.81	*		*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	20.96	*		*
* Frctn Loss (ft)	* 0.27	* Cum Volume (acre-ft)	*	1.41	*	9.59	*	2.94	*
* C & E Loss (ft)	* 0.07	* Cum SA (acres)	*	0.91	*	8.52	*	2.75	*

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -5144.1

INPUT
Description:
Station Elevation Data num= 380

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001980.935	-398.8911980.946	-397.9221980.974	-396.8831980.993	-395.613	1981				
-394.371981.034	-394.3281981.026	-394.3091981.022	-394.299 1981.02	-394.2581981.018					
-394.0791981.023	-393.429 1981.04	-392.9131981.043	-392.5521981.045	-392.3941981.036					
-392.2941981.028	-392.2651981.026	-392.231981.024	-392.1771981.023	-392.1551981.022					
-391.9021981.033	-391.8961981.034	-391.8781981.036	-391.8491981.038	-391.811 1981.04					
-388.686	1981	-383.7891980.972	-379.7651980.975	-376.2961980.963	-375.522	1981			
-375.345	1981	-356.9721980.087	-356.9341980.092	-356.8381980.093	-356.7391980.092				
-355.894	1980	-355.1181979.942	-354.0121979.868	-353.1641979.826	-352.5131979.816				
-351.6161979.844	-349.423	1980	-345.4031980.356	-345.1441980.365	-343.7151980.547				
-343.1591980.617	-3431980.631	-342.22	1980.7	-341.8841980.632	-341.6621980.587				
-339.849	1980	-336.602 1979.03	-336.507	1979	-336.428	1979	-335.286	1979	
-331.3631979.488	-327.576	1980	-327.4961980.183	-327.34	1980	-325.821979.769			
-319.236	1979	-312.221	1979	-307.505	1979	-307.113	1979	-305.918	1979
-305.4361979.036	-305.3631979.067	-297.238	1979	-293.028	1979	-291.43	1979		
-290.43	1979	-289.629	1979	-289.442	1979	-287.717	1979	-287.573	1979
-286.873	1979	-286.409	1979	-282.295	1979	-280.921978.965	-280.9021978.962		
-280.8461978.955	-276.84	1978	-268.543	1978	-266.195	1978	-260.9541978.273		
-253.6191978.643	-248.581	1979	-248.3691979.487	-248.3671979.492	-245.9121979.461				
-245.8291979.413	-245.2521979.342	-244.8621979.247	-244.267 1979.17	-243.7711979.134					
-242.7641979.061	-241.5931979.011	-241.56 1979.01	-241.548 1979.01	-240.2471979.001					
-240.2461979.001	-240.2391979.001	-238.1661979.074	-237.5961979.094	-237.4151979.101					
-236.9961979.077	-236.7251979.079	-234.3091979.091	-230.4311979.057	-230.1241979.055					
-230.0041979.049	-229.8541979.047	-226.452	1979	-219.382	1979	-216.582	1979		
-215.041	1979	-213.2041979.118	-206.2671979.093	-206.0961979.074	-205.7931979.053				
-205.0351979.008	-204.746	1979	-204.659	1979	-204.3211979.007	-202.5751979.079			
-202.0081979.112	-201.4021979.161	-188.7361979.405	-188.2131979.393	-186.8021979.337					
-185.941979.318	-185.0411979.304	-185.0291979.304	-183.8461979.298	-183.4021979.301					
-183.3971979.301	-183.3311979.304	-183.191979.309	-177.5841979.206	-176.0431979.177					
-175.9891979.157	-174.821979.095	-172.823	1979	-168.5891978.512	-164.5541978.045				
-164.211	1978	-164.1471977.987	-163.4771977.848	-163.4581977.844	-159.7331977.087				
-159.61977.058	-159.326	1977	-155.4821976.215	-154.481	1976	-150.8661975.242			
-149.729	1975	-144.9731974.042	-144.757	1974	-143.6681973.777	-141.4471973.262			
-141.41973.247	-139.4651973.237	-138.9951973.294	-137.7841973.419	-136.2131973.583					
-136.0631973.599	-132.235	1974	-130.961974.526	-129.615	1975	-127.1341975.754			
-126.346	1976	-123.346 1976.82	-122.705	1977	-122.621977.023	-119.093	1978		
-118.6531978.097	-118.361978.151	-117.8551978.259	-116.7291978.469	-113.774	1979				
-113.651979.015	-113.5841979.026	-112.4691979.206	-112.1551979.241	-111.8091979.279					
-110.3831979.379	-110.0851979.429	-109.0921979.409	-107.861	1979	-106.968 1978.87				
-104.9741978.707	-102.8071978.716	-102.7341978.737	-101.8851978.784	-101.0181978.866					
-100.346	1979	-99.453	1979	-98.822	1979	-91.164 1979.27	-83.332 1979.49		
-73.5471979.756	-72.2171979.796	-70.2381979.866	-69.8211979.879	-69.4011979.891					
-68.7881979.903	-68.5651979.908	-65.583	1980	-65.451980.004	-65.3641980.007				
-64.5341980.029	-64.3011980.035	-63.7721980.044	-63.4811980.049	-63.2711980.053					
-62.5961980.054	-62.5341980.054	-62.4331980.054	-61.3251980.035	-60.7751980.014					
-60.486	1980	-60.4451979.997	-51.521	1979.3	-50.247	1979	-48.256 1978.43		
-46.868	1978	-45.6951977.659	-43.758	1977	-43.2991976.695	-42.215	1976		
-41.6991975.702	-40.576	1975	-39.9351974.557	-39.113	1974	-38.3511973.467			
-37.697	1973	-37.421972.807	-36.185	1972	-29.579	1972	-28.54	1972	
-23.303	1972	-21.4561972.689	-20.653	1973	-19.3131973.522	-18.086	1974		
-16.061974.796	-15.551	1975	-14.9791975.217	-14.1971975.538	-13.047	1976			
-12.3451976.283	-10.55	1977	-8.871977.709	-8.177	1978	-5.8441978.956			
-5.737	1979	-4.5521979.081	01979.391	4.3341979.686	6.255 1979.86				
6.3241979.861	6.5961979.865	7.0021979.868	7.4561979.869	8.0311979.877					
8.9191979.886	9.3361979.889	9.661979.891	10.834 1979.89	11.1451979.888					
11.5641979.884	11.826 1979.88	12.4631979.867	14.112 1979.85	16.638 1979.81					
19.0891979.762	22.8531979.678	24.262 1979.65	25.9561979.625	27.7931979.604					
30.421979.574	32.3381979.549	33.6261979.526	35.521979.476	36.618 1979.45					
50.0111979.821	50.633	1980	51.774	1980	54.192	1980	55.9031979.747		
56.018 1979.73	56.5331979.679	58.302 1979.56	58.8681979.459	58.9321979.407					
59.0451979.386	61.3081979.454	61.41979.483	62.361979.635	65.3671979.905					
66.087	1980	66.465 1980.04	66.5091980.044	68.481980.178	68.9971980.214				
70.702 1980.25	71.1091980.259	71.2841980.263	71.5471980.236	71.6151980.229					
71.6381980.226	72.3251980.098	72.8451980.069	74.5281980.036	77.6571980.006					
81.284	1980	85.8171979.985	85.9131979.978	85.9191979.979	88.311	1980			

```
  90.3871980.006  90.391    1980  99.736    1980 100.118    1980  100.87    1980
 101.3821980.136 101.5111980.163 103.0921980.539 103.1921980.576 103.2331980.696
 103.9161980.789 104.1851980.844   104.51980.894  104.571980.911 104.5741980.917
 104.5751980.919 104.7291980.938  104.751980.898 105.288 1980.69 106.798    1980
 107.1631979.907 107.3361979.896 108.1541979.904 113.783    1980  116.081980.239
 117.4331980.131 117.7221980.106 118.001 1980.09  118.171980.084 118.294 1980.08
 118.3371980.078 118.3521980.076 118.3931980.074 118.545 1980.07 118.6981980.064
 119.4061980.072 119.4221980.074  119.461980.076  119.561980.078 119.6861980.083
 119.9121980.092 120.1181980.102 120.4381980.121 120.6621980.131  121.111980.146
 121.3481980.153 125.0331980.233  125.541980.244 127.5841980.297 128.3451980.327
 128.6031980.364 128.9011980.478 132.505 1980.54  132.711980.484 133.5251980.444
 134.2871980.371 135.7061980.137 136.8031980.016 136.982    1980     1401979.806

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             55.9    55.9    55.9             .1       .3
Left Levee      Station=  -64.53      Elevation= 1980.03
Right Levee     Station=    6.26      Elevation= 1979.86

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1977.23  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.06  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1975.17  * Reach Len. (ft)       *   55.90  *   55.90  *   55.90  *
* Crit W.S. (ft)         * 1975.70  * Flow Area (sq ft)     *          *   61.24  *          *
* E.G. Slope (ft/ft)     *0.012805  * Area (sq ft)          *          *   61.24  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   25.72  * Top Width (ft)        *          *   25.72  *          *
* Vel Total (ft/s)       *   11.53  * Avg. Vel. (ft/s)      *          *   11.53  *          *
* Max Chl Dpth (ft)      *    3.17  * Hydr. Depth (ft)      *          *    2.38  *          *
* Conv. Total (cfs)      *  6238.9  * Conv. (cfs)           *          *  6238.9  *          *
* Length Wtd. (ft)       *   55.90  * Wetted Per. (ft)      *          *   27.29  *          *
* Min Ch El (ft)         * 1972.00  * Shear (lb/sq ft)      *          *    1.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   20.68  *          *
* Frctn Loss (ft)        *    0.57  * Cum Volume (acre-ft)  *    1.41  *    9.53  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.91  *    8.50  *    2.75  *
**********************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5200

INPUT
Description:
Station Elevation Data    num=     345
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
    -4001979.638-396.7231979.925 -396.521979.939-396.4931979.941-395.956    1980
-395.4651980.037-395.1471980.062-395.0041980.091-394.9531980.101-384.435    1980
-381.706    1980 -376.92    1980-371.4741979.783-367.5071979.645-366.0541979.604
-361.9521979.509-358.4021979.422 -357.921979.407-356.443 1979.35-356.034 1979.33
-355.349 1979.31-355.054  1979.3-354.7871979.294 -354.361979.287-353.8781979.281
-353.4631979.277-353.1911979.276-353.0321979.278-352.7021979.295-351.6971979.317
-351.2361979.318-350.0471979.315-349.3951979.317-348.8271979.322-347.8691979.335
-345.9591979.353-345.7051979.349-345.1791979.339-344.7651979.333-344.1721979.323
 -342.551979.289-341.7661979.272-339.8051979.217-339.543 1979.21-338.2841979.161
-336.9041979.093-335.322    1979 -323.991978.058-323.306    1978-323.262    1978
-320.301    1978 -313.481978.471-312.7371978.516-312.6511978.521 -312.641978.522
-312.5571978.524-312.3271978.531 -311.721978.544-311.5361978.547-311.0131978.551
-310.3891978.502-308.1411978.247-306.313 1978.07-305.436    1978-300.346    1978
-298.441    1978-297.017    1978 -291.42    1978-285.666    1978-282.4941977.689
-281.6081977.583 -276.18    1977-274.879 1976.76-274.1621976.667 -273.561976.612
-273.0371976.576-271.7821976.509 -270.711976.442 -269.661976.402-269.4321976.384
 -269.281976.364-269.0071976.305-268.9081976.291-268.8211976.289-268.5431976.292
-268.3161976.298-267.4441976.348-266.4241976.395-265.5441976.439-264.5021976.517
-263.122 1976.61-262.1421976.697-261.4861976.782-260.137    1977-257.961 1977.29
-257.5061977.342-256.4571977.448-255.5961977.535-254.7531977.642-253.1861977.809
-252.887 1977.84-251.384    1978-249.207    1978-248.305    1978-247.291    1978
-246.8381977.952-244.5661977.752-242.7331977.561-242.4231977.509 -241.811977.344
-241.7711977.319-241.7011977.303-241.2181977.247-240.349 1977.24-240.3461977.278
-240.2231977.312-239.8131977.372 -239.651977.411-238.9681977.738-237.701    1978
-235.1461978.063-234.7081978.073-231.2491978.153-224.0521978.297-217.6871978.455
-216.1881978.503-215.6071978.514-215.1751978.504-215.1421978.496-214.7771978.479
-213.8351978.475-213.0831978.467-212.3921978.455-211.5321978.416-211.111 1978.39
-206.9671978.162-205.7381978.075-204.676    1978-204.3691977.911-203.6221977.833
-202.8951977.716-202.6211977.691-202.4291977.701-202.0181977.746-200.8181977.937
-200.509    1978-197.2291978.272-190.539    1979-189.979    1979-187.594    1979
-184.548    1979-182.623    1979-181.852    1979-179.101    1979-177.021    1979
-176.916    1979-174.463    1979-174.427    1979-174.072    1979-173.925    1979
-173.627    1979-170.089    1979 -169.48    1979-169.4451978.999-169.4421978.999
-169.4321978.998-169.4191978.998-169.2981978.993-143.377    1978-143.223 1977.98
-143.218 1977.98-142.9541977.954-142.0921977.857-139.8711977.608-139.2921977.552
-137.6111977.389 -135.01 1977.13-133.813    1977-132.1281976.683  -129.91976.189
-128.988    1976-127.6841975.743-124.791    1975-122.9621974.413-121.653    1974
-120.8171973.708-119.002    1973-114.5471972.579-114.3181972.548-112.9871972.426
-112.2461972.361-110.4751972.399-110.3541972.412 -110.031972.416  -109.61972.417
```

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-109.1881972.422 -108.871972.436-108.4061972.488-107.1591972.681-106.017    1973
-105.2291973.642-104.931    1974 -104.391974.444 -103.87    1975-103.0791975.254
-100.899    1976 -98.9621976.707 -98.064    1977  -95.561977.923 -95.346    1978
 -95.084    1978 -91.324    1978 -89.5871977.812 -87.1941977.607 -85.4351977.589
  -85.29  1977.6 -84.7361977.615 -84.6141977.626 -84.5661977.656   -84.21977.687
 -81.1981977.797 -80.7241977.837 -79.2941977.867 -77.2721977.922 -75.602    1978
  -73.48 1978.13 -73.4511978.129 -71.034    1978 -69.2421977.419 -67.701    1977
 -66.091 1976.42 -64.807    1976 -64.263 1975.57 -63.475    1975 -62.7721974.485
 -62.313    1974 -61.1871973.029 -61.157    1973 -61.1351972.979 -60.167    1972
 -59.1381971.783 -58.1231971.716 -57.3551971.657 -56.4661971.573 -52.8291971.182
 -51.013    1971 -49.283    1971 -48.133    1971 -47.2351971.463 -46.162    1972
 -45.0361972.598 -44.287    1973 -43.0191973.644 -42.347    1974 -41.0131974.687
 -40.464    1975 -39.0491975.726 -38.487    1976 -36.6931976.953 -36.608    1977
 -36.0131977.161 -32.783    1978 -28.7061978.282 -28.1071978.312 -27.4191978.336
 -27.0581978.343  -26.611978.349   -24.21978.373  -23.361978.378 -22.7141978.378
 -22.2231978.373 -21.8211978.365 -20.9341978.337 -14.7081978.125 -14.6131978.121
 -13.4081978.067 -11.378    1978  -6.103    1978  -4.804    1978  -4.768    1978
   -3.46    1978  -2.029    1978   -.761    1978    -.51    1978    -.26    1978
      0    1978    .019    1978  15.283    1978  16.001    1978  16.992    1978
  17.631    1978  18.563    1978  19.509    1978  21.148    1978  22.788    1978
  23.953    1978  31.777    1978  31.842    1978  31.941    1978  37.2661978.361
  45.212    1979  45.513    1979  45.967    1979  46.457    1979  46.554    1979
  47.267    1979  47.791    1979  48.379    1979  48.845    1979  49.035    1979
  49.149    1979  49.546    1979  49.719    1979  76.579    1979  77.312    1979
  79.182    1979  79.351    1979  82.739    1979  83.0381979.151  83.5851979.181
   86.34 1979.28  87.0791979.315  91.0841979.278  91.933    1979 100.804    1979
 102.496    1979 103.731    1979 108.981    1979 113.712    1979 113.957    1979
 115.271978.917 118.312 1978.94 120.8511978.953 122.0881978.948 122.2411978.931
 125.2971978.919 126.1941978.938 127.3051978.954 128.194    1979 130.979    1979
 137.299    1979  137.36    1979 137.652    1979 139.466    1979     140    1979

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             100     100     100            .1       .3
Left Levee      Station=  -73.48      Elevation= 1978.13
Right Levee     Station=   45.21      Elevation=    1979

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1976.83  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.49  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1975.35  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1975.35  * Flow Area (sq ft)     *          *   72.19  *          *
* E.G. Slope (ft/ft)     *0.007141  * Area (sq ft)          *          *   72.19  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   24.16  * Top Width (ft)        *          *   24.16  *          *
* Vel Total (ft/s)       *    9.78  * Avg. Vel. (ft/s)      *          *    9.78  *          *
* Max Chl Dpth (ft)      *    4.35  * Hydr. Depth (ft)      *          *    2.99  *          *
* Conv. Total (cfs)      *  8354.6  * Conv. (cfs)           *          *  8354.6  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   26.57  *          *
* Min Ch El (ft)         * 1971.00  * Shear (lb/sq ft)      *          *    1.21  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   11.85  *          *
* Frctn Loss (ft)        *    0.72  * Cum Volume (acre-ft)  *    1.41  *    9.44  *    2.94  *
* C & E Loss (ft)        *    0.08  * Cum SA (acres)        *    0.91  *    8.46  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5300

INPUT
Description:
Station Elevation Data    num=     410
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001979.164-399.9851979.164-398.2461979.079-396.625    1979-391.5621978.474
-390.8581978.358-390.4581978.308-389.9711978.248 -389.731978.199 -387.54    1978
 -386.641977.954-378.3011977.917-377.7731977.983-377.483    1978-375.3171978.028
-374.4371978.039-373.128 1978.05-372.8591978.052-372.6321978.052-372.5961978.052
-369.168    1978-360.3811977.817  -359.81977.807-356.0251977.736-353.6471977.702
-352.1951977.691-350.5651977.687-350.1641977.688-345.8481977.643-342.8581977.612
-342.4881977.604-342.0781977.592-341.3591977.564-341.3121977.562-336.3091977.343
-336.1371977.335 -333.971977.232-329.915 1977.04-329.179    1977-326.7491976.846
-326.0091976.794-319.4191976.348-317.8621976.243-314.054    1976-313.168    1976
-311.672    1976-311.352    1976-311.161    1976-303.6531976.515-301.6511976.593
 -301.551976.597-301.0911976.621-298.608 1976.92-297.695    1977-296.993    1977
-296.141    1977 -295.88    1977-295.5781976.873-293.286    1976-286.256    1976
-285.517    1976-282.994  1976.2-280.5311976.336-280.4711976.347-278.2441976.409
-276.1781976.399-274.9791976.385-274.2441976.373-273.1271976.354-272.2371976.245
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 -272.071976.222 -271.351976.179-271.1461976.145-271.1411976.112-270.8041976.076
-269.6921976.005-269.597    1976-255.486    1976-253.851    1976-251.867    1976
-251.803    1976-250.0251976.216-249.898 1976.23-248.789 1976.36-246.4921976.585
-245.6811976.664-245.2061976.713-242.424    1977-239.894    1977-238.204    1977
-235.0941976.633-232.6551976.315-230.266    1976-229.0321975.752-228.6131975.622
-228.4771975.579 -227.871975.537-227.4571975.517-225.5441975.545-225.3281975.575
-225.0321975.593-224.7221975.645-224.495 1975.66-223.9721975.674-223.0631975.687
-221.0151975.711-220.4151975.724-218.5691975.823-217.636 1975.86-215.9521975.912
-215.4821975.942-215.027    1976-210.0741976.457 -204.16    1977-202.5631977.065
-198.6431977.186-197.4671977.207-194.8011977.247-194.2681977.257-194.133 1977.26
-192.303 1977.25-185.9791977.216-185.8911977.208-185.4961977.201-184.7311977.194
-184.2181977.192-183.602 1977.19-182.8091977.192-182.1551977.193-181.9921977.194
-181.8511977.195-180.5131977.205-180.4891977.203-180.4651977.202-179.8811977.162
-179.8791977.161-179.877 1977.16-179.8531977.149-179.7941977.148 -179.741977.147
-179.1341977.137-179.0491977.137-178.9651977.136 -178.091977.129-177.0221977.127
-174.9831977.123-174.4541977.122-174.0161977.117-173.207 1977.11-172.9211977.104
-172.4031977.095-169.9531977.066-169.2361977.058-168.5971977.043-168.4821977.041
-167.6161977.009-167.4241977.002 -167.38    1977-164.063    1977-163.251    1977
-162.086    1977-160.522    1977-159.199    1977 -157.64    1977-157.049    1977
-156.966    1977-156.052    1977-139.9081976.337 -139.431976.338-138.6361976.329
 -137.871976.313-137.3561976.296-137.0631976.281-133.6741976.325-133.636 1976.35
-133.2631976.407-132.9031976.461-131.7931976.374-131.4851976.408-131.0061976.427
-127.1091976.152-127.078 1976.15-126.7651976.151-126.1111976.117-126.1021976.116
-125.9681976.109 -125.771976.114-123.5861976.161-123.2881976.133-122.9341976.134
-121.8891976.137-120.5671976.113-120.2071976.106-118.0471976.014-117.798    1976
-115.5331975.761-114.7531975.665-112.7631975.408-110.381    1975-109.1181974.726
-108.084 1974.56-105.896    1974-102.996 1973.32-101.892    1973-100.945 1972.68
 -98.969    1972 -96.0141971.044 -95.886    1971  -91.651970.542 -90.9281970.464
 -90.1921970.293 -84.6441970.344 -82.3061970.661 -80.8771970.824 -80.2571970.885
 -79.088    1971 -79.0681971.009 -76.818    1972 -76.5221972.155 -74.302    1973
 -73.4591973.354 -72.8121973.654  -72.21    1974 -71.2571974.421  -70.051974.955
 -69.948    1975 -68.9191975.431 -67.587    1976 -61.4141976.908 -59.4131976.965
  -57.241976.981 -57.1931976.985 -57.1681976.986 -57.1541976.987 -57.1461976.987
 -56.4661976.974 -51.3761976.909  -50.241976.946 -49.4021976.958 -49.3531976.962
 -49.3021976.965 -49.2871976.966 -49.2351976.969 -49.2051976.971 -49.1271976.974
 -49.0941976.976 -49.0741976.977 -49.0371976.982 -49.0241976.983  -49.011976.985
 -48.9821976.982 -48.9681976.982 -48.9361976.982 -48.8811976.982 -48.7151976.984
 -48.7041976.984 -48.6891976.984 -48.6771976.983 -48.6511976.982  -48.571976.978
  -48.511976.976 -48.4221976.974 -48.2141976.967 -45.2861976.966 -42.5441976.981
 -40.818    1977 -39.643    1977 -39.584    1977 -38.999    1977 -35.715    1977
 -32.874    1977 -32.459    1977  -32.35    1977  -32.23    1977 -30.8051976.794
 -30.3271976.725  -25.49    1976 -24.585    1976  -22.09    1976 -20.624    1976
 -18.5221976.068 -13.617 1976.26  -7.4211976.475   -6.191976.532  -5.6221976.564
  -2.8311976.591  -2.6741976.587  -2.1691976.586   -.1551976.588       01976.587
    .7411976.584   1.2241976.573    1.391976.557   1.6581976.481   1.8451976.475
   5.4481976.497    6.631976.513  13.3011976.688  13.6551976.698  17.4241976.783
  17.732 1976.79  18.4651976.816  18.7471976.829  19.6381976.879  19.7771976.884
  20.282  1976.9  20.4381976.905  20.4981976.909  20.5531976.916  20.5861976.917
   20.631976.919   20.68 1976.92  20.7361976.921  20.8531976.922  20.9611976.922
 21.0621976.919  21.1291976.919  21.2411976.919  21.4941976.921  21.6471976.921
  21.79 1976.92   21.851976.919   21.991976.915  22.1321976.913  22.274 1976.91
  22.4211976.909   24.061976.931  27.0961976.958  28.753 1976.96  28.9551976.966
  29.853    1977  30.476    1977   30.74    1977  37.724    1977  37.953    1977
  40.678    1977  43.276    1977  44.946    1977  47.064    1977  47.732    1977
  52.867 1977.14  53.7481977.098  54.416    1977  55.788    1977  59.041    1977
  60.964    1977  61.344    1977  62.283    1977  62.307    1977  62.337    1977
  64.2381977.181  64.2471977.182  68.688    1978  69.7071978.102  70.0621978.137
  70.239 1978.23  70.2771978.241  71.9071978.194  72.112 1978.16  73.1131978.128
  73.9041978.092  75.8041978.044  78.8931978.041  79.3451978.043  83.3211978.055
  84.4341978.066  84.6441978.068  85.3221978.085  85.6091978.106  85.8651978.175
  86.2661978.209  86.877 1978.23  87.7131978.246  89.8941978.295  91.5441978.324
  93.4181978.346  96.0741978.368  97.2241978.379  97.5941978.389 103.9741978.469
 109.1221978.339 110.7371978.295 112.6671978.235 118.241    1978 119.922    1978
 127.172    1978 131.579    1978 132.972    1978 133.3771977.886 134.8691977.459
 135.1771977.339 135.3141977.246 135.4981977.214 135.6151977.204 135.781  1977.2
 135.9751977.197 136.4811977.193  136.721977.193 137.4511977.202 137.6761977.205
 137.8191977.209 137.9181977.216 138.2411977.283 138.4591977.308 138.8231977.335
 139.127 1977.35 139.2741977.353 139.3881977.351 139.4881977.339     1401977.331

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1975.63  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.47  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 1973.16  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1973.93  * Flow Area (sq ft)      *          *   55.94  *          *
* E.G. Slope (ft/ft)     *0.019101  * Area (sq ft)           *          *   55.94  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   28.50  * Top Width (ft)         *          *   28.50  *          *
* Vel Total (ft/s)       *   12.62  * Avg. Vel. (ft/s)       *          *   12.62  *          *
* Max Chl Dpth (ft)      *    2.86  * Hydr. Depth (ft)       *          *    1.96  *          *
* Conv. Total (cfs)      *  5108.4  * Conv. (cfs)            *          *  5108.4  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *          *   29.37  *          *
* Min Ch El (ft)         * 1970.29  * Shear (lb/sq ft)       *          *    2.27  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   28.66  *          *
* Frctn Loss (ft)        *    1.10  * Cum Volume (acre-ft)   *    1.41  *    9.30  *    2.94  *
* C & E Loss (ft)        *    0.10  * Cum SA (acres)         *    0.91  *    8.40  *    2.75  *
*************************************************************************************************
```

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -5400

INPUT
Description:
Station Elevation Data num= 416

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-400	1977	-397.681	1977	-390.113	1977	-388.7	1977	-387.48	1977
-385.117	1977	-384.792	1976.854	-382.883	1976	-381.381	1975.805	-379.866	1975.547
-379.096	1975.453	-379.005	1975.397	-378.859	1975.389	-378.637	1975.384	-378.394	1975.384
-378.147	1975.392	-378.009	1975.451	-377.589	1975.484	-377.545	1975.497	-377.063	1975.514
-375.496	1975.557	-374.677	1975.57	-374.081	1975.572	-373.421	1975.566	-372.773	1975.552
-370.973	1975.554	-368.686	1975.544	-366.067	1975.524	-364.731	1975.492	-362.01	1975.465
-359.709	1975.437	-356.135	1975.384	-353.845	1975.327	-352.593	1975.289	-351.496	1975.26
-351.353	1975.257	-351.114	1975.256	-349.831	1975.259	-349.581	1975.257	-349.204	1975.253
-348.985	1975.251	-348.481	1975.246	-346.896	1975.238	-346.511	1975.234	-345.478	1975.224
-344.695	1975.221	-343.848	1975.217	-341.353	1975.209	-339.393	1975.209	-338.654	1975.206
-337.944	1975.208	-336.217	1975.214	-334.831	1975.205	-333.715	1975.212	-331.907	1975.223
-330.139	1975.24	-328.789	1975.254	-322.756	1975.327	-319.626	1975.338	-319.48	1975.337
-315.929	1975.317	-315.217	1975.31	-311.764	1975.273	-305.749	1975.193	-305.034	1975.183
-303.478	1975.159	-301.677	1975.122	-299.851	1975.074	-298.839	1975.033	-298.013	1975
-293.353	1974.423	-291.875	1974.24	-290.262	1974	-289.179	1974	-287.902	1974
-286.211	1974	-283.781	1974.076	-283.512	1974.084	-282.497	1974.128	-279.026	1974.27
-277.231	1974.354	-273.973	1974.524	-272.534	1974.633	-272.181	1974.651	-271.761	1974.666
-270.573	1974.697	-268.718	1974.741	-268.465	1974.748	-268.391	1974.755	-267.461	1974.816
-267.401	1974.825	-267.251	1974.831	-267.041	1974.841	-266.873	1974.853	-266.814	1974.865
-266.716	1974.873	-266.689	1974.881	-266.579	1974.882	-266.553	1974.882	-266.538	1974.882
-266.339	1974.868	-266.265	1974.863	-266.239	1974.861	-266.112	1974.847	-266.11	1974.845
-265.978	1974.832	-265.967	1974.83	-265.795	1974.788	-265.781	1974.784	-265.581	1974.757
-265.565	1974.754	-264.653	1974.644	-264.618	1974.64	-264.072	1974.591	-263.661	1974.554
-263.127	1974.523	-259.897	1974.254	-256.406	1974	-254.661	1974	-251.61	1974
-245.045	1974.999	-245.034	1975	-238.442	1975	-233.8	1975	-233.39	1975
-233.163	1975	-232.51	1975	-231.541	1974.945	-230.395	1974.86	-229.871	1974.796
-229.799	1974.751	-227.921	1974.623	-227.483	1974.694	-226.966	1974.738	-225.945	1974.786
-225.276	1974.851	-223.704	1974.945	-223.236	1975	-223.231	1975	-223.229	1975
-223.219	1975.001	-223.217	1975.001	-216.521	1975.387	-214.098	1975.521	-212.651	1975.61
-210.829	1975.722	-208.115	1975.885	-207.734	1975.905	-207.434	1975.919	-205.876	1975.998
-205.874	1975.999	-205.873	1975.999	-205.871	1975.999	-205.868	1975.999	-205.867	1975.999
-205.751	1976	-205.512	1976.001	-205.511	1976.001	-205.488	1976	-202.172	1975.832
-200.308	1975.709	-189.369	1975	-187.292	1975	-183.711	1975	-183.259	1975.057
-182.494	1975.128	-181.574	1975.187	-179.879	1975.28	-174.128	1975.237	-174.011	1975.173
-173.431	1975.083	-173.045	1975.057	-171.829	1975.028	-170.149	1975	-166.744	1975
-166.355	1975	-165.028	1975	-164.469	1975	-163.962	1975	-159.91	1975.464
-155.133	1976	-154.948	1976.094	-154.612	1976.164	-154.171	1976.19	-153.82	1976.21
-153.811	1976.211	-153.458	1976.243	-153.382	1976.284	-153.288	1976.319	-152.709	1976.278
-152.467	1976.261	-151.372	1976.23	-150.642	1976.209	-150.639	1976.209	-149.931	1976.182
-148.915	1976.111	-147.991	1976.068	-146.924	1976.027	-146.537	1976	-142.709	1975.371
-140.295	1975	-139.981	1974.836	-138.324	1974	-137.219	1973.477	-136.335	1973
-135.773	1972.66	-134.496	1972	-132.966	1971.113	-132.786	1971	-132.617	1970.892
-131.08	1970	-129.761	1969.761	-128.986	1969.747	-127.599	1969.598	-125.719	1969.395
-123.993	1969.216	-123.411	1969.169	-123.038	1969.144	-122.868	1969.136	-122.685	1969.131
-122.481	1969.129	-122.295	1969.127	-122.184	1969.126	-120.207	1969.143	-119.475	1969.223
-117.977	1969.363	-110.354	1970	-109.863	1970.793	-109.744	1971	-109.511	1971.397
-109.134	1972	-107.938	1972.406	-106.946	1973	-105.782	1973.442	-104.7	1974
-103.131	1974.632	-102.399	1975	-91.518	1975	-91.253	1975	-90.764	1975
-90.361	1974.978	-90.17	1974.96	-84.031	1974.294	-81.639	1974	-76.984	1974
-75.644	1974	-72.826	1974	-66.906	1974.125	-66.043	1974.144	-65.59	1974.16
-64.541	1974.193	-64.147	1974.207	-60.308	1974.399	-56.572	1974.579	-51.181	1974.825
-46.993	1975	-45.895	1975	-45.055	1975	-42.961	1975	-40.715	1975
-40.009	1975	-39.791	1975	-39.431	1975.054	-39.319	1975.07	-29.656	1975.81
-29.311	1975.809	-28.617	1975.813	-28.333	1975.816	-28.197	1975.82	-28.071	1975.839
-27.912	1975.853	-27.845	1975.855	-27.755	1975.855	-27.642	1975.854	-27.359	1975.852
-26.659	1975.852	-26.093	1975.851	-25.905	1975.849	-25.781	1975.847	-25.697	1975.845
-25.489	1975.838	-25.004	1975.819	-23.874	1975.764	-23.348	1975.743	-22.426	1975.702
-20.015	1975.604	-18.612	1975.552	-16.976	1975.504	-15.621	1975.467	-12.143	1975.373
-11.752	1975.361	-10.313	1975.331	-9.269	1975.312	-8.734	1975.306	-3.792	1975.505
-3.112	1975.71	-1.631	1976	-1.262	1976	-.329	1976	0	1975.948
.056	1975.94	4.591	1975.227	6.089	1975	8.866	1975	9.451	1975
11.059	1975.185	11.805	1975.277	13.883	1975.529	18.375	1976	19.338	1976
20.644	1976	29.558	1976	30.691	1975.864	31.967	1975.755	32.202	1975.748
36.159	1975.404	36.488	1975.36	37.221	1975.228	37.325	1975.18	37.552	1975.128
37.603	1975.127	37.739	1975.131	38.549	1975.159	38.926	1975.174	39.331	1975.195
39.621	1975.214	40.758	1975.349	41.219	1975.383	42.763	1975.481	44.191	1975.564
46.743	1975.712	47.011	1975.729	50.315	1975.909	50.346	1975.911	50.587	1975.928
51.151	1975.966	51.284	1975.975	51.363	1975.981	51.407	1975.985	51.446	1975.988
51.463	1975.989	51.466	1975.99	51.527	1975.992	51.545	1975.99	51.569	1975.987
51.577	1975.985	51.594	1975.975	51.613	1975.974	51.633	1975.974	52.1	1976
52.637	1976.01	53.331	1976.016	53.41	1976.017	54.925	1976.003	55.038	1976
57.187	1975.875	60.461	1975.757	62.741	1975.724	65.729	1975.658	66.589	1975.653
67.096	1975.658	67.571	1975.671	68.581	1975.722	71.397	1975.913	72.475	1976
75.041	1976.174	76.886	1976.298	78.445	1976.417	80.586	1976.618	81.276	1976.661
81.471	1976.686	82.391	1976.734	82.911	1976.756	83.908	1976.792	84.549	1976.813
84.959	1976.823	87.086	1976.871	87.357	1976.878	87.443	1976.883	87.454	1976.89

```
  87.6531976.896  87.8241976.901  87.8661976.903  87.8791976.908  87.9121976.911
  88.8221976.911  88.8671976.899   88.951976.893  89.542 1976.86  89.9911976.842
  91.0891976.873  92.9731976.928  93.7761976.883  95.958    1977  98.2781977.018
  99.2481977.021  99.9141977.008 100.132    1977 103.4651976.589 104.4661976.507
 105.5881976.465 107.0941976.442 107.5561976.426 108.315    1976 108.915    1976
 110.645    1976 121.637    1976 123.202    1976 129.044    1976  134.72    1976
 136.2381976.125 138.1491976.248 138.8241976.292 139.337 1976.33 139.6761976.356
     1401976.387

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1974.09  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.57  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1972.52  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1972.72  * Flow Area (sq ft)    *          *   70.27  *          *
* E.G. Slope (ft/ft)     *0.009083  * Area (sq ft)         *          *   70.27  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   27.76  * Top Width (ft)       *          *   27.76  *          *
* Vel Total (ft/s)       *   10.05  * Avg. Vel. (ft/s)     *          *   10.05  *          *
* Max Chl Dpth (ft)      *    3.40  * Hydr. Depth (ft)     *          *    2.53  *          *
* Conv. Total (cfs)      *  7408.0  * Conv. (cfs)          *          *  7408.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   29.75  *          *
* Min Ch El (ft)         * 1969.13  * Shear (lb/sq ft)     *          *    1.34  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *   13.46  *          *
* Frctn Loss (ft)        *    1.27  * Cum Volume (acre-ft)  *    1.41  *    9.15  *    2.94  *
* C & E Loss (ft)        *    0.27  * Cum SA (acres)        *    0.91  *    8.34  *    2.75  *
************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5500

INPUT
Description:
Station Elevation Data    num=     409
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001974.452-398.436 1974.54-397.6511974.567-396.9151974.603-395.6641974.668
-395.5791974.673-394.2431974.752-393.3961974.803-393.219 1974.81-392.8751974.823
-392.5931974.831-392.442 1974.83-392.2711974.827-391.9381974.812-391.8291974.804
-391.6621974.787-391.6421974.785-391.0621974.731 -390.811974.731-390.7911974.731
-386.3151974.109-386.2371974.101-385.568    1974-381.6051973.822-381.4231973.813
-378.3111973.686 -372.671973.489-371.6861973.447-370.151 1973.37-369.2611973.331
-368.112 1973.29-367.2351973.264-366.0671973.235-365.9131973.232 -365.771973.233
-365.4951973.237-363.7141973.275 -363.031973.287-362.2811973.295-361.326  1973.3
-360.0481973.302-357.1561973.309-355.5291973.309-352.178 1973.34-349.192 1973.38
-345.8051973.433-345.2061973.444 -344.951973.452-344.6771973.475-344.4011973.484
-343.9541973.488-343.6521973.487 -343.271973.484-342.3051973.471-341.4181973.454
-341.0971973.447 -339.99 1973.43-333.5411973.299-330.5181973.246-328.5681973.244
-325.5741973.242-323.9851973.222-322.8471973.234 -319.561973.336-319.0111973.349
-316.5181973.314-313.6441973.258-312.4891973.225 -309.311973.121-308.8271973.095
-307.7881973.011-307.647    1973-307.2731972.983-306.7271972.967-301.2441972.869
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-280.811 1972.78-279.6251972.983-279.485    1973-277.3271973.138-275.8191973.217
-275.3261973.288-275.1451973.344-274.777 1973.37-274.6611973.374-274.4841973.365
-274.3471973.338 -274.271973.273  -273.91973.202-272.226    1973-271.857  1972.9
-267.847    1972-263.934    1972-263.906    1972-263.7571972.023 -263.221972.116
 -258.19    1973-257.5971973.117-256.7781973.218-254.3181973.612-249.841    1974
-244.9741974.086-243.033    1974-237.324    1974-236.428    1974-234.267    1974
-234.113    1974 -233.221973.914-233.2081973.913-230.2341973.578-229.694 1973.53
-229.0581973.496-228.0991973.465-224.5661973.372-224.0631973.353-223.866 1973.34
-223.7991973.318-218.7731973.306-218.3371973.358-218.1451973.366-217.0441973.393
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 -211.851973.569 -210.941973.589-208.5341973.651-208.5061973.652-207.4251973.665
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-189.0571973.487-188.0911973.461-188.0261973.459-178.2681973.063-176.798    1973
-173.3271972.726-172.7031972.677 -170.061972.479-169.4871972.461-169.0111972.468
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-152.798    1972-151.246    1972-150.839    1972-148.8761972.589-148.3691972.741
-148.0431972.845-147.9531972.864 -147.841972.878-147.4321972.865-147.3641972.784
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-146.2241971.994-144.828   1971-143.7281970.224-143.398   1970-142.3371969.244
-141.981   1969-140.4691968.124-139.7611968.084-139.0341968.092-138.6271968.096
-138.6191968.092-138.5851968.087-138.4021968.047-138.3191968.034-138.2761968.032
-138.2381968.031-138.178 1968.03-138.095 1968.03-138.003 1968.03-137.9211968.031
-137.8671968.032-137.8321968.033-137.6431968.041-137.536 1968.05-137.2461968.067
  -136.41968.109 -135.291968.165-130.5121968.404-127.6611968.506-125.4921968.577
-124.1271968.604-123.0311968.619-122.3771968.665-118.3551968.953-118.2051968.959
-118.0791968.967-117.762   1969-117.6821969.028-114.415   1970 -113.81970.218
-111.537   1971 -110.61971.335-108.702   1972 -106.461972.759-105.802   1973
-101.359   1973 -95.645   1973 -95.35   1973 -94.546   1973 -92.695   1973
 -90.5611972.689 -90.107 1972.63 -89.371972.574 -88.7881972.547 -88.6381972.528
 -88.5261972.501 -88.1391972.461 -87.7871972.441 -87.2431972.422 -86.8971972.415
 -86.6491972.413 -86.3321972.414 -85.939 1972.42 -85.1491972.437 -84.7411972.452
 -84.3461972.485 -83.5821972.526 -83.034 1972.59 -81.4111972.683 -80.4321972.704
  -77.231972.967 -77.138   1973 -77.011   1973 -70.412   1973 -68.639   1973
 -61.641   1973 -61.159   1973 -59.596   1973 -50.152   1973 -45.9111973.736
 -45.3181973.867 -45.0251973.908 -44.3011973.901 -44.2691973.899 -43.961973.885
 -43.6571973.869 -43.5521973.835 -43.4411973.821 -42.9221973.781 -42.4491973.753
 -42.128 1973.74 -41.8051973.734 -41.4851973.728 -39.7011973.641 -39.3541973.644
 -39.1281973.655 -39.0481973.671 -38.165 1973.72 -37.3011973.682 -35.9731973.622
 -35.9011973.619 -35.7561973.612 -32.8681973.467 -30.9831973.387 -30.2961973.358
 -24.7091973.081 -24.6641973.079 -24.1241973.057 -22.858   1973 -15.812   1973
  -11.56   1973 -7.557   1973 -3.909 1973.21   01973.429   4.5671973.684
   6.923 1973.8   8.4861973.881   8.805 1973.9   8.961973.911   9.1261973.912
   9.2071973.883 22.106 1973.89 24.702 1973.93 27.449   1974 27.7931974.026
  28.6731974.094 30.8261974.288 35.8411974.731 38.814   1975 40.152   1975
  41.437   1975 42.307   1975 43.064   1975 45.5291974.032 45.628   1974
   45.66   1974 45.726   1974 46.218   1974 47.221   1974 49.4111974.337
  51.8451974.726 53.2931974.976 53.3731974.988 53.453   1975 53.4821975.001
  53.4831975.001 54.1481975.015 54.2341975.016 54.2611975.016 56.0181975.038
  57.0131975.047 57.7321975.053 60.1021975.074 61.6121975.085 62.232 1975.09
   63.291975.098 64.6761975.108   66.961975.117 68.8991975.106 69.9661975.106
  82.7871975.177 83.7081975.176 84.7611975.158 86.5851975.151   88.61975.155
   88.931975.158 89.4991975.164 89.8321975.164 90.0351975.163 90.749 1975.15
  90.971   1975 95.0731974.388 95.4881974.347 96.8151974.283 97.3881974.267
  97.5481974.267 97.6851974.275 98.0721974.319   98.91 1974.4 99.5171974.493
 101.7911974.931 102.239   1975 104.632   1975 108.457   1975 109.718   1975
 111.4711974.891 112.8471974.843 114.109 1974.84 117.231974.912 117.293 1974.91
 118.1631974.892 118.2871974.893 118.7741974.916 118.8431974.916 123.3021974.672
 123.5031974.696 123.5411974.711 126.8981974.758 127.9191974.721 128.6251974.697
 129.1361974.684 134.7171974.514 137.1931974.439   1401974.378

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035   -400   .025   140   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
          -400   140   100   100   100   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1972.80 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   2.14 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 1970.67 * Reach Len. (ft)   * 100.00 * 100.00 * 100.00 *
* Crit W.S. (ft)   * 1971.28 * Flow Area (sq ft)   *   *   60.19 *   *
* E.G. Slope (ft/ft)   *0.017411 * Area (sq ft)   *   *   60.19 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   31.85 * Top Width (ft)   *   *   31.85 *   *
* Vel Total (ft/s)   *   11.73 * Avg. Vel. (ft/s)   *   *   11.73 *   *
* Max Chl Dpth (ft)   *   2.64 * Hydr. Depth (ft)   *   *   1.89 *   *
* Conv. Total (cfs)   * 5350.4 * Conv. (cfs)   *   * 5350.4 *   *
* Length Wtd. (ft)   * 100.00 * Wetted Per. (ft)   *   *   32.90 *   *
* Min Ch El (ft)   * 1968.03 * Shear (lb/sq ft)   *   *   1.99 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   23.32 *   *
* Frctn Loss (ft)   *   1.22 * Cum Volume (acre-ft) *   1.41 *   9.00 *   2.94 *
* C & E Loss (ft)   *   0.06 * Cum SA (acres)   *   0.91 *   8.27 *   2.75 *
****

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
         additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -5600

INPUT
Description:
Station Elevation Data   num=   440
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
    -4001972.511-396.7821972.342 -395.681972.289-394.3741972.237 -393.821972.219
-392.7171972.189-392.471 1972.18-389.186   1972-388.1751971.884-387.3951971.713
-387.2341971.606-387.0621971.576-386.7211971.551-386.4261971.536-386.0381971.525
-385.5571971.522-384.6371971.529-384.2771971.539 -384.231971.573 -384.01 1971.6
-382.4691971.691-380.1551971.715-379.5281971.733-376.6921971.847-374.9771971.939
-374.059   1972-372.5971972.069-371.4871972.121-370.1691972.165-368.1921972.215
-367.6411972.237 -366.981972.292-366.5361972.308-365.4751972.336-364.5051972.373
-363.8331972.424-363.7991972.425-363.7821972.426-363.7791972.426-363.5641972.421
-363.4571972.419-363.4491972.419-363.2841972.416-362.6581972.406-362.3691972.402
-362.0471972.397-361.673 1972.39 -361.16 1972.38-360.9821972.376-360.6861972.369

-359.8441972.349-359.6841972.345-359.4651972.338-358.3561972.304-358.198 1972.3
-357.8451972.287-355.0251972.187-354.6811972.175-354.6671972.175-354.1251972.155
-354.0261972.152 -352.03   1972 -351.44   1972-351.362   1972-350.988   1972
-345.6921971.804-345.5291971.794 -343.831971.696-331.788   1971-331.3851970.899
-328.043   1970-327.576   1970-325.541   1970-322.4941970.754-320.875   1971
-320.764   1971-319.537   1971-318.7791971.264-317.1541971.333-316.5621971.358
-316.1881971.374-313.1951971.501 -293.121971.169-288.4451971.091-285.941   1971
-282.051   1971-281.396   1971 -280.93   1971-276.8431971.466-275.8531971.667
-275.7381971.677-275.4271971.687-275.2171971.687-274.9841971.683-274.5611971.666
-274.382 1971.65-274.2221971.625-273.2121971.551-272.7671971.531-272.5531971.529
-270.5461971.331-270.2481971.302-269.8791971.265-269.7371971.259-269.3031971.249
-269.0631971.243-268.5791971.227-268.2231971.223-267.7161971.224-267.1271971.228
-265.9121971.239-265.5591971.244-265.2361971.252-265.0491971.258-264.7151971.264
-264.082 1971.27-263.0631971.276-261.898 1971.28-260.9451971.281-256.5381971.445
-256.5181971.446-256.418 1971.45-255.9541971.459-253.8511971.513-252.6661971.546
-244.8711971.487-244.7841971.478 -244.771971.479-244.6171971.483-244.3761971.483
-243.6211971.494 -240.771971.553-235.2081971.669-234.5111971.684-233.3291971.721
-232.5711971.738-228.1521971.832-224.7911971.911-222.7521971.971-221.988   1972
-220.976   1972 -205.84   1972-204.886   1972 -203.54   1972-202.427   1972
-201.558   1972-201.438   1972-201.296   1972-199.6121971.937-176.608   1971
-173.5731970.534-169.968   1970-166.442   1970-165.347   1970-163.4011970.406
-161.9261970.782-161.005   1971-160.105 1971.3-160.0751971.359-159.6711971.441
-158.8511971.562-158.7371971.591-156.9921971.648-156.7891971.577-156.7471971.527
-155.7561971.183 -155.51   1971-153.6381970.275 -152.94   1970-151.9891969.622
-150.171   1969-149.0191968.602 -147.811968.062-147.666   1968-132.1241967.134
-132.035 1967.13-130.9781967.071-130.2461967.074-130.1681967.077-129.7921967.086
-129.6121967.091-129.4631967.097-129.3271967.106-129.1791967.119-128.7171967.167
-128.5971967.176-128.536 1967.22-127.1651967.409-126.5911967.463-125.1021967.647
-122.254   1968-120.3181968.577-118.988   1969-118.6141969.224-117.253   1970
-116.4191970.496-115.581   1971-114.0381971.514-113.8491971.576-113.7071971.623
-113.4991971.747-113.3781971.776-113.2941971.787-113.2481971.788-113.1561971.789
 -113.131971.789-113.0751971.789-112.9691971.789-112.9531971.789-112.8841971.787
-112.7751971.784-112.7561971.784-112.6641971.783 -112.531971.781-112.448 1971.78
-111.9841971.776-111.5671971.772-111.5361971.772-111.1191971.768-110.9221971.766
-110.9131971.766-110.522 1971.76-110.3971971.758-110.3951971.758-110.138 1971.74
-110.0591971.734-109.9691971.722 -109.941971.718-109.6541971.694-109.5631971.686
-109.1391971.663 -109.011971.656-107.5421971.591 -107.29 1971.58-106.1441971.516
-105.9951971.508 -104.441971.399-104.2591971.387-103.2681971.324-103.1681971.317
-100.8331971.137 -99.052   1971 -98.9971970.988 -98.292   1971 -94.976   1971
 -93.789   1971 -90.902   1971 -89.623   1971 -88.0811971.032 -87.378   1971
 -87.0511970.732 -82.8371970.647 -81.0551970.815 -79.3981970.936 -79.181   1971
 -78.9791971.076 -78.9591971.083 -78.3271971.188 -78.2571971.199 -77.6781971.256
 -77.5921971.264 -77.253 1971.29 -77.1971971.295 -77.121971.295 -76.9541971.296
 -76.9211971.296 -76.9131971.296 -75.0271971.285 -74.0431971.277 -73.1861971.264
 -72.6471971.244 -72.0051971.186 -71.5791971.167 -71.5181971.011 -71.447   1971
 -67.087   1971 -65.933   1971 -62.4251971.176 -62.0981971.191 -60.2321971.273
 -54.9381971.469 -51.8771971.582 -48.2791971.761 -47.941971.776 -45.821971.872
 -43.8051971.946 -43.6651971.956 -43.5091971.965 -43.4791971.966 -43.4211971.968
 -43.2991971.973 -42.3951971.974 -42.3841971.974 -41.8571971.913 -38.38   1972
 -36.509   1972 -35.126   1972 -30.262   1972 -26.033   1972 -25.528   1972
 -23.809   1972 -23.364   1972 -22.409   1972 -22.26   1972 -21.8381972.014
 -20.0411972.083 -17.9951972.197 -16.2611972.271 -15.3331972.306 -14.8231972.321
 -14.0541972.338 -9.8391972.412 -9.2931972.424 -8.7481972.443 -8.3341972.455
  -7.3851972.473 -5.7941972.496 -5.5711972.499 -4.0351972.519 -3.6421972.523
  -3.5851972.524 -2.7651972.533 -2.5671972.535 -2.0081972.539 -1.6291972.541
  -1.0651972.541   -.6261972.536   01972.528   .2741972.525   1.151972.509
   1.4821972.506   1.8641972.506   2.282 1972.51   3.2431972.527   3.8011972.535
   4.356 1972.54   4.8381972.543   5.2031972.543   5.641972.539   5.9611972.528
    7.621972.446 12.0511972.277 12.6621972.258 13.1341972.273 13.3071972.272
  15.3421972.337 15.3831972.345 15.5781972.342 15.7421972.335 16.083 1972.3
  16.5761972.274 17.4821972.245 18.6661972.213 19.0481972.197 19.2541972.191
    19.41972.177 20.1751972.198 20.2311972.203 20.4791972.218 20.6381972.237
  20.7311972.278 20.9291972.297 22.0261972.378 22.2781972.387 22.7751972.394
  23.4621972.418   25.891972.534 27.9161972.666 28.6831972.712   28.841972.719
  28.9611972.723 29.1281972.725 29.5821972.724 30.0441972.719 30.5691972.697
  30.8711972.694 34.7311972.675 36.2471972.666 37.1461972.658 37.5241972.651
   37.731972.637 37.867 1972.63 38.0781972.625 39.2481972.611 41.5631972.578
  47.425 1972.59 47.8721972.584 48.1381972.571 48.6341972.506 49.4271972.451
  49.8711972.435 50.288 1972.43 50.5591972.431 51.6881972.446 51.8911972.451
  52.5541972.495 52.8451972.528 53.6291972.697 54.2241972.786 55.8261972.972
  55.8271972.973 56.023   1973 57.636   1973 67.932   1973   71.67   1973
  76.945   1973 77.119   1973 77.224   1973 77.283   1973 82.326   1973
  83.1921972.743 84.0181972.645 85.9131972.457 86.8551972.341 87.0821972.303
  87.7911972.267 87.9051972.265 88.1371972.265 88.5151972.268 88.9731972.273
   89.411972.279 89.7381972.285 90.3561972.301 90.7761972.309   911972.316
   92.95 1972.4 100.3821972.622 101.771972.669 103.4741972.738 108.518   1973
  113.74   1973 114.335   1973 119.437   1973 129.486   1973 131.17   1973
 132.626   1973 135.54   1973 138.748   1973 139.413   1973   140   1973

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035   -400   .025   140   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
          -400   140   29.37   29.37   29.37   .1   .3
Left Levee   Station= -156.99   Elevation= 1971.65
Right Levee   Station= -113.29   Elevation= 1971.79

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1971.38 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.24 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 1970.13 * Reach Len. (ft)   *   29.37 *   29.37 *   29.37 *
* Crit W.S. (ft)   * 1970.25 * Flow Area (sq ft)   *   *   78.85 *   *

* E.G. Slope (ft/ft)	*0.008330	* Area (sq ft)	*	*	78.85	*	*		
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	*	706.00	*	*		
* Top Width (ft)	* 36.24	* Top Width (ft)	*	*	36.24	*	*		
* Vel Total (ft/s)	* 8.95	* Avg. Vel. (ft/s)	*	*	8.95	*	*		
* Max Chl Dpth (ft)	* 3.06	* Hydr. Depth (ft)	*	*	2.18	*	*		
* Conv. Total (cfs)	* 7735.6	* Conv. (cfs)	*	*	7735.6	*	*		
* Length Wtd. (ft)	* 29.37	* Wetted Per. (ft)	*	*	37.19	*	*		
* Min Ch El (ft)	* 1967.07	* Shear (lb/sq ft)	*	*	1.10	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	9.87	*	*		
* Frctn Loss (ft)	* 1.16	* Cum Volume (acre-ft)	*	1.41	*	8.84	*	2.94	*
* C & E Loss (ft)	* 0.27	* Cum SA (acres)	*	0.91	*	8.19	*	2.75	*

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -5629.37

INPUT
Description:
Station Elevation Data num= 405

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-400	1972.4	-398.858	1972.33	-398.312	1972.301	-397.672	1972.272	-397.562	1972.266
-395.049	1972.218	-394.935	1972.246	-393.902	1972.349	-393.274	1972.375	-393.221	1972.375
-393.017	1972.376	-392.507	1972.349	-391.936	1972.337	-390.953	1972.339	-389.97	1972.352
-387.243	1972.366	-386.303	1972.389	-385.871	1972.391	-385.253	1972.384	-384.374	1972.361
-382.201	1972.288	-380.442	1972.218	-377.509	1972.085	-375.86	1972	-373.33	1971.709
-368.147	1971	-366.459	1970.927	-366.181	1970.898	-365.995	1970.729	-365.835	1970.719
-365.441	1970.721	-365.221	1970.727	-364.975	1970.781	-364.171	1970.836	-363.657	1970.844
-362.802	1970.84	-360.991	1970.82	-360.179	1970.819	-358.304	1970.905	-357.518	1970.955
-357.065	1971	-353.252	1971.416	-352.778	1971.442	-352.115	1971.444	-352.015	1971.442
-351.118	1971.416	-346.346	1971.208	-346.111	1971.197	-345.297	1971.173	-344.978	1971.164
-344.844	1971.156	-344.431	1971.137	-343.635	1971.124	-337.966	1971.032	-337.6	1971.012
-337.595	1971.012	-337.365	1971	-337.146	1970.963	-332.184	1970	-329.827	1970
-327.684	1970	-320.167	1970.454	-318.318	1970.565	-316.852	1970.638	-314.979	1970.728
-314.344	1970.761	-308.246	1971	-294.324	1971.657	-293.281	1971.7	-291.11	1971.802
-290.757	1971.819	-290.4	1971.833	-289.867	1971.846	-289.495	1971.833	-289.358	1971.806
-289.029	1971.763	-288.968	1971.749	-288.407	1971.69	-287.766	1971.585	-287.411	1971.516
-287.091	1971.414	-287.021	1971.392	-284.85	1971	-284.819	1971	-284.097	1971
-269.405	1971	-269.134	1971	-264.577	1971	-264.41	1971	-263.633	1971
-261.996	1971	-261.598	1971	-251.752	1971	-249.97	1971	-249.167	1971
-245.275	1971	-244.907	1971	-244.453	1971	-244.33	1971	-241.223	1971
-237.826	1971	-237.019	1971	-234.273	1971	-229.124	1971.241	-229.078	1971.243
-228.381	1971.262	-227.423	1971.274	-227.198	1971.277	-226.881	1971.279	-225.414	1971.286
-216.145	1971.308	-215.7	1971.308	-215.093	1971.298	-213.35	1971.309	-211.772	1971.318
-210.156	1971.286	-209.755	1971.279	-208.702	1971.266	-207.766	1971.272	-199.301	1971.325
-194.189	1971.365	-193.401	1971.372	-191.764	1971.393	-191.407	1971.403	-185.039	1971.381
-180.075	1971.364	-179.544	1971.349	-178.979	1971.334	-176.333	1971.22	-174.936	1971.175
-173.342	1971.144	-173.115	1971.143	-171.706	1971.131	-166.892	1971	-166.158	1971
-164.027	1971	-159.375	1971	-157.987	1970.33	-157.246	1970	-156.826	1969.809
-154.983	1969	-152.809	1968.013	-152.781	1968	-152.731	1967.978	-152.586	1967.923
-150.024	1967	-139.638	1966.217	-137.843	1966.081	-137.794	1966.079	-136.511	1966.026
-135.218	1966	-135.038	1966	-134.466	1966	-133.182	1966.019	-132.988	1966.022
-132.599	1966.063	-128.514	1966.344	-125.709	1966.591	-124.389	1966.729	-123.817	1966.802
-123.597	1966.843	-123.377	1967	-123.241	1967.133	-122.844	1967.512	-122.112	1968
-121.331	1968.557	-120.657	1969	-119.584	1969.66	-119.034	1970	-117.856	1970.75
-117.45	1971	-117.342	1971.064	-116.895	1971.171	-116.583	1971.211	-116.571	1971.212
-116.499	1971.213	-116.484	1971.213	-116.075	1971.22	-116.053	1971.22	-116.052	1971.22
-115.936	1971.22	-115.893	1971.22	-115.865	1971.22	-115.852	1971.22	-115.381	1971.22
-115.357	1971.22	-115.189	1971.216	-115.144	1971.214	-114.665	1971.202	-114.637	1971.202
-114.421	1971.199	-114.361	1971.198	-113.756	1971.189	-113.624	1971.188	-112.304	1971.176
-111.777	1971.171	-110.195	1971.156	-110.104	1971.155	-108.539	1971.142	-108.257	1971.14
-107.811	1971.136	-107.776	1971.135	-107.739	1971.135	-107.283	1971.128	-106.131	1971.111
-105.867	1971.107	-105.834	1971.104	-105.831	1971.104	-104.617	1971.015	-104.615	1971.015
-104.502	1971	-102.558	1970.811	-99.785	1970.568	-98.285	1970.458	-96.358	1970.338
-95.754	1970.287	-95.424	1970.245	-95.282	1970.231	-95.121	1970.197	-94.319	1970.21
-94.271	1970.224	-94.065	1970.241	-93.931	1970.256	-93.822	1970.26	-93.678	1970.263
-93.529	1970.262	-93.404	1970.259	-93.247	1970.248	-92.914	1970.216	-92.809	1970.202
-92.741	1970.146	-91.901	1970.129	-91.546	1970.162	-91.215	1970.187	-91.118	1970.215
-90.875	1970.25	-90.548	1970.283	-90.302	1970.303	-89.365	1970.319	-89.233	1970.32
-86.444	1970.398	-86.151	1970.396	-85.417	1970.389	-84.923	1970.383	-84.551	1970.373
-84.403	1970.36	-79.308	1970.374	-79.064	1970.378	-78.51	1970.385	-76.991	1970.424
-74.358	1970.497	-63.905	1970.786	-63.154	1970.804	-62.464	1970.824	-61.327	1970.846
-61.288	1970.847	-52.891	1971	-52.016	1971.018	-51.755	1971.023	-51.506	1971.031
-51.449	1971.033	-51.356	1971.037	-51.274	1971.04	-46.295	1971.171	-43.563	1971.243
-42.749	1971.272	-31.597	1971.587	-29.756	1971.65	-26.976	1971.735	-23.911	1971.816
-22.441	1971.859	-20.53	1971.89	-20.345	1971.897	-20.184	1971.904	-20.058	1971.912
-20.005	1971.92	-19.934	1971.925	-19.871	1971.929	-19.797	1971.931	-19.559	1971.936
-19.504	1971.938	-19.479	1971.939	-19.466	1971.942	-19.411	1971.946	-19.397	1971.948
-19.391	1971.952	-19.289	1971.959	-19.144	1971.96	-19.069	1971.96	-19.007	1971.96
-18.959	1971.96	-18.898	1971.959	-18.832	1971.954	-18.729	1971.949	-18.515	1971.943
-18.325	1971.936	-18.213	1971.93	-18.042	1971.922	-17.964	1971.92	-16.783	1971.918
-16.557	1971.913	-16.356	1971.911	-16.253	1971.909	-14.855	1971.887	-12.275	1971.848
-9.787	1971.799	-9.072	1971.789	-8.456	1971.789	-7.992	1971.802	-7.064	1971.855

```
  -6.3511971.883  -5.4991971.906  -4.6421971.919  -3.9111971.919  -2.9361971.899
  -2.1661971.858       01971.702    .5111971.665   3.368 1971.51   3.624  1971.5
   3.7661971.499   4.0191971.509   4.8051971.581   5.4741971.808    6.21    1972
   6.5181972.019   7.0511972.042   7.4651972.054   8.0341972.061   9.5831972.057
  11.1611972.043  12.154    1972  14.414 1971.94  15.7611971.921  16.0211971.916
  16.2641971.911  28.337 1971.82   29.221971.802  29.7971971.793  33.7011971.756
  34.268 1971.75  36.403 1971.72  36.8221971.717    37.71971.692  38.2021971.651
  38.4751971.636  38.8461971.623  40.6581971.595  43.3791971.542  43.602 1971.54
  43.947 1971.55  46.0841971.675  48.5991971.867  49.767    1972  51.3511972.148
  52.0621972.206  53.2031972.299  54.3231972.371  55.2651972.425  55.5941972.433
  55.7651972.433  56.5661972.434  61.6471972.389  62.597 1972.38  62.965 1972.38
  68.0231972.375  68.4551972.369  68.4861972.369  68.8991972.354  70.236 1972.28
  70.6641972.257  74.547    1972  74.632 1971.99  77.5251971.851  80.0551971.754
  80.0841971.762  81.7061971.801  86.3761971.888  88.069  1971.9 100.4181971.949
 102.6281971.964 104.1171971.993 104.302    1972 106.2291972.093 106.3311972.099
  110.631972.339 112.8181972.466 114.4091972.517 114.7711972.519 114.9121972.524
 119.6461972.569 120.2231972.573 120.3591972.554 120.7061972.552 121.7191972.554
 125.683 1972.57 128.9561972.584 129.8051972.587 130.3161972.586 130.6181972.583
 130.8661972.573 132.9491972.439 135.0161972.337 139.2071972.131     1401972.086

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             70.63   70.63   70.63             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)          * 1970.87  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    2.53  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 1968.34  * Reach Len. (ft)       *   70.63  *   70.63  *   70.63  *
* Crit W.S. (ft)          * 1969.11  * Flow Area (sq ft)     *          *   55.29  *          *
* E.G. Slope (ft/ft)      *0.022937  * Area (sq ft)          *          *   55.29  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   31.89  * Top Width (ft)        *          *   31.89  *          *
* Vel Total (ft/s)        *   12.77  * Avg. Vel. (ft/s)      *          *   12.77  *          *
* Max Chl Dpth (ft)       *    2.34  * Hydr. Depth (ft)      *          *    1.73  *          *
* Conv. Total (cfs)       *  4661.6  * Conv. (cfs)           *          *  4661.6  *          *
* Length Wtd. (ft)        *   70.63  * Wetted Per. (ft)      *          *   32.72  *          *
* Min Ch El (ft)          * 1966.00  * Shear (lb/sq ft)      *          *    2.42  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *   30.89  *          *
* Frctn Loss (ft)         *    0.38  * Cum Volume (acre-ft)  *    1.41  *    8.80  *    2.94  *
* C & E Loss (ft)         *    0.13  * Cum SA (acres)        *    0.91  *    8.17  *    2.75  *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5700

INPUT
Description:
Station Elevation Data    num=     358
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
    -400 1970.76-398.0881970.717-394.2851970.603-391.1791970.514-380.0421970.229
-373.9461970.048-373.6321970.038-373.3151970.031-373.1551970.028-373.0631970.027
-372.9451970.026-372.8431970.022-372.223    1970-370.9361969.946 -369.131969.838
-368.9081969.829-368.6241969.824-368.2731969.827-360.286    1970-359.8181970.011
-358.9861970.048-358.3751970.085-357.4181970.089-357.3811970.089-357.0791970.091
 -348.411970.126-348.3311970.124-346.795 1970.08-346.6371970.076-346.473 1970.07
-346.4111970.067-344.8461970.011-344.829 1970.01-344.822 1970.01-344.604    1970
-337.6351969.378-336.0161969.244-334.8181969.151-333.452    1969-332.763    1969
-331.788    1969-329.994    1969-328.498    1969-327.778    1969-327.469    1969
-325.086    1969-319.603    1969-318.461    1969-317.022    1969-316.246    1969
-315.245    1969-314.7031969.045 -314.631969.051-314.5291969.061-313.2021969.192
-311.8571969.338-310.9881969.433-310.6841969.459-310.4371969.468-309.7311969.431
-308.6431969.357-307.6421969.455-307.2961969.441-306.8721969.461 -306.641969.466
-301.004    1970-300.936    1970-299.886    1970-296.853    1970-296.628    1970
-296.154    1970-296.1141969.996-295.8891969.948-282.9791969.434-282.1381969.467
-281.6981969.518-281.2051969.551-280.6481969.631-280.4781969.646-279.6411969.671
-279.0231969.688-278.4621969.711-278.0791969.741 -277.591969.811  -276.61969.895
-276.028    1970-274.638    1970-273.955    1970-271.345    1970-269.638    1970
-269.321    1970-269.103    1970-268.8121969.994-268.8111969.994-268.2241969.974
 -267.981969.957-262.3421969.692-261.2261969.681-260.0191969.672-258.7911969.669
-257.5851969.675-256.4641969.687-255.5261969.702-254.443 1969.73-253.7511969.758
-253.572 1969.77-253.4151969.773-234.746    1969-234.0471969.023-233.9621969.025
-233.216 1969.05-232.7581969.049-232.5791969.055-232.1011969.069-231.7051969.081
 -231.251969.098-231.0911969.105-230.5321969.135-229.1981969.214-228.688 1969.25
 -228.52 1969.31-227.9081969.359-224.6851969.489-223.4671969.544-223.1091969.574
-222.2951969.642-220.6411969.734-217.293    1970-217.179    1970-216.923    1970
-215.012    1970-214.197    1970-214.178    1970-213.788    1970-212.844    1970
-211.839    1970-211.494    1970-210.229    1970-193.475    1970-188.772    1970
-183.383    1970 -181.17    1970-174.032    1970-171.6141969.569-167.545    1969
-166.7861968.694-165.068    1968-164.8151967.903 -163.771967.433-162.619    1967
-160.3721966.078-160.196    1966-142.2051965.182-136.704    1965-132.414    1965
-128.885    1965-127.8891965.869-127.758    1966-127.5231966.269-127.3931966.382
```

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-127.0991966.529-127.0411966.535-126.7231966.569-126.4081966.694-126.2591966.711
-126.1111966.711-124.9821966.652-124.6871966.683-123.9681966.758-123.945 1966.76
-123.7851966.777-122.681    1967-121.9811967.103-121.6191967.156 -120.521967.252
-117.6321967.506-117.0281967.532-116.1911967.567-115.5211967.609-112.3131967.915
-111.419    1968 -110.121968.646-109.212    1969-106.1591969.247-104.5761969.362
-104.4511969.371-103.6821969.403-103.6221969.405-101.9931969.467-101.2911969.497
-100.8341969.523-100.2031969.519 -99.4651969.518 -98.2451969.529 -96.6691969.551
 -94.9471969.587 -93.2781969.637 -91.6991969.697   -86.61969.928 -84.935    1970
 -81.008    1970 -75.538    1970 -73.9231969.852 -73.8971969.853 -73.1591969.765
 -73.1551969.764 -72.3141969.628 -72.1281969.584 -67.0711969.355 -65.3841969.369
 -63.9151969.381 -62.6071969.396 -61.698 1969.41 -61.2731969.422 -60.8851969.438
 -58.6461969.504 -58.1241969.522 -57.3391969.562 -55.2031969.683   -53.61969.757
 -48.4241969.974 -47.699    1970 -46.5051970.043 -43.8721970.124 -43.1081970.162
 -41.1891970.255 -39.6811970.374 -39.5391970.438 -39.0331970.469 -38.7231970.488
 -38.5981970.485 -38.5311970.484 -38.1951970.472 -38.0291970.466 -37.6751970.445
 -37.5061970.435 -37.1471970.405 -36.9741970.391 -32.3051970.155 -31.815 1970.13
 -31.4261970.104 -30.0561970.009 -29.9551970.002 -29.932    1970 -29.819    1970
 -24.478  1969.9  -23.08 1969.95 -21.251    1970 -20.9271970.014 -20.6841970.024
 -20.3151970.037 -15.9821970.183  -8.4451970.462  -1.9431970.715   -.9051970.755
   -.2221970.776   -.0351970.782       01970.783    .3721970.793   2.0261970.841
   2.5681970.859   3.4491970.892   3.6671970.902   3.9191970.912   4.1871970.925
    4.221970.927   4.2631970.927   4.3161970.927   4.4491970.926   4.7011970.922
   4.9021970.915   5.0741970.912   5.1351970.908   5.2221970.895   5.2911970.891
   5.7261970.889    5.831970.886   5.9111970.882   6.0131970.873   6.0551970.867
   6.1251970.862   6.6731970.888   6.7671970.886   7.126 1970.88   7.2311970.878
   7.3351970.874   7.7291970.854   8.1071970.846   8.4641970.836   8.603 1970.83
   8.6631970.828   9.118  1970.8   9.1831970.796  10.2341970.731  16.8031970.226
  17.3891970.181  18.0021970.135  19.794    1970  23.989    1970  29.351    1970
  30.3171969.989  30.909    1970  34.1851970.197  47.375    1971  50.756    1971
  54.221    1971  65.091    1971  67.043    1971  67.3751970.988  71.1261970.812
  72.5711970.755  73.0311970.725  77.0181970.588  78.6121970.582   79.521970.583
  80.4091970.589  81.1121970.599   82.121970.622  82.8691970.645  83.4861970.681
  83.7221970.722  84.1311970.754   86.061970.834  86.9631970.885   87.371970.979
  87.475    1971   87.971971.017  88.1061971.022  88.7871971.039  90.5231971.084
  92.3071971.129  92.4631971.131  92.5361971.131  92.6451971.132   93.781971.137
  97.4021971.172 103.7921971.242 104.9591971.258 105.6021971.273 105.7781971.286
 106.3631971.322 106.5531971.337 112.5651971.407 112.8991971.411 113.7731971.421
 113.8761971.422 114.2731971.426 116.5711971.453 117.8971971.417 118.1271971.411
 118.6211971.397  121.951971.306 125.9511971.201 132.1121971.038 133.322    1971
 133.6841970.785 138.6411970.598     1401970.636

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035 -181.17    .025 -84.935    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -181.17 -84.935            45.97   45.97   45.97             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)          * 1969.14  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.98  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 1967.16  * Reach Len. (ft)       *   45.97  *   45.97  *   45.97  *
* Crit W.S. (ft)          * 1967.80  * Flow Area (sq ft)     *          *   62.59  *          *
* E.G. Slope (ft/ft)      *0.021416  * Area (sq ft)          *          *   62.59  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   41.48  * Top Width (ft)        *          *   41.48  *          *
* Vel Total (ft/s)        *   11.28  * Avg. Vel. (ft/s)      *          *   11.28  *          *
* Max Chl Dpth (ft)       *    2.16  * Hydr. Depth (ft)      *          *    1.51  *          *
* Conv. Total (cfs)       *  4824.3  * Conv. (cfs)           *          *  4824.3  *          *
* Length Wtd. (ft)        *   45.97  * Wetted Per. (ft)      *          *   42.38  *          *
* Min Ch El (ft)          * 1965.00  * Shear (lb/sq ft)      *          *    1.97  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *   22.27  *          *
* Frctn Loss (ft)         *    1.56  * Cum Volume (acre-ft)  *    1.41  *    8.70  *    2.94  *
* C & E Loss (ft)         *    0.17  * Cum SA (acres)        *    0.91  *    8.11  *    2.75  *
**********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5745.97

INPUT
Description:
Station Elevation Data    num=     433
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -400    1969-395.781    1969-395.3071969.035 -395.211969.035-395.1261969.035
 -394.751969.052-391.6911969.196-391.0451969.219-390.5041969.238-390.387 1969.24
-390.1721969.245-389.2711969.241-388.7811969.239-385.4191969.195-383.6581969.154
-382.3571969.098-381.4861969.033-381.3681969.021-381.167    1969-380.8371968.975
-380.1041968.954-377.6561968.897-375.6261968.857-373.7531968.805-373.4561968.795
-372.9081968.809-370.5421968.859-369.0531968.901-367.9371968.949-366.7431968.988
-366.504    1969-365.3651969.044-364.8411969.072-363.2751969.156-362.047 1969.21
-359.4171969.369-358.702 1969.39-358.0061969.403-356.9821969.414-355.598 1969.42
-348.6641969.427-347.9291969.431-347.5051969.439-346.1281969.523-345.6191969.554
-345.5181969.563-343.5971969.635-342.3681969.672-342.1241969.676 -341.811969.677
-341.4221969.675-341.0121969.669-340.4181969.659-340.1971969.652  -339.9 1969.64
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-339.5061969.631-337.8711969.597-337.0331969.575-335.0431969.496-334.6481969.483
-333.4671969.444-326.431 1969.17-325.7241969.142-324.0381969.075-321.853    1969
-319.0431968.438 -317.36    1968-309.707    1968-306.581    1968-305.8881968.068
 -305.861968.071-304.5751968.217-303.7921968.287 -303.481968.325-303.1921968.341
-302.7231968.354 -302.161968.362-301.6051968.361-301.1291968.347 -300.461968.299
-300.025 1968.23-298.4321968.109-297.664 1968.05-296.621    1968-296.479    1968
-296.116    1968-296.103    1968-296.101    1968  -296.1    1968-296.0941968.001
-292.3011968.386-291.274 1968.48-289.4181968.671-288.8091968.709-288.3911968.734
 -286.931968.802-285.4851968.844-284.8991968.819-282.553    1969-282.351    1969
-281.7311968.957-280.4821968.928-278.0321968.841-277.4071968.828-274.166 1968.77
-272.3591968.725-271.595 1968.72-269.4581968.645-269.036 1968.63-267.9451968.584
-267.2131968.556-266.9971968.542-266.8681968.513-266.5811968.501-265.9671968.491
-264.2731968.473-264.0991968.468-263.5981968.472-263.5231968.475-263.0311968.534
-262.792 1968.54-262.6361968.539-262.2461968.538-261.0161968.538-260.7941968.538
-258.7631968.516-257.8681968.501-257.3511968.489-256.8531968.462 -256.42 1968.45
-255.3191968.425-254.7691968.405-253.8331968.379-253.6961968.403-253.6151968.426
-253.3211968.449-251.3931968.533-250.3031968.591-244.3121968.911-244.0021968.912
-242.217    1969-242.208    1969-240.8341969.017-240.8161969.017 -240.13 1969.01
 -240.111969.009 -239.96    1969-238.4921968.907-237.2291968.866-232.9281968.826
-232.2691968.815-231.9421968.799-228.7241968.704-228.211  1968.7-227.2341968.707
-223.0681968.756-220.6391968.788-218.3291968.829 -215.781968.885-213.5471968.943
-211.653    1969-209.5961969.261-209.3121969.335 -205.961969.455-204.4151969.466
-200.4231969.515-199.5191969.526-198.7341969.538 -197.591969.554-197.1121969.558
-196.6521969.557-195.3951969.544-195.2641969.543-193.1781969.528-192.5811969.523
-191.0181969.496-190.7061969.489-187.658 1969.37-184.8881969.296-181.7141969.172
-176.266    1969-175.9411968.863-173.917    1968-173.5991967.875-171.571    1967
-171.523 1966.98-171.4611966.954-169.479    1966-168.2491965.435-167.047    1965
-164.9411964.929-156.6121964.674-155.5721964.647-154.3391964.623-152.6811964.598
-142.5041964.677-142.3211964.689-141.0051964.862-139.424    1965-138.5331965.555
-137.759    1966-136.8141966.564-136.081    1967-135.1191967.595-134.303    1968
-129.782    1968-126.622    1968-121.877    1968  -121.7    1968-119.7231967.845
-109.842    1967-109.7491966.927 -96.0251966.836 -93.4681966.956 -92.664    1967
 -92.2441967.219 -90.908    1968 -90.1861968.376 -89.109    1969  -87.67 1969.06
 -87.0521969.085 -86.772 1969.09 -86.7191969.091 -86.6181969.089 -86.4961969.086
 -86.4641969.086 -86.4581969.086 -86.0091969.059 -85.6621969.039 -85.3431969.031
 -84.933 1969.02  -83.76    1969 -83.4841968.982 -83.4521968.986 -83.4321968.991
 -83.4251968.993  -83.421968.995 -83.4171968.996 -83.4111968.996 -83.4061968.996
 -83.4041968.996 -83.3991968.996 -83.3931968.996 -83.3821968.996 -83.3771968.996
 -83.3721968.995 -83.3411968.994 -83.2971968.992 -83.2191968.988 -83.0521968.979
 -82.9861968.977 -75.2781968.774  -74.621968.729 -74.3551968.719 -72.383 1968.55
  -71.981968.507 -69.9741968.434 -69.1431968.414 -69.0571968.412  -67.551968.183
 -66.345    1968 -66.286    1968 -66.152    1968 -65.245    1968  -63.911968.104
 -63.7171968.113 -63.6271968.115 -47.442    1969  -47.28    1969 -46.698    1969
 -45.7351969.041 -43.032 1969.17 -42.4951969.195 -41.6221969.237 -39.0971969.345
 -38.529 1969.37 -36.8431969.429 -35.876 1969.46 -35.1921969.474 -34.782 1969.48
 -33.9681969.483 -33.4531969.481 -33.4271969.456 -33.1271969.381 -31.938  1969.3
  -31.761969.301 -31.5271969.303 -29.6391969.408 -27.3721969.519 -27.0291969.533
 -26.1831969.575 -25.5091969.604 -24.6571969.634  -24.171969.648 -23.9161969.654
 -23.189 1969.67 -22.6421969.686 -22.0591969.707  -21.87 1969.71 -21.6461969.711
 -20.8121969.709 -19.5061969.703 -18.9231969.699 -18.2121969.694 -17.839 1969.69
 -16.6191969.664 -16.183 1969.65 -15.7621969.628 -14.927  1969.6 -13.9371969.572
 -13.1661969.555 -12.2131969.536  -11.77 1969.53  -10.541969.523  -8.045  1969.5
  -7.5941969.499   -6.051969.476  -5.5751969.469  -4.3871969.457  -3.8071969.442
  -2.9351969.411  -2.5771969.404   -.9511969.401   -.5861969.397   -.3281969.391
    -.091969.378   -.0171969.372       01969.372    .1291969.367    .3991969.364
   1.428 1969.36   1.6881969.358    1.891969.355   2.3581969.341   2.8661969.336
   3.0751969.333    3.381969.309   6.1151969.281   7.5381969.307   7.8021969.313
   8.4751969.338   9.3251969.365  10.3661969.393  11.3671969.419  14.5151969.511
  19.5521969.654  19.8931969.662  20.1191969.673  21.0891969.707  28.559    1970
  28.9111970.029  31.3431970.235  31.8851970.259  34.302 1970.33  35.3311970.381
  44.476 1970.37   44.811970.264  45.2621970.221  45.4541970.214  45.4891970.214
  45.7621970.238  46.2291970.323  46.396 1970.34  46.6391970.351  49.4421970.404
  50.594 1970.43  52.2811970.489  52.5061970.502  52.6641970.485  53.5041970.428
  54.3111970.391  54.8271970.378  55.5231970.371  56.3771970.376  57.278 1970.39
  59.537 1970.44  60.2661970.447  61.1141970.445   62.021970.435  62.8671970.423
  64.0591970.399   65.281970.365  69.5621970.209  71.752 1970.14  76.222    1970
   77.331969.906  79.5251969.743  80.407  1969.7   84.621969.549   85.361969.516
  85.5651969.515  85.9421969.537   88.071969.723  90.352    1970  93.629 1970.19
  98.5331970.385 101.6631970.539 103.3611970.634 104.4391970.688 106.7711970.797
   108.41970.867 108.7811970.886 108.8541970.887 109.0071970.884 109.3781970.874
  109.441970.863 109.5081970.833 109.5611970.831 109.6551970.828   109.91970.814
 110.2551970.788 110.4691970.761 110.7991970.696  111.291970.732 116.296    1970
 121.3451969.875 127.1981969.907 127.3411969.944 127.703 1969.98 128.124    1970
 129.503 1970.03 129.5871970.032 129.6081970.032 129.6911970.034 130.4641970.048
  132.781970.092  133.511970.104 133.7461970.108 135.0261970.129 138.6051970.188
 139.3281970.203 139.5811970.208     1401970.217

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035 -197.59    .025 -87.052    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -197.59 -87.052            54.03   54.03   54.03            .1       .3
Right Levee     Station=-134.303      Elevation=    1968

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1968.47  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.12  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1967.35  * Reach Len. (ft)       *   54.03  *   54.03  *   54.03  *
* Crit W.S. (ft)         * 1967.35  * Flow Area (sq ft)     *          *   83.28  *          *
* E.G. Slope (ft/ft)     *0.007155  * Area (sq ft)          *          *   83.28  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   36.86  * Top Width (ft)        *          *   36.86  *          *
```

* Vel Total (ft/s)	* 8.48	* Avg. Vel. (ft/s)	*	* 8.48	*	*
* Max Chl Dpth (ft)	* 2.75	* Hydr. Depth (ft)	*	* 2.26	*	*
* Conv. Total (cfs)	* 8346.5	* Conv. (cfs)	*	* 8346.5	*	*
* Length Wtd. (ft)	* 54.03	* Wetted Per. (ft)	*	* 38.04	*	*
* Min Ch El (ft)	* 1964.60	* Shear (lb/sq ft)	*	* 0.98	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 8.29	*	*
* Frctn Loss (ft)	* 0.39	* Cum Volume (acre-ft)	* 1.41	* 8.62	* 2.94	*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.91	* 8.07	* 2.75	*

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -5800

INPUT
Description:
Station Elevation Data num= 499

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-400	1969	-397.198	1969	-395.643	1969	-394.825	1969	-393.383	1969
-385.171	968.707	-382.441	968.574	-381.811	968.546	-381.229	968.52	-380.329	968.48
-379.941	1968.468	-379.403	1968.437	-379.363	1968.434	-379.008	1968.389	-378.893	1968.352
-374.741	968.149	-374.051	1968.143	-373.742	1968.139	-373.554	1968.134	-373.462	1968.13
-373.395	1968.125	-373.31	968.122	-372.984	1968.114	-372.724	1968.109	-372.485	1968.102
-372.448	1968.101	-372.378	1968.103	-372.079	1968.109	-371.891	1968.114	-371.751	1968.119
-371.602	1968.124	-371.51	968.129	-371.386	1968.141	-371.269	1968.15	-370.931	968.194
-370.729	1968.205	-370.498	1968.212	-370.123	1968.218	-369.595	1968.221	-369.208	1968.233
-366.965	1968.232	-366.461	1968.231	-366.11	968.234	-365.767	1968.239	-361.429	1968.358
-357.505	1968.465	-355.788	1968.514	-350.354	1968.669	-348.893	1968.707	-347.618	1968.735
-347.609	1968.735	-346.741	1968.757	-345.087	1968.791	-345.067	1968.791	-344.526	1968.804
-344.309	1968.812	-344.279	1968.813	-344.188	1968.818	-343.203	1968.858	-343.039	1968.864
-342.599	1968.876	-342.352	1968.88	-342.201	1968.883	-338.904	1968.82	-338.808	1968.783
-338.697	1968.673	-338.603	1968.661	-337.098	1969	-334.769	1969.085	-333.325	1969.126
-331.633	1969.174	-331.316	1969.179	-331.009	1969.183	-330.788	1969.184	-330.352	1969.186
-330.323	1969.186	-330.203	1969.186	-330.146	1969.186	-329.886	1969.184	-329.207	1969.179
-328.867	1969.175	-328.151	1969.165	-327.671	969.156	-326.621	969.137	-326.463	1969.132
-326.049	1969.119	-325.858	1969.112	-325.282	1969.089	-325.078	1969.084	-324.261	1969.064
-323.559	1969.049	-321.258	1969	-316.669	1968.02	-316.609	1968.007	-316.585	1968
-314.111	967.689	-309.597	1967.915	-309.556	1968	-301.832	1968	-295.393	1968
-294.874	1968	-293.921	1967.974	-291.982	1967.932	-290.257	1967.895	-280.467	1967.603
-278.655	1967.554	-277.643	1967.53	-277.047	1967.525	-271.445	1967.594	-270.725	1967.596
-270.548	1967.596	-269.854	1967.603	-269.419	1967.612	-269.263	1967.619	-269.047	1967.638
-269.007	1967.662	-268.948	1967.671	-268.688	1967.67	-268.001	1967.673	-267.822	1967.672
-267.511	967.666	-266.51	1967.63	-264.514	1967.524	-263.463	1967.444	-262.489	1967.39
-261.744	1967.357	-260.271	967.315	-259.821	1967.307	-257.809	1967.249	-256.793	1967.229
-256.338	1967.222	-255.762	1967.218	-255.074	1967.217	-254.375	1967.218	-253.809	1967.222
-253.497	1967.226	-253.387	1967.231	-253.372	1967.265	-252.703	1967.527	-251.741	1967.745
-251.591	1967.736	-251.406	1967.741	-251.234	1967.754	-250.355	1968	-240.047	1968.282
-239.001	1968.304	-238.321	968.313	-236.745	1968.314	-231.158	1968.309	-230.816	1968.312
-229.609	1968.358	-229.593	1968.364	-228.299	1968.404	-227.931	1968.426	-224.787	1968.41
-224.731	1968.393	-224.378	1968.381	-223.146	1968.367	-222.002	1968.362	-221.598	1968.366
-219.823	1968.375	-219.691	968.376	-219.213	1968.378	-218.135	1968.387	-214.437	1968.44
-214.119	1968.444	-213.322	1968.456	-212.701	1968.464	-211.551	1968.483	-209.571	1968.515
-208.961	1968.526	-207.631	968.557	-206.624	1968.578	-202.975	1968.642	-202.342	1968.654
-202.242	1968.655	-201.584	1968.663	-201.341	968.665	-201.312	1968.665	-200.887	1968.668
-200.871	1968.668	-200.712	1968.668	-200.702	1968.668	-200.571	968.668	-200.347	1968.668
-200.318	1968.668	-199.716	1968.663	-199.279	1968.66	-199.108	1968.659	-198.937	1968.656
-198.811	968.654	-198.778	1968.653	-198.573	1968.645	-198.417	1968.639	-198.391	1968.638
-198.088	1968.622	-197.849	1968.608	-197.828	1968.607	-197.718	1968.601	-197.627	1968.596
-197.622	1968.596	-197.548	1968.593	-197.484	1968.59	-197.482	1968.59	-197.312	1968.582
-197.091	1968.572	-197.073	1968.572	-196.751	968.557	-196.555	1968.547	-196.524	1968.545
-196.344	1968.535	-196.199	1968.53	-196.161	1968.528	-196.021	1968.523	-195.197	1968.508
-194.471	1968.494	-193.662	1968.478	-192.109	1968.201	-191.962	1968.15	-191.541	1968.105
-191.443	1968.108	-189.724	1968.001	-189.719	1968	-189.71	1968	-184.442	1967.496
-181.109	1967	-180.558	1966.779	-178.593	1966	-177.605	1965.571	-177.593	1965.566
-176.217	1965	-172.887	1964.448	-171.883	1964.449	-170.349	1964.45	-167.137	1964.467
-164.889	1964.479	-163.704	1964.428	-163.331	964.406	-159.906	1964.24	-158.806	1964.188
-158.298	1964.17	-156.773	1964.122	-156.584	1964.117	-156.361	1964.113	-156.061	1964.108
-154.245	1964.121	-154.212	1964.124	-153.981	964.154	-153.342	1964.21	-153.021	964.235
-150.695	1964.455	-149.934	1964.518	-144.617	1965	-143.302	1965.584	-142.417	1966
-140.726	1966.764	-140.2	1967	-138.785	1967.637	-137.097	1968	-134.592	1968
-126.424	1968	-126.042	1967.927	-121.505	1967	-106.137	1966.396	-103.869	1966.316
-101.164	1966.21	-98.841	1966.118	-98.268	1966.096	-98.169	1966.093	-97.233	1966.073
-97.159	1966.072	-97.038	1966.068	-96.971	1966.066	-96.854	1966.061	-96.662	1966.055
-96.507	1966.051	-96.194	1966.043	-96.146	1966.042	-96.125	1966.041	-96.072	1966.034
-96.068	1966.032	-95.601	1966.028	-95.515	1966.032	-95.286	1966.044	-95.175	1966.051
-94.927	1966.071	-94.847	1966.078	-94.609	1966.099	-94.344	1966.094	-87.319	1966.725
-86.631	1966.779	-84.971	1966.911	-84.239	1967	-84.013	1967.125	-82.517	1968
-82.077	1968.079	-81.774	1968.106	-81.501	1968.13	-80.777	1968.194	-80.361	1968.171
-80.129	1968.158	-79.814	1968.14	-79.621	1968.135	-79.485	1968.132	-79.281	1968.126
-78.895	1968.123	-78.528	1968.12	-78.337	1968.119	-78.011	1968.117	-77.711	1968.115
-77.091	1968.111	-76.887	1968.11	-75.905	1968.093	-74.495	1968.067	-73.421	1968.043
-72.273	1968.005	-72.146	1968	-62.96	1968	-61.157	1968	-57.331	1968
-55.274	1968	-51.8	1968	-49.791	1968.019	-45.415	1968.061	-45.146	1968.063
-44.945	1968.065	-44.677	1968.048	-44.546	1968.055	-44.312	1968.067	-44.036	1968.073

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 -43.5171968.084 -43.4271968.087 -37.337 1968.33  -37.071968.332 -34.7751968.407
 -33.2971968.449 -32.062 1968.44 -30.4121968.504 -28.8941968.486 -28.3921968.481
 -27.1461968.528 -26.3141968.566 -25.2771968.603 -25.0381968.616 -24.1551968.697
 -23.8791968.712 -23.7561968.719  -23.441968.727 -23.0961968.737 -22.9061968.741
  -22.371968.747 -21.7391968.753 -21.5641968.755 -21.3561968.756 -21.2611968.756
 -21.1621968.754 -20.3981968.719  -20.081968.708 -19.6291968.698 -18.8481968.684
 -18.3331968.672 -18.0551968.657 -16.6351968.561 -16.2331968.549 -15.784 1968.54
 -15.2171968.533 -13.998 1968.52 -12.6271968.506 -11.9261968.496 -11.3221968.495
  -9.5711968.452  -9.2351968.444  -8.6521968.423  -8.1981968.397  -7.4741968.372
  -6.7881968.352  -6.3181968.342  -5.7861968.332  -5.5381968.329  -5.2481968.328
  -4.9161968.331  -4.3041968.341  -4.0041968.347  -2.8331968.383  -2.6821968.395
  -2.382 1968.43  -2.2241968.439   -.9371968.477       01968.503   6.2581968.679
   9.4151968.758  11.0381968.791  14.2151968.951  14.317    1969  14.579    1969
  15.012    1969  15.971    1969  17.3271969.147  19.1551969.232  23.7011969.414
  24.1291969.424  24.3511969.427  24.9031969.433  25.1721969.419   25.471969.402
  25.5351969.399  25.9791969.366  27.2641969.303  30.4591969.201    31.31969.155
  33.2551969.079  35.314    1969  37.212    1969  39.703    1969  40.608    1969
   43.21    1969   43.44    1969  43.669 1969.05  43.9441969.091  44.6171969.147
   45.561969.201   46.661969.237  47.886 1969.25   48.521969.249  49.1511969.247
  49.3251969.245   50.041969.238   50.311969.235  50.5591969.231  51.2051969.221
  51.5611969.212  52.3571969.191  54.7251969.092  56.944    1969   57.131968.928
  57.5561968.851  61.694    1969  63.017    1969  63.803    1969  64.711    1969
  64.816    1969  69.572    1969  69.824    1969  69.845    1969   69.86    1969
  69.876    1969  71.171    1969  72.052    1969  75.107    1969  81.632    1969
  84.5041968.822  85.603 1968.73  86.4331968.675   87.28 1968.65  87.8271968.642
  88.5731968.643  89.5611968.657  90.7151968.682  91.9051968.717  92.984 1968.76
   93.361968.949  93.5841968.977   94.22    1969  96.383    1969  96.643    1969
   98.74    1969  99.055    1969  99.593    1969 100.019    1969 100.3651969.016
 101.7391969.081 101.7951969.082 102.4441969.093 102.5631969.095 105.146    1969
 108.0431969.269 111.147 1969.37 111.2451969.373 111.531 1969.38 112.537 1969.42
 113.1451969.448 113.6211969.483 113.8131969.509 114.714 1969.58 115.267 1969.65
 115.4951969.666 115.6921969.673 115.8451969.678 116.1241969.681 116.3421969.684
 117.4551969.684 118.1851969.683  118.631969.677 119.0951969.659 120.4721969.587
 120.8391969.573 121.5031969.562 122.7341969.571 123.5211969.583

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
    -400    .035-202.342    .025 -80.777    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -202.342 -80.777            62.57   62.57   62.57             .1       .3
Right Levee     Station=  -137.1      Elevation=    1968

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1967.99  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.32  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1966.67  * Reach Len. (ft)      *   62.57  *   62.57  *   62.57  *
* Crit W.S. (ft)         * 1966.89  * Flow Area (sq ft)    *          *   76.68  *          *
* E.G. Slope (ft/ft)     *0.010122  * Area (sq ft)         *          *   76.68  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   39.35  * Top Width (ft)       *          *   39.35  *          *
* Vel Total (ft/s)       *    9.21  * Avg. Vel. (ft/s)     *          *    9.21  *          *
* Max Chl Dpth (ft)      *    2.56  * Hydr. Depth (ft)     *          *    1.95  *          *
* Conv. Total (cfs)      *  7017.2  * Conv. (cfs)          *          *  7017.2  *          *
* Length Wtd. (ft)       *   62.57  * Wetted Per. (ft)     *          *   40.14  *          *
* Min Ch El (ft)         * 1964.11  * Shear (lb/sq ft)     *          *    1.21  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   11.12  *          *
* Frctn Loss (ft)        *    0.46  * Cum Volume (acre-ft)  *    1.41  *    8.53  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.91  *    8.02  *    2.75  *
*********************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -5862.57

INPUT
Description:
Station Elevation Data    num=     452
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************************
    -4001968.348-399.2541968.357-398.7331968.377-398.4041968.413-392.5861968.379
-386.9261968.345-384.5441968.274 -383.161968.233-382.0261968.193 -380.611968.139
-379.9691968.118-376.353    1968-375.8971967.971-369.2861967.608-367.3171967.491
-363.7911967.357-362.7191967.323 -362.551967.319-362.4131967.317-362.3371967.319
-362.1091967.352-361.8221967.367-361.2631967.382-360.8921967.397-359.4521967.431
 -358.891967.449-358.7491967.475-357.9921967.615-357.6841967.652-356.1581967.753
-354.8081967.804-353.8411967.854-352.4751967.953-352.073    1968-351.438    1968
-340.737    1968-339.381    1968-334.608    1968-333.075    1968-331.801    1968
-327.944    1968-317.934    1968-317.672    1968-317.485    1968-315.0171967.591
-313.691 1967.39-311.853    1967-308.6811966.618 -308.171966.588-307.2961966.502
-307.0411966.477-306.4041966.456-304.7411966.323-304.3651966.293 -304.021966.272
-303.5241966.251-302.9481966.235-302.3891966.225-301.9421966.221-301.4021966.216
-301.1161966.218-300.4751966.236-300.4331966.236-299.7011966.236-299.0571966.263
-297.3721966.301-296.9321966.313-296.2781966.341-293.4011966.393-292.6171966.415
 -292.041966.439-291.5161966.465-291.0331966.488-289.7081966.554-288.2781966.609
-286.7611966.698-285.1631966.739-284.6181966.753-283.7931966.794-282.916  1966.8
-282.7681966.801-282.5951966.814-276.0211966.829-275.5251966.805-275.2331966.792
-273.8951966.708-273.5191966.702-272.5911966.687-266.3891966.328-263.4371966.222
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-261.1131966.157-259.527    1966-258.016 1965.92-256.6371965.833-255.846 1965.75
-251.4441965.802-251.4171965.907-251.142    1966-244.9471966.724-236.403 1966.92
-234.8511966.967-234.169    1967-232.7481967.085-232.325 1967.11 -231.911967.138
-229.7611967.281-228.3891967.364-227.3681967.426 -226.221967.496-225.0711967.579
-224.1391967.645-223.3971967.694-222.7941967.717-222.2111967.713-221.5831967.692
-219.7481967.601-218.6371967.563-218.1321967.536-217.4031967.475-216.1211967.378
-215.4671967.347-214.8841967.338-213.6821967.211-212.3151967.239-212.1921967.222
-211.9691967.192-211.5741967.142-211.5561967.135-210.5931967.091-209.8391967.111
-209.6131967.115-209.3781967.117 -209.181967.117-208.1531967.136-207.4851967.163
-207.3471967.197-195.7721967.168-189.331    1967-187.5721966.738-187.0411966.634
-186.4271966.392-185.582    1966 -184.131965.172 -183.88    1965-183.0151964.429
-182.125    1964-181.8851963.889 -180.19    1963-179.495    1963-178.011    1963
-177.498    1963-170.127 1963.26-162.8831963.512-154.1551963.815-148.895    1964
-147.6621964.568 -146.89    1965-146.2311965.371-145.113    1966-143.8461966.739
-143.374    1967-142.1721967.229-141.9831967.264-141.6391967.361-141.5381967.422
-141.3471967.536-141.2521967.542-140.6321967.553-139.5841967.566-139.0611967.569
-138.5631967.571-138.3531967.573-137.707 1967.58-137.4391967.585-137.0361967.594
 -136.81  1967.6-136.5241967.608-136.4691967.612-136.4051967.616-134.1841967.581
-134.086 1967.58-131.9511967.546-131.9311967.536  -131.71967.503-130.5881967.426
-130.0721967.382-129.5841967.341-125.3061967.037-124.746    1967-116.8361966.656
-112.5281966.484-107.0911966.278-106.3851966.245-104.1521966.143-103.4551966.118
-100.729    1966 -99.2771965.876 -96.3781965.608 -90.954 1965.18 -90.3371965.125
 -89.4861965.039  -89.461965.035 -89.459 1965.03 -89.4441965.028 -89.4041965.025
 -89.3871965.024 -89.3651965.023 -89.3351965.022 -89.1411965.018 -89.1181965.017
 -89.1081965.017 -89.0821965.014 -89.0791965.013 -89.0111965.013 -89.0031965.014
 -88.9831965.014  -88.971965.015 -88.9441965.017 -88.9171965.019 -88.8781965.022
 -88.8251965.028 -88.7211965.035 -88.624 1965.04 -88.5511965.045 -88.4661965.048
 -88.3661965.053 -88.1791965.063 -87.4891965.099 -78.752    1966 -78.288    1966
 -70.5291965.845 -69.8511965.928 -68.897    1966 -68.811 1966.03  -67.291966.645
 -66.678    1967 -66.3391967.217 -65.1851967.234 -64.5731967.241 -49.9491967.395
 -49.8741967.385 -49.8161967.378 -47.7881967.118 -47.7461967.111  -47.09    1967
  -46.79    1967 -46.6331966.977 -45.8261966.896 -45.6421966.864 -45.6141966.836
 -45.2191966.813  -44.341966.792 -43.634 1966.77 -43.2641966.742 -42.8351966.669
 -42.5311966.639 -42.2491966.632 -41.858 1966.63 -40.731 1966.63 -39.5451966.634
 -39.1561966.637 -38.8731966.644 -34.3611966.814  -32.991966.887 -31.456    1967
 -29.7521967.119 -27.2551967.275 -25.3481967.395  -24.271967.453 -21.914 1967.56
 -20.1761967.619 -18.8821967.593 -18.8161967.575 -17.9851967.502 -17.4071967.461
 -16.931 1967.45 -16.5381967.452 -15.5591967.447 -15.3871967.445 -14.1291967.449
 -11.9911967.454 -10.6161967.463  -9.7641967.469  -9.4961967.459  -7.7091967.352
  -7.277 1967.33  -6.7791967.315   -6.061967.296  -5.6871967.283  -5.5811967.269
  -3.5031967.298  -3.4191967.307  -2.6311967.341  -1.6921967.393  -1.358  1967.4
  -1.0471967.402   -.618 1967.41       01967.406   1.0681967.399   1.2991967.398
   3.4331967.377   3.7711967.378   4.3041967.386   5.1631967.407  11.5271967.593
  13.141967.636  13.4751967.646  14.8271967.695  16.1691967.756  17.5481967.825
  17.8441967.834  17.9071967.837  17.9431967.841  18.0491967.842  18.2951967.844
   18.391967.844   18.431967.842  18.676 1967.84  18.8511967.838  19.4981967.821
  19.9611967.815   20.561967.786  21.2741967.766   21.521967.761  21.737 1967.76
  23.5541967.683  23.7361967.662  24.2491967.677  26.5511967.537  27.1361967.507
  27.6161967.499  28.1821967.477  30.0521967.403  30.5271967.397  30.5621967.397
  31.0611967.382  31.5631967.392  31.7621967.362  31.8091967.355  32.1891967.316
  32.4651967.297   33.321967.258  33.6091967.232  33.9661967.218  34.2571967.209
  34.5181967.178   34.971967.162  35.3381967.141  35.7041967.127  35.7581967.127
  35.8731967.128  36.0211967.132  36.5421967.143  36.7681967.148  37.0531967.157
  37.1991967.164  37.3541967.173  37.4011967.175  38.0421967.227  38.7311967.261
  39.3411967.295  47.0791967.873  47.3521967.883  47.9181967.905  48.1071967.913
   48.211967.917  48.3161967.923  48.4111967.932  48.5251967.945  48.5571967.951
   48.561967.953  49.0361967.975  49.0611967.975   49.261967.976   49.321967.977
  49.3421967.977  49.3651967.976  49.3881967.976  49.4111967.974  49.4321967.971
  49.5061967.956  49.5471967.954  49.7241967.942  49.8041967.937  49.9081967.932
  50.0011967.929  55.6521967.589  56.5361967.536  57.3471967.492  57.5241967.473
  58.1611967.432  58.9651967.391  59.8021967.355  65.6871967.525  68.1471967.414
  68.3981967.386   72.351967.467  72.5161967.497   73.041967.552  74.3751967.795
  74.6481967.903  75.128    1968  76.5911968.059  77.0191968.076  78.2861968.107
  78.6651968.116  81.6621968.176  83.347 1968.21  84.4321968.233  85.179 1968.25
   85.641968.255  85.7021968.256  85.9791968.259  87.1281968.267  87.1681968.267
  87.7411968.271  87.7421968.271  87.7571968.271  89.0131968.275   89.021968.274
  89.5241968.265  89.5441968.265  91.0481968.252  91.0551968.252  91.555 1968.24
   91.581968.222  91.5911968.222  92.4961968.186  92.4991968.185  92.9081968.143
  92.9091968.143  92.9521968.129  92.9581968.129  93.8581968.126  93.8661968.126
  95.0431968.132  95.0591968.133  96.8861968.149 103.5621968.222 103.6191968.223
 104.727 1968.23 105.5351968.225 115.4131968.064 115.8671968.058 119.777    1968
 123.223 1967.97   123.3 1967.97 128.457 1967.93 132.8031967.905 136.529    1968
 138.009    1968     140    1968

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-223.397    .025-137.036    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -223.397-137.036            37.43   37.43   37.43            .1       .3
Right Levee     Station= -137.04      Elevation= 1967.59

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1967.14  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.81  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1965.32  * Reach Len. (ft)       *   37.43  *   37.43  *   37.43  *
* Crit W.S. (ft)         * 1965.86  * Flow Area (sq ft)     *          *   65.32  *          *
* E.G. Slope (ft/ft)     *0.016639  * Area (sq ft)          *          *   65.32  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   38.08  * Top Width (ft)        *          *   38.08  *          *
* Vel Total (ft/s)       *   10.81  * Avg. Vel. (ft/s)      *          *   10.81  *          *
* Max Chl Dpth (ft)      *    2.32  * Hydr. Depth (ft)      *          *    1.72  *          *
* Conv. Total (cfs)      *  5473.2  * Conv. (cfs)           *          *  5473.2  *          *
```

* Length Wtd. (ft)	*	37.43	* Wetted Per. (ft)	*		*	39.03	*	
* Min Ch El (ft)	*	1963.00	* Shear (lb/sq ft)	*		*	1.74	*	
* Alpha	*	1.00	* Stream Power (lb/ft s)	*		*	18.79	*	
* Frctn Loss (ft)	*	0.80	* Cum Volume (acre-ft)	*	1.41	*	8.42	*	2.94 *
* C & E Loss (ft)	*	0.05	* Cum SA (acres)	*	0.91	*	7.97	*	2.75 *

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -5900

INPUT
Description:
Station Elevation Data num= 396

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001967.398	-399.9191967.394	-398.8021967.347	-397.7811967.311	-397.3911967.296					
-396.0241967.253	-395.71967.252	-395.2741967.236	-395.1441967.231	-394.7091967.207					
-394.3421967.174	-394.221967.167	-394.061967.161	-393.8661967.159	-393.6351967.161					
-393.3931967.167	-393.051967.178	-392.8461967.187	-392.432	1967.2	-392.2261967.208				
-391.9921967.225	-391.8451967.233	-390.9211967.265	-390.6461967.279	-390.239	1967.31				
-389.5041967.379	-387.5341967.619	-386.7391967.695	-386.5361967.711	-383.5371967.946					
-383.4831967.949	-382.771	1968	-378.077	1968	-375.532	1968	-370.4041967.253		
-368.77	1967	-360.2631966.736	-359.3481966.717	-358.6311966.707	-353.4641966.666				
-352.6931966.653	-352.218	1966.64	-348.028	1966.65	-346.2341966.701	-346.1491966.709			
-346.0431966.712	-345.3261966.721	-344.4121966.746	-343.831966.774	-343.6411966.806					
-342.6481966.914	-341.412	1967	-334.6641967.687	-333.4641967.817	-332.838	1967.87			
-332.2361967.935	-332.016	1967.94	-331.7351967.947	-331.619	1967.96	-331.581967.963			
-331.5241967.964	-331.4381967.965	-330.1661967.931	-329.931967.931	-329.2621967.904					
-328.8771967.889	-328.4451967.887	-328.1741967.883	-328.0421967.881	-327.7261967.872					
-327.484	1967.86	-327.4661967.859	-327.2971967.848	-326.8781967.824	-325.8591967.758				
-324.421967.681	-323.8671967.648	-320.8351967.471	-318.8431967.378	-318.0941967.354					
-315.7681967.254	-315.699	1967.25	-314.6681967.199	-313.8741967.159	-311.223	1967			
-304.131966.309	-301.8771966.082	-301.7611966.076	-301.426	1966.06	-301.2641966.042				
-300.7441966.061	-295.128	1966.26	-293.1441966.214	-293.0151966.211	-292.1321966.191				
-282.366	1966	-282.2171965.991	-279.8671965.892	-278.0021965.863	-276.371965.877				
-273.824	1965.94	-273.387	1966	-273.29	1966	-271.786	1966	-269.187	1966
-268.967	1966	-268.795	1966	-267.501	1966	-266.364	1966	-248.367	1966
-248.034	1966	-247.192	1966	-247.175	1966	-247.162	1966	-247.033	1966
-246.91	1965.938	-244.526	1965	-244.1561964.926	-243.5651964.739	-243.3131964.497			
-242.7591964.436	-242.5981964.397	-242.4581964.386	-242.1371964.375	-241.9751964.373					
-241.8481964.375	-241.6741964.386	-241.0831964.465	-240.0791964.676	-239.9771964.728					
-239.3651964.888	-239.135	1965	-238.821965.293	-237.985	1966	-235.7341966.143			
-235.0461966.175	-234.6911966.182	-234.3971966.174	-233.9851966.134	-233.451966.058					
-232.504	1966	-231.865	1966	-231.138	1966	-228.155	1966	-227.341	1966
-226.427	1966	-225.559	1966	-223.0131966.475	-222.0891966.592	-220.7421966.804			
-219.9261966.854	-219.827	1966.86	-219.4641966.909	-219.2361966.936	-218.478	1966.94			
-218.17	1966.97	-218.1611966.971	-217.481	1966.96	-217.0281966.937	-213.957	1967		
-193.381966.461	-193.3671966.511	-193.0261966.601	-192.621	1966.54	-192.1631966.472				
-189.312	1966	-188.6891965.692	-187.167	1965	-186.3071964.581	-185.038	1964		
-183.7791963.399	-182.905	1963	-182.6751962.927	-181.7981962.778	-180.381962.741				
-180.111962.838	-179.8581962.866	-179.2371962.886	-178.137	1962.9	-171.2761962.959				
-168.271	1962.99	-167.424	1963	-164.1551963.227	-150.754	1964	-150.287	1964.23	
-148.854	1965	-148.5841965.134	-148.1031965.404	-147.107	1966	-144.3391966.538			
-142.6911966.949	-142.455	1967	-141.694	1967	-140.89	1967	-140.335	1967	
-139.76	1967	-139.042	1967	-129.273	1967	-127.228	1967	-122.4551966.491	
-119.379	1966.17	-117.827	1966	-117.0551965.839	-115.8171965.722	-115.053	1965.71		
-113.0751965.691	-112.5111965.672	-111.5941965.587	-103.8581965.666	-103.0471965.711					
-99.531	1966	-94.204	1966	-88.42	1966	-81.252	1966	-78.4271965.618	
-77.8821965.545	-77.2571965.418	-74.963	1965.31	-74.5761965.296	-74.4271965.293				
-74.3141965.294	-74.1681965.317	-73.7561965.343	-73.1451965.398	-72.9291965.424					
-72.3381965.493	-71.891965.491	-67.438	1966	-65.042	1966	-64.064	1966		
-58.9451965.549	-51.497	1965	-48.85	1965	-48.496	1965	-48.462	1965	
-46.7931965.313	-42.5381965.953	-42.236	1966	-40.0671966.078	-39.9331966.081				
-36.4611966.244	-36.4261966.245	-36.011966.249	-35.2121966.247	-35.0371966.243					
-24.2451966.486	-18.3971966.653	-15.2931966.747	-11.8491966.862	-9.7571966.921					
-8.4841966.959	-7.9051966.975	-7.571966.983	-7.4271966.986	-7.4211966.986					
-7.4021966.985	-7.3891966.985	-7.3741966.986	-7.3451966.986	-7.3271966.987					
-7.3161966.988	-7.291966.991	-7.278	1966.99	-7.2641966.989	-7.2281966.987				
-7.1141966.981	-6.688	1967	-6.667	1967	-6.661	1967	-6.659	1967	
-5.1021967.013	-5.0971967.013	-4.5031967.013	-4.5011967.013	-4.2491967.001					
-4.2481967.001	-4.048	1967	-2.159	1966.95	-.5031966.883	-.4561966.882			
01966.856	4.3741966.608	6.0221966.551	7.3471966.405	8.261966.354					
8.5331966.344	8.8331966.343	9.2851966.346	11.21966.368	11.77	1966.38				
12.2821966.399	13.4891966.496	13.7991966.585	13.8941966.641	16.255	1967				
16.439	1967	16.812	1967	19.2211966.794	19.9921966.775	21.1681966.816			
21.3261966.826	23.321966.958	23.3611966.958	23.551966.975	23.837	1967				
25.316	1967	33.924	1967	36.391	1967	36.627	1967	37.604	1967
40.751	1967	42.6341966.936	44.7141966.873	46.166	1966.84	47.0221966.836			
47.1221966.837	54.2631966.921	54.3021966.921	56.8571966.942	56.8821966.943					
57.7261966.939	57.7291966.939	58.4281966.923	58.6971966.882	66.032	1966.66				
69.1531966.707	71.7021966.752	73.6171966.795	75.0741966.836	76.2921966.875					
78.5131966.957	79.568	1967	81.2331967.117	84.5111967.314	85.6021967.346				
86.6221967.368	88.2721967.395	88.4741967.399	88.521	1967.4	88.56	1967.4			
89.5471967.414	89.8571967.418	90.0761967.422	90.5111967.429	90.9021967.435					
91.0221967.438	91.1471967.441	91.331967.446	91.5111967.453	91.6761967.458					
91.971967.469	92.0931967.472	92.1921967.475	92.41967.481	92.481967.481					
92.5191967.482	92.6711967.483	92.8041967.483	93.051967.482	94.5971967.474					
95.797	1967.47	97.7881967.471	98.4271967.468	99.0111967.462	99.8661967.452				
102.7631967.408	103.936	1967.4	104.8591967.394	106.8211967.374	108.9781967.353				

```
 109.444 1967.35  112.741967.334 117.8981967.286 118.6121967.286 119.1271967.281
 121.0111967.265 122.4211967.254  123.611967.248 126.6811967.326 126.7241967.334
 126.9741967.344 127.5251967.357 128.3051967.371 129.1571967.383  130.051967.392
 130.809  1967.4 131.1961967.408  131.691967.425 132.0951967.452 132.6491967.477
 133.9391967.518 135.2861967.552 135.8911967.571 135.9861967.584 139.4891967.664
     1401967.661

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-213.957    .025-142.455    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -213.957-142.455             100     100     100             .1       .3
Left Levee      Station= -213.96      Elevation=    1967
Right Levee     Station= -142.46      Elevation=    1967

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)          * 1966.65  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.05  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)          * 1965.60  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 1965.60  * Flow Area (sq ft)     *          *   85.93  *          *
* E.G. Slope (ft/ft)      *0.007299  * Area (sq ft)          *          *   85.93  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   40.70  * Top Width (ft)        *          *   40.70  *          *
* Vel Total (ft/s)        *    8.22  * Avg. Vel. (ft/s)      *          *    8.22  *          *
* Max Chl Dpth (ft)       *    2.86  * Hydr. Depth (ft)      *          *    2.11  *          *
* Conv. Total (cfs)       *  8263.5  * Conv. (cfs)           *          *  8263.5  *          *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)      *          *   41.76  *          *
* Min Ch El (ft)          * 1962.74  * Shear (lb/sq ft)      *          *    0.94  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    7.70  *          *
* Frctn Loss (ft)         *    0.75  * Cum Volume (acre-ft)   *    1.41  *    8.36  *    2.94  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)         *    0.91  *    7.93  *    2.75  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -6000

INPUT
Description:
Station Elevation Data    num=     442
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001966.282-399.6311966.296-398.6881966.335-396.9451966.371-395.9621966.393
-395.2151966.413-392.5141966.467-390.893 1966.51-388.7921966.555-388.2491966.565
-387.8961966.569-387.7251966.571-387.7111966.571-387.0771966.576-387.0671966.576
-387.0451966.576-386.9111966.577-386.9061966.577-386.7881966.577-386.4271966.578
-386.3631966.579-386.0871966.578-386.0721966.578-385.6831966.577-385.0811966.573
-384.6221966.568-382.7271966.528-381.2321966.481-380.9051966.465-380.1321966.348
 -379.641966.297-379.3851966.284-376.7521966.216-375.7181966.177-375.5721966.179
-375.3891966.181-374.5091966.161 -374.221966.161-372.7071966.141-372.6071966.139
-372.1741966.137-370.6211966.127-368.9741966.129-368.547 1966.13-368.2231966.121
-367.7621966.113-366.6431966.095-365.7631966.103-364.4731966.113-363.5331966.125
-362.6111966.138-359.8781966.185-359.477  1966.2-359.4371966.209-355.0161966.357
-354.5871966.376-354.5161966.385-351.6841966.457-346.707 1966.36-345.6791966.337
-345.5571966.333-343.5951966.283-342.2451966.236-340.1941966.177-338.7631966.124
-335.135    1966-330.5021965.341-328.646    1965-325.2761964.409-324.4191964.306
-324.2261964.268-323.8431964.228 -323.681964.221-323.3891964.213-321.731 1964.18
 -320.591964.203 -320.281964.207-320.1271964.206-319.3181964.246-318.7661964.277
-317.2881964.362-316.9121964.373-314.836  1964.4-313.8421964.415 -313.611964.419
-313.587 1964.42-312.8851964.436-312.8621964.437-312.6281964.448  -312.61964.452
-312.3261964.491-312.2671964.496-311.6561964.544-311.6411964.545-311.515 1964.55
-311.4631964.551-311.0141964.557-310.9481964.557-310.5421964.558-310.4791964.557
-310.2731964.555-310.0581964.549-308.4621964.482-307.706 1964.46-302.3721964.355
 -302.191964.353-301.827 1964.35-300.5121964.338-298.0631964.316-297.5241964.323
-297.2981964.334-297.061 1964.35-296.2851964.379-295.9981964.395-295.9611964.445
-295.8171964.464-291.5931964.497-290.6591964.485  -290.21964.477-289.0751964.453
-287.7871964.433-287.0951964.426-286.3491964.422-285.6491964.426-281.6681964.339
-281.6131964.328-281.3891964.319-279.2551964.274-278.3561964.255-275.6171964.187
-274.4981964.157-269.786    1964-268.4681963.748-267.0211963.393-266.6621963.252
-266.632 1963.25 -265.751963.333-265.2111963.386 -264.631963.423-264.0871963.442
-263.0031963.469 -262.421963.495-261.5311963.561-260.105 1963.64-259.2791963.674
-257.6691963.885-257.4441963.909-256.6071963.998-256.6041963.998-256.6011963.999
-256.575    1964-255.282 1964.06-253.6831964.126-253.6321964.128-252.8561964.179
-252.0361964.232-251.868 1964.23-249.6351964.388-249.5941964.387-249.2611964.376
-248.7131964.368-245.6531964.388-244.3571964.449-242.5041964.559-241.9831964.579
-241.3251964.593-239.2161964.619-237.5141964.611-233.364 1964.66-232.7851964.668
 -232.581964.674 -232.561964.684-230.8851964.691-230.0921964.659-229.7681964.645
-227.5721964.561-223.1041964.391-222.2261964.379-221.8881964.375-219.1971964.251
-218.5891964.239-217.2981964.169-216.2751964.113-214.186    1964-212.9931963.553
-211.494    1963-209.7581962.374-208.667    1962-206.1251961.896-205.7811961.875
```

```
-205.6931961.827-205.1021961.816-204.3341961.807-203.1341961.802-202.568  1961.8
-201.9541961.794-201.7351961.783-200.9451961.739-198.9651961.724-198.4751961.743
-196.8851961.736-194.6071961.719-192.0891961.711-189.5061961.724-186.9381961.754
-184.6381961.789-182.9721961.818-181.9211961.841-181.2751961.864-179.5391961.981
-179.191    1962-161.3141962.956-160.8031962.983-160.523    1963-160.4841963.043
-160.052    1964-159.796 1964.49-159.591    1965-155.455    1965-154.107    1965
-153.329    1965-149.499    1965-142.871    1965-142.138    1965-140.795    1965
-140.664    1965-139.966    1965-131.2141965.218-130.2171965.224-129.8941965.225
-129.7181965.228-129.1291965.238-128.919 1965.24 -128.441965.246-128.1391965.247
-127.6491965.248-119.9161965.224-118.5061965.219-117.2441965.208-116.0811965.184
-115.6511965.178-115.4151965.174-115.0621965.171-114.4841965.165-113.7731965.161
-110.5911965.142-108.9081965.132-108.4241965.126-108.022 1965.12-107.9691965.119
-107.3781965.105-106.7831965.081-104.828    1965-102.5121964.349-101.461    1964
 -97.827    1964 -89.001    1964 -88.151 1964.05 -87.7221964.072 -87.4261964.049
 -86.544    1964 -86.4471963.995 -84.8551963.846 -83.9851963.798  -82.841963.763
 -81.6341963.738 -79.5711963.705 -78.898 1963.69 -78.6861963.677 -77.7951963.536
  -77.161963.512 -76.3081963.468 -70.1011963.508 -70.0011963.523 -68.7271963.589
 -68.325 1963.62 -65.507 1963.78 -61.031    1964 -57.4541964.117 -55.6471964.185
 -54.0831964.254  -52.721964.331 -52.4751964.342 -52.2861964.351 -52.0451964.348
 -50.4681964.325 -49.7511964.314 -49.4821964.271 -49.3671964.253 -48.8131964.223
 -48.557 1964.21 -47.405    1964 -47.0231963.883 -45.635    1964 -44.007    1964
 -42.979    1964  -41.24    1964 -39.007    1964 -35.714    1964 -30.5541964.452
 -29.3961964.553 -26.5031964.826 -24.666    1965 -24.424    1965 -18.164    1965
 -17.7161964.971 -17.697 1964.97 -12.1161964.625 -11.1981964.545 -10.9331964.502
  -10.431964.473  -7.6341964.403  -5.2391964.395  -2.8421964.396  -1.8861964.393
  -1.6061964.395   -.8651964.405       01964.422    .0981964.424    2.011964.468
   3.4121964.506   4.4251964.531   7.6371964.594  17.349    1965  19.278    1965
  20.857    1965  22.809    1965  23.226    1965  24.944    1965  26.872    1965
  26.9661965.012  27.1611965.036  27.7351965.319    29.81965.361  31.052 1965.38
  32.3161965.394  33.4941965.401  33.6371965.401  34.5431965.399  34.9761965.395
  35.521 1965.39  36.4971965.376  36.7491965.372  39.3631965.329   47.141965.219
  47.5621965.213  48.1691965.205  51.4111965.165  52.581 1965.14  52.923 1965.13
  52.9741965.127  55.4081965.102  55.6811965.116  55.7671965.124  55.9571965.134
  56.1131965.138  56.4661965.141  64.579 1965.04  64.9341965.035  65.0781965.036
  66.4991965.028  66.5831965.028  66.8271965.029  66.8451965.029  68.8581965.031
  68.9391965.031  68.9771965.031  68.9891965.029  68.9891965.025    69.11965.022
  69.1671965.023  69.2451965.023  69.6321965.038  69.6421965.042   69.691965.046
  69.751 1965.05  69.8461965.054  69.9811965.067  70.037 1965.07  70.4691965.075
  73.081 1965.11  75.6031965.163  76.7151965.186  76.9041965.195  80.0481965.279
  80.098 1965.28  80.9811965.314  83.1871965.387  83.725  1965.4  84.8311965.451
   85.131965.451  85.252 1965.45  85.7041965.486  85.9491965.534  86.2281965.567
  86.4541965.581  87.4071965.622  90.3311965.749  91.0371965.771  91.1731965.774
  91.2641965.774  91.3921965.771  91.5661965.765  92.0041965.746  93.4931965.664
  93.9881965.644  96.1591965.569   96.741965.558  97.658 1965.53  98.2051965.502
  99.0581965.433  99.8391965.388 100.1891965.356 100.3551965.334 103.6631965.324
 103.7681965.332  104.03 1965.34 104.5571965.349 105.4111965.356 106.4071965.361
 107.2651965.362 107.7621965.356 108.1311965.339 108.7251965.324 108.992  1965.3
  109.191965.293 109.472 1965.29 109.7471965.285 109.9641965.282 110.2541965.283
 110.6321965.288 111.0461965.298 111.4161965.309 111.9691965.333 112.4951965.348
 113.4381965.367 116.5721965.426 130.5921965.749  135.561965.873 137.062 1965.91
 138.6441965.943     1401965.983

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    -400    .035 -232.58    .025-159.591    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -232.58-159.591             100     100     100             .1       .3
Left Levee      Station= -232.58      Elevation= 1964.67
Right Levee     Station= -159.59      Elevation=    1965

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1965.28  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.96  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1963.32  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1963.92  * Flow Area (sq ft)     *          *   62.88  *          *
* E.G. Slope (ft/ft)     *0.028031  * Area (sq ft)          *          *   62.88  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   52.00  * Top Width (ft)        *          *   52.00  *          *
* Vel Total (ft/s)       *   11.23  * Avg. Vel. (ft/s)      *          *   11.23  *          *
* Max Chl Dpth (ft)      *    1.61  * Hydr. Depth (ft)      *          *    1.21  *          *
* Conv. Total (cfs)      *  4216.8  * Conv. (cfs)           *          *  4216.8  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   52.47  *          *
* Min Ch El (ft)         * 1961.71  * Shear (lb/sq ft)      *          *    2.10  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   23.54  *          *
* Frctn Loss (ft)        *    1.28  * Cum Volume (acre-ft)  *    1.41  *    8.19  *    2.94  *
* C & E Loss (ft)        *    0.09  * Cum SA (acres)        *    0.91  *    7.82  *    2.75  *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -6100
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```
INPUT
Description:
Station Elevation Data    num=     398
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001964.261-396.3041964.246-391.4711964.235-390.8931964.228-390.403 1964.22
-389.6871964.203-389.3591964.199-388.974  1964.2-387.6731964.216 -386.771964.225
 -384.421964.255-383.819 1964.26 -379.391964.265-378.1991964.266-377.6331964.268
-371.4571964.295-370.7841964.295 -370.02 1964.29-367.6831964.304 -364.261964.325
-363.3591964.318-358.4861964.348-355.9421964.364 -353.171964.339-348.2781964.354
 -345.421964.362-344.8021964.363 -343.891964.364-343.6641964.364-342.2871964.363
  -340.71964.358-340.4721964.361-339.5611964.385-339.5521964.385-338.387 1964.38
-337.6441964.378-337.4671964.377-336.9231964.374-336.6771964.373-336.122 1964.37
-335.6381964.368-335.2181964.366-334.9411964.364-334.1121964.359-333.7051964.357
-332.9481964.352-332.0321964.344-331.8311964.343-331.7081964.342-331.4171964.339
-330.5661964.328-329.6861964.309  -325.91964.211-324.335 1964.17-316.804    1964
-316.1661963.665-314.606    1963-313.4441962.399 -312.51    1962-311.9051961.785
-311.4231961.675 -311.091961.635-310.6211961.614-309.9561961.617-308.1611961.662
-305.462  1961.7-305.1071961.721-302.666    1962-296.9871962.295-295.7551962.344
 -295.051962.372-294.5731962.389-291.516  1962.5-290.9021962.526-290.8351962.529
 -290.081962.569-287.4231962.741-286.186 1962.68-286.0741962.635-285.1681962.531
-284.662 1962.49-280.764 1962.43-279.2621962.396-278.3271962.359 -276.851962.257
-275.158 1962.18-274.4191962.154-270.505    1962-269.4471961.923-268.8011961.829
-265.2681961.444-264.2281961.283-263.9421961.238-263.3421961.157-263.1811961.153
-262.9451961.153-262.014    1961-262.0031960.999-261.9361960.991-260.8251960.862
-260.5321960.828-260.174  1960.8-259.1091960.692-258.5841960.639-258.2851960.608
-258.2341960.603-258.2091960.601-256.5691960.434-254.385    1960 -253.361959.976
-251.8391959.955-249.8851959.944-246.9051959.948-242.0131959.978-239.298    1960
-234.4551960.054-234.1671960.037-234.1371960.035-234.1191960.034-234.0971960.034
-233.7891960.035-233.1641960.037-232.6791960.039-232.603 1960.04-232.578 1960.04
-232.0031960.061-231.7691960.068-229.9441960.125-229.6961960.133-222.1381960.387
-216.2631960.585-207.8091960.803-204.232    1961-203.974  1961.2-203.416    1962
-200.121 1962.84-197.9911962.952 -197.191962.953-197.0841962.967 -195.24    1963
-188.322 1963.07 -188.131963.067-187.6161963.076-187.0841963.086-186.8461963.094
-186.4831963.106-186.1311963.096 -184.771963.163-183.1221963.221-177.7911963.378
-177.6051963.375-173.882  1963.3-173.567 1963.29-173.3581963.279-172.7581963.262
-172.571 1963.26-170.9231963.257-168.2041963.247-167.7191963.248-165.1411963.257
-162.2981963.286-150.2491963.405-149.6541963.409 -149.43 1963.41-148.4791963.411
-148.2351963.412-144.498 1963.41-144.2921963.409-144.1021963.409-140.6991963.407
-136.3071963.427-135.0881963.427-131.5851963.426-131.2311963.426-129.502 1963.43
-128.1931963.437-127.9171963.438-126.738 1963.45-123.5431963.496-123.4161963.497
-123.3971963.497-123.1981963.498-123.1151963.498-123.0171963.498-123.0151963.498
    -1231963.498-122.8421963.497-122.7911963.496-122.6951963.495-122.6811963.495
-122.5291963.492-122.4831963.492-121.5151963.473-121.369 1963.47-119.7351963.438
-119.5341963.434-117.8651963.406-117.512  1963.4-117.4541963.399-117.1231963.393
-117.1031963.393-113.7781963.336-113.6421963.336-113.4541963.334-113.4311963.334
-113.3721963.334-113.1731963.333-112.0561963.302-111.7661963.294-111.1411963.276
-109.2691963.236-108.6641963.223-107.8531963.206-106.7191963.191-106.4521963.188
-105.6541963.178-105.5741963.177-105.5471963.176  -105.2 1963.17-104.726 1963.16
-103.109 1963.12-102.7661963.021-102.643    1963-102.4621962.994 -96.8371962.838
 -85.6791962.542 -84.0921962.509 -81.9171962.471 -74.7441962.352 -71.6211962.457
  -71.481962.494 -71.1381962.526 -70.6631962.546 -68.469    1962  -68.311961.943
 -66.3031961.816 -62.5791961.853 -61.3411961.927 -61.2141961.964 -60.6941961.992
 -60.446    1962 -59.2981962.057 -59.2381962.058 -59.1451962.062 -51.5531962.376
 -51.1261962.374 -50.7051962.367 -49.7951962.419 -49.2241962.458 -47.8031962.523
 -47.3241962.562 -46.2851962.606 -45.6761962.637 -45.4061962.647 -43.9421962.678
 -42.4021962.725  -42.271962.734 -41.8611962.748 -41.7971962.748 -41.178 1962.75
 -40.1291962.757 -40.1191962.757  -39.741962.758 -39.4311962.755 -39.1921962.751
 -38.7341962.739 -37.9731962.713 -37.6281962.704 -34.2121962.632 -32.1791962.587
 -31.9011962.576 -30.6581962.509 -28.6081962.376 -27.9331962.366 -27.4181962.354
 -27.0471962.343  -26.271962.313 -25.9081962.306 -24.383 1962.29 -24.0431962.285
 -23.7091962.276 -20.2651962.275 -18.9011962.427  -18.871962.473 -18.8621962.476
 -18.3641962.692 -18.3341962.687 -17.373 1962.89 -16.937    1963 -16.0061963.058
  -15.751963.074  -15.711963.074 -14.0441963.207 -13.4491963.237  -8.217 1963.45
  -8.1791963.451  -7.7221963.459  -7.6151963.459  -6.909 1963.46  -6.6851963.458
  -5.689 1963.45  -1.9611963.402  -1.2471963.392   -1.051963.383    -.651963.372
    -.305 1963.37   -.2581963.376       01963.375   9.2131963.333  10.5611963.265
   12.341963.161   14.31    1963  19.996    1963   22.89    1963  23.0281963.011
   23.051963.011  24.1141963.093  26.5721963.284  26.6641963.293  27.7241963.396
  28.3881963.461  28.9861963.505  30.1391963.557  30.7431963.587  30.8911963.603
  31.1151963.647  31.8311963.607  31.8811963.587  32.1761963.556  32.8781963.517
  33.2211963.511  33.9121963.513  35.0041963.525  36.1811963.542  36.4711963.467
  36.7141963.419  41.0141963.354  44.2811963.414  47.0521963.459   48.13 1963.48
  48.8471963.498  49.1021963.507  49.3351963.514  50.4871963.529  51.9021963.545
  52.7861963.559  56.5991963.592  57.1051963.603  63.689 1963.65  63.9771963.652
  64.6211963.669  65.1671963.681  66.1931963.697  70.6871963.757  73.7911963.794
  74.3761963.799  74.5551963.799  74.6611963.798  74.7221963.797  75.1591963.778
  76.2551963.723  76.4361963.715  79.2251963.731  80.9441963.732  81.7051963.723
  81.942 1963.71  82.6771963.624   83.811963.515  84.264 1963.45  84.362  1963.4
  84.4461963.398  84.6021963.399  86.5871963.434  88.3731963.476   89.141963.506
  90.7461963.554  92.5041963.634  94.7891963.795  96.6621963.867  97.1731963.898
  97.7961963.961  97.873    1964  98.421    1964  99.465    1964 113.538    1964
 119.927    1964  126.21    1964  126.391964.001 126.3921964.001 126.423    1964
 126.871    1964 127.541    1964 128.096    1964  131.33    1964 132.549    1964
 132.612    1964   139.5    1964     1401964.002

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             100     100     100             .1       .3
Left Levee      Station= -287.42      Elevation= 1962.74
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1962.90	Element	Left OB	Channel	Right OB	
Vel Head (ft)	1.25	Wt. n-Val.		0.025		
W.S. Elev (ft)	1961.65	Reach Len. (ft)	100.00	100.00	100.00	
Crit W.S. (ft)	1962.05	Flow Area (sq ft)		78.68		
E.G. Slope (ft/ft)	*0.017263	Area (sq ft)		78.68		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	63.45	Top Width (ft)		63.45		
Vel Total (ft/s)	8.97	Avg. Vel. (ft/s)		8.97		
Max Chl Dpth (ft)	1.70	Hydr. Depth (ft)		1.24		
Conv. Total (cfs)	5373.4	Conv. (cfs)		5373.4		
Length Wtd. (ft)	100.00	Wetted Per. (ft)		63.89		
Min Ch El (ft)	1959.94	Shear (lb/sq ft)		1.33		
Alpha	1.00	Stream Power (lb/ft s)		11.91		
Frctn Loss (ft)	2.17	Cum Volume (acre-ft)	1.41	8.02	2.94	
C & E Loss (ft)	0.21	Cum SA (acres)	0.91	7.69	2.75	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -6200

INPUT
Description:
Station Elevation Data num= 433

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001961.765	-395.1361961.755	-391.3681961.758	-387.9221961.781	-385.2111961.835					
-383.0331961.917	-381.315	1962	-373.4391962.194	-371.7431962.223	-368.4381962.305				
-366.1281962.355	-357.4351962.521	-354.7451962.552	-352.6481962.592	-351.446 1962.61					
-349.3431962.637	-349.0131962.642	-348.2811962.655	-348.0611962.659	-346.0871962.696					
-346.0721962.697	-346.0361962.699	-345.2821962.703	-344.3291962.709	-343.2751962.715					
-343.2471962.712	-343.241962.712	-343.1311962.709	-342.0151962.696	-341.261962.677					
-340.751962.666	-340.2071962.646	-339.7321962.635	-336.3651962.565	-335.9971962.569					
-334.781962.581	-332.7861962.527	-331.4631962.531	-328.8931962.447	-328.7391962.442					
-326.9621962.378	-325.191962.375	-324.5111962.381	-323.911962.392	-322.8811962.411					
-321.5571962.354	-321.5551962.354	-321.3581962.355	-321.3181962.353	-318.5191962.249					
-317.3491962.179	-317.291962.175	-316.0231962.082	-315.182	1962	-314.8241961.901				
-311.518	1961	-306.761960.126	-306.3551960.121	-305.6131960.111	-304.9241960.102				
-304.6321960.098	-302.302	1960.1	-301.7181960.008	-301.666	1960	-301.4961960.012			
-299.8911960.127	-297.2341960.164	-296.144 1960.18	-295.6391960.245	-295.3331960.284					
-294.4591960.324	-290.5571960.935	-290.5071960.944	-290.18	1961	-289.9761961.052				
-289.9351961.069	-289.181961.101	-282.858 1961.22	-282.8431961.218	-282.7651961.209					
-281.917	1961	-280.7961960.223	-280.596	1960	-280.158 1959.59	-279.689	1959		
-278.0551958.821	-277.8341958.797	-277.4481958.724	-276.7711958.636	-276.1431958.498					
-275.7341958.442	-275.0911958.398	-274.147 1958.37	-272.9011958.351	-271.358 1958.34					
-269.5721958.332	-267.7651958.329	-266.161958.333	-264.8871958.346	-263.771958.366					
-261.0431958.426	-257.731958.495	-255.981958.533	-247.965 1958.75	-246.6031958.791					
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-233.229	1961	-221.4471961.381	-218.081961.483	-216.4091961.529	-213.9141961.587				
-205.197	1962	-204.44	1962	-203.239	1962	-201.3411961.554	-200.3811961.514		
-197.3651961.413	-187.7241961.151	-186.6671961.109	-185.2761961.042	-184.9621961.026					
-184.7391961.019	-184.172	1961	-182.3051960.966	-176.7511960.883	-174.241960.852				
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-161.8221960.969	-161.358	1961	-153.9271961.332	-150.7871961.463	-142.351961.814				
-139.4831961.934	-137.891	1962	-136.798	1962	-136.682	1962	-136.327	1962	
-131.5841961.202	-131.025	1961.1	-130.8281961.057	-130.784 1961.05	-130.6721961.038				
-130.6161961.033	-130.5251961.027	-130.4051961.031	-130.391961.038	-130.346 1961.05					
-130.011961.111	-129.9491961.117	-129.088 1961.24	-127.5761961.523	-127.3991961.503					
-127.091961.589	-127.0291961.625	-126.991961.648	-124.7911961.711	-124.6931961.714					
-124.1741961.729	-123.3361961.753	-123.2261961.748	-123.1521961.744	-122.811961.727					
-122.6831961.724	-116.9871961.465	-115.435 1961.41	-114.6371961.378	-114.0671961.339					
-113.4261961.306	-112.9561961.287	-112.5991961.278	-112.2121961.265	-111.6341961.254					
-111.4191961.249	-111.1361961.234	-111.0051961.225	-110.8941961.227	-110.3161961.253					
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-90.1471961.632	-89.8821961.613	-89.5241961.602	-88.3891961.615	-87.9921961.619					
-87.6551961.614	-87.2731961.627	-86.8461961.651	-86.5271961.675	-85.9221961.704					
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-85.2931961.772	-85.053 1961.77	-84.8171961.765	-84.561961.753	-84.3211961.739					
-84.2041961.726	-83.441961.643	-83.0651961.615	-82.7211961.597	-82.2531961.579					
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-73.9981961.395	-70.5721961.245	-67.5951961.128	-66.9061961.101	-66.7081961.092					
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-61.0221960.843	-59.8851960.675	-59.649 1960.66	-59.4171960.652	-59.0441960.649					
-58.5031960.652	-57.91960.661	-57.3841960.674	-56.6831960.703	-55.9831960.715					
-54.7431960.722	-54.1881960.722	-48.3221960.721	-44.1231960.747	-43.7711960.752					
-43.1791960.761	-38.8391960.714	-37.5131960.759	-35.9931960.798	-33.5961960.844					
-30.7811960.888	-29.9761960.901	-29.7031960.907	-29.3271960.911	-29.2381960.913					
-29.1121960.918	-28.7211960.937	-28.647 1960.94	-27.1751960.925	-27.1581960.921					
-27.1361960.921	-26.6541960.918	-25.8771960.899	-23.8281960.859	-23.0881960.838					

```
 -22.936 1960.82 -16.0331960.869 -14.6461960.959 -13.939 1960.99 -13.608    1961
 -13.0421961.016 -12.9641961.019 -10.4161961.065  -9.6411961.079  -9.0261961.097
  -8.9111961.101  -7.9191961.156  -7.6171961.173  -7.2321961.185  -7.1081961.189
  -6.5221961.193  -6.3331961.194  -6.2881961.194  -5.3891961.187   -5.191961.185
  -3.0531961.152   -.2881961.109       01961.106    2.041961.084   2.1381961.083
    3.191961.064   4.2531961.024   5.106    1961   5.895    1961  11.382    1961
  20.5771961.225  21.0621961.236  24.371 1961.31  26.5351961.359  30.2751961.447
  33.212 1961.52  34.634 1961.55  36.0451961.577  36.5591961.589  37.0251961.602
  37.8261961.619  37.9621961.621  40.5121961.653  43.2451961.667  43.6421961.669
  44.6771961.676  45.8541961.688  46.2171961.691  48.591 1961.71  49.2081961.718
  49.5471961.725   50.06 1961.74  51.0951961.763  51.6131961.779  52.0311961.786
  52.7571961.801  53.8481961.818  54.0891961.821  54.3841961.823  54.5231961.824
  54.5241961.824  54.7521961.825  54.9131961.825  55.0921961.826  55.1321961.826
  55.4441961.826  55.6331961.826  55.8441961.825  56.7591961.825  56.9191961.824
  57.1141961.822    57.61961.809  58.1581961.789  58.3911961.778   58.681961.769
   61.291961.712  61.9931961.695  62.478 1961.68  63.5151961.643  66.9061961.472
  68.0181961.494  68.1071961.495   69.221961.507  69.6771961.488   70.641961.483
  70.8671961.479  71.6021961.461  72.7051961.413  73.7421961.362  75.8221961.397
  76.3961961.408  82.8781961.687  84.1971961.734   84.481961.741  85.6671961.766
  85.9331961.779  86.5431961.818  87.1921961.852  88.1321961.843  88.2471961.851
  88.2981961.859   88.311961.887  88.3781961.896  88.4381961.902  88.6771961.917
  88.7421961.923   88.781961.928  88.8091961.929  88.8591961.929  88.9721961.928
  89.0081961.928  89.1591961.926  89.3191961.925  89.624 1961.92  89.7721961.916
  89.9151961.914  90.5321961.895  90.7651961.889  90.9411961.887   91.111961.887
  91.256 1961.88  91.2831961.878  92.6841961.862  94.3311961.853  96.2851961.863
  97.0241961.872 102.5391961.938 103.055 1961.92 106.2541961.961 106.3231961.959
  106.361961.958 110.0021961.981 110.041 1961.98 110.1041961.978 111.7321961.969
 111.7481961.968 112.9931961.938 115.6591961.809 117.964 1961.72 120.3081961.611
  125.66 1961.57 132.8921961.839 133.832    1962 134.189    1962  134.77    1962
 135.8571961.885 135.8911961.881     1401961.912

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             100     100     100            .1       .3
Left Levee      Station= -282.86      Elevation= 1961.22

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1961.68  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.05  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1960.63  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1961.14  * Flow Area (sq ft)     *          *   85.71  *          *
* E.G. Slope (ft/ft)     *0.008562  * Area (sq ft)          *          *   85.71  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   45.48  * Top Width (ft)        *          *   45.48  *          *
* Vel Total (ft/s)       *    8.24  * Avg. Vel. (ft/s)      *          *    8.24  *          *
* Max Chl Dpth (ft)      *    2.30  * Hydr. Depth (ft)      *          *    1.88  *          *
* Conv. Total (cfs)      *  7630.0  * Conv. (cfs)           *          *  7630.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   46.76  *          *
* Min Ch El (ft)         * 1958.33  * Shear (lb/sq ft)      *          *    0.98  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    8.07  *          *
* Frctn Loss (ft)        *    1.28  * Cum Volume (acre-ft)  *    1.41  *    7.84  *    2.94  *
* C & E Loss (ft)        *    0.25  * Cum SA (acres)        *    0.91  *    7.57  *    2.75  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -6300

INPUT
Description:
Station Elevation Data    num=     409
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001959.798 -399.151959.784-398.529 1959.77-398.5051959.759-396.3491959.779
-395.6561959.796-384.972    1960-383.2251960.048-378.9321960.173-377.4981960.215
-377.4491960.216-377.4431960.217-375.9161960.268-373.1441960.374-371.3331960.452
-369.8681960.505  -368.91960.549-368.3961960.562 -367.651960.573-367.3261960.575
-366.6331960.579-365.5681960.581-365.4731960.582-365.3411960.581-364.333 1960.58
-363.3391960.575-360.9391960.489-360.8011960.474-360.0741960.447-359.7941960.424
-359.301 1960.37-358.9071960.349  -357.61960.308-355.4511960.225-353.0651960.119
-352.0121960.086-351.9491960.083-351.5281960.075-350.3111960.051-350.0621960.038
-350.0291960.037-349.9891960.036-349.3421960.037-348.8051960.038-348.5651960.038
-348.3871960.042-347.6961960.057-346.9451960.088-346.3841960.111 -346.161960.131
-345.9581960.176-345.0921960.276-336.0031960.432-335.5141960.415-333.3971960.339
-332.7791960.319-328.345    1960-327.506    1960-327.429    1960-326.726    1960
 -326.06    1960-325.662    1960-324.628    1960-324.085    1960-323.297    1960
-322.775    1960-322.488    1960-313.859    1960-311.5041959.232-310.9421959.233
-297.1941959.252-291.635    1959-289.9681958.087-289.795    1958-289.312 1957.73
-288.2221957.204-287.836    1957-287.6211956.975-286.7651956.907-286.2061956.876
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```

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-253.6651958.667-244.6961958.534 -243.831958.426-241.4341958.127-239.508    1958
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-205.6981959.966-205.6821959.968-205.653 1959.97-205.6351959.971-205.613 1959.97
-205.5421959.964 -205.491959.961-205.3741959.956-204.975 1959.93-189.431    1959
-188.5851958.962-187.9411958.916-187.8161958.886-186.6481958.751-185.4871958.735
-180.8191958.685-179.4971958.679-179.0261958.682-178.4931958.694-176.4351958.764
-173.6421958.898 -171.861958.966-170.894 1958.99-170.436    1959-169.4741959.062
-168.1071959.195-167.3921959.226-166.0711959.275-165.7961959.297-165.5231959.389
-165.4541959.506-160.8381959.554-160.0641959.562-159.9441959.553-159.2311959.502
-158.2531959.443-156.9321959.362-150.121    1959-145.127    1959-144.951    1959
-144.842    1959-144.6631959.025-144.6011959.029-144.4881959.034-139.9931959.492
-139.2591959.507-136.1851959.571-134.3031959.623-132.3411959.692-129.8591959.792
-125.088    1960-123.4211960.177-123.4131960.177-123.3551960.175-123.3541960.174
-123.3431960.173-123.1711960.145-122.288    1960 -121.281959.743-121.1741959.744
-119.6831959.476-119.6041959.462-118.6411959.283-118.3761959.254-116.9351959.231
-116.8731959.253-116.6181959.278-115.9361959.323-113.7811959.428-112.2321959.491
-110.6561959.537-110.0121959.556 -109.941959.558-108.7621959.597-101.6151959.838
 -100.861959.869 -97.303    1960  -96.731960.018 -96.7181960.018 -96.0081960.029
 -96.0011960.029 -95.9911960.029 -95.1941960.025 -95.1851960.025  -94.361960.011
 -94.3421960.011 -93.828    1960 -92.764 1959.77 -89.211    1959 -88.4321958.963
 -87.3691958.873 -86.1211958.728 -85.1391958.679 -84.6021958.621 -84.3431958.656
 -84.0661958.671 -83.5541958.683 -81.9481958.707  -77.281958.856 -74.263 1958.99
 -73.947    1959 -67.7411959.184 -66.1831959.231 -59.3381959.426 -49.0261959.437
  -48.831959.423 -48.5991959.425 -47.9291959.448 -47.1171959.467 -45.7751959.496
 -44.8021959.511 -43.6721959.544 -41.993 1959.56 -41.0771959.568 -39.5111959.616
 -37.4021959.628 -36.4691959.634 -35.8521959.656 -35.1271959.677  -32.761959.682
  -32.481959.693  -32.221959.707 -31.7031959.742 -31.5861959.754 -31.3311959.788
   -31.21959.796 -31.0421959.801 -30.8371959.809 -30.6591959.818 -30.4051959.829
 -30.2821959.832 -29.9251959.838 -27.773 1959.82 -27.7071959.815 -27.4381959.784
 -27.2691959.785 -26.6041959.797 -26.3441959.802 -25.783 1959.81 -25.5921959.814
 -25.3331959.817 -24.4981959.828 -24.2861959.831 -24.1821959.835 -24.0661959.844
 -23.9981959.846 -23.8261959.846 -23.5181959.844 -23.1451959.841 -22.8141959.839
 -22.6181959.836 -22.5351959.834 -22.4761959.826 -22.423 1959.81 -22.2371959.796
 -22.0561959.777  -21.681959.752 -21.6541959.747 -21.5591959.743 -20.865 1959.74
 -19.5271959.733 -19.2471959.729 -11.6341959.646 -11.3971959.646 -11.1161959.639
  -11.091959.639 -10.5131959.595 -10.4371959.578  -5.0171959.442  -4.1141959.459
  -3.6291959.465  -3.1891959.465   -2.851959.459  -2.6411959.448  -2.5731959.437
       01959.432   1.9571959.428   3.5271959.465   3.9781959.481   4.4151959.512
   4.7131959.521   5.0961959.528   5.8911959.537   6.761 1959.55   8.5831959.589
   9.3681959.603  11.9951959.631  17.6121959.709  20.1251959.749   21.371959.774
  26.0691959.883  28.7671959.935  28.8911959.938   29.441959.946    30.81959.965
  30.9981959.969  31.1641959.972   31.361959.976  31.4131959.977  31.5691959.979
  31.644 1959.98  31.7341959.981  31.842 1959.98  31.8521959.979  31.8851959.978
  32.0461959.975  32.1191959.973   32.351959.964  32.7931959.967  32.8451959.965
  33.6821959.948  42.7191959.969  42.7541959.969  43.9131959.952  45.8071959.907
  45.935 1959.91  46.4051959.924  46.4581959.925  46.5261959.925  46.6271959.924
  47.4791959.918  48.9711959.887   50.261959.852  51.1131959.821  51.3511959.804
   51.361959.645  55.6131959.549  58.8681959.604   58.981959.611  59.4721959.611
  60.7781959.599  62.0141959.581  65.1651959.543  67.3591959.512   69.011959.495
  75.8461959.617  75.9041959.628  76.3241959.663  76.6631959.713  76.9741959.738
  78.4331959.934  79.952    1960  80.205    1960  80.799    1960  81.593    1960
  84.456    1960  86.281    1960  93.553    1960  93.6551960.019  93.8031960.052
  93.8311960.058  93.837 1960.06  93.839 1960.06  95.9751960.575   97.511960.998
  97.519    1961  99.655    1961   99.74    1961  99.856    1961 101.2341960.625
 102.727 1960.19  103.16    1960 103.4561960.011 103.6741960.013 103.6771960.013
 103.7821960.009 103.7971960.008 103.8731960.012 105.8021960.189 114.624    1961
  115.321960.923 116.1121960.922 117.4761960.892 118.9031960.844 119.9061960.794
 120.9541960.757 122.0631960.707 123.7341960.603 126.8951960.372 131.636    1960
 132.481 1959.96 133.1621959.903 138.2841959.783     1401959.787

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3
Right Levee     Station= -211.25      Elevation=    1960

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1960.19  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.49  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1958.70  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1959.15  * Flow Area (sq ft)     *          *   72.01  *          *
* E.G. Slope (ft/ft)     *0.029790  * Area (sq ft)          *          *   72.01  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   76.31  * Top Width (ft)        *          *   76.31  *          *
* Vel Total (ft/s)       *    9.80  * Avg. Vel. (ft/s)      *          *    9.80  *          *
* Max Chl Dpth (ft)      *    1.83  * Hydr. Depth (ft)      *          *    0.94  *          *
* Conv. Total (cfs)      *  4090.4  * Conv. (cfs)           *          *  4090.4  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   77.08  *          *
* Min Ch El (ft)         * 1956.86  * Shear (lb/sq ft)      *          *    1.74  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   17.03  *          *
* Frctn Loss (ft)        *    1.45  * Cum Volume (acre-ft)  *    1.41  *    7.66  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *    0.91  *    7.43  *    2.75  *
************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
```

0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -6400

INPUT
Description:
Station Elevation Data num= 411

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001958.249	-397.7151958.216	-397.5991958.215	-396.6811958.207	-394.7111958.189					
-393.9051958.172	-393.5921958.164	-393.4311958.161	-392.7041958.152	-392.581958.148					
-392.4631958.145	-392.3511958.144	-392.1811958.144	-391.9671958.145	-391.7291958.146					
-390.7871958.159	-390.2971958.165	-388.5351958.167	-387.9851958.168	-387.861958.168					
-385.018 1958.19	-383.2781958.183	-371.7151958.269	-370.065 1958.26	-368.321 1958.27					
-366.0211958.283	-365.4361958.284	-364.951958.285	-362.6711958.283	-361.8941958.277					
-359.2221958.251	-359.0291958.252	-358.6561958.255	-357.0671958.275	-354.0131958.311					
-353.8321958.313	-350.0311958.352	-348.5671958.363	-348.4851958.363	-347.1881958.375					
-346.3251958.383	-342.3131958.407	-337.9781958.434	-335.7091958.441	-332.6311958.469					
-332.0011958.474	-331.9931958.475	-331.0881958.485	-325.5591958.547	-323.2791958.561					
-321.4681958.551	-319.8911958.524	-318.5121958.492	-317.459 1958.47	-316.773 1958.46					
-316.181958.456	-316.0331958.462	-313.0821958.497	-312.6581958.506	-312.4811958.513					
-312.4711958.529	-310.81958.524	-306.9051958.513	-306.834 1958.51	-306.7971958.508					
-306.3771958.492	-306.1231958.486	-306.0451958.484	-305.1971958.462	-304.3361958.435					
-304.0991958.428	-300.906 1958.33	-300.3211958.317	-300.1821958.314	-297.2991958.249					
-297.1881958.247	-297.1451958.246	-296.331958.225	-296.1931958.221	-296.1381958.219					
-294.9871958.181	-294.9571958.173	-294.946 1958.17	-294.6371958.089	-294.6311958.089					
-294.6251958.088	-294.4381958.064	-294.4181958.063	-294.3911958.062	-293.341 1958.03					
-293.181958.015	-293.028	1958	-292.983	1958	-292.111	1958	-292.02	1958	
-285.0821957.397	-283.065 1957.23	-282.2381957.171	-281.4131957.122	-281.2021957.106					
-280.9711957.084	-280.304	1957	-280.2361956.948	-278.642	1956	-269.3271955.617			
-268.8971955.594	-268.8581955.583	-268.0141955.565	-264.4451955.412	-263.9221955.397					
-263.3121955.393	-262.2631955.399	-258.2141955.434	-255.8151955.458	-253.8281955.483					
-250.3871955.527	-248.6951955.516	-242.977 1955.6	-241.7561955.631	-239.724 1955.7					
-239.192 1955.72	-235.6211955.856	-235.0191955.856	-232.163	1956	-221.2381956.828				
-220.7191956.875	-220.6091956.893	-219.9151956.911	-219.8731956.903	-219.7931956.895					
-219.5631956.876	-219.4411956.859	-219.3141956.832	-219.1071956.799	-218.746 1956.85					
-217.687	1957	-217.0251957.164	-214.4991957.729	-214.3851957.754	-213.237	1958			
-210.306	1958	-208.465	1958	-207.992	1958	-207.5 1957.96	-204.9421957.767		
-201.8261957.557	-198.0951957.322	-194.863	1957	-185.7251956.763	-183.2631956.704				
-180.5831956.643	-173.731956.501	-170.2621956.433	-162.7881956.293	-161.3861956.264					
-160.4881956.241	-159.8831956.224	-159.3711956.213	-158.8251956.209	-158.2831956.209					
-157.8371956.213	-157.571956.219	-157.3551956.232	-157.043 1956.24	-156.8931956.249					
-155.7181956.395	-155.3131956.443	-151.661956.883	-151.61956.883	-151.291 1956.92					
-150.627	1957	-148.5481957.853	-148.01	1958	-145.4491958.052	-144.4461958.063			
-143.3361958.079	-142.5151958.087	-141.5691958.086	-141.2491958.079	-140.784 1958.06					
-138.8561958.009	-138.639	1958	-136.681957.851	-136.6371957.848	-134.7721957.734				
-131.9111957.522	-129.6611957.405	-129.2611957.364	-128.979	1957.3	-122.5621957.306				
-120.8281957.389	-117.8541957.515	-116.7821957.551	-115.2921957.607	-112.4951957.701					
-110.3521957.764	-105.9531957.916	-104.1941957.987	-103.947	1958	-103.56	1958			
-95.496 1958.17	-94.021958.111	-93.738	1958.1	-93.4461958.072	-93.131958.061				
-91.751958.048	-90.0461958.024	-88.938	1958	-87.7381957.968	-87.7311957.968				
-84.9641957.861	-82.266 1957.77	-80.5241957.699	-78.7321957.616	-77.328 1957.54					
-77.0121957.539	-73.3561957.578	-70.29 1957.62	-69.2971957.641	-68.631957.662					
-68.221957.683	-67.401 1957.76	-66.0781957.922	-65.303	1958	-56.818 1958.74				
-56.4051958.749	-55.992 1958.74	-54.7471958.842	-54.1421958.898	-54.0841958.901					
-54.0041958.903	-53.8511958.905	-53.3781958.912	-53.1821958.915	-53.0661958.915					
-53.0091958.914	-52.9581958.912	-51.8771958.903	-51.6841958.901	-51.3761958.895					
-49.7921958.867	-49.351958.857	-49.0371958.848	-48.2871958.821	-47.5241958.796					
-47.2711958.791	-46.5051958.778	-43.746 1958.69	-42.8061958.667	-41.9971958.645					
-40.9791958.602	-40.1641958.571	-38.844 1958.53	-31.8591958.332	-30.5531958.298					
-29.8891958.283	-29.3881958.276	-27.4031958.256	-26.9931958.249	-26.781958.251					
-26.5211958.244	-26.5081958.243	-26.2851958.257	-16.0761958.326	-15.1771958.313					
-13.691958.303	-12.2011958.274	-11.7021958.264	-9.4081958.261	-8.4381958.256					
-7.5551958.252	-4.6751958.234	-1.8431958.216	-1.5011958.209	-.442 1958.18					
-.196 1958.17	-.0531958.165	01958.164	.2751958.156	.548 1958.15					
.891958.145	1.5781958.135	2.0131958.119	2.1331958.117	2.2061958.116					
2.2681958.113	2.2961958.112	2.3631958.112	2.5911958.115	2.6791958.117					
2.944 1958.12	3.0321958.121	3.171958.123	3.6931958.127	3.8421958.129					
3.9131958.131	3.9941958.137	4.0531958.138	4.2071958.138	4.4761958.137					
4.7841958.135	5.0361958.134	5.171958.132	5.2121958.131	6.021958.122					
6.4071958.134	6.6071958.136	7.3721958.144	7.811 1958.15	8.4631958.156					
8.5191958.157	8.9631958.174	9.868 1958.2	10.2531958.211	12.9021958.202					
13.0021958.204	15.043 1958.21	16.0941958.213	16.7891958.218	19.0161958.235					
20.6081958.252	21.2091958.258	22.4131958.277	22.911958.293	23.0561958.308					
23.7681958.457	29.6351958.404	29.8051958.391	30.6961958.343	32.381 1958.15					
32.8221958.121	35.949	1958	44.165	1958	47.291	1958	49.484	1958	
50.6131958.068	52.3421958.166	53.117 1958.21	57.092 1958.42	59.5521958.609					
59.9871958.637	60.3441958.651	60.8371958.664	61.3661958.674	61.83 1958.68					
62.169 1958.68	62.4181958.675	62.986 1958.65	65.464 1958.46	66.3581958.407					
66.6791958.418	71.949 1958.18	72.1451958.179	72.3561958.174	73.828 1958.14					
74.1681958.123	74.341958.118	74.8971958.113	75.0751958.116	75.2871958.125					
75.6931958.152	75.881958.159	76.261958.173	77.1351958.244	77.7681958.305					
78.6891958.404	81.2371958.698	83.864	1959	85.1161959.032	85.1761959.033				
85.2261959.033	86.297 1959.05	86.661959.052	87.4771959.058	87.705 1959.06					
88.371959.062	89.1721959.064	91.331959.064	91.4351959.064	93.5711959.053					
99.3331959.012	100.535	1959	101.831958.982	101.968 1958.98	103.0181958.956				
104.9051958.903	106.849 1958.84	108.171958.814	109.1361958.807	110.331958.812					

```
  115.121958.888 115.1841958.889 116.5261958.901 116.6991958.899 117.773  1958.9
 118.5621958.893 120.0061958.887  123.111958.836  125.041958.799 125.646 1958.78
 127.0581958.697  128.091958.657 128.5941958.629 129.6541958.527  130.041958.506
 130.4121958.497 131.4921958.476 131.8231958.463 132.341 1958.43  139.071958.384
     1401958.455

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3
Right Levee     Station= -213.24      Elevation=    1958

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1958.24  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.96  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1957.28  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1957.47  * Flow Area (sq ft)     *          *   89.68  *          *
* E.G. Slope (ft/ft)     *0.012015  * Area (sq ft)          *          *   89.68  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   67.12  * Top Width (ft)        *          *   67.12  *          *
* Vel Total (ft/s)       *    7.87  * Avg. Vel. (ft/s)      *          *    7.87  *          *
* Max Chl Dpth (ft)      *    1.88  * Hydr. Depth (ft)      *          *    1.34  *          *
* Conv. Total (cfs)      *  6440.8  * Conv. (cfs)           *          *  6440.8  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   67.52  *          *
* Min Ch El (ft)         * 1955.39  * Shear (lb/sq ft)      *          *    1.00  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    7.84  *          *
* Frctn Loss (ft)        *    1.80  * Cum Volume (acre-ft)  *    1.41  *    7.47  *    2.94  *
* C & E Loss (ft)        *    0.16  * Cum SA (acres)        *    0.91  *    7.26  *    2.75  *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -6500

INPUT
Description:
Station Elevation Data    num=     358
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************
    -4001956.535-399.4531956.524-399.311 1956.52 -398.971956.511-398.7251956.504
-398.1371956.487-395.4081956.423-391.7051956.337 -387.291956.223-384.1231956.142
-381.4681956.069-379.6171956.019-379.2941956.008-379.052    1956-378.7961955.966
-378.7511955.927 -367.211955.577-363.8151955.624-360.4261955.679-358.0461955.726
-356.5241955.978-356.468    1956-356.152    1956-354.649    1956-354.1471956.058
    -3541956.074-353.0971956.091-351.5911956.119-351.0931956.128-349.4351956.155
-348.1071956.177-347.5741956.185  -345.51956.219-345.1211956.225 -344.84 1956.23
-344.1421956.243-344.0631956.244-343.9941956.246-343.8691956.255-343.8561956.257
-343.8441956.257-342.3151956.309-341.5341956.336-340.9421956.298-340.8861956.294
-340.668 1956.28-340.3081956.267-340.1811956.263-337.9291956.234-336.5221956.216
-334.8011956.185-333.7071956.156-331.4981956.079-331.4061956.077-329.7861956.049
-324.931    1956-323.554    1956-322.868    1956 -315.971956.164-315.2231956.183
-311.9131956.265-310.8631956.296-310.2891956.317-309.5871956.353-309.2941956.384
-305.6041956.507-302.9381956.545-301.936 1956.56-300.4481956.583-298.4491956.617
-296.5561956.653-296.2061956.662-296.1411956.666-295.9681956.677-295.8971956.681
-295.0631956.705-291.7311956.713-290.9631956.714-290.4761956.713-289.6021956.705
-286.8031956.683-285.4571956.672-284.8591956.667-284.7791956.665-284.6111956.644
-284.2351956.622  -283.61956.599-283.4281956.582-282.9771956.515-282.7711956.502
-282.5781956.496-281.9261956.511-281.8651956.512-280.7271956.527  -280.41956.524
-279.7271956.531 -277.431956.557 -276.921956.558-276.5841956.562-276.3231956.571
-276.2471956.591-276.1841956.667-276.1081956.669-276.0361956.678-275.6091956.715
-274.8861956.721-272.6941956.738-272.1971956.744-271.2371956.759-271.0081956.763
-270.9711956.762-270.3441956.677-270.0081956.617-268.9951956.479 -267.19 1956.21
-266.897 1956.22-266.715 1956.23-266.4231956.261-265.721    1956 -264.321955.353
-262.903    1955-261.1081954.866-260.9251954.852-250.3521954.061-249.225    1954
-247.7721953.976 -244.841953.937-235.1361953.822-229.662 1953.87-227.446    1954
-227.1161954.585-226.957    1955-226.4481955.915-226.417    1956-225.754    1956
 -225.27    1956-223.111    1956-205.5761955.626-201.6741955.555-200.1581955.526
-187.9871955.262-180.9431955.101-176.521    1955-173.7031954.808-173.5781954.805
 -170.891954.578-170.804 1954.57-170.6431954.541-170.5611954.467-169.6551954.344
-169.4791954.309-168.9971954.275-168.7091954.257-168.5191954.248-167.4631954.168
-165.9011954.138-165.4211954.142-164.8161954.149 -164.751954.148-164.7481954.144
-164.6791954.141-164.458 1954.14-163.3631954.143-163.2261954.144-162.9731954.149
-162.3371954.164-161.8541954.177-160.1661954.231-159.8151954.245-159.3421954.271
-157.5481954.342 -155.821954.403-155.6251954.808-155.4211954.839-155.0181954.845
-154.7581954.842-154.5931954.867-153.731    1955-153.175    1955-153.084    1955
-153.015    1955-137.175    1955-135.489    1955-133.895    1955-133.182    1955
-131.5661955.211-128.6381955.712-127.608 1955.88 -126.87    1956-124.6511956.373
 -124.341956.418-124.2271956.413-121.5621956.788-121.4081956.784-120.826 1956.74
 -120.181956.698-118.5061956.596-117.5361956.537-117.1881956.524-116.3941956.495
-115.5581956.423-114.0841956.419-113.995 1956.41-113.5831956.366-110.8451956.389
```

-110.6111956.391-110.5041956.389-109.2351956.373-107.8551956.334 -106.61 1956.29
-105.3431956.215-103.768 1956.17-103.7231956.167-103.2481956.135-103.1341956.126
-101.8741956.083-101.6511956.083-101.249 1956.08-100.5251956.074-100.2971956.072
-100.2271956.071 -99.8471956.088 -99.6711956.144 -99.5191956.144 -79.6151956.146
  -76.09   1956 -71.654   1956 -70.346   1956 -67.188   1956 -63.938   1956
 -63.1691955.962 -62.4061955.934 -61.3851955.912 -60.8921955.907 -60.529 1955.91
 -60.2851955.918 -60.0511955.936 -59.878   1956 -57.7911956.401   -56.7 1956.4
 -54.3881956.664 -51.3021956.622 -46.7791956.559 -44.0151956.663 -43.1491956.689
 -42.5241956.704 -40.4421956.734 -40.2071956.741 -40.0321956.752 -39.8471956.761
 -39.7281956.769 -39.6691956.781 -37.6111956.761 -37.5661956.755 -37.3371956.742
 -37.1741956.735 -35.8761956.701 -35.234 1956.68 -34.5931956.651 -34.0071956.621
 -30.7471956.475 -28.891 1956.45 -18.674   1956 -17.6351955.957 -17.2721955.945
 -16.7581955.978 -15.999   1956 -4.824 1956.22 -3.4661956.246 -2.5461956.268
       01956.314   5.1721956.409   6.2751956.429   8.3031956.473   8.671956.481
   8.9451956.485   9.481956.493 10.1211956.499   10.511956.502 11.7121956.507
  13.0721956.503 14.5411956.494 21.1041956.443 21.6291956.439 22.1941956.437
  33.9831956.362 34.942 1956.35 35.9231956.323 36.0931956.318 36.2651956.311
  39.0921956.255 40.486 1956.23 41.5391956.215 42.6121956.269 42.8651956.365
  43.1361956.392 45.0441956.548 46.4931956.643 47.7781956.744 50.616   1957
  50.6851957.003 50.6911957.003 51.192   1957 51.336   1957   59.17   1957
  61.634   1957 62.782   1957 69.943   1957 71.085   1957 72.575   1957
  73.083   1957 75.029   1957 76.675   1957 79.442   1957 80.632   1957
  81.645   1957 83.552   1957 85.042   1957 85.593   1957 90.9021957.078
  94.343   1957 94.3561956.999 95.5761956.942 96.8091956.867 97.3461956.821
  97.7471956.805 98.373 1956.8 99.2961956.812 101.9351956.877 106.39   1957
 110.992 1957.1 111.3921957.109 111.4541957.098 111.5521957.092 111.6611957.088
 111.8191957.086 112.1271957.083 112.2831957.083 112.4881957.082 112.7171957.083
 112.9341957.084 113.1111957.085 113.2461957.087 113.4161957.089 114.0871957.102
  114.721957.118 115.1081957.126 115.9351957.147 116.6341957.162 117.5381957.186
 117.8531957.193 118.5651957.208 119.072 1957.22 119.7651957.235 120.6921957.251
  121.831957.264 124.7631957.285   1401957.573

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035   -400   .025   140   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
          -400   140   100   100   100   .1   .3
Left Levee   Station= -272.69   Elevation= 1956.74
Right Levee   Station= -226.42   Elevation=   1956

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1956.34 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.33 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 1956.01 * Reach Len. (ft)   * 100.00 * 100.00 * 100.00 *
* Crit W.S. (ft)   * 1956.01 * Flow Area (sq ft)   *   * 153.04 *   *
* E.G. Slope (ft/ft)   *0.006418 * Area (sq ft)   *   * 153.04 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   * 158.58 * Top Width (ft)   *   * 158.58 *   *
* Vel Total (ft/s)   *   4.61 * Avg. Vel. (ft/s)   *   *   4.61 *   *
* Max Chl Dpth (ft)   *   2.19 * Hydr. Depth (ft)   *   *   0.97 *   *
* Conv. Total (cfs)   * 8812.5 * Conv. (cfs)   *   * 8812.5 *   *
* Length Wtd. (ft)   * 100.00 * Wetted Per. (ft)   *   * 160.50 *   *
* Min Ch El (ft)   * 1953.82 * Shear (lb/sq ft)   *   *   0.38 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   1.76 *   *
* Frctn Loss (ft)   *   0.75 * Cum Volume (acre-ft) *   1.41 *   7.19 *   2.94 *
* C & E Loss (ft)   *   0.02 * Cum SA (acres)   *   0.91 *   7.00 *   2.75 *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth. This indicates that there
         is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -6600

INPUT
Description:
Station Elevation Data   num=   410
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
    -4001954.116-397.422   1954 -389.94   1954-386.732   1954-385.551   1954
-382.824 1954.08 -369.581954.473-363.1331954.657-360.9891954.714-359.2181954.764
-358.2571954.787-358.1741954.789-356.5821954.825-356.2661954.833-356.2241954.834
-354.4391954.887-354.1941954.895-353.8311954.908-353.782 1954.91 -353.751954.912
-353.7451954.913-353.6611954.917-353.6491954.918-353.4591954.925-353.4331954.926
-353.349 1954.93-353.338 1954.93-353.2691954.932 -353.261954.933-353.1931954.936
-353.1841954.936-353.1041954.938-353.032 1954.94-353.031 1954.94 -353.011954.941
-352.953 1954.94-352.952 1954.94-352.944 1954.94-352.933 1954.94-352.8721954.939
-352.8471954.938-352.8011954.935-352.6971954.933-352.484 1954.93-351.9431954.923
-351.7451954.902-351.695 1954.9-351.5271954.899-350.4681954.899-350.2191954.899
-349.9411954.897-347.0621954.866-346.9341954.866-341.5111954.797-341.3421954.795
-340.769 1954.8 -340.31954.802-339.3071954.803-333.5281954.747-329.7551954.725

-327.4161954.725-325.1231954.738-320.0951954.738-320.0681954.738-319.5261954.737
-319.5241954.737-316.6131954.738-315.5731954.723   -3151954.715-312.4151954.672
-311.2771954.663-308.9441954.653-300.7051954.627-300.5441954.627-300.3741954.628
-297.553 1954.63-297.0471954.631 -293.281954.614-291.1531954.595-290.2661954.576
-289.1351954.497-288.6791954.475-288.0151954.456-287.4811954.445-285.5051954.473
-285.2141954.481-285.1041954.489 -285.041954.514-284.7111954.525-284.5681954.531
-284.4031954.553 -284.111954.563-283.495 1954.57-278.9131954.646-278.3271954.657
 -276.84 1954.67-272.263 1954.68-268.8311954.703-267.1481954.721-266.2331954.725
-265.1171954.733-261.7481954.752-261.6251954.757-261.2581954.791-261.1621954.794
-260.4351954.809 -260.36 1954.81-260.3071954.809-259.9861954.792-259.5131954.764
-259.2171954.746-258.0551954.667-257.1951954.589-255.5161954.446-253.1371954.225
-252.905 1954.23-250.794   1954-250.4431953.643-249.675   1953-244.7841952.725
 -244.271952.701-243.2561952.667-241.5361952.626-239.1021952.581-236.3551952.538
-234.5741952.533-230.9531952.482-229.1781952.458-226.849 1952.43-224.6471952.412
-222.4711952.402-220.3961952.398-215.3271952.397-214.8451952.408-214.591 1952.41
-214.4091952.415-214.2261952.426-211.952 1952.51-204.2241952.784-203.3021952.814
-203.2791952.799-203.0981952.798 -202.131952.816-201.8151952.836-201.4051952.859
 -201.341952.915-200.9511952.931-200.5921952.932-200.1411952.936-198.371   1953
-198.251   1953-198.205   1953-197.622   1953-197.139   1953-195.874   1953
-195.317   1953-194.045   1953-193.273   1953-191.603   1953 -184.42   1953
-181.927   1953-181.158   1953-180.161   1953-179.889   1953-177.853   1953
-177.692   1953-174.705   1953-173.245   1953-173.0581952.986-172.636   1953
-168.7631953.148-168.4381953.161-165.5931953.234-165.2391953.243-163.8291953.255
-162.9421953.263-161.4381953.265-158.781 1953.27-152.9311953.794-152.2771953.815
-151.7461953.847-150.322   1954-150.1291954.017-150.1181954.018-150.1161954.018
-148.5871954.064-148.5171954.066-148.4971954.067-145.8481954.121-145.6721954.125
-145.6141954.126-144.3971954.139-144.3421954.139-144.322 1954.14-143.7151954.136
-143.4161954.134-143.4061954.134-143.3981954.134-143.3861954.134 -143.381954.134
-143.3741954.134-142.6491954.111-140.557   1954-136.688   1954-136.495   1954
-111.366   1954-111.297   1954-111.289   1954-110.793   1954-110.269   1954
-109.271   1954-107.995   1954 -102.8   1954 -99.9971954.872 -99.54   1955
 -99.4921955.011 -98.952 1955.02 -85.8071955.227 -83.6711955.223 -74.4971955.204
 -74.3241955.202 -73.6431955.198 -73.5041955.196 -72.961 1955.19 -72.7651955.186
 -71.9841955.171 -71.7671955.163 -70.8051955.131 -70.2861955.105 -68.18   1955
 -66.2261954.906 -62.0931954.705 -58.6581954.522 -58.0311954.489 -51.8921954.526
   -51.71954.553 -51.5791954.592 -51.2931954.627 -51.0741954.637 -50.7051954.646
 -50.1421954.647 -47.5121954.627 -46.7361954.619 -46.0511954.619 -45.6931954.612
 -45.2491954.608 -37.7271954.499 -36.018 1954.47   -35.2 1954.45 -32.5341954.421
 -31.7361954.401 -31.0671954.384 -30.3851954.364 -29.8041954.352 -29.5561954.346
 -27.9941954.293 -27.7261954.281 -27.4431954.264 -27.1931954.255 -26.336 1954.23
 -25.9511954.261 -25.9281954.274 -25.871954.277 -25.724 1954.28 -25.25 1954.28
  -24.591954.278 -24.463 1954.28 -24.1321954.276 -23.2771954.279 -23.1661954.279
  -21.961954.272 -21.8921954.271 -21.0221954.233 -20.5521954.228 -20.2311954.221
 -19.8451954.209 -19.6561954.205 -19.2951954.201 -18.9551954.197 -18.8511954.193
 -18.6051954.174 -18.561954.174 -18.391954.173 -18.0281954.174 -17.8651954.175
 -17.7671954.176 -17.4321954.189 -17.0091954.202 -16.9141954.206 -16.7151954.219
 -16.359 1954.23 -15.6471954.246 -15.2611954.254 -12.5881954.309 -12.2181954.311
 -10.1961954.339 -8.9361954.358 -6.131 1954.4 -4.0491954.432 -2.7061954.448
   -.9361954.484   -.3331954.484   -.0871954.484   01954.482   .251954.475
   11.911954.521 27.6251954.854 34.335   1955 35.2161955.107   35.521955.143
   35.711955.196 35.7631955.211 36.133 1955.24 36.257 1955.25 36.7071955.274
  36.8621955.283 36.8781955.284 37.2441955.296   37.37 1955.3 37.391 1955.3
  38.0311955.314   38.241955.319 38.301 1955.32 39.2891955.336 39.539 1955.34
   39.711955.343 40.9781955.357 41.0851955.359   41.471955.363 41.5791955.364
  42.9921955.374   43.451955.377 44.7271955.379 45.308 1955.38 45.573 1955.38
  47.6931955.375 49.6051955.363 51.1041955.348 52.905 1955.32 53.6171955.306
  53.777 1955.31 55.4521955.368 55.9231955.388 56.1331955.405 56.236 1955.45
  58.3551955.485 60.9621955.428 61.7851955.399 62.9041955.365 66.3391955.237
  68.289 1955.15 70.7411955.062 72.8221955.002 72.8581955.001 72.902   1955
  77.8481954.908 79.8121954.861   81.781954.824 93.2521954.891 93.2521954.908
  93.6011954.922 94.3991954.934 95.7681954.944 103.3071954.964 104.291954.969
 105.1441954.981 105.938   1955 108.0151955.112 110.6711955.286 113.0191955.439
 114.1451955.512 114.3591955.527 119.3061955.867 121.143   1956 121.879 1956.02
 121.9181956.021 122.316 1956.04 122.3461956.041 122.5811956.052 122.6031956.054
 123.0071956.064 123.0551956.065 123.4851956.076 123.5461956.078 123.7071956.083
 123.7311956.084 124.3061956.103 124.4171956.107 124.9941956.137 125.1431956.144
 126.4051956.176 126.8251956.186 127.8511956.217 128.2611956.229 128.8921956.241
  129.161956.247 129.4671956.249 129.597 1956.25 129.8191956.247 129.9081956.245
  130.421956.213 131.44 1956.15 132.3381956.112 133.6181956.082 134.7821956.048
 135.981   1956 136.5771955.971 136.6241955.969 137.0481955.962   1401955.863

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035   -400   .025   140   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
          -400   140   100   100   100   .1   .3
Right Levee   Station= -145.85   Elevation= 1954.12

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1954.98 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.37 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 1953.62 * Reach Len. (ft)   * 100.00 * 100.00 * 100.00 *
* Crit W.S. (ft)   * 1954.10 * Flow Area (sq ft)   *   *   75.27 *   *
* E.G. Slope (ft/ft)   *0.034353 * Area (sq ft)   *   *   75.27 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   95.51 * Top Width (ft)   *   *   95.51 *   *
* Vel Total (ft/s)   *   9.38 * Avg. Vel. (ft/s)   *   *   9.38 *   *
* Max Chl Dpth (ft)   *   1.22 * Hydr. Depth (ft)   *   *   0.79 *   *
* Conv. Total (cfs)   * 3809.1 * Conv. (cfs)   *   * 3809.1 *   *
* Length Wtd. (ft)   * 100.00 * Wetted Per. (ft)   *   *   95.80 *   *
* Min Ch El (ft)   * 1952.40 * Shear (lb/sq ft)   *   *   1.68 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   15.80 *   *

```
* Frctn Loss (ft)        *    1.25  * Cum Volume (acre-ft)   *    1.41  *    6.93  *    2.94  *
* C & E Loss (ft)        *    0.10  * Cum SA (acres)         *    0.91  *    6.71  *    2.75  *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -6700

INPUT
Description:
Station Elevation Data    num=     313
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
    -4001952.421-399.7641952.417 -398.481952.398 -394.571952.324-392.103 1952.28
-390.7311952.259-390.3461952.252-388.9041952.232 -388.351952.228-388.0921952.228
-387.904 1952.23-387.7131952.236-387.5891952.255 -387.33 1952.27 -387.281952.279
-386.9341952.295 -384.821952.387-383.9241952.367-382.654 1952.35-381.2981952.348
-380.3251952.339-379.1371952.356-375.6231952.324 -374.14 1952.31-372.7231952.337
-371.6911952.327-371.2411952.322-370.4591952.313-369.0251952.284 -367.951952.272
-366.3641952.262-364.2551952.255-360.4041952.246-359.6411952.242-359.5361952.237
-359.1421952.231-358.6071952.234-357.2741952.258-357.2311952.263 -356.941952.271
 -352.241952.356-351.1661952.374-349.7921952.393-347.7631952.447-347.5851952.457
-346.8441952.475-342.6981952.566-338.9971952.651-334.0911952.752-328.8661952.867
-323.298    1953-321.149    1953-316.274    1953-314.705    1953-314.093    1953
-312.138    1953-308.4791952.923 -308.471952.923-307.401 1952.89-306.5431952.855
 -296.881952.672-294.307 1952.67 -290.691952.674-285.9351952.695-279.6741952.746
-272.1471952.822-264.6281952.904-256.4051952.999 -256.33    1953-256.292    1953
-241.707    1953-240.001    1953-239.394    1953-238.324    1953 -235.76    1953
-233.5571952.702-231.8721952.497-228.156    1952 -214.311951.274-210.7741951.168
-209.6641951.115 -208.91 1951.08-207.845 1951.04 -207.681951.035-207.5531951.031
-207.4181951.029-207.0991951.024-207.0451951.024-206.8511951.021-206.6961951.018
-206.5941951.016-206.5481951.014-206.3991951.012-206.3861951.012-206.3511951.012
-206.3431951.012-206.3221951.012-206.3171951.014-206.3071951.015-206.2541951.017
-206.2321951.017 -206.221951.018 -205.231951.021-205.0831951.021-205.0751951.021
 -205.07 1951.02-204.887 1951.02-204.8391951.021-204.8051951.021-204.6961951.022
-204.6461951.023-204.6181951.023-204.5991951.023-204.5831951.023-204.5081951.024
-204.2971951.027-204.2081951.028-203.7161951.036-202.0941951.061-200.8671951.076
-200.6231951.079-200.531 1951.08-199.9081951.083-198.5721951.106-196.9671951.135
-196.3861951.144-195.9751951.151-195.0681951.167-149.928    1952 -149.261952.039
-149.1231952.042-148.7731952.051-140.8971952.414-135.5631952.506-131.0211952.584
-130.5771952.588-128.9191952.598-121.5831952.748-119.0011952.806-115.7371952.887
-110.505    1953-108.3661953.042-108.1221953.047-106.5031953.084-106.3431953.087
-105.808 1953.11-105.7461953.112-105.5331953.142-105.5011953.147-103.1251953.264
-102.386  1953.3-102.1731953.317-102.1011953.323-102.0521953.339-102.0351953.345
-101.8241953.355-101.7451953.359-101.7021953.365-101.6861953.367 -98.8991953.407
 -97.9671953.421 -97.6591953.426 -96.5321953.404 -96.1621953.396 -95.3261953.374
 -94.0421953.315 -93.4821953.274 -92.9811953.262 -91.3851953.234 -90.2331953.206
  -88.221953.174 -87.235 1953.15 -84.6511953.063 -83.5971953.036 -81.819    1953
 -80.6721952.977  -80.621952.976  -77.961952.916   -77.91952.914 -74.258 1952.78
 -68.7961952.648 -66.9561952.611 -65.448 1952.57 -65.1551952.548 -64.8211952.535
 -63.8991952.522 -61.5861952.497 -60.9141952.491 -59.9931952.487 -58.8031952.486
  -54.83  1952.5 -54.4451952.498 -53.3921952.458 -49.2181952.438 -48.3581952.437
 -48.1421952.439 -46.8381952.489 -46.171 1952.54 -45.8661952.581 -44.6131952.649
 -41.9711952.748 -33.579    1953 -21.5921953.325 -17.4051953.438 -16.3441953.454
 -11.492 1953.57  -8.2831953.639  -6.2361953.677  -5.0521953.686  -4.2811953.687
  -4.2391953.676       01953.733  19.816    1954  36.2121953.571  36.7921953.595
  37.9261953.633  39.901 1953.51  41.576 1953.36  41.7351953.365  41.9621953.373
  43.2341953.222  43.6451953.223  44.2051953.165  44.6991953.114  45.5271953.055
  45.7051953.042  45.9061953.037  46.6231953.017  46.6561953.012  46.6661953.009
  46.7081953.007  46.7161953.007  46.7221953.008  46.7291953.008  46.7381953.007
  46.8421953.011  47.5331953.034  47.5721953.032  47.5851953.031   47.831953.024
  47.8561953.024  47.8651953.023  47.9011953.022  47.942 1953.02  47.952 1953.02
  48.1281953.018  48.167 1953.02  48.2241953.024  48.2761953.026  48.3721953.032
  48.3891953.033  48.5571953.037  48.7111953.041   48.861953.046  48.968 1953.05
  49.1181953.057   49.241953.063  49.5891953.077  49.7621953.086  50.2031953.109
  50.6261953.129  50.6651953.131  54.6311953.274  57.3961953.403  60.7521953.559
  64.8491953.733   70.36    1954  76.291    1954   86.46    1954  87.201    1954
  95.264    1954  95.431    1954    95.7    1954 102.946    1954  104.971953.972
 107.2391953.961 108.0871953.965 109.265 1953.99 109.633    1954  111.461954.042
  111.941954.053   112.71954.081 112.8221954.085 113.5441954.139 113.7361954.154
 114.1291954.173 114.2471954.179 115.0571954.201 118.9611954.307 122.0011954.281
 122.055 1954.28 122.9591954.272 124.0361954.274  125.281954.257 126.0091954.247
 128.3121954.162 128.6491954.161 128.8181954.157 131.6361954.156 131.8621954.165
 133.3821954.206 134.3491954.231 134.6721954.241  134.891954.246 136.3371954.272
 136.6331954.278 136.8541954.285 137.0721954.297 137.2021954.311 137.368 1954.32
 137.7211954.334  139.19 1954.38     1401954.403

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3
```

Left Levee Station= -241.71 Elevation= 1953
Right Levee Station= -98.9 Elevation= 1953.41

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1953.37	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.52	Wt. n-Val.		0.025		
W.S. Elev (ft)	1952.85	Reach Len. (ft)	100.00	100.00	100.00	
Crit W.S. (ft)	1952.85	Flow Area (sq ft)		121.57		
E.G. Slope (ft/ft)	0.009123	Area (sq ft)		121.57		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	117.40	Top Width (ft)		117.40		
Vel Total (ft/s)	5.81	Avg. Vel. (ft/s)		5.81		
Max Chl Dpth (ft)	1.84	Hydr. Depth (ft)		1.04		
Conv. Total (cfs)	7391.4	Conv. (cfs)		7391.4		
Length Wtd. (ft)	100.00	Wetted Per. (ft)		117.50		
Min Ch El (ft)	1951.01	Shear (lb/sq ft)		0.59		
Alpha	1.00	Stream Power (lb/ft s)		3.42		
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	1.41	6.70	2.94	
C & E Loss (ft)	0.00	Cum SA (acres)	0.91	6.47	2.75	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -6800

INPUT
Description:
Station Elevation Data num= 369

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-400	1951	398.604	1951	397.45	1951	395.315	1951	392.066	1951
390.682	1951	390.459	1951	389.809	1950.889	389.281	1950.865	384.974	1950.754
374.336	1950.787	372.452	1950.798	370.811	1950.813	369.421	1950.83	368.285	1950.847
366.686	1950.875	363.355	1950.948	360.513	1951	360.009	1951.025	359.743	1951.038
358.693	1951.096	356.606	1951.252	356.467	1951.266	353.241	1951.231	350.861	1951.212
348.666	1951.203	347.436	1951.203	347.103	1951.203	346.871	1951.201	346.044	1951.196
345.376	1951.196	344.589	1951.197	344.221	1951.199	343.898	1951.201	343.741	1951.198
343.638	1951.191	343.292	1951.148	343.255	1951.14	342.398	1951.12	342.112	1951.122
342.008	1951.122	341.898	1951.12	341.834	1951.12	341.549	1951.121	341.311	1951.12
341.021	1951.117	340.362	1951.11	340.276	1951.11	340.061	1951.111	340.006	1951.111
339.921	1951.112	338.541	1951.14	337.743	1951.155	337.276	1951.163	337.008	1951.166
336.369	1951.171	336.138	1951.173	335.912	1951.177	335.017	1951.186	331.244	1951.222
330.341	1951.231	329.754	1951.241	329.135	1951.257	324.102	1951.399	321.41	1951.47
316.254	1951.6	314.599	1951.645	313.245	1951.697	312.086	1951.785	311.231	1951.823
308.822	1951.904	305.713	1952	305.051	1952	303.56	1952	301.773	1952
299.037	1952	298.084	1952	296.76	1952	294.783	1952	294.296	1952
293.313	1952	289.134	1952	288.402	1952	288.126	1952	287.671	1952
287.404	1952	286.298	1951.93	286.291	1951.929	284.824	1951.798	284.018	1951.745
282.244	1951.677	281.467	1951.642	280.378	1951.56	279.743	1951.534	278.858	1951.524
277.043	1951.522	276.603	1951.515	252.163	1952	250.752	1952	250.532	1952
250.494	1952	250.441	1952	249.105	1952	248.826	1952	247.174	1952
245.978	1952	243.959	1952	243.417	1952	234.996	1952	234.177	1952
232.5	1952	230.572	1952	229.03	1952	227.732	1952	223.463	1951.387
222.299	1951.201	222.092	1951.171	220.915	1951	215.667	1950.308	213.399	1950
212.843	1950	210.307	1950	207.541	1950.508	204.99	1951	197.363	1951
196.842	1951	191.377	1950.652	183.078	1950.135	182.579	1950.095	181.394	1950
178.088	1950	167.81	1950	166.136	1950	165.835	1950	165.782	1950
164.331	1950.042	162.077	1950.11	152.231	1950.406	151.221	1950.436	150.265	1950.472
143.227	1950.766	142.669	1950.783	142.273	1950.79	141.501	1950.799	139.415	1950.826
137.116	1950.855	136.688	1950.857	136.099	1950.856	135.153	1950.85	132.41	1951
112.625	1951.554	109.743	1951.63	104.941	1951.756	104.314	1951.77	102.152	1951.811
101.327	1951.817	100.619	1951.822	100.355	1951.823	100.167	1951.827	98.191	1951.862
97.961	1951.864	97.757	1951.868	95.349	1951.886	95.291	1951.886	89.967	1951.832
89.808	1951.825	87.687	1951.815	87.498	1951.806	84.739	1951.693	82.491	1951.632
81.711	1951.601	79.851	1951.53	77.907	1951.448	75.214	1951.361	74.086	1951.317
73.319	1951.272	68.301	1951.373	67.453	1951.493	67.102	1951.563	67.055	1951.577
65.604	1952	52.223	1952.605	48.231	1952.773	45.258	1952.89	43.849	1952.953
43.352	1952.975	43.094	1952.986	43.028	1952.989	43.019	1952.989	43.007	1952.989
42.992	1952.989	42.981	1952.989	42.954	1952.988	42.939	1952.988	42.931	1952.987
42.899	1952.982	42.891	1952.981	42.879	1952.981	42.864	1952.981	42.775	1952.983
42.745	1952.983	42.721	1952.983	42.71	1952.982	42.624	1952.978	42.61	1952.977
42.593	1952.977	42.024	1952.953	40.019	1952.809	38.753	1952.731	38.628	1952.738
38.292	1952.769	38.197	1952.783	37.11	1952.845	36.206	1952.842	35.807	1952.84
35.802	1952.84	35.644	1952.838	35.511	1952.836	35.502	1952.836	35.122	1952.826
34.524	1952.816	33.998	1952.806	33.827	1952.804	33.796	1952.806	32.366	1952.813
27.087	1952.683	22.095	1952.555	16.347	1952.429	1.058	1952	1.008	1951.925
.142	1952	0	1952	.885	1952	1.216	1952	2.472	1952.087
2.683	1952.101	2.781	1952.104	5.167	1952.311	6.069	1952.373	6.588	1952.408
9.516	1952.569	11.568	1952.649	11.669	1952.65	13.041	1952.668	13.711	1952.678
14.013	1952.682	15.234	1952.705	15.615	1952.712	16.139	1952.72	16.255	1952.722
16.423	1952.723	16.455	1952.723	16.582	1952.722	16.605	1952.722	16.816	1952.715
17.468	1952.665	17.757	1952.637	18.577	1952.509	19.099	1952.392	19.503	1952.336

```
  21.7051952.034  21.913    1952  23.5221951.812  24.887 1951.72  25.1211951.713
   25.391951.719  26.5091951.794  28.4951951.991   28.62    1952  35.4121952.328
  36.6941952.386  37.363 1952.42  38.4431952.473  39.2091952.503  44.5651952.784
   44.611952.785  45.1811952.791  46.3131952.845  46.6691952.866  46.7871952.873
  47.3081952.885  47.5121952.893  47.6821952.902  47.6951952.903  47.8281952.907
  47.8471952.908  47.9211952.913  47.9481952.916  48.2911952.925  48.3251952.926
  48.6191952.919  48.7111952.916  48.8211952.913  49.0031952.907  49.1851952.903
  49.5451952.895  49.7941952.887  49.8761952.884      501952.876  50.1361952.866
  50.2451952.848  50.324 1952.84  51.1171952.804  52.3811952.735  57.8381952.341
  58.372 1952.32  62.178    1952  64.2791951.652  65.229  1951.5  65.8491951.416
  67.9511951.401  68.319 1951.44  68.5481951.451  70.0051951.463  70.586 1951.47
  71.0221951.482  72.111 1951.55  72.7441951.604  72.9541951.633  73.9071951.734
  75.987    1952  81.7691952.185  86.6811952.327  88.7741952.388   92.831952.488
  93.5211952.496  94.084  1952.5  94.6851952.501  95.1841952.498  95.4831952.491
  95.9361952.452  98.0151952.331  98.9131952.284 100.4061952.204 104.358    1952
 105.0351951.867 106.3631951.699 106.4531951.693 106.7691951.713 109.1251951.893
 110.641    1952 113.7151952.466 113.9211952.465 115.687 1952.75 116.0511952.791
 116.5861952.834 116.7241952.842 116.8091952.844 116.9011952.843 117.2071952.832
 117.6941952.819 118.7231952.802 119.4481952.795 119.8291952.789 120.1221952.783
  120.631952.779 121.0091952.773 121.499 1952.77 122.5741952.728 122.774 1952.72
 128.832 1952.52   129.11952.505 129.7461952.434  129.821952.431  130.091952.433
  136.041952.508 136.7071952.518 137.3031952.531     1401952.613

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3
Left Levee      Station=    -235      Elevation=    1952
Right Levee     Station=  -95.35      Elevation= 1951.89

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1952.26  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.69  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1951.57  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1951.71  * Flow Area (sq ft)     *          *  105.82  *          *
* E.G. Slope (ft/ft)     *0.013723  * Area (sq ft)          *          *  105.82  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  112.55  * Top Width (ft)        *          *  112.55  *          *
* Vel Total (ft/s)       *    6.67  * Avg. Vel. (ft/s)      *          *    6.67  *          *
* Max Chl Dpth (ft)      *    1.57  * Hydr. Depth (ft)      *          *    0.94  *          *
* Conv. Total (cfs)      *  6026.7  * Conv. (cfs)           *          *  6026.7  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  112.81  *          *
* Min Ch El (ft)         * 1950.00  * Shear (lb/sq ft)      *          *    0.80  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.36  *          *
* Frctn Loss (ft)        *    1.11  * Cum Volume (acre-ft)  *    1.41  *    6.44  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.91  *    6.20  *    2.75  *
*********************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -6900

INPUT
Description:
Station Elevation Data    num=     299
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
    -4001949.436-399.6141949.438-399.4941949.439-398.5921949.444-395.6161949.457
 -395.591949.457-395.3171949.458-394.4961949.463-387.622 1949.48-385.0831949.483
-383.7831949.478-383.4951949.468-379.1651949.517-378.9391949.522-376.5251949.554
-375.5821949.567-373.9551949.598-373.0951949.613 -371.771949.631-369.8481949.654
 -358.421949.766 -347.96    1950-346.155    1950-343.058    1950-343.032    1950
 -334.37    1950-334.299    1950-332.357    1950 -332.34    1950-332.041    1950
  -329.61950.054-317.6821950.315-304.0541950.624-287.244 1950.98-286.9071950.985
  -286.71950.988-286.5581950.989-286.444 1950.99-286.2551950.991-286.1821950.992
-286.1331950.992-285.615    1951-283.369    1951 -283.32    1951-281.285    1951
-279.491    1951-277.608    1951-274.276    1951-274.139    1951-272.431    1951
-272.217    1951-268.148    1951-260.9321950.799-259.3641950.747-259.2571950.743
 -254.44    1950-252.978    1950-251.891    1950-240.907    1950-237.514    1950
 -229.24    1950-229.174    1950-227.652    1950-227.013    1950-223.615    1950
-220.442    1950-218.492    1950 -216.88    1950-214.809    1950-177.7161949.343
-177.6481949.345-177.3931949.351-176.2451949.263-176.1221949.263-175.8361949.264
-174.558 1949.18-174.0911949.175-173.4041949.136-173.2581949.128-172.9321949.113
-172.2181949.082-172.1411949.079-171.7011949.068-171.029 1949.05-170.7271949.037
-170.3031949.036 -169.671949.035 -169.57 1949.03-169.0371949.037-168.5211949.044
-168.1691949.056 -167.021949.096 -166.451949.148-166.3111949.194-165.9141949.205
-164.9431949.211 -163.751949.204-162.7091949.199-161.7071949.189-159.4751949.168
-158.6311949.153-158.3051949.147-157.5431949.126-157.4351949.123-153.867    1949
-153.2071948.946-152.1991948.907-149.9661948.833-149.5611948.807-149.1191948.798
-148.8681948.796-148.6861948.797-147.212 1948.85-146.1161948.909-145.5931948.969
-145.101    1949-143.6161949.193-143.5451949.264-142.8321949.355-140.8961949.279
-140.6021949.218-140.2871949.181 -137.43    1949-130.283    1949-124.456    1949
-118.048    1949-112.919    1949-112.558    1949-112.113    1949-111.767    1949
-110.751    1949-110.2491949.163-108.8791949.536-107.5781949.845-106.822    1950
```

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-106.657    1950-106.297    1950-105.292    1950-104.714    1950-103.282    1950
 -98.4221949.882 -96.8551949.822 -96.0191949.765 -95.4551949.664 -94.9971949.638
  -94.461949.631   -94.11949.639 -92.0861949.708 -85.393    1950 -72.7551950.765
 -70.4471950.903 -69.9371950.936 -68.337    1951 -67.4381951.021 -55.9941951.248
 -55.7541951.246 -49.586 1951.36 -48.256 1951.38 -47.6611951.396 -47.5791951.426
 -47.3661951.436 -46.7341951.448 -46.4731951.449 -46.2511951.446 -46.028 1951.44
 -45.2851951.409 -44.9961951.399 -44.9161951.397 -42.5451951.349 -39.7841951.294
 -38.0911951.256 -38.0811951.256 -33.9221951.154 -31.9791951.103 -28.137    1951
 -24.6771950.681 -24.4431950.659 -22.7041950.472 -22.4541950.454 -21.225 1950.38
 -19.0871950.278 -18.7781950.258 -18.6461950.244 -18.4261950.227 -18.1531950.212
 -17.9331950.191 -17.7961950.187 -17.1071950.178 -17.0021950.177 -16.9131950.177
 -16.8621950.179 -16.4421950.227 -15.5481950.336 -15.0331950.378 -14.4781950.408
 -13.8341950.462 -13.2391950.498  -12.561950.545 -11.1211950.662   -9.491950.764
  -5.5531950.977  -5.167    1951  -4.2841951.104  -3.4731951.158  -2.289 1951.21
   -.0461951.288       01951.291    .8161951.327   1.182 1951.36   1.7691951.458
    2.041951.483   2.6481951.513   3.2411951.529    3.561951.531    3.851951.528
   4.0861951.519    4.271951.506   4.4881951.482   4.7081951.324   5.7451951.164
   6.807    1951  25.0651950.495   33.651950.258  39.8171950.127  39.8451950.129
  39.851 1950.13  42.049 1950.02  42.456    1950  46.201    1950  48.352    1950
  49.346    1950  49.833    1950  50.958    1950  53.0771950.097   53.261950.105
  53.423 1950.11  54.4641950.165    60.51950.488  60.9151950.482  61.1371950.463
  61.198 1950.44  64.203 1950.44  66.3231950.543  76.727    1951  77.4731951.393
  77.9451951.495  84.7161951.548  85.6021951.555  86.0161951.532  86.056 1951.53
  86.6451951.508   86.651951.508  86.6811951.507   88.941951.439  90.1221951.396
  92.8221951.017  92.942    1951  94.066    1951  94.674    1951  98.909    1951
 113.326  1950.1 114.7011950.058 115.0091950.049 115.1191950.041 115.2381950.032
 115.2761950.029 115.3331950.026 115.4061950.024 115.4751950.021 115.526 1950.02
 115.5581950.019 115.5771950.019 115.6281950.019 115.6991950.018 115.7561950.017
 115.7991950.016 115.8121950.016 115.8161950.016 116.0211950.012 116.0661950.014
 116.0871950.015 116.0961950.016 116.1131950.018 116.2411950.026  117.381950.022
 117.3971950.022 118.6651950.035 119.6271950.058  119.661950.059 120.5141950.106
 121.8761950.181 121.9211950.183  128.831950.548 131.141 1950.64 131.1941950.642
 131.658 1950.67 137.151    1951 139.7511951.428     1401951.461

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-272.431    .025 -46.734    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -272.431 -46.734              100     100     100             .1       .3
Left Levee      Station= -272.43      Elevation=    1951
Right Levee     Station=  -46.73      Elevation=  1951.4

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 1950.76  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.52  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1950.24  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1950.34  * Flow Area (sq ft)     *          *  122.13  *          *
* E.G. Slope (ft/ft)     *0.015273  * Area (sq ft)          *          *  122.13  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  174.66  * Top Width (ft)        *          *  174.66  *          *
* Vel Total (ft/s)       *    5.78  * Avg. Vel. (ft/s)      *          *    5.78  *          *
* Max Chl Dpth (ft)      *    1.45  * Hydr. Depth (ft)      *          *    0.70  *          *
* Conv. Total (cfs)      *  5712.6  * Conv. (cfs)           *          *  5712.6  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  174.94  *          *
* Min Ch El (ft)         * 1948.80  * Shear (lb/sq ft)      *          *    0.67  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.85  *          *
* Frctn Loss (ft)        *    1.45  * Cum Volume (acre-ft)  *    1.41  *    6.18  *    2.94  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)        *    0.91  *    5.87  *    2.75  *
*****************************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -7000

INPUT
Description:
Station Elevation Data    num=     315
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001948.317-399.0831948.296-397.6461948.275-395.5661948.274-395.2121948.272
-392.9791948.267-390.8131948.261-389.0011948.258-387.7481948.261 -387.151948.276
-386.9761948.299-386.9061948.324-386.6251948.343-386.1431948.353-385.5881948.356
-384.6231948.356 -383.681948.352-382.7031948.338-382.4891948.326 -382.271948.318
-381.1961948.299-380.7941948.287-378.8861948.333-378.7261948.346-378.0811948.377
-377.8081948.418-377.5051948.433-374.5031948.527-372.7421948.571-368.3241948.675
-364.3021948.778-358.931 1948.94-357.245    1949-355.9451949.058-354.543 1949.12
-351.3421949.251-351.2131949.255-347.4581949.355-346.9431949.364-342.6421949.438
-341.2471949.457-338.1911949.498-335.2941949.532-334.9791949.535-333.2871949.552
-332.5621949.555 -330.141949.502-328.5471949.474 -327.921949.467-327.6671949.472
-327.3991949.476-326.8991949.472-326.5861949.466-326.3771949.457-325.3961949.447
-325.1291949.442-324.9261949.433 -324.851949.418-323.3971949.354-321.3231949.383
-320.9461949.388-320.5231949.391-319.4631949.371  -318.91949.364-318.2921949.362
-317.6521949.371 -316.961949.387-311.5891949.544 -309.831949.603-299.123    1950
-296.091    1950-294.6251950.052-293.9571950.076-293.577 1950.09-291.7491950.098
-291.314  1950.1-290.6771950.103-289.9631950.106-288.7071950.112-288.0131950.115
```

-286.826 1950.12-286.0891950.124-284.8331950.128-283.9551950.132-283.5981950.133
-283.3081950.134-283.0681950.135-281.203 1950.14-280.8871950.141-280.5991950.142
-280.4681950.142-280.3031950.143-280.1971950.143-280.0331950.143 -279.951950.144
-279.7881950.144-279.5811950.144-278.9091950.144-278.7681950.145-278.6871950.145
-278.6071950.145-278.5951950.145-278.5261950.145-278.5181950.145-278.4671950.145
-278.4581950.144-278.4021950.144-278.3921950.144-278.3221950.144 -278.291950.144
-278.0461950.143-277.6381950.142-277.5951950.142-277.5471950.142-277.4111950.141
-277.3521950.141 -277.28 1950.14-277.0191950.139-276.7131950.137-276.009 1950.13
-275.6841950.127-275.2631950.123-273.5261950.107-272.6161950.098-271.5671950.089
 -270.961950.083-270.0131950.075-269.1371950.067-265.8221950.037-265.5651950.034
-265.3721950.032-264.9721950.028-262.551   1950-260.482 1949.93-257.6511949.805
-241.8371949.117-239.156   1949-198.7861948.439-181.2561948.197-176.2551948.127
-167.829   1948 -165.641947.953-152.8361947.683-151.624 1947.66-150.811 1947.65
-150.254 1947.64-148.6051947.619-145.8331947.588 -145.131947.577-137.4651947.641
-137.3431947.664-137.0031947.682-136.1981947.708-134.6541947.744-132.1321947.776
-129.9191947.685-129.1081947.654-128.8281947.655-126.2141947.665-125.6321947.645
-122.1211947.608-122.1191947.608-122.1161947.608-122.1081947.608-121.5131947.595
-118.462 1947.54-115.1011947.506 -111.881947.438-111.2441947.421-111.1011947.413
-110.7341947.365-110.4751947.316-107.3691947.296-105.7481947.416-103.0191947.737
-100.957   1948   -90.91948.732 -87.96   1949 -85.8061949.035 -75.8891949.189
  -73.951949.219 -68.7691949.296 -67.5491949.311 -64.6351949.333 -63.1711949.342
 -61.8241949.343 -61.486 1949.34 -60.7331949.333 -57.8941949.277 -55.2811949.236
 -51.9211949.199 -48.4381949.182 -47.9991949.184 -45.6351949.196 -44.0491949.221
 -43.6821949.227 -42.3251949.253 -41.2351949.265 -40.2181949.266 -38.4551949.266
 -36.9361949.266 -36.2091949.262 -36.0011949.262 -35.4281949.252 -35.306 1949.25
 -34.6131949.222 -34.481949.217 -33.9831949.191 -33.8831949.186 -33.1351949.157
 -32.9961949.152 -31.9241949.073 -31.711949.058 -30.618   1949 -30.5171948.989
 -19.0621948.869 -15.099   1949 -12.757   1949 -12.004   1949   -11.8   1949
  -11.64   1949   -9.541949.082 -8.6471949.109   -7.41949.133 -7.3991949.133
  -5.5231949.153 -5.4981949.153 -2.9111949.168 -2.8371949.169   -.0911949.179
       0 1949.18   .301 1949.18   3.8181949.187   4.8811949.185   7.861949.179
   8.5141949.177   9.5171949.172   9.661 1949.17   9.8791949.166 10.0721949.154
  10.3691949.137 10.5781949.127 10.9561949.111 11.9691949.085   13.571949.044
  13.9841949.031   14.95   1949 15.3771948.993   18.011948.942 18.9111948.952
  19.009   1949 19.098   1949   19.98   1949 22.964   1949   26.75   1949
   37.03   1949 37.2831948.997 38.4741948.987 42.8911948.978 43.641   1949
  43.754   1949 45.512   1949 51.856   1949 52.6311949.005 53.8941949.008
  54.6471949.003 54.722   1949 56.326   1949 58.555   1949 60.193   1949
  60.543   1949 60.929   1949 61.674   1949 69.0951949.207 71.4261949.165
  72.4641949.153   72.541949.153 78.0191949.147 82.4291949.122 82.4781949.122
  82.7931949.121 83.261 1949.12 91.8241949.098 91.9631949.097 92.0671949.095
  92.7251949.096 95.0371949.101   98.28 1949.12 99.5111949.127   99.61949.123
 100.8441949.083 101.2861949.082 103.5541949.105 103.6651949.108 115.224 1949.85
 115.2791949.857 116.545   1950 117.715   1950 118.952   1950 120.3821949.653
 120.7721949.526 121.2471949.425 123.256   1949 124.8751948.909 124.9511948.905
 127.0151948.809 129.089 1948.74 129.2231948.745 132.031 1948.67 132.1341948.667
 134.0451948.642 136.6381948.732 138.9971948.799 139.6881948.829   1401948.835

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035-280.468   .025 116.545   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -280.468 116.545   100   100   100   .1   .3
Left Levee   Station= -280.47   Elevation= 1950.14
Right Levee   Station= -68.77   Elevation= 1949.3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1949.45 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.50 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 1948.95 * Reach Len. (ft)   * 100.00 * 100.00 * 100.00 *
* Crit W.S. (ft)   * 1949.01 * Flow Area (sq ft)   *   * 124.33 *   *
* E.G. Slope (ft/ft)   *0.011392 * Area (sq ft)   *   * 124.33 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   * 146.71 * Top Width (ft)   *   * 146.71 *   *
* Vel Total (ft/s)   *   5.68 * Avg. Vel. (ft/s)   *   *   5.68 *   *
* Max Chl Dpth (ft)   *   1.65 * Hydr. Depth (ft)   *   *   0.85 *   *
* Conv. Total (cfs)   * 6614.5 * Conv. (cfs)   *   * 6614.5 *   *
* Length Wtd. (ft)   * 100.00 * Wetted Per. (ft)   *   * 146.82 *   *
* Min Ch El (ft)   * 1947.30 * Shear (lb/sq ft)   *   *   0.60 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   3.42 *   *
* Frctn Loss (ft)   *   1.31 * Cum Volume (acre-ft) *   1.41 *   5.90 *   2.94 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   0.91 *   5.51 *   2.75 *
****

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -7100

INPUT
Description:
Station Elevation Data   num=   352
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
    -4001947.613-399.5611947.627-398.7261947.652-397.661 1947.68-396.4181947.707
-394.9661947.734-393.1161947.764-387.5761947.828-384.038 1947.88 -371.171947.973

-368.217   1948-362.9051948.039 -362.551948.041-361.8291948.046-361.6911948.046
 -361.571948.047-361.5081948.047-361.3751948.049-361.2621948.051-361.0831948.054
-360.743 1948.06-360.5951948.063-360.4861948.065-350.2021948.161-349.8291948.167
-341.9481948.247 -341.161948.257-335.7851948.317-330.2091948.385-328.9251948.399
-327.7671948.403-325.9811948.397 -319.421948.365-313.8361948.332-313.0391948.345
-309.2241948.312-308.4261948.323-307.4731948.322-306.6491948.329 -305.941948.333
-305.1141948.337-296.4271948.422 -295.221948.427-294.5441948.424-293.2651948.408
-292.3741948.391-290.0481948.321-289.133 1948.29-288.5111948.253-288.1321948.221
-287.9031948.214 -286.931948.216-286.4831948.216-286.1031948.214-285.8121948.211
-285.0881948.215 -284.751948.209-283.3211948.232-282.6951948.216-281.9941948.195
-281.5281948.182 -281.441948.177-281.4041948.174-281.2431948.172-281.0631948.171
 -280.751948.171 -280.221948.174-277.5281948.199-276.677 1948.21-276.5521948.216
-265.0971948.321 -264.171948.302-263.3531948.296-258.5121948.282-256.8861948.274
-256.1631948.265-255.6091948.256-255.0491948.259-254.2971948.254-244.3461948.057
-244.2821948.057-241.035   1948-233.6921947.903-226.9681947.828-226.7251947.828
-225.6951947.842-225.5931947.843 -225.531947.842-225.433 1947.84-224.8651947.822
-224.7861947.801-224.6181947.793 -224.31947.788-214.1831947.677-206.5371947.602
-205.9461947.598-204.8591947.594-202.5921947.573-202.2151947.569-197.9171947.478
-186.4521947.194-185.0621947.175-184.1351947.159-178.813   1947-168.3271946.723
 -165.511946.668-155.5931946.458-151.5581946.366-148.8541946.306-146.6081946.254
-138.7471946.054-138.2141946.041-136.433   1946-134.9791945.953-131.7281945.875
-130.5181945.906-129.885   1946-127.1741946.754-125.655   1947 -123.461947.365
-123.2691947.367-122.5971947.493-120.9311947.419-118.2151947.646-117.8871947.667
-117.3911947.687-116.5611947.711-114.7181947.689 -113.45 1947.69-112.3581947.684
-112.0981947.697 -110.31947.661-109.5831947.711-101.2621947.627 -97.7461947.754
  -97.391947.759 -96.224 1947.77 -93.3941947.796 -85.51   1948 -54.6351947.289
 -51.3411947.253 -46.1621947.193 -45.521947.185 -44.9641947.175 -43.3011947.134
 -42.9271947.126 -42.6281947.117 -42.4441947.111 -42.4111947.108 -41.8221947.096
 -41.6861947.097 -40.981947.101 -40.6811947.101 -40.4431947.098 -40.2711947.095
 -39.9651947.088 -39.8331947.085 -39.7561947.085 -39.641947.085 -39.4661947.087
 -39.241 1947.09 -38.9781947.095 -37.821947.075 -37.3111947.086 -35.2841947.087
 -34.948 1947.09 -28.02 1947.15 -27.395 1947.15 -26.9951947.163 -26.8061947.223
 -25.9111947.282 -25.4631947.345 -25.2741947.395 -20.9461947.404 -20.671947.375
 -20.0671947.351 -17.9721947.287 -17.711947.271 -17.5081947.202 -17.2181947.175
 -16.8781947.159 -14.964 1947.12 -12.7171947.064 -10.786   1947 -10.304   1947
  -8.114   1947 -7.017   1947 -3.559   1947 -2.115   1947 -1.1141947.315
       0 1947.52   .5081947.613   2.881947.789   3.081947.805   3.2261947.812
   3.4471947.818   5.1811947.857   5.4971947.864   6.0091947.872   6.2161947.875
   6.2711947.876   6.3011947.875   6.3281947.866   6.41947.862   7.1121947.835
   7.3971947.823   7.6581947.808   8.193 1947.77   8.31947.766   8.431947.764
  10.3881947.729 11.2711947.705 11.8251947.708 13.2621947.736 13.599 1947.74
   13.931947.741 14.2641947.739 14.6081947.733 15.5971947.706 16.3591947.688
  20.3881947.575 21.8391947.529 23.682 1947.46 35.618   1947 38.3051946.789
  38.9951946.728 40.7051946.613 41.5381946.569 42.8961946.507 43.2491946.509
  43.5991946.516 45.9081946.552 46.2571946.561 46.6361946.584 47.5151946.623
  48.0441946.654 49.4061946.791 49.7971946.846 50.1621946.985 50.336   1947
  50.7931947.027 51.6361947.063 54.3281947.133 54.6431947.135 55.0151947.132
   58.991947.041 60.096   1947 63.1481946.829   64.07 1946.8 66.5411946.743
  66.7661946.732 66.7811946.717 67.0981946.667 67.5641946.685 68.2791946.694
  69.2251946.689 70.2011946.674 72.733 1946.62   75.51946.528 75.5761946.527
  75.7121946.534 76.5531946.593 78.5771946.708 79.0971946.748 80.3781946.883
  80.7481946.984 80.891   1947   81.791947.097 82.1911947.129 84.8751947.285
  86.8781947.365 87.1131947.376 87.4951947.385 87.6981947.388 87.9851947.386
  88.4181947.375 91.2961947.329 91.6941947.321 92.2761947.293 92.9341947.243
   93.571947.217 96.0051947.032 96.526   1947 97.1411946.938   98.91946.813
  99.3311946.764 106.6861946.802 107.013 1946.82 108.854 1946.87 110.1421946.897
  115.181946.991 115.639   1947 119.5041947.103 125.8661947.287 126.7441947.324
 127.2411947.368 133.0421947.328 134.8811947.106 135.575   1947 136.487 1946.9
 140.2071946.626 141.3231946.495 141.6521946.416 141.871946.396 142.1291946.388
 142.5351946.383 143.0891946.381 144.5861946.381 145.4021946.383 146.1221946.387
 146.6661946.395 147.0511946.404 150.3861946.531 151.3481946.572 159.5821946.873
 161.3211946.944 163.108   1947 166.8991947.243 170.261947.438 178.802   1948
 184.845   1948 186.625   1948 187.711   1948 189.3751947.874 190.6061947.741
 194.3351947.493 195.1941947.455 195.9981947.444 196.8451947.453 198.7771947.491
 199.733 1947.52 200.5781947.575 201.3521947.678 202.5251947.862 203.701   1948
 211.5181948.215 220.3181948.448 224.4181948.558 226.6811948.611 241.158   1949
 244.8841949.177 245.16 1949.21 245.4081949.223 246.2291949.244 247.3081949.263
 248.2251949.264 251.6661949.258 252.478 1949.25 256.2941949.153 258.0941949.126
 259.8081949.131   2601949.138

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035-296.427   .025 -85.51   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -296.427 -85.51   100   100   100   .1   .3
Left Levee   Station= -296.43   Elevation= 1948.42
Right Levee   Station=   -85.7   Elevation=   1948

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1948.07 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.07 * Wt. n-Val.   *   *   0.025 *   0.035 *
* W.S. Elev (ft)   * 1948.00 * Reach Len. (ft)   * 100.00 * 100.00 * 100.00 *
* Crit W.S. (ft)   * 1948.00 * Flow Area (sq ft)   *   * 121.63 * 228.03 *
* E.G. Slope (ft/ft)   *0.002409 * Area (sq ft)   *   * 121.63 * 228.03 *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 300.90 * 405.10 *
* Top Width (ft)   * 444.75 * Top Width (ft)   *   * 155.53 * 289.22 *
* Vel Total (ft/s)   *   2.02 * Avg. Vel. (ft/s)   *   *   2.47 *   1.78 *
* Max Chl Dpth (ft)   *   2.13 * Hydr. Depth (ft)   *   *   0.78 *   0.79 *
* Conv. Total (cfs)   * 14384.4 * Conv. (cfs)   *   * 6130.6 * 8253.7 *
* Length Wtd. (ft)   * 100.00 * Wetted Per. (ft)   *   * 155.76 * 289.67 *
* Min Ch El (ft)   * 1945.88 * Shear (lb/sq ft)   *   *   0.12 *   0.12 *
* Alpha   *   1.08 * Stream Power (lb/ft s) *   *   0.29 *   0.21 *

```
* Frctn Loss (ft)        *    0.42  * Cum Volume (acre-ft)   *    1.41  *    5.62  *    2.68  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)         *    0.91  *    5.16  *    2.42  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -7200

INPUT
Description:
Station Elevation Data    num=     371
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001946.157-399.7911946.154-397.3471946.138-395.046 1946.11-394.6731946.106
-394.2481946.103-392.5481946.089-392.4541946.091-391.0061946.088-390.2671946.087
-390.0861946.088-389.5851946.098-388.9781946.108 -388.391946.118-387.7051946.124
-387.3051946.132-385.3471946.166 -383.771946.193 -382.681946.209-382.2581946.211
-382.1071946.198-381.9111946.194-381.7911946.196-381.6031946.201  -380.1 1946.26
-378.3241946.348-372.676 1946.59-364.3591946.994-364.221    1947-364.076    1947
-364.027    1947-363.187    1947-363.127    1947-362.2371946.968-353.2661946.645
-352.2591946.609-351.6391946.592-349.446 1946.53-349.1081946.526-348.9111946.524
-348.6211946.528-348.1161946.536-347.7591946.533-347.5211946.531-345.822  1946.5
-341.7871946.361-340.9511946.364-340.7661946.362-339.6461946.352-338.238 1946.34
 -337.541946.347-333.7091946.387-331.0631946.346 -329.691946.359 -322.291946.433
-322.2461946.433-322.2361946.433-321.7241946.421-320.6961946.426-318.8181946.419
-317.4261946.381-314.6351946.331 -314.281946.327-313.8051946.325-311.8041946.327
-305.058 1946.29-304.6381946.288-302.2651946.268-301.9111946.265-301.2151946.263
-301.003 1946.26-300.8561946.259-299.2011946.233-298.6821946.227-298.3281946.225
-297.9241946.225-296.2071946.233-295.694 1946.23-295.1371946.228-293.8661946.239
-293.6041946.237-293.4011946.235-291.4071946.217-290.6981946.213-289.3061946.209
-289.1521946.208-289.0321946.206-288.8021946.205-288.6391946.203 -288.391946.203
-287.8951946.206-287.0811946.212-285.6151946.257-285.5251946.266-285.2871946.277
-284.9511946.288-284.6591946.294-284.5241946.297-282.4591946.319-281.6711946.331
-279.1081946.366-270.2551946.485  -267.11946.534-262.5861946.592-254.8991946.717
-252.0971946.746-250.4641946.774-249.3271946.781-249.1971946.781-247.9451946.805
-247.0371946.827-246.6861946.837 -246.031946.855-245.9741946.856-245.6651946.864
-245.4191946.869-245.1931946.872-244.9511946.874-244.2561946.876-242.767 1946.88
-242.5581946.881-242.4531946.881-242.4211946.881-242.3891946.881-242.0981946.881
-242.0951946.881-242.0941946.881-242.0711946.881-241.6581946.879-241.0061946.875
-240.9291946.874-239.0431946.862-238.799 1946.86-238.6711946.858-238.4221946.852
-238.0841946.844-237.8311946.834 -237.611946.829-237.2081946.823-236.994 1946.82
 -236.281946.811-236.0381946.807-235.8591946.803-235.5091946.797-235.2931946.795
-234.0671946.749-233.8961946.734-233.8381946.733-233.2941946.731-232.0951946.707
-231.4551946.699-230.3791946.674 -228.59 1946.62-224.2981946.607-223.0981946.602
-221.7431946.596-219.3811946.558-217.4531946.532-209.7051946.427-207.3141946.399
-206.0911946.392-205.8051946.399-201.0221946.329-200.1161946.287 -198.751946.239
-190.745    1946-190.2681945.954-190.2351945.951-184.2871945.374-181.863    1945
-179.1711944.921-176.8851944.841-175.944 1944.82-173.2281944.771-172.5131944.768
-163.5581944.772-162.6321944.775-161.6961944.791-160.8481944.797-159.468  1944.8
-157.2841944.799-156.7221944.798-149.6731944.784-149.4331944.785-145.2571944.767
-144.8831944.765-141.3031944.733-139.442 1944.69-138.8491944.647-138.8431944.613
-135.9141944.589-135.3111944.599-134.8591944.611 -134.371944.634-133.7621944.676
-132.3811944.807-131.6971944.851-130.9191944.873-130.7691944.875-129.9511944.878
-128.251 1944.87-126.4791944.868 -109.06    1945-109.054    1945-109.053    1945
-107.7431945.029-107.698 1945.03-107.4441945.033-107.4021945.033-107.3861945.033
-105.9211945.059-104.4611945.112 -103.161945.156  -99.151945.281 -93.6851945.449
 -86.4461945.682 -84.247 1945.75 -82.6451945.797  -81.551945.826 -80.8631945.842
 -80.4941945.848  -80.121945.845 -79.9861945.847 -79.2211945.863  -78.861945.872
 -75.801    1946 -72.748 1946.65 -70.829    1947 -70.365    1947 -69.947    1947
 -67.475    1947 -64.294    1947 -63.1881946.851 -62.4961946.762 -60.7771946.681
 -58.8211946.553 -57.1711946.428 -51.497    1946 -50.8911945.978 -44.7751945.742
  -34.651945.332 -28.4851945.068 -26.945    1945 -26.4191944.914 -26.0041944.886
 -24.5881944.817  -24.411944.823 -22.8561944.898 -22.143 1944.99 -22.042    1945
 -14.5611945.311 -12.4351945.399  -7.9051945.221  -7.7531945.213   -7.631945.217
  -7.5481945.202   -7.461945.199  -7.2941945.203  -7.009 1945.22  -5.6971945.306
  -5.1131945.338  -4.5731945.361  -3.9261945.398  -3.6221945.404  -3.5451945.406
   -.2081945.635       01945.647      .11945.653    .1291945.655   1.3671945.706
   1.8081945.727   3.5191945.828  11.3871945.574  11.6931945.544  13.3591945.424
  14.3121945.423   14.831945.414  14.8321945.414  19.6931945.027  19.7241945.025
  20.042    1945  20.435    1945  24.195    1945  24.6581945.027   25.621945.074
  27.555 1945.17  29.2721945.274  29.4521945.296  41.7371945.517  42.1171945.513
  46.1061945.498   46.541945.493  46.8951945.483  47.3741945.456  47.6161945.429
  48.0211945.395   48.711945.358  49.5051945.333  53.3631945.242  55.1461945.192
  57.0171945.131  58.751 1945.08  61.413    1945   62.741944.961  63.9771944.903
  64.7151944.851  65.5721944.744  65.703 1944.74  66.2391944.745  68.8521944.836
  69.0431944.849  72.578 1944.89  74.5031944.923  75.4241944.954  76.4631944.984
  77.326    1945  80.8141945.078  80.923 1945.08  84.2411945.149  90.8321945.265
  91.6121945.279  92.6711945.302  93.0051945.309  96.1611945.375 100.4421945.441
  102.161945.468 108.0051945.562 109.9621945.599 110.8991945.622 111.2231945.637
 111.3321945.649 111.4961945.658 112.0191945.674 112.4521945.683 112.5841945.686
 112.7941945.689 112.9261945.687 113.0071945.681 114.059 1945.57 114.4381945.542
```

```
 114.7011945.533 115.2491945.522 116.366 1945.53 116.7921945.533   118.71945.503
 120.2261945.493 120.4131945.492 121.0721945.486 121.2851945.485  121.74 1945.49
 122.0611945.514 122.3721945.521 122.8081945.528 123.1411945.533 123.5221945.553
 123.7081945.557 124.0041945.552 124.3621945.541 124.8991945.519 126.1361945.427
 126.7321945.392 130.6871945.234 133.5941945.097 134.009 1945.09 134.1981945.082
  136.23    1945 137.3451944.971 137.8391944.951 138.958 1944.89 139.284 1944.86
     140 1944.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-364.359    .025 -70.829    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -364.359 -70.829             100     100     100             .1       .3
Left Levee      Station= -245.19      Elevation= 1946.87
Right Levee     Station=  -70.83      Elevation=    1947

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1947.27  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.62  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1945.65  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1946.14  * Flow Area (sq ft)     *          *   69.06  *          *
* E.G. Slope (ft/ft)     *0.048228  * Area (sq ft)          *          *   69.06  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   99.56  * Top Width (ft)        *          *   99.56  *          *
* Vel Total (ft/s)       *   10.22  * Avg. Vel. (ft/s)      *          *   10.22  *          *
* Max Chl Dpth (ft)      *    1.06  * Hydr. Depth (ft)      *          *    0.69  *          *
* Conv. Total (cfs)      *  3214.8  * Conv. (cfs)           *          *  3214.8  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   99.65  *          *
* Min Ch El (ft)         * 1944.59  * Shear (lb/sq ft)      *          *    2.09  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   21.33  *          *
* Frctn Loss (ft)        *    0.64  * Cum Volume (acre-ft)  *    1.41  *    5.40  *    2.41  *
* C & E Loss (ft)        *    0.16  * Cum SA (acres)        *    0.91  *    4.87  *    2.09  *
*************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -7300

INPUT
Description:
Station Elevation Data    num=     491
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001944.208-398.0421944.185-393.3971944.202-392.8791944.201-391.3891944.198
-391.0421944.198-390.9371944.197-390.7841944.197-388.4241944.215-388.1961944.212
-387.6471944.208-385.2261944.243-383.796 1944.23-382.769 1944.22 -381.021944.203
-380.3351944.199-377.7781944.193-377.0381944.191-375.3971944.189-375.1751944.188
-374.9991944.187-374.9151944.185-374.902 1944.18 -374.86 1944.18-374.5921944.183
-374.2081944.189-373.9531944.195-373.7551944.198-371.9841944.222-369.6241944.256
-369.5591944.293-369.2921944.301  -368.31944.319-363.6731944.394-356.843  1944.5
-353.8231944.545-351.5851944.575-350.3281944.589-348.3161944.625-347.8091944.639
-341.2521944.767-338.1081944.838-330.502    1945-328.604    1945-327.969    1945
-325.612    1945-323.4061944.878-323.3481944.878-321.7731944.783-321.7461944.781
-320.2581944.708-318.6821944.646 -318.571944.631-315.2651944.572-313.7831944.593
 -312.211944.606-311.6331944.614 -311.16 1944.63 -309.991944.644-302.8271944.735
-301.6921944.772-300.9521944.795-299.5221944.801-298.8571944.819-296.2921944.817
-295.8311944.817-293.9631944.859-293.3361944.854-292.6351944.848-291.5751944.835
-290.5811944.808-290.2811944.787-290.1681944.762-285.254 1944.74-283.7761944.764
-282.7251944.786 -281.481944.822-280.8471944.837-280.2671944.845  -277.81944.881
-277.4761944.887-267.621    1945-266.9261945.009-266.8931945.009-264.8891945.024
-263.6021945.024-263.5441945.024-263.5071945.024-261.5771945.001-261.508    1945
-253.0081944.804-252.6931944.804-250.9751944.845-250.1921944.879-248.219    1945
-247.4841945.037-246.3791945.074-245.5191945.091 -244.421945.105-243.7321945.106
-243.2281945.108-242.4141945.097 -242.091945.093-241.0941945.055-240.295    1945
-236.011    1945-234.5971944.971 -234.03    1945 -233.32    1945-232.554    1945
-229.718    1945-223.556    1945-221.807    1945-220.414    1945-219.847    1945
 -217.47    1945-217.132    1945-217.0111945.006-214.3231945.149-212.5751945.153
-211.9781945.157-206.8441945.185-205.7631945.188-204.9311945.191-203.8421945.191
-203.2661945.191-203.1971945.191-202.2231945.188-201.9381945.187-201.7221945.185
-201.0121945.179-200.7941945.175-200.0791945.162-197.7531945.091-194.746    1945
-191.0381944.421-188.373    1944-180.2291943.199 -178.34    1943-177.9281942.972
-173.7911942.795-170.298    1943-168.157    1943-167.3361943.325-165.635    1944
-161.749    1944-160.517    1944-160.2911943.952-159.9451943.909-158.199 1943.82
-157.4921943.755-157.2861943.718-157.0151943.692 -155.631943.641-155.3551943.621
-155.0931943.611 -154.931943.616 -152.331943.764-151.5161943.826  -150.41943.894
-148.9861943.992-148.884    1944-148.744    1944-148.704    1944-148.647    1944
  -147.8    1944-145.464    1944 -134.97    1944-130.883    1944-128.7351943.945
-121.7341943.774-118.2731943.678-111.7521943.855 -111.071943.849  -110.21943.826
-109.5131943.817-108.9991943.814 -100.591943.473 -98.4951943.386 -97.2691943.325
 -97.1471943.314 -97.1291943.305 -95.2411943.275 -95.0821943.278  -94.651943.276
 -94.5971943.276 -94.2021943.277 -93.9251943.281 -93.3791943.299 -91.6221943.367
 -91.3831943.366 -90.8911943.359 -90.6451943.352  -87.821943.308 -87.3241943.319
 -86.6621943.339 -86.2041943.357 -85.2981943.415 -84.8741943.435 -83.413 1943.49
```

```
 -82.1251943.549 -82.0021943.553 -79.9841943.621 -79.6121943.624 -78.4121943.657
 -77.7921943.667 -77.4741943.669 -75.3351943.675 -73.6211943.715 -72.9451943.727
  -69.761943.784 -69.3141943.802 -68.9481943.842 -68.9311943.843 -68.1131943.877
 -67.9821943.878 -66.6981943.922 -64.177    1944 -63.7631944.008 -63.5851944.012
 -63.2241944.019 -61.9311944.045  -61.821944.048 -61.3721944.057 -60.6531944.075
  -60.621944.076 -60.5991944.077 -60.4251944.081  -60.311944.084 -59.6251944.106
 -59.6041944.106 -59.5681944.107  -59.441944.111 -59.2091944.119 -59.1741944.119
 -59.101 1944.12 -58.8591944.123 -58.8551944.123 -58.8411944.124  -58.841944.124
 -58.8371944.124  -58.811944.123 -58.6971944.122 -58.395 1944.12 -53.2121944.017
 -52.335    1944   -51.51943.927 -51.4271943.921 -51.2791943.892 -46.9031943.852
 -45.725 1943.89 -42.5021943.968 -40.999    1944 -38.613    1944 -37.285    1944
 -28.924    1944 -27.296    1944 -26.956    1944 -26.372 1943.99  -25.99    1944
 -25.768    1944 -25.544    1944 -15.999    1944 -15.764    1944 -15.522    1944
  -4.5921943.407  -2.2291943.287   -1.861943.265  -1.8251943.251  -1.7451943.238
  -1.3391943.214  -1.1131943.192   -.9651943.184   -.0011943.144       01943.144
    .9471943.136    .9721943.156   1.0061943.158   1.0881943.157   1.4941943.147
   1.7991943.139   1.8791943.135   1.9151943.132   1.9631943.124   2.0491943.119
   2.2151943.113   2.3361943.111   2.418 1943.11   2.451 1943.11   2.5111943.113
   2.6171943.123   2.6691943.141   3.112  1943.2   3.3121943.218   4.1161943.337
   4.4281943.393   6.5271943.861   7.217    1944   9.3321944.137  11.8341944.346
  12.8941944.418  13.007 1944.42  13.7611944.397  14.4021944.365  14.7931944.298
  15.3071944.266  16.6621944.201  17.1661944.154  17.4731944.141  17.7171944.138
  18.4491944.131  19.112 1944.13  19.3161944.129  19.9231944.137  22.5441944.035
  23.446    1944  24.662    1944  25.169    1944  28.747    1944  40.156    1944
  41.278    1944    41.6    1944  41.8291943.991  41.9511943.987  42.9491943.957
  44.5051943.923   46.741943.878  48.5921943.856  49.2071943.847  49.908 1943.83
  50.7991943.809  52.0921943.766  52.7941943.731  57.8951943.573  59.3441943.553
  59.9831943.547  67.0011943.506  68.3691943.484  71.6261943.444  71.9321943.438
  73.1541943.405  73.5841943.384  74.0571943.371  74.5221943.352  75.5381943.324
  75.8531943.318  76.0841943.316  76.3611943.317  76.8591943.324   77.121943.332
  77.5231943.339  77.8971943.343  80.5371943.356  81.118 1943.36  81.3981943.365
  81.917 1943.38  82.3871943.399  86.3621943.468  86.9161943.484  87.4691943.507
  88.1491943.547  89.1241943.571  90.866  1943.6  93.1331943.633  93.8471943.643
   94.111943.646  94.3861943.649  94.6011943.652  95.8711943.664  99.6751943.663
   99.681943.659 100.7851943.638 101.1451943.634 101.6271943.642 101.8131943.643
 102.1161943.654 103.0411943.675 103.6251943.693 103.779  1943.7 104.089 1943.71
 104.4921943.718 105.0971943.727 105.7571943.734 106.3221943.738 106.7081943.737
 106.9681943.732 107.1721943.727 107.6351943.718 108.4581943.701 109.4591943.675
 110.0061943.654 110.6471943.645 112.0021943.627  112.32 1943.62 115.068 1943.56
 115.6911943.557 118.009  1943.5 118.2021943.495 119.515 1943.47 120.005 1943.29
 120.578 1943.29 122.1741943.296  122.641943.299 122.8391943.305 123.1191943.321
 123.3411943.326 123.725 1943.33 124.9281943.329 125.501 1943.33 125.9291943.336
 126.4691943.353 126.7961943.361 127.2041943.364 127.8311943.372 128.7011943.388
 129.3421943.407 129.5111943.406 136.8591943.703 144.866    1944 144.9041944.001
 146.0931944.044 148.1551944.093 149.4411944.105 152.1641944.113  154.55    1944
 154.877    1944 155.658    1944 156.966    1944 157.517    1944 159.775    1944
 164.529    1944 165.968    1944 172.5151944.392 173.1181944.403 173.9331944.441
 179.4311944.714 180.4951944.736 183.4581944.786 189.7481944.937 190.5411944.967
 192.7241944.987 193.269 1944.98 193.4041944.962 193.5591944.928 194.1281944.926
 195.0841944.937 197.9231944.993 198.207    1945 199.8151945.079 200.4461945.116
 202.6721945.243 203.739  1945.3  205.691945.419 207.9531945.568 209.3251945.663
 209.7781945.702 209.8721945.716 210.3491945.779 210.7521945.794  211.081945.803
 211.2791945.804 212.8121945.769 213.4461945.778 214.7761945.764 215.1421945.757
  215.881945.732 216.6451945.717  218.031945.685 220.8811945.586 221.8351945.574
 226.5481945.574 226.8631945.574 228.4071945.589 228.8731945.596 229.4081945.608
 230.9151945.616 231.4271945.633 231.8091945.652 240.7661945.674 241.0421945.656
 241.9431945.621 242.6271945.607 243.1821945.612 246.2811945.664 247.7371945.695
 249.0161945.736  253.681945.913 255.783    1946 256.4571946.073 256.9531946.189
     2601946.238

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-206.844    .025  12.894    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -206.844  12.894              100     100     100            .1       .3
Left Levee      Station= -206.84      Elevation= 1945.19
Right Levee     Station=   12.89      Elevation= 1944.42

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1944.56  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.14  * Wt. n-Val.            *          *   0.025  *   0.035  *
* W.S. Elev (ft)         * 1944.42  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1944.42  * Flow Area (sq ft)     *          *  138.22  *  105.74  *
* E.G. Slope (ft/ft)     *0.005270  * Area (sq ft)          *          *  138.22  *  105.74  *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  459.44  *  246.56  *
* Top Width (ft)         *  364.52  * Top Width (ft)        *          *  203.93  *  160.59  *
* Vel Total (ft/s)       *    2.89  * Avg. Vel. (ft/s)      *          *    3.32  *    2.33  *
* Max Chl Dpth (ft)      *    1.63  * Hydr. Depth (ft)      *          *    0.68  *    0.66  *
* Conv. Total (cfs)      *  9725.0  * Conv. (cfs)           *          *  6328.6  *  3396.4  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  204.43  *  160.69  *
* Min Ch El (ft)         * 1942.80  * Shear (lb/sq ft)      *          *    0.22  *    0.22  *
* Alpha                  *    1.09  * Stream Power (lb/ft s) *          *    0.74  *    0.50  *
* Frctn Loss (ft)        *    0.30  * Cum Volume (acre-ft)  *    1.41  *    5.16  *    2.29  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.91  *    4.52  *    1.91  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
```

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -7400

INPUT
Description:
Station Elevation Data num= 423

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001942.557	-399.7431942.555	-398.4281942.542	-397.6791942.536	-396.7011942.535					
-395.389 1942.54	-392.2161942.557	-390.1111942.568	-388.5981942.574	-386.5311942.581					
-384.4931942.583	-383.0661942.585	-377.2391942.576	-377.0431942.573	-375.5971942.571					
-368.9711942.555	-368.3891942.552	-365.7821942.507	-362.8691942.466	-361.44 1942.46					
-358.6671942.428	-357.1891942.408	-352.4811942.325	-347.891 1942.3	-347.0761942.295					
-345.1951942.269	-341.6731942.212	-341.2571942.207	-340.6921942.198	-340.3661942.196					
-340.0231942.196	-339.4231942.198	-339.0571942.201	-336.8731942.233	-333.4751942.111					
-331.8671942.072	-331.7021942.074	-330.7411942.063	-330.6941942.063	-330.6611942.063					
-329.758 1942.07	-329.485 1942.06	-329.41942.056	-329.3661942.052	-329.2941942.046					
-329.2831942.044	-329.1961942.035	-329.1811942.031	-329.176 1942.03	-329.172 1942.03					
-329.0881942.034	-329.0571942.035	-328.9291942.038	-328.878 1942.04	-328.821942.042					
-328.791942.044	-328.7511942.048	-328.7011942.051	-328.5661942.061	-328.4461942.067					
-328.361942.071	-328.1591942.077	-327.9851942.081	-326.5461942.115	-326.262 1942.12					
-323.5091942.207	-323.019 1942.21	-321.0941942.275	-320.4831942.275	-318.1721942.361					
-317.759 1942.38	-317.1121942.432	-316.6141942.485	-316.1361942.511	-315.5771942.532					
-315.406 1942.54	-314.8261942.549	-314.2671942.553	-313.4931942.557	-310.4021942.563					
-309.5661942.567	-308.8361942.576	-307.549 1942.57	-305.1031942.555	-303.6861942.555					
-301.9551942.563	-295.1871942.618	-291.821942.667	-291.8041942.675	-290.3711942.704					
-274.7611942.991	-274.7271942.992	-274.2	1943	-272.736	1943	-271.84	1943		
-266.346	1943	-265.709	1943	-265.481	1943	-261.6771943.146	-251.3181943.265		
-248.8581943.298	-246.8411943.334	-245.9521943.347	-244.9731943.357	-244.019 1943.36					
-243.1731943.357	-242.4561943.347	-241.8981943.334	-240.4161943.277	-239.6861943.227					
-238.6321943.207	-231.8631943.115	-231.1571943.119	-230.2121943.123	-221.3471943.188					
-218.7651943.201	-217.193 1943.2	-216.41943.191	-216.0521943.179	-212.225	1943				
-211.165 1942.71	-208.232	1942	-203.6511941.614	-202.6521941.611	-199.8931941.617				
-199.451941.613	-199.0411941.602	-197.2721941.523	-196.4151941.489	-185.6	1941				
-185.571940.978	-185.4361940.974	-184.8391940.973	-184.6671940.976	-184.511	1941				
-183.4941941.254	-179.554	1942	-166.1321942.602	-161.671942.648	-161.6191942.645				
-160.7181942.686	-159.1911942.729	-158.7981942.754	-155.8041942.814	-154.9751942.864					
-151.907	1943	-150.7281942.938	-144.246	1943	-139.8781943.012	-137.4981943.014			
-136.2251943.009	-135.259	1943	-133.1431942.907	-132.8531942.895	-131.034 1942.8				
-129.8361942.754	-129.2771942.724	-127.431942.607	-123.7131942.385	-121.0471942.239					
-119.5571942.163	-118.4151942.093	-117.81 1942.08	-117.3641942.051	-117.0781942.031					
-117.0321942.028	-116.9791942.024	-116.9191942.022	-116.876 1942.02	-116.8621942.019					
-116.8061942.017	-116.7791942.016	-116.7721942.016	-116.7261942.015	-116.5641942.014					
-116.5471942.014	-116.5381942.014	-116.5281942.013	-116.5241942.013	-116.481942.015					
-116.481942.016	-116.4741942.016	-116.4441942.018	-116.3651942.022	-116.0781942.032					
-115.797 1942.04	-114.9181942.064	-112.7451942.149	-99.4851942.142	-99.2371942.125					
-99.0131942.133	-98.9381942.133	-98.4231942.142	-98.3471942.139	-97.367 1942.16					
-97.0821942.168	-96.1761942.188	-93.8691942.271	-88.5311942.394	-83.9371942.547					
-81.7511942.609	-81.041942.633	-78.9081942.667	-77.6761942.709	-76.8711942.714					
-73.577 1942.81	-72.9371942.827	-72.5891942.838	-71.4621942.878	-71.346 1942.88					
-71.1461942.882	-71.0241942.883	-70.9061942.883	-70.7151942.881	-70.6151942.881					
-70.5031942.883	-69.8881942.902	-69.0831942.884	-69.0291942.877	-68.7161942.854					
-68.629 1942.85	-68.0231942.836	-67.6391942.825	-67.29 1942.81	-67.1791942.803					
-66.9951942.778	-66.8681942.771	-66.6031942.761	-65.091942.721	-64.19 1942.69					
-63.4961942.682	-61.7371942.617	-60.4841942.563	-58.7971942.482	-49.808	1942				
-47.8121941.831	-46.9521941.696	-36.4141941.686	-35.1881941.785	-35.1271941.819					
-34.9011941.818	-34.2541941.804	-33.7981941.783	-33.7891941.779	-28.7391941.665					
-27.3181941.718	-25.5761941.767	-20.6021941.928	-19.3241941.967	-19.21	1942				
-18.548	1942	-18.3261942.012	-17.8961942.018	-16.1991942.017	-16.105	1942			
-15.131	1942	-14.808	1942	-14.099	1942	-13.901	1942	-1.2141941.931	
01941.954	2.365	1942	2.963	1942	5.526	1942	11.5231942.173		
12.5951942.199	13.4731942.213	16.8211942.226	18.0581942.236	18.2431942.235					
18.5351942.237	18.723 1942.24	18.9571942.251	19.2071942.258	20.2991942.277					
24.791942.385	26.04 1942.42	27.4971942.468	29.3331942.518	31.115 1942.57					
32.9221942.638	35.1371942.717	38.0851942.813	38.7631942.832	40.221942.887					
40.7731942.906	41.0011942.913	41.5111942.925	41.5681942.926	41.791942.923					
42.5031942.916	42.7091942.912	42.8631942.909	43.5271942.889	43.6071942.885					
43.674 1942.88	43.7321942.874	43.8881942.865	44.2091942.865	45.1311942.824					
47.6311942.693	48.5551942.636	51.8341942.408	53.151942.336	58.288	1942				
70.72	1942	70.725	1942	71.0431942.026	72.9011942.104	74.286	1942		
74.7271941.949	76.2481941.721	80.05 1941.83	80.1331941.875	80.3421941.925					
80.45	1942	90.469	1942	93.724	1942	98.171941.852	100.605 1941.78		
105.9561941.633	108.2731941.574	115.0921941.417	115.5271941.405	115.7751941.394					
116.1471941.364	116.4131941.323	116.5981941.315	116.9371941.311	117.9861941.306					
119.6481941.292	120.005 1941.29	120.578 1941.29	122.1741941.296	122.641941.299					
122.8391941.305	123.1191941.321	123.3411941.326	123.725 1941.33	124.9281941.329					
125.501 1941.33	125.9291941.336	126.4691941.353	126.7961941.361	127.2041941.364					
127.8311941.372	128.7011941.388	129.3421941.407	129.5111941.406	136.8591941.703					
144.866	1942	144.9041942.001	146.0931942.044	148.1551942.093	149.4411942.105				
152.1641942.113	154.55	1942	154.877	1942	155.658	1942	156.966	1942	
157.517	1942	159.775	1942	164.529	1942	165.968	1942	172.5151942.392	
173.1181942.403	173.9331942.441	179.4311942.714	180.4951942.736	183.4581942.786					
189.7481942.937	190.5411942.967	192.7241942.987	193.269 1942.98	193.4041942.962					
193.5591942.928	194.1281942.926	195.0841942.937	197.9231942.993	198.207	1943				
199.8151943.079	200.4461943.116	202.6721943.243	203.739 1943.3	205.691943.419					
207.9531943.568	209.3251943.663	209.7781943.702	209.8721943.716	210.3491943.779					

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 210.7521943.794  211.081943.803 211.2791943.804 212.8121943.769 213.4461943.778
 214.7761943.764 215.1421943.757  215.881943.732 216.6451943.717  218.031943.685
 220.8811943.586 221.8351943.574 226.5481943.574 226.8631943.574 228.4071943.589
 228.8731943.596 229.4081943.608 230.9151943.616 231.4271943.633 231.8091943.652
 240.7661943.674 241.0421943.656 241.9431943.621 242.6271943.607 243.1821943.612
 246.2811943.664 247.7371943.695 249.0161943.736  253.681943.913 255.783    1944
 256.4571944.073 256.9531944.189     2601944.238

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-246.841    .025  41.511    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -246.841  41.511            28.56   28.56   28.56            .1       .3
Left Levee      Station= -246.84      Elevation= 1943.33
Right Levee     Station= -151.91      Elevation=    1943

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1943.08  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.            *          *   0.025  *   0.035  *
* W.S. Elev (ft)         * 1943.01  * Reach Len. (ft)       *   28.56  *   28.56  *   28.56  *
* Crit W.S. (ft)         * 1943.01  * Flow Area (sq ft)     *          *  194.11  *  148.50  *
* E.G. Slope (ft/ft)     *0.001984  * Area (sq ft)          *          *  194.11  *  148.50  *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  435.41  *  270.59  *
* Top Width (ft)         *  405.33  * Top Width (ft)        *          *  248.48  *  156.85  *
* Vel Total (ft/s)       *    2.06  * Avg. Vel. (ft/s)      *          *    2.24  *    1.82  *
* Max Chl Dpth (ft)      *    2.03  * Hydr. Depth (ft)      *          *    0.78  *    0.95  *
* Conv. Total (cfs)      * 15850.1  * Conv. (cfs)           *          *  9775.2  *  6074.9  *
* Length Wtd. (ft)       *   28.56  * Wetted Per. (ft)      *          *  248.90  *  157.01  *
* Min Ch El (ft)         * 1940.97  * Shear (lb/sq ft)      *          *    0.10  *    0.12  *
* Alpha                  *    1.03  * Stream Power (lb/ft s) *          *    0.22  *    0.21  *
* Frctn Loss (ft)        *    0.01  * Cum Volume (acre-ft)  *    1.41  *    4.78  *    2.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.91  *    4.00  *    1.54  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -7428.56

INPUT
Description:
Station Elevation Data    num=     484
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
   -10401943.174-1032.38 1943.01-1032.271943.009-1032.01    1943-1021.361942.482
-1017.501942.312-1016.79 1942.27-1016.081942.216-1015.05 1942.15-1014.30 1942.11
-1013.761942.096-1013.271942.105-1013.141942.114-1012.991942.119-1010.341942.152
-1005.091942.192-999.1471942.184-996.4611942.144-995.9261942.141-986.903    1942
-986.1351942.029-986.0591942.031-977.6761942.353-976.1231942.377-975.0341942.389
-972.8691942.432-972.4131942.444-970.5741942.467-967.3961942.499-966.8091942.522
-966.3891942.532-962.4861942.576-961.821 1942.57 -961.461942.562-958.8141942.464
-945.452    1942 -940.871941.862-917.614    1941 -914.941940.929-913.7271940.991
-913.279    1941-897.876    1941-896.3131941.008-894.754    1941-892.804 1940.99
-886.8051940.901-879.877 1940.73-879.0761940.723-878.3321940.731-875.4331940.817
-874.4661940.832-869.2321940.818-869.0551940.819 -860.421940.682-859.938 1940.69
-859.1951940.699-858.0181940.702-854.516 1940.71-852.1771940.676  -847.3  1940.6
-843.2741940.532-840.1731940.454-833.4441940.329-828.274 1940.23-827.6861940.231
-826.7681940.211-826.2521940.219-824.6851940.259-822.6871940.261-821.2751940.232
-818.3391940.163-817.0771940.143-807.205    1940-804.6321939.937-804.3271939.915
-803.9141939.903 -802.421939.884-802.1681939.876 -800.131939.693 -799.571939.724
 -799.181939.738-796.8791939.788-796.3441939.811-795.3611939.883 -793.061940.062
-792.106 1940.14-790.6811940.165-787.9531940.168 -782.761940.182-780.4831940.192
-772.2521940.246-771.9731940.246-771.7641940.238-769.9981940.182-768.8611940.141
-767.326 1940.05  -766.7    1940-766.2771939.983-764.6511939.912-764.0111939.871
-762.4821939.821-759.022  1939.7-758.6591939.725-758.1341939.734-755.1191939.766
-751.7981939.848-747.1681939.902-739.457    1940-737.712 1940.04-730.455 1940.19
-719.117 1940.36-718.2231940.362-715.036  1940.4-713.059 1940.42-711.3231940.429
-699.1911940.448-694.5841940.464-693.8551940.457-688.3241940.385-688.0851940.376
-687.6931940.369-686.8271940.359-675.9221940.342-675.8781940.345-675.3811940.352
-660.6491940.482-643.2831940.663-639.8341940.693-636.9771940.722-626.4011940.827
-623.376 1940.86-618.3671940.897-617.1361940.904-600.438    1941 -598.231941.017
-598.0721941.018-597.9411941.018-569.2221941.233-566.8861941.244-564.4351941.267
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-540.1861941.309-539.5591941.308-537.4261941.315-535.3721941.325 -532.721941.348
-521.1481941.492-506.9451941.685-503.9221941.715-500.3871941.803-500.162 1941.82
-490.765    1942-490.508    1942-489.8441941.981-489.1781941.955-488.3291941.898
-488.2061941.879-486.1881941.807-484.217 1941.79 -481.291941.753-478.079 1941.72
-475.083 1941.71-468.9111941.777-468.5161941.776-467.898 1941.77-466.9481941.753
-463.883 1941.77-461.6681941.716-458.7981941.633-453.3991941.541-447.9821941.419
```

-446.5521941.399-445.5671941.398-444.1191941.406-443.8571941.408-441.6731941.398
-435.9211941.459 -434.811941.487-433.1121941.511-432.3141941.536-431.9391941.552
-431.7691941.567-427.8021941.624 -427.421941.627-420.2471941.763-419.9211941.769
-405.6571941.982-405.4171941.989-405.375 1941.99-405.3561941.991-405.3481941.991
-405.3391941.991-405.3281941.991-405.3171941.991-405.265 1941.99-400.9441942.024
-400.9141942.024-400.8581942.023-400.8271942.023-400.7851942.023 -400.731942.023
-400.5951942.024-395.9581942.048 -395.831942.049-391.2151942.064-386.6631942.068
-386.4981942.068-372.8721942.042 -358.071942.007-356.768   1942-356.762   1942
-351.7431941.832-348.1641941.738-345.4771941.685-344.3971941.658-338.4611941.479
 -337.851941.468-337.4251941.465-336.9331941.467 -336.381941.475-335.309 1941.5
-334.4381941.524-332.5711941.627-332.256 1941.69-331.6981941.733-330.8551941.776
-330.5581941.793-330.3121941.794-327.8041941.837-326.3071941.847-320.0991941.865
-318.2091941.877-316.1161941.905-313.1061941.964-311.487   1942-298.5831942.233
-294.8221942.292-287.8161942.374-286.685 1942.38-280.3531942.391-279.2821942.388
-276.4681942.365-273.7371942.413-264.7471942.544 -262.81942.603-261.765 1942.63
-260.7611942.645-259.6111942.667-257.149 1942.72-255.049 1942.82 -254.921942.825
-254.8291942.827-254.6971942.828-254.5051942.828-254.3191942.827-253.7151942.807
-253.5361942.798-253.484 1942.79-253.3121942.779-252.7461942.751-252.5571942.736
-252.3981942.717-252.304 1942.7-252.2051942.692-251.5161942.665-250.6051942.623
-249.8291942.633-249.3481942.616-248.6431942.599-247.7031942.589-246.7041942.579
-245.6981942.555-244.8331942.527-243.3921942.527-240.9841942.438-239.0591942.446
-234.3151942.482-233.2681942.483-232.4171942.474-231.7291942.458-226.4211942.281
-217.464   1942-215.2561941.408-213.805   1941-211.0821940.887-210.1821940.858
-209.0451940.827-207.1961940.811-205.9681940.784-203.6361940.754-202.5041940.735
 -201.411940.729-199.5941940.727-194.205 1940.73-193.5051940.729-193.1951940.723
-193.0761940.694-192.9321940.685-192.8371940.613-192.7531940.611-192.3781940.611
 -192.271940.612-191.459 1940.74-189.2081940.848-188.445 1940.86-188.1081940.877
-187.7211940.934-186.8761940.991-186.805   1941-186.2121941.126-183.3861941.624
-181.305   1942-175.0741942.179-169.8571942.322-167.0211942.391-164.5571942.456
-162.8871942.508-159.4911942.607-157.0731942.665-156.5391942.674-149.183   1943
-133.9751942.195-133.8581942.195-131.368   1942-130.684 1941.96-128.9151941.878
-128.663 1941.85-128.5071941.763 -128.31941.746-127.3121941.717 -126.351941.704
-124.6151941.684-124.3481941.676-124.3281941.655-123.9481941.641 -123.721941.636
-123.4441941.635-123.1261941.639-122.5211941.659-122.1311941.676-121.4181941.693
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-102.572   1942-102.114   1942 -96.9421941.689 -94.851941.665 -93.9871941.648
 -93.5051941.634 -92.7291941.584 -91.8891941.543 -91.1191941.516 -90.8211941.511
 -90.5971941.513 -90.3071941.533 -90.0761941.583 -89.3951941.621   -89.31941.641
 -89.266 1941.69 -86.7981941.991 -86.708   1942 -83.561942.085 -81.7161942.141
 -75.7451942.351 -75.1311942.363 -74.071942.375 -73.424 1942.38   -72.8 1942.38
 -71.7861942.369 -71.2591942.369 -70.6651942.379 -67.4081942.481 -63.1391942.383
 -62.8551942.349 -61.1981942.226 -60.7381942.206 -57.5261942.131 -55.488 1942.07
 -53.748   1942 -53.3561941.984 -50.844 1941.87 -46.561 1941.65 -45.6131941.611
  -44.341941.568 -40.428 1941.46 -39.0911941.414 -37.5691941.358 -36.9851941.331
 -36.5561941.305 -35.4471941.211 -35.2291941.177 -32.5531941.174 -32.2421941.199
 -32.2261941.208 -32.1691941.208 -32.0051941.204 -31.8891941.199 -31.8871941.198
 -30.6051941.169 -30.2441941.182 -29.8021941.195 -28.5391941.236 -28.2151941.246
 -28.0131941.304 -26.6211941.408 -25.4651941.483 -23.9781941.569 -23.915 1941.57
 -15.383   1942 -14.915   1942 -14.124   1942 -13.736   1942 -12.2751941.925
  -8.3321941.672   -6.431941.563 -5.7021941.528 -4.5371941.483 -2.9211941.411
  -1.5991941.345 -1.583 1941.34   -.4381941.301   01941.301   .0921941.301
    .5721941.297   4.6681941.275   7.6031941.332   7.877 1941.34   8.555   1942
   8.734   1942   8.765   1942   9.118   1942   9.521   1942   9.993   1942
  23.5841941.465 25.0571941.713 27.314   1942 27.8651942.019 30.242 1942.09
  35.545 1942.22 36.1451942.226   38.451942.199 45.8661942.123   48.011942.089
  49.6151942.053   51.34   1942 58.8471941.755 72.9831941.042 73.1171941.036
  73.878   1941   75.371940.959 76.1691940.942 76.9541940.935 77.2381940.937
  77.5471940.949 77.894   1941 83.2041941.792 85.056   1942 97.448   1942
  98.763   1942 99.434   1942 99.855   1942 101.328   1942 112.971941.538
 124.898   1941 127.991940.921 129.9331940.855 131.5421940.817

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
   -1040   .035-255.049   .025-149.183   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -255.049-149.183   74.44   74.44   74.44   .1   .3
Left Levee   Station= -255.05   Elevation= 1942.82
Right Levee   Station= -149.18   Elevation=   1943

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1942.83 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.00 * Wt. n-Val.   *   0.035 *   0.025 *   *
* W.S. Elev (ft)   * 1942.82 * Reach Len. (ft)   *   74.44 *   74.44 *   74.44 *
* Crit W.S. (ft)   * 1942.82 * Flow Area (sq ft)   * 1195.80 *   93.59 *   *
* E.G. Slope (ft/ft)   *0.000093 * Area (sq ft)   * 1195.80 *   93.59 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   * 655.04 *   50.96 *   *
* Top Width (ft)   * 874.13 * Top Width (ft)   * 773.26 * 100.87 *   *
* Vel Total (ft/s)   *   0.55 * Avg. Vel. (ft/s)   *   0.55 *   0.54 *   *
* Max Chl Dpth (ft)   *   3.13 * Hydr. Depth (ft)   *   1.55 *   0.93 *   *
* Conv. Total (cfs)   * 73161.0 * Conv. (cfs)   * 67880.0 * 5280.9 *   *
* Length Wtd. (ft)   *   74.44 * Wetted Per. (ft)   * 773.44 * 101.18 *   *
* Min Ch El (ft)   * 1940.61 * Shear (lb/sq ft)   *   0.01 *   0.01 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   0.00 *   0.00 *   *
* Frctn Loss (ft)   *   0.01 * Cum Volume (acre-ft) *   1.02 *   4.68 *   1.95 *
* C & E Loss (ft)   *   0.00 * Cum SA (acres)   *   0.66 *   3.88 *   1.49 *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than

0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -7500

INPUT
Description:
Station Elevation Data num= 462

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001942.027	-396.041942.035	-395.9491942.035	-391.331942.036	-386.6311942.025					
-386.5711942.025	-381.27	1942-372.2241941.936	-370.9391941.909	-370.2491941.892					
-356.4711941.752	-353.2621941.666	-352.291941.649	-351.5191941.634	-351.071 1941.63					
-347.6391941.502	-345.3621941.432	-343.7371941.393	-343.1031941.374	-341.9541941.324					
-341.3761941.311	-340.5851941.289	-339.798 1941.26	-339.4741941.253	-339.2511941.251					
-338.9941941.251	-338.7071941.255	-338.1591941.266	-337.7191941.277	-337.11941.298					
-336.9711941.304	-336.7941941.327	-336.6411941.359	-336.37 1941.38	-335.9661941.399					
-335.8251941.407	-335.171941.408	-334.6761941.417	-333.397 1941.43	-332.8941941.433					
-332.181941.434	-329.3661941.426	-328.5531941.427	-327.6751941.435	-326.4511941.454					
-318.0661941.619	-315.6981941.661	-311.9051941.723	-311.3631941.729	-310.3681941.736					
-307.0111941.797	-304.5931941.812	-301.6211941.863	-298.79 1941.9	-298.2171941.903					
-297.8471941.904	-297.6341941.903	-297.4561941.902	-295.4541941.921	-295.4131941.921					
-293.8821941.924	-285.0381941.894	-284.2551941.913	-282.7771941.899	-279.51941.843					
-277.9981941.826	-276.2341941.821	-274.1961941.835	-267.003 1941.92	-265.9951941.936					
-263.708	1942-263.2331942.029	-257.6691942.266	-257.1511942.284	-256.7871942.292					
-256.2521942.294	-255.465 1942.29	-254.71942.282	-252.1741942.189	-251.4121942.151					
-251.1891942.114	-250.4521942.065	-249.229	1942-242.3941941.795	-218.714	1941				
-218.4841940.955	-218.391940.958	-218.3431940.959	-218.0031940.958	-217.9541940.957					
-217.9071940.956	-217.8641940.955	-208.2341940.471	-206.2681940.363	-205.1081940.309					
-203.5981940.243	-203.3421940.235	-203.0221940.225	-202.5061940.219	-202.1671940.211					
-201.5331940.201	-201.2291940.195	-200.9381940.193	-200.4591940.191	-199.0761940.188					
-198.91940.187	-198.8231940.186	-198.7931940.178	-198.7571940.176	-198.7331940.157					
-198.7131940.157	-198.6191940.156	-198.5931940.157	-198.3921940.189	-197.8411940.215					
-197.6561940.217	-197.5751940.221	-197.4821940.235	-197.2791940.249	-197.1591940.265					
-196.3131940.336	-195.3721940.442	-193.321940.681	-191.0781940.899	-190.9861940.897					
-189.82	1941-188.5411941.062	-188.0471941.062	-176.7841941.468	-175.0691941.474					
-173.6631941.484	-171.871941.504	-171.5081941.506	-166.0251941.665	-163.6551941.728					
-163.4191941.733	-162.9721941.738	-162.1331941.745	-161.0131941.749	-160.541 1941.75					
-160.2261941.749	-160.041941.748	-159.8331941.745	-159.711941.745	-159.571941.748					
-159.4911941.754	-159.4281941.766	-158.857 1941.78	-158.3541941.791	-158.0721941.795					
-157.9241941.796	-156.8721941.791	-156.5891941.788	-156.0421941.778	-155.711941.774					
-155.3081941.774	-154.8421941.775	-154.3121941.775	-153.704 1941.77	-153.0771941.763					
-152.5361941.755	-152.1881941.749	-152.0071941.744	-151.7441941.733	-151.121941.711					
-150.6341941.687	-149.6381941.646	-149.0391941.627	-148.3541941.603	-147.0051941.535					
-144.5431941.458	-143.3881941.414	-141.4921941.329	-140.034 1941.28	-139.7721941.276					
-136.9921941.191	-133.341941.031	-132.492	1941-132.276	1941-131.575	1941				
-131.241	1941-130.9891941.014	-130.9551941.011	-130.932 1941.01	-130.9051941.008					
-130.8991941.008	-130.8821941.006	-130.8771941.006	-130.8671941.005	-130.8651941.005					
-130.8641941.005	-130.8631941.004	-130.8571941.004	-130.8511941.004	-130.8411941.004					
-130.841941.004	-130.8381941.004	-130.8361941.004	-130.8351941.004	-130.8331941.004					
-130.8291941.004	-130.8271941.004	-130.8231941.004	-130.8181941.004	-130.8121941.004					
-130.7971941.004	-130.7931941.005	-130.7921941.005	-130.7861941.005	-130.7781941.005					
-130.6811941.007	-130.6761941.007	-130.6721941.007	-129.0411941.056	-128.231 1941.07					
-127.2141941.082	-125.2091941.102	-124.5541941.114	-123.1081941.165	-122.5381941.175					
-121.7441941.185	-120.0841941.199	-119.0541941.206	-116.975 1941.21	-115.7211941.217					
-114.163 1941.23	-112.6071941.246	-111.381941.263	-110.6811941.278	-110.3691941.291					
-110.2411941.301	-109.8241941.322	-108.3491941.361	-107.374 1941.38	-106.5641941.389					
-106.0521941.383	-105.7751941.366	-105.6481941.346	-105.5991941.314	-105.4421941.297					
-104.928 1941.28	-104.4141941.257	-103.8011941.238	-103.2181941.229	-102.3981941.223					
-101.351 1941.22	-100.26 1941.22	-99.3481941.223	-98.781941.229	-98.5091941.237					
-98.4691941.254	-90.681941.333	-87.9321941.295	-85.7261941.268	-82.0081941.229					
-79.7011941.203	-75.481941.139	-74.1521941.122	-72.0511941.101	-64.2641941.042					
-61.3161941.013	-60.481	1941	-60.0311940.983	-52.2431940.886	-46.663	1941			
-44.8761941.194	-42.8941941.301	-41.4691941.347	-40.7371941.357	-40.3451941.352					
-40.0131941.336	-39.73 1941.31	-38.5391941.158	-36.519	1941	-34.8461940.921				
-31.81940.853	-30.4981940.831	-29.0891940.816	-27.6321940.814	-26.25 1940.82					
-24.4061940.841	-21.2791940.936	-19.7371940.962	-19.028 1940.96	-19.019 1940.96					
-18.5291940.943	-18.4681940.944	-18.3891940.944	-17.4351940.939	-15.1951940.871					
-12.9911940.797	-9.8491940.668	-8.7411940.635	-8.1181940.613	-5.761940.493					
-4.8611940.455	-4.3021940.382	-2.4151940.405	-2.3141940.414	-1.6341940.429					
-1.4331940.431	-1.0711940.432	01940.432	.2911940.432	1.0051940.454					
1.2181940.464	2.1981940.482	3.1441940.492	3.7741940.494	4.4121940.493					
4.9781940.486	5.4251940.477	5.9591940.464	6.494 1940.44	6.6821940.438					
6.9361940.439	7.4791940.446	7.7781940.453	7.791940.464	8.1441940.485					
8.9461940.513	9.7611940.536	10.331940.545	16.6761940.617	19.2611940.636					
19.9551940.646	20.5651940.659	21.9511940.696	27.1711940.813	31.811940.968					
31.8871940.967	32.929	1941	33.681	1941	34.981	1941	40.7961940.831		
41.0261940.827	46.3831940.683	46.6041940.682	46.8371940.685	47.7721940.688					
48.3971940.686	48.7831940.688	75.549	1940	76.711	1940	85.554	1940		
85.729	1940	85.769	1940	86.153	1940	86.946	1940	88.473	1940
90.385	1940	93.015	1940	97.052	1940	105.2661939.913	107.691	1940	
108.9851940.049	111.821940.177	112.3861940.192	115.9761940.253	116.5291940.269					
118.8451940.389	120.539 1940.44	121.881940.467	122.14 1940.47	122.4711940.468					
122.7131940.464	125.0651940.346	125.4641940.315	125.9211940.295	127.0841940.261					
133.2191940.125	137.1591940.015	137.869	1940	141.2571939.943	144.1711939.859				
146.4791939.764	147.387 1939.69	147.831939.668	148.1531939.661	148.5991939.659					
149.1871939.662	149.8161939.668	150.6671939.683	150.9991939.698	153.3511939.777					

```
 154.2311939.827 154.8361939.851  158.261939.918 159.0241939.943 160.111    1940
 161.085    1940 162.305    1940 163.238    1940 164.7891939.946 169.6541939.806
 171.3591939.791 172.1371939.779 172.8211939.763 173.4111939.742 174.2731939.709
 174.619  1939.7 175.4371939.673 177.5071939.587 178.5551939.538 178.8561939.513
 186.7281939.382 186.8911939.399 187.0631939.403 187.2881939.399 187.7171939.382
 188.4721939.328 188.7081939.309  188.811939.286  188.881939.279 189.0491939.273
 189.1371939.272 189.2061939.273 189.3231939.282 189.3431939.301 189.4111939.317
 189.5921939.331  189.911939.346 190.0031939.374 190.1871939.388 190.4311939.412
  190.68 1939.42 191.1431939.427 194.5291939.452 195.3011939.466 196.6891939.513
 196.8061939.514 200.3271939.613 200.7141939.616 201.9811939.686 202.4841939.705
 203.0181939.717 203.5211939.724 204.143 1939.73 204.2941939.733 204.9191939.723
 205.328  1939.7 211.3091939.794 217.041    1940 220.3881940.623 221.919    1941
 228.8381941.724 229.7961941.821 230.3041941.869 230.5921941.889 230.7851941.893
 231.1551941.889 231.3311941.894 233.082    1942 241.7361942.334 249.1671942.607
 251.8861942.701 252.7271942.722 253.4131942.755 256.3061942.928 256.5911942.944
 257.624    1943     260    1943

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-257.669    .025-157.924    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -257.669-157.924             100     100     100             .1       .3
Left Levee      Station=  -254.7      Elevation= 1942.28
Right Levee     Station= -157.92      Elevation=  1941.8

CROSS SECTION OUTPUT  Profile #PF 1
**************************************************************************************************
* E.G. Elev (ft)         * 1941.83  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.            *          *   0.025  *   0.035  *
* W.S. Elev (ft)         * 1941.81  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1941.81  * Flow Area (sq ft)      *          *   57.56  *  483.65  *
* E.G. Slope (ft/ft)     *0.000714  * Area (sq ft)           *          *   57.56  *  483.65  *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *   70.49  *  635.51  *
* Top Width (ft)         *  472.48  * Top Width (ft)         *          *   84.89  *  387.59  *
* Vel Total (ft/s)       *    1.30  * Avg. Vel. (ft/s)       *          *    1.22  *    1.31  *
* Max Chl Dpth (ft)      *    2.54  * Hydr. Depth (ft)       *          *    0.68  *    1.25  *
* Conv. Total (cfs)      * 26422.7  * Conv. (cfs)            *          *  2638.0  * 23784.6  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *          *   84.99  *  387.94  *
* Min Ch El (ft)         * 1940.16  * Shear (lb/sq ft)       *          *    0.03  *    0.06  *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.04  *    0.07  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)   *          *    4.55  *    1.54  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *          *    3.72  *    1.16  *
**************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -7600

INPUT
Description:
Station Elevation Data    num=     408
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001942.027-395.9381942.017-395.8921942.017-391.896    1942-391.0781941.995
-391.0681941.995-391.0641941.995-391.0631941.995-391.0381941.996-391.0261941.996
-391.0211941.996-391.0141941.996 -391.011941.996-391.0071941.996-390.9891941.996
-390.9841941.996-390.9831941.995-390.9721941.995-390.9661941.995-390.9571941.995
-390.9431941.994-385.6111941.947-385.4611941.945-385.2321941.942-385.1561941.942
-385.011 1941.94-384.7861941.937-384.5531941.932-383.7211941.913-368.3771941.706
-360.2731941.496-359.7641941.481-351.4791941.334-341.245    1941-340.9031940.992
-339.4081940.967-338.4311940.957-337.3671940.953-335.3771940.956-331.9391940.994
-331.296    1941-322.1611941.094-320.5751941.101-317.5411941.103-317.1231941.108
-306.7251941.091-306.4061941.095-306.1181941.096-301.0651941.079-297.5371941.057
-295.4031941.035 -293.551941.006-293.5361941.006-293.0011941.003-292.9961941.003
 -292.971941.003 -285.69 1941.13-285.4831941.127-285.0421941.116-284.8461941.113
-284.6221941.111-284.3691941.111-283.5321941.117-283.4211941.118-283.0521941.127
-280.8711941.171-280.5361941.177-277.3251941.233 -277.091941.236-274.0671941.293
-273.0291941.317-272.2831941.338-268.7321941.463 -267.321941.504-266.4861941.521
-263.1921941.566-262.7281941.568 -262.481941.565-261.7581941.514-261.5231941.489
-261.3871941.422-260.9461941.397-260.4871941.385-259.8951941.376-259.2391941.372
  -258.61941.375-258.3131941.374-257.7441941.383-257.3751941.378-256.907 1941.39
-256.3491941.415-255.5911941.482-255.041 1941.51-253.9161941.552-253.6141941.568
-253.4261941.606-253.2571941.622-250.3161941.633-249.9751941.619-249.4321941.608
 -248.061941.583 -246.75 1941.55-246.1641941.541-245.3521941.531-244.3861941.524
-243.3771941.522-242.4831941.525-241.8551941.529-233.078 1941.36-232.3511941.341
-228.7751941.282-226.4851941.239 -220.731941.119-218.2411941.061 -215.84    1941
-214.7841940.707-212.022    1940-211.1011939.793-210.1991939.825-207.7891939.542
-206.1771939.377-206.0171939.342-205.9391939.333-205.7971939.331-205.5471939.329
-205.2271939.329-204.3241939.332-203.8611939.332-201.2371939.318 -201.021939.315
-200.9571939.311-200.8071939.309-200.5051939.306 -199.171939.297-198.4541939.293
-198.1661939.294-197.7061939.307-195.2131939.388-191.4791939.504-187.7841939.626
-177.575    1940-176.0431940.155 -175.781940.152-175.6281940.148-175.5631940.143
-175.5171940.136-175.4621940.135-175.333 1940.14-175.1581940.152-174.9971940.168
```

-174.7431940.184-173.328 1940.25-170.9921940.352-166.4751940.583-164.6291940.643
-163.4481940.707-162.537 1940.75-161.5241940.805-160.9831940.803-160.5811940.831
 -160.291940.856 -159.981940.874-159.8141940.881-159.7011940.884-158.3611940.899
-158.212 1940.9-158.0221940.899 -157.891940.899-157.7161940.902-157.5421940.906
-157.5011940.908-157.4481940.912-157.2871940.918-157.1991940.922-157.0521940.928
-156.9021940.932 -156.831940.933-156.7541940.934-156.6461940.934-156.5831940.934
-156.5181940.934-156.4541940.933-156.346 1940.93-156.1981940.926-156.0981940.923
-155.9381940.916-155.8921940.914-155.7871940.911-155.721 1940.91-155.662 1940.91
-155.6161940.911-155.5821940.913-155.0451940.914-154.8051940.905-154.4721940.895
-154.1711940.884 -153.921940.876-152.7451940.842-146.0821940.747-144.2361940.695
-143.5311940.674-141.6071940.633-141.1541940.622-137.5531940.531-136.2131940.504
-135.1181940.495-133.985 1940.49-132.6161940.477-131.9431940.466-130.3871940.436
-129.0131940.402-128.0271940.396-127.0331940.368-126.501 1940.35-126.263 1940.34
-125.9971940.319 -125.491940.287 -125.281940.263-124.9231940.236 -124.711940.226
-120.8781940.233-119.8641940.295-119.1841940.321 -119.051940.325 -118.611940.335
 -118.411940.337-117.202 1940.34-116.0061940.354-115.058 1940.38-113.7621940.435
-113.2181940.452-112.7311940.463-111.9911940.475-111.6731940.482-111.197 1940.48
-110.6521940.471-107.0731940.361-105.7991940.328-104.6651940.306-103.7881940.297
-103.2111940.297-102.9191940.305-102.6581940.325-102.4131940.331-102.0241940.333
-101.4811940.329-100.792 1940.32-100.0581940.307 -99.421940.292 -98.5651940.259
 -97.9631940.242 -96.9861940.226 -96.8411940.224 -93.0471940.177 -91.5471940.152
 -85.8141940.036 -84.157   1940 -80.4271939.939 -79.2991939.916 -78.8281939.903
 -72.8661939.927 -72.8491939.952 -71.6331939.999 -71.62   1940 -71.2651940.031
 -70.8041940.054 -70.008 1940.07 -65.8791940.125 -65.0981940.141 -64.1961940.189
 -63.7891940.194 -63.0571940.193 -59.2161940.182 -57.9711940.174 -54.446 1940.14
 -46.2351940.049 -41.526   1940 -35.5171939.858 -30.5741939.734 -27.1451939.642
 -25.7071939.599 -25.4151939.596 -23.6411939.609 -22.7151939.599 -21.5431939.567
 -17.963 1939.44 -15.5881939.364 -10.2131939.214 -2.784   1939   -2.55   1939
  -2.254   1939   0   1939   .76   1939   3.603   1939   5.436   1939
   8.7511938.945 10.343   1939 13.3111939.428 15.7611939.721   16.071939.723
  17.1811939.712 17.3751939.715 17.7931939.746 18.0661939.755 18.3941939.757
  18.7861939.747 19.2281939.729 19.9591939.693 20.7531939.643 21.3411939.617
   27.051939.394 32.0821939.165 35.862   1939 40.408   1939 41.172   1939
  41.3561939.006 42.7231939.063 44.0221939.112 45.5891939.195 46.5411939.236
  48.9391939.281 54.3291939.406 55.5161939.427 56.7471939.438 57.5781939.441
  60.0721939.423 61.1231939.408 62.6281939.381 73.2531939.172 77.8371939.086
  77.8921939.085 79.484 1939.06 81.1081939.042 81.3281939.037 83.0831939.027
  86.402   1939 88.6791938.981 88.9241938.976 98.1341938.923 100.9791938.898
 102.2671938.876 111.4571938.728 114.211938.677 120.3641938.545 124.1041938.467
 125.2871938.437 126.4641938.401 128.1031938.358 129.7491938.318 133.7571938.226
 134.6321938.202 136.278 1938.17 136.6231938.155 136.7291938.146 136.767 1938.14
 136.8441938.136 136.9661938.133 137.2861938.131 137.4841938.129 137.7111938.123
 137.9431938.113 138.2651938.096 138.5811938.076 139.2181938.074 139.2641938.075
  139.381938.076 139.531938.075 139.6631938.074 139.7441938.072 139.7821938.071
 141.6541938.086 141.661938.088 141.7341938.095 141.7881938.099 141.842 1938.1
 142.2641938.101 142.824 1938.11 143.7321938.111 145.3271938.081 148.022   1938
 148.0371937.999 148.0661937.997 148.0871937.996 148.2031937.989 148.411938.783
  149.021940.032 149.311942.328 149.546 1940.7 149.611940.281 149.61 1940.28
 149.6111940.271 149.613 1940.26 149.6531939.985 149.6531939.984 149.6531939.983
 149.6541939.979 149.6541939.978 149.6571939.957 149.6591939.944 149.66 1939.94
 149.6611939.938 149.6661939.904 149.6661939.898 149.6681939.883 149.672 1939.85
 149.6721939.847 149.681939.787 149.6811939.781

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035-253.257   .025-157.199   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -253.257-157.199   100   100   100   .1   .3
Left Levee   Station= -250.32   Elevation= 1941.63
Right Levee   Station= -157.2   Elevation= 1940.92

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1940.96 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.03 * Wt. n-Val.   *   *   0.025 *   0.035 *
* W.S. Elev (ft)   * 1940.93 * Reach Len. (ft)   * 100.00 * 100.00 * 100.00 *
* Crit W.S. (ft)   * 1940.93 * Flow Area (sq ft)   *   *   56.83 * 426.67 *
* E.G. Slope (ft/ft)   *0.000747 * Area (sq ft)   *   *   56.83 * 426.67 *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   *   90.47 * 615.53 *
* Top Width (ft)   * 364.07 * Top Width (ft)   *   *   58.38 * 305.69 *
* Vel Total (ft/s)   *   1.46 * Avg. Vel. (ft/s)   *   *   1.59 *   1.44 *
* Max Chl Dpth (ft)   *   2.94 * Hydr. Depth (ft)   *   *   0.97 *   1.40 *
* Conv. Total (cfs)   * 25826.0 * Conv. (cfs)   *   * 3309.5 * 22516.5 *
* Length Wtd. (ft)   * 100.00 * Wetted Per. (ft)   *   *   58.59 * 310.16 *
* Min Ch El (ft)   * 1939.29 * Shear (lb/sq ft)   *   *   0.05 *   0.06 *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   0.07 *   0.09 *
* Frctn Loss (ft)   *   0.09 * Cum Volume (acre-ft) *   *   4.42 *   0.49 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   *   3.56 *   0.36 *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth. This indicates that there
         is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -7700

INPUT
Description:
Station Elevation Data num= 366

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001942.027-395.958    1942-395.5751941.997-395.5691941.997-390.8711941.941
 -390.741941.941 -390.691941.942-390.6741941.942-390.3461941.944-390.1811941.946
-390.1171941.947-390.0181941.951 -389.951941.952-389.9081941.953-389.6381941.948
-389.568 1941.94-389.5381941.937-389.362 1941.93-389.2781941.927-389.1271941.923
-388.8791941.918 -383.091941.837-382.5371941.827-381.6421941.813-381.3321941.809
-380.7171941.798-379.7081941.779-378.5811941.753-373.7041941.631-360.4361941.378
-347.421    1941-342.0631940.855-334.8631940.658-333.7791940.636 -333.081940.626
-332.328 1940.62-330.9451940.615-328.6251940.628-322.9041940.646-321.8041940.643
-319.6921940.633-318.3651940.744-318.2711940.764 -314.771940.862-312.9711940.912
-310.2751940.968-309.019    1941-308.901    1941-308.864    1941-308.707    1941
-298.153    1941-297.7281940.903-297.6571940.801-297.448  1940.7 -296.451940.647
-296.4221940.624-295.3111940.478 -293.451940.461-292.4561940.449-291.7091940.437
-291.4841940.435-287.7511940.461  -286.51940.476  -285.11940.495-284.5631940.506
-284.1581940.518-281.2821940.632 -279.291940.695-277.8911940.726-277.594 1940.73
-270.9711940.822-270.8071940.825-269.4761940.854-269.1041940.864-268.7661940.876
-268.4091940.885-268.306 1940.89-268.1871940.893-267.8821940.899 -267.761940.902
-267.7081940.903-267.6961940.902-267.692  1940.9-267.5931940.886-267.3971940.848
-267.3651940.844-267.2791940.842-267.0241940.839-266.155 1940.84-265.588 1940.84
-265.0461940.823-263.4741940.686-263.108 1940.64-262.9131940.563-262.515 1940.54
-262.1361940.529 -261.67 1940.52-261.1591940.514-260.6341940.513-260.1221940.517
 -259.661940.522-258.9551940.538-257.219  1940.6-255.9191940.634-252.852  1940.7
 -251.481940.736-248.0511940.859-245.7361940.934-244.208    1941 -240.17    1941
-236.383    1941 -235.91    1941-235.888    1941-233.8051940.932-205.3931940.196
-201.1911940.085-197.769    1940-197.0861939.718-195.253    1939-194.5551938.946
-193.0491938.853 -190.811938.742-186.9591938.567-184.9131938.474-184.8241938.472
-182.0061938.483-181.3821938.489-180.938 1938.49-178.3831938.488-172.7191938.479
-172.235 1938.48-171.9471938.483-171.7911938.487-171.3731938.517-169.5861938.593
-166.0921938.698-165.6691938.768-165.3381938.788-161.8431938.943-160.293    1939
-154.613 1939.17-153.6041939.189-145.4421939.432-132.5461939.061-132.4541939.064
-132.3621939.065-130.992    1939-130.446    1939-128.487    1939-127.516    1939
-126.733    1939-125.236    1939 -124.57    1939-122.866    1939-120.936    1939
-120.491    1939 -119.26    1939 -118.48    1939-114.981    1939-114.149    1939
-113.045    1939-110.971    1939-107.507    1939-102.6361939.209-101.4341939.251
-100.8751939.256 -99.1541939.263 -98.3051939.284 -97.6431939.326 -96.7841939.356
 -95.854 1939.37 -93.4611939.378  -91.681939.394 -91.2831939.385 -90.3741939.341
 -89.5631939.256 -87.904    1939 -84.888    1939 -81.001    1939 -80.707 1939.03
 -80.0481939.053 -79.4961939.056 -78.5171939.055 -76.2811939.044 -75.5891939.036
 -75.1931939.026 -74.707    1939  -72.19    1939  -71.23    1939 -70.865    1939
 -69.933    1939 -68.959    1939 -67.391    1939 -66.228    1939 -65.298    1939
 -63.988    1939 -63.669    1939 -58.189    1939  -51.44    1939 -48.649    1939
 -47.439    1939   -46.7    1939 -44.829    1939 -44.686    1939 -44.288    1939
 -42.587    1939 -36.8391938.858 -29.441 1938.67 -24.6671938.545  -5.264    1938
  -3.432 1937.83  -3.1241937.825   -2.891937.829       01937.628   4.2461937.331
   6.1111937.358   9.2081937.425  15.0811937.352  15.1611937.346  15.7791937.344
  16.251937.347   17.751937.356  18.4681937.349  19.7081937.316  21.0381937.277
  27.127    1937  30.639    1937  35.326    1937   38.661937.307   41.751937.579
  42.414 1937.62  43.927 1937.77  44.0621937.787  45.4091937.838  45.4921937.827
  45.581 1937.81  45.7171937.801  45.9831937.793  46.3231937.788   46.821937.791
  47.3491937.787  47.593 1937.79  47.6561937.785  47.6861937.792  47.7851937.798
  47.9391937.793  48.3471937.766  49.5751937.722   57.23    1937  57.778    1937
  60.007    1937  60.2011938.902  60.4291941.126  60.6371943.022    61.11939.383
  61.121939.227  61.4031937.019  63.122 1937.01  63.969    1937   66.71 1937.26
  67.1941937.269   68.171937.299  68.9631937.329  69.2591937.347  69.869  1937.4
  70.3891937.418  72.2781937.439  77.0541937.698  78.1551937.757  78.3121937.772
   80.381937.712  80.6341937.701  80.8711937.685  81.0311937.659  81.291 1937.65
  83.6551937.639  84.156 1937.63  85.9541937.638  87.1091937.623   88.031937.617
   88.55 1937.62  91.1821937.679  91.6361937.677  91.6771937.678  91.8421937.679
  92.9751937.692  93.1761937.699  93.4991937.687  93.7771937.711  94.0921937.679
  95.5431937.488  105.441937.526 108.0521937.593 120.0111937.963 121.025    1938
 121.395    1938 122.051    1938 123.2191937.845 128.1191937.155 129.192    1937
 131.8951936.775 140.971    1936 141.2761935.981 141.5991935.946  142.211935.932
  145.291935.892 146.5771935.976 146.698    1936 147.292    1936 147.445    1936
 147.4581935.972 147.8111935.898 148.4181935.899 150.3781935.857 151.0361935.854
 151.8981935.864 155.2841935.929 158.636    1936  176.26 1936.27 183.8311936.392
 189.2261936.479 191.7551936.515 194.159 1936.54  196.461936.551 198.7691936.545
  206.891936.447 214.2961936.351 215.2231936.353 224.1681936.219 224.7341936.213
  234.991936.123 235.3981936.117 236.2931936.103 237.2321936.086 237.6811936.079
 238.1161936.074 238.543 1936.07  238.931936.067 239.5951936.064 239.6221936.064
 239.6251936.081  239.651936.113 239.7051936.128 239.7961936.136 239.921 1936.14
 240.0741936.141 240.226 1936.14 240.3471936.138 240.4241936.136 240.5151936.136
 240.7051936.143 242.6561936.248 243.4341936.294 243.9581936.329 244.9571936.404
 246.7141936.518 247.529 1936.56 251.878    1937  252.87    1937 253.087    1937
 253.583    1937 255.276    1937 255.859    1937 256.354    1937 259.0791937.032
     2601937.043
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Manning's n Values num= 3

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     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    -400    .035    -400    .025  60.637    .035
```

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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400  60.637             100     100     100            .1       .3
Right Levee     Station=   60.64      Elevation= 1943.02
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1939.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.025	
W.S. Elev (ft)	1939.70	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1938.91	Flow Area (sq ft)		304.66	
E.G. Slope (ft/ft)	0.001231	Area (sq ft)		304.66	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	257.31	Top Width (ft)		257.31	
Vel Total (ft/s)	2.32	Avg. Vel. (ft/s)		2.32	
Max Chl Dpth (ft)	3.84	Hydr. Depth (ft)		1.18	
Conv. Total (cfs)	20122.1	Conv. (cfs)		20122.1	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		260.08	
Min Ch El (ft)	1937.00	Shear (lb/sq ft)		0.09	
Alpha	1.00	Stream Power (lb/ft s)		0.21	
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)		4.01	0.00
C & E Loss (ft)	0.11	Cum SA (acres)		3.20	0.01

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -7800

INPUT
Description:
Station Elevation Data num= 365

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001942.027	-397.464	1942	-395.066	1941.966	-394.991	1941.965	-390.019	1941.881	
-389.723	1941.879	-389.611	1941.879	-389.571	1941.881	-388.782	1941.88	-388.362	1941.882
-388.193	1941.884	-387.928	1941.89	-387.743	1941.891	-387.626	1941.893	-386.847	1941.877
-386.638	1941.857	-386.547	1941.851	-385.996	1941.828	-385.722	1941.819	-385.216	1941.807
-384.335	1941.787	-377.829	1941.668	-376.297	1941.636	-373.577	1941.581	-372.556	1941.562
-370.398	1941.518	-366.405	1941.43	-361.141	1941.303	-349.219	1941	-339.866	1940.715
-338.666	1940.689	-325.131	1940.306	-322.049	1940.218	-321.624	1940.208	-321.355	1940.204
-321.07	1940.2	-320.556	1940.196	-319.725	1940.195	-317.827	1940.191	-317.485	1940.188
-316.846	1940.181	-316.457	1940.211	-316.431	1940.216	-315.447	1940.237	-314.965	1940.247
-314.268	1940.256	-313.935	1940.262	-311.328	1940.331	-303.462	1940	-302.116	1939.987
-291.031	1939.887	-289.313	1939.874	-287.719	1939.86	-285.409	1939.849	-282.785	1939.845
-282.009	1939.848	-281.531	1939.852	-276.918	1939.916	-275.315	1939.953	-273.88	1940
-273.52	1940.01	-270.737	1940.071	-269.911	1940.102	-268.941	1940.125	-266.417	1940.16
-265.378	1940.178	-264.931	1940.182	-264.825	1940.177	-264.793	1940.161	-263.938	1940.031
-263.777	1940	-257.107	1939.732	-256.589	1939.713	-255.981	1939.702	-254.537	1939.684
-251.793	1939.666	-249.584	1939.659	-248.577	1939.661	-246.216	1939.673	-241.838	1939.675
-241.539	1939.674	-241.269	1939.677	-240.957	1939.685	-240.869	1939.691	-240.105	1939.703
-235.623	1939.563	-235.416	1939.548	-234.768	1939.542	-233.551	1939.516	-233.021	1939.51
-232.518	1939.514	-231.239	1939.536	-230.346	1939.543	-228.539	1939.543	-228.364	1939.539
-226.847	1939.528	-223.591	1939.517	-222.472	1939.516	-221.319	1939.521	-215.205	1939.511
-212.336	1939.548	-211.858	1939.55	-211.576	1939.553	-208.994	1939.533	-205.863	1939.592
-198.989	1939.544	-194.451	1939.583	-193.572	1939.593	-192.916	1939.609	-192.651	1939.613
-192.444	1939.612	-191.323	1939.599	-190.516	1939.594	-189.885	1939.597	-189.099	1939.61
-186.776	1939.68	-186.074	1939.69	-185.219	1939.692	-184.032	1939.688	-182.398	1939.68
-180.507	1939.668	-178.664	1939.651	-177.161	1939.63	-175.991	1939.608	-174.369	1939.571
-173.508	1939.555	-172.941	1939.542	-172.566	1939.531	-167.827	1939.394	-165.881	1939.346
-160.031	1939.194	-158.241	1939.153	-154.775	1939	-154.197	1939	-154.14	1939
-153.145	1939	-152.318	1939	-150.075	1939	-149.719	1939	-148.996	1939
-147.583	1938.866	-144.113	1938.501	-143.396	1938.442	-142.376	1938.372	-139.777	1938.212
-133.904	1938	-132.034	1937.805	-130.616	1937.67	-128.844	1937.436	-128.601	1937.399
-120.693	1937.276	-120.379	1937.292	-119.353	1937.317	-117.691	1937.391	-116.658	1937.467
-116.031	1937.501	-115.11	1937.572	-113.912	1937.629	-111.287	1937.71	-110.291	1937.687
-107.446	1937.767	-106.539	1937.82	-104.857	1937.946	-104.707	1937.944	-104.634	1937.942
-104.481	1937.932	-103.972	1938	-99.206	1938.176	-98.405	1938.17	-97.829	1938.169
-93.759	1938.299	-93.293	1938.294	-88.837	1938.443	-87.948	1938.46	-86.169	1938.432
-84.527	1938.475	-83.782	1938.459	-82.635	1938.482	-78.317	1938.55	-77.004	1938.575
-76.271	1938.584	-74.921	1938.596	-74.683	1938.597	-74.502	1938.599	-74.241	1938.597
-71.851	1938.577	-64.176	1938.518	-56.923	1938.464	-54.688	1938.451	-53.478	1938.439
-53.007	1938.432	-52.469	1938.416	-52.251	1938.405	-50.723	1938.375	-29.642	1938.001
-29.638	1938.001	-29.634	1938.001	-29.6	1938	-3.963	1937.222	-.555	1937.16
01937.149	3.093	1937.088	7.027	1937	10.3	1936.76	10.351	1936.757	
10.694	1936.727	10.723	1936.725	10.782	1936.721	10.855	1936.717	11.004	1936.705
12.34	1936.6	12.591	1936.581	12.901	1936.558	14.623	1936.43	16.803	1936.267
18.681	1936.125	18.698	1936.257	18.737	1936.527	18.741	1936.561	18.746	1936.598
18.766	1936.741	18.781	1936.845	18.795	1936.949	19.366	1941.019	19.551	1936.805
19.691	1936.01	19.749	1936	19.906	1935.966	20.379	1935.862	21.533	1935.605
21.636	1935.579	24.251	1935	27.241	1934.658	27.447	1934.653	27.599	1934.656
27.797	1934.682	28.086	1934.96	28.251	1935	30.536	1935.886	32.091	1935.992
32.288	1936	34.868	1936	35.018	1936	36.212	1936.069	38.265	1936.088
40.489	1936.067	41.806	1936	42.61	1935.975	44.483	1935.853	44.854	1935.85
45.247	1935.871	47.084	1936	47.951	1936.178	51.394	1937	53.031	1937.358
55.48	1938	58.365	1938.659	59.943	1939	63.286	1939.689	65.048	1940
76.292	1940	76.82	1940	80.651	1939.05	80.854	1939	84.777	1938.024
84.877	1938	84.981	1937.978	88.966	1937	89.102	1936.972	90.484	1936.683
93.352	1936.088	93.728	1936	94.045	1935.93	98.589	1935	102.094	1934.282
103.396	1934	105.776	1934	105.936	1934	106.513	1934	120.371	1934
120.84	1934	123.005	1933.724	123.385	1933.716	124.302	1933.676	126.308	1933.601
126.815	1933.588	127.781	1933.573	128.815	1933.559	129.491	1933.539	130.612	1933.515

```
 130.9181933.509 131.2051933.507 131.4791933.511 135.0761933.614  135.381933.626
 135.6251933.628 135.9041933.643 136.7591933.718 137.171 1933.75 137.3171933.755
   137.4 1933.75 137.4811933.692 137.5731933.667 137.818 1933.65 138.2671933.648
  138.661933.544 139.0871933.505  139.951933.479 141.3811933.469 143.2141933.473
 145.2041933.487 147.1541933.509 149.2761933.541 152.0041933.591 161.9041933.788
 162.5261933.797 172.556    1934 182.4521934.496 184.7511934.615 184.9761934.632
 185.0271934.669 185.1061934.805 185.1351934.816 185.1851934.818 185.423 1934.81
 185.7611934.793  185.871934.785  185.981934.765 186.5931934.619 186.9981934.584
 188.116 1934.52 190.8381934.388 191.9531934.356 199.267    1934  205.611933.815
 206.2311933.799 206.773 1933.79 212.7111933.733 216.0261933.715 219.0831933.728
 221.7381933.788 224.2511933.892  226.23    1934 229.8861934.187 229.978 1934.19
  231.16    1934 231.6781933.973 231.9071933.975  232.83    1934 233.9011934.033
  236.18 1934.09 236.3871934.089 238.5931934.158 243.7681934.347 247.0051934.467
 247.5511934.484 248.5911934.497 251.0421934.524 252.6131934.537 254.0271934.541
 255.1351934.534 255.9771934.518 257.0431934.488 258.1661934.475     2601934.432

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035  19.366    .025  65.048    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.366  65.048            93.64   93.64   93.64            .1       .3
Left Levee      Station=  19.366      Elevation= 1941.02
Right Levee     Station=   65.05      Elevation=    1940

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1939.42  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.14  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1938.28  * Reach Len. (ft)      *   93.64  *   93.64  *   93.64  *
* Crit W.S. (ft)         * 1938.28  * Flow Area (sq ft)    *          *   82.44  *          *
* E.G. Slope (ft/ft)     *0.007921  * Area (sq ft)         *          *   82.44  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   37.24  * Top Width (ft)       *          *   37.24  *          *
* Vel Total (ft/s)       *    8.56  * Avg. Vel. (ft/s)     *          *    8.56  *          *
* Max Chl Dpth (ft)      *    4.81  * Hydr. Depth (ft)     *          *    2.21  *          *
* Conv. Total (cfs)      *  7932.5  * Conv. (cfs)          *          *  7932.5  *          *
* Length Wtd. (ft)       *   93.64  * Wetted Per. (ft)     *          *   40.02  *          *
* Min Ch El (ft)         * 1934.65  * Shear (lb/sq ft)     *          *    1.02  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    8.72  *          *
* Frctn Loss (ft)        *    0.72  * Cum Volume (acre-ft)  *          *    3.56  *    0.00  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *          *    2.86  *    0.01  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -7893.64

INPUT
Description:
Station Elevation Data    num=     378
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001942.027-398.039    1942-394.0941941.927  -393.91941.923 -388.34 1941.81
-387.7731941.802-387.5521941.801-387.4761941.803-385.8291941.792-384.8831941.789
-384.486 1941.79-383.8441941.797-383.3831941.797-383.0841941.798-380.9671941.755
-380.3541941.711-380.0811941.696-378.3471941.635-377.4261941.608-375.6121941.561
-372.0461941.478-365.9851941.349-361.0481941.234-350.657    1941-336.2171940.545
-331.7181940.406 -329.121940.329-327.6531940.288-326.7071940.265-324.4081940.215
-323.7761940.203-321.7471940.169-321.0861940.162-318.1491940.089-315.788 1940.02
 -315.28    1940-313.2351939.964-307.4991939.853-302.2491939.745-298.2071939.678
-291.978 1939.58-287.3441939.511-285.3231939.483-273.1071939.327-268.6861939.273
-268.0561939.266-267.4831939.259-266.6741939.252-265.7811939.247-265.5231939.247
-265.3641939.247-263.8841939.259-263.3891939.267-262.8711939.279-262.1111939.292
-261.862  1939.3-261.5241939.307 -260.531939.315-260.0661939.321-259.202  1939.3
-259.0211939.301-258.0541939.288-256.7011939.274 -254.381939.237-240.541    1939
 -239.99 1938.99-239.0181938.961-234.9271938.691-234.4911938.678-233.8991938.674
-233.2421938.676-232.2921938.684-231.8591938.692-229.4831938.704-222.0791938.766
-221.561    1939-219.055    1939-217.174    1939-216.934    1939 -214.38    1939
-212.018    1939-207.943    1939-206.664    1939-204.1321938.907-202.6651938.932
-197.459    1939-196.042    1939-195.603    1939-194.357    1939-193.179    1939
-192.5911938.993-192.5151938.994-192.4591938.995-192.4451938.995-192.4351938.995
-192.4251938.995-192.4141938.995-192.4041938.994-192.3881938.994-192.3631938.994
-192.3231938.993-192.2021938.992-192.1891938.992-192.1821938.992-192.1491938.991
-192.131 1938.99-192.122 1938.99-192.0971938.988-192.0881938.987-192.0731938.986
 -192.041938.985-191.9761938.983-189.7131938.941-189.4011938.932 -189.02 1938.92
-186.746 1938.86-186.1721938.845-184.4081938.781-183.2751938.727-181.9021938.643
 -181.031938.484-180.5231938.454-177.3071938.343-175.8441938.267-175.5641938.262
-175.374 1938.26-174.5191938.256-173.7821938.254-172.5581938.259-172.2411938.258
-172.0991938.259-171.0861938.279-168.581 1938.29-168.0551938.293-167.8791938.306
-167.7221938.309  -167.51938.307-166.2431938.288-165.517 1938.28-165.0371938.279
-164.4791938.286-162.0051938.364-160.9321938.378-160.0341938.356-158.9491938.352
```

-148.2721938.142-147.6671938.132-147.0121938.118-144.7731938.082-143.3181938.068
-142.977 1938.06 -140.931938.059-139.1011938.036 -137.29   1938-135.577 1937.98
-126.065 1937.84-122.8341937.785 -121.361937.754-120.7961937.736-120.2281937.723
-119.0611937.708-117.5751937.694-116.2071937.684-115.2541937.681-114.2381937.683
-113.5991937.684-110.886 1937.72 -110.71 1937.74-110.3161937.761-108.323 1937.82
-103.2951937.994-103.047   1938-102.769   1938-101.802   1938-100.4791937.956
 -94.7691937.735 -93.9531937.719 -92.5541937.697 -90.6171937.679 -89.4811937.665
 -88.282 1937.64 -87.1341937.602 -86.034 1937.55 -82.9351937.373 -76.75   1937
 -74.0971936.626 -73.412 1936.49 -72.3981936.318 -70.516   1936 -67.8511935.891
 -65.9561935.824 -57.081935.705 -56.702 1935.71 -47.427 1935.71 -46.2871935.707
 -45.7451935.712 -45.1741935.726 -43.8241935.738 -41.4221935.737 -38.3811935.727
 -37.8651935.733 -30.67   1936 -30.4381936.018 -29.611   1936 -29.182   1936
  -28.63   1936 -22.617   1936 -21.104   1936 -19.086   1936 -14.775   1936
 -12.049   1936 -8.071   1936 -2.0321935.579   01935.444   6.705   1935
   7.1341934.878   7.3521934.817   7.3891934.782   7.671936.373   8.0081940.113
   8.4611935.018   8.5091934.504   9.1651934.256   9.3151934.238   9.928   1934
  12.6021933.437 14.399   1933 17.6981932.333 19.257   1932 20.0251931.951
  22.911 1931.81 24.9381931.691 25.8611931.655 26.1891931.651   28.511931.658
  29.9391931.657 33.7221931.647   34.921931.647 36.103 1931.66 36.9271931.677
  38.213 1931.73 39.3381931.787 40.0081931.834 40.6921931.873 42.8591931.951
   43.78   1932 44.4421932.087 45.4191932.218 50.3541932.894 51.194   1933
  52.4511933.217 56.789   1934 60.7761934.785 61.851   1935 62.7861935.184
  65.1731935.644 66.8871935.951 67.166   1936 67.5721936.074 72.738   1937
  75.5351937.514 78.292   1938 81.3221938.309 81.8371938.363 81.9371938.375
  82.3081938.397 83.3111938.422 87.8271938.811 88.6021938.871 88.952 1938.9
  89.127 1938.92 89.143 1938.92 89.1711938.919 89.1911938.918 89.2221938.906
   89.26 1938.9 89.3321938.895   89.831938.871 90.4821938.846 90.7321938.834
  90.9751938.818 91.4241938.776 91.7371938.739 94.2211938.414 94.7431938.403
  95.319 1938.37 97.602   1938 99.7591937.207 100.377   1937 102.4381936.276
  103.25   1936   105.91935.175 106.483   1935 108.8151934.312 109.882   1934
 112.6011933.198 113.272   1933 115.4411932.377 116.851   1932 130.2021931.689
 133.1671931.624 137.9911931.513 143.7081931.389 148.471 1931.29 149.9281931.261
 154.4851931.177 154.816 1931.17 154.9841931.165 155.1641931.157 155.5991931.142
 155.8841931.129 155.981931.126 156.121931.123 156.821931.131 156.841931.137
 157.1831931.177 157.4931931.204 157.6281931.207   157.81931.205 161.6191931.148
 161.8091931.144 162.0341931.137 162.2451931.124 162.3981931.108 162.5671931.078
 162.5991931.075 162.6261931.075 163.0711931.079 164.5391931.092 164.6971931.094
 164.999 1931.1 166.5131931.127 174.5231931.168 177.7041931.238 180.9891931.269
 187.4261931.356 191.4571931.471 193.986 1931.49 195.2661931.536 196.3051931.583
 199.9821931.806 200.7661931.823 201.3651931.857 202.2091931.844 202.8691931.862
 203.9771931.916 205.444   1932 205.5311932.054 207.2681932.103 207.8111932.107
 208.3321932.098 209.4831932.068 210.8421932.053 211.441932.033 211.814   1932
  212.711931.957 213.6781931.928 231.5481931.215 232.2711931.187 234.891931.124
 235.5221931.107 236.2071931.088 236.4261931.083 236.641931.082 237.4171931.082
 237.6881931.083 237.9341931.087 238.1631931.095 238.3931931.108 239.0671931.154
 247.446   1931 249.0131930.985 250.3381930.967 250.4741930.967 250.794   1931
 251.901   1931 252.091   1931   2601931.234

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035   8.008   .025 88.602   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
         8.008 88.602   6.34   6.34   6.34   .1   .3
Left Levee   Station=   8.008   Elevation= 1940.11
Right Levee   Station=   88.6   Elevation= 1938.87

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1937.45 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   4.30 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 1933.15 * Reach Len. (ft)   *   6.34 *   6.34 *   6.34 *
* Crit W.S. (ft)   * 1934.27 * Flow Area (sq ft)   *   *   42.43 *   *
* E.G. Slope (ft/ft)   *0.068909 * Area (sq ft)   *   *   42.43 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   38.30 * Top Width (ft)   *   *   38.30 *   *
* Vel Total (ft/s)   *   16.64 * Avg. Vel. (ft/s)   *   *   16.64 *   *
* Max Chl Dpth (ft)   *   2.19 * Hydr. Depth (ft)   *   *   1.11 *   *
* Conv. Total (cfs)   * 2689.5 * Conv. (cfs)   *   * 2689.5 *   *
* Length Wtd. (ft)   *   6.34 * Wetted Per. (ft)   *   *   38.52 *   *
* Min Ch El (ft)   * 1931.65 * Shear (lb/sq ft)   *   *   4.74 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   78.85 *   *
* Frctn Loss (ft)   *   1.65 * Cum Volume (acre-ft) *   *   3.43 *   0.00 *
* C & E Loss (ft)   *   0.32 * Cum SA (acres)   *   *   2.78 *   0.01 *
****

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -7900

INPUT
Description:
Station Elevation Data   num=   365

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001941.929-399.7121941.922-393.1861941.809-387.9531941.712-387.1861941.698
-382.9811941.612-381.8281941.598-381.3761941.595-381.2221941.598-377.8671941.576
 -375.941941.571-375.1321941.572-373.8251941.587-372.8861941.587-372.2771941.589
-367.9641941.502-366.7171941.411-366.1611941.381 -362.631941.256-360.7531941.201
-357.0581941.107-352.488    1941 -348.211940.872-344.3161940.765-341.8041940.704
  -335.7 1940.57-334.024 1940.54-328.6361940.448-326.8811940.431-324.8851940.381
 -323.281940.334-322.0871940.286-321.5721940.263-321.1691940.256 -320.461940.231
 -320.131940.224-318.8771940.192-318.6581940.185-309.0891940.006 -308.83    1940
-307.9851939.982-290.7391939.584-288.4011939.537-286.5321939.503-284.8331939.474
-281.6421939.418-279.153 1939.37-276.8761939.323-275.1231939.294 -272.421939.252
 -270.411939.222-269.533 1939.21-264.2341939.142-262.3161939.118-262.0431939.115
-261.7941939.112-261.4431939.109-261.0561939.107-260.9441939.107-260.8751939.107
-260.2331939.112-260.0181939.116-259.7941939.121-259.4641939.127-259.356 1939.13
-259.2091939.133-258.7781939.137-258.5771939.139-257.4821939.113-257.4141939.113
-256.1871939.096-254.472 1939.08-251.5281939.032-249.652    1939-238.4711938.791
-237.6941938.768-234.4231938.552-234.0751938.542-233.6021938.539-233.077 1938.54
-232.3171938.547-231.9711938.553-230.0721938.563-224.1531938.613-223.294    1939
-221.836    1939-220.742    1939-220.304    1939-218.796    1939-217.401    1939
-214.995    1939-211.528    1939-204.6631938.747-203.4541938.768-197.892 1938.84
 -197.281938.842-195.8141938.855-195.1231938.851-194.8921938.854-193.2261938.836
-191.3011938.851-189.8731938.862-189.5211938.863-189.2871938.864-189.0261938.864
 -188.761938.862-188.4841938.857-188.099 1938.85-187.4631938.841-186.459 1938.83
-183.3881938.801-183.0621938.798-182.8921938.793 -182.071938.766-181.5961938.747
-181.3791938.735-180.7591938.692-180.5161938.667-180.1421938.651-179.3081938.621
-177.697 1938.57-176.3861938.545-173.971 1938.47-171.0271938.384-170.0791938.359
-167.443 1938.29-166.8391938.268 -166.451938.249 -165.98 1938.22-165.6811938.166
-165.5071938.156-164.4051938.117-163.9041938.092-163.808 1938.09-163.7431938.089
 -163.451938.088-163.1971938.087-162.7781938.089-162.6691938.089 -162.621938.089
-162.2731938.096-161.4141938.099-161.2341938.101-161.1741938.105 -161.121938.106
-161.0441938.105-160.6131938.099-160.3641938.096  -160.21938.096-160.0091938.098
 -159.161938.125-158.793 1938.13-157.5361938.099-157.2361938.097-152.279    1938
 -142.971937.907-140.5651937.887-139.154 1937.88-137.2351937.879-135.5381937.867
 -132.561937.832 -124.481937.714-121.7361937.667-120.484 1937.64-120.0051937.625
-119.5221937.614-118.5311937.602-117.268 1937.59-116.1071937.581-115.2971937.578
-114.434 1937.58-113.8911937.581-111.5871937.611-111.4371937.628-111.1021937.647
 -109.411937.697-105.1381937.844  -104.61937.857-104.0911937.856  -99.86    1938
 -98.692    1938 -96.0541937.581 -95.5031937.559  -94.381937.522 -91.2611937.401
  -89.421937.366 -86.2621937.317 -81.8911937.276 -79.3261937.243 -76.6191937.188
 -74.0291937.101 -71.876    1937  -71.391936.928 -65.902    1936 -57.366 1935.65
 -55.9841935.601  -49.511935.514 -49.2341935.518 -42.4691935.518 -41.6371935.515
 -41.242 1935.52 -40.826 1935.53 -39.8411935.538 -38.0891935.538 -35.871 1935.53
 -35.4951935.535 -30.0091935.738 -29.4331935.718 -29.1091935.711 -23.861    1936
  -20.85    1936 -20.281    1936 -19.523    1936 -12.208    1936 -10.734    1936
  -7.312    1936  -7.107    1936  -6.6861935.956  -6.3281935.929  -4.5231935.779
       0 1935.39   4.535    1935   5.4811934.831   7.3571934.486   7.5321935.926
   7.5651936.262   7.6211936.825   7.8311938.014   8.0131940.034   8.2581937.283
   8.3351936.458   8.3411936.386   8.3851935.882   8.3991935.716   8.4751934.756
   8.5131934.326   8.666 1934.29   8.901 1934.25   9.3641934.205  10.006    1934
   11.071933.755  14.307    1933  18.8061932.116  19.395    1932  20.3321931.921
  21.9991931.775  22.862 1931.72  25.0461931.613   26.581931.523  27.2791931.496
  27.5261931.492  29.2831931.498  30.3641931.498  33.2281931.489  34.134 1931.49
  35.0291931.499  35.6521931.512  36.6261931.553  37.4771931.596  37.9851931.631
  38.5021931.661  40.1421931.719  40.9691931.764  44.202    1932  44.9951932.109
  52.042    1933  55.8371933.655  58.892    1934  62.1341934.579  64.465    1935
  66.9411935.444  70.119    1936  74.7521936.843  75.629    1937  76.9241937.238
  80.629    1938  85.4181938.413  87.8261938.598  88.9171938.689  89.4611938.751
  89.5091938.752  89.5981938.749   89.661938.744  89.7561938.708  89.874 1938.69
  90.0961938.674  91.6471938.599  93.672 1938.52   94.451938.484  95.2071938.433
  96.6011938.302  97.5761938.189  99.017    1938  99.8251937.717 101.845    1937
 102.8411936.645 104.652    1936  106.811935.301 107.709    1935 109.209 1934.51
 110.953    1934 111.7271933.772 114.336    1933 116.4781932.384 117.742    1932
 158.5541931.045 160.529    1931 160.5581930.991 164.6571930.961 172.7891930.985
 176.125    1931 176.2951931.002 185.091 1931.12 186.4491931.159 190.471 1931.19
 190.9661931.207 191.3681931.226  192.791931.312 195.5691931.371 195.8391931.386
 196.219 1931.38 196.5171931.388 197.0161931.413 199.068 1931.53 201.9721931.626
 204.8141931.731 206.578  1931.8 207.1791931.809 208.1561931.855 208.6161931.885
 208.8171931.904 208.9931931.927 209.0441931.931 209.0831931.933 209.5881931.946
 209.6281931.947 209.6591931.948 209.6861931.947 209.8181931.945  209.891931.942
 209.9681931.936 210.0551931.925 210.3181931.878   210.51931.852 210.787 1931.83
 211.3881931.804 211.9931931.785 213.3041931.728 214.4421931.705 220.1161931.487
  220.831931.453 230.1291931.135 230.643 1931.11 234.422    1931 239.0411930.946
 249.9151930.841 251.0471930.826 251.1631930.826 252.868    1931 257.463    1931
  258.09    1931 258.1311930.983 258.3561930.967 258.7821930.962     2601930.977

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    -400    .035   8.013    .025  89.461    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.013  89.461             100     100     100            .1       .3
Left Levee      Station=   8.013      Elevation= 1940.03
Right Levee     Station=   89.46      Elevation= 1938.75

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1936.90  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.76  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1933.14  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1934.19  * Flow Area (sq ft)     *          *   45.38  *          *
* E.G. Slope (ft/ft)     *0.056666  * Area (sq ft)          *          *   45.38  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   39.14  * Top Width (ft)        *          *   39.14  *          *
```

* Vel Total (ft/s)	* 15.56	* Avg. Vel. (ft/s)	*	* 15.56	*
* Max Chl Dpth (ft)	* 2.31	* Hydr. Depth (ft)	*	* 1.16	*
* Conv. Total (cfs)	* 2965.8	* Conv. (cfs)	*	* 2965.8	*
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	* 39.37	*
* Min Ch El (ft)	* 1931.49	* Shear (lb/sq ft)	*	* 4.08	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 63.45	*
* Frctn Loss (ft)	* 0.40	* Cum Volume (acre-ft)	*	* 3.42	* 0.00 *
* C & E Loss (ft)	* 0.16	* Cum SA (acres)	*	* 2.77	* 0.01 *

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -8000

INPUT
Description:
Station Elevation Data num= 280

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-400	1940.8	-398.273	1940.771	-396.471	1940.745	-387.588	1940.593	-376.706	1940.411
-364.039	1940.19	-363.064	1940.172	-360.663	1940.13	-357.51	1940.075	-353.383	1940
-304.505	1939.096	-303.313	1939.074	-299.635	1939	-272.754	1938.289	-271.738	1938.261
-270.429	1938.219	-269.911	1938.206	-269.386	1938.196	-268.851	1938.192	-268.327	1938.19
-265.804	1938.192	-265.306	1938.19	-264.414	1938.183	-263.136	1938.171	-261.868	1938.153
-260.968	1938.134	-257.217	1938.199	-255.511	1938.217	-253.668	1938.226	-250.065	1938.226
-246.37	1938.22	-244.571	1938.207	-242.46	1938.185	-236.959	1938.143	-236.422	1938.138
-234.139	1938.115	-231.042	1938.074	-226.335	1938	-215.714	1937.643	-199.002	1937.241
-188.965	1937	-174.697	1936.663	-169.822	1936.538	-157.535	1936.232	-155.524	1936.183
-155.06	1936.17	-153.372	1936.132	-147.366	1936	-146.137	1935.931	-141.629	1935.778
-140.321	1935.685	-139.931	1935.676	-139.561	1935.675	-139.023	1935.677	-136.104	1935.728
-132.758	1935.773	-132.265	1935.787	-131.591	1935.866	-131.311	1935.877	-130.784	1935.885
-129.897	1935.889	-128.543	1935.886	-124.392	1935.862	-116.449	1935.806	-111.845	1935.778
-110.069	1935.772	-108.692	1935.77	-107.711	1935.774	-101.021	1935.851	-97.432	1935.884
-97.141	1935.884	-94.811	1935.887	-94.391	1935.885	-90.427	1935.881	-89.943	1935.881
-89.939	1935.881	-89.934	1935.881	-89.931	1935.881	-89.402	1935.88	-88.792	1935.875
-87.691	1935.871	-84.791	1935.863	-83.541	1935.848	-82.545	1935.84	-82.193	1935.837
-81.794	1935.828	-81.389	1935.792	-80.838	1935.765	-79.842	1935.733	-76.941	1935.657
-75.781	1935.622	-75.399	1935.614	-75.056	1935.611	-74.521	1935.615	-73.653	1935.625
-70.746	1935.65	-68.853	1935.673	-65.158	1935.735	-59.698	1935.814	-59.637	1935.815
-58.414	1935.826	-58.253	1935.827	-58.063	1935.83	-57.736	1935.832	-57.144	1935.832
-56.862	1935.831	-56.653	1935.828	-56.332	1935.82	-56.143	1935.817	-55.681	1935.814
-54.669	1935.811	-54.046	1935.81	-52.325	1935.807	-49.945	1935.775	-46.082	1935.73
-44.511	1935.724	-44.441	1935.724	-44.365	1935.723	-42.693	1935.711	-40.943	1935.689
-40.455	1935.681	-39.203	1935.66	-37.145	1935.622	-36.436	1935.609	-30.871	1935.525
-30.068	1935.513	-28.737	1935.499	-28.671	1935.498	-27.957	1935.49	-27.194	1935.477
-27.131	1935.475	-26.281	1935.454	-26.172	1935.45	-15.352	1935.105	-13.641	1935.045
-12.337	1935	-9.031	1934.233	-8.113	1934	-4.474	1934	-2.797	1934
-2.517	1934.172	-2.239	1934.342	-1.357	1934.528	-1.255	1934.56	-.989	1934.586
-.895	1934.613	-.691	1934.613	-.255	1934.597	0	1934.582	1.065	1934.522
1.673	1934.475	2.161	1934.425	2.701	1934.344	2.933	1934.309	4.781	1934
9.434	1933.167	10.407	1933	10.528	1932.971	13.846	1932	14.683	1931.695
16.383	1931	17.839	1930.444	18.931	1930	19.803	1929.634	21.315	1929
24.986	1928.246	27.647	1928	30.152	1927.951	31.621	1927.927	32.738	1927.914
33.909	1927.909	35.392	1927.907	36.973	1927.907	38.327	1927.908	39.202	1927.911
39.676	1927.919	39.909	1927.934	40.118	1928	41.671	1928.876	41.947	1929
42.941	1929.145	45.36	1930	45.477	1930	48.12	1930	49.174	1930.517
49.641	1930.628	49.781	1930.661	50.818	1930.908	51.204	1931	63.022	1931.291
66.899	1931.386	67.017	1931.382	67.872	1931.39	68.396	1931.395	71.631	1931.434
78.851	1931.521	79.594	1931.544	81.326	1931.598	83.678	1931.626	94.684	1932
96.401	1932.441	98.669	1933	100.457	1933.484	102.921	1934	104.999	1934.422
107.994	1935	109.988	1935.356	110.346	1935.364	110.668	1935.337	113.275	1935.67
113.591	1935.74	114.061	1935.817	114.244	1935.842	114.362	1935.865	114.411	1935.874
114.414	1935.901	114.459	1935.912	114.476	1935.92	114.523	1935.927	114.595	1935.932
114.611	1935.932	114.798	1935.927	114.855	1935.925	114.908	1935.92	115.095	1935.912
115.146	1935.911	115.213	1935.91	115.489	1935.904	115.543	1935.901	115.771	1935.881
115.827	1935.876	116.118	1935.853	116.338	1935.831	116.989	1935.763	118.924	1935.607
119.226	1935.582	121.161	1935.416	126.318	1935	128.284	1934.385	129.499	1934
132.648	1933.009	132.679	1933	132.737	1932.987	137.631	1932	139.547	1931.608
142.57	1931	145.336	1930.487	146.694	1930.366	151.512	1930	160.232	1929.868
162.279	1929.843	163.201	1929.843	163.389	1929.86	163.551	1929.999	163.658	1930
164.868	1930.029	166.666	1930.025	167.926	1930	168.968	1929.993	171.741	1929.963
174.265	1929.921	176.348	1929.876	177.933	1929.833	179.043	1929.797	180.41	1929.747
182.662	1929.681	185.419	1929.591	186.638	1929.56	187.634	1929.547	188.441	1929.547
189.052	1929.553	189.649	1929.564	189.751	1929.562	190.066	1929.451	190.428	1929.416
191.208	1929.399	192.612	1929.406	194.571	1929.431	198.898	1929.493	200	1929.507

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-400	.035	-400	.025	114.414	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-400	114.414	100	100	100	.1	.3

Right Levee Station= 114.41 Elevation= 1935

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 1933.06	* Element	* Left OB	* Channel	* Right OB *

* Vel Head (ft)	*	2.65	* Wt. n-Val.	*		*	0.025	*		*	
* W.S. Elev (ft)	*	1930.41	* Reach Len. (ft)	*	100.00	*	100.00	*	100.00	*	
* Crit W.S. (ft)	*	1931.56	* Flow Area (sq ft)	*		*	54.06	*		*	
* E.G. Slope (ft/ft)	*	0.023912	* Area (sq ft)	*		*	54.06	*		*	
* Q Total (cfs)	*	706.00	* Flow (cfs)	*		*	706.00	*		*	
* Top Width (ft)	*	31.03	* Top Width (ft)	*		*	31.03	*		*	
* Vel Total (ft/s)	*	13.06	* Avg. Vel. (ft/s)	*		*	13.06	*		*	
* Max Chl Dpth (ft)	*	2.50	* Hydr. Depth (ft)	*		*	1.74	*		*	
* Conv. Total (cfs)	*	4565.6	* Conv. (cfs)	*		*	4565.6	*		*	
* Length Wtd. (ft)	*	100.00	* Wetted Per. (ft)	*		*	31.92	*		*	
* Min Ch El (ft)	*	1927.91	* Shear (lb/sq ft)	*		*	2.53	*		*	
* Alpha	*	1.00	* Stream Power (lb/ft s)	*		*	33.02	*		*	
* Frctn Loss (ft)	*	3.51	* Cum Volume (acre-ft)	*		*	3.31	*	0.00	*	
* C & E Loss (ft)	*	0.33	* Cum SA (acres)	*		*	2.69	*	0.01	*	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -8100

INPUT
Description:
Station Elevation Data num= 239

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001939.943	-378.0831939.391	-372.1151939.238	-370.3811939.193	-365.321939.073					
-365.0981939.068	-362.036	1939	-358.8351938.922	-352.791938.784	-346.0431938.638				
-340.4091938.522	-336.3141938.441	-333.4871938.391	-331.561 1938.36	-330.3391938.344					
-329.689 1938.34	-328.791938.338	-328.0121938.328	-327.8121938.324	-327.0721938.312					
-324.21938.232	-323.7961938.224	-323.4551938.217	-320.3821938.136	-319.5781938.118					
-319.1351938.108	-318.782	1938.1	-318.5451938.095	-318.174 1938.09	-317.871938.086				
-316.7121938.056	-316.09 1938.04	-315.91938.036	-314.3021938.006	-314.2641938.005					
-314.191938.005	-313.795	1938	-312.5351937.988	-305.9691937.953	-302.7031937.919				
-289.4961937.745	-282.7791937.649	-278.0751937.577	-276.6181937.575	-275.2271937.571					
-273.5461937.562	-270.4991937.515	-268.954 1937.51	-266.629 1937.47	-266.019 1937.46					
-264.9551937.444	-262.0491937.408	-257.6771937.403	-253.9651937.398	-252.5551937.395					
-250.9611937.392	-250.0171937.392	-249.306 1937.39	-248.7661937.385	-236.011937.244					
-232.46 1937.21	-221.3071937.077	-221.0481937.074	-220.4821937.068	-215.319	1937				
-214.3551936.979	-214.1811936.975	-214.151936.976	-214.0111936.977	-213.9511936.979					
-213.9281936.979	-213.9111936.979	-213.8871936.979	-213.8551936.978	-213.8131936.977					
-213.6491936.973	-213.6251936.972	-213.5541936.971	-213.516 1936.97	-213.481936.969					
-213.3051936.964	-212.0141936.933	-200.688 1936.69	-196.2611936.577	-190.5831936.433					
-184.21 1936.28	-184.0171936.275	-180.3921936.189	-178.221936.135	-176.231936.097					
-171.104	1936	-170.9881935.998	-163.6741935.895	-163.222 1935.89	-157.496 1935.82				
-156.7431935.807	-147.6671935.712	-145.9571935.685	-141.0891935.617	-130.9061935.498					
-129.7751935.478	-129.5551935.465	-121.5161935.514	-121.3621935.532	-120.8741935.552					
-120.6421935.558	-120.2231935.567	-117.9681935.518	-117.4221935.524	-116.7021935.514					
-116.6151935.513	-116.3851935.508	-116.1351935.503	-113.5841935.441	-111.7661935.397					
-111.3741935.395	-111.0241935.389	-110.5861935.376	-95.781935.022	-95.7531935.021					
-95.5761935.016	-94.916	1935	-88.5461934.933	-88.2591934.931	-88.113 1934.93				
-88.0591934.932	-87.2391934.936	-86.2831934.919	-86.0791934.915	-85.86 1934.91					
-85.0481934.896	-83.6051934.869	-79.0681934.797	-45.869	1934	-43.63	1934			
-43.168	1934	-42.801	1934	-41.551	1934	-35.3171934.148	-34.7841934.149		
-34.5381934.158	-16.7721934.092	-16.631934.068	-16.2221934.051	-14.424	1934				
-14.402	1934	-14.401	1934	-6.4181933.611	01933.273	5.192	1933		
10.1111932.223	11.523	1932	12.383 1931.72	14.501	1931	15.7421930.583			
17.47	1930	18.3471929.692	20.39	1929	21.4141928.656	23.343	1928		
27.8031927.779	30.557 1927.53	31.3481927.499	33.1821927.456	35.2551927.416					
35.8971927.405	36.385 1927.4	36.8961927.397	37.5441927.396	38.2351927.396					
38.8261927.397	39.2091927.398	39.4161927.401	39.5181927.408	39.6621927.454					
39.6651927.471	40.1721927.704	40.824 1927.83	41.809 1927.93	42.113	1928				
43.381928.477	44.771	1929	45.7221929.154	51.053	1930	55.115	1930		
56.733	1930	58.217	1930	87.661930.445	88.301 1930.43	90.1431930.436			
96.5561930.541	98.7151930.576	103.6411930.611	106.4731930.623	107.4351930.643					
112.6151930.753	114.5711930.758	115.3271930.778	123.0751930.979	123.2461930.979					
123.278 1930.98	123.841	1931	126.2221931.492	128.646	1932	132.7131932.832			
133.471	1933	135.0731933.306	138.519	1934	141.5391934.574	144.202	1935		
144.8971935.054	144.9361935.054	145.124 1935.05	145.5481935.039	146.947	1935				
152.6161934.403	156.041	1934	157.3671933.669	160.263	1933	161.884 1932.65			
164.992	1932	168.0171931.386	169.814	1931	172.5691930.439	174.847	1930		
175.6041929.883	175.771929.857	180.6891929.096	181.224	1929	181.7041928.988				
186.7321928.881	190.6841928.808	193.4811928.764	195.1211928.743	195.9631928.738					
196.5281928.746	196.8921928.745	197.7771928.729	2001928.678						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-400	.035	-400	.025	144.202	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-400 144.202 100 100 100 .1 .3
Right Levee Station= 144.2 Elevation= 1935

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1931.40	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.56	Wt. n-Val.		0.025		
W.S. Elev (ft)	1930.83	Reach Len. (ft)	100.00	100.00	100.00	
Crit W.S. (ft)	1930.83	Flow Area (sq ft)		117.27		
E.G. Slope (ft/ft)	0.008660	Area (sq ft)		117.27		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	102.43	Top Width (ft)		102.43		
Vel Total (ft/s)	6.02	Avg. Vel. (ft/s)		6.02		
Max Chl Dpth (ft)	3.44	Hydr. Depth (ft)		1.14		
Conv. Total (cfs)	7586.5	Conv. (cfs)		7586.5		
Length Wtd. (ft)	100.00	Wetted Per. (ft)		103.28		
Min Ch El (ft)	1927.40	Shear (lb/sq ft)		0.61		
Alpha	1.00	Stream Power (lb/ft s)		3.70		
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)		3.11	0.00	
C & E Loss (ft)	0.05	Cum SA (acres)		2.54	0.01	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -8200

INPUT
Description:
Station Elevation Data num= 263

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-400	1939	-399.784	1939	-398.716	1939	-396.196	1939	-394.498	1939
-391.433	1938.848	-389.333	1938.751	-386.807	1938.663	-385.225	1938.602	-384.086	1938.538
-383.193	1938.445	-382.744	1938.427	-382.238	1938.412	-381.51	1938.393	-380.986	1938.36
-380.977	1938.346	-380.488	1938.31	-379.588	1938.292	-378.117	1938.269	-377.599	1938.26
-376.813	1938.243	-376.113	1938.23	-375.075	1938.214	-373.873	1938.198	-373.76	1938.196
-371.206	1938.166	-369.241	1938.172	-368.653	1938.174	-368.515	1938.173	-368.041	1938.17
-364.866	1938.111	-363.373	1938.083	-363.275	1938.082	-359.078	1938	-351.616	1937.835
-339.521	1937.569	-338.591	1937.551	-338.261	1937.554	-337.667	1937.551	-336.159	1937.542
-335.418	1937.53	-331.731	1937.52	-330.036	1937.519	-329.533	1937.524	-328.977	1937.522
-327.919	1937.509	-315.329	1937.278	-314.279	1937.257	-312.477	1937.219	-301.19	1937
-297.471	1936.918	-296.861	1936.91	-296.573	1936.906	-295.831	1936.893	-295.571	1936.887
-285.867	1936.687	-283.237	1936.643	-280.624	1936.597	-275.938	1936.503	-275.055	1936.485
-272.826	1936.439	-252.487	1936	-248.794	1935.925	-248.223	1935.917	-241.931	1935.812
-239.709	1935.774	-238.426	1935.758	-233.035	1935.69	-227.725	1935.633	-225.632	1935.628
-223.522	1935.63	-221.161	1935.618	-220.013	1935.601	-217.85	1935.57	-206.338	1935.352
-202.853	1935.304	-202.371	1935.295	-196.961	1935.192	-191.394	1935.091	-186.741	1935
-185.118	1934.962	-179.959	1934.821	-173.719	1934.626	-171.999	1934.565	-170.672	1934.585
-170.214	1934.601	-165.249	1934.691	-162.459	1934.75	-162.452	1934.75	-161.862	1934.758
-161.724	1934.754	-161.297	1934.753	-161.126	1934.753	-161.025	1934.753	-160.643	1934.746
-160.214	1934.736	-159.449	1934.718	-159.057	1934.711	-155.296	1934.681	-155.188	1934.681
-152.217	1934.547	-145.401	1934.19	-141.573	1934	-138.424	1933.842	-136.446	1933.755
-133.904	1933.681	-129.574	1933.563	-127.866	1933.523	-126.694	1933.502	-125.894	1933.495
-124.963	1933.497	-118.635	1933.57	-116.773	1933.606	-115.844	1933.63	-115.021	1933.665
-113.682	1933.698	-112.688	1933.719	-111.276	1933.728	-109.824	1933.731	-109.411	1933.738
-109.111	1933.757	-107.177	1933.962	-106.878	1934	-100.641	1934.419	-100.222	1934.44
-98.646	1934.519	-96.834	1934.591	-95.617	1934.628	-92.994	1934.662	-90.621	1934.141
-90.423	1934.005	-90.421	1934.005	-90.417	1934.005	-90.388	1934	-90.26	1934
-86.784	1934	-82.717	1934	-81.671	1934	-78.699	1933.836	-76.106	1933.711
-72.142	1933.498	-71.758	1933.477	-70.098	1933.376	-69.927	1933.344	-66.596	1933.191
-65.905	1933.176	-65.543	1933.165	-65.116	1933.148	-63.992	1933.1	-63.711	1933.087
-62.527	1933.054	-60.63	1933	-59.462	1932.986	-56.966	1932.963	-53.708	1932.939
-45.692	1932.894	-42.174	1932.882	-39.559	1932.881	-39.357	1932.882	-35.88	1932.89
-35.493	1932.886	-33.852	1932.885	-30.225	1932.871	-29.599	1932.877	-25.549	1932.925
-23.721	1932.939	-23.692	1932.939	-23.654	1932.941	-23.504	1932.949	-23.477	1932.952
-23.415	1932.956	-23.369	1932.965	-23.268	1932.96	-23.256	1932.958	-23.211	1932.957
-23.176	1932.956	-23.085	1932.951	-23.012	1932.945	-22.978	1932.941	-22.938	1932.938
-22.802	1932.933	-22.735	1932.929	-22.651	1932.925	-22.532	1932.922	-22.505	1932.922
-21.148	1932.923	-20.986	1932.92	-19.829	1932.91	-18.917	1932.896	-16.352	1932.851
-16.053	1932.844	-15.762	1932.834	-13.645	1932.747	-11.511	1932.698	-8.311	1932.603
0	1932.231	5.15	1932	9.437	1931.427	10.538	1931.288	12.812	1931
13.606	1930.722	14.983	1930.24	15.6	1930	15.971	1929.843	16.527	1929.62
18.067	1929	19.418	1928.448	20.248	1928.109	20.514	1928	20.851	1927.884
21.605	1927.724	25.701	1927.117	26.935	1927	28.701	1926.997	31.008	1927
32.412	1927	35.594	1926.926	37.417	1926.892	38.953	1926.88	39.993	1926.901
40.664	1926.946	41.085	1926.994	41.131	1927	41.351	1927.075	44.351	1928
45.118	1928.127	50.07	1929	90.159	1929.532	94.225	1929.565	103.637	1929.622
107.855	1929.651	111.635	1929.683	118.505	1929.743	121.503	1929.765	123.829	1929.777
126.543	1929.772	128.275	1929.775	131.144	1929.793	134.721	1929.82	142.347	1929.883
154.877	1929.996	155.309	1930	155.389	1930.02	156.954	1930.403	159.435	1931
161.886	1931.597	163.691	1932	166.733	1932.739	167.885	1933	171.083	1933.785
171.972	1934	173.193	1934	184.108	1934	184.244	1933.966	187.676	1933
189.233	1932.595	191.319	1932	192.688	1931.632	194.971	1931	198.761	1930.016
198.822	1930	198.86	1929.99	200	1929.684				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-400	.035	-162.459	.025	171.972	.035

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -162.459 171.972              100     100     100             .1       .3
Right Levee     Station=  171.97      Elevation=    1934

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1930.49  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.38  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1930.11  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1930.01  * Flow Area (sq ft)     *          *  142.52  *          *
* E.G. Slope (ft/ft)     *0.006862  * Area (sq ft)          *          *  142.52  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  140.46  * Top Width (ft)        *          *  140.46  *          *
* Vel Total (ft/s)       *    4.95  * Avg. Vel. (ft/s)      *          *    4.95  *          *
* Max Chl Dpth (ft)      *    3.23  * Hydr. Depth (ft)      *          *    1.01  *          *
* Conv. Total (cfs)      *  8523.0  * Conv. (cfs)           *          *  8523.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  141.22  *          *
* Min Ch El (ft)         * 1926.88  * Shear (lb/sq ft)      *          *    0.43  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.14  *          *
* Frctn Loss (ft)        *    0.51  * Cum Volume (acre-ft)  *          *    2.81  *    0.00  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    2.26  *    0.01  *
*********************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.
Note:    Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -8300

INPUT
Description:
Station Elevation Data    num=     281
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001937.667-398.1931937.659-394.4081937.656-391.5921937.662-389.2291937.675
-389.1441937.676-388.5841937.677-387.3481937.663-386.3131937.659-385.4311937.652
-384.9171937.651-383.727 1937.66-383.438 1937.66-382.9451937.652-378.561 1937.57
-376.9221937.541-376.7021937.539-372.1581937.503-371.6171937.494-368.7261937.467
-362.9891937.433-355.6431937.386-353.2321937.366-353.1951937.365-351.874 1937.35
-350.4321937.326-348.0211937.285-347.0721937.266-345.7951937.234-338.111    1937
-328.1811936.672 -319.911936.408-317.1321936.313-315.7451936.262 -312.281936.183
 -311.281936.159-310.7851936.146-310.6281936.142-310.537 1936.14-310.0521936.137
-308.3281936.124-305.5881936.219-305.5461936.226-305.5351936.228-305.5261936.228
-305.4641936.232 -305.141936.216-304.6431936.224-304.4611936.228-304.1231936.236
 -303.49 1936.22-303.2621936.222-299.473 1936.17-299.2721936.168-299.1271936.166
-298.9161936.165-298.4961936.158-290.1651936.167-289.9921936.161-287.1631936.198
-286.9391936.241-286.862 1936.25-286.7321936.262-286.2621936.301-283.1251936.339
-282.5781936.345 -282.431936.356-281.2221936.393-279.4061936.465-278.3931936.491
-278.2091936.491-278.119 1936.49-277.7611936.478-277.0851936.455-275.666 1936.39
-275.346 1936.37-275.1811936.337-274.3991936.251-272.7411936.108-272.6751936.103
-271.061    1936-269.8921935.966 -269.72 1935.96-266.6151935.852-265.7241935.824
-262.8291935.714-261.2141935.652-258.3941935.561-255.2761935.465-253.4081935.412
-250.9891935.345-249.5461935.308-248.0481935.285-241.308 1935.12-241.1111935.116
-240.8041935.107-236.901    1935-213.5721934.699-213.1381934.693 -204.841934.583
-203.0881934.552-199.1681934.496 -197.651934.471-196.2751934.437-195.8881934.429
-193.345 1934.39-192.4851934.377-191.9591934.371 -191.671934.369-190.6451934.377
-190.3151934.375-189.4261934.375  -188.51934.372-188.0561934.369-185.7391934.353
 -184.091934.319-180.6191934.288-180.2211934.286-176.5341934.293-176.1551934.296
-176.0741934.297-175.6721934.304-174.7021934.275-174.5481934.275-174.5021934.275
-173.6571934.265-172.9491934.261-172.5031934.257-171.9671934.276-171.3791934.344
    -1711934.368-170.3851934.381-169.3991934.381-167.942 1934.37-164.6521934.336
 -163.59 1934.33-162.9591934.332-161.444 1934.35-160.8951934.367-159.5611934.458
 -159.281934.457-159.0561934.455 -159.011934.455-158.3991934.449-157.4531934.438
-156.9091934.431-155.8671934.419-155.0491934.409-154.4621934.401-154.1611934.397
 -152.481934.376-151.2341934.268-150.1661934.159-149.7681934.131-148.8551934.089
-147.0241934.024-146.7681934.017-146.219    1934-138.0511933.537 -133.911933.312
-132.0381933.216-131.6691933.199-131.1121933.174-131.0541933.171  -129.51933.097
-129.1781933.089-125.619    1933-124.1891932.989-122.949 1932.99 -122.46    1933
-122.2181933.012-122.0921933.018-120.8291933.143-119.2031933.224-115.5161933.335
-114.1661933.388-114.117 1933.41 -104.18  1933.3 -96.9331933.221 -84.817    1933
 -80.0931932.801   -79.81932.794 -79.2451932.785 -75.1851932.703 -74.9531932.702
 -74.7911932.704 -74.6161932.715 -74.506 1932.73 -74.2581932.731 -73.5981932.719
 -72.2151932.686 -64.9831932.495 -63.1281932.449 -61.4781932.409 -58.6231932.339
 -56.551  1932.3 -53.1061932.243 -48.3771932.158 -42.8931932.034 -41.836    1932
 -13.2581931.375  -5.6051931.203  -2.5911931.137   -.8991931.102       01931.085
    .6551931.073    .8771931.069    .9211931.067    1.291931.059   1.5951931.053
   3.3871931.044   3.3881931.045   4.296    1931   6.6981930.754  12.079  1930.2
  14.149    1930  14.5781929.827  16.642    1929  17.5421928.632  19.066    1928
  20.2841927.505  21.522    1927  24.7681926.808  25.3731926.768   30.231926.465
  30.9361926.427  31.387 1926.41  32.0291926.397   32.88 1926.39  33.7871926.389
  35.2091926.391  36.4761926.361  37.1871926.348  37.7861926.343  38.1921926.352
  38.4531926.369  38.6171926.388    38.91926.423  38.992 1926.44  40.6731926.659
  40.9911926.727  42.942    1927  44.5591927.846   44.87    1928  49.4141928.711
  51.602    1929  52.985    1929  54.537    1929  54.5551928.636  55.3221928.561
   56.851928.537  59.3491928.545  63.1681928.581  74.3351928.695  79.9831928.734
  84.4841928.831  85.4421928.851  85.5831928.853  85.7711928.856  91.1891928.864
  91.2281928.864  91.5021928.869   97.271928.865  97.3081928.865 110.185 1928.84
 115.6071928.835 119.9321928.846 125.3721928.886 135.7521928.983 137.562    1929
 168.8121929.991 169.112    1930 175.6311930.368  176.531930.419 185.932    1931
 190.7241931.971 190.876    1932 190.9451932.014 191.6591932.159 195.851    1933
```

200 1933.56

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
-400 .035 -400 .025 200 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-400 200 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1929.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.		0.025	
W.S. Elev (ft)	1929.68	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)		Flow Area (sq ft)		170.28	
E.G. Slope (ft/ft)	0.003943	Area (sq ft)		170.28	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	144.16	Top Width (ft)		144.16	
Vel Total (ft/s)	4.15	Avg. Vel. (ft/s)		4.15	
Max Chl Dpth (ft)	3.34	Hydr. Depth (ft)		1.18	
Conv. Total (cfs)	11243.0	Conv. (cfs)		11243.0	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		145.43	
Min Ch El (ft)	1926.34	Shear (lb/sq ft)		0.29	
Alpha	1.00	Stream Power (lb/ft s)		1.20	
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)		2.45	0.00
C & E Loss (ft)	0.03	Cum SA (acres)		1.93	0.01

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -8400

INPUT
Description:
Station Elevation Data num= 197
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
-4001937.376-394.2031937.297-375.7251937.056 -371.17 1937-367.9211936.968
-365.4221936.951 -364.211936.951-360.947 1937-360.587 1937-360.559 1937
-360.486 1937-358.425 1937-356.492 1937-355.844 1937 -354.97 1937
-353.995 1937-353.693 1937-352.4291936.974-352.315 1936.97-351.7961936.948
-351.4491936.936-349.4781936.871 -347.541936.783-345.8111936.699-344.065 1936.61
-338.6011936.333-337.2861936.264-332.253 1936-330.784 1935.96 -329.621935.921
-328.724 1935.89-320.9661935.635-304.552 1935-297.4921934.842 -293.041934.912
-292.6351934.936-291.6531934.936 -289.181934.914-288.154 1934.91-287.951 1934.98
-287.5161934.991-286.2391934.995-284.4981934.985-284.4641934.983-284.4261934.983
-284.4111934.982-284.4041934.982-284.3971934.981-282.4331934.951-272.1851934.687
-270.264 1934.67-269.0271934.658 -268.911934.651-268.8671934.646-268.2241934.636
-267.9391934.624-267.4981934.604-267.2111934.596-266.389 1934.58 -264.71934.552
-259.4541934.473-244.7921934.349 -242.371934.318-238.7431934.272-238.0891934.268
-226.1611934.182 -217.131934.123-216.9091934.122-216.2391934.109-213.6661934.036
-212.2291934.001-212.173 1934-209.9651933.937-187.5011933.303-180.9021933.118
-180.8361933.117 -176.67 1933-170.822 1933 -166.76 1933 -166.48 1933
-163.862 1933-160.5121933.022-159.8821933.022-156.7251933.022-154.591 1933
-152.3031932.978-152.1221932.977 -147.871932.889-146.7591932.884-145.1471932.881
-144.2951932.878-143.9281932.878-143.7891932.877 -143.661932.875-143.2751932.865
-141.632 1932.83-140.4961932.805 -138.571932.765-134.997 1932.7-125.6161932.532
-120.4031932.433-117.8441932.382 -113.671932.295-113.2741932.284-111.9021932.237
-111.8311932.236-111.1561932.245-110.5441932.249-110.091 1932.25-109.8511932.248
-108.717 1932.24-107.8881932.237-107.0621932.239 -105.41932.261-104.4131932.261
-104.0791932.255-100.0111932.181 -99.0831932.169 -93.7271932.105 -93.2451932.096
-91.0271932.083 -86.963 1932.06 -84.0031932.074 -82.6361932.081 -82.4591932.086
-80.71932.135 -74.353 1932 -72.218 1932 -70.259 1932 -65.048 1932
-59.05 1932 -58.932 1932 -58.8651931.998 -58.8531931.998 -54.1821931.836
-51.216 1931.79 -47.6031931.687 -46.4411931.654 -36.0841931.521 -28.1361931.424
-26.4881931.398 -19.6011931.276 -8.3691931.081 -3.851 1931 01930.701
.9571930.626 9.263 1930 10.9791929.577 13.738 1929 15.0541928.525
16.583 1928 17.4571927.695 19.397 1927 19.4041926.998 21.0591926.488
22.042 1926.34 24.1021926.129 25.437 1926 28.6941925.956 30.4171925.919
31.9081925.883 33.321925.856 34.7861925.842 36.2541925.838 37.599 1925.84
38.6971925.844 39.5281925.849 40.1011925.854 40.5891925.863 42.071 1926
44.041926.831 44.38 1927 45.7961927.629 46.4221927.821 46.7731927.898
46.9891927.907 47.3931927.857 47.9721927.901 48.58 1928 50.9141928.019
51.3041928.022 51.6421928.025 52.0711928.028 52.2411928.029 53.837 1928.04
54.4081928.045 55.067 1928.05 55.9691928.057 148.2471928.829 168.644 1929
169.038 1929.02 187.291 1930 188.5511930.255 192.01 1931 193.9141931.397
196.683 1932 2001932.235

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
-400 .035 -400 .025 200 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-400 200 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1929.65	Element	Left OB	Channel	Right OB

* Vel Head (ft)	* 0.15	* Wt. n-Val.	*	* 0.025	*	*		
* W.S. Elev (ft)	* 1929.50	* Reach Len. (ft)	* 100.00	* 100.00	* 100.00	*		
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	* 225.33	*	*		
* E.G. Slope (ft/ft)	*0.001872	* Area (sq ft)	*	* 225.33	*	*		
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*	*		
* Top Width (ft)	* 166.64	* Top Width (ft)	*	* 166.64	*	*		
* Vel Total (ft/s)	* 3.13	* Avg. Vel. (ft/s)	*	* 3.13	*	*		
* Max Chl Dpth (ft)	* 3.66	* Hydr. Depth (ft)	*	* 1.35	*	*		
* Conv. Total (cfs)	* 16317.4	* Conv. (cfs)	*	* 16317.4	*	*		
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	* 167.56	*	*		
* Min Ch El (ft)	* 1925.84	* Shear (lb/sq ft)	*	* 0.16	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 0.49	*	*		
* Frctn Loss (ft)	* 0.31	* Cum Volume (acre-ft)	*	* 2.00	* 0.00	*		
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	* 1.58	* 0.01	*		

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -8500

INPUT
Description:
Station Elevation Data num= 265

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001937.172	-394.781	1937	-385.1151936.645	-384.3031936.615	-381.398	1936.53			
-375.0831936.338	-363.598	1936	-360.7531935.756	-360.3581935.709	-358.7581935.538				
-357.791935.443	-353.265	1935	-351.4091934.742	-346.65	1934	-341.6031933.492			
-341.0621933.445	-340.7531933.429	-338.8051933.508	-338.316	1933.46	-338.041933.433				
-337.6281933.421	-336.8021933.279	-336.5891933.246	-335.605	1933	-333.261932.467				
-332.6991932.327	-331.294	1932	-330.6041931.943	-330.3581931.922	-329.6461931.868				
-325.7311931.653	-325.5771931.646	-324.5311931.603	-323.3851931.554	-320.9861931.481					
-319.7831931.448	-317.6471931.398	-317.0941931.395	-316.4311931.409	-315.783	1931.41				
-306.4591931.334	-303.3261931.309	-302.9071931.306	-302.8851931.306	-301.881931.308					
-298.3261931.302	-297.881931.297	-297.731931.295	-296.5181931.283	-295.405	1931.25				
-295.2911931.246	-291.8751931.079	-289.797	1931	-288.951	1931	-288.847	1931		
-286.938	1931	-284.159	1931	-284.099	1931	-281.967	1931	-280.207	1931
-280.134	1931	-273.584	1931	-271.6471931.015	-270.067	1931	-270.043	1931	
-270.037	1931	-268.78	1931	-268.15	1931	-267.37	1931	-266.792	1931
-264.476	1931	-264.355	1931	-263.252	1931	-262.006	1931	-261.252	1931
-258.85	1931	-257.124	1931	-251.898	1931	-250.883	1931	-249.055	1931
-247.978	1931	-246.7481930.936	-245.5811930.893	-245.0311930.877	-242.5311930.805				
-240.3221930.712	-238.9081930.683	-237.8631930.649	-237.4571930.645	-236.026	1931				
-226.804	1931	-226.603	1931	-225.862	1931	-220.952	1931	-219.79	1931
-216.915	1931	-215.211931.036	-215.121931.037	-215.0221931.038	-214.8931931.041				
-214.8681931.041	-210.7351931.143	-208.2791931.213	-208.1981931.216	-208.1791931.216					
-205.2711931.259	-203.3921931.307	-203.1761931.313	-201.4051931.363	-199.29	1931.41				
-198.1821931.445	-196.8991931.497	-196.4191931.526	-196.161931.562	-191.7591931.694					
-190.0861931.679	-189.6951931.679	-189.4221931.683	-186.3071931.714	-182.9821931.709					
-180.4091931.679	-179.2121931.639	-177.0351931.621	-175.8031931.639	-161.471	1932				
-160.352	1932	-159.159	1932	-155.125	1932	-152.335	1932	-149.757	1932
-149.711	1932	-146.7791932.169	-146.5611932.186	-146.0811932.224	-144.4091932.423				
-144.175	1932.46	-142.4251932.501	-134.8711932.676	-133.5931932.628	-133.1991932.613				
-132.3281932.571	-131.0221932.528	-129.8491932.489	-126.171	1932	-126.023	1932			
-121.071	1932	-118.783	1932	-117.297	1932	-116.343	1932	-114.617	1932
-112.402	1932	-109.787	1932	-109.664	1932	-109.35	1932	-109.197	1932
-105.581	1931.89	-99.5821931.695	-97.8681931.634	-94.7421931.492	-94.5581931.476				
-90.9341931.394	-87.4321931.343	-86.7741931.337	-85.115	1931.33	-84.4491931.324				
-83.9531931.317	-83.8311931.315	-79.1141931.137	-78.5831931.124	-78.0931931.116					
-77.8591931.112	-77.707	1931.11	-77.519	1931.11	-75.33	1931	-74.412	1931	
-71.904	1931	-70.027	1931	-67.103	1931	-66.3521931.079	-66.1951931.095		
-65.2431931.179	-60.9461931.105	-60.626	1931.1	-57.509	1931	-57.4191930.999			
-54.1421930.955	-52.8341930.935	-42.9811930.784	-41.6581930.759	-41.051930.755					
-40.7251930.756	-40.1371930.749	-39.1941930.732	-37.9051930.703	-31.7321930.549					
-9.5791930.023	-8.598	1930	01929.556	9.3241929.075	10.047	1929.04			
10.679	1929	10.8961928.925	14.77	1928	15.3191927.814	17.653	1927		
18.7211926.633	19.1631926.526	20.516	1926	24.471	1925.72	26.8181925.527			
27.351925.497	27.9031925.482	28.696	1925.47	30.5581925.445	31.361925.428				
32.0541925.411	32.7111925.398	33.3931925.392	34.076	1925.39	34.7021925.391				
35.2131925.393	35.61925.395	35.8671925.397	36.0941925.402	37.1741925.502					
37.4461925.521	39.111925.667	39.3671925.695	39.8141925.719	43.121	1926				
44.781926.562	45.818	1927	47.9981927.487	49.0531927.713	49.7171927.841				
50.416	1928	53.5321928.037	64.963	1928.17	76.0811928.289	96.9531928.508			
144.444	1929	146.5181929.427	149.233	1930	150.2011930.193	153.794	1931		
157.9641931.855	158.676	1932	159.422	1932	165.151	1932	166.207	1931.87	
173.934	1931	175.8781930.586	179.08	1930	179.1831929.983	181.534	1929.59		
182.249	1929.57	182.2781929.569	183.7791929.569	184.4751929.561	185.1811929.542				
185.9171929.511	187.5151929.418	194.108	1929	199.8921928.343	2001928.333				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-400	.035	-134.871	.025	165.151	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-134.871 165.151 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 1929.32	* Element	* Left OB	* Channel	* Right OB *

* Vel Head (ft)	* 0.37	* Wt. n-Val.	*	* 0.025	* 0.035	*
* W.S. Elev (ft)	* 1928.95	* Reach Len. (ft)	* 100.00	* 100.00	* 100.00	*
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	* 143.60	* 1.70	*
* E.G. Slope (ft/ft)	*0.005939	* Area (sq ft)	*	* 143.60	* 1.70	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 703.64	* 2.36	*
* Top Width (ft)	* 134.46	* Top Width (ft)	*	* 128.99	* 5.47	*
* Vel Total (ft/s)	* 4.86	* Avg. Vel. (ft/s)	*	* 4.90	* 1.39	*
* Max Chl Dpth (ft)	* 3.56	* Hydr. Depth (ft)	*	* 1.11	* 0.31	*
* Conv. Total (cfs)	* 9161.4	* Conv. (cfs)	*	* 9130.7	* 30.7	*
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	* 129.79	* 6.12	*
* Min Ch El (ft)	* 1925.39	* Shear (lb/sq ft)	*	* 0.41	* 0.10	*
* Alpha	* 1.01	* Stream Power (lb/ft s)	*	* 2.01	* 0.14	*
* Frctn Loss (ft)	* 0.44	* Cum Volume (acre-ft)	*	* 1.58	* 0.00	*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	* 1.24	* 0.01	*

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -8600

INPUT
Description:
Station Elevation Data num= 339

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001937.521	-397.054	1937.48	-374.284	1937	-347.2331936.034	-346.282	1936		
-344.4151935.884	-332.1051935.117	-329.911	1935	-315.9851934.084	-314.54	1934			
-309.6691933.656	-309.391933.636	-308.2411933.565	-307.831933.534	-307.0841933.447					
-301.7711933.573	-301.6621933.586	-299.4191933.712	-297.2781933.819	-296.6081933.843					
-296.1971933.846	-295.2431933.857	-295.0451933.857	-294.8371933.854	-291.2691933.926					
-289.8491933.973	-289.291	1934	-287.5351934.133	-287.1481934.167	-286.6751934.215				
-285.0151934.396	-282.5531934.641	-282.2821934.668	-280.8691934.818	-280.8411934.821					
-280.8371934.821	-280.5951934.842	-280.1331934.804	-279.9381934.788	-279.1231934.763					
-278.1711934.674	-276.3531934.538	-276.2891934.533	-275.8591934.511	-274.9241934.462					
-272.874 1934.27	-272.5311934.266	-271.7391934.286	-270.146 1934.14	-270.0871934.134					
-270.0321934.133	-269.9021934.128	-267.659	1934	-266.8981933.958	-266.0811933.912				
-265.3991933.944	-264.971	1934	-264.0181934.117	-263.8951934.137	-262.5771934.349				
-261.7221934.522	-258.531	1935	-254.6381935.315	-253.4951935.362	-252.7091935.415				
-251.5771935.535	-251.2031935.574	-250.7121935.604	-249.6131935.709	-249.1971935.749					
-248.311935.781	-247.9121935.796	-246.5181935.939	-246.017	1936	-244.4921936.129				
-244.41936.137	-243.6971936.224	-243.3221936.264	-241.5931936.476	-241.1061936.536					
-240.7251936.555	-240.4971936.548	-239.962 1936.51	-239.1341936.552	-238.4491936.612					
-235.9481936.891	-235.1681936.984	-235.034	1937	-234.5261937.052	-233.5431937.168				
-233.0891937.221	-230.9521937.323	-228.991937.416	-228.31937.375	-226.7281937.371					
-225.684 1937.36	-225.471937.357	-225.1021937.353	-224.2521937.313	-223.8471937.294					
-223.6121937.288	-223.5781937.288	-219.345	1937	-218.251936.896	-216.6821936.765				
-212.972	1936	-212.6711935.929	-211.3311935.612	-209.6351935.209	-208.758	1935			
-208.3921934.913	-208.0261934.827	-206.8891934.492	-205.457	1934	-204.7511933.813				
-203.1561933.317	-202.137	1933	-200.7761932.628	-200.5711932.572	-198.519	1932			
-198.4931931.993	-198.4811931.989	-196.0611931.313	-195.5991931.191	-194.875	1931				
-193.9081930.742	-191.6471930.139	-191.156	1930	-189.911929.966	-183.1551929.773				
-178.3541929.628	-177.2151929.597	-175.7271929.566	-175.0121929.555	-173.9541929.547					
-173.5571929.541	-173.2221929.529	-172.6341929.501	-172.3161929.491	-169.2161929.435					
-167.632 1929.41	-166.7961929.401	-166.4911929.401	-166.3991929.409	-166.0511929.506					
-164.7891929.742	-164.294 1929.93	-164.2841929.931	-163.479	1930	-162.171930.245				
-161.051930.459	-157.252	1931	-156.9871931.029	-156.8921931.029	-156.8481931.035				
-153.7331931.463	-152.7531931.454	-151.851931.534	-151.4121931.518	-150.945	1931.5				
-149.7831931.564	-147.9621931.613	-147.4921931.618	-146.5741931.604	-145.2591931.573					
-145.0951931.569	-143.6141931.521	-143.5421931.518	-142.351931.465	-141.3771931.407					
-141.1421931.393	-138.4991931.192	-136.461931.016	-136.276	1931	-135.9871930.918				
-134.2781930.432	-133.038	1930	-132.4481929.784	-130.1	1929	-128.5681928.497			
-127.229	1928	-119.175	1928	-114.739	1928	-112.511928.372	-109.16	1929	
-106.3281929.231	-104.871 1929.34	-104.5381929.365	-102.4121929.508	-101.2821929.573					
-99.6931929.644	-99.4191929.641	-99.0621929.662	-97.8431929.557	-97.7421929.549					
-97.0681929.504	-96.8291929.501	-96.321929.501	-95.7531929.494	-95.3511929.481					
-95.3471929.471	-92.7131929.548	-92.0011929.595	-90.041929.704	-89.0581929.766					
-88.3011929.805	-86.1011929.893	-84.2761929.954	-82.1191929.999	-82.012	1930				
-79.966	1930	-79.1141929.978	-76.2141929.866	-75.7191929.844	-74.8721929.799				
-68.8081929.491	-65.5971929.316	-62.6111929.176	-58.889	1929	-52.423	1929			
-51.339	1929	-50.987	1929	-50.7491929.018	-50.5321929.029	-49.6771929.076			
-49.321929.087	-47.5891929.142	-47.2311929.136	-46.1881929.202	-45.9881929.197					
-45.7681929.191	-45.0651929.243	-44.8511929.233	-44.775 1929.23	-44.1521929.282					
-44.0111929.307	-43.9011929.326	-42.0011929.453	-41.0491929.467	-40.5431929.479					
-40.351929.484	-39.7341929.506	-38.731 1929.56	-38.6121929.572	-38.5841929.574					
-38.471929.601	-38.0611929.633	-38.0331929.639	-38.0261929.641	-33.2141929.723					
-32.8271929.722	-32.4891929.723	-31.7771929.728	-31.5461929.731	-31.5311929.733					
-25.4011929.731	-25.2611929.729	-24.7861929.721	-23.8221929.707	-23.487	1929.7				
-23.0731929.685	-22.7311929.676	-20.7231929.629	-14.4711929.503	-5.639	1929.32				
-.1751929.207	01929.203	9.981	1929	12.9461928.246	13.89	1928			
14.211927.891	16.792	1927	17.5921926.714	19.713	1926	21.3121925.566			
25.297	1925	26.791924.971	29.5111924.933	32.241924.922	34.9131924.947				
37.5391924.999	37.593	1925	37.771925.035	40.3941925.605	43.849	1926			
45.8531926.974	45.918	1927	46.2511927.047	46.3151927.041	49.939	1927.4			
49.9671927.394	50.2761927.321	50.5331927.228	50.7561927.208	51.1171927.194					
51.6291927.184	52.2281927.176	52.8551927.171	53.4761927.169	54.1021927.169					
54.7511927.171	55.4321927.176	56.091927.182	56.6331927.188	56.9711927.192					
57.141927.196	57.3821927.204	57.6171927.209	59.1531927.235	71.3821927.445					
79.9561927.594	94.252 1927.85	100.8721927.962	103.12	1928	111.6911928.352				
126.504	1929	129.5971929.823	130.242	1930	131.9131930.478	134.07	1931		
139.0381931.834	140.108	1932	140.494	1932	141.597	1932	145.013	1932	

```
  146.151931.907 154.1561931.216 156.0951931.049 156.636    1931 156.9271930.942
 161.712    1930 166.1431929.092 166.601    1929 167.1841928.885 171.537    1928
 174.1581927.601 176.7181927.223 178.225    1927     2001926.637

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-230.952    .025 140.108    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -230.952 140.108             100     100     100             .1       .3
Left Levee      Station=  -33.21      Elevation= 1929.72
Right Levee     Station=  140.11      Elevation=    1932

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)          * 1928.87  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.31  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 1928.56  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 1928.10  * Flow Area (sq ft)     *          *  157.48  *          *
* E.G. Slope (ft/ft)      *0.003337  * Area (sq ft)          *          *  157.48  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *  104.66  * Top Width (ft)        *          *  104.66  *          *
* Vel Total (ft/s)        *    4.48  * Avg. Vel. (ft/s)      *          *    4.48  *          *
* Max Chl Dpth (ft)       *    3.64  * Hydr. Depth (ft)      *          *    1.50  *          *
* Conv. Total (cfs)       * 12221.2  * Conv. (cfs)           *          * 12221.2  *          *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)      *          *  105.55  *          *
* Min Ch El (ft)          * 1924.92  * Shear (lb/sq ft)      *          *    0.31  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    1.39  *          *
* Frctn Loss (ft)         *    0.51  * Cum Volume (acre-ft)  *          *    1.23  *          *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)        *          *    0.97  *          *
**********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -8700

INPUT
Description:
Station Elevation Data    num=     332
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001936.554-390.1111936.536-386.2991936.448-384.2661936.402-376.985 1936.24
-373.0911936.153-372.5931936.145-370.7391936.115-365.959    1936-359.1881935.761
-353.6681935.571 -353.561935.568-347.3131935.353-340.6891935.126-337.184    1935
-318.1521934.104-315.942    1934-315.3861933.966-300.757    1933-295.0791932.854
-294.5561932.841-291.501 1932.77-289.5621932.719-280.4431932.708 -280.121932.716
-279.0431932.714-276.0611932.692-274.0871932.672-272.8981932.652-268.4851932.739
-268.3811932.754-267.9521932.774-266.5341932.821-266.2691932.815 -265.931932.811
-265.5811932.809-265.2471932.803-264.8981932.785 -264.451932.742  -263.8 1932.66
-262.9091932.527-262.4341932.578-261.8231932.434-261.5481932.328-261.3581932.218
-261.2191932.214-260.6861932.124-260.3951932.091-260.319 1932.09-259.994 1932.08
-259.159 1932.12-255.9691932.296-255.3771932.335 -253.651932.475-252.1021932.624
-251.1861932.718-249.405    1933-245.8351933.602-243.5431933.989-243.478    1934
 -242.811934.109-241.6131934.314-239.7871934.594-239.7741934.596-237.317    1935
-232.0361935.834-231.9081935.845-231.842 1935.85-231.6831935.859-230.9681935.907
-229.573    1936-222.523    1936-222.102    1936-222.058    1936-221.757 1935.89
-219.202    1935-219.0281934.942-216.002    1934-214.9041933.681-213.156 1933.15
 -212.941933.106  -212.6    1933-211.5431932.641  -210.91932.395-209.866    1932
-209.5621931.937-209.385  1931.9-208.517 1931.72-208.3311931.682-208.1741931.649
-207.3831931.485-205.993    1931-197.1161930.498-188.299    1930-187.802    1930
-187.618 1929.95-187.2491929.908-187.1011929.828-172.1641929.652-168.2751929.871
-166.371 1929.96-165.651    1930-163.974    1930 -159.89    1930-158.6261929.668
-158.2621929.597 -157.851929.555-157.2541929.527-155.7481929.494-154.2461929.298
-152.4381929.258-151.9921929.248-151.1181929.236  -148.71929.203-147.1381929.163
-144.608 1929.07-143.8531929.038-142.965    1929-142.8561928.976-135.325 1928.84
-134.4471928.867-132.8371928.937-131.9021928.962-131.6871928.964-127.4791928.998
-127.4661928.997-127.4571928.997-120.6181928.814-119.8081928.792-118.3681928.746
-116.8641928.688-114.7811928.584-112.7391928.531-110.9011928.483-109.815 1928.45
-109.2791928.434-108.9391928.424-108.349 1928.42-107.3971928.405-106.8051928.387
-106.3021928.371 -106.251928.369-105.6531928.346-105.5391928.342-104.1221928.288
 -97.308    1928 -92.0331927.378 -91.8231927.359 -88.7831927.085 -88.571 1927.06
  -88.521927.052 -88.5111927.039 -88.4631927.026 -88.426 1927.02 -88.4181927.018
 -88.4021927.016 -88.1041927.011 -88.0931927.012 -88.0831927.013 -88.0561927.014
 -88.0381927.014 -88.0261927.015 -88.0121927.016 -87.9791927.021  -87.961927.023
 -87.438    1927 -87.273    1927 -87.104    1927 -84.589    1927 -84.332    1927
 -79.603    1927 -78.919    1927 -77.923    1927 -74.834    1927 -73.128    1927
 -68.741    1927 -68.134    1927 -66.929 1927.07 -66.8841927.073 -66.691  1927.1
 -65.3481927.231   -61.41927.909 -60.873    1928 -59.264 1928.31   -56.21928.813
 -55.002    1929 -51.5621929.138 -51.1361929.171 -51.0941929.186 -51.0691929.194
 -45.633    1929 -45.608    1929  -45.57    1929 -45.4131928.963 -44.4191928.771
  -43.711928.674 -43.2951928.656  -42.811928.675 -41.3651928.801 -41.0311928.819
 -40.6151928.867 -40.5741928.868 -40.4821928.879 -40.4541928.885 -40.2581928.841
 -37.7621928.481 -37.0571928.428 -36.312 1928.41 -35.535 1928.41 -34.8421928.415
 -34.3911928.413  -34.171928.406 -34.1051928.388 -31.4911928.393 -28.769 1928.48
 -26.6361928.542  -24.231928.587 -23.1151928.615 -19.3921928.719 -17.0111928.782
   -9.271928.951  -7.386    1929  -2.578    1929       0    1929   1.979    1929
  10.064    1929  10.753    1929  11.468    1929  11.471    1929  14.849    1928
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  16.7341927.203  17.227    1927  17.7951926.764  19.465    1926  20.485 1925.55
  21.6331925.073  21.6541925.062  21.813    1925  28.5261924.415  29.1381924.372
  29.4641924.361  30.8281924.334  31.7651924.321  32.7041924.317  33.6241924.326
  34.5281924.344  35.9091924.378  36.284 1924.39  36.9911924.434  37.9011924.509
  38.3851924.553  43.156    1925  43.4291925.138  45.232    1926  49.4471926.821
  49.659    1927  49.694    1927  49.888    1927  50.319    1927  54.1491927.056
  57.221  1927.1  66.2981927.121  72.5911927.135  75.3261927.173  79.4531927.231
  81.1761927.257  83.9951927.302  86.0991927.331  89.3861927.377 105.1941927.642
 107.3771927.675 107.8041927.681 108.9421927.691 109.5431927.685  110.891927.653
 111.9531927.637 113.322 1927.63 114.762 1927.63 116.5351927.668 116.9171927.678
 125.7131927.901  126.071927.902 126.1451927.904 129.775    1928 131.3191928.314
  134.31    1929 136.7241929.519  139.03    1930 141.2461930.505 143.541    1931
 144.8741931.267 146.6071931.588  146.731931.721 146.9551931.782 146.984 1931.83
 147.0281931.846  147.041931.845 147.1831931.838 147.3321931.833 147.3631931.832
 147.6641931.825 148.098 1931.82 148.9961931.811 149.2511931.808  149.371931.806
 149.4581931.801 150.0841931.742 150.4321931.711 151.3321931.642 151.6091931.615
 152.632 1931.53 153.5491931.454 159.787    1931  161.141930.657 163.549    1930
 163.7261929.955 164.2361929.825  167.31    1929 167.6761928.906 171.197    1928
 173.226 1927.41 174.967    1927 178.9291926.662 179.579 1926.64 181.7141926.568
 183.1221926.514 183.4471926.501  186.33 1926.36 187.0911926.317 192.725    1926
 197.231    1926     200    1926

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-222.523    .025 146.955    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -222.523 146.955            74.45   74.45   74.45            .1       .3
Left Levee      Station=   10.06      Elevation=    1929
Right Levee     Station=  146.96      Elevation= 1931.78

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1928.33  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.56  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1927.77  * Reach Len. (ft)       *   74.45  *   74.45  *   74.45  *
* Crit W.S. (ft)         * 1927.77  * Flow Area (sq ft)     *          *  117.28  *          *
* E.G. Slope (ft/ft)     *0.008967  * Area (sq ft)          *          *  117.28  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  105.02  * Top Width (ft)        *          *  105.02  *          *
* Vel Total (ft/s)       *    6.02  * Avg. Vel. (ft/s)      *          *    6.02  *          *
* Max Chl Dpth (ft)      *    3.45  * Hydr. Depth (ft)      *          *    1.12  *          *
* Conv. Total (cfs)      *  7455.7  * Conv. (cfs)           *          *  7455.7  *          *
* Length Wtd. (ft)       *   74.45  * Wetted Per. (ft)      *          *  106.03  *          *
* Min Ch El (ft)         * 1924.32  * Shear (lb/sq ft)      *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.73  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)  *          *    0.92  *          *
* C & E Loss (ft)        *    0.07  * Cum SA (acres)        *          *    0.73  *          *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -8774.45

INPUT
Description:
Station Elevation Data    num=     270
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001937.263-395.1841937.175-393.708 1937.15 -392.021937.102-391.9191937.099
 -391.881937.098-389.033    1937-388.0761936.979-381.5721936.866-379.9281936.799
-378.8971936.756-375.4161936.654-371.603 1936.52-360.081    1936-360.0631935.999
-360.0021935.996-359.9441935.994-344.0421935.291-337.993    1935-325.6391934.327
-320.102    1934-317.9561933.852-317.407 1933.82-316.7991933.789 -316.571933.777
-310.5241933.421-300.689    1933-295.9271932.779-293.3911932.662-293.1211932.639
-292.7691932.617-292.7641932.617-291.8971932.579-290.9271932.541-290.9221932.541
-288.4011932.412-287.2581932.345-281.564    1932-264.108 1931.18-263.4191931.131
-262.8131931.102-262.332  1931.1-262.2791931.104-262.2721931.104-262.078 1931.09
-261.4591931.046-261.038    1931 -260.76    1931-257.112    1931-256.479    1931
-256.238    1931-250.153    1931-249.618    1931-238.303    1931-237.048    1931
-236.551    1931 -235.411931.131-232.9571931.413-232.6681931.397-232.5281931.361
 -230.191931.433-228.875 1931.54 -224.55    1932-221.385 1932.27-219.7871932.411
 -219.661932.422-217.7231932.685 -217.04 1932.77-215.514    1933-214.1671933.188
-213.2281933.301-211.9911933.431-209.9091933.693-208.5281933.797-208.0921933.829
-204.476    1934-202.249    1934-200.558    1934-198.465    1934-195.126    1934
-195.023    1934-194.6641933.892-193.6861933.791-186.034    1933-185.1171932.959
-183.573 1932.86-182.6871932.778-182.2981932.714-173.627    1933-163.9021932.809
-163.492 1932.82 -162.411932.819-161.5941932.802-159.8971932.746-159.3611932.734
-159.1361932.746-159.0811932.778-158.7481932.872-157.7511932.975-157.4941932.987
-157.484    1933-148.123    1933-143.764    1933-142.337    1933-141.8451932.891
-140.6641932.873-139.4981932.856-138.1071932.828-136.8631932.784-136.0521932.727
-135.1591932.798-134.8031932.822-133.3631932.844-132.8691932.836-131.3341932.831
```

-131.0441932.828-129.7121932.816-128.848 1932.82-128.6421932.824-127.3351932.852
-127.106 1932.85-126.7431932.855-126.3461932.851-126.1041932.849-125.9741932.848
-124.9551932.846-124.1041932.808-123.3921932.798-122.737 1932.76-122.5441932.748
-119.4971932.847-114.798   1933-112.3251932.901-112.1121932.893-110.1461932.814
-109.3761932.809-109.0981932.832-108.3991932.817-108.224 1932.81-107.6381932.754
-107.3241932.768-107.073 1932.76-106.7961932.751-106.5821932.745-106.0691932.699
-105.0811932.612-104.3031932.517-103.5941932.407-102.5491932.245-101.157   1932
 -99.7221931.452 -99.5921931.416 -98.097   1931 -96.5851930.574 -96.3811930.552
 -95.445 1930.37 -95.1981930.377 -94.2231930.401 -93.2841930.462 -92.9741930.483
 -92.6171930.429 -92.1291930.479 -91.975 1930.52 -91.8231930.562 -85.6471930.152
 -83.347   1930 -73.171930.402 -72.2951930.396 -72.2731930.396 -71.021930.409
  -70.661930.409 -70.1391930.411 -69.896 1930.41 -68.9951930.408 -68.1471930.403
 -67.682 1930.4 -67.635 1930.4 -67.5151930.399 -66.2891930.386 -66.1941930.385
 -65.8961930.381 -64.971930.368 -64.8011930.365 -64.0991930.353 -63.405 1930.34
 -63.1921930.331 -62.222 1930.29 -61.4171930.256 -60.747 1930.23 -55.859 1930.04
 -55.3631930.021 -55.2191930.002 -55.201   1930 -55.167   1930 -54.811   1930
 -54.1941929.982 -36.7691929.464 -25.346   1929 -11.887   1929 -4.585   1929
       0   1929   1.8   1929   8.711   1929 12.2851928.225 13.052   1928
  14.5341927.416   15.53   1927 15.9811926.806   17.91   1926   18.581925.724
  20.378   1925 23.395 1924.54 27.9191924.098 28.961   1924 29.163   1924
  35.221   1924 41.8161924.809 43.556   1925 44.8391925.542 45.946   1926
  79.2031926.456 87.0931926.563 119.842   1927 120.0891927.017 123.978 1927.31
 133.121   1928 135.0171928.405 137.917   1929 142.0741929.864 142.2411929.897
 142.758   1930 145.5741930.569 146.9311930.843 147.3981930.935 147.483 1930.96
 147.525 1930.97 147.5731930.976 147.5861930.977 147.5891930.977 147.5971930.975
 147.6771930.972 147.691930.971 147.7161930.968 147.891930.955 147.9331930.953
 148.016 1930.95 148.131930.944 149.2181930.873 150.961930.754 151.6321930.717
 161.707   1930 161.7141929.998 163.7431929.416 165.22   1929 167.021928.493
 168.706   1928 171.521927.192 172.23   1927 172.8361926.849 175.941   1926
 183.5311925.528 185.581925.475 187.5021925.363 189.1831925.266 191.9291925.239
 192.2211925.226 193.8051925.156 196.1381925.148 197.311925.145   2001925.142

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035-202.249   .025 147.525   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -202.249 147.525   25.55   25.55   25.55   .1   .3
Right Levee   Station= 147.52   Elevation= 1930.97

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1927.78 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.32 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 1927.46 * Reach Len. (ft)   *   25.55 *   25.55 *   25.55 *
* Crit W.S. (ft)   * 1927.11 * Flow Area (sq ft)   *   * 156.37 *   *
* E.G. Slope (ft/ft)   *0.003715 * Area (sq ft)   *   * 156.37 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   * 111.55 * Top Width (ft)   *   * 111.55 *   *
* Vel Total (ft/s)   *   4.51 * Avg. Vel. (ft/s)   *   *   4.51 *   *
* Max Chl Dpth (ft)   *   3.46 * Hydr. Depth (ft)   *   *   1.40 *   *
* Conv. Total (cfs)   * 11583.5 * Conv. (cfs)   *   * 11583.5 *   *
* Length Wtd. (ft)   *   25.55 * Wetted Per. (ft)   *   * 112.39 *   *
* Min Ch El (ft)   * 1924.00 * Shear (lb/sq ft)   *   *   0.32 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   1.46 *   *
* Frctn Loss (ft)   *   0.14 * Cum Volume (acre-ft) *   *   0.68 *   *
* C & E Loss (ft)   *   0.03 * Cum SA (acres)   *   *   0.54 *   *
****

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
         water surface was used.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -8800

INPUT
Description:
Station Elevation Data   num=   219
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
    -400 1939.35-398.724 1939.46-392.185   1940-390.805   1940-381.289   1940
 -377.49   1940-376.914   1940-375.411   1940-369.5681939.755 -361.021939.384
-357.4381939.223-357.2831939.218-350.646   1939-345.9771938.622-342.3551938.332
-338.316   1938-332.6921937.559-326.037   1937-322.3191936.693-320.5751936.542
-318.351 1936.35-316.3181936.187-313.997   1936-312.9151935.931-299.146   1935
-294.2651934.693-283.445   1934-281.429 1933.86-280.8571933.826-280.439 1933.8
-279.2171933.722-278.0731933.676-277.3591933.624-274.9691933.415-273.4841933.303
-273.0391933.273-272.8631933.262-269.732   1933-269.2041932.944-268.9711932.918
-263.6751932.381-262.7041932.298-259.999   1932-253.306   1932-250.693   1932
-248.775   1932-248.6371932.068 -248.591932.203-247.9611932.465-247.487 1932.53
-247.3311932.685-245.749 1932.72-245.3661932.679-245.2151932.634-245.1881932.608
-245.1371932.557-245.0461932.535-244.2561932.441 -243.481932.206-243.0831932.148
-242.1121932.072-240.802   1932-240.2281931.958-240.0911931.954-239.2321931.908
-236.2551931.747-235.3421931.709-234.7121931.708-233.9771931.753-233.6581931.751
-233.5911931.751-231.213   1932-225.0331932.678 -224.321932.756-221.991   1933
-221.6661933.033-220.3331933.167-220.0581933.181-219.6091933.238-218.969 1933.32
-218.8071933.308-217.5921933.487-217.2121933.551-217.0251933.621-216.844 1933.69
-216.6911933.725-211.3731933.853 -210.161933.834-209.0031933.814-207.7891933.792

-206.3841933.771 -204.641933.741-204.1851933.731-203.1161933.712-201.1681933.676
-182.9961933.109-181.229   1933 -178.841932.971-178.8091932.971-177.0731932.974
-177.0141932.973-176.9681932.974   -175   1933 -168.19   1933-165.926   1933
-163.229   1933-162.633   1933-157.8581932.879-157.2661932.856-155.0391932.789
 -153.911932.749-153.1291932.716 -151.97 1932.66-150.5861932.605-149.0511932.539
-135.406   1932-131.8931931.924-128.4561931.842 -99.3661931.023 -98.8081931.008
 -98.559   1931 -65.5261930.013 -65.2921930.007 -65.011   1930 -50.2351929.662
 -24.425   1929 -20.498   1929   0   1929   .882   1929   4.554   1929
   7.957   1929   9.8061928.454 10.998 1928.09 11.313   1928 11.7541927.804
  13.557   1927   15.761926.045 15.8521926.006 15.865   1926 17.8491925.192
  18.331   1925 22.8881924.313   24.56   1924 31.746   1924 35.004   1924
  36.2631924.187 42.511   1925 44.3391925.912   44.57   1926 44.919   1926
  45.513   1926 45.888   1926 45.981   1926 51.6421926.072 69.1061926.294
  76.0051926.392 119.568   1927 127.9851927.624 133.343   1928 134.8451928.305
 138.0411928.933 138.1681928.958 138.3761928.999 138.38   1929 143.0911929.941
 143.1181929.946 143.386   1930 143.58 1930.04 145.4771930.416 145.8341930.487
 146.3921930.598 146.4891930.617 146.86 1930.73 146.9551930.759 146.991 1930.77
 147.1691930.812 147.2151930.823 147.2361930.828 147.4361930.852 147.4891930.858
 147.5151930.861 147.5661930.865 147.5791930.865 147.5861930.866 147.6011930.865
 147.6071930.865 147.6491930.858 148.1051930.839 148.181930.833 148.3271930.817
  149.29 1930.75 149.526 1930.74 149.9731930.721 150.573 1930.69 153.8031930.487
 155.7741930.363 161.187   1930 161.5961929.887 164.747   1929 164.9021928.957
  168.23   1928 170.6111927.327 171.77   1927 172.6941926.723 175.343   1926
  176.051925.938 176.5331925.896 177.4491925.851 178.3321925.815 185.6581925.371
  187.941925.328 188.5111925.295 190.1971925.199 192.5721925.189 192.8511925.188
 194.2281925.129 196.1541925.131 197.5381925.133   2001925.142

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
    -400   .035-211.373   .025 147.236   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -211.373 147.236   100   100   100   .1   .3
Right Levee   Station= 147.24   Elevation= 1930.83

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 1927.61 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.57 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 1927.04 * Reach Len. (ft)   * 100.00 * 100.00 * 100.00 *
* Crit W.S. (ft)   * 1927.04 * Flow Area (sq ft)   *   * 116.66 *   *
* E.G. Slope (ft/ft)   *0.009292 * Area (sq ft)   *   * 116.66 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   * 106.66 * Top Width (ft)   *   * 106.66 *   *
* Vel Total (ft/s)   *   6.05 * Avg. Vel. (ft/s)   *   *   6.05 *   *
* Max Chl Dpth (ft)   *   3.04 * Hydr. Depth (ft)   *   *   1.09 *   *
* Conv. Total (cfs)   * 7324.1 * Conv. (cfs)   *   * 7324.1 *   *
* Length Wtd. (ft)   * 100.00 * Wetted Per. (ft)   *   * 107.45 *   *
* Min Ch El (ft)   * 1924.00 * Shear (lb/sq ft)   *   *   0.63 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   3.81 *   *
* Frctn Loss (ft)   *   0.84 * Cum Volume (acre-ft) *   *   0.60 *   *
* C & E Loss (ft)   *   0.03 * Cum SA (acres)   *   *   0.48 *   *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth. This indicates that there
         is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -8900

INPUT
Description:
Station Elevation Data   num=   326
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
    -4001936.506-397.4311936.477-394.0351936.436-392.3551936.415-390.0351936.384
-386.7071936.338-381.3741936.016-381.102   1936-377.892   1936 -377.11   1936
-375.376   1936-375.321   1936-375.272   1936-375.2181935.996-369.3361935.876
-367.4811935.879-365.4741935.876-361.1621935.886-360.6061935.896-359.6741935.896
-357.5441935.882-354.1751935.852-353.0911935.849-351.2721935.852-341.1231935.893
-341.0761935.893-340.0261935.888-339.9031935.886-339.4371935.866-339.4011935.864
-339.3711935.863-339.1841935.863-335.9321935.873-335.8571935.872-335.7241935.872
-335.5481935.871 -335.341935.868-335.0881935.861-334.7381935.849-334.7351935.849
-334.2151935.833-334.0081935.834-331.1911935.835 -330.51935.817-327.7981935.807
 -327.491935.805-325.4721935.786-324.5751935.765-323.4911935.747-322.5021935.731
-320.4891935.689-318.4341935.643-317.5771935.629-317.0031935.613-315.6071935.577
  -315.61935.576-313.6121935.556-312.6391935.542-311.0811935.514-306.4491935.421
-306.0221935.412-303.764 1935.36-300.6231935.276-300.3451935.269-298.6691935.217
-294.3141935.083-293.7651935.068-291.821   1935-290.2951934.954-284.6971934.855
 -270.621934.603-236.917   1934-232.0061933.135-231.219   1933-230.4891932.851
 -226.95   1932-225.247 1931.52-223.551   1931-222.1881930.599-220.238   1930
-217.075 1929.06-216.889   1929-216.5241928.882-213.803   1928 -211.811927.341
-210.723   1927-209.5351926.621-207.578   1926-205.9081925.437-204.567   1925
-202.7381924.368-201.614   1924-198.8321923.199-197.777   1923 -197.561922.986

```
-187.3081922.355-185.3161922.237 -184.841922.212-184.6071922.204-184.2631922.226
-184.0271922.224-182.229    1922-172.7921921.381-171.9691921.332 -171.41 1921.31
-170.5731921.296-170.2321921.288-169.9421921.286-169.6621921.303-168.7681921.466
-166.264    1922-165.0141922.082-163.5711922.154-162.263  1922.2-157.8781922.309
-157.0581922.307-156.2251922.278-155.6651922.244-154.5271922.175-153.6281922.126
-153.4431922.116-151.4111922.631-149.952    1923-147.4061923.631-145.973    1924
-145.6381924.085-142.052    1925-139.5121925.649 -138.05    1926-135.1871926.733
 -134.15    1927-133.4781927.166-130.051    1928-129.0431928.257 -125.78    1929
-125.6921929.016-125.6531929.017-125.6231929.017-125.6021929.017-125.5781929.019
-121.0021929.415-115.5221929.402-111.1391929.545 -107.431929.552-104.4551929.603
-103.5891929.614-103.5351929.614-102.1951929.648-101.2221929.672 -99.6391929.689
  -95.761929.715 -94.3741929.696 -92.9631929.659 -91.4331929.681  -91.381929.682
 -87.1921929.563 -86.3791929.566 -84.0891929.574 -83.3291929.562   -82.41929.547
 -79.9731929.534  -79.851929.534 -79.3321929.534 -78.4731929.533 -77.4531929.533
 -73.6851929.497 -70.548 1929.48 -70.162 1929.47 -68.4091929.472 -66.7361929.494
 -59.348 1929.56 -46.6081929.674 -46.1021929.698 -43.8261929.806 -42.693 1929.83
 -42.038 1929.86 -40.2411929.941 -39.922 1929.95 -39.8721929.952 -38.7711929.986
 -38.7261929.987  -38.691929.988  -38.681929.989 -38.1071929.992 -38.1011929.992
 -38.0941929.993 -38.0871929.994 -38.0851929.995 -38.0811929.995 -38.0761929.995
 -38.0691929.995 -38.0561929.996 -38.0481929.996 -38.0391929.996 -38.0331929.996
 -38.0091929.996 -38.0061929.996 -38.0031929.996 -37.9951929.997 -37.9941929.997
 -37.9931929.997 -37.9921929.997 -37.9911929.997 -37.9891929.997 -37.9741929.996
 -37.9711929.996 -37.9561929.996 -37.9461929.995 -37.9331929.995 -37.9151929.994
 -37.8971929.993 -37.8661929.991 -37.8191929.989 -37.6581929.981 -24.5651929.314
 -18.395    1929  -18.251928.931 -16.164    1928 -14.2751927.003 -14.268    1927
 -14.2661926.999 -14.0651926.901 -12.2131926.008 -12.196    1926 -12.1931925.999
 -12.174 1925.99 -10.119    1925  -8.106 1924.03  -8.042    1924  -2.171 1923.72
       01923.743  14.2591923.891  14.626    1924  15.6251924.319  17.982    1925
  18.8721925.295  19.2281925.413  21.157    1926  23.804    1926   25.46    1926
  25.598    1926  26.932    1926  27.753    1926  28.246    1926  31.689    1926
  42.022    1926  47.956    1926  49.603    1926  52.5641925.921  52.8171925.915
  59.028    1926  63.1581926.045  65.6841926.073  65.9111926.076  66.194 1926.08
  66.5191926.085   67.121926.092  67.4131926.096  67.5521926.098  71.6331926.173
   90.941926.534 105.1211926.769 107.8111926.813 109.2971926.836 110.1991926.852
 116.262    1927 117.3611927.159 118.3821927.335 122.557    1928 123.0641928.087
 128.905    1929 131.0941929.344 135.286    1930 135.9771930.142 136.1191930.171
 136.1371930.175 137.3991930.313 137.6831930.344 137.7211930.349 138.0271930.368
 138.1031930.373 138.1131930.374 138.2051930.371 138.228 1930.37 138.231 1930.37
 138.458 1930.34 140.8761930.273 141.2581930.252 142.0011930.187 145.678    1930
 146.5141929.913 146.9151929.872 147.4721929.786  148.36 1929.65 149.4541929.541
 150.6571929.421 151.5051929.314 152.954    1929 156.1111928.254 157.213    1928
 159.7341927.414 161.838    1927 165.9311926.393 169.036    1926  170.911925.833
 170.9871925.826 171.3491925.791 173.8931925.575 176.7841925.329  177.85 1925.26
 178.2951925.231 178.914 1925.21 180.6461925.152 181.6291925.085 186.256    1925
 186.4551924.999 189.2681924.993 190.569    1925 191.7561925.013 191.8281925.009
 191.9481925.011   194.41925.056 194.7711925.045  195.541925.058 197.8871925.099
     2001925.142

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-236.917    .025 137.683    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -236.917 137.683             100     100     100            .1       .3
Right Levee     Station=  -40.24      Elevation= 1929.94

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 1925.75  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.44  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1923.30  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1924.05  * Flow Area (sq ft)     *          *   56.27  *          *
* E.G. Slope (ft/ft)     *0.038855  * Area (sq ft)          *          *   56.27  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   50.46  * Top Width (ft)        *          *   50.46  *          *
* Vel Total (ft/s)       *   12.55  * Avg. Vel. (ft/s)      *          *   12.55  *          *
* Max Chl Dpth (ft)      *    2.02  * Hydr. Depth (ft)      *          *    1.12  *          *
* Conv. Total (cfs)      *  3581.6  * Conv. (cfs)           *          *  3581.6  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   50.79  *          *
* Min Ch El (ft)         * 1921.29  * Shear (lb/sq ft)      *          *    2.69  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   33.72  *          *
* Frctn Loss (ft)        *    1.68  * Cum Volume (acre-ft)  *          *    0.40  *          *
* C & E Loss (ft)        *    0.19  * Cum SA (acres)        *          *    0.30  *          *
*****************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -9000

INPUT
Description:
Station Elevation Data    num=     284
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
*********************************************************************************
-387.478    1926-343.5751925.566-343.107 1925.61-342.9791925.689-342.5881925.747
-341.119 1925.81 -337.921925.866-333.2691925.913-327.8841925.948-327.8351925.948
-322.6271925.969-322.5131925.967-318.3241925.966-318.2931925.965-318.1971925.963
-318.0641925.961-317.935 1925.96-317.8041925.958-317.4931925.952-314.4811925.907
-313.1041925.823-312.904 1925.73 -307.431925.537-302.836 1925.62-299.5031925.672
-298.9841925.677-296.0331925.707-295.2611925.698-292.4531925.692-291.4841925.694
-289.3211925.661-288.8041925.653-287.6581925.662-284.7351925.611 -284.311925.604
-283.1471925.615-282.665 1925.62-282.3911925.622-277.9531925.563 -277.491925.569
-273.2761925.519-273.1241925.518-269.5981925.479-265.4041925.435-264.2191925.419
-263.4211925.404-262.9121925.388-262.6051925.374-262.4471925.361 -251.311925.349
-245.8891925.493-240.8051925.621-238.3211925.679-235.4371925.739-231.5911925.806
-226.0521925.889-218.322    1926-210.814    1926  -205.4    1926-196.049    1926
-195.959    1926-195.077    1926-193.564    1926-186.993    1926-178.301    1926
-177.759    1926-177.352    1926-176.3141926.375-175.8751926.517-174.376    1927
-170.8111927.684-170.1691927.807-169.7311927.911 -169.36    1928-168.9471928.007
-168.9141928.008-166.9531928.036-166.8121928.038-166.7981928.038-164.773 1928.06
-164.683 1928.06-158.747 1928.11-158.6241928.111-155.4051928.142-155.3371928.142
-154.1021928.151-154.0591928.151-153.3541928.153-153.2631928.153 -151.921928.155
-151.5721928.153-147.587 1928.13 -146.191928.131-139.6651928.136-139.2771928.135
-138.0891928.133-137.6361928.129-136.605 1928.12-136.1011928.111-135.1391928.092
-133.9291928.057-132.3441928.011-132.024    1928-130.8111927.903-130.7811927.901
-130.5991927.857-124.709    1928-123.405    1928-119.4061928.092-118.9721928.099
-110.0571928.309-103.4271928.485-100.2191928.576  -98.781928.617 -96.1781928.695
 -95.4111928.714  -94.861928.721 -94.4461928.714  -94.111928.697 -93.4311928.648
 -91.7941928.577  -90.671928.514 -89.5281928.431 -88.6161928.349 -85.9421928.109
 -84.731    1928 -83.2261927.199 -82.898    1927 -82.6751926.864 -80.954    1926
 -79.1261925.042 -79.044    1925 -77.0241924.006 -77.012    1924     -771923.995
 -75.4721923.411  -74.411923.006 -74.394    1923 -74.3651922.989 -71.732    1922
 -70.2831921.435  -69.11    1921 -67.0541920.187 -66.562    1920 -66.2571919.882
 -65.6051919.619 -63.938    1919 -61.5931918.054 -61.445    1918 -61.2631917.929
 -60.4891917.633 -58.836    1917 -57.6511916.557 -56.7571916.246 -56.152    1916
 -55.2461915.953 -55.1971915.951 -54.1741915.946 -52.6261915.935 -48.526 1915.92
 -48.2631915.916 -47.8871915.899 -43.6021915.774 -42.2781915.747 -41.167 1915.74
 -40.2361915.745 -39.4791915.751 -38.9251915.752 -38.2291915.744 -37.7231915.743
 -37.5191915.747 -37.2481915.756 -36.1041915.801 -35.8251915.806 -33.4391915.804
 -32.7491915.812 -31.9381915.851  -30.431915.965 -30.025    1916 -29.8881916.048
 -27.042    1917 -24.8161917.824 -24.302    1918  -23.641918.242 -21.607    1919
  -20.71 1919.32 -18.879    1920 -17.0721920.692 -16.226    1921 -14.8251921.501
 -13.574    1922 -12.0291922.553   -10.8    1923   -9.691923.314  -9.2291923.315
  -8.6831923.384  -8.375 1923.39  -7.8171923.359  -6.8491923.294   -5.941923.193
  -4.6181923.002  -4.608    1923  -4.5681922.991  -4.4061922.957       01922.026
    .125    1922    .3821921.947   1.2631921.846   2.8411921.751   4.6581921.676
   6.398 1921.63   7.9871921.614   9.4431921.619  10.7111921.638   11.691921.665
   12.83 1921.71  13.0361921.706   13.071921.689  17.8881921.932  18.946    1922
  21.135 1922.82  21.5871922.989  21.616    1923  21.9631923.129  21.9841923.137
  24.311    1924  36.6521924.745  39.7821924.866  43.2431924.984   43.73    1925
   61.64 1925.26  63.1171925.282  65.3111925.323  67.016 1925.35  68.1621925.366
  68.9511925.379  69.4851925.392  78.2661925.656  79.9771925.708  89.596    1926
  92.4481926.496  95.314    1927 100.0151927.811 101.085    1928 103.0831928.352
 104.8881928.645 107.201    1929 107.5071929.016 116.3551929.305 116.504  1929.3
 120.242 1929.13 123.331    1929 126.0841928.704 131.803    1928 132.927 1927.86
 133.9191927.731 139.004    1927 140.5461926.777 144.156 1926.22 144.7891926.129
 145.6261926.021 145.785    1926 147.3331925.931 153.8531925.671 159.4861925.517
 165.2771925.391 170.0221925.139 170.2671925.126 170.2791925.125 170.5631925.113
 173.192    1925 173.5691924.995 175.0541924.969 179.7181924.831 180.3621924.821
 181.9031924.812 183.7981924.819 187.6361924.841 189.8721924.865 191.9981924.904
 194.3021924.965 195.402    1925 197.6451925.066     2001925.142

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-387.478    .035 -96.178    .025 116.355    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -96.178 116.355            89.63   89.63   89.63             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1921.24  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.88  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1917.36  * Reach Len. (ft)       *   89.63  *   89.63  *   89.63  *
* Crit W.S. (ft)         * 1918.45  * Flow Area (sq ft)     *          *   44.67  *          *
* E.G. Slope (ft/ft)     *0.049493  * Area (sq ft)          *          *   44.67  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   33.70  * Top Width (ft)        *          *   33.70  *          *
* Vel Total (ft/s)       *   15.81  * Avg. Vel. (ft/s)      *          *   15.81  *          *
* Max Chl Dpth (ft)      *    1.62  * Hydr. Depth (ft)      *          *    1.33  *          *
* Conv. Total (cfs)      *  3173.5  * Conv. (cfs)           *          *  3173.5  *          *
* Length Wtd. (ft)       *   89.63  * Wetted Per. (ft)      *          *   34.18  *          *
* Min Ch El (ft)         * 1915.74  * Shear (lb/sq ft)      *          *    4.04  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   63.82  *          *
* Frctn Loss (ft)        *    4.37  * Cum Volume (acre-ft)  *          *    0.29  *          *
* C & E Loss (ft)        *    0.14  * Cum SA (acres)        *          *    0.20  *          *
*************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
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REACH: 1 RS: -9089.63

INPUT
Description:
Station Elevation Data num= 227

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-328.148	1927	-326.582	1927	-305.189	1927	-269.221	1927	-265.437	1927
-264.46	1927	-263.336	1927	-261.588	1927	-246.603	1926.63	-243.914	1926.583
-239.619	1926.5	-222.128	1926.13	-216.053	1926	-185.592	1926	-180.751	1926
-176.649	1926	-132.041	1926	-117.022	1925.68	-113.847	1925.61	-112.628	1925.583
-109.562	1925.45	-108.143	1925.40	-107.627	1925.39	-103.947	1925.42	-103.938	1925.447
-103.711	1925.45	-103.261	1925.46	-102.507	1925.50	-100.709	1925.585	-99.984	1925.596
-99.098	1925.585	-98.095	1925.55	-96.479	1925.478	-95.981	1925.461	-95.618	1925.455
-95.337	1925.455	-95.102	1925.458	-94.653	1925.471	-93.981	1925.503	-92.377	1925.609
-90.814	1925.707	-88.565	1925.825	-85.783	1925.931	-85.736	1925.932	-83.21	1926
-77.644	1926.187	-71.482	1926.406	-69.305	1926.474	-67.427	1926.518	-67.336	1926.519
-65.818	1926.537	-64.451	1926.53	-63.246	1926.488	-62.035	1926.408	-60.708	1926.282
-59.235	1926.108	-58.511	1926	-56.443	1925.608	-53.959	1925	-51.957	1924.197
-51.476	1924	-50.041	1923.41	-49.143	1923.06	-48.995	1923	-48.704	1922.865
-46.706	1922	-44.654	1921.01	-44.633	1921	-44.575	1920.973	-42.459	1920
-40.91	1919.27	-40.319	1919	-38.475	1918.112	-38.24	1918	-38.136	1917.95
-36.113	1917	-35.771	1916.839	-33.973	1916	-33.439	1915.751	-32.484	1915.297
-31.887	1915	-31.805	1914.959	-31.768	1914.948	-31.715	1914.94	-31.627	1914.935
-31.508	1914.932	-31.355	1914.929	-31.148	1914.924	-30.458	1914.903	-29.181	1914.864
-28.444	1914.844	-25.625	1914.715	-19.398	1914.43	-17.097	1914.328	-15.668	1914.271
-14.756	1914.242	-14.061	1914.227	-12.871	1914.207	-12.332	1914.199	-11.808	1914.196
-11.271	1914.198	-10.739	1914.203	-9.967	1914.214	-9.768	1914.221	-9.591	1914.24
-7.956	1914.509	-7.581	1914.564	-4.539	1915	-3.655	1915.266	-2.699	1915.434
01	1915.778	.166	1915.799	2.032	1916	3.706	1916.095	3.857	1916.096
3.958	1916.099	6.716	1916.204	7.391	1916.215	7.446	1916.216	8.293	1916.22
9.014	1916.217	9.768	1916.217	10.179	1916.224	10.618	1916.236	11.088	1916.256
11.615	1916.291	12.286	1916.346	13.265	1916.434	16.452	1916.532	17.572	1916.589
18.418	1916.666	19.415	1917	19.868	1917.258	21.226	1918	21.951	1918.403
23.089	1919	23.985	1919.464	24.972	1920	25.717	1920.411	26.843	1921
28.204	1921.693	28.328	1921.779	28.794	1922	31.671	1922.975	31.802	1923
34.385	1923.995	34.683	1924	36.151	1924.028	37.954	1924.028	39.191	1924.098
39.938	1924.214	39.968	1924.218	40.27	1924	47.268	1924	47.917	1923.929
49.167	1924	50.847	1924.169	51.513	1924.248	52.049	1924.311	53.202	1924.392
56.191	1924.602	61.869	1925	65.579	1925.796	65.696	1925.821	66.484	1926
68.241	1926.368	70.093	1926.791	71.011	1927	74.947	1927.91	75.35	1928
82.926	1928	85.692	1928	88.127	1928	90.662	1928	93.898	1927.546
97.578	1927	102.426	1926.332	104.781	1926	104.833	1925.995	105.619	1925.915
106.369	1925.83	106.415	1925.825	108.105	1925.67	109.338	1925.557	109.781	1925.526
113.29	1925.41	116.21	1925.259	120.215	1925	120.927	1924.982	121.002	1924.981
124.823	1924.862	126.413	1924.821	127.865	1924.792	130.281	1924.752	131.403	1924.746
132.752	1924.755	134.539	1924.786	138.592	1924.875	139.98	1924.9	141.001	1924.902
141.956	1924.902	142.269	1924.902	143.389	1924.896	144.925	1924.869	151.364	1924.731
153.474	1924.695	154.227	1924.688	157.518	1924.692	163.265	1924.7	164.385	1924.7
165.614	1924.7	167.726	1924.712	169.07	1924.705	172.727	1924.684	174.705	1924.681
175.696	1924.675	179.051	1924.614	179.547	1924.611	180.767	1924.617	182.337	1924.639
185.778	1924.692	187.964	1924.735	190.181	1924.793	192.753	1924.877	196.038	1925
196.573	1925.018	2001	925.142						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-328.148	.035	-65.818	.025	82.926	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-65.818	82.926	10.37	10.37	10.37	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 1918.07	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.41	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 1916.66	* Reach Len. (ft)	* 10.37	* 10.37	* 10.37 *
* Crit W.S. (ft)	* 1917.04	* Flow Area (sq ft)	*	* 74.09	* *
* E.G. Slope (ft/ft)	*0.017010	* Area (sq ft)	*	* 74.09	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 53.80	* Top Width (ft)	*	* 53.80	* *
* Vel Total (ft/s)	* 9.53	* Avg. Vel. (ft/s)	*	* 9.53	* *
* Max Chl Dpth (ft)	* 2.47	* Hydr. Depth (ft)	*	* 1.38	* *
* Conv. Total (cfs)	* 5413.1	* Conv. (cfs)	*	* 5413.1	* *
* Length Wtd. (ft)	* 10.37	* Wetted Per. (ft)	*	* 54.36	* *
* Min Ch El (ft)	* 1914.20	* Shear (lb/sq ft)	*	* 1.45	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 13.79	* *
* Frctn Loss (ft)	* 2.42	* Cum Volume (acre-ft)	*	* 0.17	* *
* C & E Loss (ft)	* 0.74	* Cum SA (acres)	*	* 0.11	* *

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -9100

INPUT

Description:
Station Elevation Data   num=   246

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-328.095	1926.96	-327.358	1927	-327.045	1927	-326.593	1927	-326.089	1927
-325.54	1927	-324.93	1927	-324.324	1927	-324.234	1927	-316.341	1927
-272.912	1927	-266.604	1927	-266.444	1927	-266.26	1927	-265.821	1927
-265.348	1927	-260.113	1926.908	-252.595	1926.732	-241.313	1926.47	-231.952	1926.252
-220.764	1926	-220.356	1926	-210.812	1926	-204.237	1926	-179.281	1926
-165.328	1926	-135.14	1926	-111.275	1925.501	-108.955	1925.451	-108.065	1925.426
-105.825	1925.333	-104.788	1925.297	-104.412	1925.29	-101.723	1925.312	-101.717	1925.326
-101.551	1925.333	-101.221	1925.34	-100.671	1925.37	-99.358	1925.427	-98.828	1925.436
-98.181	1925.427	-97.449	1925.402	-96.268	1925.349	-95.904	1925.337	-95.639	1925.332
-95.434	1925.332	-95.263	1925.334	-94.935	1925.344	-94.443	1925.368	-93.271	1925.445
-92.131	1925.516	-90.487	1925.602	-88.455	1925.68	-88.238	1925.686	-83.541	1925.812
-83.159	1925.81	-77.048	1926	-75.944	1926.039	-72.424	1926.15	-69.389	1926.22
-69.241	1926.222	-66.788	1926.252	-64.578	1926.24	-62.631	1926.173	-60.672	1926.042
-60.224	1926	-54.861	1925.176	-54.322	1925.088	-54.091	1925.044	-53.912	1925
-53.768	1924.942	-51.472	1924	-50.399	1923.559	-49.108	1923	-48.255	1922.604
-46.86	1922	-45.722	1921.451	-44.782	1921	-42.791	1920.067	-42.655	1920
-42.489	1919.919	-40.542	1919	-39.923	1918.71	-38.431	1918	-37.047	1917.334
-36.336	1917	-35.194	1916.465	-34.272	1916	-34.081	1915.904	-32.26	1915
-31.811	1914.776	-31.609	1914.713	-31.321	1914.672	-30.839	1914.643	-30.185	1914.627
-29.345	1914.611	-28.209	1914.582	-27.633	1914.565	-24.431	1914.468	-17.939	1914.27
-17.428	1914.255	-16.874	1914.239	-13.392	1914.143	-11.856	1914.073	-11.466	1914.056
-11.223	1914.046	-11.068	1914.041	-10.951	1914.039	-10.749	1914.035	-10.657	1914.034
-10.568	1914.033	-10.477	1914.034	-10.387	1914.035	-10.256	1914.036	-10.222	1914.038
-10.192	1914.041	-9.914	1914.086	-9.213	1914.187	-9.071	1914.208	-8.144	1914.138
-7.351	1914.257	-7.095	1914.271	-6.358	1914.31	-4.339	1914.593	-4.106	1914.626
-3.241	1914.746	-1.008	1915	-.064	1915.065	0	1915.069	3.199	1915.247
3.446	1915.252	3.729	1915.253	5.276	1915.294	6.323	1915.336	8.518	1915.464
16.218	1915.987	16.406	1916	16.423	1916.011	17.158	1916.506	18.632	1917
20.346	1917.976	20.39	1918	21.955	1918.872	22.2	1919	22.392	1919.1
24.05	1920	25.302	1920.691	25.894	1921	27.527	1921.832	27.944	1922
28.614	1922.625	29.454	1922.643	30.396	1923	30.513	1923.332	30.662	1924
30.731	1924.383	31.112	1924.75	31.838	1925	32.084	1925.039	32.131	1925.047
33.343	1925.013	33.475	1925	35.211	1924.852	41.441	1924	47.23	1924
48.347	1924	49.982	1924.174	55.758	1925	58.604	1925.844	59.286	1926
62.482	1926.656	62.537	1926.668	64.161	1927	66.513	1927.449	66.685	1927.482
68.621	1927.851	69.171	1927.978	69.267	1928	71.421	1928	71.593	1928
73.727	1928	75.179	1927.8	77.744	1927.645	79.462	1927.512	80.595	1927.437
83.291	1927.255	85.031	1927.169	86.743	1927	90.259	1926.557	94.346	1926
94.798	1925.947	98.611	1925.502	103.579	1925	104.011	1924.969	104.349	1924.968
106.349	1924.927	108.093	1924.849	111.334	1924.648	111.822	1924.635	114.966	1924.599
119.155	1924.608	120.543	1924.581	123.771	1924.594	124.431	1924.597	125.873	1924.561
128.061	1924.493	128.971	1924.47	129.803	1924.453	131.186	1924.431	131.828	1924.427
132.601	1924.432	133.624	1924.45	135.945	1924.501	136.739	1924.515	141.686	1924.528
142.244	1924.527	143.755	1924.525	149.155	1924.5	150.012	1924.485	153.603	1924.408
154.779	1924.388	155.219	1924.383	157.035	1924.386	160.239	1924.39	164.327	1924.391
165.013	1924.391	166.679	1924.4	169.307	1924.415	172.219	1924.399	173.371	1924.396
173.948	1924.393	175.902	1924.358	176.191	1924.356	176.901	1924.36	177.815	1924.372
179.819	1924.403	181.092	1924.428	182.383	1924.462	183.881	1924.511	186.043	1924.592
195.975	1924.989	196.012	1924.99	196.059	1924.99	196.224	1925	199.163	1925.119
200	1925.162								

Manning's n Values   num=   3

Sta	n Val	Sta	n Val	Sta	n Val
-328.095	.035	-66.788	.025	69.267	.035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -66.788 69.267   92.13   92.13   92.13   .1   .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1917.85	Element	Left OB	Channel / Right OB
Vel Head (ft)	1.71	Wt. n-Val.		0.025 /
W.S. Elev (ft)	1916.14	Reach Len. (ft)	92.13	92.13 / 92.13
Crit W.S. (ft)	1916.63	Flow Area (sq ft)		67.26 /
E.G. Slope (ft/ft)	0.021925	Area (sq ft)		67.26 /
Q Total (cfs)	706.00	Flow (cfs)		706.00 /
Top Width (ft)	51.15	Top Width (ft)		51.15 /
Vel Total (ft/s)	10.50	Avg. Vel. (ft/s)		10.50 /
Max Chl Dpth (ft)	2.10	Hydr. Depth (ft)		1.31 /
Conv. Total (cfs)	4768.0	Conv. (cfs)		4768.0 /
Length Wtd. (ft)	92.13	Wetted Per. (ft)		51.64 /
Min Ch El (ft)	1914.03	Shear (lb/sq ft)		1.78 /
Alpha	1.00	Stream Power (lb/ft s)		18.71 /
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)		0.15 /
C & E Loss (ft)	0.03	Cum SA (acres)		0.10 /

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -9192.13

INPUT
Description:
Station Elevation Data   num=   204

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-327.618	1926.436	-322.721	1926.702	-322.421	1926.778	-320.607	1926.854	-316.785	1926.927
-310.692	1926.991	-309.273	1927	-299.847	1927	-299.673	1927	-297.135	1927

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-290.269    1927-285.639    1927-284.878    1927-261.6011926.609-237.0221926.172
-227.365    1926-226.895    1926-226.096    1926 -210.95    1926-202.948    1926
-187.428    1926-167.246    1926-163.638    1926-146.299    1926-146.105    1926
 -144.71    1926-142.049  1925.9-138.0081925.769-130.939 1925.58-127.7351925.484
-127.4131925.475-125.1471925.361-117.949    1925-116.9771924.885-109.523    1924
-102.9651923.494 -99.5181923.315 -97.8221923.201 -96.4191923.165 -94.8431923.124
 -93.5611923.057  -93.311923.045  -93.261923.043 -93.2171923.043 -93.1651923.043
 -93.0641923.044 -93.0171923.044   -92.41923.052 -92.2471923.054 -92.1081923.058
 -91.9331923.063 -90.0891923.079 -89.3641923.085 -89.0151923.097 -85.7751923.173
 -81.3561923.343 -78.1211923.454 -77.5111923.475 -77.105 1923.49 -74.3751923.589
  -70.511923.734 -68.2921923.776 -65.6091923.877 -65.0851923.895 -64.7021923.903
 -64.4061923.902 -64.1281923.894 -63.3061923.861 -63.0431923.848 -62.7191923.825
 -58.9211923.504  -57.191923.428 -55.6011923.319 -54.6851923.242 -53.125    1923
 -52.1751922.699 -50.202    1922 -48.6931921.391 -47.858    1921  -47.531920.837
 -45.741    1920 -45.2481919.758 -43.634    1919 -42.824 1918.61 -41.529    1918
 -40.2141917.391 -39.425    1917 -37.861 1916.26 -37.328    1916 -36.7381915.725
 -35.234    1915 -33.677 1914.25  -33.17    1914 -29.7381913.113 -29.581    1913
 -28.7511912.966 -25.3031912.877 -22.4161912.835 -18.0751912.799 -13.5551912.777
 -11.169 1912.77  -8.7031912.778  -6.3071912.808  -3.865 1912.86       01912.969
   1.115    1913   1.4791913.016   3.9581913.172   5.4931913.328   7.449    1914
   9.2111914.945   9.319    1915   9.4191915.054  11.096    1916  12.0041916.481
   12.85    1917  14.0041917.703  14.512    1918  15.6311918.695  16.099    1919
  16.5361919.295  17.579    1920  19.0921920.994  19.102    1921  19.1931921.031
  19.2441921.063  19.3621921.118  21.542    1922   21.821922.325  22.212    1923
  22.3051923.072   22.421923.085  22.763 1923.11  23.099 1923.14  23.8861923.252
  24.2511923.287  24.9261923.351  26.3241923.347  27.3561923.343  27.6571923.371
  30.8211923.394  32.3071923.463   32.941923.532  33.3271923.592  33.906 1923.68
  34.1181923.697  34.3281923.733  35.829    1924  37.0191924.252  40.868    1925
  45.3221925.899  45.787    1926  45.867    1926  48.187    1926  52.1591925.176
  52.993    1925  53.4121924.915  57.633    1924  61.1781923.287  62.495    1923
  62.612 1922.92  63.1341922.793  63.171  1922.7   63.831922.642  65.7311922.569
  66.8891922.544   67.431922.517  67.8011922.507   68.24  1922.5  70.3871922.514
  70.7391922.549  71.1361922.564  72.2471922.596  74.3751922.693  81.262    1923
 101.7891923.393 104.4681923.422 130.2781923.703 135.4031923.779 139.4521923.837
 139.9771923.844 140.6331923.851  141.461923.859 142.2821923.866 142.6141923.869
 142.9081923.871 143.4781923.874  144.041923.876 144.5311923.877 146.2511923.881
 146.4821923.882 153.1281923.946 159.704    1924 160.7081924.008 160.7821924.008
   168.81924.058 168.9171924.059 176.5221924.099 186.6551924.143 189.3211924.158
 191.3191924.183 193.0911924.224 194.5311924.272     2001924.277

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-327.618    .035-146.299    .025  48.187    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
      -146.299  48.187            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 1916.20  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.46  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1914.74  * Reach Len. (ft)       *          *          *          *
* Crit W.S. (ft)         * 1915.09  * Flow Area (sq ft)     *          *   72.90  *          *
* E.G. Slope (ft/ft)     *0.013616  * Area (sq ft)          *          *   72.90  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   43.54  * Top Width (ft)        *          *   43.54  *          *
* Vel Total (ft/s)       *    9.68  * Avg. Vel. (ft/s)      *          *    9.68  *          *
* Max Chl Dpth (ft)      *    1.97  * Hydr. Depth (ft)      *          *    1.67  *          *
* Conv. Total (cfs)      *  6050.3  * Conv. (cfs)           *          *  6050.3  *          *
* Length Wtd. (ft)       *          * Wetted Per. (ft)      *          *   44.18  *          *
* Min Ch El (ft)         * 1912.77  * Shear (lb/sq ft)      *          *    1.40  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   13.58  *          *
* Frctn Loss (ft)        *    1.57  * Cum Volume (acre-ft)  *          *          *          *
* C & E Loss (ft)        *    0.08  * Cum SA (acres)        *          *          *          *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.

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

SUMMARY OF MANNING'S N VALUES

River:EQUESTRIAN DB OF
*************************************************************
*     Reach      *   River Sta.   *   n1    *   n2    *   n3    *
*************************************************************
*1               *    -1500       *     .035*     .025*     .035*
*1               *    -1525       *     .035*     .025*     .035*
*1               *    -1550       *     .035*     .025*     .035*
*1               *    -1575       *     .035*     .025*     .035*
*1               *    -1600       *     .035*     .025*     .035*
*1               *    -1625       *     .035*     .025*     .035*
*1               *    -1650       *     .035*     .025*     .035*
*1               *    -1675       *     .035*     .025*     .035*
*1               *    -1700       *     .035*     .025*     .035*
*1               *    -1725       *     .035*     .025*     .035*
*1               *    -1750       *     .035*     .025*     .035*
*1               *    -1775       *     .035*     .025*     .035*
*1               *    -1800       *     .035*     .025*     .035*
*1               *    -1825       *     .035*     .025*     .035*
*1               *    -1850       *     .035*     .025*     .035*
*1               *    -1875       *     .035*     .025*     .035*
*1               *    -1900       *     .035*     .025*     .035*
```

*1	*	-1925	*	.035*	.025*	.035*
*1	*	-1950	*	.035*	.025*	.035*
*1	*	-1975	*	.035*	.025*	.035*
*1	*	-2000	*	.035*	.025*	.035*
*1	*	-2025	*	.035*	.025*	.035*
*1	*	-2050	*	.035*	.025*	.035*
*1	*	-2075	*	.035*	.025*	.035*
*1	*	-2100	*	.035*	.025*	.035*
*1	*	-2125	*	.035*	.025*	.035*
*1	*	-2150	*	.035*	.025*	.035*
*1	*	-2175	*	.035*	.025*	.035*
*1	*	-2200	*	.035*	.025*	.035*
*1	*	-2225	*	.035*	.025*	.035*
*1	*	-2250	*	.035*	.025*	.035*
*1	*	-2275	*	.035*	.025*	.035*
*1	*	-2300	*	.035*	.025*	.035*
*1	*	-2325	*	.035*	.025*	.035*
*1	*	-2350	*	.035*	.025*	.035*
*1	*	-2375	*	.035*	.025*	.035*
*1	*	-2400	*	.035*	.025*	.035*
*1	*	-2425	*	.035*	.025*	.035*
*1	*	-2450	*	.035*	.025*	.035*
*1	*	-2475	*	.035*	.025*	.035*
*1	*	-2500	*	.035*	.025*	.035*
*1	*	-2525	*	.035*	.025*	.035*
*1	*	-2550	*	.035*	.025*	.035*
*1	*	-2575	*	.035*	.025*	.035*
*1	*	-2600	*	.035*	.025*	.035*
*1	*	-2625	*	.035*	.025*	.035*
*1	*	-2650	*	.035*	.025*	.035*
*1	*	-2675	*	.035*	.025*	.035*
*1	*	-2700	*	.035*	.025*	.035*
*1	*	-2730	*	.035*	.025*	.035*
*1	*	-2750	*	.035*	.025*	.035*
*1	*	-2775	*	.035*	.025*	.035*
*1	*	-2790.28	*	.035*	.025*	.035*
*1	*	-2791.78	*	.035*	.025*	.035*
*1	*	-2800	*	.035*	.025*	.035*
*1	*	-2804.37	*	.035*	.025*	.035*
*1	*	-2900	*	.035*	.025*	.035*
*1	*	-2950.26	*	.035*	.025*	.035*
*1	*	-3000	*	.035*	.025*	.035*
*1	*	-3100	*	.035*	.025*	.035*
*1	*	-3200	*	.035*	.025*	.035*
*1	*	-3300	*	.035*	.025*	.035*
*1	*	-3305.97	*	.035*	.025*	.035*
*1	*	-3391.11	*	.035*	.025*	.035*
*1	*	-3400	*	.035*	.025*	.035*
*1	*	-3500	*	.035*	.025*	.035*
*1	*	-3600	*	.035*	.025*	.035*
*1	*	-3700	*	.035*	.025*	.035*
*1	*	-3789.96	*	.035*	.025*	.035*
*1	*	-3800	*	.035*	.025*	.035*
*1	*	-3868.66	*	.035*	.025*	.035*
*1	*	-3900	*	.035*	.025*	.035*
*1	*	-4000	*	.035*	.025*	.035*
*1	*	-4100	*	.035*	.025*	.035*
*1	*	-4146.01	*	.035*	.025*	.035*
*1	*	-4200	*	.035*	.025*	.035*
*1	*	-4300	*	.035*	.025*	.035*
*1	*	-4399.05	*	.035*	.025*	.035*
*1	*	-4400	*	.035*	.025*	.035*
*1	*	-4423.9	*	.035*	.025*	.035*
*1	*	-4500	*	.035*	.025*	.035*
*1	*	-4528.19	*	.035*	.025*	.035*
*1	*	-4563.86	*	.035*	.025*	.035*
*1	*	-4596.68	*	.035*	.025*	.035*
*1	*	-4600	*	.035*	.025*	.035*
*1	*	-4607.48	*	.035*	.013*	.035*
*1	*	-4608.44	*Culvert	*	*	*
*1	*	-4834.44	*	.035*	.013*	.035*
*1	*	-4895.41	*	.035*	.025*	.035*
*1	*	-4900	*	.035*	.025*	.035*
*1	*	-4925.31	*	.035*	.025*	.035*
*1	*	-5000	*	.035*	.025*	.035*
*1	*	-5071.59	*	.035*	.025*	.035*
*1	*	-5100	*	.035*	.025*	.035*
*1	*	-5144.1	*	.035*	.025*	.035*
*1	*	-5200	*	.035*	.025*	.035*
*1	*	-5300	*	.035*	.025*	.035*
*1	*	-5400	*	.035*	.025*	.035*
*1	*	-5500	*	.035*	.025*	.035*
*1	*	-5600	*	.035*	.025*	.035*
*1	*	-5629.37	*	.035*	.025*	.035*
*1	*	-5700	*	.035*	.025*	.035*
*1	*	-5745.97	*	.035*	.025*	.035*
*1	*	-5800	*	.035*	.025*	.035*
*1	*	-5862.57	*	.035*	.025*	.035*
*1	*	-5900	*	.035*	.025*	.035*
*1	*	-6000	*	.035*	.025*	.035*
*1	*	-6100	*	.035*	.025*	.035*
*1	*	-6200	*	.035*	.025*	.035*
*1	*	-6300	*	.035*	.025*	.035*
*1	*	-6400	*	.035*	.025*	.035*
*1	*	-6500	*	.035*	.025*	.035*

*1	*	-6600	*	.035*	.025*	.035*
*1	*	-6700	*	.035*	.025*	.035*
*1	*	-6800	*	.035*	.025*	.035*
*1	*	-6900	*	.035*	.025*	.035*
*1	*	-7000	*	.035*	.025*	.035*
*1	*	-7100	*	.035*	.025*	.035*
*1	*	-7200	*	.035*	.025*	.035*
*1	*	-7300	*	.035*	.025*	.035*
*1	*	-7400	*	.035*	.025*	.035*
*1	*	-7428.56	*	.035*	.025*	.035*
*1	*	-7500	*	.035*	.025*	.035*
*1	*	-7600	*	.035*	.025*	.035*
*1	*	-7700	*	.035*	.025*	.035*
*1	*	-7800	*	.035*	.025*	.035*
*1	*	-7893.64	*	.035*	.025*	.035*
*1	*	-7900	*	.035*	.025*	.035*
*1	*	-8000	*	.035*	.025*	.035*
*1	*	-8100	*	.035*	.025*	.035*
*1	*	-8200	*	.035*	.025*	.035*
*1	*	-8300	*	.035*	.025*	.035*
*1	*	-8400	*	.035*	.025*	.035*
*1	*	-8500	*	.035*	.025*	.035*
*1	*	-8600	*	.035*	.025*	.035*
*1	*	-8700	*	.035*	.025*	.035*
*1	*	-8774.45	*	.035*	.025*	.035*
*1	*	-8800	*	.035*	.025*	.035*
*1	*	-8900	*	.035*	.025*	.035*
*1	*	-9000	*	.035*	.025*	.035*
*1	*	-9089.63	*	.035*	.025*	.035*
*1	*	-9100	*	.035*	.025*	.035*
*1	*	-9192.13	*	.035*	.025*	.035*

SUMMARY OF REACH LENGTHS

River: EQUESTRIAN DB OF

Reach	River Sta.	Left	Channel	Right
*1	-1500	25*	25*	25*
*1	-1525	25*	25*	*
*1	-1550	25*	25*	25*
*1	-1575	25*	25*	25*
*1	-1600	25*	25*	25*
*1	-1625	25*	25*	25*
*1	-1650	25*	25*	25*
*1	-1675	25*	25*	25*
*1	-1700	25*	25*	25*
*1	-1725	25*	25*	25*
*1	-1750	25*	25*	25*
*1	-1775	25*	25*	25*
*1	-1800	25*	25*	25*
*1	-1825	25*	25*	25*
*1	-1850	25*	25*	25*
*1	-1875	25*	25*	25*
*1	-1900	25*	25*	25*
*1	-1925	25*	25*	25*
*1	-1950	25*	25*	25*
*1	-1975	25*	25*	25*
*1	-2000	25*	25*	25*
*1	-2025	25*	25*	25*
*1	-2050	25*	25*	25*
*1	-2075	25*	25*	25*
*1	-2100	25*	25*	25*
*1	-2125	25*	25*	25*
*1	-2150	25*	25*	25*
*1	-2175	25*	25*	25*
*1	-2200	25*	25*	25*
*1	-2225	25*	25*	25*
*1	-2250	25*	25*	25*
*1	-2275	25*	25*	25*
*1	-2300	25*	25*	25*
*1	-2325	25*	25*	25*
*1	-2350	25*	25*	25*
*1	-2375	25*	25*	25*
*1	-2400	25*	25*	25*
*1	-2425	25*	25*	25*
*1	-2450	25*	25*	25*
*1	-2475	25*	25*	25*
*1	-2500	25*	25*	25*
*1	-2525	25*	25*	25*
*1	-2550	25*	25*	25*
*1	-2575	25*	25*	25*
*1	-2600	25*	25*	25*
*1	-2625	25*	25*	25*
*1	-2650	25*	25*	25*
*1	-2675	25*	25*	25*
*1	-2700	30*	30*	30*
*1	-2730	20*	20*	30*
*1	-2750	25*	25*	25*
*1	-2775	15.28*	15.28*	15.28*
*1	-2790.28	1.5*	1.5*	1.5*
*1	-2791.78	8.22*	8.22*	8.22*

*1	*	-2800	* 4.37*	4.37*	4.37*
*1	*	-2804.37	* 95.63*	95.63*	95.63*
*1	*	-2900	* 50.262*	50.262*	50.262*
*1	*	-2950.26	* 49.74*	49.74*	49.74*
*1	*	-3000	* 100*	100*	100*
*1	*	-3100	* 100*	100*	100*
*1	*	-3200	* 100*	100*	100*
*1	*	-3300	* 5.97*	5.97*	5.97*
*1	*	-3305.97	* 85.14*	85.14*	85.14*
*1	*	-3391.11	* 8.89*	8.89*	8.89*
*1	*	-3400	* 100*	100*	100*
*1	*	-3500	* 100*	100*	100*
*1	*	-3600	* 100*	100*	100*
*1	*	-3700	* 89.64*	89.64*	89.64*
*1	*	-3789.96	* 10.04*	10.04*	10.04*
*1	*	-3800	* 68.66*	68.66*	68.66*
*1	*	-3868.66	* 21.34*	21.34*	21.34*
*1	*	-3900	* 100*	100*	100*
*1	*	-4000	* 100*	100*	100*
*1	*	-4100	* 46.01*	46.01*	46.01*
*1	*	-4146.01	* 53.99*	53.99*	53.99*
*1	*	-4200	* 100*	100*	100*
*1	*	-4300	* 99.05*	99.05*	99.05*
*1	*	-4399.05	* .95*	.95*	.95*
*1	*	-4400	* 23.9*	23.9*	23.9*
*1	*	-4423.9	* 76.1*	76.1*	76.1*
*1	*	-4500	* 28.19*	28.19*	28.19*
*1	*	-4528.19	* 35.67*	35.67*	35.67*
*1	*	-4563.86	* 32.82*	32.82*	32.82*
*1	*	-4596.68	* 3.32*	3.32*	3.32*
*1	*	-4600	* 7.44*	7.44*	7.44*
*1	*	-4607.48	* 227*	227*	227*
*1	*	-4608.44	*Culvert *	*	*
*1	*	-4834.44	* 60.97*	60.97*	60.97*
*1	*	-4895.41	* 4.59*	4.59*	4.59*
*1	*	-4900	* 25.31*	25.31*	25.31*
*1	*	-4925.31	* 74.69*	74.69*	74.69*
*1	*	-5000	* 71.59*	71.59*	71.59*
*1	*	-5071.59	* 28.41*	28.41*	28.41*
*1	*	-5100	* 44.1*	44.4*	44.1*
*1	*	-5144.1	* 55.9*	55.9*	55.9*
*1	*	-5200	* 100*	100*	100*
*1	*	-5300	* 100*	100*	100*
*1	*	-5400	* 100*	100*	100*
*1	*	-5500	* 100*	100*	100*
*1	*	-5600	* 29.37*	29.37*	29.37*
*1	*	-5629.37	* 70.63*	70.63*	70.63*
*1	*	-5700	* 45.97*	45.97*	45.97*
*1	*	-5745.97	* 54.03*	54.03*	54.03*
*1	*	-5800	* 62.57*	62.57*	62.57*
*1	*	-5862.57	* 37.43*	37.43*	37.43*
*1	*	-5900	* 100*	100*	100*
*1	*	-6000	* 100*	100*	100*
*1	*	-6100	* 100*	100*	100*
*1	*	-6200	* 100*	100*	100*
*1	*	-6300	* 100*	100*	100*
*1	*	-6400	* 100*	100*	100*
*1	*	-6500	* 100*	100*	100*
*1	*	-6600	* 100*	100*	100*
*1	*	-6700	* 100*	100*	100*
*1	*	-6800	* 100*	100*	100*
*1	*	-6900	* 100*	100*	100*
*1	*	-7000	* 100*	100*	100*
*1	*	-7100	* 100*	100*	100*
*1	*	-7200	* 100*	100*	100*
*1	*	-7300	* 100*	100*	100*
*1	*	-7400	* 28.56*	28.56*	28.56*
*1	*	-7428.56	* 74.44*	74.44*	74.44*
*1	*	-7500	* 100*	100*	100*
*1	*	-7600	* 100*	100*	100*
*1	*	-7700	* 100*	100*	100*
*1	*	-7800	* 93.64*	93.64*	93.64*
*1	*	-7893.64	* 6.34*	6.34*	6.34*
*1	*	-7900	* 100*	100*	100*
*1	*	-8000	* 100*	100*	100*
*1	*	-8100	* 100*	100*	100*
*1	*	-8200	* 100*	100*	100*
*1	*	-8300	* 100*	100*	100*
*1	*	-8400	* 100*	100*	100*
*1	*	-8500	* 100*	100*	100*
*1	*	-8600	* 100*	100*	100*
*1	*	-8700	* 74.45*	74.45*	74.45*
*1	*	-8774.45	* 25.55*	25.55*	25.55*
*1	*	-8800	* 100*	100*	100*
*1	*	-8900	* 100*	100*	100*
*1	*	-9000	* 89.63*	89.63*	89.63*
*1	*	-9089.63	* 10.37*	10.37*	10.37*
*1	*	-9100	* 92.13*	92.13*	92.13*
*1	*	-9192.13	* *	*	*

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SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: EQUESTRIAN DB OF

Reach	River Sta.	Contr.	Expan.
1	-1500	.1	.3
1	-1525	.1	.3
1	-1550	.1	.3
1	-1575	.1	.3
1	-1600	.1	.3
1	-1625	.1	.3
1	-1650	.1	.3
1	-1675	.1	.3
1	-1700	.1	.3
1	-1725	.1	.3
1	-1750	.1	.3
1	-1775	.1	.3
1	-1800	.1	.3
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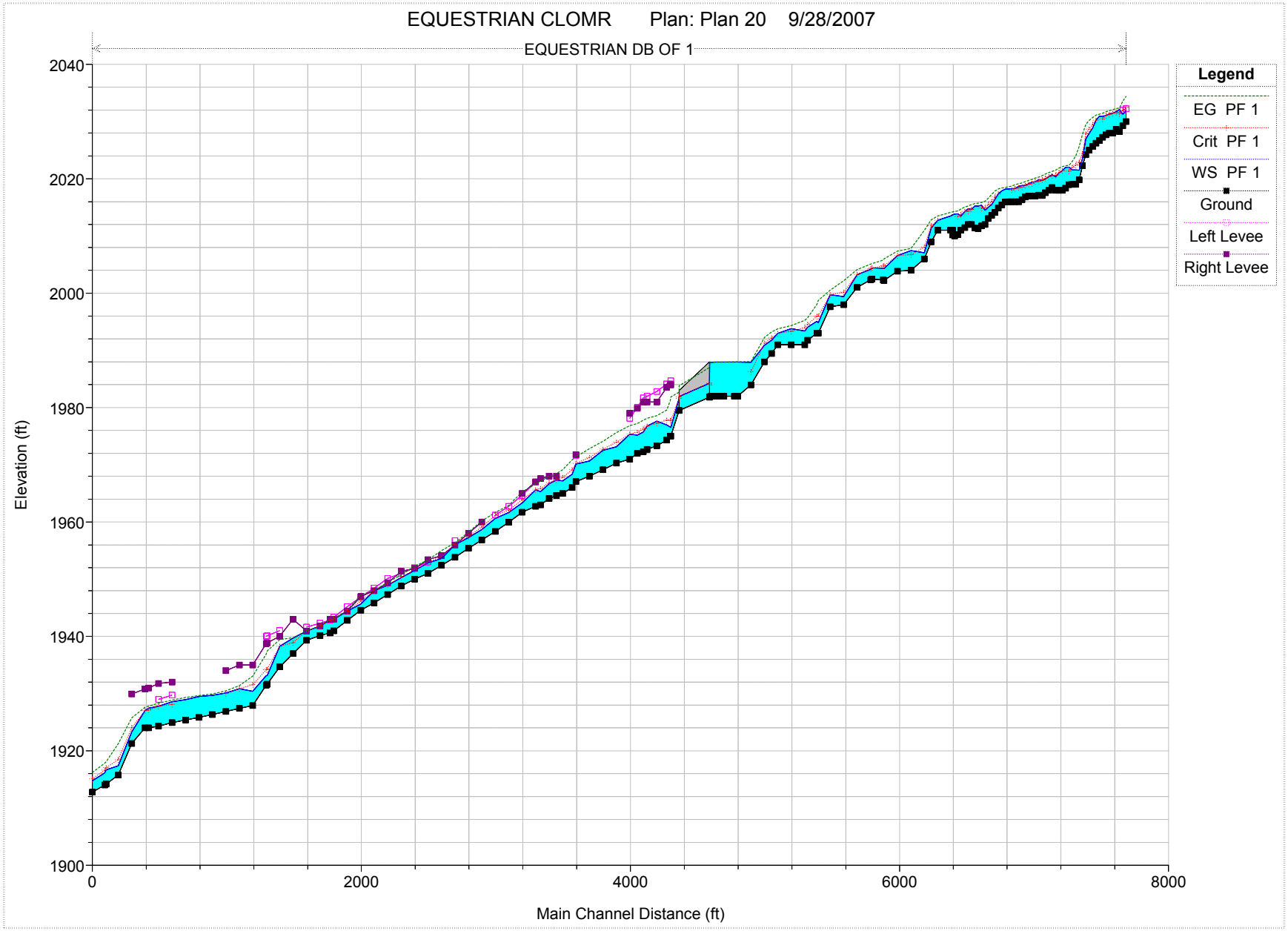
Profile Output Table - Standard Table 1

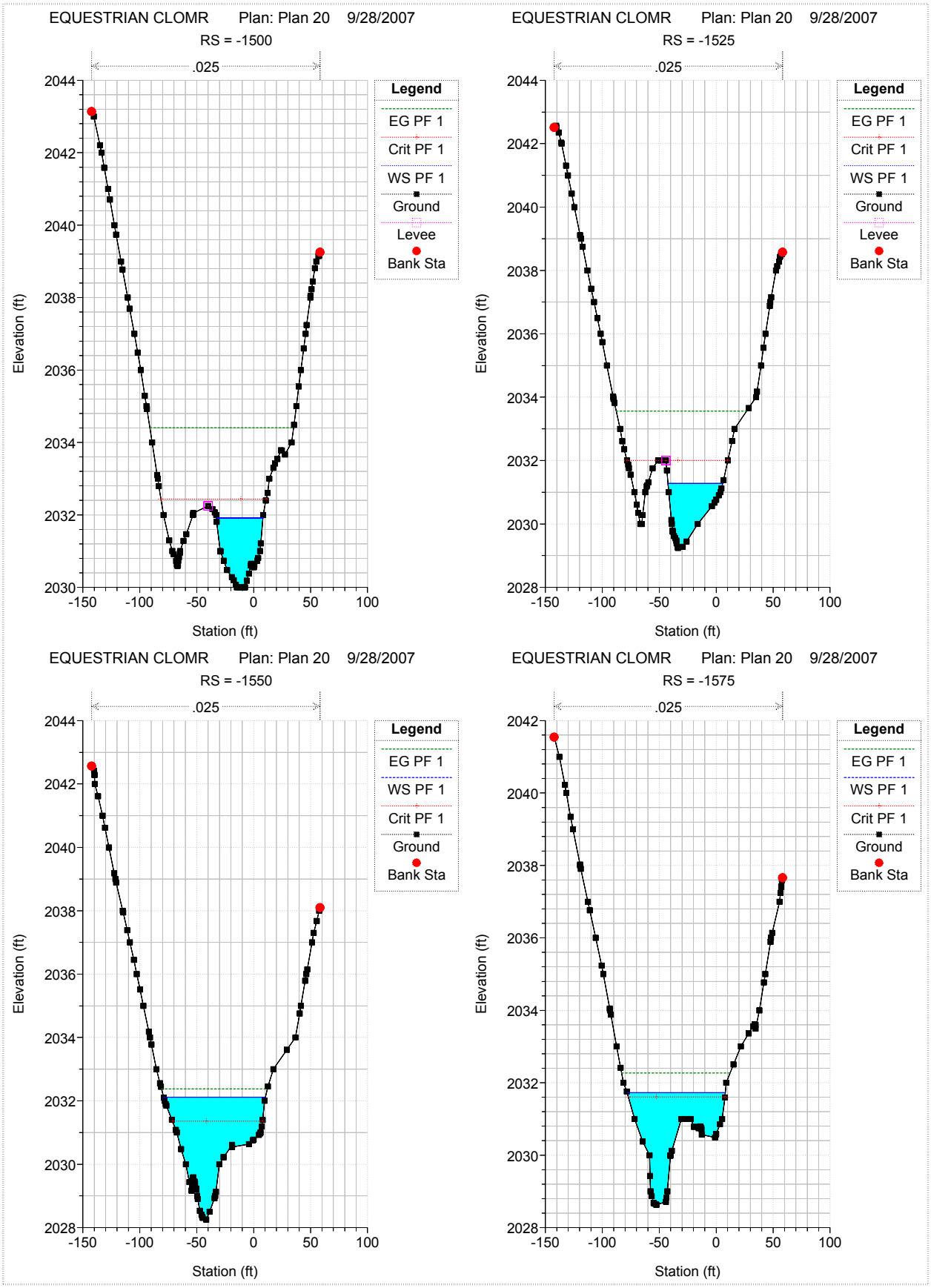
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	-1500	PF 1	706.00	2030.00	2031.91	2032.44	2034.41	0.030424	12.67	55.70	40.82	1.91
1	-1525	PF 1	706.00	2029.24	2031.28	2032.00	2033.56	0.032553	12.12	58.25	48.10	1.94
1	-1550	PF 1	706.00	2028.25	2032.12	2031.36	2032.38	0.002063	4.13	170.92	89.53	0.53
1	-1575	PF 1	706.00	2028.63	2031.73	2031.61	2032.27	0.006504	5.91	119.47	86.24	0.88
1	-1600	PF 1	706.00	2028.00	2031.50	2031.44	2032.09	0.007381	6.14	115.00	86.24	0.94
1	-1625	PF 1	706.00	2028.00	2031.35	2031.26	2031.90	0.006884	5.93	119.15	89.18	0.90
1	-1650	PF 1	706.00	2027.69	2031.07	2031.07	2031.69	0.008779	6.31	111.95	90.74	1.00
1	-1675	PF 1	706.00	2027.27	2030.86	2030.46	2031.46	0.005181	6.21	113.76	62.11	0.81
1	-1700	PF 1	706.00	2026.68	2030.91		2031.29	0.003377	4.89	144.51	80.87	0.64
1	-1725	PF 1	706.00	2026.25	2030.24	2030.24	2031.11	0.008469	7.50	94.18	54.77	1.01
1	-1750	PF 1	706.00	2025.67	2028.90	2029.51	2030.73	0.016232	10.85	65.05	35.06	1.40
1	-1775	PF 1	706.00	2025.00	2027.95	2028.68	2030.22	0.022224	12.07	58.48	34.63	1.64
1	-1800	PF 1	706.00	2024.22	2026.99	2027.83	2029.50	0.035119	12.72	55.49	44.59	2.01
1	-1825	PF 1	706.00	2022.29	2023.56	2024.39	2027.76	0.144048	16.45	42.92	68.62	3.67
1	-1850	PF 1	706.00	2019.79	2021.49	2022.91	2025.65	0.054427	16.38	43.09	33.14	2.53
1	-1875	PF 1	706.00	2019.00	2021.56	2022.36	2024.05	0.036056	12.65	55.79	46.06	2.03

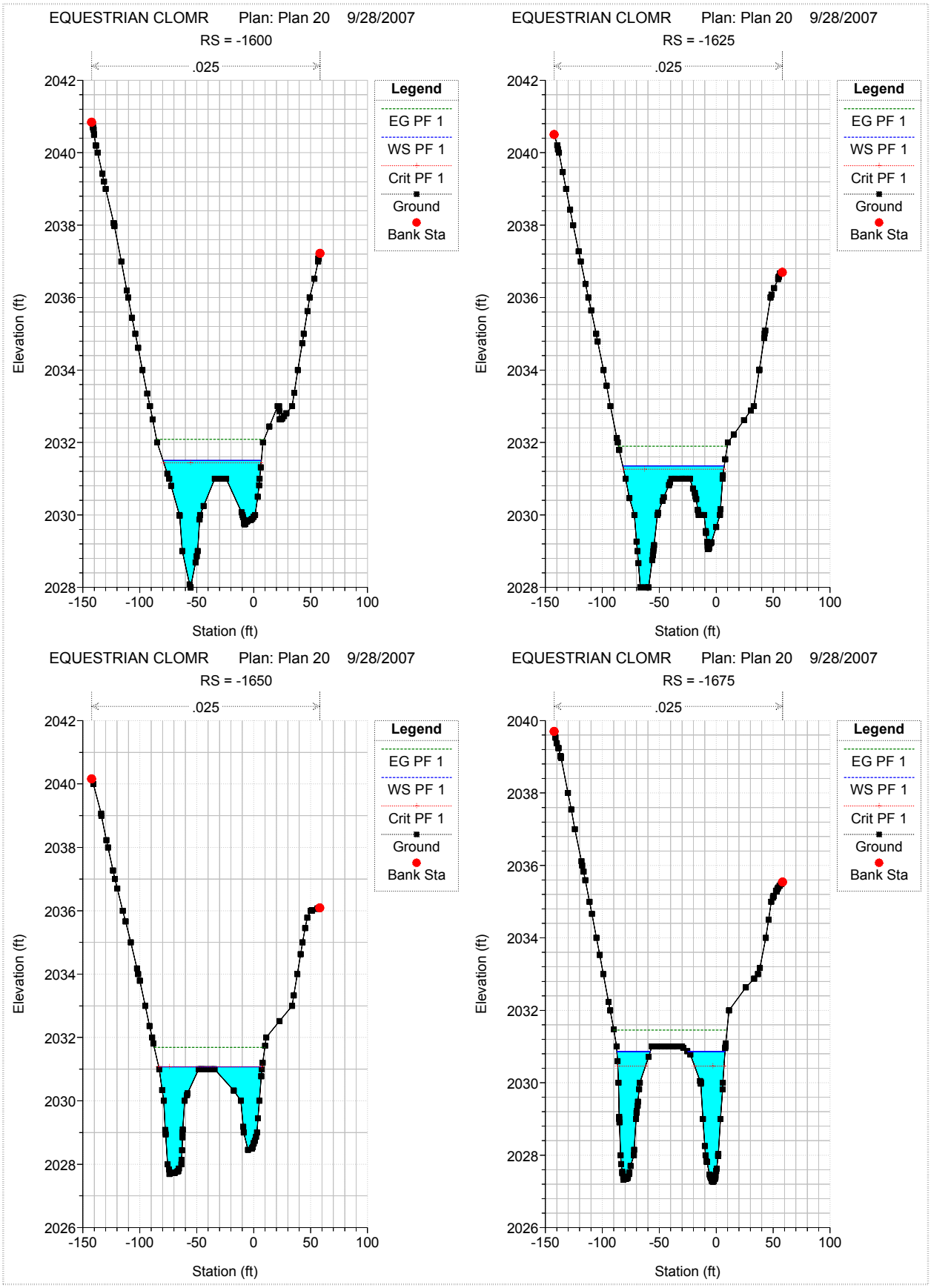
1	-1900	PF 1	706.00	2019.00	2021.55	2021.99	2023.02	0.023626	9.72	72.60	64.84	1.62
1	-1925	PF 1	706.00	2018.98	2022.05	2021.33	2022.34	0.002172	4.26	165.71	85.12	0.54
1	-1950	PF 1	706.00	2018.37	2022.01		2022.28	0.002034	4.18	168.86	84.75	0.52
1	-1975	PF 1	706.00	2018.00	2021.44	2021.44	2022.14	0.008725	6.74	104.71	77.29	1.02
1	-2000	PF 1	706.00	2018.00	2021.02	2021.15	2021.88	0.011629	7.46	94.69	74.61	1.17
1	-2025	PF 1	706.00	2018.00	2020.34	2020.64	2021.50	0.017271	8.65	81.59	69.51	1.41
1	-2050	PF 1	706.00	2018.48	2020.74	2020.56	2021.28	0.005775	5.92	119.32	79.16	0.85
1	-2075	PF 1	706.00	2018.00	2020.41	2020.41	2021.09	0.008280	6.65	106.15	77.43	1.00
1	-2100	PF 1	706.00	2017.57	2019.97	2020.11	2020.83	0.011453	7.46	94.58	73.77	1.16
1	-2125	PF 1	706.00	2017.06	2019.73	2019.84	2020.55	0.010910	7.27	97.15	76.03	1.13
1	-2150	PF 1	706.00	2017.15	2019.84	2019.55	2020.30	0.004668	5.43	129.94	83.07	0.77
1	-2175	PF 1	706.00	2017.00	2019.48	2019.48	2020.13	0.008473	6.46	109.32	84.55	1.00
1	-2200	PF 1	706.00	2017.00	2019.43	2019.16	2019.88	0.004735	5.37	131.55	86.93	0.77
1	-2225	PF 1	706.00	2017.00	2019.13	2019.06	2019.72	0.007417	6.18	114.26	85.70	0.94
1	-2250	PF 1	706.00	2016.82	2018.84	2018.84	2019.51	0.008589	6.60	106.91	81.02	1.01
1	-2275	PF 1	706.00	2016.34	2018.82	2018.55	2019.28	0.004693	5.41	130.50	84.78	0.77
1	-2300	PF 1	706.00	2016.00	2018.68	2018.45	2019.15	0.005001	5.46	129.19	86.73	0.79
1	-2325	PF 1	706.00	2016.00	2018.33	2018.33	2018.97	0.008451	6.45	109.42	84.76	1.00
1	-2350	PF 1	706.00	2016.00	2018.26	2018.05	2018.74	0.005412	5.53	127.56	89.00	0.81
1	-2375	PF 1	706.00	2016.00	2018.21		2018.60	0.003810	4.97	142.16	89.50	0.69
1	-2400	PF 1	706.00	2015.94	2018.19		2018.49	0.002665	4.43	159.36	91.45	0.59
1	-2425	PF 1	706.00	2015.43	2017.90		2018.39	0.003900	5.66	124.79	65.50	0.72
1	-2450	PF 1	706.00	2014.88	2017.35	2017.35	2018.22	0.007955	7.49	94.31	55.33	1.01
1	-2475	PF 1	706.00	2014.14	2016.42	2016.81	2017.87	0.017118	9.69	72.86	52.00	1.44
1	-2500	PF 1	706.00	2013.58	2015.48	2016.03	2017.29	0.029011	10.80	65.38	59.04	1.81
1	-2525	PF 1	706.00	2013.04	2015.04	2015.48	2016.60	0.021551	10.02	70.44	56.91	1.59
1	-2550	PF 1	706.00	2012.00	2014.49	2014.96	2016.07	0.020631	10.08	70.07	54.01	1.56
1	-2575	PF 1	706.00	2011.77	2015.37	2014.85	2015.85	0.003349	5.55	127.21	60.46	0.67
1	-2600	PF 1	706.00	2011.26	2015.26		2015.76	0.003849	5.68	124.31	62.43	0.71
1	-2625	PF 1	706.00	2011.44	2015.23		2015.64	0.003168	5.19	136.14	68.25	0.65
1	-2650	PF 1	706.00	2012.00	2014.68	2014.68	2015.49	0.008041	7.22	97.80	61.48	1.01
1	-2675	PF 1	706.00	2012.00	2014.74	2014.32	2015.22	0.003887	5.59	126.31	67.62	0.72
1	-2700	PF 1	706.00	2011.49	2014.28	2014.28	2015.06	0.008304	7.08	99.77	65.98	1.01
1	-2730	PF 1	706.00	2011.00	2013.46	2013.76	2014.69	0.015062	8.90	79.36	58.23	1.34
1	-2750	PF 1	706.00	2010.23	2013.88	2013.40	2014.39	0.003683	5.74	122.99	60.16	0.71
1	-2775	PF 1	706.00	2010.00	2013.85		2014.29	0.002856	5.32	132.77	60.26	0.63
1	-2790.28	PF 1	706.00	2011.00	2013.67		2014.23	0.004174	5.96	118.50	60.86	0.75
1	-2791.78	PF 1	706.00	2010.20	2013.71		2014.20	0.003508	5.62	125.53	61.22	0.69
1	-2800	PF 1	706.00	2011.00	2013.54		2014.16	0.004945	6.29	112.33	60.47	0.81
1	-2804.37	PF 1	706.00	2011.00	2013.51		2014.14	0.005159	6.36	111.08	60.71	0.83
1	-2900	PF 1	706.00	2011.00	2012.76	2012.76	2013.51	0.008176	6.95	101.63	68.74	1.01
1	-2950.26	PF 1	706.00	2009.00	2011.39	2011.79	2012.84	0.018620	9.68	72.95	54.50	1.47
1	-3000	PF 1	706.00	2006.00	2007.08	2008.06	2010.95	0.074879	15.80	44.69	46.28	2.83
1	-3100	PF 1	706.00	2004.00	2007.45	2006.73	2007.84	0.002526	5.01	141.04	64.35	0.60
1	-3200	PF 1	706.00	2003.84	2006.56	2006.56	2007.38	0.008018	7.25	97.43	61.02	1.01
1	-3300	PF 1	706.00	2002.22	2004.29	2004.79	2005.99	0.024450	10.48	67.36	55.93	1.68
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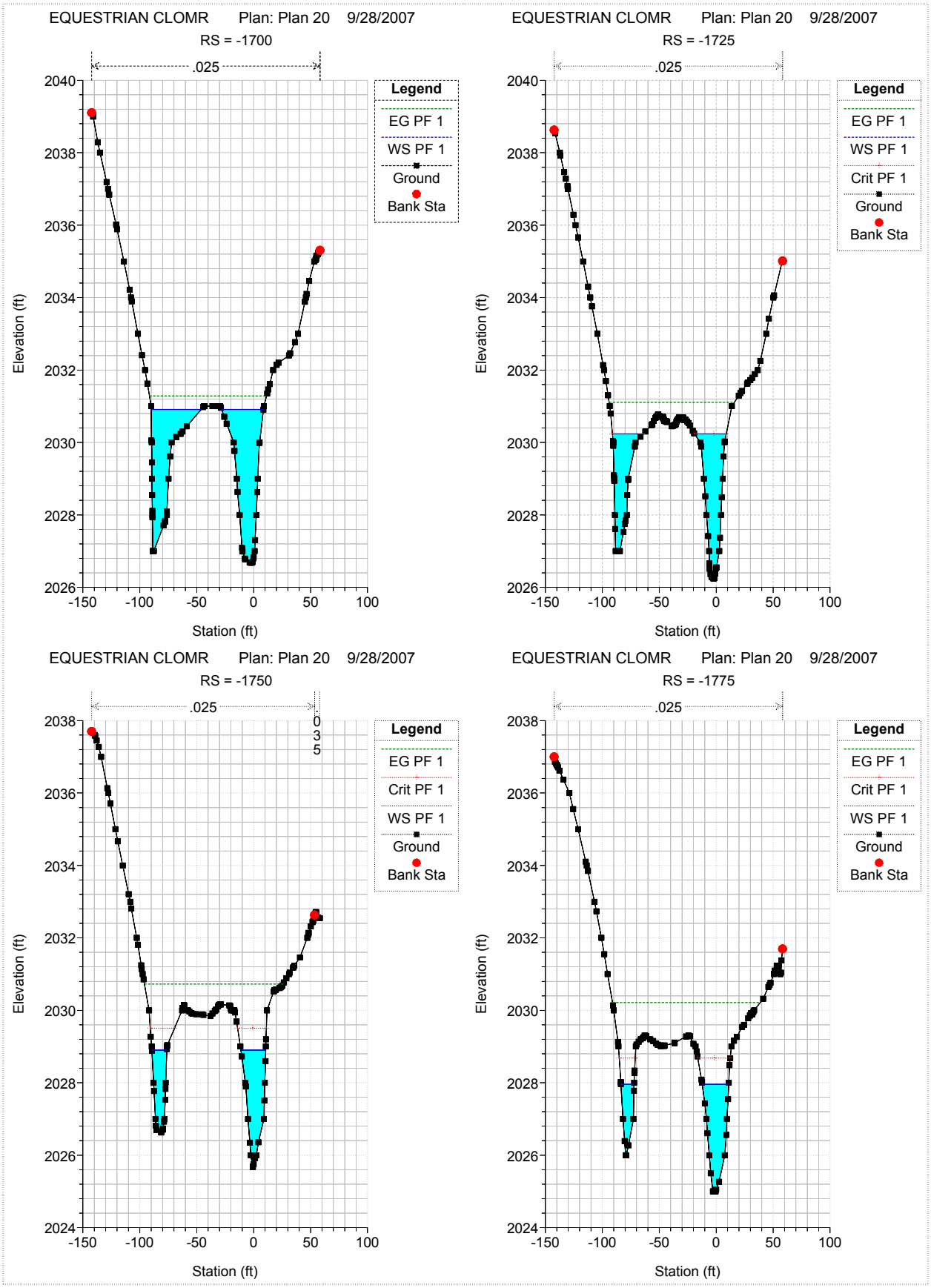
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1	-3500	PF 1	706.00	2001.00	2003.27	2003.30	2004.11	0.008473	7.35	96.01	61.25	1.04	
1	-3600	PF 1	706.00	1998.00	1999.40	2000.19	2002.20	0.051565	13.41	52.64	52.76	2.37	
1	-3700	PF 1	706.00	1997.61	1999.72	1999.72	2000.52	0.008125	7.18	98.38	62.72	1.01	
1	-3789.96	PF 1	706.00	1993.00	1994.84	1996.00	1998.75	0.048170	15.87	44.47	32.65	2.40	
1	-3800	PF 1	706.00	1993.00	1995.10	1995.97	1998.03	0.039484	13.73	51.42	40.12	2.14	
1	-3868.66	PF 1	706.00	1991.78	1994.03	1994.54	1995.73	0.020870	10.45	67.58	49.93	1.58	
1	-3900	PF 1	706.00	1991.00	1993.38	1993.95	1995.24	0.022944	10.94	64.53	47.50	1.65	
1	-4000	PF 1	706.00	1991.00	1993.82	1993.37	1994.34	0.003777	5.79	122.03	60.75	0.72	
1	-4100	PF 1	706.00	1991.00	1992.98	1992.98	1993.78	0.007962	7.20	98.05	61.67	1.01	
1	-4146.01	PF 1	706.00	1989.45	1991.76	1992.17	1993.20	0.016582	9.65	73.14	51.20	1.42	
1	-4200	PF 1	706.00	1988.01	1990.90	1991.28	1992.28	0.016408	9.44	74.76	53.44	1.41	
1	-4300	PF 1	706.00	1983.97	1987.92	1986.27	1988.03	0.000550	2.63	268.57	103.09	0.29	
1	-4399.05	PF 1	706.00	1982.00	1987.94		1987.98	0.000128	1.55	455.25	128.84	0.15	
1	-4400	PF 1	706.00	1982.00	1987.94		1987.98	0.000129	1.55	454.75	128.72	0.15	
1	-4423.9	PF 1	706.00	1982.00	1987.94		1987.98	0.000116	1.52	465.12	126.11	0.14	
1	-4500	PF 1	706.00	1982.00	1987.94		1987.97	0.000067	1.22	577.97	144.27	0.11	
1	-4528.19	PF 1	706.00	1982.00	1987.95		1987.96	0.000047	1.05	670.86	161.01	0.09	
1	-4563.86	PF 1	706.00	1982.00	1987.94		1987.96	0.000065	1.22	580.65	142.15	0.11	
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1	-4600	PF 1	706.00	1982.00	1987.90		1987.96	0.000147	1.86	379.53	88.39	0.16	
1	-4607.48	PF 1	706.00	1981.83	1987.81	1983.96	1987.95	0.000088	2.97	237.65	39.75	0.21	
1	-4608.44		Culvert										
1	-4834.44	PF 1	706.00	1979.50	1981.63	1981.63	1982.71	0.002217	8.33	84.76	39.76	1.01	
1	-4895.41	PF 1	706.00	1975.00	1976.51	1977.75	1981.87	0.103841	18.58	38.00	39.11	3.32	
1	-4900	PF 1	706.00	1975.00	1976.59	1977.77	1981.25	0.079055	17.33	40.73	37.72	2.94	
1	-4925.31	PF 1	706.00	1974.32	1976.98	1977.82	1979.58	0.025823	12.94	54.55	34.03	1.80	
1	-5000	PF 1	706.00	1973.32	1977.65	1977.27	1978.60	0.004790	7.85	89.97	32.17	0.83	
1	-5071.59	PF 1	706.00	1972.69	1976.77	1976.77	1978.15	0.007061	9.44	74.81	27.06	1.00	
1	-5100	PF 1	706.00	1972.26	1975.73	1976.28	1977.81	0.012965	11.57	60.99	25.91	1.33	
1	-5144.1	PF 1	706.00	1972.00	1975.17	1975.70	1977.23	0.012805	11.53	61.24	25.72	1.32	
1	-5200	PF 1	706.00	1971.00	1975.35	1975.35	1976.83	0.007141	9.78	72.19	24.16	1.00	
1	-5300	PF 1	706.00	1970.29	1973.16	1973.93	1975.63	0.019101	12.62	55.94	28.50	1.59	
1	-5400	PF 1	706.00	1969.13	1972.52	1972.72	1974.09	0.009083	10.05	70.27	27.76	1.11	
1	-5500	PF 1	706.00	1968.03	1970.67	1971.28	1972.80	0.017411	11.73	60.19	31.85	1.50	
1	-5600	PF 1	706.00	1967.07	1970.13	1970.25	1971.38	0.008330	8.95	78.85	36.24	1.07	
1	-5629.37	PF 1	706.00	1966.00	1968.34	1969.11	1970.87	0.022937	12.77	55.29	31.89	1.71	
1	-5700	PF 1	706.00	1965.00	1967.16	1967.80	1969.14	0.021416	11.28	62.59	41.48	1.62	
1	-5745.97	PF 1	706.00	1964.60	1967.35	1967.35	1968.47	0.007155	8.48	83.28	36.86	0.99	
1	-5800	PF 1	706.00	1964.11	1966.67	1966.89	1967.99	0.010122	9.21	76.68	39.35	1.16	
1	-5862.57	PF 1	706.00	1963.00	1965.32	1965.86	1967.14	0.016639	10.81	65.32	38.08	1.45	
1	-5900	PF 1	706.00	1962.74	1965.60	1965.60	1966.65	0.007299	8.22	85.93	40.70	1.00	
1	-6000	PF 1	706.00	1961.71	1963.32	1963.92	1965.28	0.028031	11.23	62.88	52.00	1.80	
1	-6100	PF 1	706.00	1959.94	1961.65	1962.05	1962.90	0.017263	8.97	78.68	63.45	1.42	
1	-6200	PF 1	706.00	1958.33	1960.63	1961.14	1961.68	0.008562	8.24	85.71	45.48	1.06	
1	-6300	PF 1	706.00	1956.86	1958.70	1959.15	1960.19	0.029790	9.80	72.01	76.31	1.78	

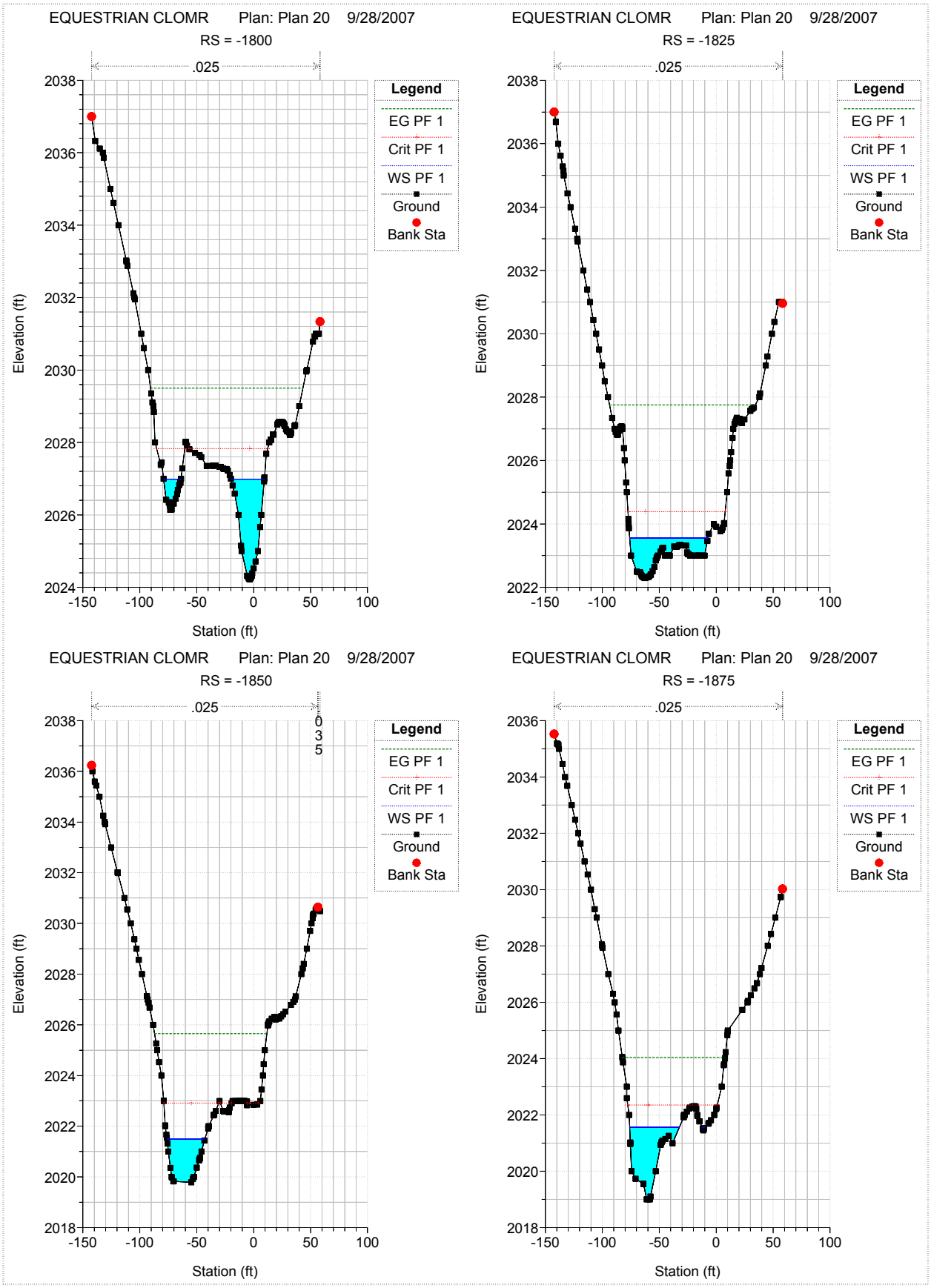
1	-6400	PF 1	706.00	1955.39	1957.28	1957.47	1958.24	0.012015	7.87	89.68	67.12	1.20
1	-6500	PF 1	706.00	1953.82	1956.01	1956.01	1956.34	0.006418	4.61	153.04	158.58	0.83
1	-6600	PF 1	706.00	1952.40	1953.62	1954.10	1954.98	0.034353	9.38	75.27	95.51	1.86
1	-6700	PF 1	706.00	1951.01	1952.85	1952.85	1953.37	0.009123	5.81	121.57	117.40	1.01
1	-6800	PF 1	706.00	1950.00	1951.57	1951.71	1952.26	0.013723	6.67	105.82	112.55	1.21
1	-6900	PF 1	706.00	1948.80	1950.24	1950.34	1950.76	0.015273	5.78	122.13	174.66	1.22
1	-7000	PF 1	706.00	1947.30	1948.95	1949.01	1949.45	0.011392	5.68	124.33	146.71	1.09
1	-7100	PF 1	706.00	1945.88	1948.00	1948.00	1948.07	0.002409	2.47	349.67	444.75	0.49
1	-7200	PF 1	706.00	1944.59	1945.65	1946.14	1947.27	0.048228	10.22	69.06	99.56	2.16
1	-7300	PF 1	706.00	1942.80	1944.42	1944.42	1944.56	0.005270	3.32	243.96	364.52	0.71
1	-7400	PF 1	706.00	1940.97	1943.01	1943.01	1943.08	0.001984	2.24	342.61	405.33	0.45
1	-7428.56	PF 1	706.00	1940.61	1942.82	1942.82	1942.83	0.000093	0.54	1289.39	874.13	0.10
1	-7500	PF 1	706.00	1940.16	1941.81	1941.81	1941.83	0.000714	1.22	541.20	472.48	0.26
1	-7600	PF 1	706.00	1939.29	1940.93	1940.93	1940.96	0.000747	1.59	483.50	364.07	0.28
1	-7700	PF 1	706.00	1937.00	1939.70	1938.91	1939.78	0.001231	2.32	304.66	257.31	0.38
1	-7800	PF 1	706.00	1934.65	1938.28	1938.28	1939.42	0.007921	8.56	82.44	37.24	1.01
1	-7893.64	PF 1	706.00	1931.65	1933.15	1934.27	1937.45	0.068909	16.64	42.43	38.30	2.79
1	-7900	PF 1	706.00	1931.49	1933.14	1934.19	1936.90	0.056666	15.56	45.38	39.14	2.55
1	-8000	PF 1	706.00	1927.91	1930.41	1931.56	1933.06	0.023912	13.06	54.06	31.03	1.74
1	-8100	PF 1	706.00	1927.40	1930.83	1930.83	1931.40	0.008660	6.02	117.27	102.43	0.99
1	-8200	PF 1	706.00	1926.88	1930.11	1930.01	1930.49	0.006862	4.95	142.52	140.46	0.87
1	-8300	PF 1	706.00	1926.34	1929.68		1929.95	0.003943	4.15	170.28	144.16	0.67
1	-8400	PF 1	706.00	1925.84	1929.50		1929.65	0.001872	3.13	225.33	166.64	0.47
1	-8500	PF 1	706.00	1925.39	1928.95		1929.32	0.005939	4.90	145.30	134.46	0.82
1	-8600	PF 1	706.00	1924.92	1928.56	1928.10	1928.87	0.003337	4.48	157.48	104.66	0.64
1	-8700	PF 1	706.00	1924.32	1927.77	1927.77	1928.33	0.008967	6.02	117.28	105.02	1.00
1	-8774.45	PF 1	706.00	1924.00	1927.46	1927.11	1927.78	0.003715	4.51	156.37	111.55	0.67
1	-8800	PF 1	706.00	1924.00	1927.04	1927.04	1927.61	0.009292	6.05	116.66	106.66	1.02
1	-8900	PF 1	706.00	1921.29	1923.30	1924.05	1925.75	0.038855	12.55	56.27	50.46	2.09
1	-9000	PF 1	706.00	1915.74	1917.36	1918.45	1921.24	0.049493	15.81	44.67	33.70	2.42
1	-9089.63	PF 1	706.00	1914.20	1916.66	1917.04	1918.07	0.017010	9.53	74.09	53.80	1.43
1	-9100	PF 1	706.00	1914.03	1916.14	1916.63	1917.85	0.021925	10.50	67.26	51.15	1.61
1	-9192.13	PF 1	706.00	1912.77	1914.74	1915.09	1916.20	0.013616	9.68	72.90	43.54	1.32

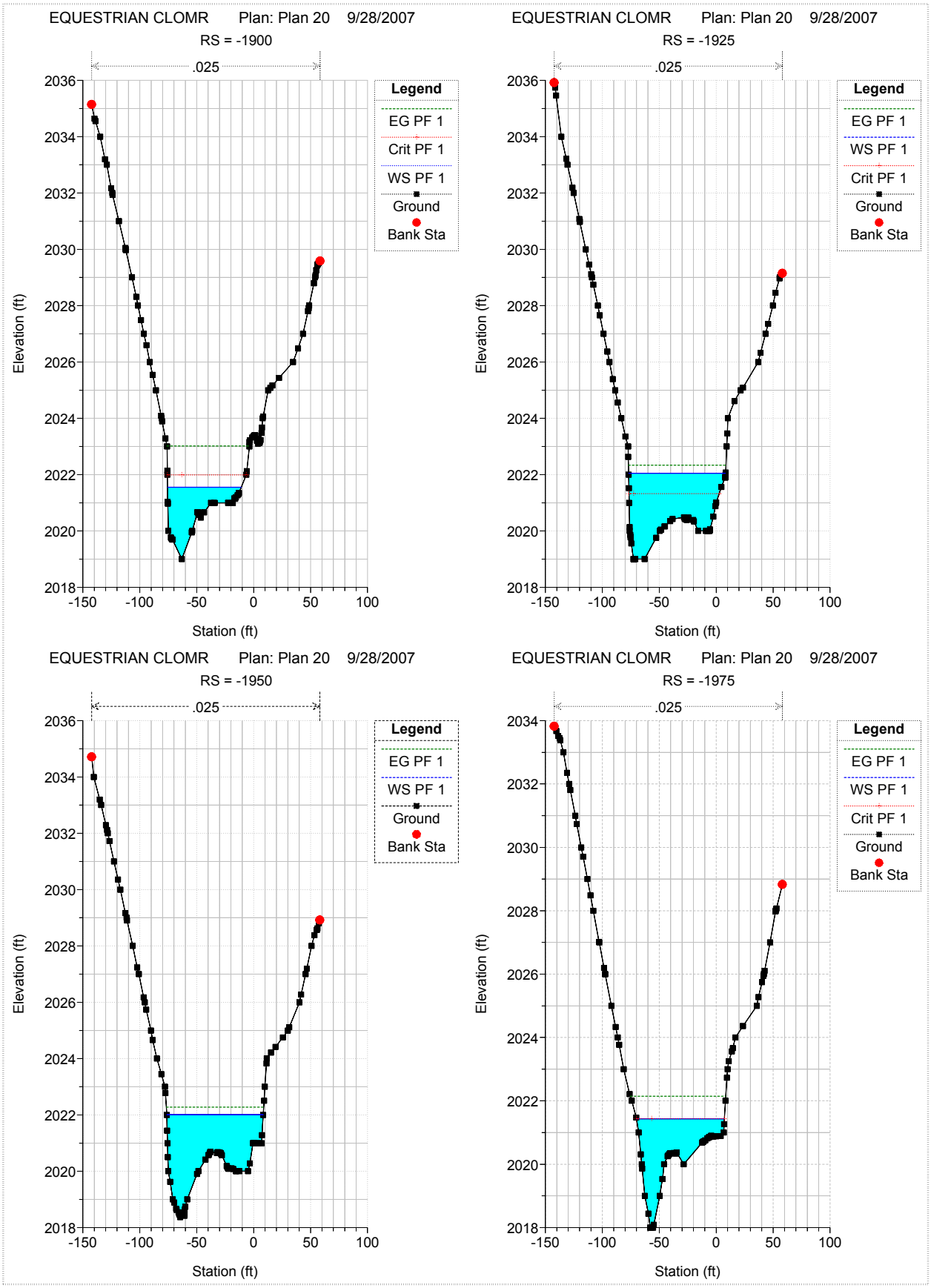

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
EQUESTRIAN DB OF 1
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Left Levee
Right Levee
Elevation (ft)
2040
2020
2000
1980
1960
1940
1920
1900
0
2000
4000
6000
8000
Main Channel Distance (ft)

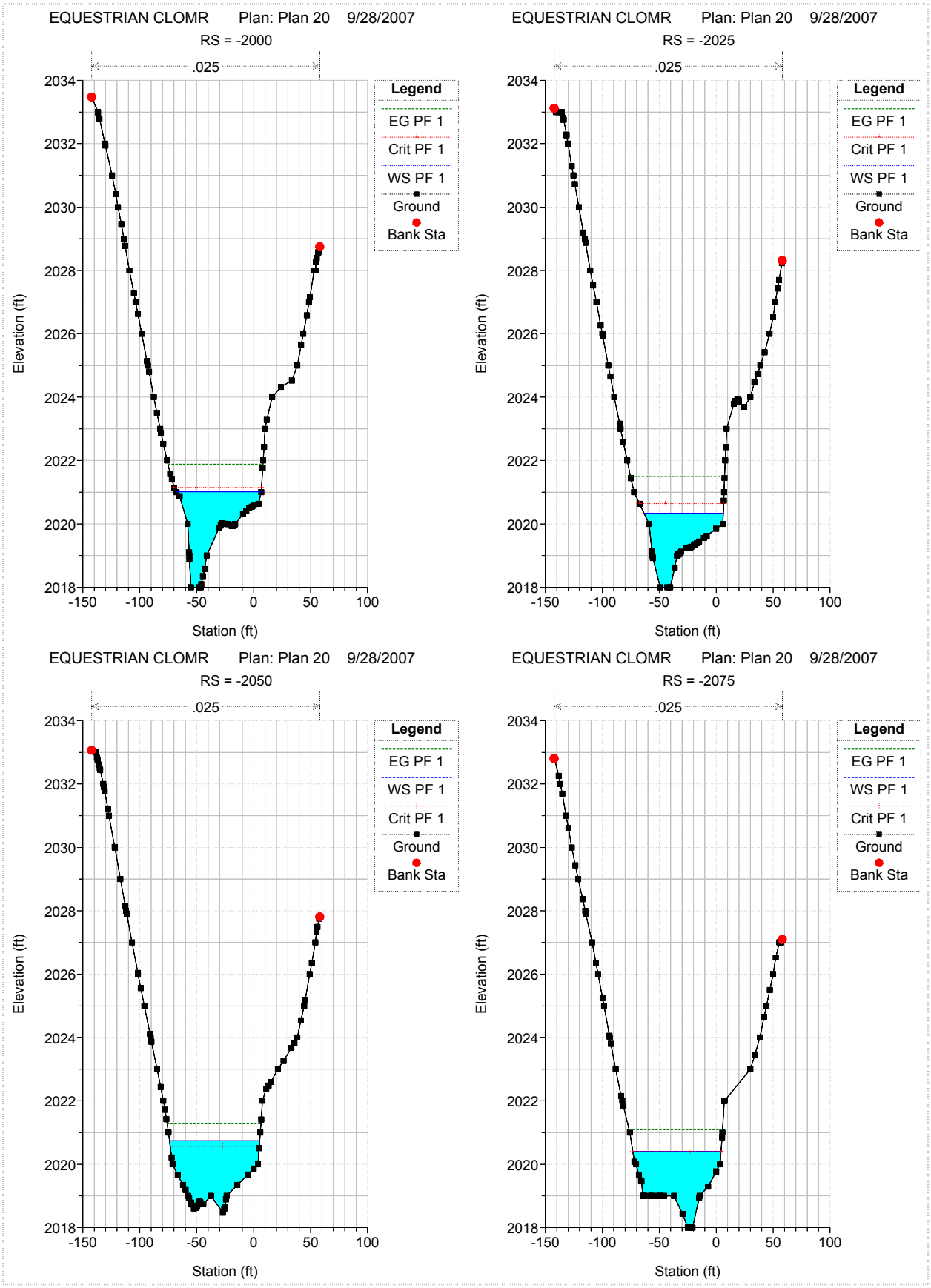

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1500
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1525
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1550
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1575
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

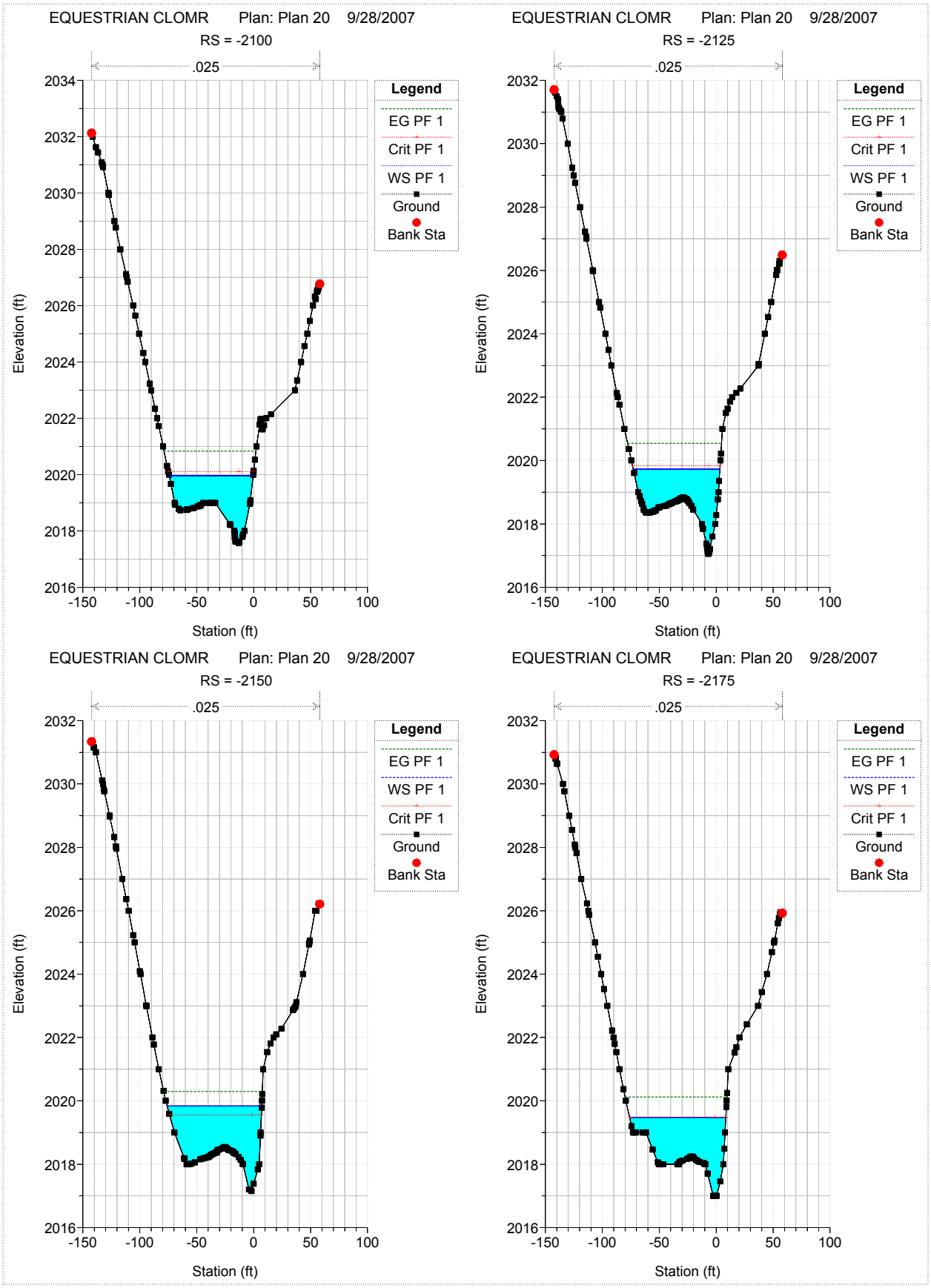

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1600
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1625
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1650
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1675
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

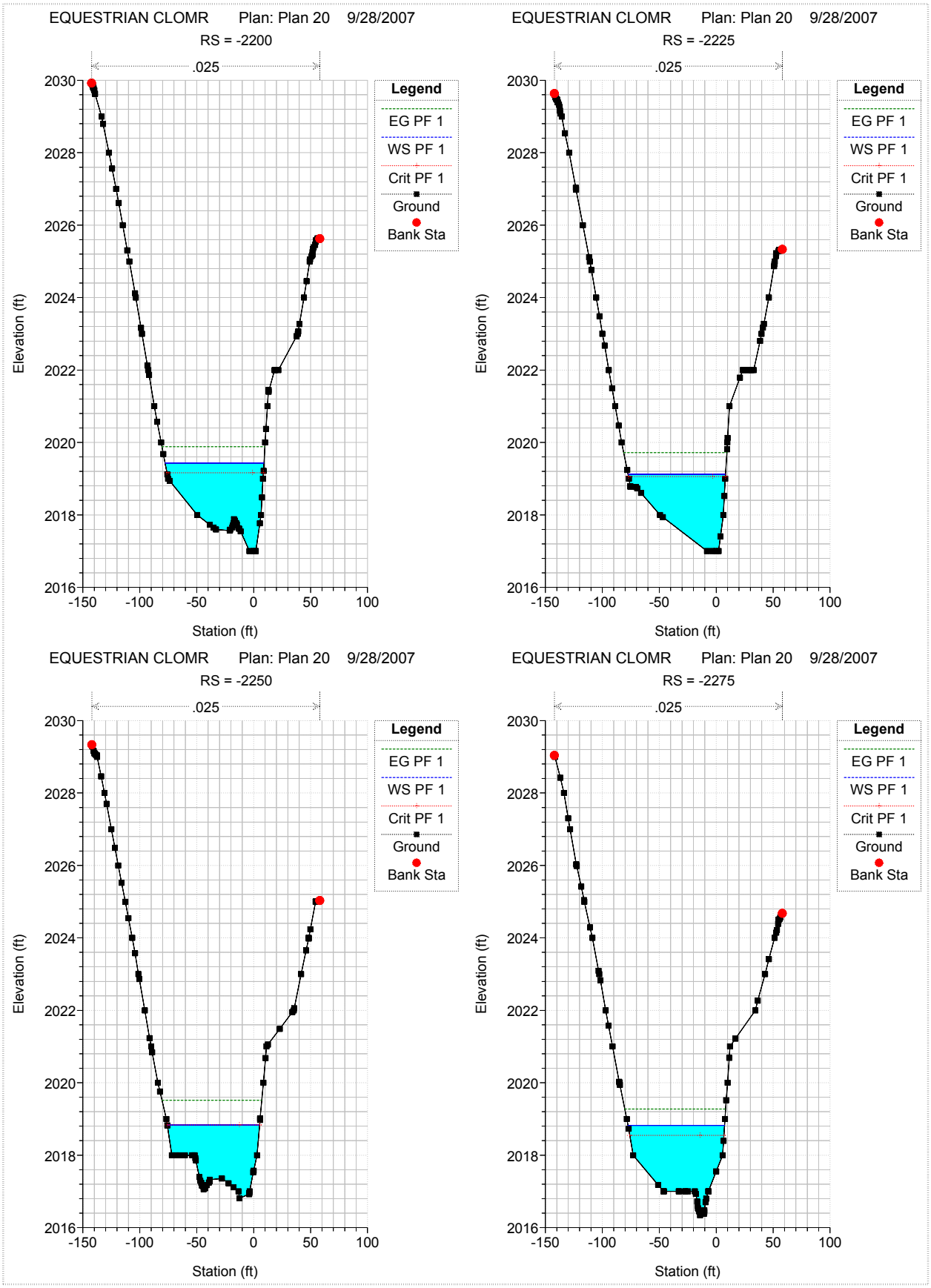

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1700
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1725
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1750
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1775
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

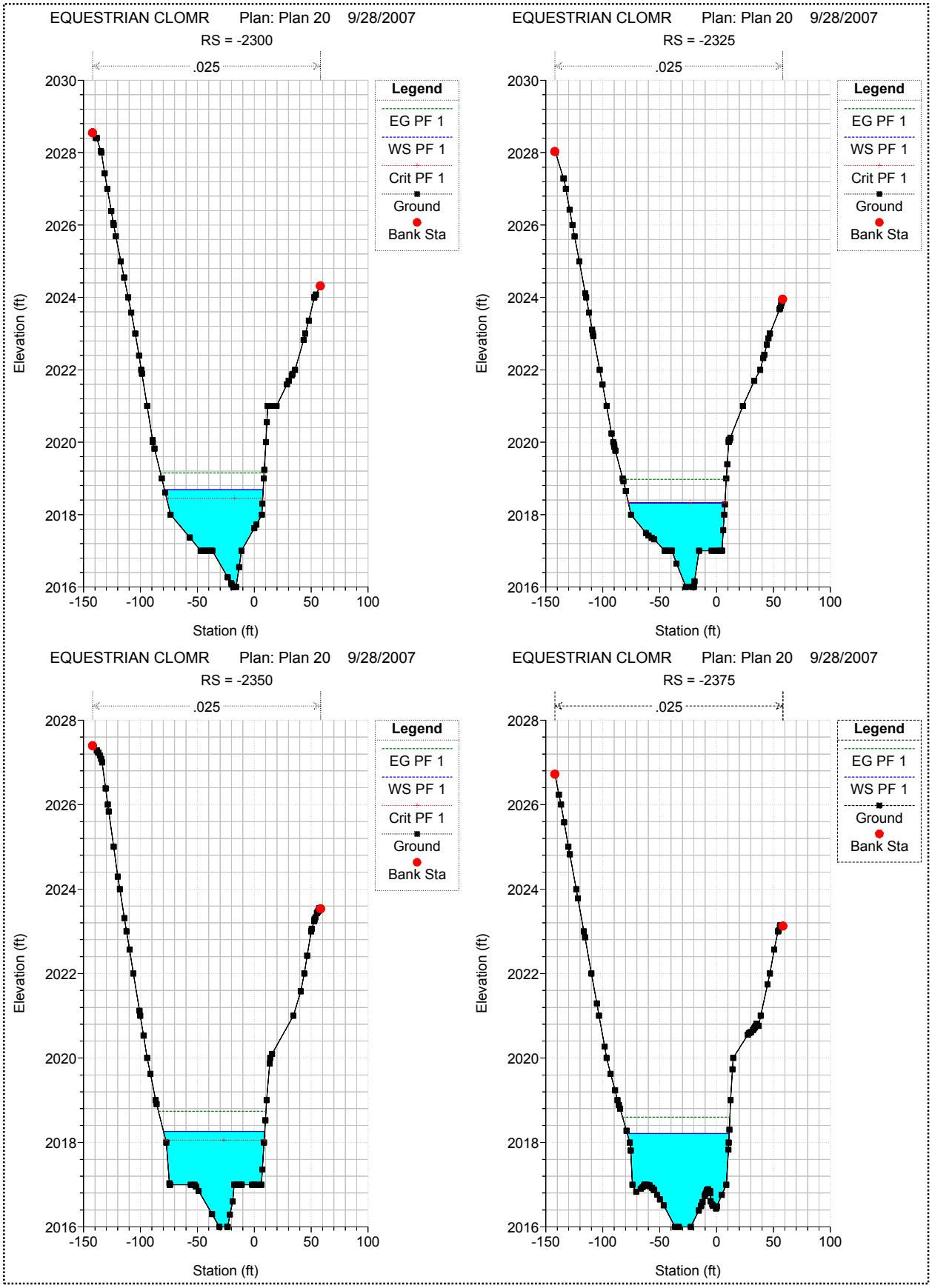

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1800
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1825
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1850
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1875
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

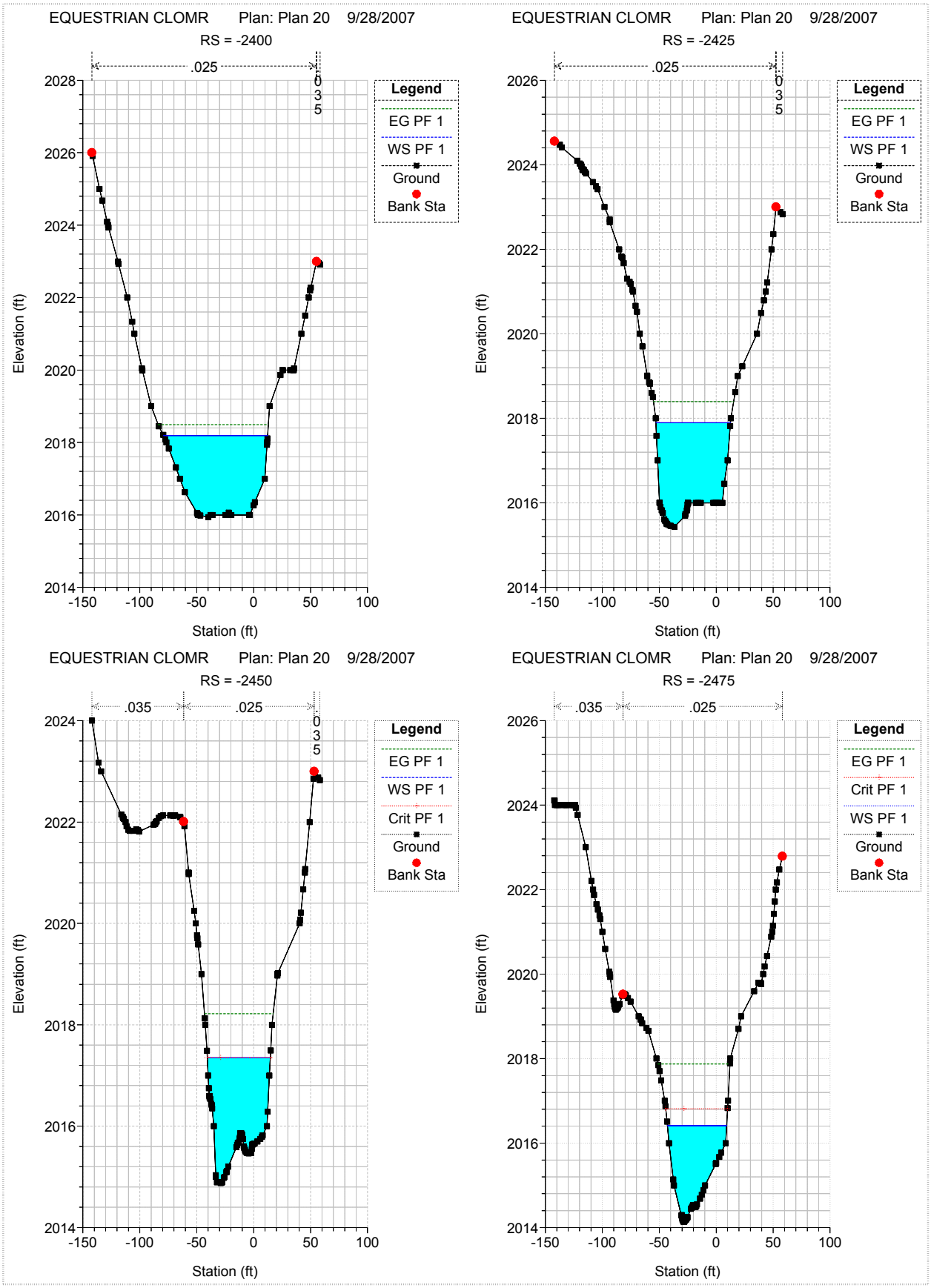

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1900
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1925
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1950
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1975
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

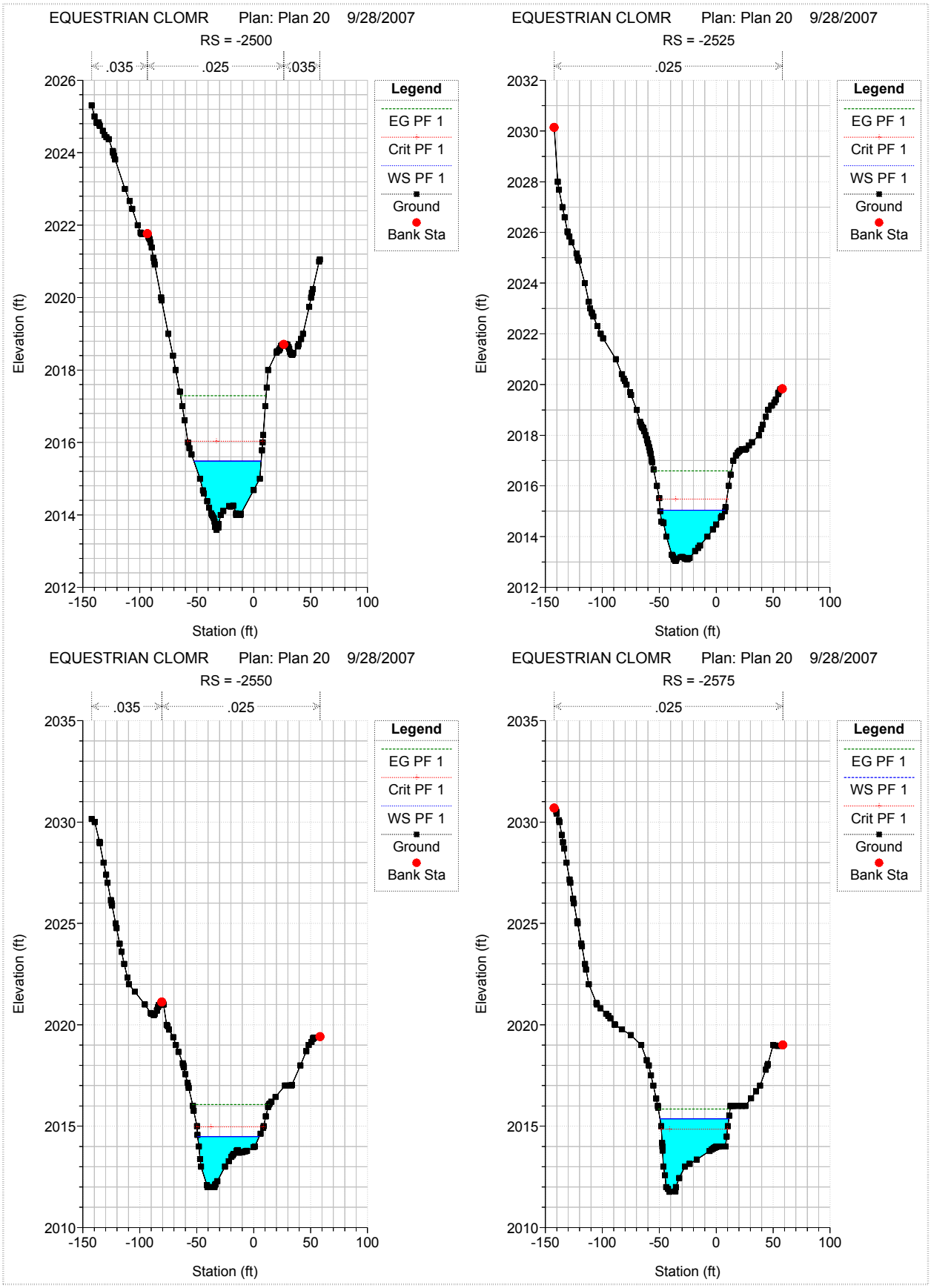

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2000
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2025
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2050
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2075
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

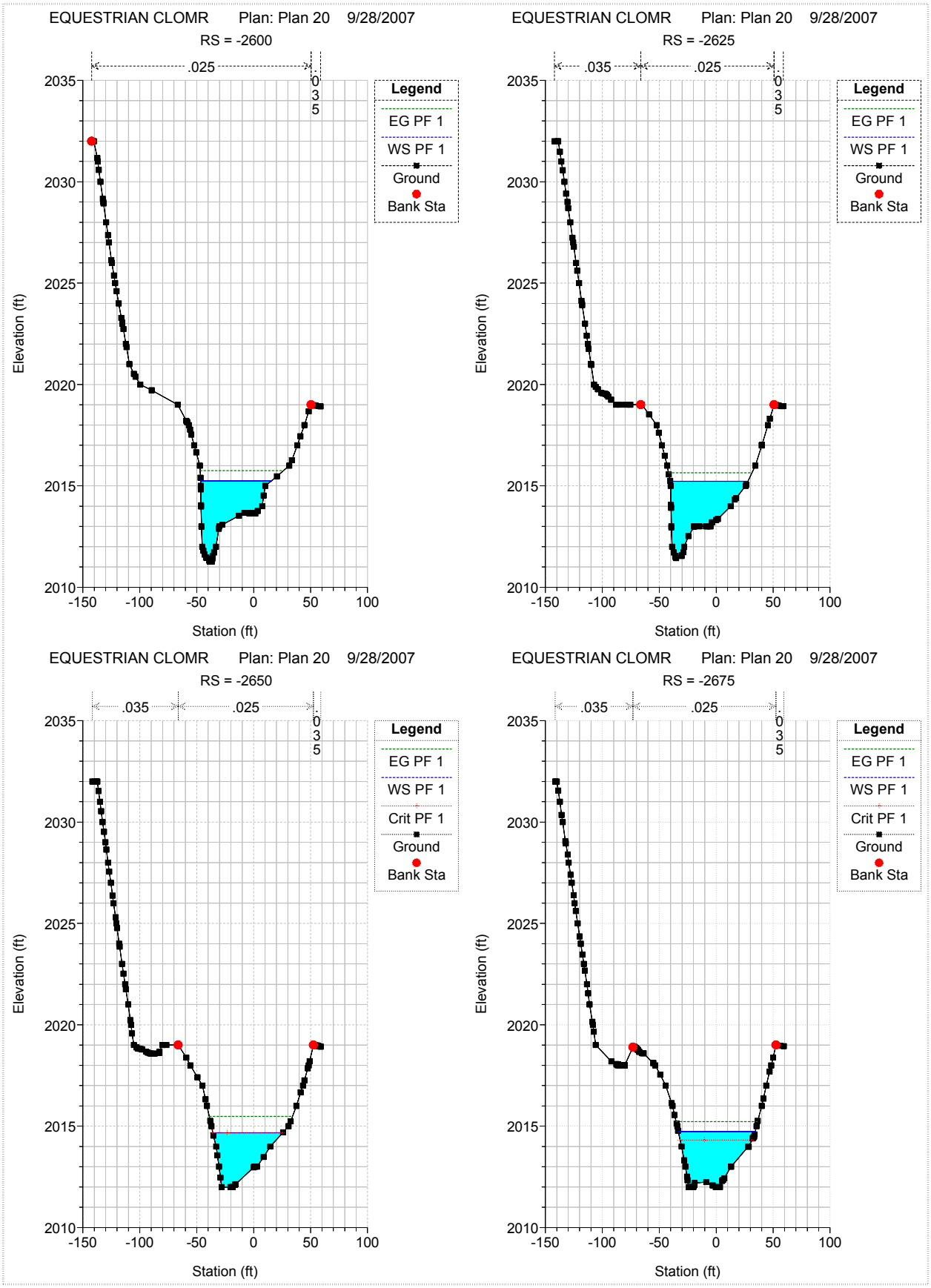

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2100
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2125
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2150
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2175
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

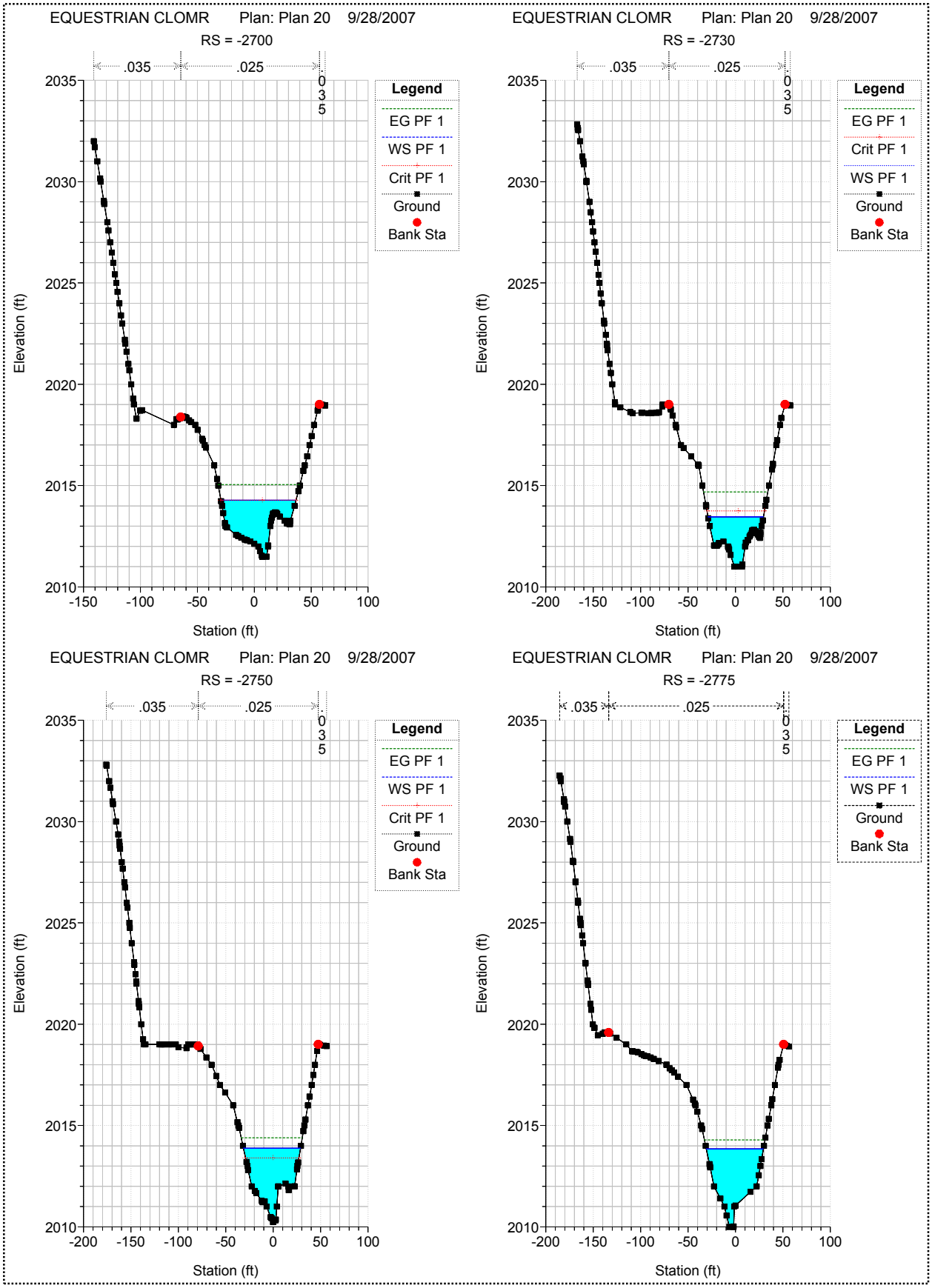

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2200
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2225
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2250
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2275
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

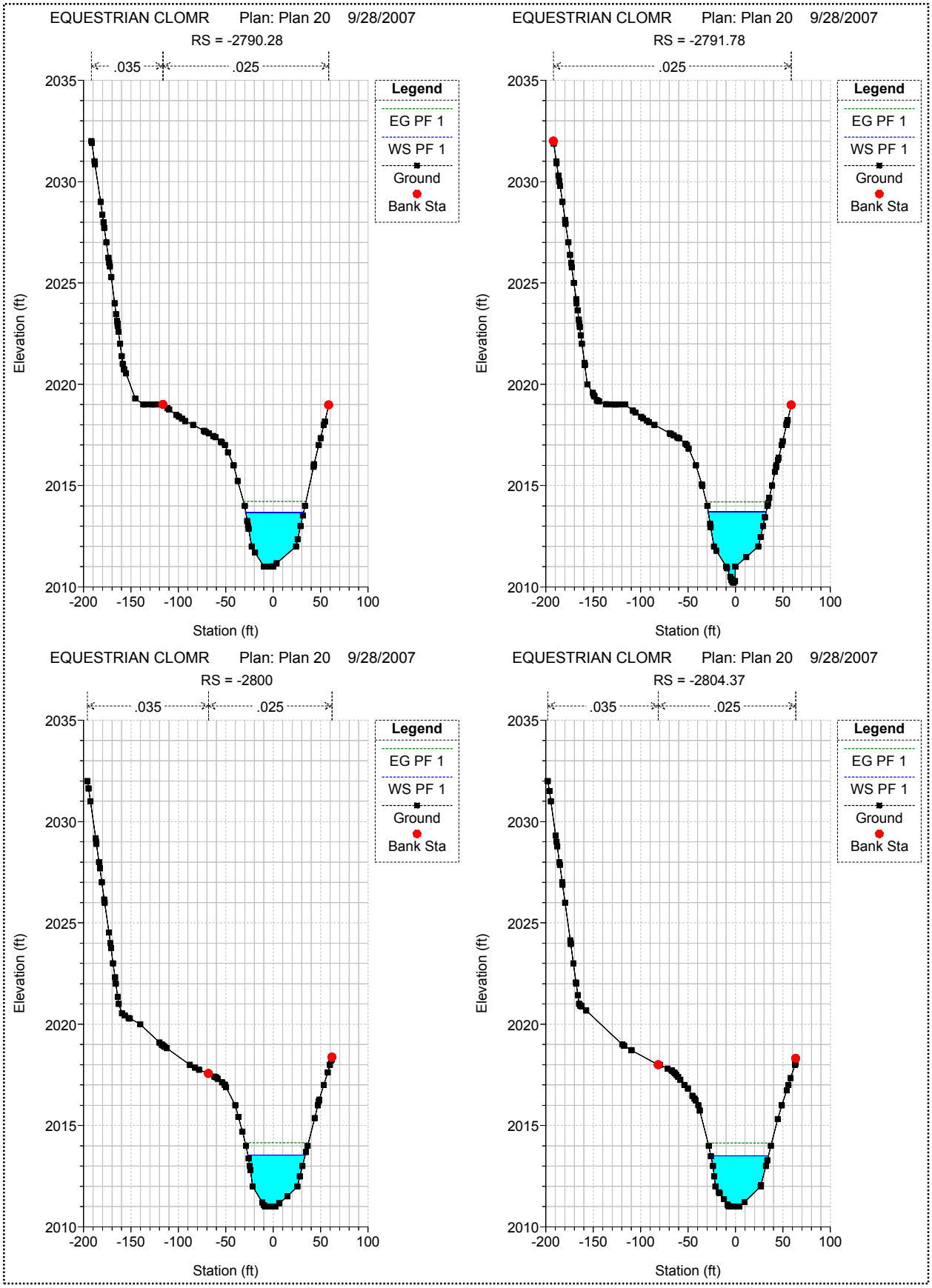

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2300
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2325
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2350
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2375
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

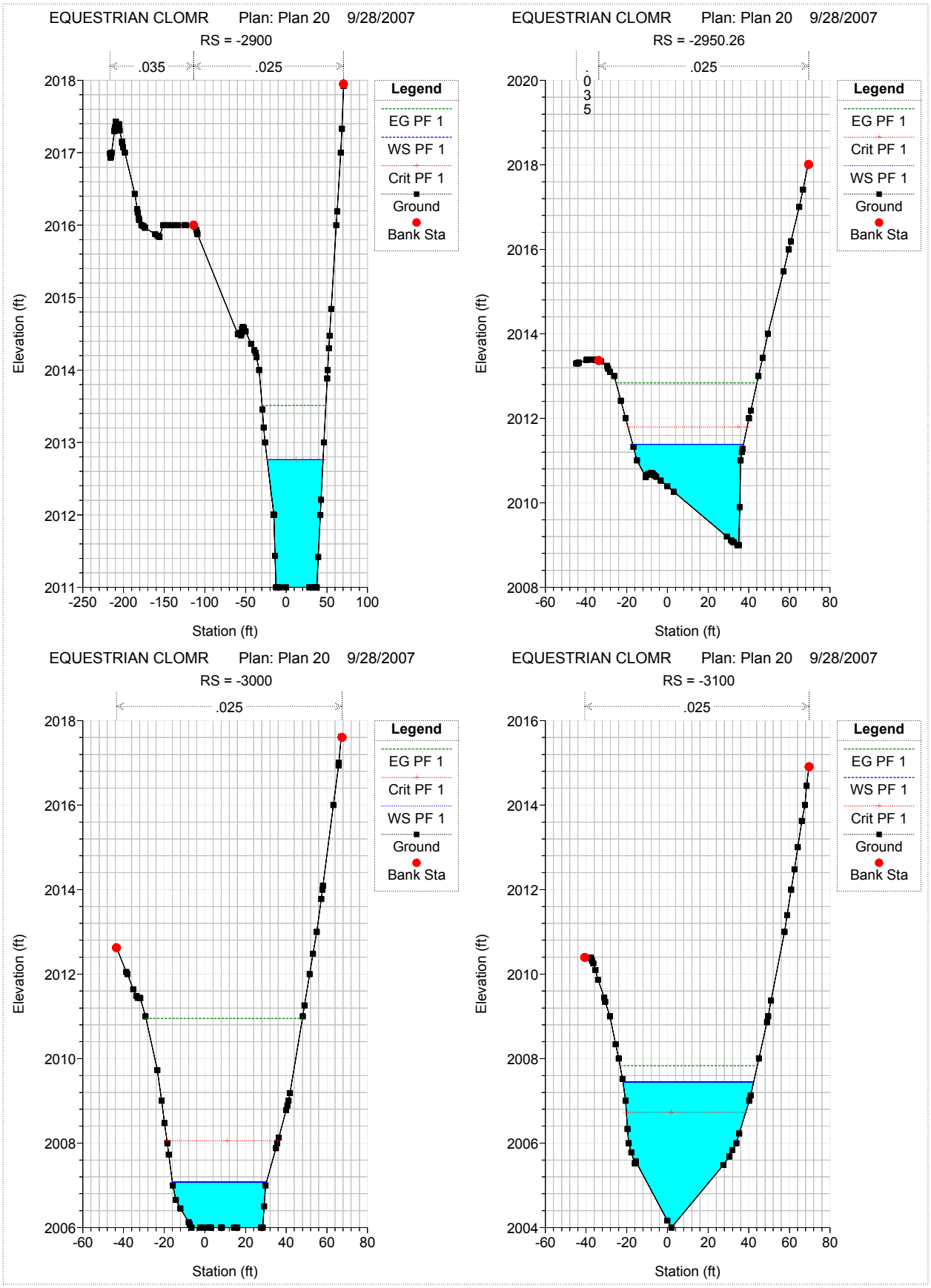

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2400
.025
035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2425
.025
035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2450
.035
.025
035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2475
.035
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

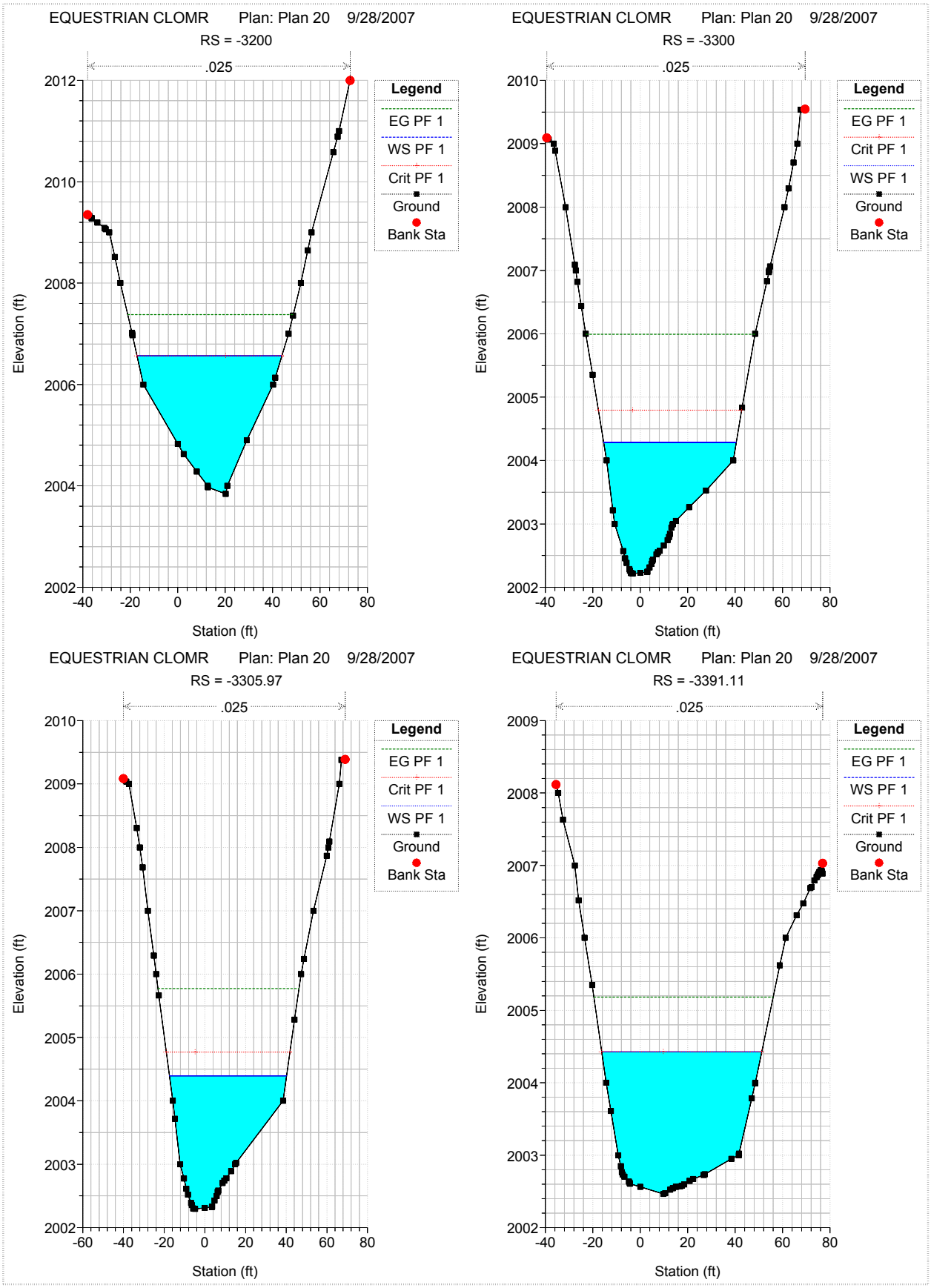

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2500
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2525
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2550
.035
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2575
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

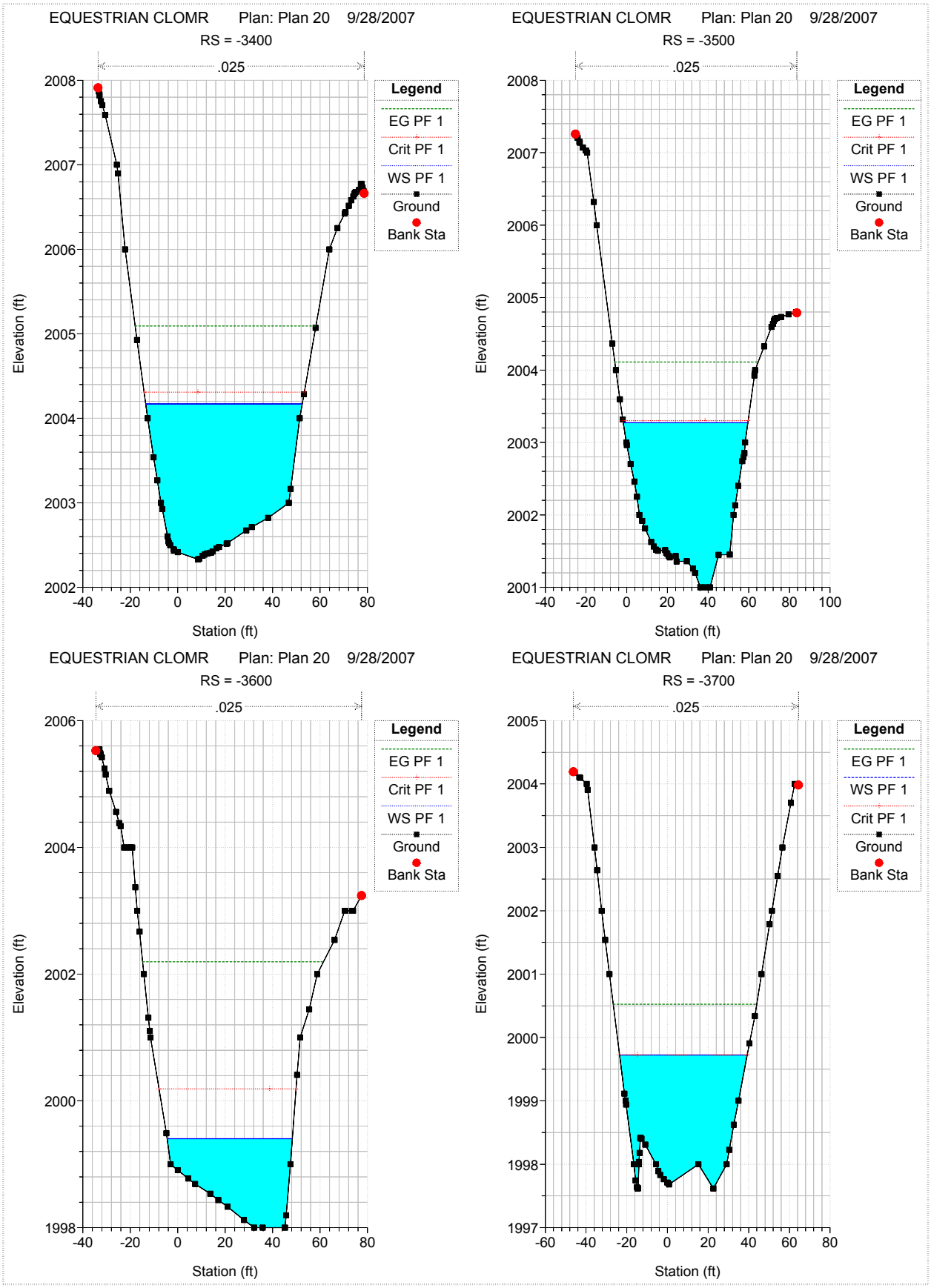

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2600
.025
0
3
5
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2625
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2650
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2675
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

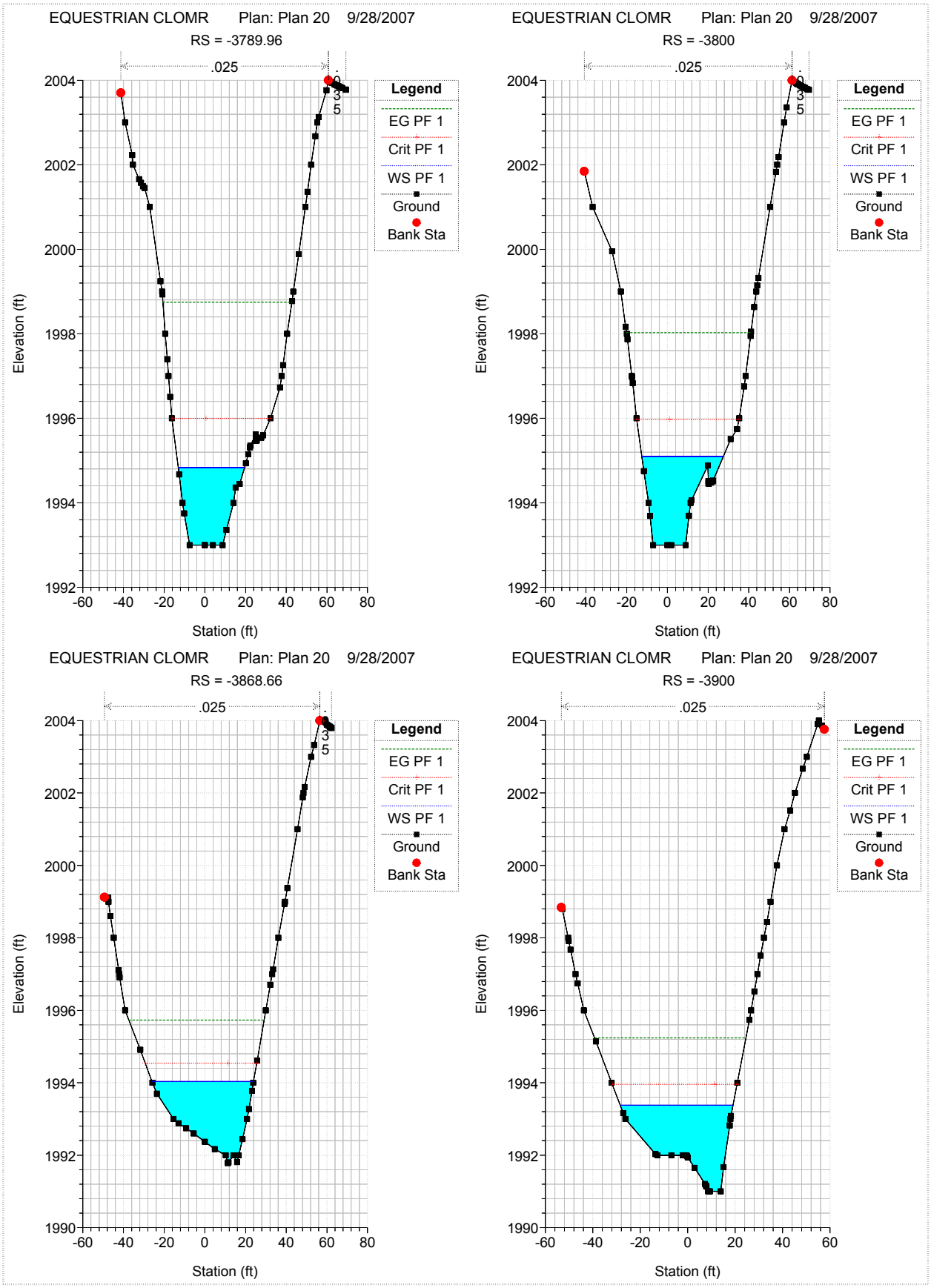

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2700
.035
.025
0
3
5
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2730
.035
.025
0
3
5
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2750
.035
.025
0
3
5
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2775
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.025
0
3
5
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

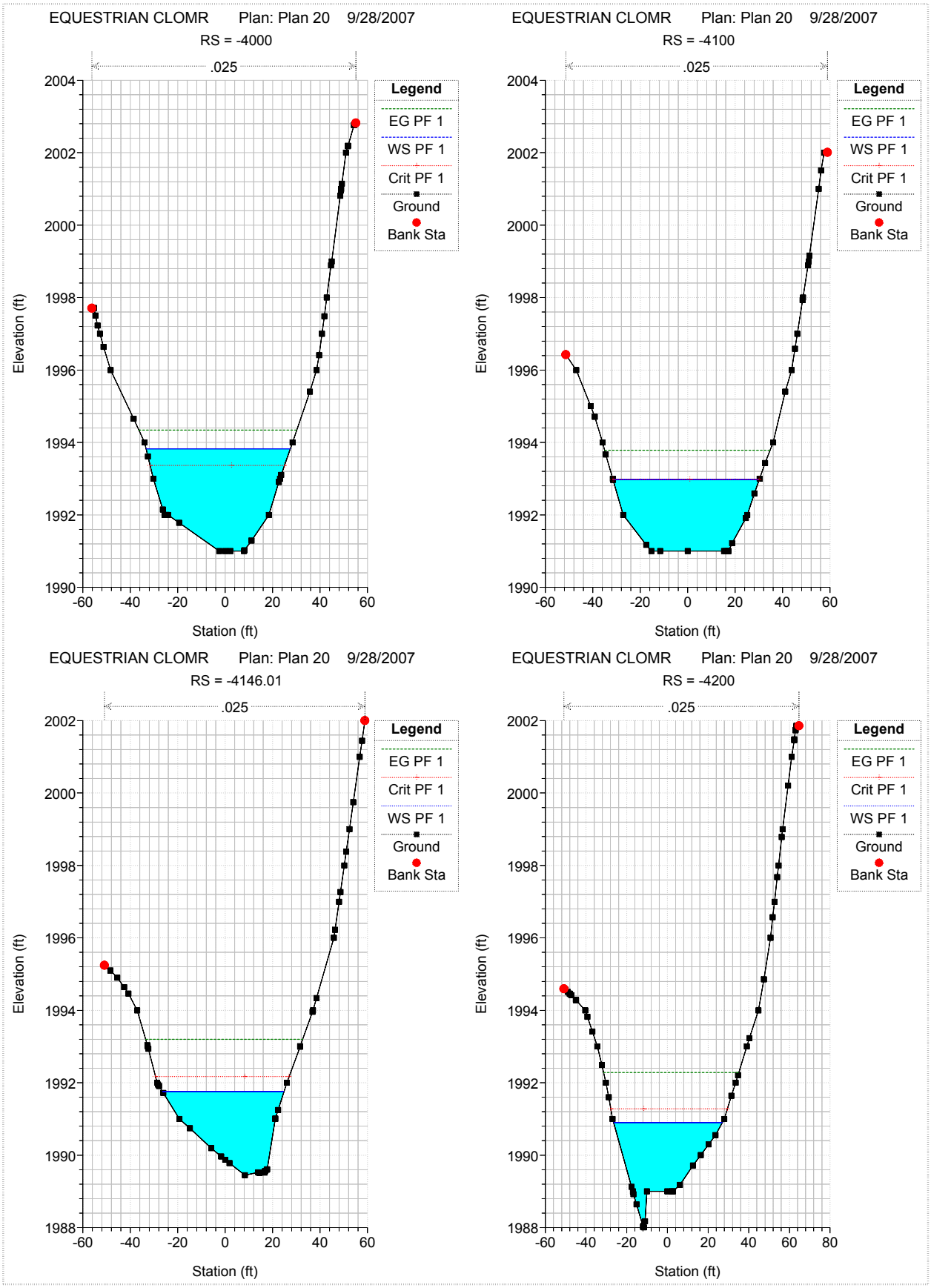

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2790.28
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2791.78
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2800
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2804.37
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

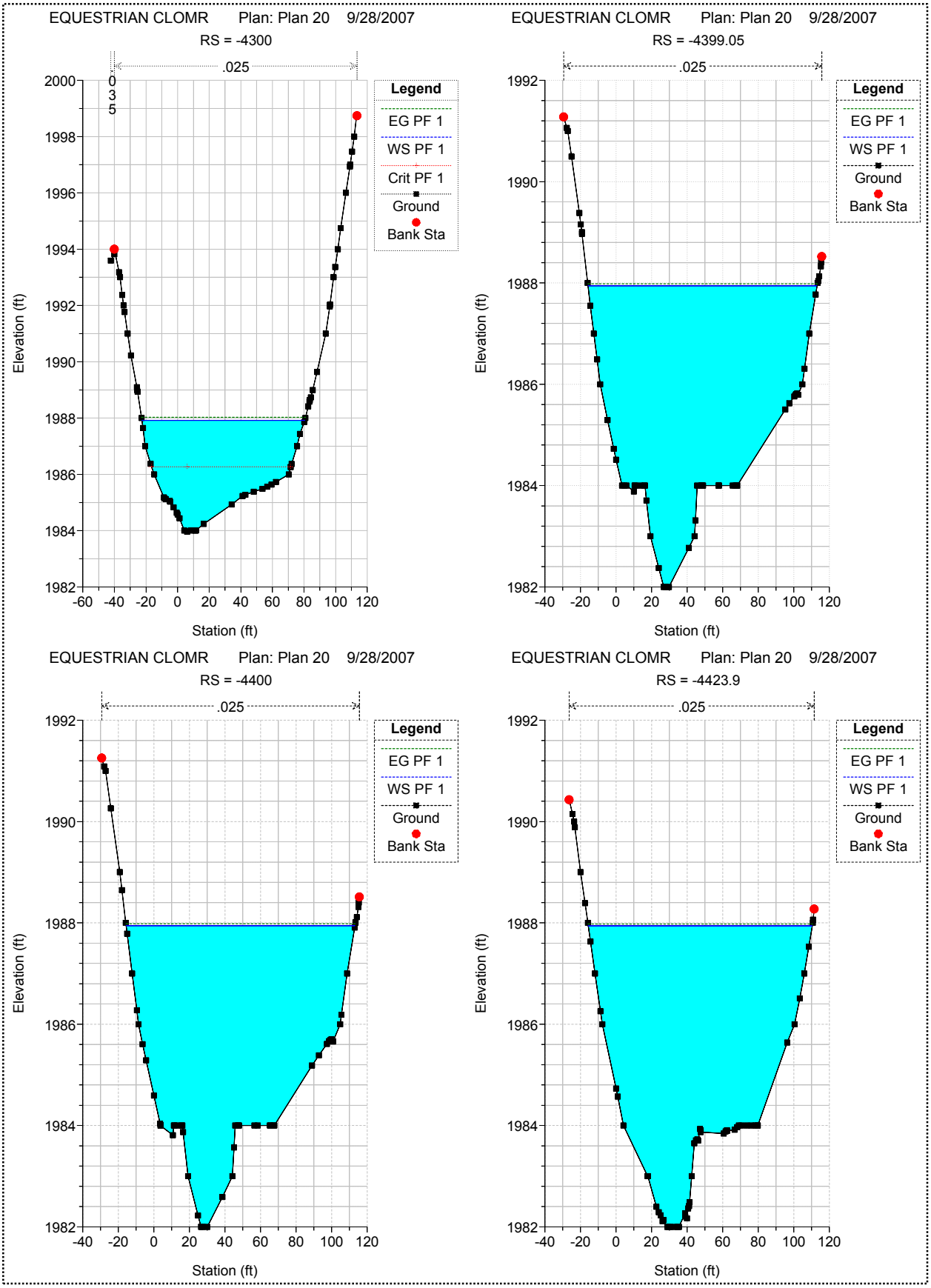

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2900
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2950.26
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3000
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3100
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

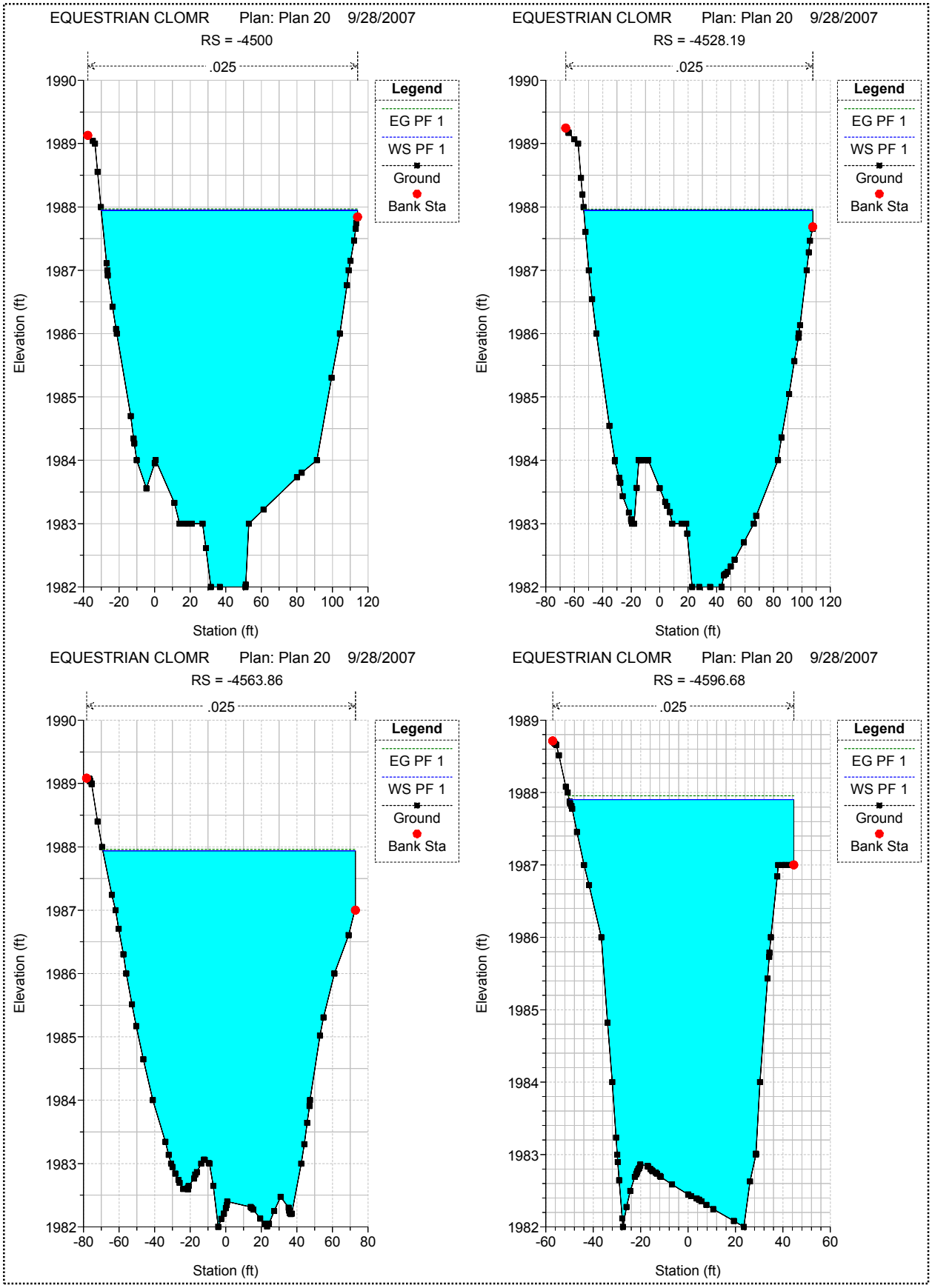

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3200
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3300
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3305.97
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3391.11
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

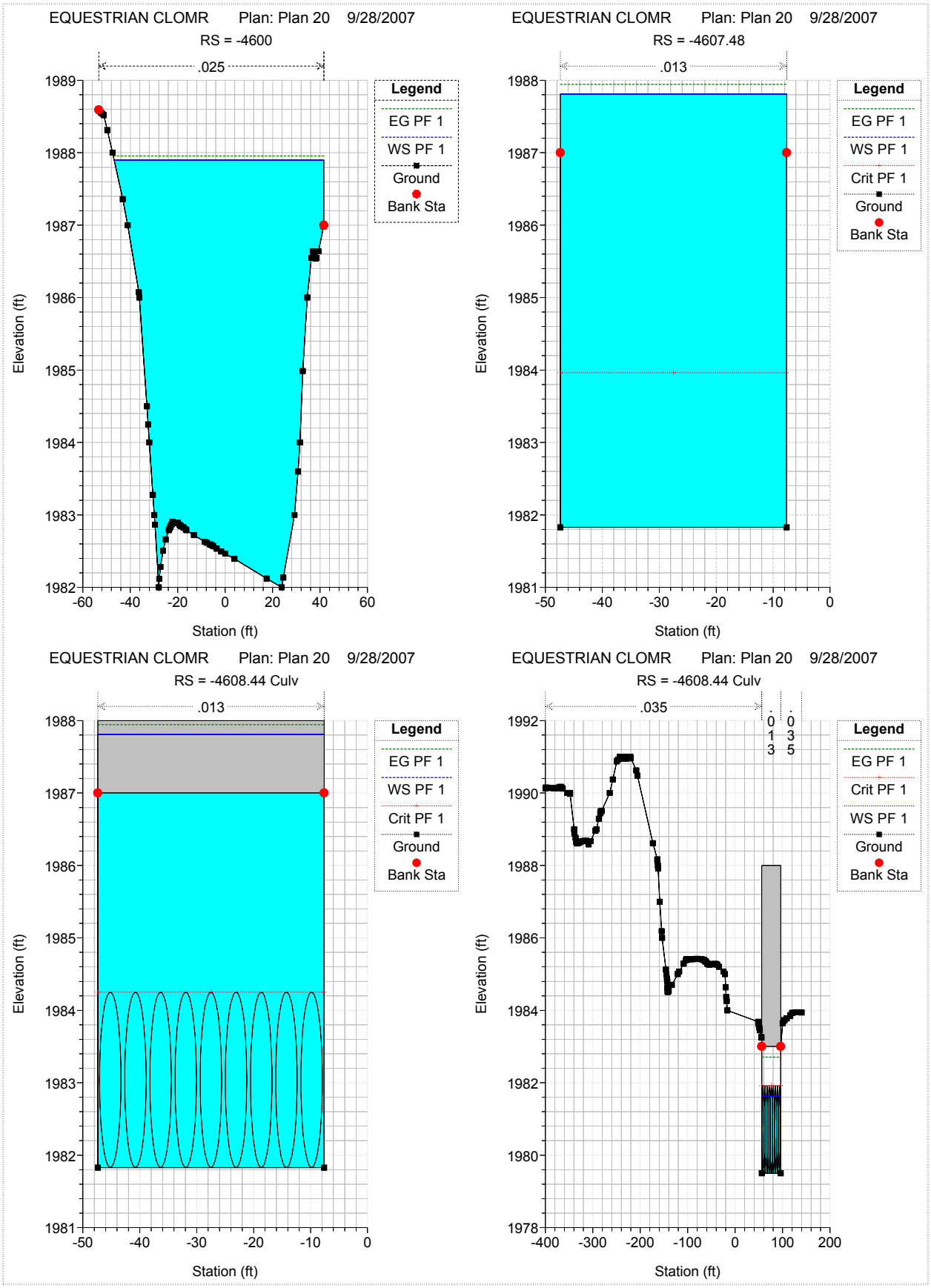

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3400
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Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3500
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3600
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3700
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

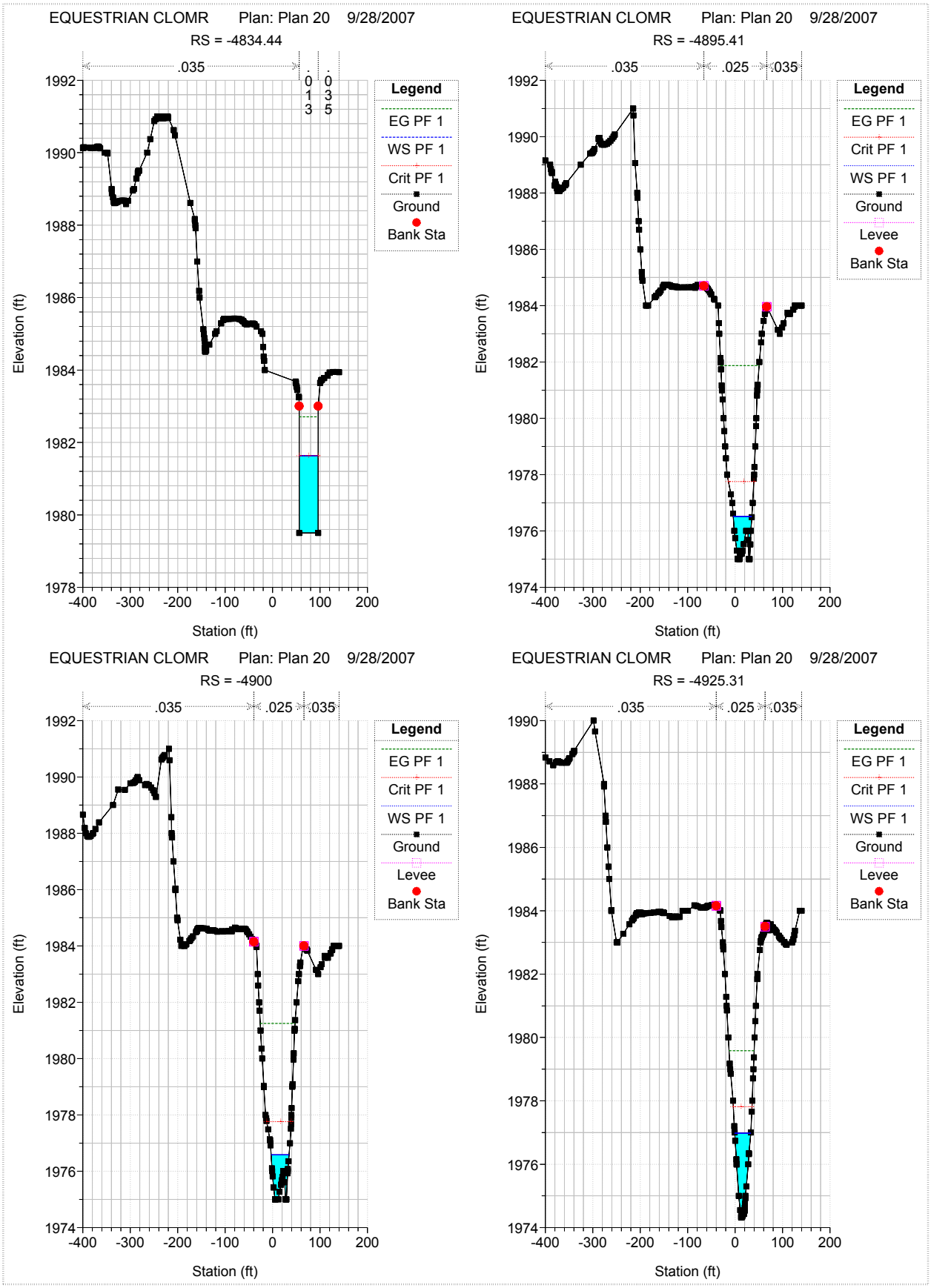

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3789.96
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3800
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3868.66
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -3900
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

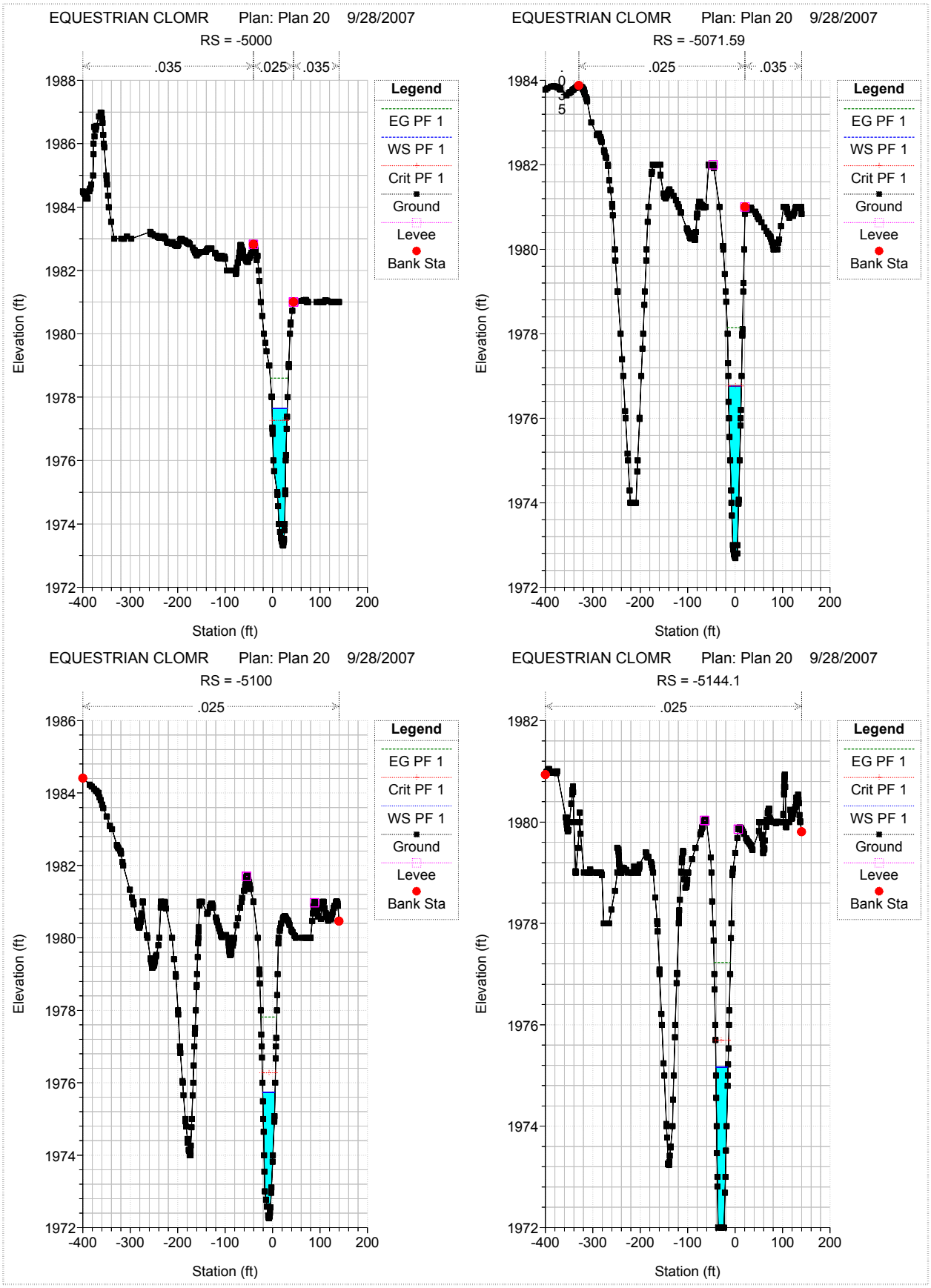

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4000
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4100
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4146.01
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4200
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

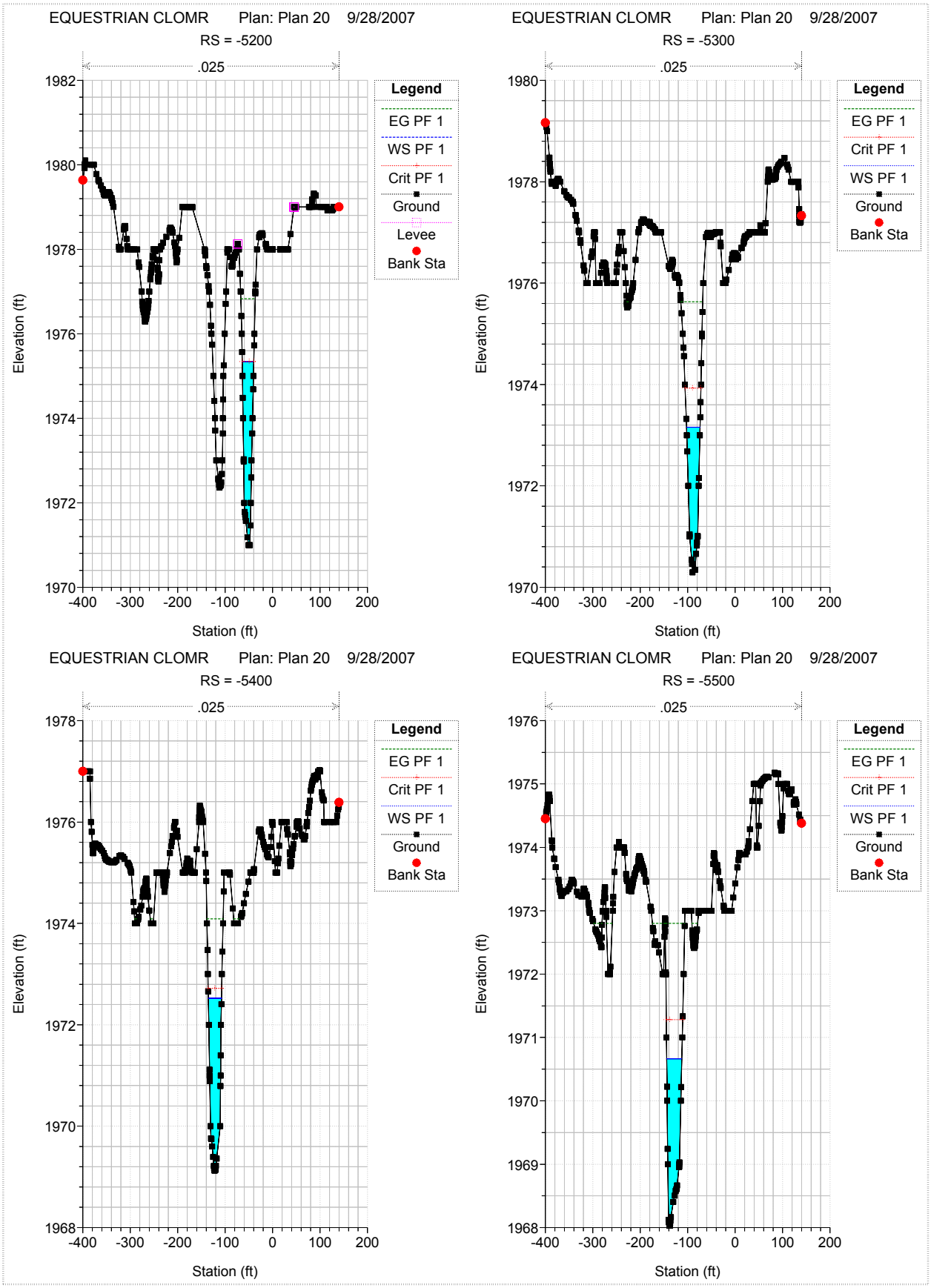

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4300
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4399.05
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4400
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4423.9
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

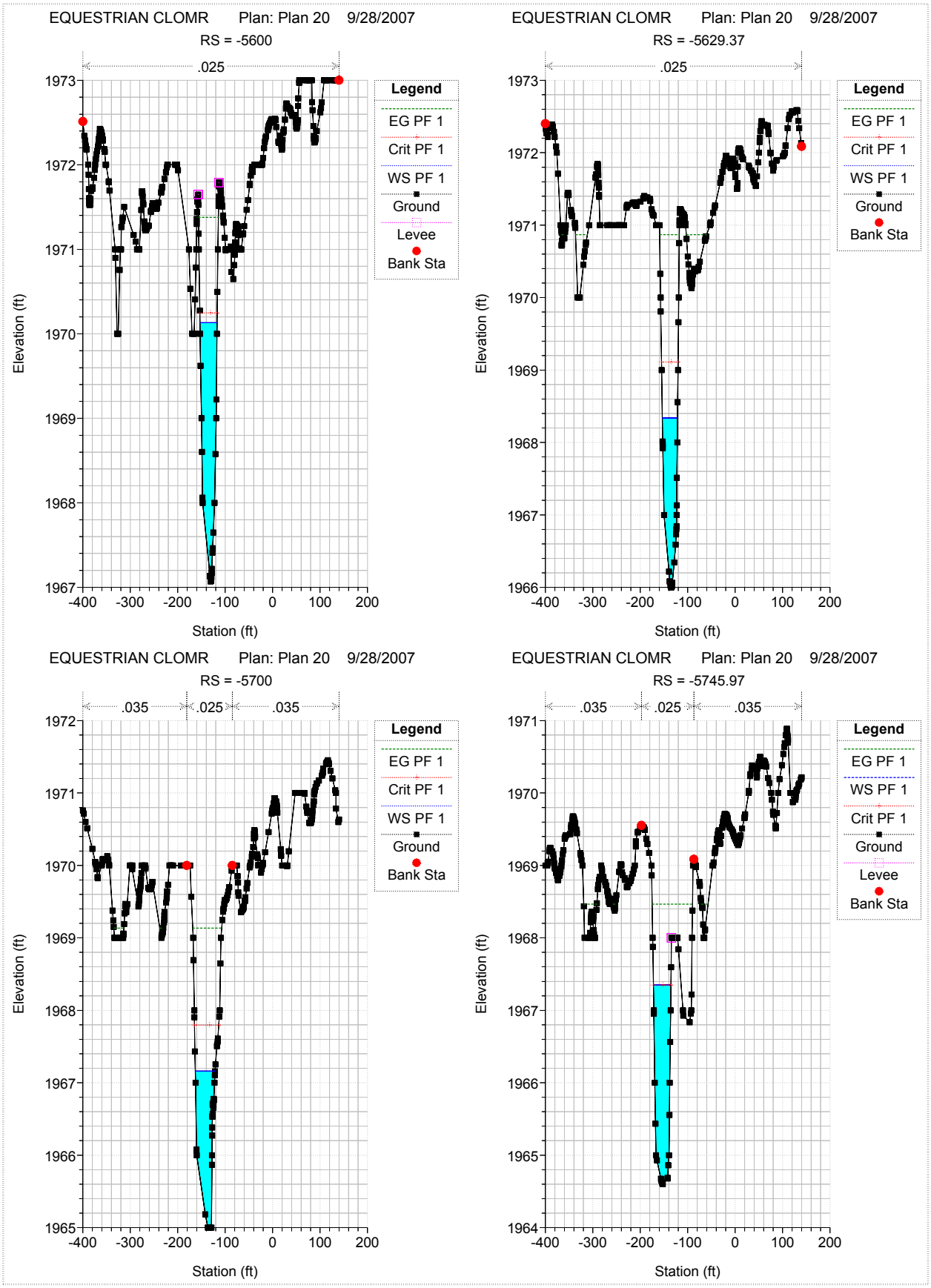

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4500
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4528.19
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4563.86
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4596.68
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

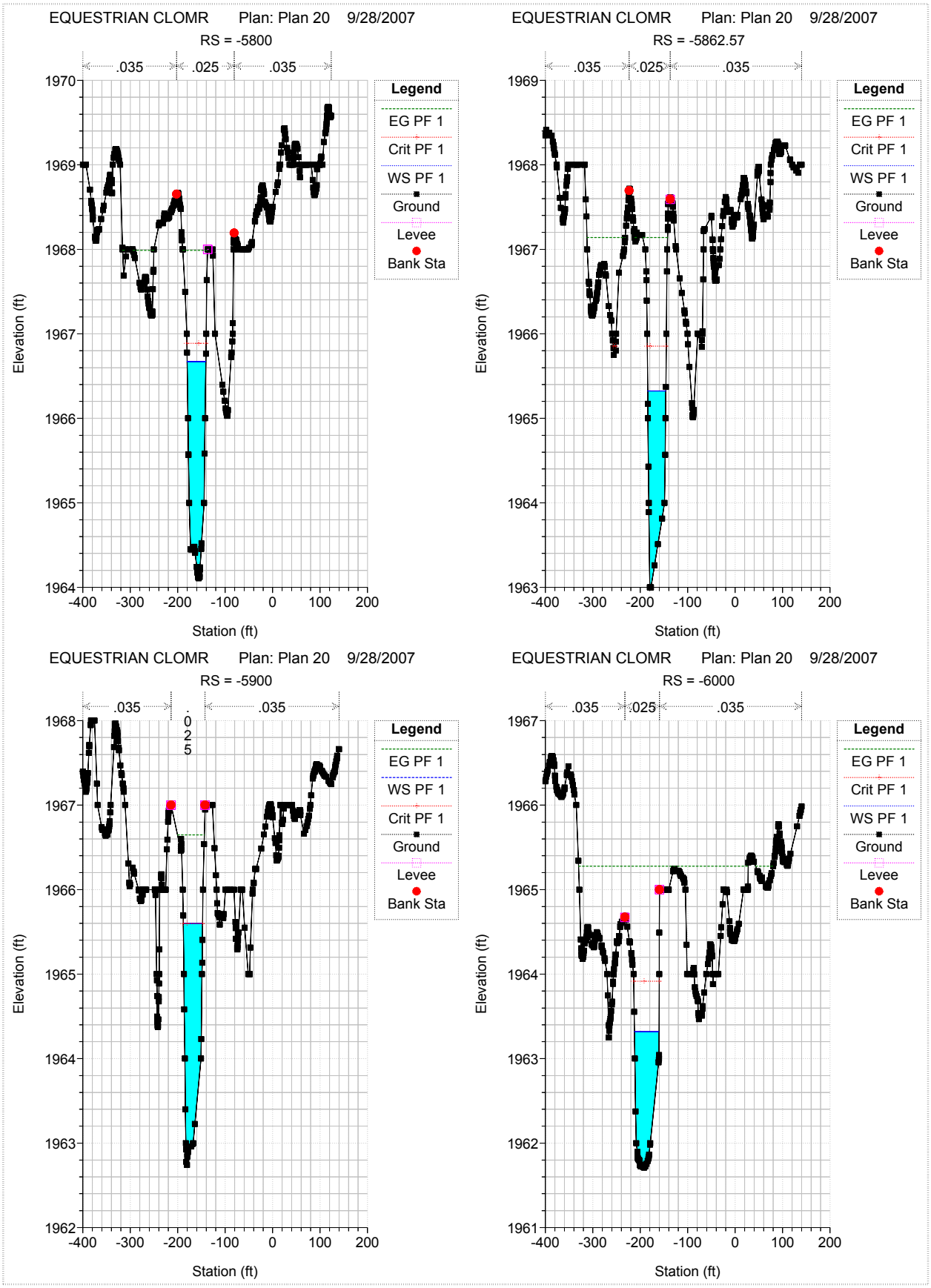

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4600
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4607.48
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4608.44 Culv
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4608.44 Culv
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

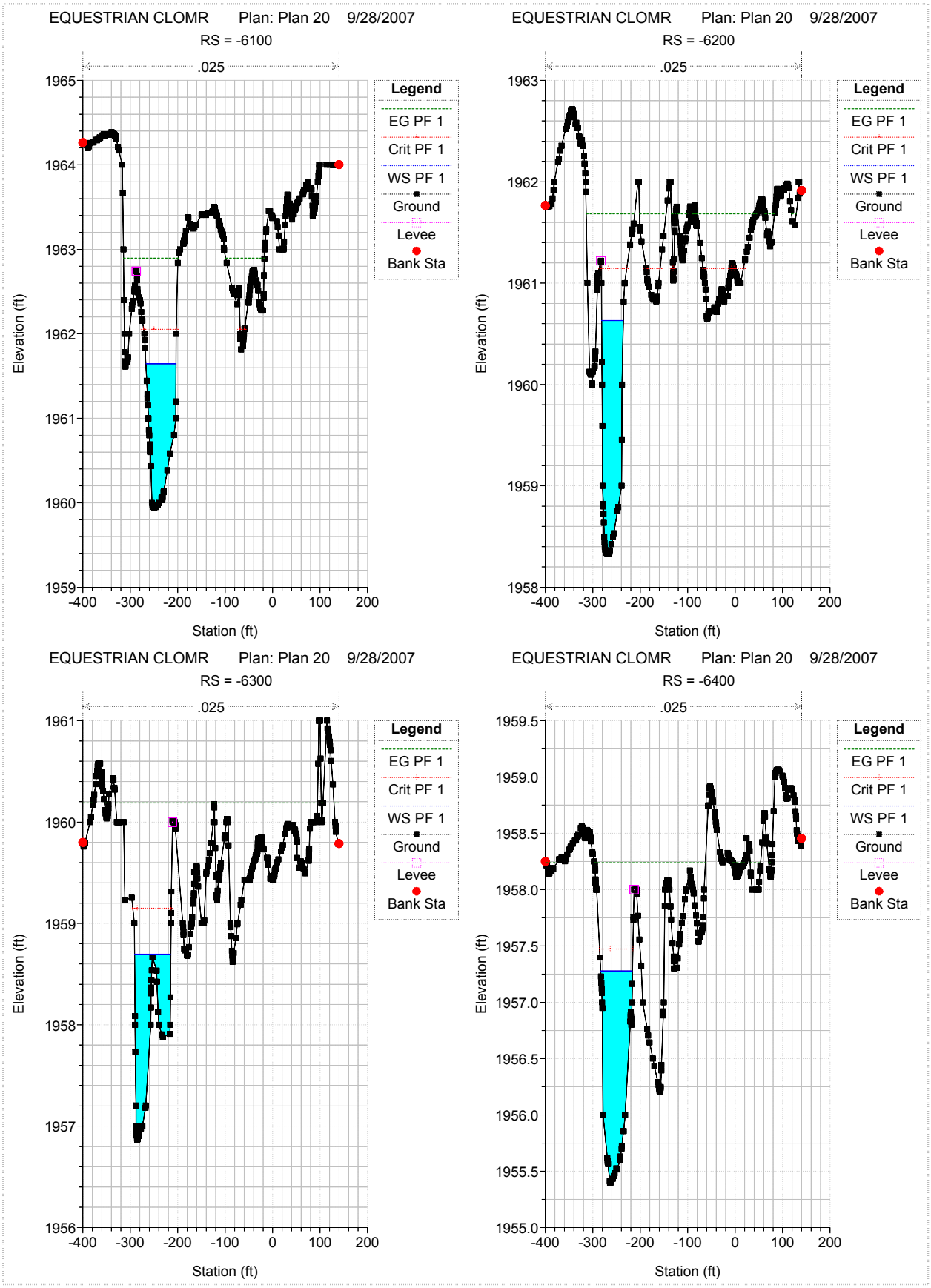

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4834.44
.035
.013
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4895.41
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4900
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -4925.31
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

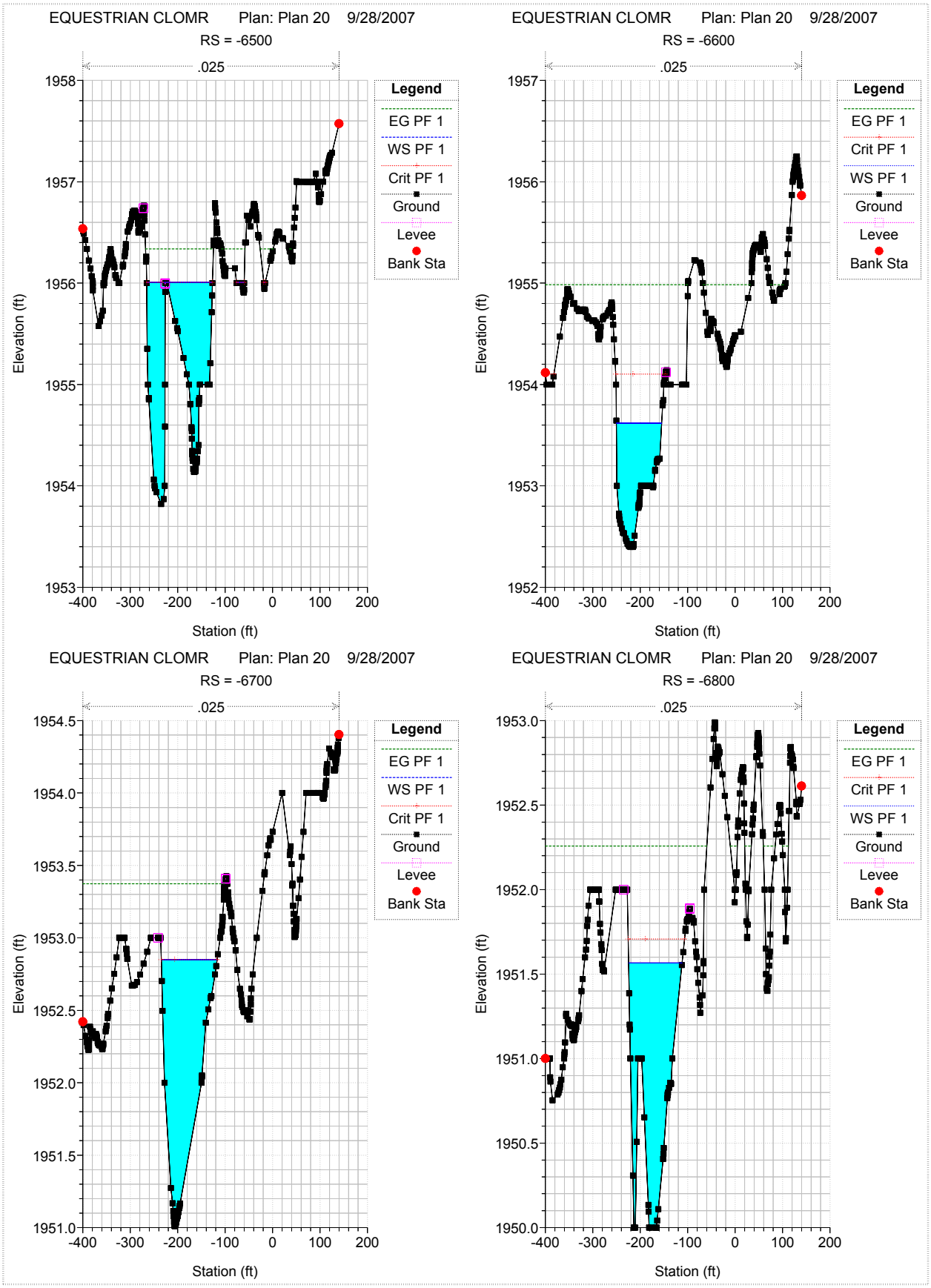

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5000
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5071.59
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5100
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5144.1
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

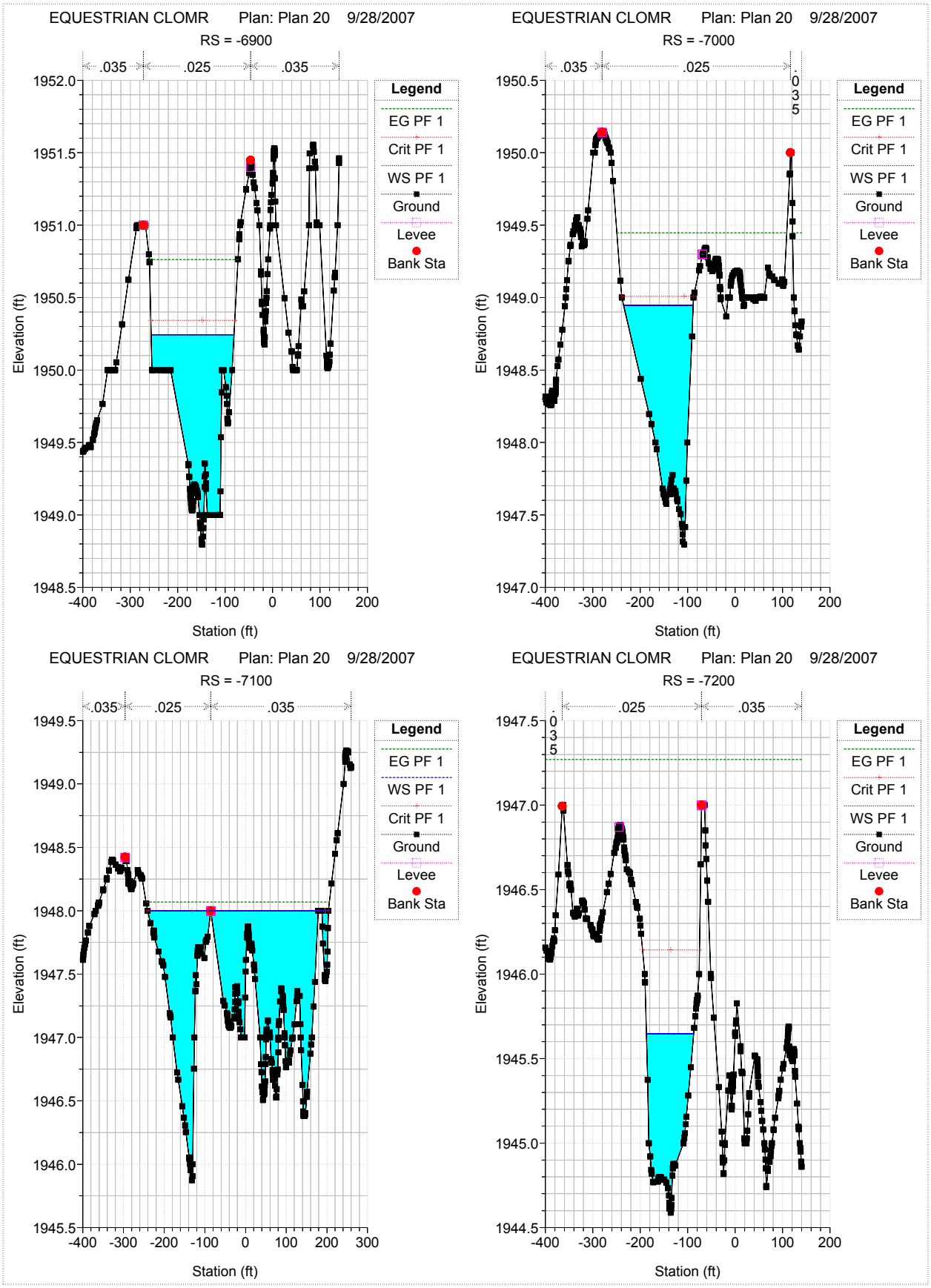

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5200
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5300
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5400
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5500
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

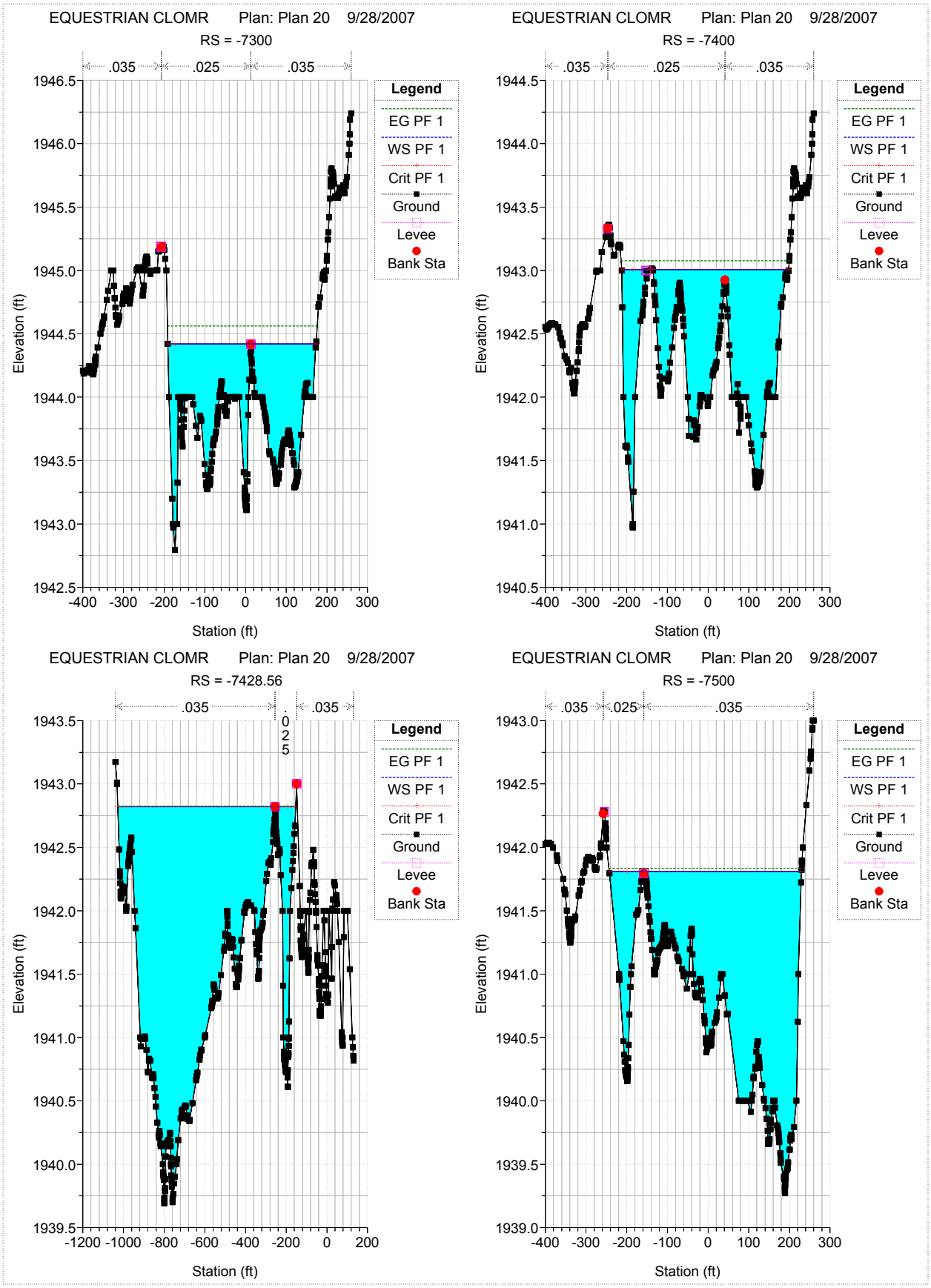

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5600
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5629.37
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5700
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5745.97
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

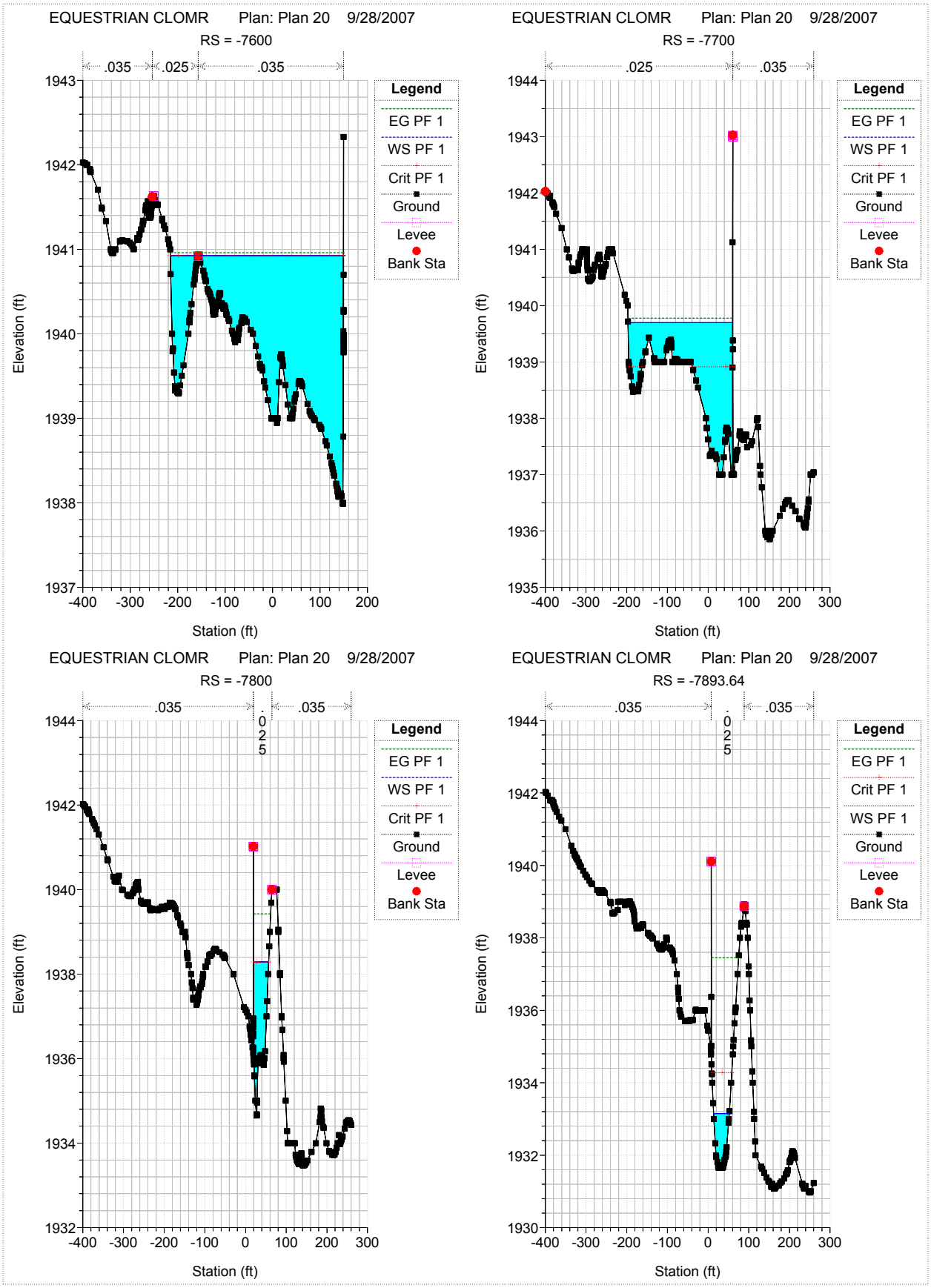

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5800
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5862.57
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -5900
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6000
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

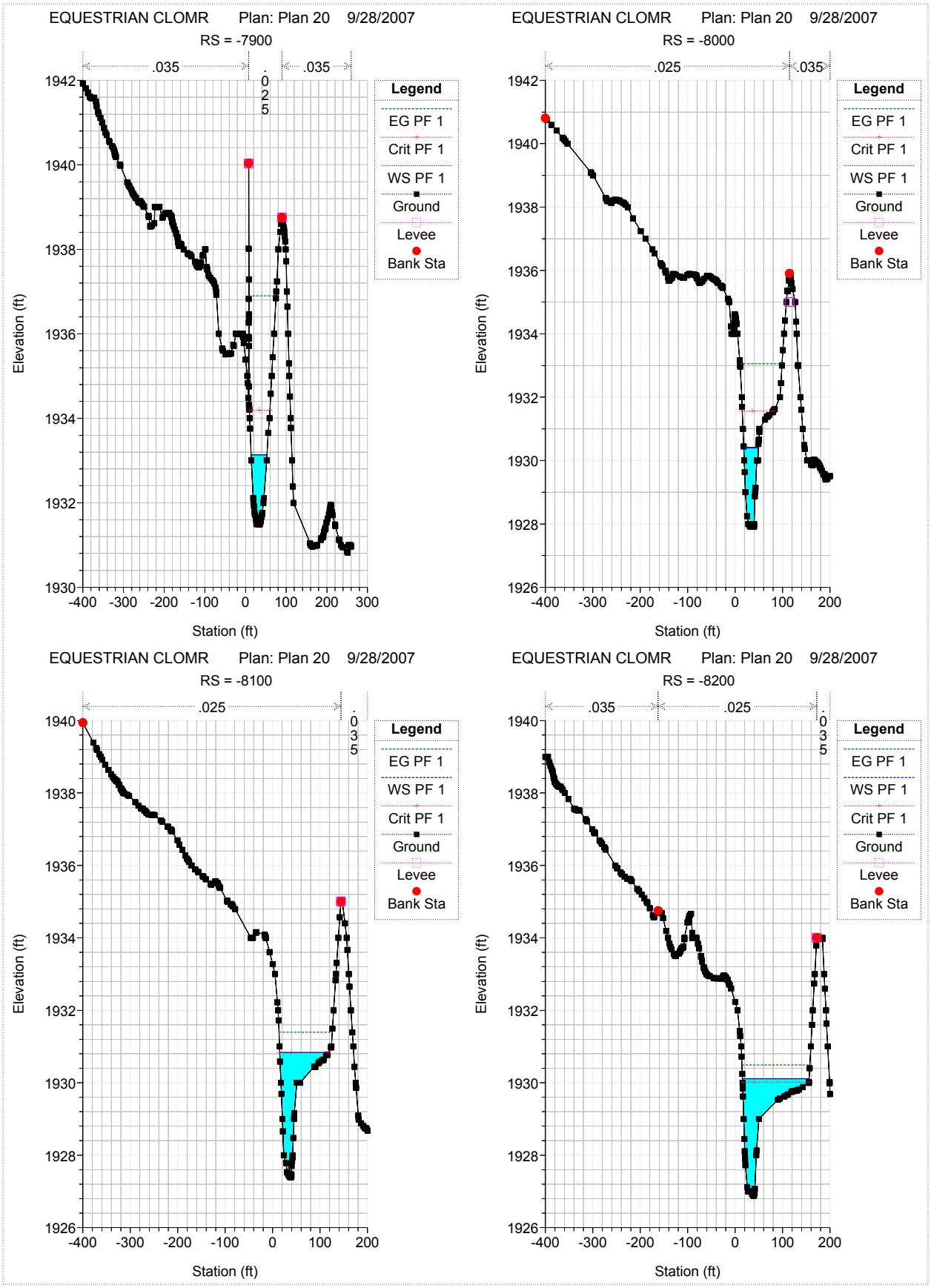

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6100
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6200
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6300
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6400
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

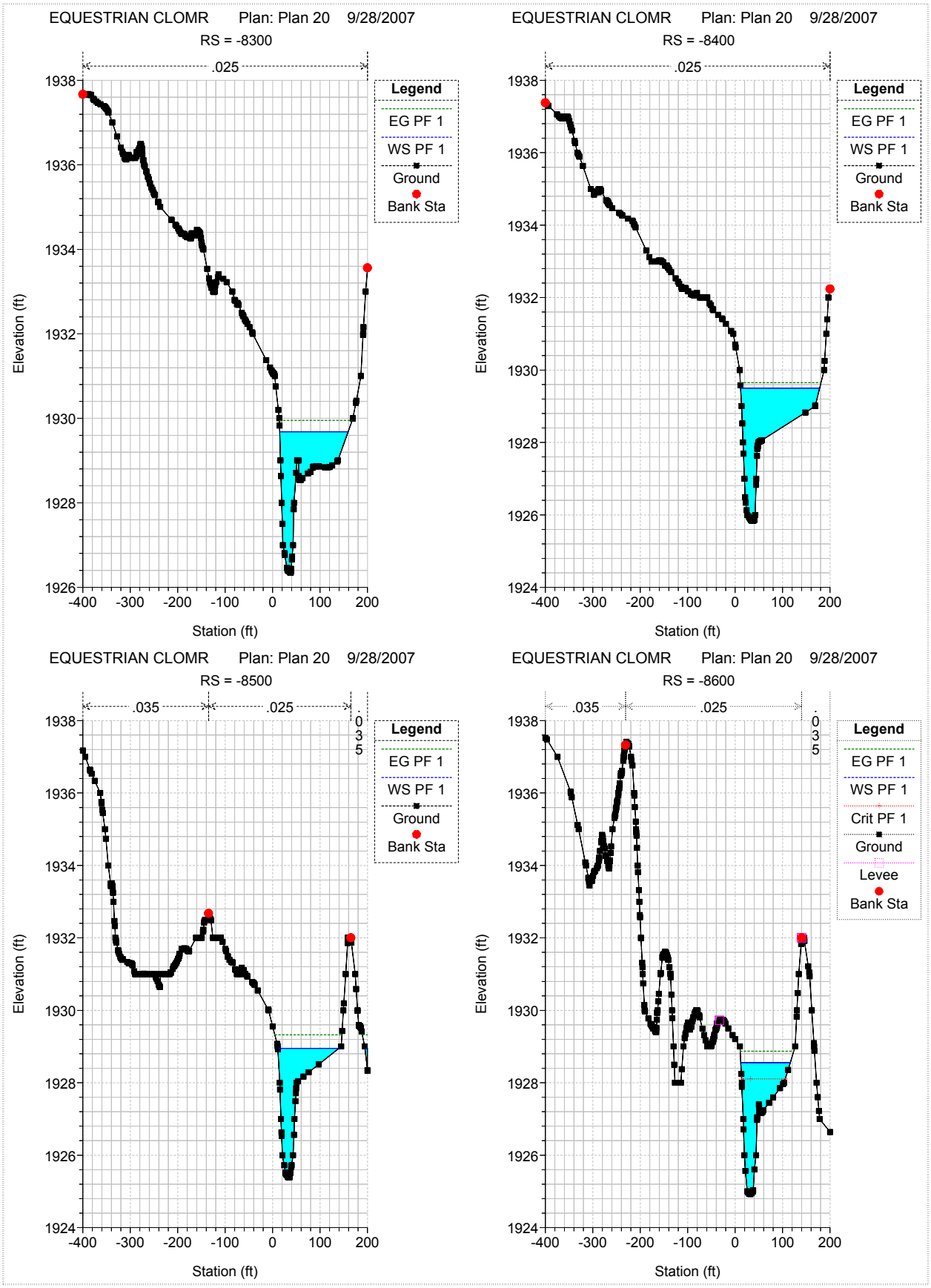

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6500
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6600
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6700
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6800
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

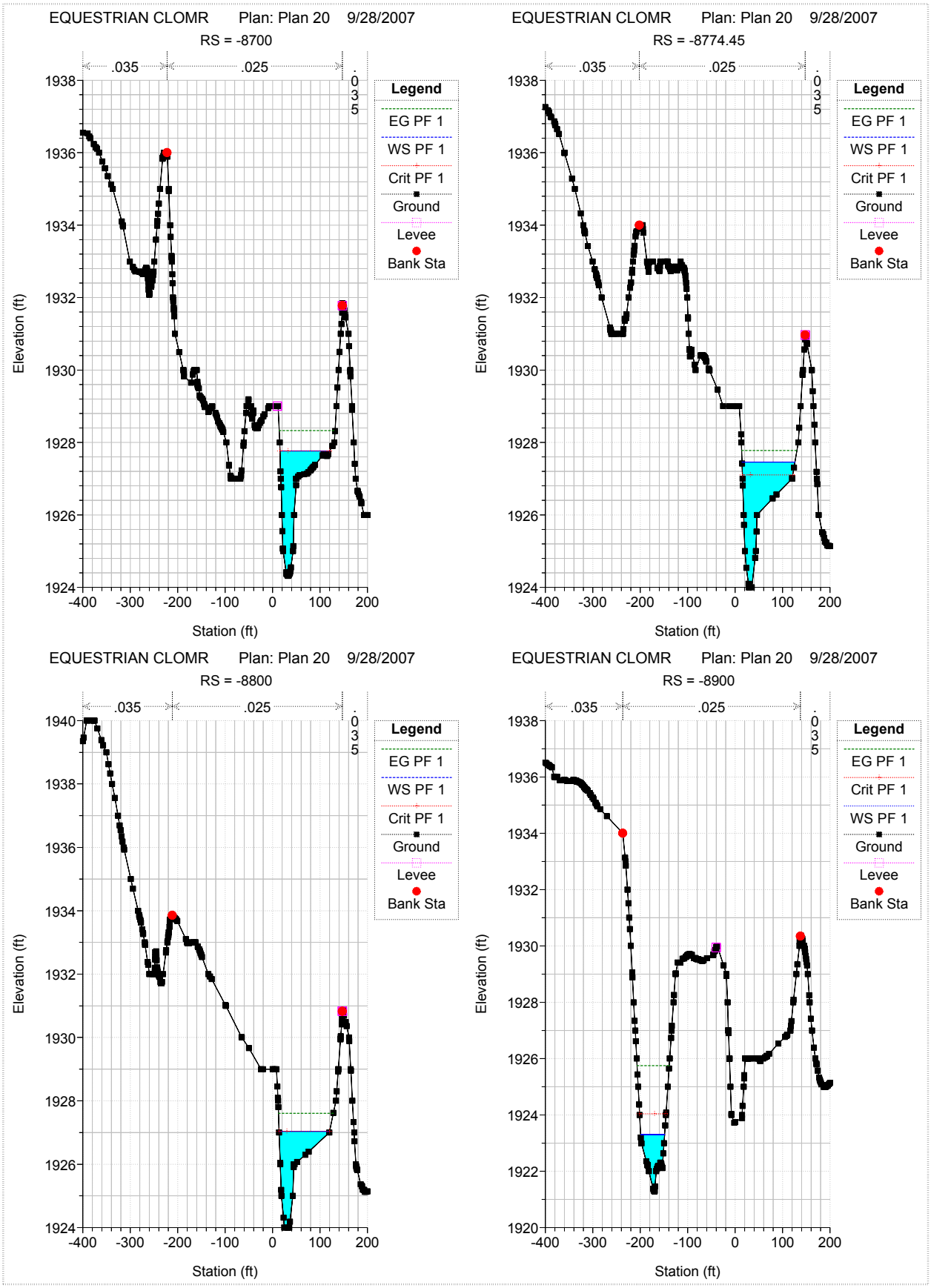

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -6900
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7000
.035
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7100
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7200
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

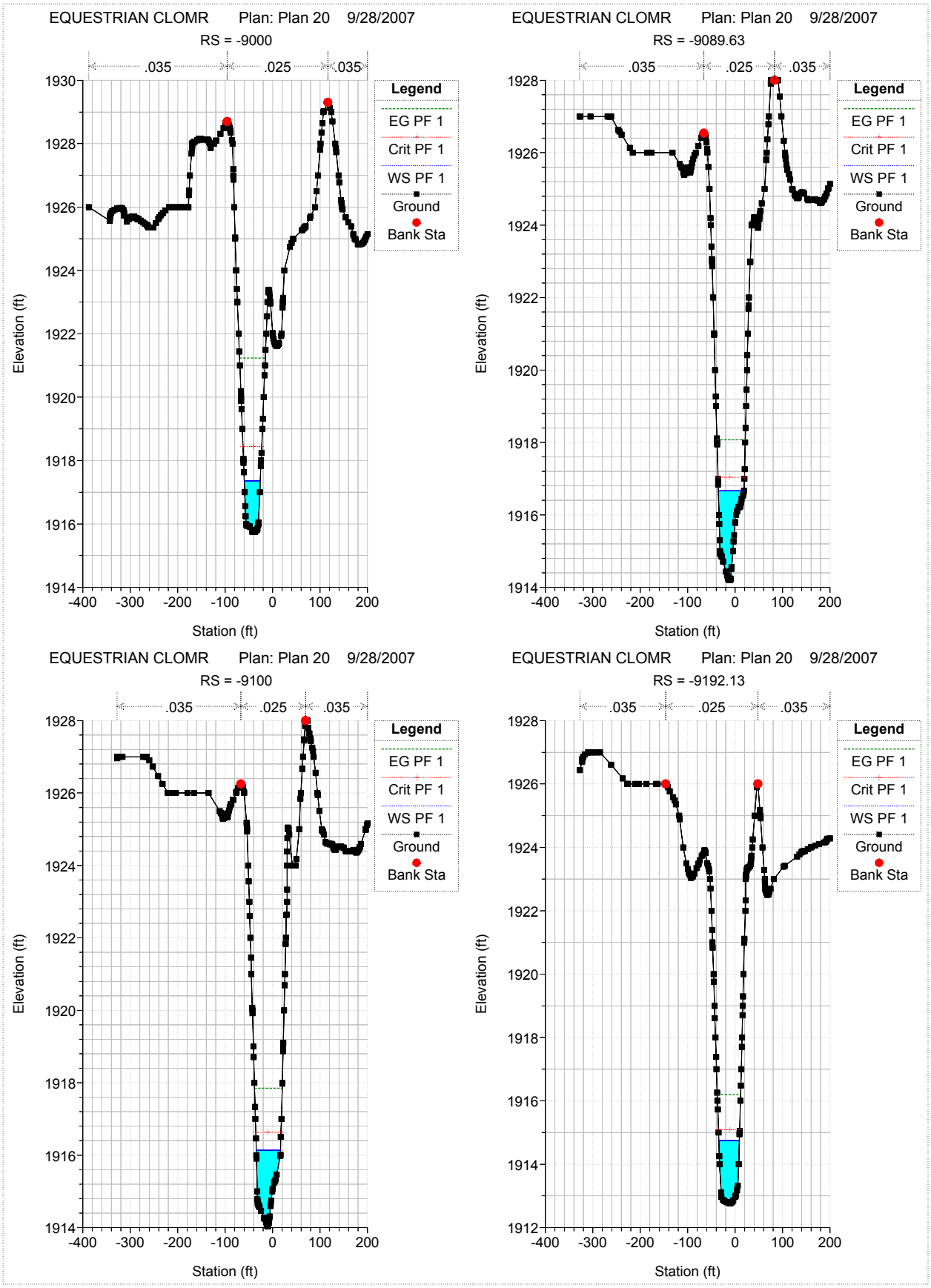

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7300
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7400
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7428.56
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7500
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

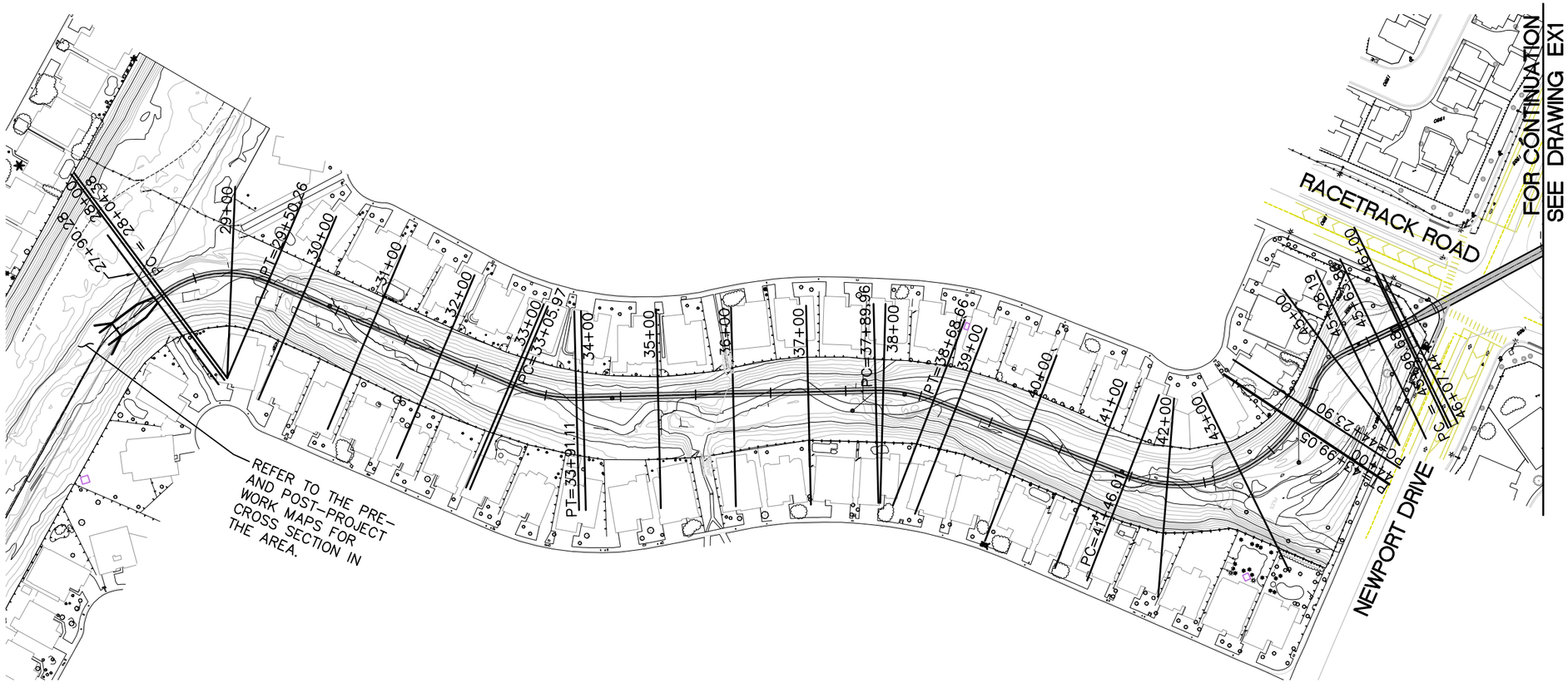

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7600
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7700
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7800
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7893.64
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -7900
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8000
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8100
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8200
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8300
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8400
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8500
.035
.025
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8600
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8700
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8774.45
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8800
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -8900
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -9000
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -9089.63
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -9100
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -9192.13
.035
.025
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)



LEGEND

PROPOSED CONCRETE BOX FACILITY

STA _____ CROSS SECTION

NORTH

Revisions				
No.	DESCRIPTION	BY	DATE	APPROVAL

80 0 40 80 160 320

GRAPHIC SCALE 1" = 80'

Avoid cutting underground utility lines. It's costly.

Call before you Dig

IT'S THE LAW
1-800-227-2600
UNDERGROUND SERVICE (USA)

City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
PRE-PROJECT HEC-RAS CROSS-SECTION EXHIBIT

SCALE :	DATE : AUG. 2007	DRAWING No.	EX1
HORIZONTAL : 1"=80'	DRAWN : DKP	SHEET No.	-
VERTICAL : NA	CHECKED : JNG	COH DRAWING No.	

2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148
PH. (702) 873-7550
FAX (702) 362-2597
WEB SITE WWW.VTNNV.COM

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FOR CONTINUATION
SEE DRAWING EX1

FOR CONTINUATION
SEE DRAWING EX2

NEWPORT DRIVE

RACETRACK ROAD

PC = 50+71.59
PT = 51+44.10
PC = 56+29.37
PRC = 57+45.97
PT = 58+62.57
PC = 48+74.44
PRC = 49+25.31
PT = 49+95.41
PC = 49+00

51+00
52+00
53+00
54+00
55+00
56+00
57+00
58+00
59+00
60+00
61+00
62+00
63+00
64+00
65+00
66+00

LEGEND

PROPOSED CONCRETE BOX FACILITY

STA _____ CROSS SECTION

NORTH

Revisions				
No.	DESCRIPTION	BY	DATE	APPROVAL

80 0 40 80 160 320
GRAPHIC SCALE 1" = 80'

Avoid cutting underground utility lines. It's costly.
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IT'S THE LAW
1-800-227-2600
UNDERGROUND SERVICE (USA)

City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
PRE-PROJECT HEC-RAS CROSS-SECTION EXHIBIT

SCALE :	DATE : AUG. 2007	DRAWING No.	EX2
HORIZONTAL : 1"=80'	DRAWN : DKP	SHEET No.	-
VERTICAL : NA	CHECKED : JNG	COH DRAWING No.	

VTN
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148
PH. (702) 873-7550
FAX (702) 362-2597
WEB SITE WWW.VTNNV.COM

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FOR CONTINUATION
SEE DRAWING EX2

PUEBLO BLVD

BURKHOLDER BLVD

89+00
90+00
90+89.63
PT = 91+00
91+92.13
86+00
PC = 87+74.45
87+00
86+00
85+00
84+00
83+00
82+00
81+00
80+00
79+00
78+00
77+00
76+00
75+00
74+00
PC = 74+28.56
73+00
72+00
71+00
70+00
69+00
68+00
67+00
PT = 78+93.64

LEGEND

PROPOSED CONCRETE BOX FACILITY

STA _____ CROSS SECTION

NORTH

Revisions				
No.	DESCRIPTION	BY	DATE	APPROVAL

80 0 40 80 160 320
GRAPHIC SCALE 1"=80'

PROFESSIONAL ENGINEER-STATE OF NEVADA
JEFFREY N. GARRETT
EXP. 12-31-07
CIVIL
No. 17158

Avoid cutting underground utility lines. It's costly.
IT'S THE LAW
1-800-227-2600
UNDERGROUND SERVICE (USA)
Call before you Dig

City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
PRE-PROJECT HEC-RAS CROSS-SECTION EXHIBIT

SCALE :
HORIZONTAL : 1"=80'
VERTICAL : NA

DATE : AUG. 2007
DRAWN : DKP
CHECKED : JNG

DRAWING No. CH2
SHEET No. -
COH DRAWING No.

vtn
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148
PH. (702) 873-7550
FAX (702) 362-2597
WEB SITE WWW.VTNNV.COM

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HERITAGE PARK OUTFALL CHANNEL CLOMR
PRE-PROJECT CONDITIONS: CHECK-RAS OUTPUT

CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.prj
Plan File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.p20
Geometry File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g09
Flow File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05
Report File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.nt
Selected profiles: PF 1
Date: 9/28/2007
Time: 09:45:32

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP
EQUESTRIAN DB OF,1						
-1500		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1525		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1550		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1575		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1600		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1625		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1650		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1675		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1700		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1725		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1750		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1775		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1800		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1825		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1850		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1875		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1900		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1925		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1950		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1975		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2000		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2025		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2050		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2075		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2100		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2125		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2150		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2175		-----	0.025	0.035	0.1	0.3

	-----	0.035	-----		
-2200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2225	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2250	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2275	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2325	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2350	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2375	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2400	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-2425	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2450	0.035	0.025	0.035	0.1	0.3
-2475	0.035	0.025	0.035	0.1	0.3
-2500	0.035	0.025	0.035	0.1	0.3
-2525	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2550	0.035	0.025	0.035	0.1	0.3
-2575	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2625	0.035	0.025	0.035	0.1	0.3
-2650	0.035	0.025	0.035	0.1	0.3
-2675	0.035	0.025	0.035	0.1	0.3
-2700	0.035	0.025	0.035	0.1	0.3
-2730	0.035	0.025	0.035	0.1	0.3
-2750	0.035	0.025	0.035	0.1	0.3
-2775	0.035	0.025	0.035	0.1	0.3
-2790.28	0.035	0.025	0.035	0.1	0.3
-2791.78	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2800	0.035	0.025	0.035	0.1	0.3
-2804.37	0.035	0.025	0.035	0.1	0.3
-2900	0.035	0.025	0.035	0.1	0.3
-2950.26	0.035	0.025	0.035	0.1	0.3
-3000	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3100	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3305.97	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3391.11	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-3400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3500	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3700	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3789.96	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3800	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3868.66	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		

-3900	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4000	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-4100	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4146.01	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4300	0.035	0.025	0.035	0.1	0.3
-4399.05	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4423.9	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4500	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4528.19	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-4563.86	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4596.68	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4607.48	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-4608.44Culvert-Up	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-4608.44Culvert-Dn	0.035	0.013	0.035	0.1	0.3
-4834.44	0.035	0.013	0.035	0.1	0.3
-4895.41	0.035	0.025	0.035	0.1	0.3
-4900	0.035	0.025	0.035	0.1	0.3
-4925.31	0.035	0.025	0.035	0.1	0.3
-5000	0.035	0.025	0.035	0.1	0.3
-5071.59	0.035	0.025	0.035	0.1	0.3
-5100	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5144.1	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5500	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-5600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5629.37	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5700	0.035	0.025	0.035	0.1	0.3
-5745.97	0.035	0.025	0.035	0.1	0.3
-5800	0.035	0.025	0.035	0.1	0.3
-5862.57	0.035	0.025	0.035	0.1	0.3
-5900	0.035	0.025	0.035	0.1	0.3
-6000	0.035	0.025	0.035	0.1	0.3
-6100	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-6200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6500	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6600	-----	0.035	0.035	0.1	0.3

	-----	0.025	-----		
-6700	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6800	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6900	0.035	0.025	0.035	0.1	0.3
-7000	0.035	0.025	0.035	0.1	0.3
-7100	0.035	0.025	0.035	0.1	0.3
-7200	0.035	0.025	0.035	0.1	0.3
-7300	0.035	0.025	0.035	0.1	0.3
-7400	0.035	0.025	0.035	0.1	0.3
-7428.56	0.035	0.025	0.035	0.1	0.3
-7500	0.035	0.025	0.035	0.1	0.3
-7600	0.035	0.025	0.035	0.1	0.3
-7700	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-7800	0.035	0.025	0.035	0.1	0.3
-7893.64	0.035	0.025	0.035	0.1	0.3
-7900	0.035	0.025	0.035	0.1	0.3
-8000	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-8100	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-8200	0.035	0.025	0.035	0.1	0.3
-8300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-8400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-8500	0.035	0.025	0.035	0.1	0.3
-8600	0.035	0.025	0.035	0.1	0.3
-8700	0.035	0.025	0.035	0.1	0.3
-8774.45	0.035	0.025	0.035	0.1	0.3
-8800	0.035	0.025	0.035	0.1	0.3
-8900	0.035	0.025	0.035	0.1	0.3
-9000	0.035	0.025	0.035	0.1	0.3
-9089.63	0.035	0.025	0.035	0.1	0.3
-9100	0.035	0.025	0.035	0.1	0.3
-9192.13	0.035	0.025	0.035	0.1	0.3

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.035	0.035
Right Overbank n Value:	0.035	0.035
Channel n Value:	0.013	0.035
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

RS: -2450
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2475
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2500
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2550
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2625
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2650
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2675
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2700
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2730
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2750
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2775
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2790.28
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2800
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2804.37
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -2950.26
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -4300
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -4608.44
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -4834.44
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -4895.41
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -4900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -4925.31
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5000
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5071.59
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5700
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5745.97
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5800
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a

concrete lined channel.

RS: -5862.57
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -6000
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -6900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7000
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7100
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7200
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7300
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7400
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7428.56
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7500
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7600
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.

The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -7800
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -7893.64
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -7900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -8200
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -8500
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -8600
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -8700
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -8774.45
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -8800
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -8900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -9000
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025. The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -9089.63
NT RC 03 Channel n value is equal to or less than 0.025

```
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:      -9100
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

TRANSITION LOSS COEFFICIENT CHECK
---------------------------------

RS:     -4600
NT TL 01 This is section 4
         Contraction and expansion loss coefficients are 0.1 and 0.3
         They should be equal to 0.3 and 0.5 respectively.

RS:     -4607.48
NT TL 01 This is section 3
         Contraction and expansion loss coefficients are 0.1 and 0.3
         They should be equal to 0.3 and 0.5 respectively.

RS:     -4834.44
NT TL 01 This is section 2
         Contraction and expansion loss coefficients are 0.1 and 0.3
         They should be equal to 0.3 and 0.5 respectively.

ROUGHNESS COEFFICIENT AT STRUCTURES
-----------------------------------

RS:     -4834.44
NT RS 01 This is Section 2.
         Channel n value of 0.013 is less than the channel n value of 0.025
         at Section 1.

RS:     -4607.48
NT RS 01 This is Section 3.
         Channel n value of 0.013 is less than the channel n value of 0.025
         at Section 4.

---END---
```

CHECK-RAS Program, XS Check
Cross Section Location and Alignment Review

Project File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.prj
Plan File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.p20
Geometry File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g09
Flow File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05
Report File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.xs
Selected profiles: PF 1
Date: 9/28/2007
Time: 09:46:19

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code
EQUESTRIAN DB OF,1						
-1500	25	25	25	40.82	706	
-1525	25	25	0	48.09	706	
-1550	25	25	25	89.53	706	
-1575	25	25	25	86.24	706	
-1600	25	25	25	86.24	706	
-1625	25	25	25	89.18	706	
-1650	25	25	25	90.74	706	C
-1675	25	25	25	62.11	706	D
-1700	25	25	25	80.87	706	D
-1725	25	25	25	54.77	706	D,C
-1750	25	25	25	35.06	706	D
-1775	25	25	25	34.63	706	D
-1800	25	25	25	44.59	706	D
-1825	25	25	25	68.62	706	
-1850	25	25	25	33.12	706	
-1875	25	25	25	45.9	706	D
-1900	25	25	25	64.81	706	
-1925	25	25	25	85.12	706	
-1950	25	25	25	84.75	706	
-1975	25	25	25	77.29	706	C
-2000	25	25	25	74.61	706	
-2025	25	25	25	69.51	706	
-2050	25	25	25	79.16	706	
-2075	25	25	25	77.43	706	C
-2100	25	25	25	73.77	706	
-2125	25	25	25	76.03	706	
-2150	25	25	25	83.07	706	
-2175	25	25	25	84.55	706	C
-2200	25	25	25	86.93	706	
-2225	25	25	25	85.7	706	
-2250	25	25	25	81.02	706	C
-2275	25	25	25	84.78	706	
-2300	25	25	25	86.73	706	
-2325	25	25	25	84.76	706	C
-2350	25	25	25	89	706	
-2375	25	25	25	89.5	706	
-2400	25	25	25	91.45	706	
-2425	25	25	25	65.5	706	
-2450	25	25	25	55.33	706	C
-2475	25	25	25	52	706	
-2500	25	25	25	59.04	706	
-2525	25	25	25	56.91	706	
-2550	25	25	25	54.01	706	
-2575	25	25	25	60.46	706	
-2600	25	25	25	62.43	706	
-2625	25	25	25	68.25	706	
-2650	25	25	25	61.48	706	C
-2675	25	25	25	67.62	706	
-2700	30	30	30	65.98	706	C
-2730	20	20	30	58.23	706	
-2750	25	25	25	60.16	706	
-2775	15.28	15.28	15.28	60.26	706	
-2790.28	1.5	1.5	1.5	60.86	706	
-2791.78	8.22	8.22	8.22	61.22	706	

-2800	4.37	4.37	4.37	60.47	706	
-2804.37	95.63	95.63	95.63	60.71	706	
-2900	50.262	50.262	50.262	68.74	706	C
-2950.26	49.74	49.74	49.74	54.5	706	
-3000	100	100	100	46.28	706	
-3100	100	100	100	64.35	706	
-3200	100	100	100	61.02	706	C
-3300	5.97	5.97	5.97	55.93	706	
-3305.97	85.14	85.14	85.14	57.62	706	
-3391.11	8.89	8.89	8.89	67.47	706	C
-3400	100	100	100	65.98	706	
-3500	100	100	100	61.25	706	
-3600	100	100	100	52.76	706	
-3700	89.64	89.64	89.64	62.72	706	C
-3789.96	10.04	10.04	10.04	32.65	706	
-3800	68.66	68.66	68.66	40.15	706	
-3868.66	21.34	21.34	21.34	49.94	706	
-3900	100	100	100	47.51	706	
-4000	100	100	100	60.75	706	
-4100	46.01	46.01	46.01	61.67	706	C
-4146.01	53.99	53.99	53.99	51.2	706	
-4200	100	100	100	53.44	706	
-4300	99.05	99.05	99.05	103.09	706	
-4399.05	0.95	0.95	0.95	128.84	706	
-4400	23.9	23.9	23.9	128.72	706	
-4423.9	76.1	76.1	76.1	126.11	706	
-4500	28.19	28.19	28.19	144.27	706	E
-4528.19	35.67	35.67	35.67	161.01	706	E
-4563.86	32.82	32.82	32.82	142.15	706	E
-4596.68	3.32	3.32	3.32	94.8	706	E
-4600	7.44	7.44	7.44	88.39	706	E
-4607.48	227	227	227	39.75	706	E
-4608.44	Culvert #1-Up					
-4608.44	Culvert #1-Dn					
-4834.44	60.97	60.97	60.97	39.76	706	C
-4895.41	4.59	4.59	4.59	39.11	706	
-4900	25.31	25.31	25.31	37.71	706	
-4925.31	74.69	74.69	74.69	34.03	706	
-5000	71.59	71.59	71.59	32.17	706	
-5071.59	28.41	28.41	28.41	27.06	706	C
-5100	44.1	44.4	44.1	25.91	706	
-5144.1	55.9	55.9	55.9	25.72	706	
-5200	100	100	100	24.16	706	C
-5300	100	100	100	28.5	706	
-5400	100	100	100	27.76	706	
-5500	100	100	100	31.85	706	
-5600	29.37	29.37	29.37	36.24	706	
-5629.37	70.63	70.63	70.63	31.89	706	
-5700	45.97	45.97	45.97	41.48	706	
-5745.97	54.03	54.03	54.03	36.86	706	C
-5800	62.57	62.57	62.57	39.35	706	
-5862.57	37.43	37.43	37.43	38.08	706	
-5900	100	100	100	40.7	706	C
-6000	100	100	100	52	706	
-6100	100	100	100	63.45	706	
-6200	100	100	100	45.45	706	
-6300	100	100	100	76.31	706	
-6400	100	100	100	67.09	706	
-6500	100	100	100	158.58	706	D,C
-6600	100	100	100	95.51	706	
-6700	100	100	100	117.4	706	E,C
-6800	100	100	100	112.55	706	E
-6900	100	100	100	174.66	706	E
-7000	100	100	100	146.42	706	E
-7100	100	100	100	444.75	706	E,C
-7200	100	100	100	99.56	706	E
-7300	100	100	100	364.52	706	E,C
-7400	28.56	28.56	28.56	405.33	706	D,E,C
-7428.56	74.44	74.44	74.44	874.13	706	D,E,C
-7500	100	100	100	472.48	706	C
-7600	100	100	100	364.07	706	D,E,C

-7700	100	100	100	257.31	706	E
-7800	93.64	93.64	93.64	37.24	706	E,C
-7893.64	6.34	6.34	6.34	38.3	706	E
-7900	100	100	100	39.13	706	E
-8000	100	100	100	31.03	706	E
-8100	100	100	100	102.43	706	E,C
-8200	100	100	100	140.46	706	E
-8300	100	100	100	144.16	706	
-8400	100	100	100	166.64	706	
-8500	100	100	100	134.46	706	D,E
-8600	100	100	100	104.66	706	E
-8700	74.45	74.45	74.45	105.02	706	E,C
-8774.45	25.55	25.55	25.55	111.55	706	E
-8800	100	100	100	106.66	706	E,C
-8900	100	100	100	50.46	706	
-9000	89.63	89.63	89.63	33.7	706	
-9089.63	10.37	10.37	10.37	53.77	706	
-9100	92.13	92.13	92.13	51.15	706	
-9192.13	0	0	0	43.54	706	

B=blocked obstruction XS SC 05
C=critial depth XS SC 03
D=divided flow XS SC 01
E=cross section extended XS SC 02
K=known water-surface XS SC 04

DISTANCE CHECK

RS: -1525
XS DT 02 Right overbank distance is equal to zero.

SPACING CHECK

INEFFECTIVE FLOW CHECK

RS: -1500
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -1525
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

DISCHARGE CHECK

RS: -7400
XS DC 05 There is no flow on the right overbank at the downstream
cross section. There is no flow on the left overbank at this section.

RS: -7428.56
XS DC 04 There is no flow on the left overbank at the downstream
cross section. There is no flow on the right overbank at this section.

XS DC 02 Constant dicharge used for the EQUESTRIAN DB OF,1

LOCATION CHECK

BOUNDARY CONDITION CHECK

XS BC 02 The name of the stream is EQUESTRIAN DB OF,1
         Normal S = 0.0137 is specified as the downstream boundary
         for profile PF 1

XS BC 02 The name of the stream is EQUESTRIAN DB OF,1
         Normal S = 0.0304 is specified as the upstream boundary
         for profile PF 1

XS BC 03 Maximum number of iterations is 0
         It should not be less than 20.

XS FR 02 The profile is computed as mixed flow regime.

LATERAL WEIRS CHECK

---END---

CHECK-RAS Program: Structure Check

Project File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.prj
Plan File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.p20
Geometry File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g09
Flow File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05
Report File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.br
Selected profiles: PF 1
Date: 9/28/2007
Time: 09:48:58

RS	MaxLoChord	MnTpRd	EGEL	WSEL	MinChEl	Structure
EQUESTRIAN DB OF,1						
-1500			2034.41	2031.91	2030	
-1525			2033.56	2031.28	2029.24	
-1550			2032.38	2032.12	2028.25	
-1575			2032.27	2031.73	2028.63	
-1600			2032.09	2031.5	2028	
-1625			2031.9	2031.35	2028	
-1650			2031.69	2031.07	2027.69	
-1675			2031.46	2030.86	2027.27	
-1700			2031.29	2030.91	2026.68	
-1725			2031.11	2030.24	2026.25	
-1750			2030.73	2028.9	2025.67	
-1775			2030.22	2027.95	2025	
-1800			2029.5	2026.99	2024.22	
-1825			2027.76	2023.56	2022.29	
-1850			2025.67	2021.48	2019.79	
-1875			2024.06	2021.56	2019	
-1900			2023.03	2021.55	2019	
-1925			2022.34	2022.05	2018.98	
-1950			2022.28	2022.01	2018.37	
-1975			2022.14	2021.44	2018	
-2000			2021.88	2021.02	2018	
-2025			2021.5	2020.34	2018	
-2050			2021.28	2020.74	2018.48	
-2075			2021.09	2020.41	2018	
-2100			2020.83	2019.97	2017.57	
-2125			2020.55	2019.73	2017.06	
-2150			2020.3	2019.84	2017.15	
-2175			2020.13	2019.48	2017	
-2200			2019.88	2019.43	2017	
-2225			2019.72	2019.13	2017	
-2250			2019.51	2018.84	2016.82	
-2275			2019.28	2018.82	2016.34	
-2300			2019.15	2018.68	2016	
-2325			2018.97	2018.33	2016	
-2350			2018.74	2018.26	2016	
-2375			2018.6	2018.21	2016	
-2400			2018.49	2018.19	2015.94	
-2425			2018.39	2017.9	2015.43	
-2450			2018.22	2017.35	2014.88	
-2475			2017.87	2016.42	2014.14	
-2500			2017.29	2015.48	2013.58	
-2525			2016.6	2015.04	2013.04	
-2550			2016.07	2014.49	2012	
-2575			2015.85	2015.37	2011.77	
-2600			2015.76	2015.26	2011.26	
-2625			2015.64	2015.23	2011.44	
-2650			2015.49	2014.68	2012	
-2675			2015.22	2014.74	2012	
-2700			2015.06	2014.28	2011.49	
-2730			2014.69	2013.46	2011	
-2750			2014.39	2013.88	2010.23	
-2775			2014.29	2013.85	2010	
-2790.28			2014.23	2013.67	2011	
-2791.78			2014.2	2013.71	2010.2	
-2800			2014.16	2013.54	2011	
-2804.37			2014.14	2013.51	2011	

-2900			2013.51	2012.76	2011	
-2950.26			2012.84	2011.39	2009	
-3000			2010.95	2007.08	2006	
-3100			2007.84	2007.45	2004	
-3200			2007.38	2006.56	2003.84	
-3300			2005.99	2004.29	2002.22	
-3305.97			2005.77	2004.39	2002.29	
-3391.11			2005.18	2004.43	2002.47	
-3400			2005.09	2004.17	2002.33	
-3500			2004.11	2003.27	2001	
-3600			2002.2	1999.4	1998	
-3700			2000.52	1999.72	1997.61	
-3789.96			1998.75	1994.84	1993	
-3800			1998.02	1995.1	1993	
-3868.66			1995.73	1994.04	1991.78	
-3900			1995.24	1993.38	1991	
-4000			1994.34	1993.82	1991	
-4100			1993.78	1992.98	1991	
-4146.01			1993.2	1991.76	1989.45	
-4200			1992.28	1990.9	1988.01	
-4300			1988.03	1987.92	1983.97	
-4399.05			1987.98	1987.94	1982	
-4400			1987.98	1987.94	1982	
-4423.9			1987.98	1987.94	1982	
-4500			1987.97	1987.94	1982	
-4528.19			1987.96	1987.95	1982	
-4563.86			1987.96	1987.94	1982	
-4596.68			1987.96	1987.9	1982	
-4600			1987.96	1987.9	1982	
-4607.48			1987.95	1987.81	1981.83	
-4608.44						
	1984.25	1988	0	1984.25	1981.83	Culvert #1-Up
-4608.44						
	1981.92	1979.5	0	1981.92	1979.5	Culvert #1-Dn
-4834.44			1982.71	1981.63	1979.5	
-4895.41			1981.87	1976.51	1975	
-4900			1981.26	1976.59	1975	
-4925.31			1979.58	1976.98	1974.32	
-5000			1978.6	1977.65	1973.32	
-5071.59			1978.15	1976.77	1972.69	
-5100			1977.81	1975.73	1972.26	
-5144.1			1977.23	1975.17	1972	
-5200			1976.83	1975.35	1971	
-5300			1975.63	1973.16	1970.29	
-5400			1974.09	1972.52	1969.13	
-5500			1972.8	1970.67	1968.03	
-5600			1971.38	1970.13	1967.07	
-5629.37			1970.87	1968.34	1966	
-5700			1969.14	1967.16	1965	
-5745.97			1968.47	1967.35	1964.6	
-5800			1967.99	1966.67	1964.11	
-5862.57			1967.14	1965.32	1963	
-5900			1966.65	1965.6	1962.74	
-6000			1965.28	1963.32	1961.71	
-6100			1962.9	1961.65	1959.94	
-6200			1961.69	1960.63	1958.33	
-6300			1960.19	1958.7	1956.86	
-6400			1958.24	1957.28	1955.39	
-6500			1956.34	1956.01	1953.82	
-6600			1954.98	1953.62	1952.4	
-6700			1953.37	1952.85	1951.01	
-6800			1952.26	1951.57	1950	
-6900			1950.76	1950.24	1948.8	
-7000			1949.45	1948.94	1947.3	
-7100			1948.07	1948	1945.88	
-7200			1947.27	1945.65	1944.59	
-7300			1944.56	1944.42	1942.8	
-7400			1943.08	1943.01	1940.97	
-7428.56			1942.83	1942.82	1940.61	
-7500			1941.83	1941.81	1940.16	
-7600			1940.96	1940.93	1939.29	

-7700	1939.78	1939.7	1937
-7800	1939.42	1938.28	1934.65
-7893.64	1937.45	1933.15	1931.65
-7900	1936.9	1933.14	1931.49
-8000	1933.05	1930.41	1927.91
-8100	1931.4	1930.83	1927.4
-8200	1930.49	1930.11	1926.88
-8300	1929.95	1929.68	1926.34
-8400	1929.65	1929.5	1925.84
-8500	1929.32	1928.95	1925.39
-8600	1928.87	1928.56	1924.92
-8700	1928.33	1927.77	1924.32
-8774.45	1927.78	1927.46	1924
-8800	1927.61	1927.04	1924
-8900	1925.75	1923.3	1921.29
-9000	1921.24	1917.36	1915.74
-9089.63	1918.08	1916.66	1914.2
-9100	1917.85	1916.14	1914.03
-9192.13	1916.2	1914.75	1912.77

RIVER/REACH: EQUESTRIAN DB OF, 1
RIVER STATION: -4608.44
TYPE OF STRUCTURE: Culvert

Description:

Distance from Upstream XS:	1
Deck/Roadway Width:	225
Weir Coefficient:	2.6
Maximum allowable submergence for weir flow:	0.95
Elevation at which weir flow begins:	0
Weir crest shape:	Broad Crested

Sec	River Station	Length Channel	WSEL	Surch.	EGEL	TopWidth Actual	
4	-4600	7.44	1987.9		1987.96	88.39	
3	-4607.48	227.00	1987.81		1987.95	39.75	
	-4608.44	226.00	1984.25		0	0	Culvert #1-Up
	-4608.44	0.00	1981.92		0	0	Culvert #1-Dn
2	-4834.44	60.97	1981.63		1982.71	39.76	
1	-4895.41	4.59	1976.51		1981.87	39.11	

Ineffective Flow, Section 3			Ineffective Flow, Section 2		
Sta L	Sta R	Elev	Sta L	Sta R	Elev

Opening Type	StagStaL	StagStaR	EncStaL	EncStaR	LIfStaS	RIfStaS
Culvert Group						U
						D

CULVERT:
Culvert Name: Culvert #1
Shape: Ellipse Rise: 2.42 Span: 3.75 Barrels: 9
FHWA Chart #: # 29- Horizontal Ellipse; Con
FHWA Scale #: # 1 - Square edge with headwall
Solution Crit:Highest U.S. EG

UpstrmDist: 1 Length: 226 n-Value: 0.013
EntLossCoef: 0.5 ExtLossCoef: 1 CulvInvElU 1981.83 CulvInvElD 1979.5

LCntStaU: -45.19 RCntStaU: -9.83 LCntStaD 58.38 RCntStaD
93.74
Culvert Depth Blocked: 0

Culv Area:	256.59	CulvQ:	706	MinTopRd:	1988.01	

	LAbutSt	RAbutSt	LMnTpRd	RMnTpRd	MnTpRd	MxLoCd	
Culvert #1	-47.07	-7.96	1988	1988	1988	1984.25	U
	56.51	95.62	1979.5	1979.5	1979.5	1981.92	D

Name	Q Total.	Q Struc	Q Weir	Selected Method	Flow Type
Culvert #1	706	0		Highest U.S. EG	Pressure Flow

GEOMETRIC CHECK

RS: -4608.44
ST GD 03 The starting station of 56.18 from downstream road/weir data
is greater than the starting station of -400 from downstream internal
section.
The high chord elevation of 1988 for the starting road/weir station is
greater than the ground elevation of 1979.5 for the same ground station.
The road/weir profile may need to be extended.

RS: -4608.44
ST GD 03 The end station of 95.94 from downstream road/weir data
is less than the end station of 140 from downstream internal
section.
The high chord elevation of 1988 for the end road/weir station is
greater than the ground elevation of 1979.5 for the same ground station.
The road/weir profile may need to be extended.

TYPE OF FLOW CHECK

RS: -4608.44 This is Culvert #1
CV PF 01 Type of flow is pressure flow because,
1. EGEL 3 of 1987.95 is less than or equal to MinTopRd of 1988.01.
2. CulvWSIn of 1984.25 is greater than or equal to MxLoCdU of 1984.25.
3. CulvWSOut of 1981.92 is greater than or equal to MxLoCdD of 1981.92.

DISTANCE CHECK

RS: -4608.44 This is Culvert #1
ST DT 01 'Culvert Upstrm Dist' of 1 is less than the height of the
culvert opening of 2.42 .
Section 3 should be placed at the foot of the road embankment or
wing walls.
Distances at Sections 4 & 3, and 'Distance from Upstream XS'
should be adjusted.

RS: -4608.44 This is Culvert #1
ST DT 02 The channel distance of 0 at Downstream Internal Section is less than
the height of the culvert opening of 2.42
Section 2 should be placed at the foot of the road embankment or
wing walls.
Distances at Sections 4, 3 & 2 should be adjusted.

RS: -4608.44 This is Culvert #1
ST DT 03 The channel distance at Downstream Internal Section is less than

or equal to zero. The channel distance at Downstream Internal Section is computed by subtracting the summation of Culvert Upstrm Dist and Culvert Length from the channel length at Section 3.
Culvert Upstrm Dist is 1, Culvert length is 226, Channel length at section 3 is 227
Lengths at Sections 4, 3 & 2 and 'Culvert Upstream Dist' should be adjusted.

CULVERT COEFFICIENT CHECK

CULVERT CRITERIA CHECK

INEFFECTIVE FLOW CHECK

---END

HERITAGE PARK OUTFALL CHANNEL CLOMR
POST-PROJECT CONDITIONS: HEC-RAS OUTPUT

Equestrian.prj

vtn nevada

Water Surface Comparison
between Pre-Project and Post-Project HEC-RAS Models

10/15/2007

Pre-Poject		Post-Project		? WSE	Check	Pre-Poject		Post-Project		? WSE	Check
River Sta	WSE	River Sta	WSE			River Sta	WSE	River Sta	WSE		
ft	ft	ft	ft			ft	ft	ft	ft		
-1500	2031.91	-1500	2031.91	0.00	ok	-2675	2014.74	-2675	2016.33	1.59	fix
-1525	2031.28	-1525	2031.28	0.00	ok			-2683.75	2016.32		
-1550	2032.12	-1550	2030.73	-1.39	ok			-2692.09	2016.32		
-1575	2031.73	-1575	2031.49	-0.24	ok	-2700	2014.28	-2700	2016.28	2.00	fix
-1600	2031.5	-1600	2030.93	-0.57	ok			-2725	2014.81		
-1625	2031.35	-1625	2030.85	-0.50	ok			-2726.48	2014.71		
-1650	2031.07	-1650	2030.81	-0.26	ok	-2730	2013.46				
-1675	2030.86	-1675	2030.8	-0.06	ok			-2737.5	2014.34		
-1700	2030.91	-1700	2030.77	-0.14	ok	-2750	2013.88	-2750	2014.07	0.19	ok
-1725	2030.24	-1725	2030.32	0.08	ok			-2766.11	2013.77		
-1750	2028.9	-1750	2029.14	0.24	ok	-2775	2013.85	-2775	2012.15	-1.70	ok
-1775	2027.95	-1775	2028.04	0.09	ok			-2782.5	2011.29		
-1800	2026.99	-1800	2027.01	0.02	ok	-2790.28	2013.67	-2790.28	2009.45	-4.22	ok
-1825	2023.56	-1825	2023.52	-0.04	ok			-2790.29	2009.44		
-1850	2021.48	-1850	2021.5	0.02	ok	-2791.78	2013.71				
-1875	2021.56	-1875	2021.51	-0.05	ok						
-1900	2021.55	-1900	2021.33	-0.22	ok						
-1925	2022.05	-1925	2021.9	-0.15	ok						
-1950	2022.01	-1950	2021.9	-0.11	ok						
-1975	2021.44	-1975	2021.48	0.04	ok						
-2000	2021.02	-2000	2021.17	0.15	ok						
-2025	2020.34	-2025	2020.33	-0.01	ok						
-2050	2020.74	-2050	2020.37	-0.37	ok						
-2075	2020.41	-2075	2020.19	-0.22	ok						
-2100	2019.97	-2100	2020.16	0.19	ok						
-2125	2019.73	-2125	2019.79	0.06	ok						
-2150	2019.84	-2150	2019.49	-0.35	ok						
-2175	2019.48	-2175	2019.52	0.04	ok						
-2200	2019.43	-2200	2019.46	0.03	ok						
-2225	2019.13	-2225	2019.06	-0.07	ok						
-2250	2018.84	-2250	2018.54	-0.30	ok						
-2275	2018.82	-2275	2018.78	-0.04	ok						
-2300	2018.68	-2300	2018.48	-0.20	ok						
-2325	2018.33	-2325	2018.41	0.08	ok						
-2350	2018.26	-2350	2018.45	0.19	ok						
-2375	2018.21	-2375	2018.4	0.19	ok						
-2400	2018.19	-2400	2018.37	0.18	ok						
-2425	2017.9	-2425	2017.97	0.07	ok						
-2450	2017.35	-2450	2017.47	0.12	ok						
-2475	2016.42	-2475	2016.91	0.49	ok						
-2500	2015.48	-2500	2016.08	0.60	ok						
-2525	2015.04	-2525	2016.51	1.47	fix						
-2550	2014.49	-2550	2016.57	2.08	fix						
-2575	2015.37	-2575	2016.58	1.21	fix						
-2600	2015.26	-2600	2016.57	1.31	fix						
-2625	2015.23	-2625	2016.55	1.32	fix						
-2650	2014.68	-2650	2016.44	1.76	fix						

UESTRIAN DB OF Reach: 1 Profile: PF 1													
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Hydr Depth	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)	(ft/s)	(sq ft)	(ft)	
1	-1500	PF 1	706	2030	2031.91	1.36	2032.44	2034.41	0.030424	12.67	55.7	40.82	1.91
1	-1525	PF 1	706	2029.24	2031.28	1.2	2031.83	2033.55	0.032876	12.08	58.44	48.87	1.95
1	-1550	PF 1	706	2028.25	2030.73	1.03	2031.32	2032.61	0.03351	11.01	64.12	62.46	1.92
1	-1575	PF 1	706	2028.63	2031.49	1.3	2031.49	2032.15	0.008514	6.5	108.65	83.36	1
1	-1600	PF 1	706	2028	2030.93	1.17	2031.13	2031.85	0.013786	7.69	91.86	78.67	1.25
1	-1625	PF 1	706	2028	2030.85	1.25	2030.9	2031.55	0.009576	6.71	105.24	83.96	1.06
1	-1650	PF 1	706	2027.69	2030.81	1.36	2030.7	2031.34	0.006606	5.84	120.86	88.88	0.88
1	-1675	PF 1	706	2027.27	2030.8	1.54		2031.16	0.003887	4.84	145.83	94.74	0.69
1	-1700	PF 1	706	2026.68	2030.77	1.66		2031.06	0.002902	4.34	162.55	98.03	0.59
1	-1725	PF 1	706	2026.25	2030.32	1.13	2030.32	2030.91	0.009626	6.18	114.18	100.62	1.02
1	-1750	PF 1	706	2025.67	2029.14	1.9	2029.5	2030.56	0.012147	9.55	73.92	38.89	1.22
1	-1775	PF 1	706	2025	2028.04	1.73	2028.69	2030.11	0.019757	11.55	61.15	35.41	1.55
1	-1800	PF 1	706	2024.22	2027.01	1.25	2027.85	2029.44	0.033589	12.51	56.45	45.02	1.97
1	-1825	PF 1	706	2022.29	2023.52	0.59	2024.33	2027.7	0.153668	16.41	43.03	72.52	3.75
1	-1850	PF 1	706	2019.79	2021.5	1.31	2022.79	2025.58	0.05282	16.21	43.55	33.27	2.5
1	-1875	PF 1	706	2019	2021.51	1.26	2022.33	2024.06	0.035112	12.82	55.06	43.72	2.01
1	-1900	PF 1	706	2019	2021.33	1.08	2021.85	2023.02	0.028179	10.41	67.81	62.56	1.76
1	-1925	PF 1	706	2018.98	2021.9	1.81	2021.31	2022.22	0.002784	4.6	153.34	84.58	0.6
1	-1950	PF 1	706	2018.37	2021.9	2.08		2022.15	0.001771	4.02	175.67	84.51	0.49
1	-1975	PF 1	706	2018	2021.48	1.51	2021.33	2022.04	0.006031	6.03	117.17	77.65	0.86
1	-2000	PF 1	706	2018	2021.17	1.38	2021.17	2021.86	0.008358	6.67	105.85	76.91	1
1	-2025	PF 1	706	2018	2020.33	1.17	2020.64	2021.51	0.017727	8.73	80.89	69.36	1.42
1	-2050	PF 1	706	2018	2020.37	1.3	2020.44	2021.14	0.010009	7.06	100.05	77.11	1.09
1	-2075	PF 1	706	2018	2020.19	1.34	2020.23	2020.94	0.009325	6.95	101.65	76.06	1.06
1	-2100	PF 1	706	2017.57	2020.16	1.63	2019.9	2020.68	0.004925	5.74	122.9	75.4	0.79
1	-2125	PF 1	706	2017.06	2019.79	1.37	2019.79	2020.5	0.008611	6.75	104.55	76.51	1.02
1	-2150	PF 1	706	2017.15	2019.49	1.25	2019.56	2020.26	0.010537	7.04	100.23	79.98	1.11
1	-2175	PF 1	706	2017	2019.52	1.42	2019.36	2020.05	0.006097	5.84	120.82	84.84	0.86
1	-2200	PF 1	706	2017	2019.46	1.55		2019.89	0.004359	5.23	135.01	87.14	0.74
1	-2225	PF 1	706	2017	2019.06	1.28	2019.06	2019.71	0.008633	6.48	108.91	85.2	1.01
1	-2250	PF 1	706	2016.82	2018.54	1.18	2018.71	2019.43	0.013022	7.57	93.25	78.78	1.23
1	-2275	PF 1	706	2016.34	2018.78	1.63	2018.41	2019.19	0.003898	5.13	137.72	84.44	0.71
1	-2300	PF 1	706	2016	2018.48	1.38	2018.37	2019.05	0.006678	6.01	117.38	84.84	0.9
1	-2325	PF 1	706	2016	2018.41	1.51		2018.87	0.004865	5.45	129.55	85.51	0.78
1	-2350	PF 1	706	2016	2018.45	1.8		2018.74	0.002397	4.29	164.4	91.17	0.56
1	-2375	PF 1	706	2016	2018.4	1.84		2018.67	0.002223	4.18	168.72	91.85	0.54
1	-2400	PF 1	706	2015.91	2018.37	1.87		2018.61	0.001966	3.99	177.09	94.73	0.51
1	-2425	PF 1	706	2016	2017.97	1.82		2018.51	0.004494	5.89	119.86	65.88	0.77
1	-2450	PF 1	706	2015.42	2017.47	1.7	2017.47	2018.33	0.007844	7.43	94.96	55.91	1.01
1	-2475	PF 1	706	2015.14	2016.91	1.49	2017.15	2018.06	0.012481	8.61	82.01	54.97	1.24
1	-2500	PF 1	706	2014.86	2016.08	1.08	2016.53	2017.6	0.025116	9.89	71.42	66.08	1.68
1	-2525	PF 1	706	2014.44	2016.51	1.78	2016.2	2017.04	0.004572	5.87	120.34	67.46	0.77
1	-2550	PF 1	706	2014	2016.57	2.14		2016.9	0.002241	4.63	152.42	71.18	0.56
1	-2575	PF 1	706	2013.64	2016.58	2.38		2016.84	0.00153	4.09	172.63	72.64	0.47
1	-2600	PF 1	706	2013.26	2016.57	2.64		2016.79	0.001136	3.76	187.74	71.04	0.41
1	-2625	PF 1	706	2012.83	2016.55	2.75		2016.76	0.001026	3.65	193.23	70.23	0.39
1	-2650	PF 1	706	2012.39	2016.44	2.83		2016.72	0.001339	4.26	165.56	58.53	0.45
1	-2675	PF 1	706	2011.95	2016.33	2.94		2016.68	0.001588	4.74	148.87	50.6	0.49
1	-2683.75	PF 1	706	2011.82	2016.32	2.9		2016.67	0.001591	4.7	150.07	51.79	0.49
1	-2692.09	PF 1	706	2011.72	2016.32	2.89		2016.64	0.002611	4.57	154.61	53.55	0.47
1	-2700	PF 1	706	2011.62	2016.28	2.98		2016.62	0.002096	4.68	153.61	51.54	0.44
1	-2725	PF 1	706	2011.49	2014.81	3.23	2014.81	2016.44	0.0023	10.25	68.91	21.36	1.01
1	-2726.48	PF 1	706	2011.48	2014.71	3.14	2014.79	2016.43	0.002497	10.53	67.05	21.32	1.05
1	-2737.5	PF 1	706	2011.36	2014.34	2.91	2014.68	2016.37	0.003184	11.41	61.88	21.24	1.18
1	-2750	PF 1	706	2011.22	2014.07	2.78	2014.54	2016.3	0.003706	11.99	58.86	21.18	1.27
1	-2766.11	PF 1	706	2011.05	2013.77	2.66	2014.36	2016.21	0.00425	12.55	56.28	21.13	1.35
1	-2775	PF 1	706	2009.38	2012.15	2.71	2013.28	2016.02	0.007127	15.8	44.69	16.5	1.69
1	-2782.5	PF 1	706	2007.97	2011.29	3.22	2012.65	2015.89	0.007929	17.22	41.01	12.72	1.69
1	-2790.28	PF 1	706	2006.5	2009.45	2.94	2011.24	2015.66	0.012362	20	35.3	12	2.05
1	-2790.29	PF 1	706	2006.5	2009.44	2.94	2011.27	2015.66	0.012374	20.01	35.29	12	2.06
1	-3290.29	PF 1	706	1997.45	2000.04	2.59	2002.22	2008.08	0.018005	22.75	31.03	12	2.49

HEC-RAS Version 3.1.3 May 2005
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
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PROJECT DATA
Project Title: EQUESTRIAN CLOMR
Project File : EQUESTRIAN.prj
Run Date and Time: 9/28/2007 09:22:51

Project in English units

Project Description:
Equestrian Detention Outfall

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PLAN DATA

Plan Title: Plan 20
Plan File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.p20

Geometry Title: POST-PROJECT; PARK
Geometry File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g09

Flow Title : Neighborhood
Flow File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05

Plan Summary Information:
Number of: Cross Sections = 61 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

****

FLOW DATA

Flow Title: Neighborhood
Flow File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05

Flow Data (cfs)

River	Reach	RS	PF 1
EQUESTRIAN DB OF1		-1500	706

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
EQUESTRIAN DB OF1		PF 1	Normal S = 0.0304	Normal S = 0.0137

****

GEOMETRY DATA

Geometry Title: POST-PROJECT; PARK
Geometry File : J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g09

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1500

INPUT
Description:
Station Elevation Data   num=   102
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.261   2043-140.481   2043-140.475   2043-135.1042042.208-133.566   2042
-131.2242041.581-127.893   2041-126.2152040.707-122.378   2040-120.855 2039.74
-116.536   2039-115.2462038.777-110.674   2038-108.8942037.693 -104.82   2037
-101.912 2036.48 -99.111   2036-95.61842035.294-94.1404   2035 -93.7072034.921
-89.0945   2034-84.68812033.095-84.2205   2033-83.24232032.795-79.1597   2032
-74.13042031.295-71.4223   2031-70.12782030.912-68.05442030.724-67.54942030.637
-67.10112030.599 -66.8892030.593 -66.7222030.597-66.5035 2030.62-66.18342030.731
-65.67212030.831-64.71282030.957-64.5355   2031-61.65622031.283-59.26782031.469
-53.2934   2032-53.12672032.009-53.0267 2032.05-39.90362032.246 -36.3082032.159
-34.08492032.071-32.9996   2032 -32.4372031.809 -29.309   2031 -29.2332030.994
-29.19712030.991-26.30872030.733-23.26452030.479-19.0713 2030.28-17.48582030.194
-15.66542030.073-14.6993   2030-12.7716   2030-9.76562   2030-7.76299   2030
-7.71138   2030-5.951742030.182-4.223712030.383-2.640642030.604 -2.24682030.645
-1.902772030.651-.5626772030.569   02030.557 .1478562030.554 .6291052030.615
3.1228952030.7324.0218322030.8095.530625   20316.2684612031.209 8.29692   2032
10.706172032.39512.191112032.60913.80411   203315.324082033.14916.839972033.145
16.919412033.14217.098132033.14917.77806 2033.1821.891942033.39633.43209   2034
35.482132034.48537.46578   203539.492592035.54441.45111   203643.923312036.594
45.55312   203746.454682037.23949.83693   203850.099752038.05650.811212038.228
51.96051 2038.4553.774492038.81554.98262   203956.810192039.15157.517462039.157
58.213942039.23858.34977 2039.25

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.261   .035-142.261   .02558.34977   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.26158.34977   25   25   25   .1   .3
Left Levee   Station=   -39.9   Elevation= 2032.25

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2034.41 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   2.49 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2031.91 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2032.44 * Flow Area (sq ft)   *   *   55.70 *   *
* E.G. Slope (ft/ft)   *0.030424 * Area (sq ft)   *   *   55.70 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   40.82 * Top Width (ft)   *   *   40.82 *   *
* Vel Total (ft/s)   *   12.67 * Avg. Vel. (ft/s)   *   *   12.67 *   *
* Max Chl Dpth (ft)   *   1.91 * Hydr. Depth (ft)   *   *   1.36 *   *
* Conv. Total (cfs)   * 4047.6 * Conv. (cfs)   *   * 4047.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   41.20 *   *
* Min Ch El (ft)   * 2030.00 * Shear (lb/sq ft)   *   *   2.57 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   32.54 *   *
* Frctn Loss (ft)   *   * Cum Volume (acre-ft)   *   *   3.68 *   0.00 *
* C & E Loss (ft)   *   * Cum SA (acres)   *   *   2.17 *   0.00 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1525

INPUT
Description:
Station Elevation Data   num=   95
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.2682042.739-142.2572042.739-140.8772042.609 -140.672042.565 -140.182042.508
-138.4412042.352-136.0812042.035-135.828   2042 -131.922041.303-130.192   2041
-129.094 2040.81-124.509   2040-119.4862039.115-118.823   2039-117.3562038.744
 -113.05   2038 -109.782037.423-107.337   2037-104.4682036.495-101.556   2036
-100.0952035.738-95.9636   2035-90.59542034.021-90.4834   2034-90.19082033.945
-89.47542033.825-84.4017   2033-82.45242032.609-80.83392032.358-78.2929   2032
-77.29262031.875-76.65292031.768-75.26332031.554-71.9249   2031-69.88522030.612
-68.58372030.352-66.7094   2030-66.0606   2030-65.5086   2030-64.62572030.283
-62.1973   2031-60.28042031.074-52.88182031.349-46.75942031.588-46.10792031.611
-45.40092031.633-45.17372031.636-45.06042031.635-44.0801 2031.46-41.7082   2031
-39.28942030.127 -38.949   2030-38.45352029.781 -38.3492029.763-38.23492029.757
-37.95972029.759-37.87532029.774-37.06812029.615-35.9814 2029.55-35.00932029.472
-34.78982029.435-34.68772029.384-33.78292029.256-33.64412029.249-33.59152029.239
-29.36472029.276-26.08912029.448-16.1598   2030-3.649712030.556-1.398832030.673
       02030.7622.2393232030.9043.711227   20314.592877 2031.126.4156132031.383
10.19792   203213.961862032.62116.08633   203328.442932033.65535.07403   2034
35.807822034.17439.27631   203541.515732035.55843.29516   203647.09778 2036.88
47.58003   203748.374022037.15552.40611   203853.60807 2038.1355.190842038.276
55.926252038.41456.542912038.45557.725882038.51758.13948 2038.5558.350222038.577

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.268   .035-142.268   .02558.35022   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.26858.35022   25   25   .1   .3
Left Levee   Station= -46.76   Elevation= 2031.59

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2033.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.27	Wt. n-Val.		0.025	
W.S. Elev (ft)	2031.28	Reach Len. (ft)	25.00	25.00	0.00
Crit W.S. (ft)	2031.83	Flow Area (sq ft)		58.44	
E.G. Slope (ft/ft)	*0.032876	Area (sq ft)		58.44	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	48.87	Top Width (ft)		48.87	
Vel Total (ft/s)	12.08	Avg. Vel. (ft/s)		12.08	
Max Chl Dpth (ft)	2.04	Hydr. Depth (ft)		1.20	
Conv. Total (cfs)	3893.7	Conv. (cfs)		3893.7	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		49.23	
Min Ch El (ft)	2029.24	Shear (lb/sq ft)		2.44	
Alpha	1.00	Stream Power (lb/ft s)		29.43	
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)		3.65	0.00
C & E Loss (ft)	0.07	Cum SA (acres)		2.15	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1550

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.274	2042.254	-142.244	2042.255	-139.544	2042	-136.724	2041.609	-132.788	2041
-130.682	2040.615	-127.179	2040	-122.466	2039.178	-121.471	2039	-120.736	2038.886
-114.928	2038	-114.571	2037.946	-110.951	2037.383	-108.694	2037	-105.278	2036.45
-102.68	2036	-99.85222	2035.517	-96.8097	2035	-92.03772	2034.183	-91.0282	2034
-89.7979	2033.78	-85.4234	2033	-82.36152	2032.559	-81.45242	2032.449	-79.03392	2032.098
-78.3905	2032	-77.37562	2031.898	-76.74942	2031.845	-71.85162	2031.402	-68.36662	2031.082
-67.4322	2031	-63.7417	2030.48	-59.6808	2030	-56.38132	2029.439	-54.67532	2029.168
-54.2352	2029.272	-54.20922	2029.334	-53.98342	2029.478	-53.51852	2029.569	-52.90472	2029.583
-51.85882	2029.454	-51.37282	2029.403	-50.3982	2029.232	-50.22172	2029.194	-49.5825	2029
-49.17982	2028.906	-47.27332	2028.529	-45.75652	2028.405	-45.14262	2028.342	-44.88332	2028.308
-41.56342	2028.252	-38.68372	2028.502	-34.3191	2028.93	-33.7689	2029	-33.1132	2029.131
-30.1965	2030	-20.50682	2030.241	-16.28252	2030.361	-3.79112	2030.706		2030.818
1.9457242	2030.875	6.108246	2031	7.0023362	2031.187	7.914908	2031.49	9.598696	2032
12.579942	2032.451	17.20134	2033	29.076382	2033.616	36.65795	2034	40.348562	2034.757
41.42886	2035	45.274232	2035.794	46.3264	2036	47.050282	2036.146	51.34959	2037
52.807462	2037.303	55.354972	2037.674	57.3991	2038	57.901	2038.045	58.350672	2038.097

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.274	.035	-142.274	.025	58.35067	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.27	458.35067	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2032.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.88	Wt. n-Val.		0.025	
W.S. Elev (ft)	2030.73	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2031.32	Flow Area (sq ft)		64.12	
E.G. Slope (ft/ft)	*0.033510	Area (sq ft)		64.12	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	62.46	Top Width (ft)		62.46	
Vel Total (ft/s)	11.01	Avg. Vel. (ft/s)		11.01	
Max Chl Dpth (ft)	2.48	Hydr. Depth (ft)		1.03	
Conv. Total (cfs)	3856.7	Conv. (cfs)		3856.7	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		62.98	
Min Ch El (ft)	2028.25	Shear (lb/sq ft)		2.13	
Alpha	1.00	Stream Power (lb/ft s)		23.45	
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)		3.61	0.00
C & E Loss (ft)	0.12	Cum SA (acres)		2.12	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1575

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.281	2041.539	-142.259	2041.54	-137.674	2041	-132.992	2040.223	-131.734	2040
-127.925	2039.339	-125.838	2039	-119.672	2038.027	-119.501	2038	-118.903	2037.909
-112.666	2037	-110.993	2036.76	-105.737	2036	-100.642	2035.238	-99.1234	2035
-93.51232	2034.051	-93.2414	2034	-92.54072	2033.878	-87.5038	2033	-84.04872	2032.414
-81.5103	2032	-78.56932	2031.759	-71.7086	2031	-64.68592	2030.374	-58.4924	2030
-58.07792	2029.429	-57.7772	2029	-56.71452	2028.874	-54.9742	2028.684	-54.8182	2028.675
-53.22142	2028.646	-52.43732	2028.628	-44.19542	2028.716	-43.74682	2028.828	-42.8585	2029
-40.14672	2029.982	-40.1052	2030	-38.84772	2030.028	-2.832472	2030.836		2030.844
3.2390842	2030.853	3.2965732	2030.853	5.270041	2031	7.6132122	2031.592	8.698822	2032
15.160432	2032.502	21.74082	2033	28.439482	2033.362	32.425752	2033.562	33.989852	2033.619

```
 34.52842033.60134.670142033.49237.94581    203441.87897 2034.7743.09396    2035
47.622542035.89348.20878    203648.66305 2036.0855.50229    203756.474442037.235
56.969652037.40357.727332037.58957.741992037.611 57.8686 2037.64 58.00632037.649
58.168252037.65158.313882037.652

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.281    .035-142.281    .02558.31388    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.28158.31388               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2032.15  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.66  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 2031.49  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2031.49  * Flow Area (sq ft)    *          *  108.65  *          *
* E.G. Slope (ft/ft)     *0.008514  * Area (sq ft)         *          *  108.65  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   83.36  * Top Width (ft)       *          *   83.36  *          *
* Vel Total (ft/s)       *    6.50  * Avg. Vel. (ft/s)     *          *    6.50  *          *
* Max Chl Dpth (ft)      *    2.86  * Hydr. Depth (ft)     *          *    1.30  *          *
* Conv. Total (cfs)      *  7651.4  * Conv. (cfs)          *          *  7651.4  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   84.24  *          *
* Min Ch El (ft)         * 2028.63  * Shear (lb/sq ft)     *          *    0.69  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.45  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *          *    3.57  *    0.00  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    2.08  *    0.00  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1600

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
-142.2872040.847-141.4292040.755-141.2742040.721-140.8712040.678-140.6162040.639
-140.0662040.499-138.4492040.197-137.126    2040-132.9932039.419 -131.382039.207
-129.929    2039-122.9152038.058-122.7952038.043-122.513    2038-122.3352037.971
-116.308    2037-111.3942036.196-110.179    2036-106.7992035.447-104.027    2035
-101.5542034.612-97.6174    2034-93.49152033.349-91.0638    2033-88.83342032.639
-84.7211    2032-75.73352031.137-74.2416    2031-72.45752030.802-65.1648    2030
 -65.0822029.976-62.6426    2029-56.17652028.078-55.4664    2028-55.3938    2028
-51.00752028.686-49.9677 2028.86-49.2178    2029-47.42042029.873-47.0971    2030
-10.6174    2030-9.70563    2030-9.423312029.941-8.316742029.857-8.252752029.761
-8.174282029.742-7.864222029.741-7.42446 2029.75 -6.2231 2029.81-5.453862029.828
-3.193622029.851-2.076262029.867-1.166612029.893       02029.9471.155898    2030
 3.487622030.4994.7374452030.8175.216611    20316.1990522031.3168.104875    2032
17.835882032.37333.78006    203335.581152033.37238.76359    203442.66583 2034.74
43.94832    203547.25335 2035.6349.21566    203653.235232036.51956.64665    2037
56.947062037.07456.980072037.12457.26514 2037.1957.575192037.20957.939832037.215
58.267732037.216

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.287    .035-142.287    .02558.26773    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.28758.26773               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2031.85  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.92  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 2030.93  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2031.13  * Flow Area (sq ft)    *          *   91.86  *          *
* E.G. Slope (ft/ft)     *0.013786  * Area (sq ft)         *          *   91.86  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   78.67  * Top Width (ft)       *          *   78.67  *          *
* Vel Total (ft/s)       *    7.69  * Avg. Vel. (ft/s)     *          *    7.69  *          *
* Max Chl Dpth (ft)      *    2.93  * Hydr. Depth (ft)     *          *    1.17  *          *
* Conv. Total (cfs)      *  6012.9  * Conv. (cfs)          *          *  6012.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   79.47  *          *
* Min Ch El (ft)         * 2028.00  * Shear (lb/sq ft)     *          *    0.99  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    7.65  *          *
* Frctn Loss (ft)        *    0.27  * Cum Volume (acre-ft)  *          *    3.51  *    0.00  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    2.03  *    0.00  *
************************************************************************************************

CROSS SECTION
```

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1625

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.2942040.503	-139.4992040.202	-138.9942040.091	-138.137	2040	-134.8092039.464				
-131.888	2039	-128.2552038.431	-125.573	2038	-120.8742037.282	-119.033	2037		
-114.8482036.375	-112.312	2036	-109.862035.648	-105.484	2035	-104.1542034.791			
-98.9239	2034	-96.33542033.566	-92.8248	2033	-87.3252032.126	-86.5518	2032		
-85.11362031.794	-79.6584	2031	-76.24972030.465	-71.9631	2030	-69.92112029.263			
-69.2087	2029	-68.30752028.665	-66.5817	2028	-62.0481	2028	-59.4133	2028	
-56.2262 2028.75	-55.62062028.886	-55.1096	2029	-55.00192029.066	-54.83262029.091				
-54.75572029.112	-54.59512029.167	-51.6201	2030	-51.6061	2030	-51.2736	2030		
-24.4105	2030	-17.9357	2030	-17.111	2030	-15.419	2030	-9.725552029.301	
-9.406982029.269	-9.266782029.266	-7.900772029.251	-7.562029.152	-7.474572029.116					
-7.384372029.093	-7.35422029.075	-7.3294 2029.07	-7.24762029.063	-7.242872029.056					
-7.237072029.055	-7.214152029.055	-7.181642029.055	-7.09283 2029.06	-7.035972029.061					
-6.868882029.063	-6.786282029.064	-6.719042029.066	-6.466422029.078	-6.229422029.094					
-6.03248 2029.11	-5.032442029.212	-4.255162029.246	02029.6653.414118	2030					
3.7388662030.152	5.56635	20315.8844072031.0938.0012542031.53610.18128	2032						
15.392922032.21724.408252032.61830.458312032.88733.04204	203337.778942033.999								
37.78277	203437.823182034.009	42.04022034.88542.58107	203543.068632035.091						
47.79948	203648.57362 2036.085	0.798322036.267	54.2813 2036.515	4.839862036.556					
54.92939 2036.585	5.858832036.66957.426452036.68557.758582036.69258.109152036.696								
58.221372036.695									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.294	.035	-142.294	.02558.22137	.035	

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.29458.22137		25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2031.55	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.70	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2030.85	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2030.90	* Flow Area (sq ft)	*	* 105.24	* *
* E.G. Slope (ft/ft)	*0.009576	* Area (sq ft)	*	* 105.24	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 83.96	* Top Width (ft)	*	* 83.96	* *
* Vel Total (ft/s)	* 6.71	* Avg. Vel. (ft/s)	*	* 6.71	* *
* Max Chl Dpth (ft)	* 2.85	* Hydr. Depth (ft)	*	* 1.25	* *
* Conv. Total (cfs)	* 7214.8	* Conv. (cfs)	*	* 7214.8	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 84.95	* *
* Min Ch El (ft)	* 2028.00	* Shear (lb/sq ft)	*	* 0.74	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.97	* *
* Frctn Loss (ft)	* 0.27	* Cum Volume (acre-ft)	*	* 3.45	* 0.00 *
* C & E Loss (ft)	* 0.08	* Cum SA (acres)	*	* 1.98	* 0.00 *

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1650

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.32040.158	-140.828	2040	-134.062039.064	-133.669	2039	-129.288 2038.23			
-127.867	2038	-123.5582037.269	-121.857	2037	-119.7532036.698	-114.974	2036		
-112.5942035.663	-107.992	2035	-102.5792034.183	-101.357	2034	-100.0622033.794			
-95.2359	2033	-91.35782032.362	-89.1938	2032	-88.0532031.811	-82.9322	2031		
-80.45082030.337	-79.0147	2030	-77.6689 2029.08	-77.4936	2029	-77.34242028.938			
-75.631	2028	-74.34362027.831	-73.955 2027.69	-69.48322027.724	-69.33742027.732				
-68.95562027.742	-66.8884 2027.77	-66.33122027.781	-65.56772027.866	-63.4976	2028				
-63.31992028.133	-62.95042028.443	-62.57452028.854	-62.4065	2029	-62.27812029.093				
-60.6338	2030	-60.5023	2030	-56.3872	2030	-47.9807	2030	-26.3738	2030
-11.2919	2030	-9.2222029.178	-8.74169	2029	-4.942032028.451	-1.561242028.497			
-1.506142028.505	-.8811452028.546	02028.652	.0797832028.662	.9748772028.739					
2.0374132028.869	2.844485	20293.770298 2029.455.015427	20306.5814552030.773						
7.091821	20317.8248322031.19810.054682031.74111.11249	203222.745312032.517							
33.68086	203335.172262033.32838.29308	203441.15609 2034.6342.94591	2035						
47.106612035.52349.864112035.85950.98348	203651.130522036.01455.80463 2036.06								
56.794912036.08157.840182036.09258.174792036.091									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.3	.035	-142.3	.02558.17479	.035	

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -142.358.17479               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2031.34  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.53  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2030.81  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2030.70  * Flow Area (sq ft)     *          *  120.86  *          *
* E.G. Slope (ft/ft)     *0.006606  * Area (sq ft)          *          *  120.86  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   88.88  * Top Width (ft)        *          *   88.88  *          *
* Vel Total (ft/s)       *    5.84  * Avg. Vel. (ft/s)      *          *    5.84  *          *
* Max Chl Dpth (ft)      *    3.12  * Hydr. Depth (ft)      *          *    1.36  *          *
* Conv. Total (cfs)      *  8686.1  * Conv. (cfs)           *          *  8686.1  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   90.90  *          *
* Min Ch El (ft)         * 2027.69  * Shear (lb/sq ft)      *          *    0.55  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.20  *          *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)  *          *    3.39  *    0.00  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)        *          *    1.93  *    0.00  *
*********************************************************************************************

Note:    Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1675

INPUT
Description:
Station Elevation Data    num=     113
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.3072039.685-142.1872039.687-141.4042039.587-141.129 2039.52-140.0282039.362
-138.505 2039.23 -136.632039.016-136.463    2039-136.3422038.972-130.165    2038
-127.3522037.545-124.142    2037-118.4052036.115-117.627    2036-116.478 2035.83
-114.9632035.595-111.263    2035-109.2422034.661  -105.2    2034 -102.36 2033.53
-99.2018    2033-94.55712032.235-93.1535    2032-90.06372031.475-87.5251    2031
-86.73792030.597 -85.927    2030-85.20162029.056 -85.157    2029-85.10392028.909
-84.0617    2028-83.57372027.756-82.60352027.536 -82.4922027.499-81.66072027.391
-81.47822027.324-79.3779 2027.34-79.30942027.344-79.13012027.349-78.15922027.362
-77.89752027.367-77.53892027.407-76.45752027.477 -76.1532027.527-75.13582027.702
-72.3408    2028-72.06292028.147-70.3396    2029-69.91162029.172-69.70182029.225
-69.02152029.368-68.68152029.475-67.72722029.826-67.1791    2030-25.3307    2030
-16.2995    2030-13.5709    2030-13.52172029.975-11.6603    2029-9.972932028.252
-9.44346    2028-8.44358 2027.83-8.280162027.821-8.091852027.814  -5.7462027.467
 -5.23812027.407-4.72943 2027.36-4.045592027.315-3.701632027.286-3.458762027.276
 -3.11732027.272-2.740192027.272 -2.41682027.274-2.219462027.278-2.120362027.283
-2.002642027.295-1.307512027.336-.8785282027.366-.6634432027.397-.5613542027.443
       02027.556 .3592952027.6281.6583652027.9771.751907    20281.8227672028.037
3.843728    20295.549385 2029.825.871013    20307.9442522030.9548.033332    2031
8.3375322031.09111.15101    203226.130392032.63333.281412032.87436.71986    2033
38.257872033.17343.44971    203445.979362034.50648.34933    2035 49.88352035.116
49.924142035.11550.277842035.15852.34156 2035.3152.829862035.38553.387212035.423
55.369222035.51856.403882035.561 56.5038 2035.5756.53687 2035.6157.081842035.639
57.167352035.65357.318062035.666 58.22062035.706

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
-142.307    .035-142.307    .025 58.2206    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.307 58.2206               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2031.16  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.36  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2030.80  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  145.83  *          *
* E.G. Slope (ft/ft)     *0.003887  * Area (sq ft)          *          *  145.83  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   94.74  * Top Width (ft)        *          *   94.74  *          *
* Vel Total (ft/s)       *    4.84  * Avg. Vel. (ft/s)      *          *    4.84  *          *
* Max Chl Dpth (ft)      *    3.53  * Hydr. Depth (ft)      *          *    1.54  *          *
* Conv. Total (cfs)      * 11324.2  * Conv. (cfs)           *          * 11324.2  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   97.65  *          *
* Min Ch El (ft)         * 2027.27  * Shear (lb/sq ft)      *          *    0.36  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.75  *          *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)  *          *    3.31  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *          *    1.88  *    0.00  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1700

INPUT
Description:
Station Elevation Data    num=      94
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.3142039.103 -141.972039.107-141.127    2039-136.8252038.282-135.103    2038
-129.191 2037.19-127.847    2037-126.7922036.845-120.8582036.021 -120.71    2036
-119.9412035.885-114.015    2035-108.9852034.219-107.653    2034-107.0192033.895
 -101.61    2033-98.0814 2032.41-95.4715    2032-93.29772031.624-90.0633    2031
-89.78532030.055-89.6582    2030-89.46582029.452-89.2922    2029-89.17652028.545
-88.99282028.108-88.9149    2028-88.86212027.931-88.5596    2027-88.4673    2027
-88.4334    2027-87.6331    2027-79.15642027.711  -77.942027.808-77.72272027.822
-77.61172027.833-76.3519    2028-76.22062028.092-74.8813    2029-73.30012029.617
-72.0409    2030-71.6108    2030-30.0953    2030-25.8896    2030-17.4105    2030
-16.88152029.762 -14.846    2029-14.06432028.635-12.3696    2028-10.1253 2027.09
-9.91048    2027-9.844242026.988-7.773712026.795-7.382982026.775-3.578612026.687
 -3.12292026.681-2.569262026.678-2.021252026.678-1.559592026.682-1.19764 2026.69
-.7809782026.707-.1696822026.797       02026.829 .900079    20271.3211362027.303
2.258151    2028 3.111332028.6293.589581    20295.0851782029.9895.106314    2030
8.558848  2030.98.929314    203111.92212 2031.3512.760732031.45914.087942031.612
17.13408    203220.259472032.13921.774942032.20231.054232032.40332.041172032.466
36.210852032.77238.86683    203345.103492033.88645.90857    203446.52653  2034.1
48.835272034.45853.25048    203554.316372035.04454.533842035.06554.60581 2035.15
 55.79192035.214  55.9782035.24456.306012035.27358.270322035.359

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.314    .035-142.314    .02558.27032    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.31458.27032               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************************
* E.G. Elev (ft)         * 2031.06  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.29  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2030.77  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          *  162.55  *          *
* E.G. Slope (ft/ft)     *0.002902  * Area (sq ft)           *          *  162.55  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   98.03  * Top Width (ft)         *          *   98.03  *          *
* Vel Total (ft/s)       *    4.34  * Avg. Vel. (ft/s)       *          *    4.34  *          *
* Max Chl Dpth (ft)      *    4.09  * Hydr. Depth (ft)       *          *    1.66  *          *
* Conv. Total (cfs)      * 13105.4  * Conv. (cfs)            *          * 13105.4  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *  102.89  *          *
* Min Ch El (ft)         * 2026.68  * Shear (lb/sq ft)       *          *    0.29  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.24  *          *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)   *          *    3.22  *    0.00  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *          *    1.82  *    0.00  *
*********************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1725

INPUT
Description:
Station Elevation Data    num=     105
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 -142.322038.626-141.9832038.629-141.3662038.531-137.392    2038-136.7752037.925
-133.4972037.467-132.0982037.284-130.7152037.082-130.173    2037-125.469 2036.29
-123.527    2036-121.1942035.656  -116.9    2035-112.5332034.301-110.575    2034
-109.1282033.759  -104.3    2033-99.38882032.133-98.6419    2032-96.89882031.696
-94.92852031.301-93.5322    2031-92.74952030.798-90.5347 2030.04-90.43892030.008
-90.42882030.004-90.4224    2030  -90.422029.997 -90.3542029.907-89.78442029.092
-89.6869    2029-89.6462 2028.94-88.9794    2028-88.6824 2027.61-88.2658    2027
-85.5615    2027-84.4889    2027-81.53412027.525-80.1889 2027.75-79.60952027.843
-78.6022    2028-78.02432028.547-77.25972028.969-77.2272 2028.99-77.1907    2029
-71.40562029.889 -70.842    2030 -70.137    2030-69.3802    2030-68.1738    2030
 -60.094    2030-59.0208    2030-29.6544    2030-28.9787    2030-28.0199    2030
-18.1637    2030-15.2908    2030-13.8714    2030-13.22422029.889-10.7884    2029
-9.623442028.512-8.52232    2028-7.166632027.413-6.28148    2027-6.115982026.659
-5.73493 2026.51-4.924222026.362-4.165282026.292-4.022062026.284 -2.62762026.252
-2.46056 2026.25-2.257632026.249-2.056762026.249-1.88754 2026.25-1.754882026.253
-1.602152026.259-1.378082026.292-.9041272026.382       0 2026.53 .1334272026.551
2.774007    20273.2357722027.3674.157831    20284.7877232028.4885.528466    2029
6.5579472029.6167.283088    20307.399833 2030.0313.81127    203119.783182031.291
21.289252031.36422.655312031.423 27.00572031.62727.81368 2031.6629.987292031.723
31.674472031.78634.029242031.88536.51522    203238.760272032.25444.01895    2033
46.191392033.41650.28986    203450.783632034.06358.01715    203558.320042035.013

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -142.32    .035 -142.32    .02558.32004    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.3258.32004               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************************
```

* E.G. Elev (ft)	* 2030.91	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.59	* Wt. n-Val.	*	* 0.025	*	*
* W.S. Elev (ft)	* 2030.32	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00	*
* Crit W.S. (ft)	* 2030.32	* Flow Area (sq ft)	*	* 114.18	*	*
* E.G. Slope (ft/ft)	*0.009626	* Area (sq ft)	*	* 114.18	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*	*
* Top Width (ft)	* 100.62	* Top Width (ft)	*	* 100.62	*	*
* Vel Total (ft/s)	* 6.18	* Avg. Vel. (ft/s)	*	* 6.18	*	*
* Max Chl Dpth (ft)	* 4.07	* Hydr. Depth (ft)	*	* 1.13	*	*
* Conv. Total (cfs)	* 7196.0	* Conv. (cfs)	*	* 7196.0	*	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 104.57	*	*
* Min Ch El (ft)	* 2026.25	* Shear (lb/sq ft)	*	* 0.66	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.06	*	*
* Frctn Loss (ft)	* 0.22	* Cum Volume (acre-ft)	*	* 3.14	* 0.00	*
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	*	* 1.77	* 0.00	*

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1750

INPUT
Description:
Station Elevation Data num= 117

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3272037.701	-142.3142037.701	-140.0482037.593	-139.6612037.568	-138.3632037.439					
-138.0162037.448	-136.1362037.273	-134.055	2037	-128.5812036.133	-127.703	2036			
-125.8852035.706	-121.383	2035	-119.2732034.667	-114.92	2034	-109.7382033.207			
-108.411	2033	-107.4872032.816	-102.657	2032	-101.7192031.811	-98.7723	2031.24		
-98.2408	2031.14	-97.4461	2031	-96.63922030.854	-91.8549	2030	-90.35412029.271		
-89.6299	2029	-89.41622028.882	-87.953	2028	-87.51582027.774	-86.2499	2027		
-85.77252026.806	-85.3889	2026.69	-81.20192026.624	-81.11682026.647	-79.88632026.707				
-79.49942026.737	-78.71032026.924	-78.2728	2027	-77.7804	2027.53	-77.43292027.831			
-77.2571	2028	-76.27722028.934	-76.2047	2029	-76.02652029.015	-75.77292029.035			
-62.9567	2030	-58.5598	2030	-57.6281	2030	-56.50732029.968	-54.54332029.917		
-53.67452029.908	-50.70062029.895	-45.31742029.886	-45.01372029.886	-38.89552029.786					
-37.98042029.842	-36.2092029.914	-34.17612029.976	-33.4802	2030	-25.5194	2030			
-21.2295	2030	-19.7537	2030	-18.3725	2030	-17.6728	2030	-16.9724	2030
-16.37422029.939	-14.9473	2029.69	-11.7631	2029	-10.46662028.731	-7.31478	2028		
-6.911142027.896	-4.89974	2027	-3.234592026.343	-2.46001	2026	-.805962025.672			
-.6378582025.683	02025.7581.3439192025.9172.311248	20264.2272852026.358							
8.916181	20279.4188112027.5079.841789	202810.430252028.59510.72442	2029						
10.870472029.198	11.671	203017.598692030.514	18.06482030.54618.391482030.557						
19.231852030.564	19.649252030.573	22.641052030.612	23.806762030.634	24.682242030.661					
25.297912030.687	26.552672030.769	28.750322030.891	31.06146	203131.67757	2031.04				
34.64642031.177	34.796782031.185	35.53165	2031.2340.631012031.458	47.15505	2032				
47.907632032.086	48.12263	2032.1148.434822032.138	50.295022032.319	51.611682032.437					
52.349922032.473	53.60052032.632	54.316352032.694	54.710012032.714	54.98382032.699					
56.547682032.558	58.223122032.546								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.327	.035	-142.327	.02	558.22312	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-142.32 758.22312 25 25 25 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2030.56	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 1.42	* Wt. n-Val.	*	* 0.025	*	*
* W.S. Elev (ft)	* 2029.14	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00	*
* Crit W.S. (ft)	* 2029.50	* Flow Area (sq ft)	*	* 73.92	*	*
* E.G. Slope (ft/ft)	*0.012147	* Area (sq ft)	*	* 73.92	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*	*
* Top Width (ft)	* 38.89	* Top Width (ft)	*	* 38.89	*	*
* Vel Total (ft/s)	* 9.55	* Avg. Vel. (ft/s)	*	* 9.55	*	*
* Max Chl Dpth (ft)	* 3.47	* Hydr. Depth (ft)	*	* 1.90	*	*
* Conv. Total (cfs)	* 6405.7	* Conv. (cfs)	*	* 6405.7	*	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 41.99	*	*
* Min Ch El (ft)	* 2025.67	* Shear (lb/sq ft)	*	* 1.34	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 12.75	*	*
* Frctn Loss (ft)	* 0.27	* Cum Volume (acre-ft)	*	* 3.09	* 0.00	*
* C & E Loss (ft)	* 0.08	* Cum SA (acres)	*	* 1.73	* 0.00	*

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1775

INPUT
Description:
Station Elevation Data num= 137

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.333	2037	-142.294	2037	-141.6242	2036.858	-140.8132	2036.814	-140.0092	2036.781
-139.7322	2036.767	-139.482	2036.751	-138.954	2036.71	-137.6292	2036.621	-134.2232	2036.369
-129.034	2036	-125.643	2035.56	-121.334	2035	-114.5542	2034.101	-113.789	2034
-112.6362	2033.848	-106.792	2033	-105.1852	2032.736	-100.836	2032	-98.34512	2031.553
-95.3548	2031	-90.68632	2030.135	-89.9611	2030	-86.26972	2029.128	-85.7658	2029
-83.76742	2028.019	-83.73	2028	-83.65782	2027.961	-81.7801	2027	-80.512	2026.421
-79.6355	2026	-79.3976	2026	-78.8659	2026	-77.13112	2026.273	-72.8035	2027
-72.38292	2027.781	-72.1716	2028	-71.8752	2028.269	-71.63452	2028.332	-70.6494	2029
-70.03032	2029.053	-68.2152	2029.126	-66.31342	2029.188	-64.4186	2029.22	-63.732	2029.245
-63.00332	2029.288	-62.63852	2029.293	-62.11382	2029.288	-61.43922	2029.275	-57.96842	2029.193
-55.32	2029.147	-52.8312	2029.082	-52.7555	2029.08	-51.12882	2029.048	-48.95062	2029.027
-48.73592	2029.021	-48.6939	2029.02	-48.67542	2029.019	-48.61182	2029.019	-48.49682	2029.019
-45.8788	2029.02	-45.74192	2029.018	-45.72142	2029.019	-45.68182	2029.021	-45.63632	2029.022
-45.5952	2029.023	-45.47562	2029.028	-45.4149	2029.03	-36.70352	2029.094	-36.57182	2029.099
-36.45452	2029.099	-26.47952	2029.279	-24.42742	2029.307	-23.6809	2029.3	-23.16472	2029.284
-19.95072	2029.078	-18.0227	2029	-17.14882	2028.865	-16.50372	2028.731	-12.90732	2028.083
-12.52962	2028.014	-12.4636	2028	-9.927052	2027.434	-8.51522	2027	-7.745892	2026.737
-5.94914	2026	-3.378222	2025.158	-2.98361	2025	-2.03967	2025	-.539061	2025
-.5299352	2025.001	0	2025.046	2.523563	2025.262	7.412665	2026	8.858536	2026.56
9.451361	2027	10.31532	2027.547	11.02176	2028	11.74986	2028.487	12.25005	2028.678
13.31825	2029	15.56553	2029.157	18.13941	2029.264	22.69285	2029.537	24.30836	2029.598
28.12594	2029.781	29.53857	2029.853	29.85524	2029.869	30.47367	2029.908	30.60123	2029.915
30.67194	2029.917	30.7662	2029.918	30.93588	2029.919	31.21118	2029.917	31.50187	2029.915
31.62962	2029.912	31.64713	2029.913	31.66038	2029.894	31.69504	2029.884	32.45699	2029.952
32.47524	2029.951	33.39433	2030	34.24611	2030.321	45.89522	2030.645	46.79742	2030.699
47.75934	2030.761	50.72546	2031	51.50781	2031.095	53.05077	2031.226	53.54052	2031.237
54.16828	2031.204	56.21357	2031.004	56.21772	2031.004	56.23054	2031.003	56.89038	2031.039
57.29021	2031.377	58.25082	2031.697						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.333	.035	-142.333	.025	58.25082	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-142.33358.25082 25 25 25 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2030.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.07	Wt. n-Val.		0.025	
W.S. Elev (ft)	2028.04	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2028.69	Flow Area (sq ft)		61.15	
E.G. Slope (ft/ft)	0.019757	Area (sq ft)		61.15	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	35.41	Top Width (ft)		35.41	
Vel Total (ft/s)	11.55	Avg. Vel. (ft/s)		11.55	
Max Chl Dpth (ft)	3.04	Hydr. Depth (ft)		1.73	
Conv. Total (cfs)	5022.7	Conv. (cfs)		5022.7	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		37.64	
Min Ch El (ft)	2025.00	Shear (lb/sq ft)		2.00	
Alpha	1.00	Stream Power (lb/ft s)		23.13	
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)		3.05	0.00
C & E Loss (ft)	0.07	Cum SA (acres)		1.71	0.00

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1800

INPUT
Description:
Station Elevation Data num= 134

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.34	2037	-142.319	2037	-139.1162	2036.324	-135.2462	2036.112	-132.512	2036
-131.6032	2035.863	-125.808	2035	-123.0652	2034.614	-118.762	2034	-111.8332	2033.021
-111.69	2033	-111.6632	2032.996	-110.8192	2032.877	-105.5272	2032.121	-104.702	2032
-104.4152	2031.947	-98.7739	2031	-96.40342	2030.607	-92.6831	2030	-89.93962	2029.358
-88.8683	2029.1	-88.0569	2029	-87.78182	2028.838	-86.5772	2028	-81.67312	2027.391
-81.39212	2027.382	-80.87962	2027.451	-80.72982	2027.445	-79.1793	2027	-76.77622	2026.414
-74.63882	2026.339	-74.0383	2026.35	-73.76852	2026.303	-73.68662	2026.278	-73.65942	2026.252
-73.42492	2026.143	-72.00612	2026.145	-70.26632	2026.313	-68.63612	2026.452	-67.33522	2026.574
-66.6012	2026.683	-65.4972	2026.824	-64.5289	2026.89	-64.4612	2026.891	-64.45012	2026.888
-63.8492	2027	-62.74012	2027.286	-59.83	2028	-59.70792	2028.022	-59.56542	2028.016
-59.2994	2028	-58.44422	2027.907	-56.4192	2027.814	-51.51722	2027.713	-47.59542	2027.652
-46.08542	2027.597	-41.21232	2027.355	-36.06262	2027.357	-35.74872	2027.353	-35.1945	2027.36
-33.58572	2027.368	-30.09672	2027.329	-28.99082	2027.325	-26.93482	2027.285	-25.9977	2027.27
-23.79222	2027.265	-22.6501	2027.22	-21.11692	2027.102	-20.0845	2027	-18.4925	2026.81
-16.75132	2026.585	-13.2843	2026	-11.08442	2025.144	-10.6582	2025	-5.71782	2024.324
-5.523922	2024.308	-4.283342	2024.257	-4.116682	2024.245	-4.082242	2024.234	-3.557772	2024.217

-3.428862024.222-3.261832024.231 -3.14562024.248-3.001822024.258-2.384012024.281
-2.036512024.297-1.753282024.318-1.207182024.385   02024.5241.6326162024.713
 3.77333   20255.718366 2025.666.619939   20269.2253082026.9289.399814   2027
9.4512432027.0259.5036982027.03910.984852027.68713.79264   202815.088152028.073
15.164162028.07615.322192028.07716.785432028.22517.524522028.21920.89036 2028.5
21.607492028.53722.372092028.56122.763672028.56623.719372028.56725.026952028.561
25.689942028.54826.303632028.52426.870112028.48927.366642028.45128.381282028.358
29.244292028.31530.454872028.30130.847432028.29331.35463 2028.28 31.44642028.272
31.670022028.231 31.80662028.21431.898082028.21232.051562028.21632.864852028.262
35.746512028.44836.081462028.45636.459652028.47640.10226   202946.295042029.959
46.58597   203046.712042030.01557.28383   203158.278512031.331

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
 -142.34   .035 -142.34   .02558.27851   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -142.3458.27851   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2029.44 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   2.43 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2027.01 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2027.85 * Flow Area (sq ft)   *   *   56.45 *   *
* E.G. Slope (ft/ft)   *0.033589 * Area (sq ft)   *   *   56.45 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   45.02 * Top Width (ft)   *   *   45.02 *   *
* Vel Total (ft/s)   *   12.51 * Avg. Vel. (ft/s)   *   *   12.51 *   *
* Max Chl Dpth (ft)   *   2.79 * Hydr. Depth (ft)   *   *   1.25 *   *
* Conv. Total (cfs)   * 3852.2 * Conv. (cfs)   *   * 3852.2 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   45.89 *   *
* Min Ch El (ft)   * 2024.22 * Shear (lb/sq ft)   *   *   2.58 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   32.26 *   *
* Frctn Loss (ft)   *   0.63 * Cum Volume (acre-ft) *   *   3.02 *   0.00 *
* C & E Loss (ft)   *   0.04 * Cum SA (acres)   *   *   1.68 *   0.00 *
****

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -1825

INPUT
Description:
Station Elevation Data   num=   154
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.346   2037-142.343   2037-140.8612036.687-138.736   2036-136.7172035.617
 -134.752035.282-134.215 2035.14-133.987   2035-130.5522034.434-127.978   2034
-123.8892033.319 -122.12   2033-121.6532032.914-116.571   2032-113.2842031.401
-110.912   2031-107.8942030.436-105.458   2030-102.9962029.508-100.249   2029
-97.87232028.501-95.0661   2028-91.43572027.342-89.2095   2027-88.40532026.899
-87.44142026.824 -86.7312026.806-86.2092 2026.83-85.27472026.954-84.8156   2027
-84.15172027.059-83.10792027.085-82.6917 2027.07-82.37862027.038-82.2057   2027
-81.10262026.396-80.3731   2026-79.15932025.308-78.5805   2025-77.13282024.154
-76.8628   2024-76.61772023.861-74.7197   2023-69.80062022.493-68.84162022.479
 -66.773 2022.47-65.86032022.395-65.39522022.363 -64.932022.343-64.21952022.324
 -63.122 2022.3-62.68362022.295-62.36882022.294-60.45142022.312 -59.5512022.328
-58.95832022.344 -57.7652022.385-57.18912022.409 -55.9352022.511-54.41712022.645
-53.08232022.848-52.3633 2022.93-52.23022022.935-52.06022022.944-51.3094   2023
-48.96742023.123-47.61552023.219-46.69492023.251-45.0553   2023 -43.272022.814
-43.16452022.786-42.59192022.745-41.80522022.807-40.9222   2023-36.90882023.286
-34.79362023.281-33.90112023.293-32.46462023.335-31.50962023.339-27.35042023.317
-26.2182 2023.32-25.54522023.103-25.31912023.078-24.7231 2023.05-24.64732023.049
 -24.5522023.047-24.43622023.051-23.21362023.007-22.9393   2023-22.05452022.991
-16.71352022.908-15.50942022.897-14.23672022.896-12.96622022.905-11.78432022.929
 -10.7532022.971-10.2854   2023-8.77567 2023.13-8.622672023.138-4.752882023.473
 -3.4325 2023.52-2.737162023.555-1.897852023.572   02023.659 .2134752023.669
1.9103522023.7293.6235672023.8156.774657   20246.8820862024.0319.499689   2025
10.93743 2025.611.778372025.82412.27904   202613.047092026.26214.299132026.718
15.01026   202716.104642027.15816.662172027.21817.619642027.28117.929332027.311
18.094092027.352 20.76412027.32220.777582027.27120.896662027.22321.540692027.219
 21.80062027.21321.945962027.20321.998172027.19222.655742027.18324.845032027.301
29.943272027.56531.23188 2027.6232.200422027.65633.128332027.67937.86465   2028
38.620252028.12143.56652   202945.086462029.28449.03102   203056.318642030.793
56.724492030.82857.091582030.85557.228582030.86857.417892030.89157.637362030.911
57.744162030.92357.754042030.92857.77359 2030.9357.847432030.93458.062812030.944
58.101352030.94558.138712030.94758.170432030.94758.304112030.956

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.346   .035-142.346   .02558.30411   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.34658.30411   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2027.70 * Element   * Left OB * Channel * Right OB *

* Vel Head (ft)	* 4.18	* Wt. n-Val.	*	* 0.025	*	*
* W.S. Elev (ft)	* 2023.52	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00	*
* Crit W.S. (ft)	* 2024.33	* Flow Area (sq ft)	*	* 43.03	*	*
* E.G. Slope (ft/ft)	*0.153668	* Area (sq ft)	*	* 43.03	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*	*
* Top Width (ft)	* 72.52	* Top Width (ft)	*	* 72.52	*	*
* Vel Total (ft/s)	* 16.41	* Avg. Vel. (ft/s)	*	* 16.41	*	*
* Max Chl Dpth (ft)	* 1.23	* Hydr. Depth (ft)	*	* 0.59	*	*
* Conv. Total (cfs)	* 1801.0	* Conv. (cfs)	*	* 1801.0	*	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 72.84	*	*
* Min Ch El (ft)	* 2022.29	* Shear (lb/sq ft)	*	* 5.67	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 92.99	*	*
* Frctn Loss (ft)	* 1.56	* Cum Volume (acre-ft)	*	* 2.99	* 0.00	*
* C & E Loss (ft)	* 0.18	* Cum SA (acres)	*	* 1.65	* 0.00	*

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1850

INPUT
Description:
Station Elevation Data num= 138

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.353	2036.23	-142.329	2036.23	-141.618	2036	-139.4992	2035.598	-138.242	2035.433
-135.498	2035	-132.142	2034.248	-130.892	2034	-130.3962	2033.909	-125.169	2033
-119.4822	2032.012	-119.415	2032	-119.3182	2031.982	-113.45	2031	-110.9612	2030.544
-107.825	2030	-104.792	2029.371	-103.02	2029	-100.9042	2028.559	-98.0777	2028
-93.69822	2027.129	-93.0442	2027	-92.32362	2026.869	-91.42162	2026.683	-88.4293	2026
-85.60632	2025.258	-84.7138	2025	-83.08042	2024.529	-81.0774	2024	-78.90692	2023.003
-78.8985	2023	-77.71462	2022.034	-77.6412	2022	-76.63872	2021.665	-76.30762	2021.547
-75.70282	2021.307	-75.046	2021	-73.1633	2020.36	-72.0755	2020	-71.91592	2019.975
-70.70122	2019.824	-70.23812	2019.821	-54.8486	2019.79	-53.30952	2019.927	-52.4172	2020
-49.9952	2020.367	-47.9942	2020.661	-47.6592	2020.697	-47.25682	2020.721	-46.97932	2020.751
-45.799	2021	-43.3824	2021.43	-40.0842	2021.913	-39.75722	2021.964	-39.62172	2021.984
-39.4608	2022	-36.9147	2022	-32.93262	2022.319	-32.4242	2022.332	-31.12672	2022.387
-30.62882	2022.402	-29.99172	2022.407	-29.15572	2022.401	-28.19922	2022.385	-26.50482	2022.341
-25.21242	2022.289	-25.0306	2022.29	-24.83182	2022.243	-24.5555	2022.24	-23.2633	2022.22
-22.9722	2022.217	-22.66412	2022.217	-22.35672	2022.219	-22.07082	2022.225	-21.82132	2022.235
-21.60712	2022.248	-21.1552	2022.281	-20.55192	2022.291	-20.1769	2022.3	-19.87262	2022.315
-19.74542	2022.338	-14.82942	2022.499	-14.51512	2022.512	-11.86132	2022.647	-11.1182	2022.679
-10.58152	2022.699	-10.32372	2022.721	-10.25492	2022.738	-10.03932	2022.752	-9.433292	2022.773
-7.254052	2022.755	-7.17332	2022.742	-6.74366	2022.7	-6.663042	2022.689	-6.457632	2022.678
-5.178962	2022.588	-4.442942	2022.551	-4.148792	2022.546	-3.89132	2022.547	-3.66582	2022.551
-3.253332	2022.567	-2.230012	2022.625		02022.706	.0867692	2022.7091	.608527	2022.77
3.216741	2022.854	5.779499	20236.96	24712	2023.441	8.0614	20248.81	75962	2024.448
9.6935	2025	12.5451	2025.981	2.60327	202612.7	24632	2026.005	15.11486	2026.102
17.58772	2026.192	2.083852	2026.325	25.814062	2026.418	27.86436	2026.523	2.797472	2026.784
34.83439	2026.905	36.32972	202736.9	57042	2027.118	41.87353	2028	43.04582	2028.225
43.92643	2028.399	46.59165	202949.5	04912	2029.698	50.84414	2030	51.84092	2030.115
51.95496	2030.166	52.18084	2030.191	53.03388	2030.238	55.52211	2030.354	55.96735	2030.367
56.39893	2030.385	56.76543	2030.391	58.30976	2030.488				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.353	.035	-142.353	.025	58.30976	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-142.35	358.30976	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2025.58	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 4.08	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2021.50	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2022.79	* Flow Area (sq ft)	*	* 43.55	* *
* E.G. Slope (ft/ft)	*0.052820	* Area (sq ft)	*	* 43.55	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 33.27	* Top Width (ft)	*	* 33.27	* *
* Vel Total (ft/s)	* 16.21	* Avg. Vel. (ft/s)	*	* 16.21	* *
* Max Chl Dpth (ft)	* 1.71	* Hydr. Depth (ft)	*	* 1.31	* *
* Conv. Total (cfs)	* 3071.9	* Conv. (cfs)	*	* 3071.9	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 33.68	* *
* Min Ch El (ft)	* 2019.79	* Shear (lb/sq ft)	*	* 4.26	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 69.12	* *
* Frctn Loss (ft)	* 2.10	* Cum Volume (acre-ft)	*	* 2.96	* 0.00 *
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	*	* 1.62	* 0.00 *

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1875

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3542	035.522	-142.3232	035.523	-142.2962	035.523	-139.795	2035.18	-139.4962	035.166
-138.9172	035.158	-138.6042	035.143	-138.021	2035	-135.0212	034.456	-132.664	2034
-130.9022	033.684	-126.851	2033	-123.9742	032.483	-121.275	2032	-119.2220	31.632
-115.584	2031	-112.9432	030.533	-109.967	2030	-106.5862	029.306	-105.082	2029
-100.4482	028.049	-100.207	2028	-99.89342	027.932	-94.8277	2027	-90.66042	026.298
-89.2088	2026	-88.52682	025.788	-85.7555	2025	-82.42932	024.057	-82.2489	2024
-81.78692	023.866	-78.6457	2023	-78.25342	022.899	-76.4992	2022	-76.05862	021.353
-75.4138	2021.02	-75.3897	2021	-75.347	2020.97	-74.2907	2020	-70.85132	019.736
-61.1132	2019	-58.5599	2019	-58.3408	2019	-57.77	2019	106	-53.1368	2020
-48.71212	020.935	-48.4145	2021	-47.85792	021.041	-47.2042	021.078	-44.62682	021.146
-41.65372	021.257	-38.3736	2021	-29.82322	021.866	-28.84452	021.913	-27.5114	2022
-25.59682	022.065	-17.5731	2022	-16.5938	2022	-16.37432	021.964	-14.77972	021.772
-14.58762	021.773	-11.91942	021.517	-11.61242	021.483	-11.17472	021.453	-11.10712	021.469
-11.08252	021.496	-10.75132	021.525	-6.91009	2021.69	-6.39531	2021.71	-4.501992	021.811
-1.64792	2022	-1.578822	022.008	02	022.211	.3577282	022.257	4.752805	2023
6.629512	023.764	6.949746	2023.802	7.629095	20	248.2725932	024.226	9.789388	2024.836
10.07982	2024.95	910.17996	2025	22.82758	2025.73	227.45249	2026	27.98371	2026.049
30.43982	026.247	33.62123	2026.493	35.79644	2026.676	38.3512	2027	39.83824	2027.216
45.26952	2028	48.07778	2028.419	51.9215	2029	56.69168	2029.75	257.98821	2030
58.31541	2030.021								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.354	.035	-142.354	.025	58.31541	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-142.35 458.31541 25 25 25 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2024.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.55	Wt. n-Val.		0.025	
W.S. Elev (ft)	2021.51	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2022.33	Flow Area (sq ft)		55.06	
E.G. Slope (ft/ft)	0.035112	Area (sq ft)		55.06	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	43.72	Top Width (ft)		43.72	
Vel Total (ft/s)	12.82	Avg. Vel. (ft/s)		12.82	
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)		1.26	
Conv. Total (cfs)	3767.7	Conv. (cfs)		3767.7	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		44.58	
Min Ch El (ft)	2019.00	Shear (lb/sq ft)		2.71	
Alpha	1.00	Stream Power (lb/ft s)		34.72	
Frctn Loss (ft)	1.07	Cum Volume (acre-ft)		2.93	0.00
C & E Loss (ft)	0.46	Cum SA (acres)		1.60	0.00

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1900

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3422	035.016	-141.6532	035.002	-141.575	2035	-139.789	2034.64	-138.9912	034.548
-134.811	2034	-130.7172	033.197	-129.047	2033	-125.1722	032.169	-124.255	2032
-123.8692	031.933	-118.305	2031	-112.722	2030.05	-112.5642	030.024	-112.429	2030
-112.2952	029.975	-106.919	2029	-103.2072	028.313	-101.597	2028	-98.97282	027.492
-96.4613	2027	-94.19272	026.599	-91.1489	2026	-88.78442	025.543	-85.9297	2025
-81.15072	024.087	-80.7489	2024	-80.31782	023.894	-77.40512	023.286	-76.0648	2023
-75.8261	2022.14	-75.7991	2022	-75.52272	021.027	-75.5183	2021	-75.50082	020.969
-75.0784	2020	-72.77272	019.764	-72.43242	019.739	-71.8528	2019.71	-71.34612	019.692
-63.0884	2019	-54.37982	019.951	-54.33932	019.953	-53.8642	2020	-47.08932	020.435
-45.30182	020.562	-39.87852	020.423	-38.49312	020.427	-38.10332	020.426	-38.06182	020.419
-37.03142	020.408	-34.07692	020.503	-33.3242	020.536	-32.94442	020.557	-32.92342	020.572
-18.2448	2021	-16.79242	021.159	-16.24952	021.144	-15.5832	021.194	-14.07092	021.269
-13.2103	2021.32	-12.86712	021.348	-6.42397	2022	-6.028472	022.129	-3.79311	2023
-3.682962	023.158	-3.314422	023.222	-1.34252	023.324	02	023.374	.5750132	023.396
1.2301692	023.4041	5.044622	023.3842	8.608612	023.2013	8.8337742	023.1054	3.9287222	023.269
5.2782322	023.1275	4.0191722	023.1726	1.1490822	023.2276	7.7896822	023.4817	2.7832822	023.677
7.921235	2024	8.338142	024.06412	70669	2025	14.63522	025.08316	.387432	025.165
22.27005	2025.43534	.58223	202639.04073	2026.47943	.33145	202747.7226	92027.804		
48.24539	2027.90748	.74528	202852.87693	2028.7953	.99361	202954.3748	12029.072		

55.0222029.25855.813222029.426 56.16362029.46557.06989 2029.51 58.23942029.582

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
-142.342 .035-142.342 .025 58.2394 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-142.342 58.2394 25 25 25 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2023.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.68	Wt. n-Val.		0.025	
W.S. Elev (ft)	2021.33	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2021.85	Flow Area (sq ft)		67.81	
E.G. Slope (ft/ft)	*0.028179	Area (sq ft)		67.81	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	62.56	Top Width (ft)		62.56	
Vel Total (ft/s)	10.41	Avg. Vel. (ft/s)		10.41	
Max Chl Dpth (ft)	2.33	Hydr. Depth (ft)		1.08	
Conv. Total (cfs)	4205.7	Conv. (cfs)		4205.7	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		63.61	
Min Ch El (ft)	2019.00	Shear (lb/sq ft)		1.88	
Alpha	1.00	Stream Power (lb/ft s)		19.53	
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)		2.90	0.00
C & E Loss (ft)	0.26	Cum SA (acres)		1.57	0.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1925

INPUT
Description:
Station Elevation Data num= 89
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
-142.332035.054 -140.12035.016 -139.13 2035-138.0062034.645-135.993 2034
-131.6972033.214-130.545 2033-126.1742032.189 -125.18 2032-120.2112031.075
-119.818 2031-119.6892030.976-114.526 2030-111.6682029.462-109.8672029.113
-109.233 2029-107.9422028.744 -104.04 2028-102.2552027.653-98.8772 2027
-95.7152026.367-93.7497 2026-90.75212025.396 -88.722 2025-86.4608 2024.56
-83.3346 2024-79.68942023.357-77.3052 2023-77.02412022.541-76.8767 2022
-76.58522021.391-76.4292 2021-76.08122020.137-75.9894 2020 -75.452019.859
-75.2742019.793-75.23732019.767-74.59322019.556-72.7621 2019-72.57262018.981
-71.1134 2019-62.8437 2019-52.66572019.759-49.5726 2020-47.82672020.046
-43.19372020.159-36.4566 2020.34-33.40842020.416 -22.4732020.469-22.4441 2020.42
-21.95182020.401-17.91842020.315-17.4891 2020.27-15.7669 2020-9.23745 2020
-7.8374 2020-7.55332 2020-7.34061 2020-6.02456 2020-5.78771 2020
-5.493192020.027-5.335542020.056-2.56035 2020.51-.6060432020.879-.127735 2021
02021.0154.4880762021.5587.902814 2021.91 7.932062021.8967.9922842021.895
8.0471252021.9098.157803 20228.2336852022.0739.253572 20239.7799132023.462
10.24712 202415.359692024.54816.008542024.60921.45665 2025 23.56062025.092
36.79843 202639.001882026.32743.34631 202745.61799 2027.3549.84865 2028
52.161982028.45655.599492028.96855.80632 202958.159642029.146

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
-142.33 .035 -142.33 .02558.15964 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-142.3358.15964 25 25 25 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2022.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.025	
W.S. Elev (ft)	2021.90	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2021.31	Flow Area (sq ft)		153.34	
E.G. Slope (ft/ft)	*0.002784	Area (sq ft)		153.34	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	84.58	Top Width (ft)		84.58	
Vel Total (ft/s)	4.60	Avg. Vel. (ft/s)		4.60	
Max Chl Dpth (ft)	2.91	Hydr. Depth (ft)		1.81	
Conv. Total (cfs)	13380.3	Conv. (cfs)		13380.3	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		86.21	
Min Ch El (ft)	2018.98	Shear (lb/sq ft)		0.31	
Alpha	1.00	Stream Power (lb/ft s)		1.42	
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)		2.83	0.00
C & E Loss (ft)	0.02	Cum SA (acres)		1.52	0.00

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1950

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.319	2034.716	-142.278	2034.718	-142.247	2034.717	-140.382	2034	-135.212	2033.2
-134.006	2033	-129.853	2032.285	-128.781	2032.118	-128.144	2032	-126.642	2031.723
-122.622	2031	-119.126	2030.361	-117.152	2030	-112.613	2029.167	-111.691	2029
-111.192	2028.906	-106.261	2028	-102.212	2027.235	-100.92	2027	-96.576	2026.176
-95.6492	2026	-94.3431	2025.74	-90.2731	2025	-88.6816	2024.663	-84.9651	2024
-81.0962	2023.449	-77.8634	2023	-77.3252	2022.625	-76.319	2022	-75.9725	2021.442
-75.6107	2021	-75.4225	2020.502	-74.986	2020	-73.4313	2019.623	-70.9961	2019
-69.8298	2018.89	-68.1881	2018.677	-67.6543	2018.632	-66.1015	2018.548	-65.8354	2018.528
-65.4864	2018.471	-64.4858	2018.371	-60.8516	2018.418	-60.6293	2018.467	-60.5486	2018.643
-59.9873	2018.742	-58.2585	2019	-49.7158	2019.899	-48.4783	2020	-47.431	2020
-42.3377	2020	-27.1786	2020	-25.3206	2020	-23.5774	2020	-22.1476	2020
-20.1031	2020	-19.536	2020	-19.3705	2020	-17.072	2020	-16.4169	2020
-15.4986	2020	-12.4413	2020	-5.07057	2020	0	2020	4.022	9.580512
20.637	7.059446	20217.37	0286	2021	2828.404664	20229.15	6657	2022	5069.749907
2023	11.20585	2023.82	411.40346	20241	5.145092	2024.21	619.148	2820	24.41925.7
08922	2024.748	30.09716	20253	1.329712	2025.11	240.217	35	20264	1.715442
2026.275	45.6277	2027	46.67036	2027.19	350.91859	20285	3.232272	2028	37255.186
392	2028.55855	.782092	2028.599	55.99894	2028.622	56.46206	2028.713	56.63637	2028.731
57.15715	2028.76	58.09211	2028.781						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.319	.035	-142.319	.02	558.09211	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-142.31958.09211	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2022.15	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.25	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2021.90	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	* 175.67	* *
* E.G. Slope (ft/ft)	*0.001771	* Area (sq ft)	*	* 175.67	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 84.51	* Top Width (ft)	*	* 84.51	* *
* Vel Total (ft/s)	* 4.02	* Avg. Vel. (ft/s)	*	* 4.02	* *
* Max Chl Dpth (ft)	* 3.52	* Hydr. Depth (ft)	*	* 2.08	* *
* Conv. Total (cfs)	* 16777.9	* Conv. (cfs)	*	* 16777.9	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 86.24	* *
* Min Ch El (ft)	* 2018.37	* Shear (lb/sq ft)	*	* 0.23	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 0.90	* *
* Frctn Loss (ft)	* 0.07	* Cum Volume (acre-ft)	*	* 2.74	* 0.00 *
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	*	* 1.48	* 0.00 *

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1975

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.307	2033.823	-142.287	2033.823	-140.489	2033.669	-138.828	2033.513	-137.637	2033.44
-136.973	2033.379	-134.244	2033	-131.056	2032.356	-129.126	2032	-128.082	2031.807
-123.838	2031	-122.412	2030.737	-118.52	2030	-116.913	2029.703	-113.158	2029
-110.437	2028.488	-107.907	2028	-102.873	2027.018	-102.776	2027	-98.5801	2026.196
-97.5571	2026	-97.5192	2025.993	-92.114	2025	-88.3263	2024.331	-86.5166	2024
-85.1885	2023.769	-81.1746	2023	-76.1093	2022.215	-74.2117	2022	-70.2526	2021.476
-68.027	2021	-66.1787	2020.316	-65.4241	2020	-65.2292	2019.916	-62.6968	2019
-59.5024	2018.442	-57.8722	2018	-56.8022	2018	-55.3406	2018	-54.8957	2018.091
-49.5438	2019	-47.1985	2019.537	-47.0489	2019.537	-45.8876	2020	-42.52	2020
-42.3966	2020	-30.263	2020	-29.839	2020	-28.5452	2020	0	2020.762
4.295419	2020.877	4.452632	2020.874	6.623309	2021	7.259596	2021.388	138368	2022
9.475868	2022.739	929945	2023	11.08126	2023.252	13.76148	2023.562	14.56658	2023.666
16.81291	2024	23.60588	2024.358	35.60689	2025	37.10206	2025.272	40.20622	2025.749
41.44954	2025.946	41.78279	2026	42.43625	2026.108	47.30086	2027	52.17889	2027.975
52.2814	2028	52.79951	2028.055	53.95692	2028.282	54.39256	2028.327	54.83591	2028.343
58.08537	2028.455								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.307	.035	-142.307	.02	558.08537	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-142.30758.08537	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2022.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.025	
W.S. Elev (ft)	2021.48	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2021.33	Flow Area (sq ft)		117.17	
E.G. Slope (ft/ft)	0.006031	Area (sq ft)		117.17	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	77.65	Top Width (ft)		77.65	
Vel Total (ft/s)	6.03	Avg. Vel. (ft/s)		6.03	
Max Chl Dpth (ft)	3.48	Hydr. Depth (ft)		1.51	
Conv. Total (cfs)	9091.2	Conv. (cfs)		9091.2	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		78.56	
Min Ch El (ft)	2018.00	Shear (lb/sq ft)		0.56	
Alpha	1.00	Stream Power (lb/ft s)		3.38	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)		2.66	0.00
C & E Loss (ft)	0.01	Cum SA (acres)		1.43	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2000

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.295	2033.469	-142.236	2033.468	-136.832	2033.004	-136.785	2033	-136.674	2032.982
-135.492	2032.792	-130.521	2032	-130.174	2031.939	-124.291	2031	-121.118	2030.411
-119.068	2030	-116.345	2029.466	-114.058	2029	-112.911	2028.773	-109.072	2028
-105.265	2027.292	-103.711	2027	-101.739	2026.631	-98.3498	2026	-93.7364	2025.138
-92.9889	2025	-91.9393	2024.804	-87.6703	2024	-82.3631	2023.046	-82.1189	2023
-81.4212	2022.869	-79.3103	2022.531	-76.1065	2022	-73.2521	2021.592	-71.8004	2021.422
-69.7333	2021.135	-67.6208	2021	-65.0339	2020.871	-57.8604	2020	-56.6278	2019.099
-56.5199	2019	-56.3563	2018.874	-55.022	2018	-47.6472	2018	-46.5153	2018
-46.0501	2018.099	-44.6279	2018.35	-43.1712	2018.578	-41.1827	2019	-30.3792	2019.869
-29.0431	2019.944	-28.2975	2020	-27.7362	2020.013	-27.0772	2020.02	-26.5589	2020.001
-25.5799	2020.004	-24.698	2020	-22.2352	2019.989	-19.4378	2019.938	-18.4737	2019.931
-17.5592	2019.947	-16.6182	2019.983	-16.2897	2020	-9.34554	2020.304	-6.51366	2020.416
-4.03248	2020.494	-1.65782	2020.547		0	2020.572	4.202389	2020.638	6.671445
2021	8.011526	2021.761	8.388204	2022	9.103322	2022.429	10.05721	2023	11.47993
2023.284	16.272	2024	24.01221	2024.325	33.52481	2024.523	38.32729	2025	41.6044
2025.64	43.52592	2026	46.63581	2026.587	48.59024	2027	49.73327	2027.272	54.35534
2028	55.04406	2028.024	58.07863	2028.129					

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.295	.035	-142.295	.025	58.07863	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.295	58.07863	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2021.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.		0.025	
W.S. Elev (ft)	2021.17	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2021.17	Flow Area (sq ft)		105.85	
E.G. Slope (ft/ft)	0.008358	Area (sq ft)		105.85	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	76.91	Top Width (ft)		76.91	
Vel Total (ft/s)	6.67	Avg. Vel. (ft/s)		6.67	
Max Chl Dpth (ft)	3.17	Hydr. Depth (ft)		1.38	
Conv. Total (cfs)	7722.6	Conv. (cfs)		7722.6	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		77.83	
Min Ch El (ft)	2018.00	Shear (lb/sq ft)		0.71	
Alpha	1.00	Stream Power (lb/ft s)		4.73	
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)		2.59	0.00
C & E Loss (ft)	0.00	Cum SA (acres)		1.38	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2025

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.284	2033.114	-142.184	2033.113	-140.864	2033	-137.42	2032.562	-136.484	2032.494
-134.207	2032.344	-132.123	2032.176	-130.207	2032	-126.861	2031.293	-125.504	2031
-124.111	2030.719	-120.65	2030	-116.591	2029.197	-115.516	2029	-114.859	2028.874

-110.541   2028-108.0852027.529-105.245   2027-101.4172026.264-100.045   2026
-99.56282025.914-94.7671   2025-92.89922024.651-89.5396   2024-84.84522023.164
-83.8673   2023-81.69932022.584-78.0974   2022-74.94522021.444-72.1843   2021
-67.28682020.635-58.9935   2020-56.40272019.141-56.0012   2019-55.72772018.939
 -55.6392018.924-49.1999   2018-42.8266   2018-40.3401   2018-36.50052018.622
-34.3783   2019-33.38962019.035-33.25212019.036 -32.0842019.081-30.83852019.121
-26.71482019.229-23.24872019.254-22.74042019.261-21.89862019.281-19.68552019.327
-18.42152019.355-16.82572019.395-14.96032019.445-10.7345 2019.56-8.326612019.621
       02019.8455.750599   20206.5762372020.7356.922939   20217.1685572021.192
 7.96012   20228.9443072022.7489.237174   202316.249432023.31829.93166   2024
 33.48492024.46736.278692024.72838.77658   202542.495152025.41646.86977   2026
 50.05182026.52151.88755   202753.550312027.35356.71707   202857.37181   2028
58.09884   2028

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.284   .035-142.284   .02558.09884   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.28458.09884   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2021.51 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.18 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2020.33 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2020.64 * Flow Area (sq ft)   *   *   80.89 *   *
* E.G. Slope (ft/ft)   *0.017727 * Area (sq ft)   *   *   80.89 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   69.36 * Top Width (ft)   *   *   69.36 *   *
* Vel Total (ft/s)   *   8.73 * Avg. Vel. (ft/s)   *   *   8.73 *   *
* Max Chl Dpth (ft)   *   2.33 * Hydr. Depth (ft)   *   *   1.17 *   *
* Conv. Total (cfs)   * 5302.6 * Conv. (cfs)   *   * 5302.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   69.83 *   *
* Min Ch El (ft)   * 2018.00 * Shear (lb/sq ft)   *   *   1.28 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   11.19 *   *
* Frctn Loss (ft)   *   0.29 * Cum Volume (acre-ft) *   *   2.54 *   0.00 *
* C & E Loss (ft)   *   0.05 * Cum SA (acres)   *   *   1.34 *   0.00 *
****

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2050

INPUT
Description:
Station Elevation Data   num=   67
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.2722033.064-138.638   2033-137.8012032.831 -137.562032.809-137.1582032.764
-136.3312032.609-135.3482032.473-132.128   2032-131.621 2031.91-130.879 2031.77
-128.019 2031.21-127.031   2031-121.9982030.008-121.961   2030-121.9322029.994
-116.997   2029-112.7322028.141-111.982   2028-111.4742027.903-106.817   2027
 -101.772026.041-101.564   2026 -99.1572025.562 -96.028   2025 -91.0292024.111
-90.4256   2024-89.7114 2023.87-84.8313   2023-81.68322022.436-79.3977   2022
-76.62182021.419-74.8177   2021-72.04962020.217-71.2754   2020-66.67832019.664
-62.14432019.346-59.8309 2019.19-57.6054   2019-56.57022018.933-33.1381   2018
-24.27292018.888-23.6724   2019-14.29642019.344-5.000442019.679   0 2019.86
  3.8516   20204.773934 2020.51 5.84529   20216.6352112021.4127.744112   2022
11.084882022.38613.134882022.484 15.04472022.59321.28886   202326.174332023.259
33.099332023.67535.741152023.83138.34481   202441.525382024.54244.34405   2025
45.255742025.17949.11367   202650.97117 2026.3554.20389   202756.283322027.522
57.572862027.75958.127192027.803

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.272   .035-142.272   .02558.12719   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.27258.12719   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2021.14 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.77 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2020.37 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2020.44 * Flow Area (sq ft)   *   * 100.05 *   *
* E.G. Slope (ft/ft)   *0.010009 * Area (sq ft)   *   * 100.05 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   77.11 * Top Width (ft)   *   *   77.11 *   *
* Vel Total (ft/s)   *   7.06 * Avg. Vel. (ft/s)   *   *   7.06 *   *
* Max Chl Dpth (ft)   *   2.37 * Hydr. Depth (ft)   *   *   1.30 *   *
* Conv. Total (cfs)   * 7057.0 * Conv. (cfs)   *   * 7057.0 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   77.39 *   *
* Min Ch El (ft)   * 2018.00 * Shear (lb/sq ft)   *   *   0.81 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   5.70 *   *
* Frctn Loss (ft)   *   0.30 * Cum Volume (acre-ft) *   *   2.49 *   0.00 *

```
* C & E Loss (ft)        *    0.15  * Cum SA (acres)         *          *    1.30  *    0.00  *
*********************************************************************************************
```

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2075

INPUT
Description:
Station Elevation Data num= 63

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -142.262032.806-142.2542032.806-138.2742032.247-136.836    2032-135.2252031.693
-131.807    2031-129.7922030.612-126.777    2030-123.6962029.434-121.176    2029
-117.3472028.363-115.092    2028-114.4842027.899-108.928    2027 -105.572026.354
-103.657    2026-99.8083 2025.24-98.5729    2025-93.79252024.057-93.5045    2024
 -92.4962023.802 -88.293    2023-83.49932022.151-82.5763    2022-81.35862021.821
 -75.765    2021-71.8192 2020.08-70.4232    2020 -67.9162019.662-66.01512019.486
-65.58682019.463-64.4294    2019-60.28042018.909-46.1539 2018.63 -42.7852018.528
-32.93222018.238-32.12532018.216-24.9925    2018 -23.037    2018 -22.004    2018
-20.7727    2018-14.98882018.925-14.4841    2019-7.067192019.297       02019.771
 3.40929    20205.118398 2020.855.413903    20217.1585742021.9997.160525    2022
7.1840762022.0017.2161562022.0037.4099922022.01129.99083    202333.890852023.446
38.32705    202442.075112024.65244.17972    202547.106952025.49549.96383    2026
53.554072026.55956.97376    202758.155542027.095
```

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -142.26    .035 -142.26    .02558.15554    .035
```

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

```
       -142.2658.15554               25      25      25             .1       .3
```

CROSS SECTION OUTPUT Profile #PF 1

```
*********************************************************************************************
* E.G. Elev (ft)         * 2020.94  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.75  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 2020.19  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2020.23  * Flow Area (sq ft)      *          *  101.65  *          *
* E.G. Slope (ft/ft)     *0.009325  * Area (sq ft)           *          *  101.65  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   76.06  * Top Width (ft)         *          *   76.06  *          *
* Vel Total (ft/s)       *    6.95  * Avg. Vel. (ft/s)       *          *    6.95  *          *
* Max Chl Dpth (ft)      *    2.19  * Hydr. Depth (ft)       *          *    1.34  *          *
* Conv. Total (cfs)      *  7310.9  * Conv. (cfs)            *          *  7310.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   76.37  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)       *          *    0.77  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.38  *          *
* Frctn Loss (ft)        *    0.23  * Cum Volume (acre-ft)   *          *    2.43  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *          *    1.26  *    0.00  *
*********************************************************************************************
```

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2100

INPUT
Description:
Station Elevation Data num= 73

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.249 2032.12-142.222 2032.12-141.369    2032-138.541 2031.63-136.5732031.443
-133.5052031.096-132.775    2031-132.262 2030.92-127.466    2030-127.1372029.937
-122.324    2029 -121.142028.774-117.085    2028-112.1452027.123-111.478    2027
-110.6522026.847-107.1062026.213-105.875    2026-103.9762025.652-100.525    2025
-96.96722024.318-95.2575    2024-91.2183 2023.23-89.9847    2023-86.58132022.341
-84.7706    2022 -83.3792021.727-79.5349    2021-75.11462020.117-74.4189    2020
-72.80062019.672-69.4768    2019-59.24512018.796-42.24832018.478-17.0207    2018
-16.68672017.937-16.66672017.776-16.01122017.664-16.00492017.623 -13.0582017.573
-12.4696 2017.62-9.801762017.793-9.307572017.877-8.02552    2018-3.35264 2018.96
 -3.1123    2019-2.849762019.086-.398428    2020       02020.1461.0472492020.529
 2.56771    20214.4283952021.5355.2696412021.7377.3546812021.6157.8525572021.606
9.1966742021.75311.07221    202215.26649 2022.1536.20401    202338.155342023.338
 41.6977    202444.620222024.562  47.014    202549.378832025.46152.08158    2026
54.245532026.23555.494652026.49356.035022026.54256.859292026.63156.994532026.673
57.805412026.76257.894442026.76558.16491 2026.76
```

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.249    .035-142.249    .02558.16491    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.24958.16491               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
********************************************************************************************
* E.G. Elev (ft)         * 2020.68  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.51  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2020.16  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2019.90  * Flow Area (sq ft)     *          *  122.90  *          *
* E.G. Slope (ft/ft)     *0.004925  * Area (sq ft)          *          *  122.90  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   75.40  * Top Width (ft)        *          *   75.40  *          *
* Vel Total (ft/s)       *    5.74  * Avg. Vel. (ft/s)      *          *    5.74  *          *
* Max Chl Dpth (ft)      *    2.59  * Hydr. Depth (ft)      *          *    1.63  *          *
* Conv. Total (cfs)      * 10059.7  * Conv. (cfs)           *          * 10059.7  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   76.05  *          *
* Min Ch El (ft)         * 2017.57  * Shear (lb/sq ft)      *          *    0.50  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.85  *          *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)  *          *    2.36  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *          *    1.21  *    0.00  *
********************************************************************************************

Note:    Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2125

INPUT
Description:
Station Elevation Data    num=     111
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.2362031.699-141.4072031.615 -139.952031.494-139.0322031.401 -138.75 2031.34
-138.4622031.165-138.2122031.118-137.7422031.088-136.4932031.035-136.121    2031
-134.8972030.792-130.413    2030-126.379 2029.24-125.134    2029-123.856 2028.77
  -119.6    2028-115.1992027.223-114.269 2027.07-113.876    2027-108.2832026.005
-108.257    2026-108.2452025.998-108.1672025.983-102.837    2025-101.8652024.821
-97.3891    2024-94.64022023.494-91.9903    2023-87.24122022.132-86.4949    2022
-85.06772021.766-80.5431    2021-76.6426 2020.36-74.5226    2020-72.09962019.608
-68.6203    2019-67.08782018.875-67.05962018.878-66.98982018.883-66.81042018.889
-66.69342018.895-66.60012018.909-66.49732018.912-66.36012018.915-66.23082018.917
-66.19422018.919-66.19232018.921-66.1896 2018.93-66.18022018.934-66.12552018.936
-66.11922018.938-65.23262018.945-64.92432018.942-64.7805 2018.94-64.64512018.938
-64.47162018.935-64.15722018.931-63.37632018.919-62.71722018.907-61.7869 2018.89
 -59.4552018.849-55.61652018.778-12.5521    2018-11.65772017.849-11.62432017.846
-8.595732017.374-8.08368 2017.28-7.77433 2017.21-7.566462017.147-7.452622017.124
 -7.30332017.106-7.244592017.095-7.242562017.079-7.175912017.068-7.175272017.063
-6.875612017.058-6.815772017.063-6.544492017.081-6.494232017.089-6.159872017.121
-6.030722017.138-5.861422017.169-5.53555 2017.21-3.295812017.599-.867356    2018
       02018.2841.515174 2018.781.995361    20192.5956932019.3583.653104    2020
4.073206 2020.225.388734    20218.481772  2021.59.9164242021.63511.985672021.859
13.94001    202217.634922022.13321.234452022.27337.12452    202337.375912023.046
   42.73    202445.625762024.53248.24586    202552.667632025.85553.43669    2026
53.583472026.01355.358982026.20555.650292026.29557.396982026.48757.588742026.494
58.171362026.483

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
-142.236    .035-142.236    .02558.17136    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.23658.17136               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
********************************************************************************************
* E.G. Elev (ft)         * 2020.50  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.71  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2019.79  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2019.79  * Flow Area (sq ft)     *          *  104.55  *          *
* E.G. Slope (ft/ft)     *0.008611  * Area (sq ft)          *          *  104.55  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   76.51  * Top Width (ft)        *          *   76.51  *          *
* Vel Total (ft/s)       *    6.75  * Avg. Vel. (ft/s)      *          *    6.75  *          *
* Max Chl Dpth (ft)      *    2.73  * Hydr. Depth (ft)      *          *    1.37  *          *
* Conv. Total (cfs)      *  7608.3  * Conv. (cfs)           *          *  7608.3  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   77.17  *          *
* Min Ch El (ft)         * 2017.06  * Shear (lb/sq ft)      *          *    0.73  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.92  *          *
* Frctn Loss (ft)        *    0.20  * Cum Volume (acre-ft)  *          *    2.30  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *          *    1.17  *    0.00  *
********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION
```

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2150

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.2232031.333	-140.3882031.149	-138.603	2031	-133.092030.117	-132.237	2030			
-131.6032029.836	-131.2782029.771	-126.504	2029	-126.4782028.996	-126.4652028.994				
-126.372028.977	-122.6042028.325	-121.0382028.037	-120.829	2028	-120.6012027.959				
-115.37	2027	-111.852026.364	-109.847	2026	-105.8122025.224	-104.629	2025		
-99.89962024.089	-99.4254	2024	-94.28992023.009	-94.2433	2023	-94.1885	2022.99		
-89.0178	2022	-87.8112021.774	-83.2685	2021	-79.15742020.321	-77.1929	2020		
-74.13562019.591	-69.4914	2019	-61.10382018.195	-60.83762018.175	-60.64562018.164				
-59.0162	2018	-57.4306	2018	-55.9971	2018	-55.3092018.023	-54.28272018.079		
-53.46352018.199	-52.5613	2018.23	-51.35812018.256	-50.22262018.271	-49.90232018.287				
-49.8849	2018.31	-49.86182018.387	-49.77892018.418	-49.29932018.442	-49.24342018.457				
-41.46332018.515	-38.758	2018.49	-37.49642018.475	-36.30812018.457	-34.78562018.431				
-32.02612018.391	-25.17352018.285	-19.38992018.185	-11.22562018.032	-9.36364	2018				
-4.151062017.205	-1.891562017.151	02017.3883.537841	2017.834.863621	2018					
5.9789512018.9016.097659	20197.0438482019.7897.280115	20207.5551072020.214							
8.42141	202111.804972021.54114.809242021.80517.49164	202219.873932022.099							
24.354992022.27734.512782022.86335.081172022.89435.958752022.94736.83669	2023								
37.585212023.10943.35014	202448.642862024.93749.04051	202549.405642025.062							
51.333722025.44651.94209	2025.5555.05735	202656.988552026.21357.283042026.223							
58.177812026.207									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.223	.035	-142.223	.02558.17781	.035	

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.22358.17781		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2020.26	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.77	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2019.49	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2019.56	* Flow Area (sq ft)	*	* 100.23	* *
* E.G. Slope (ft/ft)	*0.010537	* Area (sq ft)	*	* 100.23	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 79.98	* Top Width (ft)	*	* 79.98	* *
* Vel Total (ft/s)	* 7.04	* Avg. Vel. (ft/s)	*	* 7.04	* *
* Max Chl Dpth (ft)	* 2.33	* Hydr. Depth (ft)	*	* 1.25	* *
* Conv. Total (cfs)	* 6877.8	* Conv. (cfs)	*	* 6877.8	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 80.80	* *
* Min Ch El (ft)	* 2017.15	* Shear (lb/sq ft)	*	* 0.82	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 5.75	* *
* Frctn Loss (ft)	* 0.24	* Cum Volume (acre-ft)	*	* 2.24	* 0.00 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	*	* 1.12	* 0.00 *

Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2175

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.212030.896	-140.5182030.714	-138.8922030.531	-134.652	2030	-133.2532029.767				
-129.105	2029	-126.6632028.547	-124.2362028.083	-123.834	2028	-122.8082027.813			
-118.483	2027	-113.5912026.233	-112.351	2026	-111.585	2025.87	-106.404	2025	
-103.9782024.548	-101.053	2024	-98.53092023.527	-95.7101	2023	-91.45522022.216			
-90.3077	2022	-89.20642021.797	-87.78962021.536	-84.9139	2021	-81.3712020.368			
-79.3439	2020	-74.43752019.203	-73.1087	2019	-70.48842018.841	-54.33912018.163			
-50.4827	2018	-49.3652	2018	-48.7698	2018	-46.4073	2018	-34.0875	2018
-33.5023	2018	-32.9584	2018	-31.6344	2018	-29.1933	2018	-17.6942018.085	
-12.59172018.039	-10.21222018.009	-9.61119	2018	-7.588082017.705	-2.72204	2017			
-1.70887	2017	0	2017	.487735	2017	3.545552017.4576.184544	2018		
7.0442022018.4957.698636	20198.9247822019.8129.187682	20209.6280322020.248							
10.63052	202116.152782021.52517.782822021.69720.32174	202226.869472022.412							
36.75497	202340.101942023.43244.62345	202448.977392024.69750.83465	2025						
51.19637	2025.0655.035112025.75855.908752025.85856.08141	2025.8756.192922025.875							
56.84874	2025.8356.904292025.834	56.91822025.84757.014512025.86457.160582025.874							
57.414262025.88757.559512025.90457.600782025.91257.840572025.91857.867892025.921									
57.897432025.922	57.92482025.92358.011822025.92258.171272025.924	58.17332025.924							
58.173482025.924									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.21	.035	-142.21	.02558.17348	.035	

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.2158.17348		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2020.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.		0.025	
W.S. Elev (ft)	2019.52	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2019.36	Flow Area (sq ft)		120.82	
E.G. Slope (ft/ft)	*0.006097	Area (sq ft)		120.82	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	84.84	Top Width (ft)		84.84	
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)		5.84	
Max Chl Dpth (ft)	2.52	Hydr. Depth (ft)		1.42	
Conv. Total (cfs)	9041.5	Conv. (cfs)		9041.5	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		85.52	
Min Ch El (ft)	2017.00	Shear (lb/sq ft)		0.54	
Alpha	1.00	Stream Power (lb/ft s)		3.14	
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)		2.18	0.00
C & E Loss (ft)	0.03	Cum SA (acres)		1.08	0.00

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2200

INPUT
Description:
Station Elevation Data num= 93

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.196	2029.927	-142.167	2029.927	-142.143	2029.922	-142.018	2029.909	-141.932	2029.902
-141.852	2029.898	-141.742	2029.896	-141.708	2029.895	-141.608	2029.88	-141.396	2029.867
-141.268	2029.855	-141.224	2029.835	-141.142	2029.821	-140.443	2029.771	-139.947	2029.72
-139.212	2029.621	-133.578	2029	-132.32	2028.798	-127.033	2028	-124.344	2027.562
-120.804	2027	-118.575	2026.616	-114.919	2026	-110.953	2025.307	-109.177	2025
-104.219	2024.121	-103.568	2024	-98.896	2023.164	-98.0252	2023	-93.2627	2022.121
-92.6172	2022	-91.8938	2021.867	-87.2605	2021	-82.4136	2020.186	-81.3374	2020
-79.4412	2019.683	-75.9064	2019.12	-75.1972	2019	-73.8024	2018.943	-49.5969	2018
-36.4264	2017.684	-30.498	2017.55	-19.2411	2017.51	-18.9218	2017.539	-17.5682	2017.611
-17.0836	2017.664	-16.8252	2017.727	-16.7135	2017.824	-16.3108	2017.797	-15.4526	2017.731
-14.7628	2017.685	-12.8102	2017.571	-10.9468	2017.497	-3.72771	2017	0	2017
1.529489	2017	1.833045	2017	5.393854	2017.766	6.440764	2017	7.240929	2018.48
8.205366	2019	8.649742	2019.214	10.08841	2020	10.82102	2020.371	12.01488	2021
16.53796	2021.488	21.717	2022	37.71442	2022.932	38.76264	2023	39.14462	2023.064
40.26403	2023.269	44.11292	2024	46.36293	2024.455	49.08379	2025	49.58236	2025.057
50.72783	2025.136	51.46762	2025.169	51.59425	2025.165	51.86861	2025.181	51.93731	2025.242
52.413	2025.327	53.13449	2025.375	54.3875	2025.445	55.10491	2025.525	55.30878	2025.565
56.49318	2025.595	56.62812	2025.608	56.77403	2025.616	56.90922	2025.618	57.33902	2025.617
58.12659	2025.626	58.13662	2025.626	58.13749	2025.626				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.196	.035	-142.196	.025	58.13749	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.196	58.13749	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2019.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.		0.025	
W.S. Elev (ft)	2019.46	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		135.01	
E.G. Slope (ft/ft)	*0.004359	Area (sq ft)		135.01	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	87.14	Top Width (ft)		87.14	
Vel Total (ft/s)	5.23	Avg. Vel. (ft/s)		5.23	
Max Chl Dpth (ft)	2.46	Hydr. Depth (ft)		1.55	
Conv. Total (cfs)	10693.5	Conv. (cfs)		10693.5	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		87.77	
Min Ch El (ft)	2017.00	Shear (lb/sq ft)		0.42	
Alpha	1.00	Stream Power (lb/ft s)		2.19	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)		2.10	0.00
C & E Loss (ft)	0.02	Cum SA (acres)		1.03	0.00

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2225

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.179	2029.629	-142.029	2029.63	-141.909	2029.604	-141.267	2029.534	-140.827	2029.5

-140.421 2029.48-139.858 2029.47-139.6862029.461-139.1732029.387 -138.092029.322
 -137.442029.258-137.2142029.159-136.7842029.086-135.579   2029 -132.832028.543
-129.206   2028-123.3492027.034-123.127   2027-123.0272026.984-117.024   2026
-111.6192025.116-110.957   2025-109.6412024.762-105.315   2024-102.5322023.487
-99.9016   2023 -98.005 2022.67-94.3582   2022-91.47162021.496-88.7663   2021
-85.72692020.467-83.1311   2020-78.18042019.241-76.7045   2019-75.47092018.782
-75.37692018.782-75.35172018.787-70.40152018.769 -69.4032018.732-66.11842018.605
-49.3702   2018-46.82282017.936-8.21179   2017-3.25209   2017   0   2017
1.989913   2017 3.686062017.4116.162466   20187.165674 2018.527.998346   2019
9.526755 2019.81 9.84046   202010.063492020.12511.69856   202124.790752021.615
32.89685   202238.508032022.80439.89475   202341.06355 2023.1741.831692023.278
46.18979   2024 50.79962024.86751.055912024.92551.40986   202552.650312025.147
53.016772025.21855.145772025.27255.388312025.29655.650622025.31155.893592025.314
56.666212025.31258.081912025.32858.093312025.328

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.179   .035-142.179   .02558.09331   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.17958.09331   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2019.71 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.65 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2019.06 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2019.06 * Flow Area (sq ft)   *   * 108.91 *   *
* E.G. Slope (ft/ft)   *0.008633 * Area (sq ft)   *   * 108.91 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   85.20 * Top Width (ft)   *   *   85.20 *   *
* Vel Total (ft/s)   *   6.48 * Avg. Vel. (ft/s)   *   *   6.48 *   *
* Max Chl Dpth (ft)   *   2.06 * Hydr. Depth (ft)   *   *   1.28 *   *
* Conv. Total (cfs)   * 7598.6 * Conv. (cfs)   *   * 7598.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   85.64 *   *
* Min Ch El (ft)   * 2017.00 * Shear (lb/sq ft)   *   *   0.69 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   4.44 *   *
* Frctn Loss (ft)   *   0.20 * Cum Volume (acre-ft) *   *   2.03 *   0.00 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   *   0.98 *   0.00 *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth. This indicates that there
         is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2250

INPUT
Description:
Station Elevation Data   num=   78
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.1622029.331-141.8922029.332-141.6742029.286-140.5162029.159-139.7232029.097
 -138.992029.062-137.9752029.043-137.6642029.028 -137.47   2029-134.0092028.463
-130.995   2028-129.1532027.703-124.963   2027-121.8682026.493-118.875   2026
-115.9972025.521-112.759   2025 -110.042024.545-106.724   2024-101.5182023.063
-101.151   2023-100.394 2022.86-95.6329   2022-91.3665 2021.23-90.0544   2021
-89.08742020.837 -84.068   2020-82.28792019.756-76.6235   2019-75.77822018.823
-71.8111   2018-57.60362017.467-53.7391 2017.33-48.8478 2017.15-47.37142017.094
 -47.2522017.093 -45.2832017.086 -44.7382017.063-43.99682017.059-42.63392017.089
-41.33582017.173-39.30082017.247-38.62532017.285-38.52892017.323-27.98392017.356
-22.14572017.223-17.79762017.115-13.3806   2017-12.43782016.815-3.895332016.922
-3.847592016.959-3.58513   2017-.3172932017.525   02017.5781.633799 2017.85
2.883954   20183.130348 2018.095.621325   20195.676773 2019.028.472083   2020
10.363262020.68211.27952   202112.449022021.05222.987472021.48934.05772 2021.95
35.26942   202235.68512 2022.0641.70604   202346.137852023.65248.26303 2023.98
 48.3767   202449.835362024.23954.44552   202554.527212025.00554.877992025.009
 55.99342025.00756.23451 2025.0158.05527 2025.03

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.162   .035-142.162   .02558.05527   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.16258.05527   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2019.43 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.89 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2018.54 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2018.71 * Flow Area (sq ft)   *   *   93.25 *   *
* E.G. Slope (ft/ft)   *0.013022 * Area (sq ft)   *   *   93.25 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   78.78 * Top Width (ft)   *   *   78.78 *   *
* Vel Total (ft/s)   *   7.57 * Avg. Vel. (ft/s)   *   *   7.57 *   *

* Max Chl Dpth (ft)	* 1.73	* Hydr. Depth (ft)	*	* 1.18	*
* Conv. Total (cfs)	* 6186.9	* Conv. (cfs)	*	* 6186.9	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 79.08	*
* Min Ch El (ft)	* 2016.82	* Shear (lb/sq ft)	*	* 0.96	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 7.26	*
* Frctn Loss (ft)	* 0.26	* Cum Volume (acre-ft)	*	* 1.98	* 0.00 *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	* 0.93	* 0.00 *

Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2275

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.145	2029.033	-141.754	2029.034	-141.591	2029	-136.922	2028.419	-133.766	2028
-129.931	2027.304	-128.366	2027	-124.616	2026.347	-122.559	2026	-116.027	2025.042
-115.734	2025	-110.746	2024.293	-108.775	2024	-103.295	2023.091	-102.767	2023
-101.769	2022.833	-97.0763	2022	-94.5942	2021.581	-91.1153	2021	-85.1733	2020.026
-85.0169	2020	-84.6377	2019.942	-78.562	2019	-76.8946	2018.731	-72.8774	2018
-51.0174	2017.178	-46.2632	2017	-45.1677	2016.963	-45.1335	2016.963	-40.6604	2016.827
-35.1615	2016.669	-28.7927	2016.445	-28.3211	2016.434	-28.0058	2016.431	-27.6561	2016.43
-27.0673	2016.435	-26.4682	2016.452	-25.2178	2016.472	-24.6709	2016.485	-24.4579	2016.499
-15.8676	2016.515	-15.0121	2016.465	-14.7546	2016.44	-14.262	2016.343	-10.6652	2016.388
-10.6451	2016.404	-10.4707	2016.431	-10.4009	2016.477	-9.32666	2016.698	-8.74903	2016.796
-6.90172	2017	-6.89926	2017	-6.88522	2017.001	0	2017.554	5.559669	2018
6.434736	2018.399	7.717485	2019	8.779147	2019.516	9.930632	2020	11.45848	2020.686
12.15888	2021	16.94313	2021.223	4.38989	2022	36.54712	2022.264	42.94725	2023
46.31195	2023.415	51.17529	2024	52.76844	2024.146	52.76867	2024.146	53.41852	2024.221
54.44798	2024.391	54.72607	2024.489	54.85174	2024.555	32.95266	2024.527	56.22382	2024.563
58.09719	2024.676	58.11033	2024.676						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.145	.035	-142.145	.025	58.11033	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-142.14 58.11033 25 25 25 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2019.19	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.41	* Wt. n-Val.	*	* 0.025	*
* W.S. Elev (ft)	* 2018.78	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2018.41	* Flow Area (sq ft)	*	* 137.72	*
* E.G. Slope (ft/ft)	*0.003898	* Area (sq ft)	*	* 137.72	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*
* Top Width (ft)	* 84.44	* Top Width (ft)	*	* 84.44	*
* Vel Total (ft/s)	* 5.13	* Avg. Vel. (ft/s)	*	* 5.13	*
* Max Chl Dpth (ft)	* 2.44	* Hydr. Depth (ft)	*	* 1.63	*
* Conv. Total (cfs)	* 11308.1	* Conv. (cfs)	*	* 11308.1	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 84.82	*
* Min Ch El (ft)	* 2016.34	* Shear (lb/sq ft)	*	* 0.40	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 2.03	*
* Frctn Loss (ft)	* 0.13	* Cum Volume (acre-ft)	*	* 1.91	* 0.00 *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	* 0.88	* 0.00 *

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2300

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.123	2028.544	-139.494	2028.411	-139.112	2028.409	-138.795	2028.407	-138.609	2028.398
-134.825	2028.042	-134.438	2028	-131.374	2027.427	-129.119	2027	-125.661	2026.383
-123.904	2026.061	-123.552	2026	-121.605	2025.694	-117.273	2025	-114.334	2024.549
-110.787	2024	-108.163	2023.586	-104.486	2023	-101.302	2022.393	-99.2989	2022
-98.7657	2021.896	-94.1826	2021	-89.438	2020.06	-89.1216	2020	-87.7436	2019.827
-81.3276	2019	-78.3667	2018.613	-73.6049	2018	-56.7512	2017.366	-46.9999	2017
-39.5098	2016.72	-19.6062	2016.039	-18.4562	2016	-18.3611	2016	-16.0372	2016
-13.3491	2016.551	-11.2869	2017	0	2017.624	1.833075	2017.725	6.644048	2018
7.166923	2018.304	8.365707	2019	8.820959	2019.234	10.10839	2020	16.43958	2020.738
19.67825	2021	28.84079	2021.630	30.22122	2021.699	32.86420	2021.847	33.45614	2021.888
35.77612	2022	43.41711	2022.824	44.82804	2023	47.93774	2023.362	52.70544	2024
52.71987	2024.001	54.17922	2024.078	58.13649	2024.316	58.16423	2024.316		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

-142.123   .035-142.123   .02558.16423   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.12358.16423   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2019.05 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.56 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2018.48 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   * 2018.37 * Flow Area (sq ft)   *   * 117.38 *   *
* E.G. Slope (ft/ft)   *0.006678 * Area (sq ft)   *   * 117.38 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   84.84 * Top Width (ft)   *   *   84.84 *   *
* Vel Total (ft/s)   *   6.01 * Avg. Vel. (ft/s)   *   *   6.01 *   *
* Max Chl Dpth (ft)   *   2.48 * Hydr. Depth (ft)   *   *   1.38 *   *
* Conv. Total (cfs)   * 8639.5 * Conv. (cfs)   *   * 8639.5 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   85.17 *   *
* Min Ch El (ft)   * 2016.00 * Shear (lb/sq ft)   *   *   0.57 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   3.46 *   *
* Frctn Loss (ft)   *   0.14 * Cum Volume (acre-ft) *   *   1.84 *   0.00 *
* C & E Loss (ft)   *   0.03 * Cum SA (acres)   *   *   0.84 *   0.00 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2325

INPUT
Description:
Station Elevation Data   num=   77
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.101 2028.03-141.502   2028-134.507 2027.29-134.3162027.289-134.1572027.285
-132.506   2027-129.1392026.426-126.691   2026-124.7982025.685 -120.67   2025
-115.3422024.112-114.656   2024-112.1662023.581-109.4052023.109-108.725   2023
-108.3252022.931 -102.65   2022-100.2212021.592-96.6496   2021-92.20432020.239
-90.7915   2020-90.27372019.933-89.74322019.871-88.92332019.768-82.4317   2019
 -81.8152018.923-79.80242018.654-75.1613   2018-62.00982017.493-59.74242017.422
-57.07742017.355-54.80822017.315-45.5867   2017-40.18862016.704-32.9564 2016.32
-26.8476   2016-21.4617   2016-20.0507   2016-19.10232016.079-17.64562016.107
 -17.4272016.115   0 2016.814.754237   20175.8534762017.5746.663273   2018
7.1957722018.2818.597715   20199.3175062019.395 10.628   202011.021762020.035
11.454892020.06712.187362020.12423.05029   2021 33.20192021.69738.34293   2022
41.110062022.32441.821642022.41744.11415 2022.6945.536672022.87246.77594   2023
55.517172023.67255.832282023.70156.379442023.76356.936632023.836 56.95652023.834
57.142722023.86457.229912023.88357.364312023.89757.601252023.91657.637242023.921
57.727412023.927 57.85882023.93857.927932023.94157.997192023.94358.057422023.947
58.08009 2023.9558.214182023.949

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.101   .035-142.101   .02558.21418   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.10158.21418   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2018.87 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.46 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2018.41 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 129.55 *   *
* E.G. Slope (ft/ft)   *0.004865 * Area (sq ft)   *   * 129.55 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   85.51 * Top Width (ft)   *   *   85.51 *   *
* Vel Total (ft/s)   *   5.45 * Avg. Vel. (ft/s)   *   *   5.45 *   *
* Max Chl Dpth (ft)   *   2.41 * Hydr. Depth (ft)   *   *   1.51 *   *
* Conv. Total (cfs)   * 10121.6 * Conv. (cfs)   *   * 10121.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   85.96 *   *
* Min Ch El (ft)   * 2016.00 * Shear (lb/sq ft)   *   *   0.46 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   2.49 *   *
* Frctn Loss (ft)   *   0.08 * Cum Volume (acre-ft) *   *   1.77 *   0.00 *
* C & E Loss (ft)   *   0.05 * Cum SA (acres)   *   *   0.79 *   0.00 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2350

INPUT
Description:
Station Elevation Data   num=   62
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.0792027.394-138.4242027.282-137.0442027.231-135.538 2027.16-134.5262027.084
-133.804   2027-130.6962026.382-128.781   2026-127.947 2025.84-123.625   2025
-119.9162024.297-118.146   2024-114.1842023.312-112.247   2023-111.4752022.875
-106.163   2022-100.8522021.121-100.117   2021-97.2987 2020.53-94.0683   2020
-91.24992019.623-86.7375   2019-85.80842018.906-77.2994   2018-74.53282017.032

-74.4384   2017-58.02482016.582 -54.4122016.493-45.61432016.643-45.21592016.625
-42.75162016.547-41.52322016.503-35.18752016.215-30.6741   2016-23.7481   2016
-23.2806   2016-13.97412016.305-4.160232016.614   02016.7676.293607   2017
7.0878652017.359 8.63777   2018 9.832032018.526 10.8732   201913.630412019.874
14.05392   202015.726742020.09934.37738   202140.824462021.57944.06134   2022
46.44358 2022.4249.92291   202350.508442023.061 52.66292023.23352.990122023.281
   53.812023.33355.004762023.43355.63327 2023.4656.26308 2023.4856.810672023.521
57.016882023.54858.236112023.534

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.079   .035-142.079   .02558.23611   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.07958.23611   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2018.74 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.29 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2018.45 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 164.40 *   *
* E.G. Slope (ft/ft)   *0.002397 * Area (sq ft)   *   * 164.40 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   91.17 * Top Width (ft)   *   *   91.17 *   *
* Vel Total (ft/s)   *   4.29 * Avg. Vel. (ft/s)   *   *   4.29 *   *
* Max Chl Dpth (ft)   *   2.45 * Hydr. Depth (ft)   *   *   1.80 *   *
* Conv. Total (cfs)   * 14419.6 * Conv. (cfs)   *   * 14419.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   91.70 *   *
* Min Ch El (ft)   * 2016.00 * Shear (lb/sq ft)   *   *   0.27 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   1.15 *   *
* Frctn Loss (ft)   *   0.06 * Cum Volume (acre-ft) *   *   1.68 *   0.00 *
* C & E Loss (ft)   *   0.00 * Cum SA (acres)   *   *   0.74 *   0.00 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2375

INPUT
Description:
Station Elevation Data   num=   64
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-142.0732026.721-138.4392026.235-138.4382026.235 -136.58   2026-133.9482025.583
-130.125   2025-128.8632024.823-123.291   2024-121.7712023.779-116.598   2023
-115.6242022.859-109.917   2022-105.115 2021.29-103.268   2021-98.30512020.274
-96.5878   2020-93.06022019.628-89.15142019.233-87.0351   2019-85.86872018.886
-84.87292018.801-79.20572018.279-76.2258   2018-75.4553 2017.81 -73.972   2017
-49.65172016.357-36.4079   2016 -33.078   2016-22.7846   2016-10.60312016.376
-8.34116 2016.46-4.30034 2016.62-2.938852016.667-1.015892016.727   02016.733
 4.618792016.756 8.54834   2017 10.33582017.828 10.6386   201811.158432018.304
12.39488   201913.988712019.73314.48634   2020 27.5035 2020.5528.432052020.587
28.858272020.59829.697512020.60230.310312020.61431.982332020.663 33.12232020.702
33.704422020.72634.167922020.75235.170782020.81436.893262020.76736.901632020.758
38.82706   202144.720542021.74146.80458   202250.655282022.56753.97591   2023
54.528972023.01855.563932023.09455.953672023.14658.25804 2023.12

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.073   .035-142.073   .02558.25804   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -142.07358.25804   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2018.67 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.27 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2018.40 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 168.72 *   *
* E.G. Slope (ft/ft)   *0.002223 * Area (sq ft)   *   * 168.72 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   91.85 * Top Width (ft)   *   *   91.85 *   *
* Vel Total (ft/s)   *   4.18 * Avg. Vel. (ft/s)   *   *   4.18 *   *
* Max Chl Dpth (ft)   *   2.40 * Hydr. Depth (ft)   *   *   1.84 *   *
* Conv. Total (cfs)   * 14974.3 * Conv. (cfs)   *   * 14974.3 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   92.47 *   *
* Min Ch El (ft)   * 2016.00 * Shear (lb/sq ft)   *   *   0.25 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   1.06 *   *
* Frctn Loss (ft)   *   0.05 * Cum Volume (acre-ft) *   *   1.59 *   0.00 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   *   0.68 *   0.00 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2400

INPUT

Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.084	2026.006	-142.042	2026	-141.451	2025.91	-135.421	2025	-132.881	2024.679
-128.741	2024.098	-128.019	2024	-127.524	2023.936	-119.266	2023	-118.705	2022.929
-111.133	2022	-106.748	2021.331	-104.782	2021	-98.16472	2020.044	-97.8353	2020
-97.71172	2019.983	-90.0287	2019	-83.40092	2018.448	-79.39412	2018.208	-77.69532	2018.089
-76.5634	2018	-74.48032	2017.832	-68.34432	2017.313	-64.6888	2017	-60.40372	2016.626
-49.84322	2016.059	-49.13852	2016.012	-48.6649	2016	-46.86372	2015.984	-39.54332	2015.938
-38.32432	2015.924	-37.79242	2015.909	-26.51262	2015.923	-26.16782	2015.948	-25.23562	2015.979
-24.4031	2016	-23.4233	2016	-19.5742	2016	-17.206	2016	-11.9762	2016
-3.43844	2016	-3.35587	2016	0	2016.263	1.299462	2016.352	9.878996	2017
11.76572	2017.936	11.92067	2018	12.16166	2018.109	14.03082	2019	15.21123	2019.17
16.32498	2019.297	17.89226	2019.212	20.36165	2019.315	35.2036	2020	35.50619	2020.042
41.82622	2021	45.14693	2021.502	48.30624	2022	50.35701	2022.255	1.396852	2022.353
54.18091	2022.528	54.36793	2022.545	54.40674	2022.562	55.54104	2022.722	56.17187	2022.753
56.32629	2022.764	56.36172	2022.772	56.44405	2022.781	56.79499	2022.795	7.14499	2022.81
57.27968	2022.814	58.24014	2022.83						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.084	.035	-142.084	.025	58.24014	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-142.08458.24014	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2018.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.		0.025	
W.S. Elev (ft)	2018.37	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		177.09	
E.G. Slope (ft/ft)	0.001966	Area (sq ft)		177.09	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	94.73	Top Width (ft)		94.73	
Vel Total (ft/s)	3.99	Avg. Vel. (ft/s)		3.99	
Max Chl Dpth (ft)	2.46	Hydr. Depth (ft)		1.87	
Conv. Total (cfs)	15923.9	Conv. (cfs)		15923.9	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		95.17	
Min Ch El (ft)	2015.91	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)		1.49	0.00
C & E Loss (ft)	0.03	Cum SA (acres)		0.63	0.00

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2425

INPUT
Description:
Station Elevation Data num= 117

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.096	2024.558	-137.368	2024.471	-135.529	2024.409	-122.026	2024.095	-119.698	2024.031
-118.79	2024	-118.297	2023.965	-118.237	2023.963	-117.526	2023.884	-117.286	2023.884
-116.908	2023.874	-116.804	2023.891	-116.563	2023.888	-116.221	2023.878	-115.949	2023.866
-115.189	2023.832	-114.337	2023.797	-108.381	2023.592	-105.643	2023.491	-104.068	2023.426
-98.1024	2023	-93.57252	2022.704	-93.51682	2022.646	-85.1533	2022	-83.27412	2021.829
-82.7162	2021.821	-82.3482	2021.794	-81.30642	2021.671	-78.43232	2021.305	-76.0349	2021.23
-75.28342	2021.186	-73.47352	2021.042	-73.1631	2021	-70.8467	2020.66	-69.67212	2020.521
-67.0718	2020	-64.86252	2019.704	-60.6217	2019.01	-60.57612	2019.003	-60.5528	2019
-58.9832	2018.855	-58.32272	2018.834	-58.1522	2018.82	-56.56842	2018.604	-55.67952	2018.499
-53.1221	2018	-52.44372	2017.586	-51.4205	2017	-49.69482	2016.002	-49.6909	2016
-49.684	2016	-48.3595	2016	-46.9017	2016	-45.5812	2016	-43.6139	2016
-42.6424	2016	-41.5981	2016	-41.0816	2016	-40.8308	2016	-40.464	2016
-38.1096	2016	-37.17	2016	-33.8365	2016	-33.2814	2016	-33.0392	2016
-27.9028	2016	-27.7457	2016	-27.3212	2016	-26.1861	2016	-25.1747	2016
-20.3828	2016	-19.7935	2016	-19.1061	2016	-18.7715	2016	-17.6381	2016
-16.6012	2016	-15.7715	2016	-14.4362	2016	-13.2088	2016	-12.1042	2016
-10.4298	2016	-10.0312	2016	-9.11768	2016	-7.28958	2016	-7.16371	2016
-6.81167	2016	-6.68261	2016	-6.55663	2016	-6.44115	2016	-6.34238	2016
-5.99274	2016	0	2016	5.3158	2016	7.107042	2016.454	9.967904	2017
12.27588	2017.818	12.90054	2018	16.65378	2018.617	18.94975	2019	22.96053	2019.229
35.88189	2020	39.33712	2020.495	41.84652	2020.789	43.44988	2021	44.73246	2021.211
48.60596	2022	48.93256	2022	49.37354	2022	51.71523	2022.331	53.23272	2022.407
53.60361	2022.433	53.68878	2022.451	53.88682	2022.473	54.73078	2022.494	55.57246	2022.542
55.89636	2022.553	58.20612	2022.591						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.096	.035	-142.096	.025	58.20612	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-142.09658.20612	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2018.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.		0.025	
W.S. Elev (ft)	2017.97	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		119.86	
E.G. Slope (ft/ft)	*0.004494	Area (sq ft)		119.86	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	65.88	Top Width (ft)		65.88	
Vel Total (ft/s)	5.89	Avg. Vel. (ft/s)		5.89	
Max Chl Dpth (ft)	1.97	Hydr. Depth (ft)		1.82	
Conv. Total (cfs)	10531.5	Conv. (cfs)		10531.5	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		66.68	
Min Ch El (ft)	2016.00	Shear (lb/sq ft)		0.50	
Alpha	1.00	Stream Power (lb/ft s)		2.97	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)		1.40	0.00
C & E Loss (ft)	0.03	Cum SA (acres)		0.58	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2450

INPUT
Description:
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.14	2024	-136.32	2023.17	-133.983	2023	-116.171	2022.148	-115.088	2022.099
-114.516	2022.076	-114.137	2022.065	-113.855	2022.058	-112.576	2022	-111.737	2021.915
-110.303	2021.847	-108.918	2021.826	-105.734	2021.826	-103.045	2021.858	-101.763	2021.838
-100.532	2021.811	-87.9941	2021.948	-87.9397	2021.947	-87.8922	2021.948	-86.4632	2021.964
-85.7645	2022	-85.2772	2022.014	-83.4005	2022.083	-81.7044	2022.116	-79.5746	2022.128
-73.3091	2022.131	-70.5622	2022.124	-68.8705	2022.13	-64.7637	2022.103	-64.3107	2022.094
-61.4442	2022.006	-61.2357	2022	-60.9327	2021.918	-57.165	2021	-57.0139	2020.976
-52.3092	2020.251	-50.7825	2020	-49.7013	2019.765	-49.3285	2019.704	-48.6521	2019.585
-45.7654	2019	-42.92	2018.123	-42.5573	2018	-41.0412	2017.488	-39.935	2017
-39.3867	2016.748	-38.9449	2016.598	-38.718	2016.565	-38.4823	2016.595	-38.0252	2016.536
-37.381	2016.44	-36.8752	2016.416	-36.4893	2016.353	-34.9704	2016	-33.3897	2015.416
-33.332	2015.416	-33.3142	2015.416	-30.3163	2015.416	-27.8226	2015.416	-27.4153	2015.416
-27.1074	2015.416	-26.0863	2015.416	-25.7479	2015.416	-25.682	2015.416	-24.5936	2015.416
-24.5334	2015.416	-23.9254	2015.416	-23.8192	2015.416	-14.0127	2015.564	-9.70234	2015.639
-5.72932	2015.652	-5.24851	2015.655	-4.53876	2015.657		02	015.655	.3075822
015.655	1.9233472	015.684	5.66511	2015.767	.2192142	015.79611	.59209	2016	13.048082
016.695	13.80098	2017	14.952432	017.49515	.94837	2018	20.799382	018.97420	.88994
2019	21.203472	019.01840	.51964	2020	40.911962	020.07741	.558662	020.21143	.539922
020.671	44.90902	2021	45.224382	021.074	49.0909	2022	50.29268	2022.065	0.880942
022.102	51.01586	2022.135	1.329592	022.16552	.666572	022.19853	.999932	022.27554	.513042
022.292	58.17212	022.352							

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.14	.035	-64.7637	.025	58.1721	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-64.7637	58.1721	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2018.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.		0.025	
W.S. Elev (ft)	2017.47	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2017.47	Flow Area (sq ft)		94.96	
E.G. Slope (ft/ft)	*0.007844	Area (sq ft)		94.96	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	55.91	Top Width (ft)		55.91	
Vel Total (ft/s)	7.43	Avg. Vel. (ft/s)		7.43	
Max Chl Dpth (ft)	2.06	Hydr. Depth (ft)		1.70	
Conv. Total (cfs)	7971.2	Conv. (cfs)		7971.2	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		56.58	
Min Ch El (ft)	2015.42	Shear (lb/sq ft)		0.82	
Alpha	1.00	Stream Power (lb/ft s)		6.11	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)		1.34	0.00
C & E Loss (ft)	0.00	Cum SA (acres)		0.55	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2475

INPUT
Description:
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
********************************************************************************
-142.1922024.111-141.9082024.109-141.603    2024-132.7292023.564-131.5462023.533
-121.8422023.221-119.2172023.117-119.0442023.111-118.933 2023.11-118.7542023.115
-118.5022023.112-118.341 2023.11-117.9522023.117-115.1082023.026-114.508    2023
-109.6052022.208-108.083    2022-107.2052021.875-105.1812021.658-103.8562021.526
-102.6042021.385-101.945  2021.3-100.035    2021-97.44182020.595-93.98842020.063
-93.5585    2020-93.1918 2019.93-90.16882019.379 -89.5692019.286-89.08922019.228
-88.66422019.189 -88.3172019.167-88.04272019.159-87.81512019.166-87.59232019.183
-87.1431 2019.23-86.89582019.206-86.48762019.208-86.07572019.238-85.52652019.275
-84.73552019.295-82.58812019.489-81.96972019.523-81.22622019.532-80.41992019.525
 -79.3222019.503-77.51982019.434-75.22042019.349-68.1211    2019-66.37262018.926
-66.13452018.922-66.01282018.916-64.98282018.837-61.24812018.724-59.65522018.656
-52.5993    2018-50.82392017.843-49.85432017.707-48.24322017.485-45.2248    2017
-44.58352016.873-43.1608 2016.51-41.4768    2016  -37.682015.139-37.15562015.161
-35.21392015.161-29.83512015.161-29.52662015.161-27.99122015.161-16.15822015.221
-11.61532015.252-6.651282015.284       02015.3154.1144932015.3344.5413732015.547
5.449604    20167.523397    20168.298864    201610.02121 2016.8310.36211    2017
10.495242017.06812.38126    201819.603082018.70121.77287    201933.390452019.598
37.151042019.79639.121622019.794 39.13672019.77439.270992019.764 41.1539    2020
42.586112020.17944.575732020.42548.383352020.88549.17499    2021  49.7182021.145
50.534792021.42551.422572021.71552.30144    202252.427392022.00753.129722022.031
58.138072022.113

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.192    .035-81.2262    .02558.13807    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -81.226258.13807               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
********************************************************************************************
* E.G. Elev (ft)         * 2018.06  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.15  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2016.91  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2017.15  * Flow Area (sq ft)     *          *   82.01  *          *
* E.G. Slope (ft/ft)     *0.012481  * Area (sq ft)          *          *   82.01  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   54.97  * Top Width (ft)        *          *   54.97  *          *
* Vel Total (ft/s)       *    8.61  * Avg. Vel. (ft/s)      *          *    8.61  *          *
* Max Chl Dpth (ft)      *    1.77  * Hydr. Depth (ft)      *          *    1.49  *          *
* Conv. Total (cfs)      *  6319.5  * Conv. (cfs)           *          *  6319.5  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   55.55  *          *
* Min Ch El (ft)         * 2015.14  * Shear (lb/sq ft)      *          *    1.15  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.90  *          *
* Frctn Loss (ft)        *    0.24  * Cum Volume (acre-ft)  *          *    1.29  *    0.00  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    0.52  *    0.00  *
********************************************************************************************

Note:    Program found supercritical flow starting at this cross section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2500

INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
********************************************************************************
-142.2152025.307-139.708    2025-137.8992024.825-137.4842024.836-137.1842024.828
-136.9612024.825-136.3342024.841-135.7222024.785-135.2332024.746-132.5662024.608
-131.0342024.496-129.4032024.427-127.3332024.373-123.8312024.046-123.7882024.043
-123.756 2024.04-123.505    2024-122.6482023.915-121.5772023.816-113.033    2023
-109.0112022.667 -106.622022.453-101.857    2022-99.40422021.793-98.78562021.763
-97.49432021.748-93.33762021.764-92.41342021.701-92.24242021.682-92.0736 2021.65
-91.47722021.614-90.60132021.524-89.56572021.384-88.02882021.103-87.3926    2021
-86.94382020.915-81.2587    2020-80.80182019.924-75.0488    2019-70.8649  2018.4
-68.5463    2018-64.69822017.403-62.6328    2017-60.5743 2016.61 -57.668    2016
-56.44172015.847-54.62432015.667-46.9941    2015-44.6836 2014.86-43.8027 2014.86
-40.7726 2014.86-39.1125 2014.86 -37.231 2014.86 -36.765 2014.86-35.7829 2014.86
-34.9688 2014.86-34.0664 2014.86-32.9587 2014.86-28.23072014.859-21.2379 2014.86
-16.7155 2014.86-13.91762014.861       0 2014.86   .8384 2014.865.1120342014.861
5.5887022015.0997.391978    20167.575482    2016 7.57577    2016 7.83668    2016
 8.34381 2016.21 10.2726    2017 11.89852017.65112.72288    201825.311892018.434
26.098532018.45628.020352018.48729.00475 2018.5130.929922018.57136.700632018.767
37.399182018.78938.827572018.83839.034122018.84439.37696 2018.8540.282982018.861
 40.79412018.86541.211052018.86441.639422018.85841.71581 2018.8643.26949    2019
46.002692019.35548.694422019.74450.35817    202051.13959 2020.13 51.82512020.232
57.58298    202158.10184 2021.05

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.215    .035-93.3376    .02558.10184    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -93.337658.10184               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
********************************************************************************************
* E.G. Elev (ft)         * 2017.60  * Element               *  Left OB *  Channel * Right OB *
```

* Vel Head (ft)	* 1.52	* Wt. n-Val.	*	* 0.025	*				
* W.S. Elev (ft)	* 2016.08	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00	*			
* Crit W.S. (ft)	* 2016.53	* Flow Area (sq ft)	*	* 71.42	*				
* E.G. Slope (ft/ft)	*0.025116	* Area (sq ft)	*	* 71.42	*				
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*				
* Top Width (ft)	* 66.08	* Top Width (ft)	*	* 66.08	*				
* Vel Total (ft/s)	* 9.89	* Avg. Vel. (ft/s)	*	* 9.89	*				
* Max Chl Dpth (ft)	* 1.22	* Hydr. Depth (ft)	*	* 1.08	*				
* Conv. Total (cfs)	* 4454.8	* Conv. (cfs)	*	* 4454.8	*				
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 66.42	*				
* Min Ch El (ft)	* 2014.86	* Shear (lb/sq ft)	*	* 1.69	*				
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 16.67	*				
* Frctn Loss (ft)	* 0.43	* Cum Volume (acre-ft)	*	* 1.24	* 0.00	*			
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	*	* 0.48	* 0.00	*			

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2525

INPUT
Description:
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.304	2030	-142.108	2030	-142.096	2030	-141.884	2029.851	-140.673	2029
-139.836	2028.411	-139.251	2028	-138.041	2027.687	-135.054	2027	-133.056	2026.595
-130.566	2026.031	-130.391	2026	-129.054	2025.835	-127.054	2025.615	-122.673	2025.173
-121.627	2025	-120.865	2024.892	-115.411	2024	-111.906	2023.261	-110.891	2023
-109.464	2022.845	-108.953	2022.803	-107.823	2022.684	-104.383	2022.308	-101.475	2022
-99.33422	2021.824	-88.1188	2021	-82.8222	2020.413	-81.29262	2020.235	-80.23882	2020.135
-78.6848	2020	-75.65542	2019.698	-74.7768	2019.59	-69.7818	2019	-66.83722	2018.531
-66.04552	2018.414	-65.422	2018.347	-64.873	2018.303	-64.45612	2018.287	-63.95792	2018.286
-63.24132	2018.164	-63.16082	2018.157	-61.9133	2018	-60.87242	2017.843	-60.52862	2017.787
-59.77332	2017.682	-58.97712	2017.526	-58.2468	2017.39	-57.71682	2017.275	-56.90312	2017.072
-56.6179	2017	-56.30122	2016.927	-55.09682	2016.651	-52.0955	2016	-50.06212	2015.521
-49.0684	2015	-48.21972	2014.594	-46.35542	2014.552	-46.14972	2014.533	-39.30362	2014.478
-32.12462	2014.471	-23.12	2014.464	-19.56762	2014.461	-16.9504	2014.46	0	2014.444
.8280942	2014.444	5.728322	2014.446	384.8492	2014.768	8.851912	2016	9.632398	2016
9.633825	2016	11.03091	2016	12.79514	2016.444	14.93004	2017	17.04608	2017.06
24.97235	2017.553	26.2621	2017.552	7.54153	2017.542	7.750532	2017.543	28.39745	2017.571
30.23443	2017.669	32.42132	2017.757	33.83992	2017.831	37.55482	2018	39.50523	2018.235
40.91245	2018.417	43.47602	2018.723	45.63113	2019	45.767	2019.009	48.36199	2019.168
48.93773	2019.174	51.03926	2019.295	52.30886	2019.395	54.40197	2019.622	54.58572	2019.664
54.78692	2019.683	56.02051	2019.757	56.28058	2019.797	56.36459	2019.805	56.48532	2019.811
56.61485	2019.818	56.77605	2019.819	58.14742	2019.833				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.304	.035	-142.304	.025	58.14742	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.3	58.14742	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2017.04	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.53	* Wt. n-Val.	*	* 0.025	*
* W.S. Elev (ft)	* 2016.51	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2016.20	* Flow Area (sq ft)	*	* 120.34	*
* E.G. Slope (ft/ft)	*0.004572	* Area (sq ft)	*	* 120.34	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*
* Top Width (ft)	* 67.46	* Top Width (ft)	*	* 67.46	*
* Vel Total (ft/s)	* 5.87	* Avg. Vel. (ft/s)	*	* 5.87	*
* Max Chl Dpth (ft)	* 2.07	* Hydr. Depth (ft)	*	* 1.78	*
* Conv. Total (cfs)	* 10441.6	* Conv. (cfs)	*	* 10441.6	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 68.23	*
* Min Ch El (ft)	* 2014.44	* Shear (lb/sq ft)	*	* 0.50	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 2.95	*
* Frctn Loss (ft)	* 0.08	* Cum Volume (acre-ft)	*	* 1.19	* 0.00 *
* C & E Loss (ft)	* 0.06	* Cum SA (acres)	*	* 0.44	* 0.00 *

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2550

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.319	2030.153	-139.576	2030.009	-139.508	2030	-139.396	2029.967	-135.386	2029
-134.204	2028.634	-131.776	2028	-129.685	2027.403	-128.348	2027	-125.395	2026.15
-124.892	2026	-124.447	2025.882	-121.354	2025	-120.432	2024.765	-117.709	2024

-116.0332023.594-113.725   2023-110.751 2022.33-109.518   2022-104.3442021.633
-95.7155   2021-90.39372020.581-89.9262 2020.55-89.46182020.531-88.19282020.497
-87.69562020.489-87.43992020.491-85.00542020.697 -84.6912020.731-84.02562020.876
-83.14462020.967-83.13232020.965-82.2459   2021-81.84432021.066-80.54682021.122
-80.43822021.138-79.2754   2021-79.2556   2021-76.4154   2020-75.66152019.942
-74.31282019.764-70.69242019.389-68.3458   2019-66.10012018.663-62.30292018.105
-61.7592   2018-61.34992017.899-59.98062017.562-58.22082017.149-57.5637   2017
-57.11382016.884-53.2717   2016-51.12462015.438-49.8938   2015 -49.2752014.574
-48.1692   2014-45.64852014.095-32.91932014.076-25.04552014.066-22.31572014.062
-19.98322014.059   02014.028 .8704292014.026 6.344612014.0197.1800342014.436
10.31134   201612.435262016.23917.889542016.83927.534632016.97728.916652017.036
31.33561 2017.0131.577672016.99931.99533   201732.98962   201733.14506   2017
33.512552017.03641.08717   201846.209972018.70548.35847   201950.898232019.153
51.805472019.29152.09851 2019.3252.519592019.339 52.97152019.36453.043292019.365
58.349652019.418

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-142.319   .035-80.5468   .02558.34965   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -80.546858.34965   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2016.90 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.33 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2016.57 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 152.42 *   *
* E.G. Slope (ft/ft)   *0.002241 * Area (sq ft)   *   * 152.42 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   71.18 * Top Width (ft)   *   *   71.18 *   *
* Vel Total (ft/s)   *   4.63 * Avg. Vel. (ft/s)   *   *   4.63 *   *
* Max Chl Dpth (ft)   *   2.57 * Hydr. Depth (ft)   *   *   2.14 *   *
* Conv. Total (cfs)   * 14912.1 * Conv. (cfs)   *   * 14912.1 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   72.17 *   *
* Min Ch El (ft)   * 2014.00 * Shear (lb/sq ft)   *   *   0.30 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   1.37 *   *
* Frctn Loss (ft)   *   0.05 * Cum Volume (acre-ft) *   *   1.11 *   0.00 *
* C & E Loss (ft)   *   0.02 * Cum SA (acres)   *   *   0.40 *   0.00 *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2575

INPUT
Description:
Station Elevation Data   num=   71
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
 -142.292030.683-141.2642030.629-140.3712030.513-140.2392030.412-138.164 2030.09
-137.742   2030 -135.722029.368-134.515   2029-133.624 2028.69-131.514   2028
 -128.672027.165-128.176   2027-125.6722026.214-124.979   2026-122.0442025.096
-121.743   2025-118.5022024.011-118.467   2024-118.0192023.864-115.204   2023
-114.2762022.725-111.901   2022-105.3122021.072-104.739   2021 -101.612020.811
-96.6316 2020.55-94.80522020.441-92.99212020.315-89.21132020.023-89.10092020.016
 -88.874   2020-82.9335 2019.77-75.09962019.493-65.8421   2019-61.07932018.256
 -59.224   2018-57.32012017.505-55.2886   2017-52.76662016.359-51.2836   2016
-50.9965 2015.92-48.2811   2015-47.44412014.176-47.3076   2014-47.14282013.797
-43.48142013.706-40.32072013.701-33.78462013.693-23.12122013.678-18.16572013.672
 -4.10172013.653   02013.6476.7498592013.6398.7795022014.65311.47561   2016
17.225342016.53618.106292016.616 19.50672016.74330.263812016.95430.57745 2016.96
30.587272016.95730.692472016.92231.857472016.53631.999962016.48935.060162016.727
38.56611   201743.610492017.78245.02454   201845.416132018.069 58.2097   2019
58.551872019.003

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
 -142.29   .035 -142.29   .02558.55187   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
       -142.2958.55187   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2016.84 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.26 * Wt. n-Val.   *   *   0.025 *   *
* W.S. Elev (ft)   * 2016.58 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 172.63 *   *
* E.G. Slope (ft/ft)   *0.001530 * Area (sq ft)   *   * 172.63 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   72.64 * Top Width (ft)   *   *   72.64 *   *
* Vel Total (ft/s)   *   4.09 * Avg. Vel. (ft/s)   *   *   4.09 *   *
* Max Chl Dpth (ft)   *   2.94 * Hydr. Depth (ft)   *   *   2.38 *   *
* Conv. Total (cfs)   * 18047.6 * Conv. (cfs)   *   * 18047.6 *   *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   74.00 *   *
* Min Ch El (ft)   * 2013.64 * Shear (lb/sq ft)   *   *   0.22 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   0.91 *   *
* Frctn Loss (ft)   *   0.03 * Cum Volume (acre-ft) *   *   1.02 *   0.00 *
* C & E Loss (ft)   *   0.01 * Cum SA (acres)   *   *   0.36 *   0.00 *

****

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2600

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-141.867	2031	-140.767	2031	-140.206	2031	-137.288	2031	-136.944	2031
-135.955	2030.582	-134.481	2030	-132.442	2029.148	-132.073	2029	-131.912	2028.932
-129.57	2028	-127.968	2027.36	-127.135	2027	-125	2026.131	-124.68	2026
-122.761	2025.381	-121.673	2025	-120.397	2024.605	-118.509	2024	-116.219	2023.285
-115.488	2023.047	-115.344	2023	-114.478	2022.731	-112.215	2022	-111.703	2021.851
-109.092	2021	-105.172	2020.524	-103.752	2020.388	-99.4889	2020	-89.6006	2019.721
-66.6489	2019	-59.1981	2018.211	-58.6881	2018.162	-58.2216	2018.127	-56.8783	2018
-55.8884	2017.78	-54.7863	2017.527	-52.2133	2017	-50.4598	2016.65	-47.3734	2016
-46.7044	2015.398	-46.5572	2015	-46.5187	2014.828	-46.2312	2014.04	-46.2061	2014
-46.2027	2013.992	-38.4956	2013.314	-37.1107	2013.312	-33.7586	2013.308	-20.6907	2013.293
-15.5158	2013.287	-2.94621	2013.272	0	2013.268	7.145345	2013.269	4.969942	2014.436
12.62789	2016	19.72193	2016.491	9.941162	2016.505	23.28442	2016.726	27.32389	2016.805
32.94871	2016.916	33.13495	2016.919	33.72855	2016.931	34.12931	2016.939	34.48981	2016.946
34.54625	2016.928	35.59887	2016.584	35.79691	2016.613	38.40538	2017	41.07814	2017.454
44.51415	2018	46.79577	2018.144	49.46118	2018.269	49.91355	2018.298	50.41111	2018.342
51.56471	2018.415	2.121222	2018.459	52.58869	2018.545	52.87579	2018.573	53.28388	2018.599
53.96707	2018.624	55.06828	2018.656	56.77144	2018.977	57.02939	2019	57.06604	2019
57.10827	2019	57.29088	2019	57.29179	2019	57.30892	2018.997	57.30952	2018.995

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-141.867	.035	-141.867	.025	57.30952	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-141.867	57.30952	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.		0.025	
W.S. Elev (ft)	2016.57	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		187.74	
E.G. Slope (ft/ft)	0.001136	Area (sq ft)		187.74	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	71.04	Top Width (ft)		71.04	
Vel Total (ft/s)	3.76	Avg. Vel. (ft/s)		3.76	
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)		2.64	
Conv. Total (cfs)	20942.2	Conv. (cfs)		20942.2	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		73.02	
Min Ch El (ft)	2013.26	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		0.69	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.91	0.00
C & E Loss (ft)	0.00	Cum SA (acres)		0.32	0.00

****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2625

INPUT
Description:
Station Elevation Data num= 108

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-140.857	2031	-137.026	2031	-135.998	2031	-134.863	2030.567	-133.393	2030
-131.853	2029.408	-130.728	2029	-129.938	2028.698	-128.136	2028	-126.202	2027.241
-125.56	2027	-125.016	2026.794	-123.066	2026	-122.034	2025.611	-120.473	2025
-118.242	2024.126	-117.925	2024	-117.692	2023.912	-115.272	2023	-113.718	2022.404
-112.63	2022	-110.019	2021.011	-109.988	2021	-109.891	2020.964	-107.306	2020
-105.807	2019.881	-104.035	2019.765	-101.045	2019.591	-99.6385	2019.56	-97.5492	2019.546
-96.7062	2019.518	-95.7952	2019.468	-94.7574	2019.401	-92.2708	2019.249	-87.8466	2019
-82.1689	2018.84	-77.2907	2018.712	-74.7046	2018.652	-72.0143	2018.595	-69.7512	2018.549
-68.2708	2018.523	-67.7152	2018.529	-64.4581	2018.428	-60.4156	2018.293	-55.6325	2018.125
-53.1692	2018.082	-52.2222	2018	-50.5004	2017.627	-49.3826	2017.365	-47.5623	2017
-44.7572	2016.36	-43.0557	2016	-41.6092	2015.568	-40.4914	2015.255	-40.0707	2015
-39.7367	2014.071	-39.7069	2014	-39.6789	2013.919	-39.3025	2013	-39.2846	2012.952
-39.2427	2012.867	-38.7548	2012.854	-37.7237	2012.827	-37.0854	2012.943	-32.9789	2012.911
-26.3862	2012.903	-19.2812	2012.893	-15.6239	2012.888	-12.5692	2012.883	-1.04367	2012.867
0	2012.865	7.368412	2012.855	8.644401	2013.493	13.65644	2016	16.82397	2016.166
19.00407	2016.274	21.3271	2016.392	1.33863	2016.392	8.189972	2016.731	34.06845	2016.847
35.24893	2016.87	37.02752	2016.905	38.20323	2016.931	39.36438	2016.951	39.36492	2016.951
39.52224	2016.899	39.56171	2016.914	40.01011	2016.997	40.01847	2016.998	40.029	2017
40.15052	2017.022	45.51675	2018	45.57117	2018	46.10219	2018	46.57391	2018.086
47.15052	2018.144	47.97012	2018.194	49.34222	2018.245	51.55385	2018.315	4.974412	2018.953
55.49247	2019	55.56608	2019	55.65091	2019	56.01764	2019	56.01947	2019
56.05384	2018.993	56.05507	2018.991	56.05508	2018.991				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-140.857	.035	-53.1692	.025	56.05508	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-53.16	9256.05508		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.		0.025	
W.S. Elev (ft)	2016.55	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		193.23	
E.G. Slope (ft/ft)	0.001026	Area (sq ft)		193.23	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	70.23	Top Width (ft)		70.23	
Vel Total (ft/s)	3.65	Avg. Vel. (ft/s)		3.65	
Max Chl Dpth (ft)	3.73	Hydr. Depth (ft)		2.75	
Conv. Total (cfs)	22037.2	Conv. (cfs)		22037.2	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		72.70	
Min Ch El (ft)	2012.83	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.62	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.81	0.00
C & E Loss (ft)	0.01	Cum SA (acres)		0.28	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2650

INPUT
Description:
Station Elevation Data num= 127

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-139.847	2031	-136.846	2031	-135.811	2031	-135.071	2031	-133.888	2030.539
-132.616	2030	-131.467	2029.513	-130.272	2029	-129.414	2028.644	-127.915	2028
-126.802	2027.555	-125.473	2027	-123.947	2026.372	-123.073	2026	-121.344	2025.306
-120.57	2025	-120.004	2024.767	-118.111	2024	-117.772	2023.861	-115.566	2023
-114.420	22.521	-112.982	2022	-112.303	2021.754	-110.284	2021	-108.396	2020.235
-107.675	2020	-106.812	2019.577	-105.203	2019	-102.332	2018.882	-100.952	2018.837
-99.9466	2018.814	-99.1041	2018.803	-97.6069	2018.79	-96.8657	2018.775	-92.9991	2018.658
-91.261	2018.613	-89.5862	2018.583	-88.0063	2018.57	-85.5732	2018.565	-85.5287	2018.571
-84.9739	2018.573	-83.1407	2018.767	-83.0032	2018.766	-82.8465	2018.766	-82.7731	2018.767
-82.696	2018.769	-82.2488	2018.774	-82.074	2018.777	-81.9892	2018.786	-81.8928	2018.791
-81.8165	2018.793	-81.7032	2018.793	-81.378	2018.792	-80.8823	2018.788	-80.5317	2018.784
-80.3836	2018.781	-80.2554	2018.778	-79.6474	2018.758	-79.2219	2018.746	-78.3976	2018.728
-78.0049	2018.72	-77.8665	2018.715	-77.1308	2018.693	-76.8454	2018.682	-76.6804	2018.671
-76.5208	2018.648	-76.2796	2018.639	-73.7172	2018.581	-72.9664	2018.56	-72.3027	2018.54
-71.7443	2018.52	-69.5208	2018.422	-67.2476	2018.347	-61.3642	2018.181	-55.5423	2018
-52.8673	2017.747	-52.1579	2017.68	-51.1835	2017.588	-44.5482	2017.583	-42.6357	2017.581
-37.7467	2017.533	-36.4067	2017.52	-36.1794	2017.518	-35.7844	2017.514	-29.4408	2014.449
-25.3264	2012.461	-21.6712	2012.454	-16.8517	2012.444	-12.0098	2012.434	-8.7573	2012.427
0	2012.406	1.397522	2012.404	7.210325	2012.391	8.680361	2013.126	14.42725	2016
19.84588	2016.229	22.98627	2016.359	23.00042	2016.363	2.246152	2016.744	2.765532	2016.954
43.35799	2016.966	43.36205	2016.967	43.75388	2017.097	43.79718	2017.105	45.53092	2017.449
47.23142	2017.793	48.08913	2017.968	48.24799	2018	48.40413	2018.035	48.49972	2018.055
48.50307	2018.055	48.50628	2018.056	48.65692	2018.127	48.73201	2018.114	48.78708	2018.106
48.78751	2018.106	48.78794	2018.105	48.79325	2018.105	53.17739	2018.935	53.95555	2019
54.06612	2019	54.19353	2019	54.7444	2019	54.74715	2019	54.79877	2018.99
54.80063	2018.986	54.80065	2018.986						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-139.847	.035	-37.7467	.025	54.80065	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

-37.74	6754.80065		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.		0.025	
W.S. Elev (ft)	2016.44	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		165.56	
E.G. Slope (ft/ft)	0.001339	Area (sq ft)		165.56	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	58.53	Top Width (ft)		58.53	
Vel Total (ft/s)	4.26	Avg. Vel. (ft/s)		4.26	
Max Chl Dpth (ft)	4.05	Hydr. Depth (ft)		2.83	
Conv. Total (cfs)	19293.5	Conv. (cfs)		19293.5	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		60.30	
Min Ch El (ft)	2012.39	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.98	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)		0.70	0.00
C & E Loss (ft)	0.01	Cum SA (acres)		0.24	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2675

INPUT
Description:
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-138.837	2031	-137.985	2031	-137.365	2031	-135.753	2030	.345	-134.831	2030
-132.405	2029	.054	-132.255	2029	-132.111	2028	.945	-129.557	2028	-128.182	2027	.475
-126.903	2027	-125.311	2026	.395	-124.298	2026	-123.245	2025	.607	-121.591	2025
-119.921	2024	.364	-118.97	2024	-117.542	2023	.464	-116.272	2023	-114.762	2022	.411
-113.6	2022	-112.445	2021	.552	-111.165	2021	-108.771	2020	.149	-108.368	2020
-107.471	2019	.659	-105.855	2019	-91.97962	2018	.196	-87.7722	2018	.07	-87.29892	2018	.047
-84.7022	2018	-83.6379	2018	-82.5666	2018	-82.1536	2018	-80.5699	2018
-80.4969	2018	-76.19982	2018	.453	-75.87762	2018	.451	-75.51032	2018	.451	-75.33812	2018	.453
-75.15742	2018	.459	-74.1092	2018	.47	-73.69942	2018	.477	-73.50062	2018	.499	-73.27462	2018	.511
-73.09582	2018	.514	-72.83022	2018	.515	-72.06792	2018	.511	-70.90592	2018	.502	-70.08412	2018	.493
-69.7372	2018	.487	-69.43652	2018	.479	-68.01122	2018	.432	-67.0142	2018	.406	-65.08172	2018	.362
-64.16122	2018	.344	-63.83692	2018	.332	-62.1123	2018	.28	-61.44332	2018	.255	-61.0565	2018	.23
-60.68242	2018	.175	-60.11712	2018	.154	-54.11072	2018	.017	-53.4811	2018	-50.0672	2017	.622
-46.68112	2017	.246	-32.4212	2017	.106	-30.91262	2017	.087	-28.13192	2017	.061	-23.77762	2014	.954
-17.67392	2012	.012	-16.48832	2012	.008	-14.4752	2012	.002	-14.0036	2012	-9.38763	2012
-4.930342	2011	.978	0	2011	.964	1.865739	2011	.959	7.358182	2011	.945	9.255437	2012	.891
15.50264	2016	15.50479	2016	20.25331	2016	.186	29.84615	2016	.563	0.781872	2016	.597
31.63441	2016	.633	3.419812	2016	.701	33.70037	2016	.712	35.39211	2016	.778	45.52856	2016	.98
46.45546	2016	.999	46.69667	2017	.079	48.40707	2017	.646	52.49049	2019	52.56615	2019
52.73616	2018	.999	53.47116	2019	53.47483	2019	53.54371	2018	.987	53.74618	2018	.982
53.54621	2018	.982

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-138.837	.035	-28.1319	.025	53.54621	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-28.13195 3.54621 8.75 8.75 8.75 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.		0.025	
W.S. Elev (ft)	2016.33	Reach Len. (ft)	8.75	8.75	8.75
Crit W.S. (ft)		Flow Area (sq ft)		148.87	
E.G. Slope (ft/ft)	0.001588	Area (sq ft)		148.87	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	50.60	Top Width (ft)		50.60	
Vel Total (ft/s)	4.74	Avg. Vel. (ft/s)		4.74	
Max Chl Dpth (ft)	4.39	Hydr. Depth (ft)		2.94	
Conv. Total (cfs)	17716.4	Conv. (cfs)		17716.4	
Length Wtd. (ft)	8.75	Wetted Per. (ft)		52.54	
Min Ch El (ft)	2011.95	Shear (lb/sq ft)		0.28	
Alpha	1.00	Stream Power (lb/ft s)		1.33	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)		0.61	0.00
C & E Loss (ft)	0.00	Cum SA (acres)		0.21	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2683.75

INPUT
Description:
Station Elevation Data num= 97

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-138.483	2031	-138.384	2031	-138.312	2031	-138.124	2030	.924	-135.657	2030
-135.413	2029	.905	-132.92	2029	-130.504	2028	.083	-130.278	2028	-130.157	2027	.954
-127.596	2027	-127.335	2026	.901	-124.855	2026	-122.873	2025	.253	-122.332	2025	.065
-122.148	2025	-121.995	2024	.942	-121.176	2024	.632	-119.431	2024	-118.357	2023	.596
-116.681	2023	-114.422	2022	.159	-113.973	2022	-113.703	2021	.896	-111.187	2021
-110.585	2020	.775	-108.463	2020	-107.643	2019	.68	-105.753	2019	-104.001	2018	.346
-103.847	2018	.411	-96.5001	2018	-93.323	2018	-91.74072	2018	.194	-88.33532	2018	.239
-86.76932	2018	.252	-77.0287	2018	-73.77	2018	.343	-73.38322	2018	.341	-72.94212	2018	.341
-72.73542	2018	.344	-72.51852	2018	.351	-71.25992	2018	.364	-70.76772	2018	.371	-70.52912	2018	.399
-70.25772	2018	.413	-70.04	2018	.417	-69.72412	2018	.418	-68.80882	2018	.413	-67.41362	2018	.403
-66.42692	2018	.392	-66.01012	2018	.384	-65.64932	2018	.375	-63.93792	2018	.318	-62.74062	2018	.286
-60.42042	2018	.234	-59.31522	2018	.213	-58.92582	2018	.198	-56.85512	2018	.135	-56.05182	2018	.105
-55.58742	2018	.075	-55.13822	2018	.009	-54.8917	2018	-51.79142	2017	.708	-51.7912	2017	.708
-46.852	2017	.268	-45.22532	2017	.094	-35.91882	2017	.048	-26.2687	2017	-20.92642	2014	.365
-17.32542	2012	.589	-16.1324	2012	-4.956622	2011	.885	-3.5172	2011	.863	-1.55012	2011	.856
0	2011	.851	7.976971	2011	.823	14.84367	2015	.006	16.90073	2015	.873	19.65283	2015	.968
22.07237	2016	.052	25.48064	2016	.223	27.11112	2016	.336	30.39746	2016	.458	35.38963	2016	.745
35.68519	2016	.757	36.28464	2016	.781	40.90062	2016	.872	41.29137	2016	.884	41.29599	2016	.88
43.10839	2016	.915	44.24902	2016	.938	46.00209	2016	.973	47.01715	2016	.993	47.33453	2016	.999
47.74115	2017	.134	52.92637	2018	.854

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-138.483	.035	-26.2687	.025	52.92637	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

```
      -26.268752.92637             8.33    8.33    8.33             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2016.67  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.34  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2016.32  * Reach Len. (ft)       *    8.33  *     8.33  *    8.33  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  150.07  *          *
* E.G. Slope (ft/ft)     *0.001591  * Area (sq ft)          *          *  150.07  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   51.79  * Top Width (ft)        *          *   51.79  *          *
* Vel Total (ft/s)       *    4.70  * Avg. Vel. (ft/s)      *          *    4.70  *          *
* Max Chl Dpth (ft)      *    4.50  * Hydr. Depth (ft)      *          *    2.90  *          *
* Conv. Total (cfs)      * 17699.1  * Conv. (cfs)           *          * 17699.1  *          *
* Length Wtd. (ft)       *    8.33  * Wetted Per. (ft)      *          *   53.69  *          *
* Min Ch El (ft)         * 2011.82  * Shear (lb/sq ft)      *          *    0.28  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.31  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *          *    0.58  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    0.20  *    0.00  *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2692.09

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-139.9682031.319-139.4052031.214-138.732    2031 -135.922030.087-135.649    2030
-135.1512029.843-132.737    2029-131.4992028.632-129.693    2028-128.7042027.628
-127.139    2027-125.0772026.222-124.468    2026-123.7492025.726-121.916    2025
-119.9952024.278-119.236    2024-117.1952023.213-116.607    2023-114.0842022.052
-113.939    2022 -113.64 2021.89-111.393    2021-110.2782020.569-108.804    2020
-107.4152019.391-106.433    2019-104.4132018.361-104.3142018.366-101.2692018.715
-99.98962018.728-99.39122018.731-71.9454    2018-70.42122018.165-69.93922018.162
-69.39042018.163-69.13352018.167 -68.8642018.176-67.30412018.194-66.69582018.205
-66.4011 2018.24-66.06642018.258-65.80172018.263-65.40892018.264-64.2837 2018.26
-62.57462018.248-61.37042018.235-60.86282018.226 -60.4242018.215 -58.3492018.146
-56.90372018.108-54.11822018.046-52.79822018.021-52.33422018.003-52.2304    2018
-50.61222017.803 -47.2862017.405-44.85552017.099-36.45582017.057-24.9785    2017
-18.11172013.578-14.87172011.988-10.25012011.902-2.494332011.751       02011.743
6.7869512011.7228.1985512011.7178.5483862011.8448.7708332011.92118.47936 2015.59
21.245272015.78924.371882015.95528.48022 2016.2529.371152016.28531.48636 2016.41
32.539562016.48535.153822016.67336.545022016.77339.134232016.82543.457492016.911
47.176722016.98547.483722016.99147.509032016.99247.545142016.99247.74867 2017.06
51.82698 2018.42

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-139.968    .035-24.9785    .03351.82698    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -24.978551.82698             7.92    7.92    7.92             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2016.64  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.32  * Wt. n-Val.            *          *    0.033  *          *
* W.S. Elev (ft)         * 2016.32  * Reach Len. (ft)       *    7.92  *     7.92  *    7.92  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  154.61  *          *
* E.G. Slope (ft/ft)     *0.002611  * Area (sq ft)          *          *  154.61  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   53.55  * Top Width (ft)        *          *   53.55  *          *
* Vel Total (ft/s)       *    4.57  * Avg. Vel. (ft/s)      *          *    4.57  *          *
* Max Chl Dpth (ft)      *    4.60  * Hydr. Depth (ft)      *          *    2.89  *          *
* Conv. Total (cfs)      * 13816.5  * Conv. (cfs)           *          * 13816.5  *          *
* Length Wtd. (ft)       *    7.92  * Wetted Per. (ft)      *          *   55.30  *          *
* Min Ch El (ft)         * 2011.72  * Shear (lb/sq ft)      *          *    0.46  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.08  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *          *    0.55  *    0.00  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    0.19  *    0.00  *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2700

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-143.0042031.724-142.7732031.681-140.611    2031-139.9132030.775-137.481    2030
-135.2262029.294  -134.3    2029-133.8312028.842-133.4632028.725-131.176    2028
-129.574 2027.34-129.0012027.108 -128.74    2027-126.9922026.297-126.297    2026
-123.8982025.005-123.887    2025-123.8412024.981-121.266    2024-119.9472023.502
-118.625    2023-117.3692022.512 -116.03    2022-114.0242021.245-113.369    2021
-112.3772020.634-110.745    2020-110.1582019.776-108.152    2019-101.5292018.793
```

-96.26252018.629-94.70442018.604-91.58142018.559-91.08922018.548-87.72652018.471
-78.02992018.256-75.74392018.201-71.87342018.088-69.09742018.018-68.4395   2018
-68.42432018.002-68.0941   2018-67.9424   2018-67.4213   2018-67.20722018.001
-66.90432018.005-66.58672018.016-64.7527 2018.04-64.03922018.053 -63.6942018.095
-63.30212018.117-62.99242018.123-62.53322018.125 -61.222018.121-59.23182018.109
-57.83552018.095-57.24822018.085-56.74092018.072-54.5881   2018-52.27052017.769
-44.46622016.984-36.47272016.807-24.13032016.321-20.42232014.712 -13.1442011.767
-7.017232011.687-2.193142011.646-.439197 2011.64   02011.6395.9376172011.623
7.7195642011.6167.8169382011.61610.859722012.76714.408252014.05817.291682015.196
17.522992015.28718.06128 2015.518.06855 2015.518.163552015.507   59.64 2018.96

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-143.004   .035-24.1303   .03318.16355   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -24.130318.16355   25   25   25   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2016.62 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   0.34 * Wt. n-Val.   *   *   0.033 *   0.035 *
* W.S. Elev (ft)   * 2016.28 * Reach Len. (ft)   *   25.00 *   25.00 *   25.00 *
* Crit W.S. (ft)   *   * Flow Area (sq ft)   *   * 149.99 *   3.62 *
* E.G. Slope (ft/ft)   *0.002096 * Area (sq ft)   *   * 149.99 *   3.62 *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 702.26 *   3.74 *
* Top Width (ft)   *   51.54 * Top Width (ft)   *   *   42.21 *   9.33 *
* Vel Total (ft/s)   *   4.60 * Avg. Vel. (ft/s)   *   *   4.68 *   1.03 *
* Max Chl Dpth (ft)   *   4.67 * Hydr. Depth (ft)   *   *   3.55 *   0.39 *
* Conv. Total (cfs)   * 15420.3 * Conv. (cfs)   *   * 15338.6 *   81.7 *
* Length Wtd. (ft)   *   25.00 * Wetted Per. (ft)   *   *   43.82 *   9.36 *
* Min Ch El (ft)   * 2011.62 * Shear (lb/sq ft)   *   *   0.45 *   0.05 *
* Alpha   *   1.03 * Stream Power (lb/ft s) *   *   2.10 *   0.05 *
* Frctn Loss (ft)   *   0.05 * Cum Volume (acre-ft) *   *   0.53 *   0.00 *
* C & E Loss (ft)   *   0.13 * Cum SA (acres)   *   *   0.18 *   0.00 *
****

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
         additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2725

INPUT
Description:
Station Elevation Data   num=   22
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-10.90372015.497-10.90182015.497-10.80372015.499-10.29222012.431-10.16532011.551
 -10.137 2011.5-10.1004 2011.5-9.02265 2011.5-5.263472011.499-4.999042011.499
-.1301722011.497-.0109592011.497   02011.4974.4224742011.4955.2424472011.495
6.5739952011.4949.9621882011.49310.115142011.49310.559292014.15910.781682015.495
10.818082015.49410.881892015.493

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-10.9037   .035-10.9037   .01310.88189   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -10.903710.88189   1.48   1.48   1.48   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2016.44 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   1.63 * Wt. n-Val.   *   *   0.013 *   *
* W.S. Elev (ft)   * 2014.81 * Reach Len. (ft)   *   1.48 *   1.48 *   1.48 *
* Crit W.S. (ft)   * 2014.81 * Flow Area (sq ft)   *   *   68.91 *   *
* E.G. Slope (ft/ft)   *0.002300 * Area (sq ft)   *   *   68.91 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   21.36 * Top Width (ft)   *   *   21.36 *   *
* Vel Total (ft/s)   *   10.25 * Avg. Vel. (ft/s)   *   *   10.25 *   *
* Max Chl Dpth (ft)   *   3.32 * Hydr. Depth (ft)   *   *   3.23 *   *
* Conv. Total (cfs)   * 14719.8 * Conv. (cfs)   *   * 14719.8 *   *
* Length Wtd. (ft)   *   1.48 * Wetted Per. (ft)   *   *   26.97 *   *
* Min Ch El (ft)   * 2011.49 * Shear (lb/sq ft)   *   *   0.37 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   3.76 *   *
* Frctn Loss (ft)   *   0.00 * Cum Volume (acre-ft) *   *   0.46 *   *
* C & E Loss (ft)   *   0.00 * Cum SA (acres)   *   *   0.17 *   *
****

Warning: The energy equation could not be balanced within the specified number of iterations. The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth. This indicates that there
         is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2726.48

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-10.89092015.479	-10.856	2015.48-10.79092015.481		-10.34422012.802		-10.1252011.483			
-6.781312011.482	-3.362812011.481	-.0816022011.481		-.0000012011.481		02011.481			
3.078876 2011.48	6.385262011.47910.124992011.47910.763052015.31310.79091 2015.48								
10.79552 2015.4810.891652015.478									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-10.8909	.035	-10.8909	.01310.89165	.035	

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-10.890910.89165 11.02 11.02 11.02 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.72	Wt. n-Val.		.013	
W.S. Elev (ft)	2014.71	Reach Len. (ft)	11.02	11.02	11.02
Crit W.S. (ft)	2014.79	Flow Area (sq ft)		67.05	
E.G. Slope (ft/ft)	*0.002497	Area (sq ft)		67.05	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	21.32	Top Width (ft)		21.32	
Vel Total (ft/s)	10.53	Avg. Vel. (ft/s)		10.53	
Max Chl Dpth (ft)	3.23	Hydr. Depth (ft)		3.14	
Conv. Total (cfs)	14128.9	Conv. (cfs)		14128.9	
Length Wtd. (ft)	11.02	Wetted Per. (ft)		26.79	
Min Ch El (ft)	2011.48	Shear (lb/sq ft)		0.39	
Alpha	1.00	Stream Power (lb/ft s)		4.11	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.46	
C & E Loss (ft)	0.01	Cum SA (acres)		0.17	

Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2737.5

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-10.88632015.365	-10.82972015.363	-10.78632015.362		-10.48232013.526		-10.1252011.362			
-4.625762011.362	-.0000032011.361	02011.3616.207286 2011.3610.124992011.359							
10.61953 2014.3510.786352015.36110.812912015.36210.891652015.365									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-10.8863	.035	-10.8863	.01310.89165	.035	

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-10.886310.89165 12.5 12.5 12.5 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.02	Wt. n-Val.		.013	
W.S. Elev (ft)	2014.34	Reach Len. (ft)	12.50	12.50	12.50
Crit W.S. (ft)	2014.68	Flow Area (sq ft)		61.88	
E.G. Slope (ft/ft)	*0.003184	Area (sq ft)		61.88	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	21.24	Top Width (ft)		21.24	
Vel Total (ft/s)	11.41	Avg. Vel. (ft/s)		11.41	
Max Chl Dpth (ft)	2.98	Hydr. Depth (ft)		2.91	
Conv. Total (cfs)	12512.0	Conv. (cfs)		12512.0	
Length Wtd. (ft)	12.50	Wetted Per. (ft)		26.30	
Min Ch El (ft)	2011.36	Shear (lb/sq ft)		0.47	
Alpha	1.00	Stream Power (lb/ft s)		5.34	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.44	
C & E Loss (ft)	0.03	Cum SA (acres)		0.16	

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2750

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

-10.88122015.231-10.8734 2015.23-10.78122015.226-10.14022011.319 -10.1252011.226
-9.887922011.226-.0000062011.225   02011.2252.1629512011.22510.124992011.224
10.276382012.14510.781192015.22610.865522015.23110.891652015.233

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-10.8812   .035-10.8812   .01310.89165   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -10.881210.89165   16.11   16.11   16.11   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2016.30 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   2.23 * Wt. n-Val.   *   *   0.013 *   *
* W.S. Elev (ft)   * 2014.07 * Reach Len. (ft)   *   16.11 *   16.11 *   16.11 *
* Crit W.S. (ft)   * 2014.54 * Flow Area (sq ft)   *   *   58.86 *   *
* E.G. Slope (ft/ft)   *0.003706 * Area (sq ft)   *   *   58.86 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   21.18 * Top Width (ft)   *   *   21.18 *   *
* Vel Total (ft/s)   *   11.99 * Avg. Vel. (ft/s)   *   *   11.99 *   *
* Max Chl Dpth (ft)   *   2.84 * Hydr. Depth (ft)   *   *   2.78 *   *
* Conv. Total (cfs)   * 11597.6 * Conv. (cfs)   *   * 11597.6 *   *
* Length Wtd. (ft)   *   16.11 * Wetted Per. (ft)   *   *   26.01 *   *
* Min Ch El (ft)   * 2011.22 * Shear (lb/sq ft)   *   *   0.52 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   6.28 *   *
* Frctn Loss (ft)   *   0.04 * Cum Volume (acre-ft) *   *   0.43 *   *
* C & E Loss (ft)   *   0.02 * Cum SA (acres)   *   *   0.15 *   *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2766.11

INPUT
Description:
Station Elevation Data   num=   21
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-10.87452015.055-10.78452015.052-10.77452015.052-10.69612014.569 -10.125 2011.05
-5.13708 2011.05-5.12738 2011.05-5.12264 2011.05-5.11429 2011.05-.124749 2011.05
 -.00001 2011.05   0 2011.05 4.8648 2011.054.872742 2011.054.878096 2011.05
9.875138 2011.0510.12499 2011.0510.125392011.05210.774522015.05210.891222015.059
10.891652015.059

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-10.8745   .035-10.8745   .01310.89165   .035

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
      -10.874510.89165   8.89   8.89   8.89   .1   .3

CROSS SECTION OUTPUT Profile #PF 1
****
* E.G. Elev (ft)   * 2016.21 * Element   * Left OB * Channel * Right OB *
* Vel Head (ft)   *   2.44 * Wt. n-Val.   *   *   0.013 *   *
* W.S. Elev (ft)   * 2013.77 * Reach Len. (ft)   *   8.89 *   8.89 *   8.89 *
* Crit W.S. (ft)   * 2014.36 * Flow Area (sq ft)   *   *   56.28 *   *
* E.G. Slope (ft/ft)   *0.004250 * Area (sq ft)   *   *   56.28 *   *
* Q Total (cfs)   * 706.00 * Flow (cfs)   *   * 706.00 *   *
* Top Width (ft)   *   21.13 * Top Width (ft)   *   *   21.13 *   *
* Vel Total (ft/s)   *   12.55 * Avg. Vel. (ft/s)   *   *   12.55 *   *
* Max Chl Dpth (ft)   *   2.72 * Hydr. Depth (ft)   *   *   2.66 *   *
* Conv. Total (cfs)   * 10829.5 * Conv. (cfs)   *   * 10829.5 *   *
* Length Wtd. (ft)   *   8.89 * Wetted Per. (ft)   *   *   25.76 *   *
* Min Ch El (ft)   * 2011.05 * Shear (lb/sq ft)   *   *   0.58 *   *
* Alpha   *   1.00 * Stream Power (lb/ft s) *   *   7.27 *   *
* Frctn Loss (ft)   *   0.06 * Cum Volume (acre-ft) *   *   0.41 *   *
* C & E Loss (ft)   *   0.02 * Cum SA (acres)   *   *   0.15 *   *
****

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1   RS: -2775

INPUT
Description:
Station Elevation Data   num=   12
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
****
-8.666952014.504-8.583942014.505-8.563782014.506-7.991652010.176 -7.87262009.377
 -6.35062009.377-.0000072009.377   02009.3776.4569542009.3777.8725922009.377
7.9999272010.2468.5637762014.506

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
****
-8.66695   .035-8.66695   .0138.563776   .035

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -8.666958.563776              7.5     7.5     7.5             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2016.02  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.87  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 2012.15  * Reach Len. (ft)       *    7.50  *    7.50  *    7.50  *
* Crit W.S. (ft)         * 2013.28  * Flow Area (sq ft)     *          *   44.69  *          *
* E.G. Slope (ft/ft)     *0.007127  * Area (sq ft)          *          *   44.69  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          * 706.00  *          *
* Top Width (ft)         *   16.50  * Top Width (ft)        *          *   16.50  *          *
* Vel Total (ft/s)       *   15.80  * Avg. Vel. (ft/s)      *          *   15.80  *          *
* Max Chl Dpth (ft)      *    2.77  * Hydr. Depth (ft)      *          *    2.71  *          *
* Conv. Total (cfs)      *  8362.6  * Conv. (cfs)           *          *  8362.6  *          *
* Length Wtd. (ft)       *    7.50  * Wetted Per. (ft)      *          *   21.34  *          *
* Min Ch El (ft)         * 2009.38  * Shear (lb/sq ft)      *          *    0.93  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   14.72  *          *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)  *          *    0.39  *          *
* C & E Loss (ft)        *    0.14  * Cum SA (acres)        *          *    0.14  *          *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2782.5

INPUT
Description:
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-6.766082014.036-6.728612014.037-6.662922014.038 -6.4146 2011.72-5.971742007.965
-1.647682007.965-.0000042007.965       02007.9651.6787242007.9655.9717352007.965
 6.476832012.3036.6629192014.038

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-6.76608    .035-6.76608    .0136.662919    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -6.766086.662919             7.78    7.78    7.78             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2015.89  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.60  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 2011.29  * Reach Len. (ft)       *    7.78  *    7.78  *    7.78  *
* Crit W.S. (ft)         * 2012.65  * Flow Area (sq ft)     *          *   41.01  *          *
* E.G. Slope (ft/ft)     *0.007929  * Area (sq ft)          *          *   41.01  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          * 706.00  *          *
* Top Width (ft)         *   12.72  * Top Width (ft)        *          *   12.72  *          *
* Vel Total (ft/s)       *   17.22  * Avg. Vel. (ft/s)      *          *   17.22  *          *
* Max Chl Dpth (ft)      *    3.32  * Hydr. Depth (ft)      *          *    3.22  *          *
* Conv. Total (cfs)      *  7928.7  * Conv. (cfs)           *          *  7928.7  *          *
* Length Wtd. (ft)       *    7.78  * Wetted Per. (ft)      *          *   18.64  *          *
* Min Ch El (ft)         * 2007.97  * Shear (lb/sq ft)      *          *    1.09  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   18.75  *          *
* Frctn Loss (ft)        *    0.06  * Cum Volume (acre-ft)  *          *    0.39  *          *
* C & E Loss (ft)        *    0.07  * Cum SA (acres)        *          *    0.14  *          *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2790.28

INPUT
Description:
Station Elevation Data    num=       4
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************
      -62013.552      -62006.503       62006.503       62013.552

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
      -6    .035      -6    .013       6    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
            -6       6             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2015.66  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    6.21  * Wt. n-Val.            *          *   0.013  *          *
```

* W.S. Elev (ft)	* 2009.45	* Reach Len. (ft)	*	0.00	* 0.01	* 0.00	*
* Crit W.S. (ft)	* 2011.24	* Flow Area (sq ft)	*		* 35.30	*	*
* E.G. Slope (ft/ft)	*0.012362	* Area (sq ft)	*		* 35.30	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*		* 706.00	*	*
* Top Width (ft)	* 12.00	* Top Width (ft)	*		* 12.00	*	*
* Vel Total (ft/s)	* 20.00	* Avg. Vel. (ft/s)	*		* 20.00	*	*
* Max Chl Dpth (ft)	* 2.94	* Hydr. Depth (ft)	*		* 2.94	*	*
* Conv. Total (cfs)	* 6349.8	* Conv. (cfs)	*		* 6349.8	*	*
* Length Wtd. (ft)	* 0.01	* Wetted Per. (ft)	*		* 17.88	*	*
* Min Ch El (ft)	* 2006.50	* Shear (lb/sq ft)	*		* 1.52	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		* 30.47	*	*
* Frctn Loss (ft)	* 0.08	* Cum Volume (acre-ft)	*		* 0.38	*	*
* C & E Loss (ft)	* 0.16	* Cum SA (acres)	*		* 0.14	*	*

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2790.29

INPUT
Description:
Station Elevation Data num= 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-6	2012.5	-6	2006.5	6	2006.5	6	2012.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-6	.013	-6	.013	6	.013

Bank Sta: Left Right Coeff Contr. Expan.
-6 6 .1 .3
Cross Section Lid
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
-6 2013.5	2012.5	6 2013.5	2012.5

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2015.66	* Element	*	Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 6.21	* Wt. n-Val.	*		* 0.013	*	*
* W.S. Elev (ft)	* 2009.44	* Reach Len. (ft)	*	0.00	* 500.00	* 0.00	*
* Crit W.S. (ft)	* 2011.27	* Flow Area (sq ft)	*		* 35.29	*	*
* E.G. Slope (ft/ft)	*0.012374	* Area (sq ft)	*		* 35.29	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*		* 706.00	*	*
* Top Width (ft)	* 12.00	* Top Width (ft)	*		* 12.00	*	*
* Vel Total (ft/s)	* 20.01	* Avg. Vel. (ft/s)	*		* 20.01	*	*
* Max Chl Dpth (ft)	* 2.94	* Hydr. Depth (ft)	*		* 2.94	*	*
* Conv. Total (cfs)	* 6346.7	* Conv. (cfs)	*		* 6346.7	*	*
* Length Wtd. (ft)	* 500.00	* Wetted Per. (ft)	*		* 17.88	*	*
* Min Ch El (ft)	* 2006.50	* Shear (lb/sq ft)	*		* 1.52	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		* 30.50	*	*
* Frctn Loss (ft)	* 0.00	* Cum Volume (acre-ft)	*		* 0.38	*	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*		* 0.14	*	*

Warning: The cross section had to be extended vertically during the critical depth calculations.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3290.29

INPUT
Description:
Station Elevation Data num= 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-6	2003.45	-6	1997.45	6	1997.45	6	2003.45

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-6	.013	-6	.013	6	.013

Bank Sta: Left Right Coeff Contr. Expan.
-6 6 .1 .3
Cross Section Lid
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
-6 2004.45	2003.45	6 2004.45	2003.45

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2008.08	* Element	*	Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 8.04	* Wt. n-Val.	*		* 0.013	*	*

W.S. Elev (ft)	2000.04	Reach Len. (ft)			
Crit W.S. (ft)	2002.22	Flow Area (sq ft)		31.03	
E.G. Slope (ft/ft)	0.018005	Area (sq ft)		31.03	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	12.00	Top Width (ft)		12.00	
Vel Total (ft/s)	22.75	Avg. Vel. (ft/s)		22.75	
Max Chl Dpth (ft)	2.59	Hydr. Depth (ft)		2.59	
Conv. Total (cfs)	5261.5	Conv. (cfs)		5261.5	
Length Wtd. (ft)		Wetted Per. (ft)		17.17	
Min Ch El (ft)	1997.45	Shear (lb/sq ft)		2.03	
Alpha	1.00	Stream Power (lb/ft s)		46.21	
Frctn Loss (ft)	7.40	Cum Volume (acre-ft)			
C & E Loss (ft)	0.18	Cum SA (acres)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

SUMMARY OF MANNING'S N VALUES

River:EQUESTRIAN DB OF

Reach	River Sta.	n1	n2	n3
1	-1500	.035	.025	.035
1	-1525	.035	.025	.035
1	-1550	.035	.025	.035
1	-1575	.035	.025	.035
1	-1600	.035	.025	.035
1	-1625	.035	.025	.035
1	-1650	.035	.025	.035
1	-1675	.035	.025	.035
1	-1700	.035	.025	.035
1	-1725	.035	.025	.035
1	-1750	.035	.025	.035
1	-1775	.035	.025	.035
1	-1800	.035	.025	.035
1	-1825	.035	.025	.035
1	-1850	.035	.025	.035
1	-1875	.035	.025	.035
1	-1900	.035	.025	.035
1	-1925	.035	.025	.035
1	-1950	.035	.025	.035
1	-1975	.035	.025	.035
1	-2000	.035	.025	.035
1	-2025	.035	.025	.035
1	-2050	.035	.025	.035
1	-2075	.035	.025	.035
1	-2100	.035	.025	.035
1	-2125	.035	.025	.035
1	-2150	.035	.025	.035
1	-2175	.035	.025	.035
1	-2200	.035	.025	.035
1	-2225	.035	.025	.035
1	-2250	.035	.025	.035
1	-2275	.035	.025	.035
1	-2300	.035	.025	.035
1	-2325	.035	.025	.035
1	-2350	.035	.025	.035
1	-2375	.035	.025	.035
1	-2400	.035	.025	.035
1	-2425	.035	.025	.035
1	-2450	.035	.025	.035
1	-2475	.035	.025	.035
1	-2500	.035	.025	.035
1	-2525	.035	.025	.035
1	-2550	.035	.025	.035
1	-2575	.035	.025	.035
1	-2600	.035	.025	.035
1	-2625	.035	.025	.035
1	-2650	.035	.025	.035
1	-2675	.035	.025	.035
1	-2683.75	.035	.025	.035
1	-2692.09	.035	.033	.035
1	-2700	.035	.033	.035
1	-2725	.035	.013	.035
1	-2726.48	.035	.013	.035
1	-2737.5	.035	.013	.035
1	-2750	.035	.013	.035
1	-2766.11	.035	.013	.035
1	-2775	.035	.013	.035
1	-2782.5	.035	.013	.035
1	-2790.28	.035	.013	.035
1	-2790.29	.013	.013	.013
1	-3290.29	.013	.013	.013

SUMMARY OF REACH LENGTHS

River: EQUESTRIAN DB OF

Reach	River Sta.	Left	Channel	Right
*1	-1500	25*	25*	25*
*1	-1525	25*	25*	*
*1	-1550	25*	25*	25*
*1	-1575	25*	25*	25*
*1	-1600	25*	25*	25*
*1	-1625	25*	25*	25*
*1	-1650	25*	25*	25*
*1	-1675	25*	25*	25*
*1	-1700	25*	25*	25*
*1	-1725	25*	25*	25*
*1	-1750	25*	25*	25*
*1	-1775	25*	25*	25*
*1	-1800	25*	25*	25*
*1	-1825	25*	25*	25*
*1	-1850	25*	25*	25*
*1	-1875	25*	25*	25*
*1	-1900	25*	25*	25*
*1	-1925	25*	25*	25*
*1	-1950	25*	25*	25*
*1	-1975	25*	25*	25*
*1	-2000	25*	25*	25*
*1	-2025	25*	25*	25*
*1	-2050	25*	25*	25*
*1	-2075	25*	25*	25*
*1	-2100	25*	25*	25*
*1	-2125	25*	25*	25*
*1	-2150	25*	25*	25*
*1	-2175	25*	25*	25*
*1	-2200	25*	25*	25*
*1	-2225	25*	25*	25*
*1	-2250	25*	25*	25*
*1	-2275	25*	25*	25*
*1	-2300	25*	25*	25*
*1	-2325	25*	25*	25*
*1	-2350	25*	25*	25*
*1	-2375	25*	25*	25*
*1	-2400	25*	25*	25*
*1	-2425	25*	25*	25*
*1	-2450	25*	25*	25*
*1	-2475	25*	25*	25*
*1	-2500	25*	25*	25*
*1	-2525	25*	25*	25*
*1	-2550	25*	25*	25*
*1	-2575	25*	25*	25*
*1	-2600	25*	25*	25*
*1	-2625	25*	25*	25*
*1	-2650	25*	25*	25*
*1	-2675	8.75*	8.75*	8.75*
*1	-2683.75	8.33*	8.33*	8.33*
*1	-2692.09	7.92*	7.92*	7.92*
*1	-2700	25*	25*	25*
*1	-2725	1.48*	1.48*	1.48*
*1	-2726.48	11.02*	11.02*	11.02*
*1	-2737.5	12.5*	12.5*	12.5*
*1	-2750	16.11*	16.11*	16.11*
*1	-2766.11	8.89*	8.89*	8.89*
*1	-2775	7.5*	7.5*	7.5*
*1	-2782.5	7.78*	7.78*	7.78*
*1	-2790.28	*	.01*	*
*1	-2790.29	*	500*	*
*1	-3290.29	*	*	*

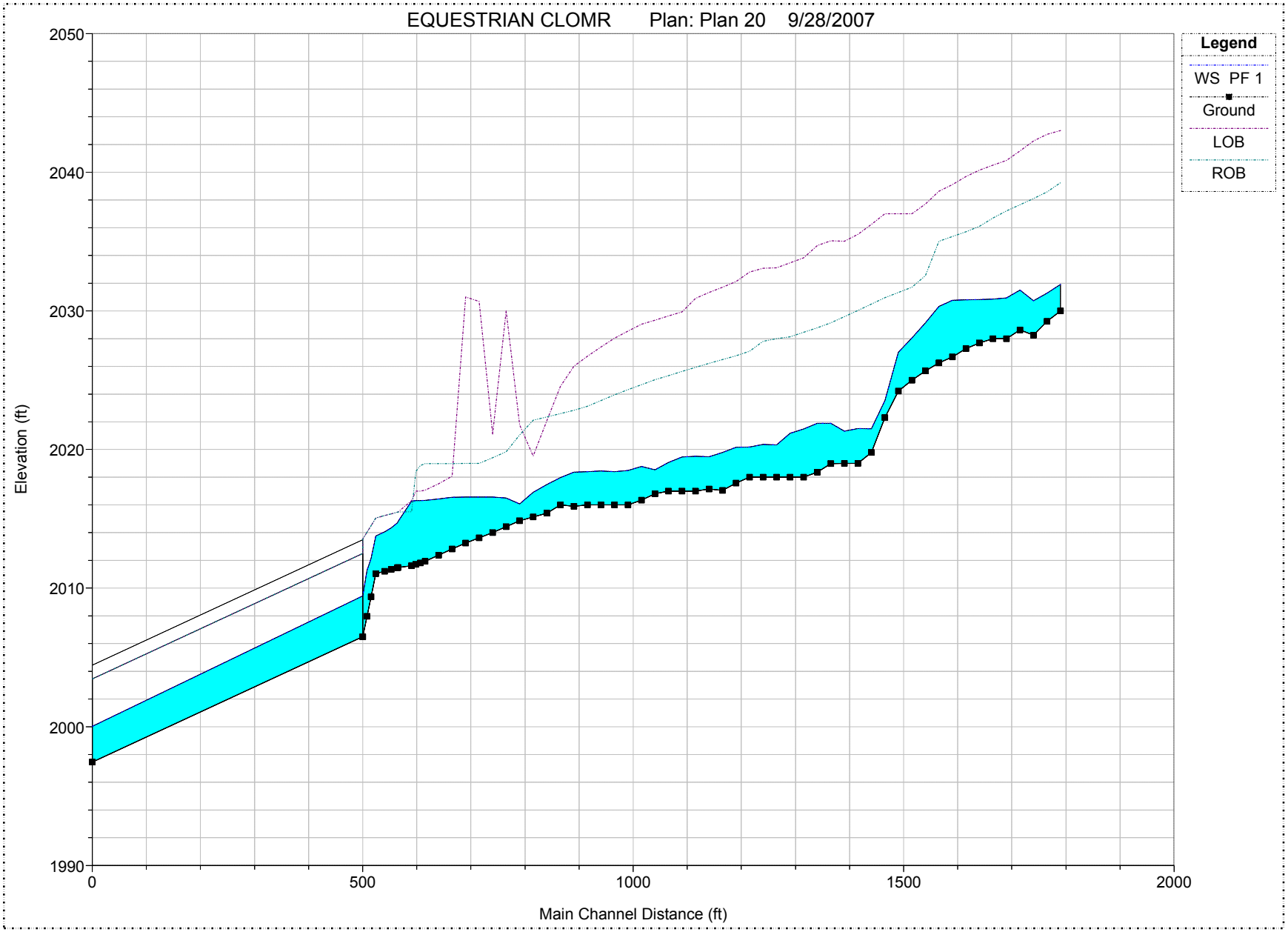
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: EQUESTRIAN DB OF

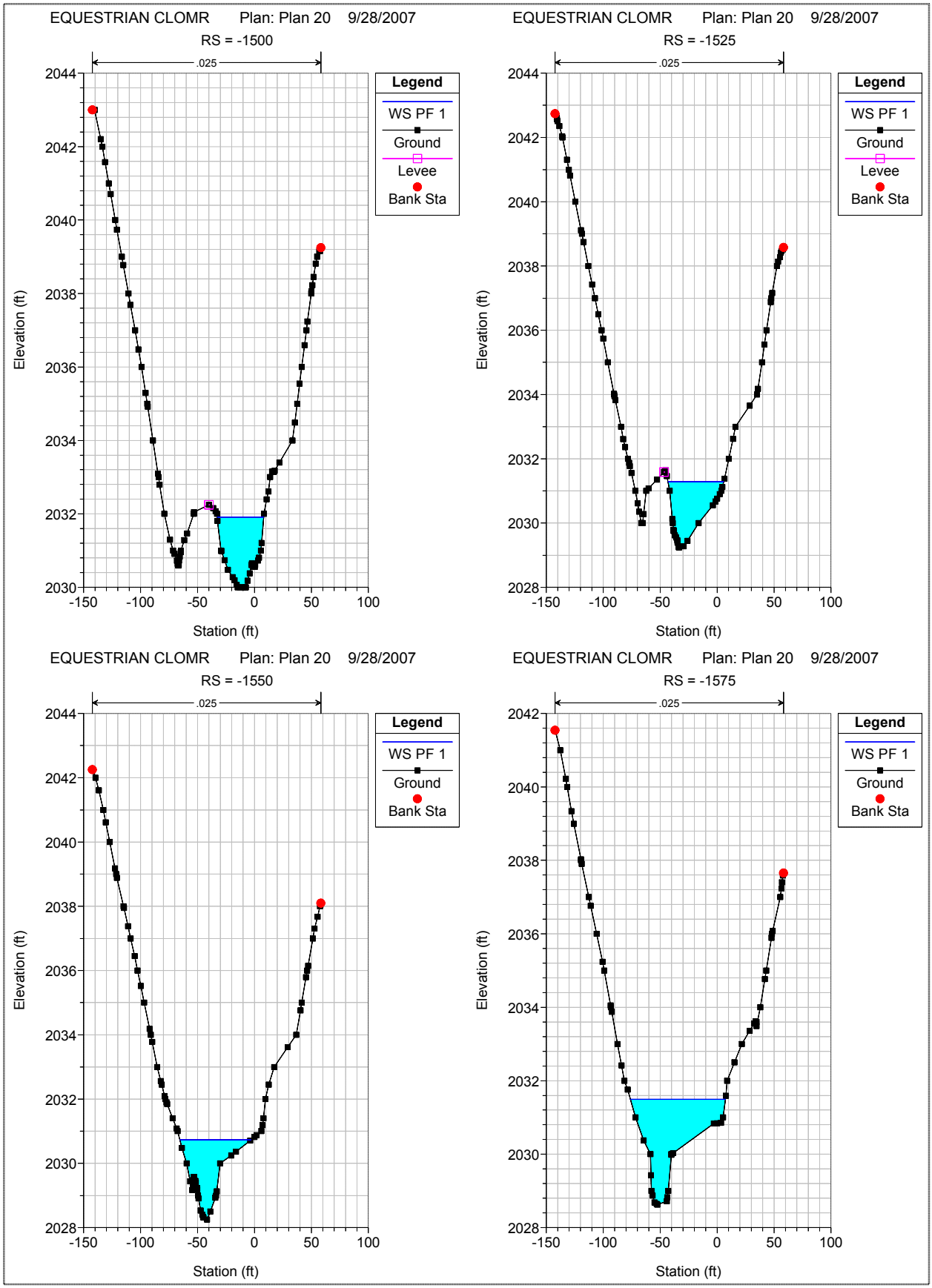
Reach	River Sta.	Contr.	Expan.
*1	-1500	.1*	.3*
*1	-1525	.1*	.3*
*1	-1550	.1*	.3*
*1	-1575	.1*	.3*
*1	-1600	.1*	.3*
*1	-1625	.1*	.3*
*1	-1650	.1*	.3*
*1	-1675	.1*	.3*
*1	-1700	.1*	.3*
*1	-1725	.1*	.3*
*1	-1750	.1*	.3*
*1	-1775	.1*	.3*
*1	-1800	.1*	.3*
*1	-1825	.1*	.3*
*1	-1850	.1*	.3*
*1	-1875	.1*	.3*
*1	-1900	.1*	.3*
*1	-1925	.1*	.3*
*1	-1950	.1*	.3*

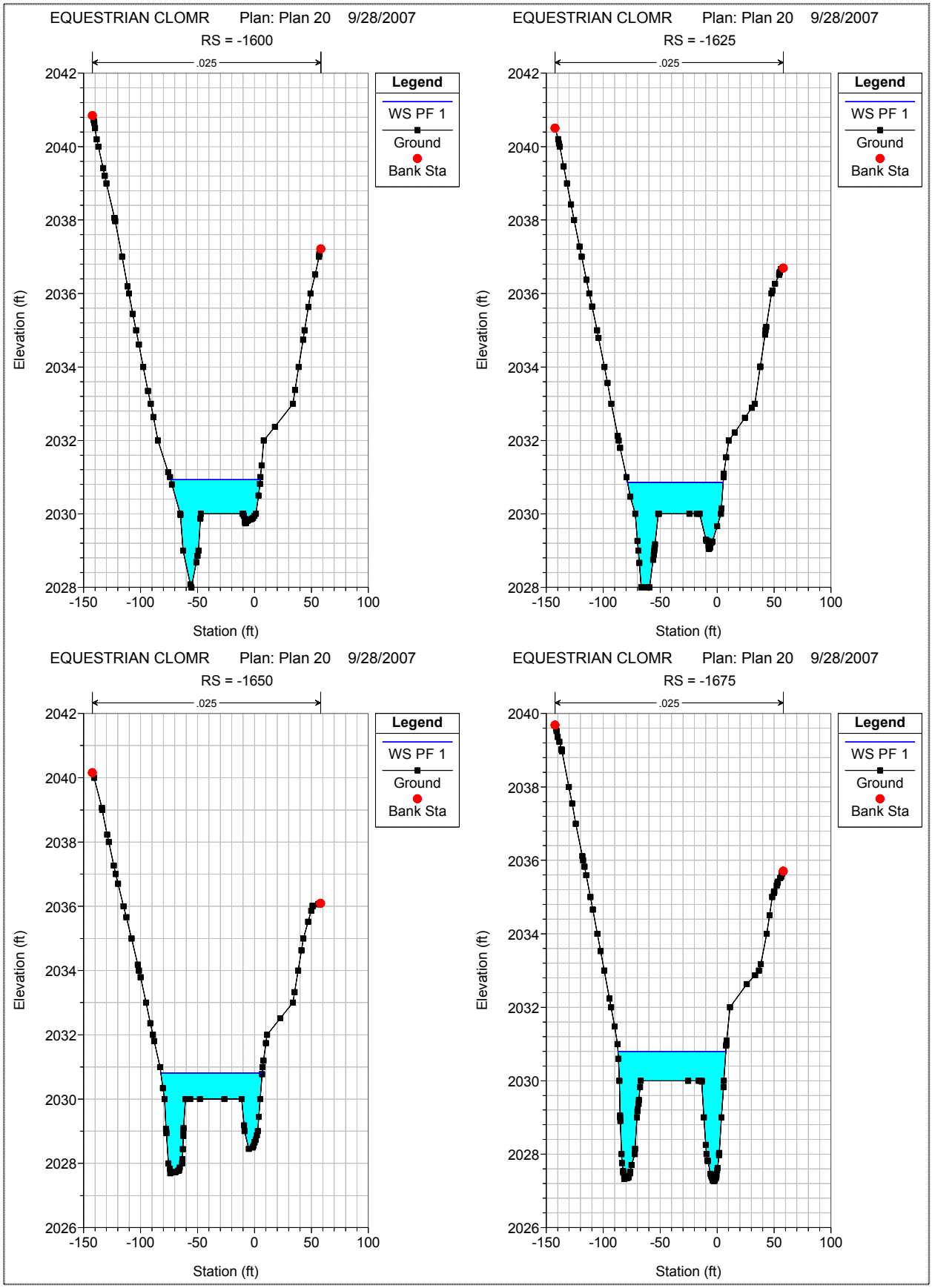
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*1               *    -1975   *       .1*       .3*
*1               *    -2000   *       .1*       .3*
*1               *    -2025   *       .1*       .3*
*1               *    -2050   *       .1*       .3*
*1               *    -2075   *       .1*       .3*
*1               *    -2100   *       .1*       .3*
*1               *    -2125   *       .1*       .3*
*1               *    -2150   *       .1*       .3*
*1               *    -2175   *       .1*       .3*
*1               *    -2200   *       .1*       .3*
*1               *    -2225   *       .1*       .3*
*1               *    -2250   *       .1*       .3*
*1               *    -2275   *       .1*       .3*
*1               *    -2300   *       .1*       .3*
*1               *    -2325   *       .1*       .3*
*1               *    -2350   *       .1*       .3*
*1               *    -2375   *       .1*       .3*
*1               *    -2400   *       .1*       .3*
*1               *    -2425   *       .1*       .3*
*1               *    -2450   *       .1*       .3*
*1               *    -2475   *       .1*       .3*
*1               *    -2500   *       .1*       .3*
*1               *    -2525   *       .1*       .3*
*1               *    -2550   *       .1*       .3*
*1               *    -2575   *       .1*       .3*
*1               *    -2600   *       .1*       .3*
*1               *    -2625   *       .1*       .3*
*1               *    -2650   *       .1*       .3*
*1               *    -2675   *       .1*       .3*
*1               *    -2683.75*       .1*       .3*
*1               *    -2692.09*       .1*       .3*
*1               *    -2700   *       .1*       .3*
*1               *    -2725   *       .1*       .3*
*1               *    -2726.48*       .1*       .3*
*1               *    -2737.5 *       .1*       .3*
*1               *    -2750   *       .1*       .3*
*1               *    -2766.11*       .1*       .3*
*1               *    -2775   *       .1*       .3*
*1               *    -2782.5 *       .1*       .3*
*1               *    -2790.28*       .1*       .3*
*1               *    -2790.29*       .1*       .3*
*1               *    -3290.29*       .1*       .3*
**************************************************

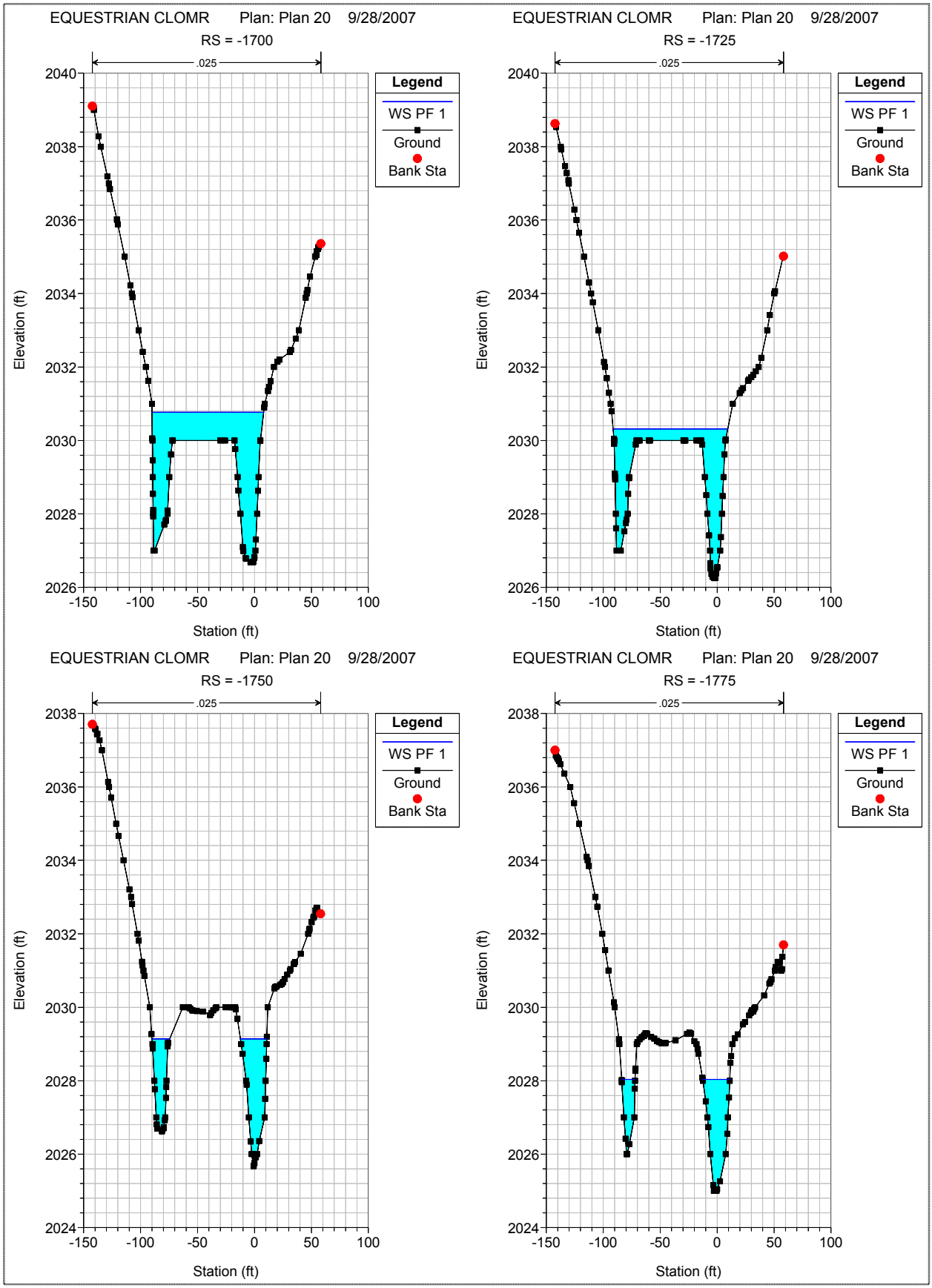
Profile Output Table - Standard Table 1
*****************************************************************************************************************************************************************
*
* Reach       * River Sta   * Profile * Q Total * Min Ch El * W.S. Elev * Crit W.S. * E.G. Elev * E.G. Slope * Vel Chnl * Flow Area * Top Width * Froude # Chl
*
*             *             *         *   (cfs) *      (ft) *      (ft) *      (ft) *      (ft) *    (ft/ft) *   (ft/s) *   (sq ft) *      (ft) *
*
*****************************************************************************************************************************************************************
*
* 1           * -1500       * PF 1    *  706.00 *   2030.00 *   2031.91 *   2032.44 *   2034.41 *   0.030424 *    12.67 *     55.70 *     40.82 *         1.91
*
* 1           * -1525       * PF 1    *  706.00 *   2029.24 *   2031.28 *   2031.83 *   2033.55 *   0.032876 *    12.08 *     58.44 *     48.87 *         1.95
*
* 1           * -1550       * PF 1    *  706.00 *   2028.25 *   2030.73 *   2031.32 *   2032.61 *   0.033510 *    11.01 *     64.12 *     62.46 *         1.92
*
* 1           * -1575       * PF 1    *  706.00 *   2028.63 *   2031.49 *   2031.49 *   2032.15 *   0.008514 *     6.50 *    108.65 *     83.36 *         1.00
*
* 1           * -1600       * PF 1    *  706.00 *   2028.00 *   2030.93 *   2031.13 *   2031.85 *   0.013786 *     7.69 *     91.86 *     78.67 *         1.25
*
* 1           * -1625       * PF 1    *  706.00 *   2028.00 *   2030.85 *   2030.90 *   2031.55 *   0.009576 *     6.71 *    105.24 *     83.96 *         1.06
*
* 1           * -1650       * PF 1    *  706.00 *   2027.69 *   2030.81 *   2030.70 *   2031.34 *   0.006606 *     5.84 *    120.86 *     88.88 *         0.88
*
* 1           * -1675       * PF 1    *  706.00 *   2027.27 *   2030.80 *           *   2031.16 *   0.003887 *     4.84 *    145.83 *     94.74 *         0.69
*
* 1           * -1700       * PF 1    *  706.00 *   2026.68 *   2030.77 *           *   2031.06 *   0.002902 *     4.34 *    162.55 *     98.03 *         0.59
*
* 1           * -1725       * PF 1    *  706.00 *   2026.25 *   2030.32 *   2030.32 *   2030.91 *   0.009626 *     6.18 *    114.18 *    100.62 *         1.02
*
* 1           * -1750       * PF 1    *  706.00 *   2025.67 *   2029.14 *   2029.50 *   2030.56 *   0.012147 *     9.55 *     73.92 *     38.89 *         1.22
*
* 1           * -1775       * PF 1    *  706.00 *   2025.00 *   2028.04 *   2028.69 *   2030.11 *   0.019757 *    11.55 *     61.15 *     35.41 *         1.55
*
* 1           * -1800       * PF 1    *  706.00 *   2024.22 *   2027.01 *   2027.85 *   2029.44 *   0.033589 *    12.51 *     56.45 *     45.02 *         1.97
*
* 1           * -1825       * PF 1    *  706.00 *   2022.29 *   2023.52 *   2024.33 *   2027.70 *   0.153668 *    16.41 *     43.03 *     72.52 *         3.75
*
* 1           * -1850       * PF 1    *  706.00 *   2019.79 *   2021.50 *   2022.79 *   2025.58 *   0.052820 *    16.21 *     43.55 *     33.27 *         2.50
*
* 1           * -1875       * PF 1    *  706.00 *   2019.00 *   2021.51 *   2022.33 *   2024.06 *   0.035112 *    12.82 *     55.06 *     43.72 *         2.01
*
* 1           * -1900       * PF 1    *  706.00 *   2019.00 *   2021.33 *   2021.85 *   2023.02 *   0.028179 *    10.41 *     67.81 *     62.56 *         1.76
*
* 1           * -1925       * PF 1    *  706.00 *   2018.98 *   2021.90 *   2021.31 *   2022.22 *   0.002784 *     4.60 *    153.34 *     84.58 *         0.60
*
* 1           * -1950       * PF 1    *  706.00 *   2018.37 *   2021.90 *           *   2022.15 *   0.001771 *     4.02 *    175.67 *     84.51 *         0.49
*
* 1           * -1975       * PF 1    *  706.00 *   2018.00 *   2021.48 *   2021.33 *   2022.04 *   0.006031 *     6.03 *    117.17 *     77.65 *         0.86
*
* 1           * -2000       * PF 1    *  706.00 *   2018.00 *   2021.17 *   2021.17 *   2021.86 *   0.008358 *     6.67 *    105.85 *     76.91 *         1.00
*
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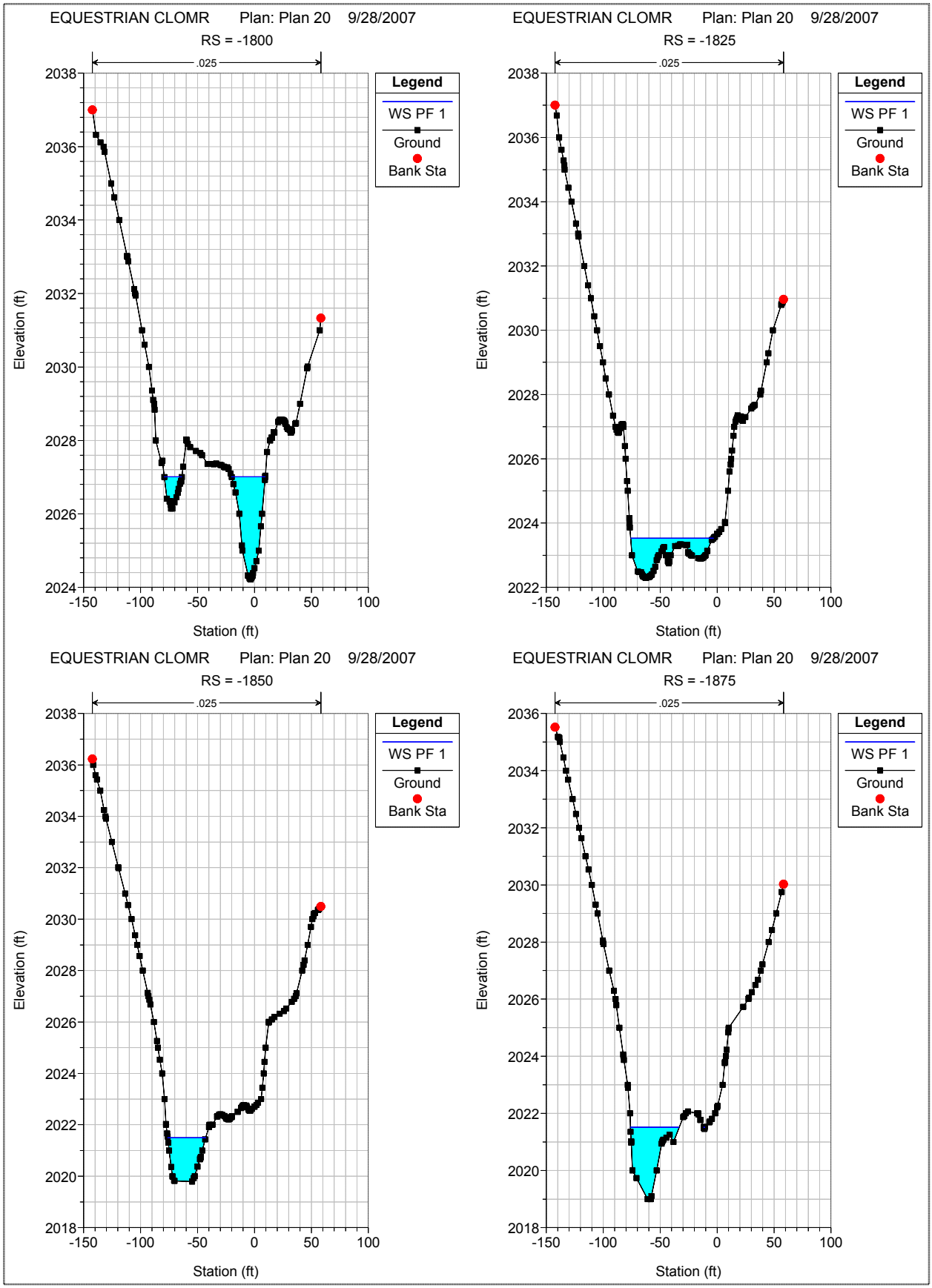
1	-2025	PF 1	706.00	2018.00	2020.33	2020.64	2021.51	0.017727	8.73	80.89	69.36	1.42
1	-2050	PF 1	706.00	2018.00	2020.37	2020.44	2021.14	0.010009	7.06	100.05	77.11	1.09
1	-2075	PF 1	706.00	2018.00	2020.19	2020.23	2020.94	0.009325	6.95	101.65	76.06	1.06
1	-2100	PF 1	706.00	2017.57	2020.16	2019.90	2020.68	0.004925	5.74	122.90	75.40	0.79
1	-2125	PF 1	706.00	2017.06	2019.79	2019.79	2020.50	0.008611	6.75	104.55	76.51	1.02
1	-2150	PF 1	706.00	2017.15	2019.49	2019.56	2020.26	0.010537	7.04	100.23	79.98	1.11
1	-2175	PF 1	706.00	2017.00	2019.52	2019.36	2020.05	0.006097	5.84	120.82	84.84	0.86
1	-2200	PF 1	706.00	2017.00	2019.46		2019.89	0.004359	5.23	135.01	87.14	0.74
1	-2225	PF 1	706.00	2017.00	2019.06	2019.06	2019.71	0.008633	6.48	108.91	85.20	1.01
1	-2250	PF 1	706.00	2016.82	2018.54	2018.71	2019.43	0.013022	7.57	93.25	78.78	1.23
1	-2275	PF 1	706.00	2016.34	2018.78	2018.41	2019.19	0.003898	5.13	137.72	84.44	0.71
1	-2300	PF 1	706.00	2016.00	2018.48	2018.37	2019.05	0.006678	6.01	117.38	84.84	0.90
1	-2325	PF 1	706.00	2016.00	2018.41		2018.87	0.004865	5.45	129.55	85.51	0.78
1	-2350	PF 1	706.00	2016.00	2018.45		2018.74	0.002397	4.29	164.40	91.17	0.56
1	-2375	PF 1	706.00	2016.00	2018.40		2018.67	0.002223	4.18	168.72	91.85	0.54
1	-2400	PF 1	706.00	2015.91	2018.37		2018.61	0.001966	3.99	177.09	94.73	0.51
1	-2425	PF 1	706.00	2016.00	2017.97		2018.51	0.004494	5.89	119.86	65.88	0.77
1	-2450	PF 1	706.00	2015.42	2017.47	2017.47	2018.33	0.007844	7.43	94.96	55.91	1.01
1	-2475	PF 1	706.00	2015.14	2016.91	2017.15	2018.06	0.012481	8.61	82.01	54.97	1.24
1	-2500	PF 1	706.00	2014.86	2016.08	2016.53	2017.60	0.025116	9.89	71.42	66.08	1.68
1	-2525	PF 1	706.00	2014.44	2016.51	2016.20	2017.04	0.004572	5.87	120.34	67.46	0.77
1	-2550	PF 1	706.00	2014.00	2016.57		2016.90	0.002241	4.63	152.42	71.18	0.56
1	-2575	PF 1	706.00	2013.64	2016.58		2016.84	0.001530	4.09	172.63	72.64	0.47
1	-2600	PF 1	706.00	2013.26	2016.57		2016.79	0.001136	3.76	187.74	71.04	0.41
1	-2625	PF 1	706.00	2012.83	2016.55		2016.76	0.001026	3.65	193.23	70.23	0.39
1	-2650	PF 1	706.00	2012.39	2016.44		2016.72	0.001339	4.26	165.56	58.53	0.45
1	-2675	PF 1	706.00	2011.95	2016.33		2016.68	0.001588	4.74	148.87	50.60	0.49
1	-2683.75	PF 1	706.00	2011.82	2016.32		2016.67	0.001591	4.70	150.07	51.79	0.49
1	-2692.09	PF 1	706.00	2011.72	2016.32		2016.64	0.002611	4.57	154.61	53.55	0.47
1	-2700	PF 1	706.00	2011.62	2016.28		2016.62	0.002096	4.68	153.61	51.54	0.44
1	-2725	PF 1	706.00	2011.49	2014.81	2014.81	2016.44	0.002300	10.25	68.91	21.36	1.01
1	-2726.48	PF 1	706.00	2011.48	2014.71	2014.79	2016.43	0.002497	10.53	67.05	21.32	1.05
1	-2737.5	PF 1	706.00	2011.36	2014.34	2014.68	2016.37	0.003184	11.41	61.88	21.24	1.18
1	-2750	PF 1	706.00	2011.22	2014.07	2014.54	2016.30	0.003706	11.99	58.86	21.18	1.27
1	-2766.11	PF 1	706.00	2011.05	2013.77	2014.36	2016.21	0.004250	12.55	56.28	21.13	1.35
1	-2775	PF 1	706.00	2009.38	2012.15	2013.28	2016.02	0.007127	15.80	44.69	16.50	1.69
1	-2782.5	PF 1	706.00	2007.97	2011.29	2012.65	2015.89	0.007929	17.22	41.01	12.72	1.69
1	-2790.28	PF 1	706.00	2006.50	2009.45	2011.24	2015.66	0.012362	20.00	35.30	12.00	2.05
1	-2790.29	PF 1	706.00	2006.50	2009.44	2011.27	2015.66	0.012374	20.01	35.29	12.00	2.06
1	-3290.29	PF 1	706.00	1997.45	2000.04	2002.22	2008.08	0.018005	22.75	31.03	12.00	2.49

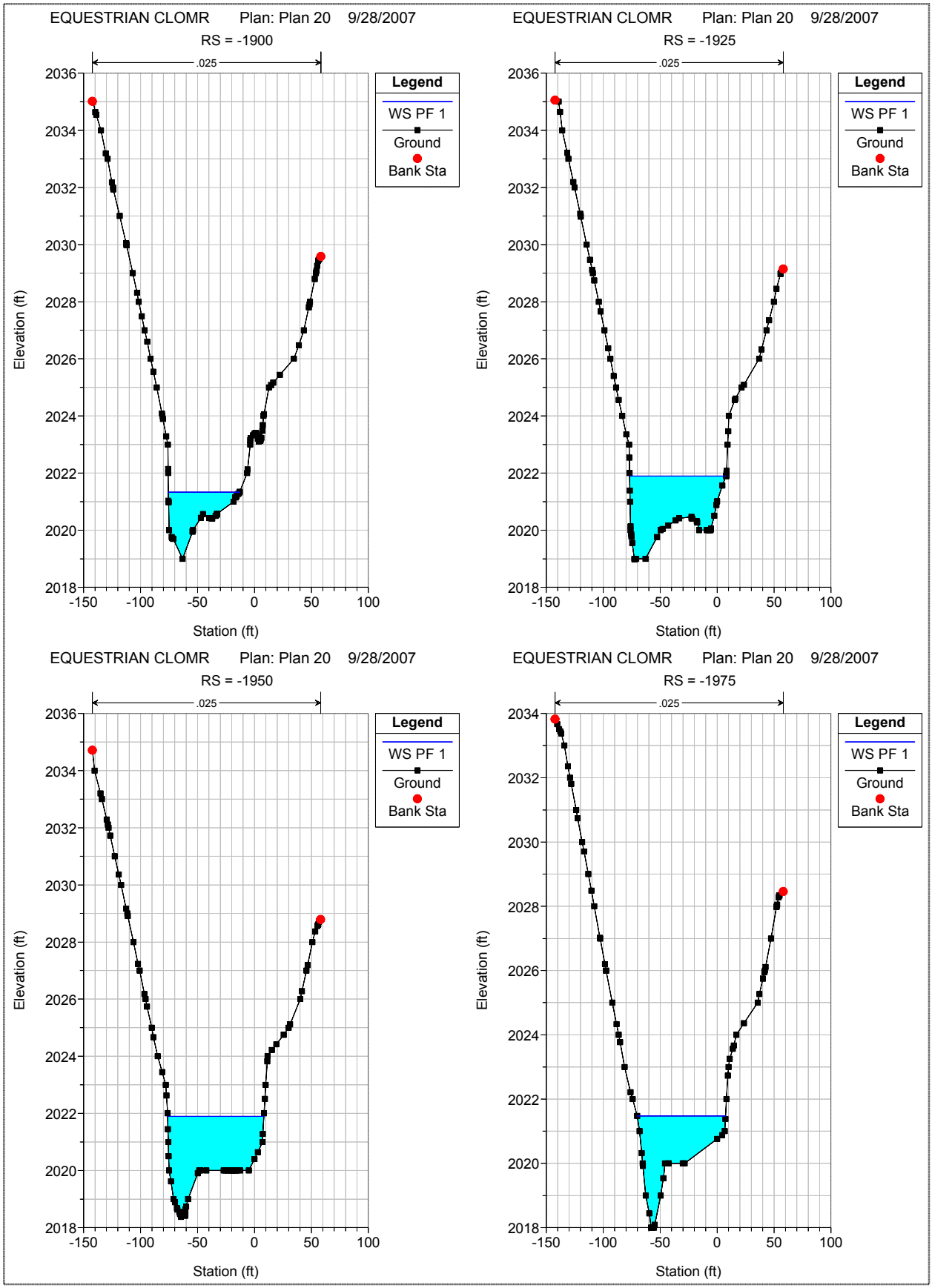

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
Legend
WS PF 1
Ground
LOB
ROB
Elevation (ft)
2050
2040
2030
2020
2010
2000
1990
0
500
1000
1500
2000
Main Channel Distance (ft)

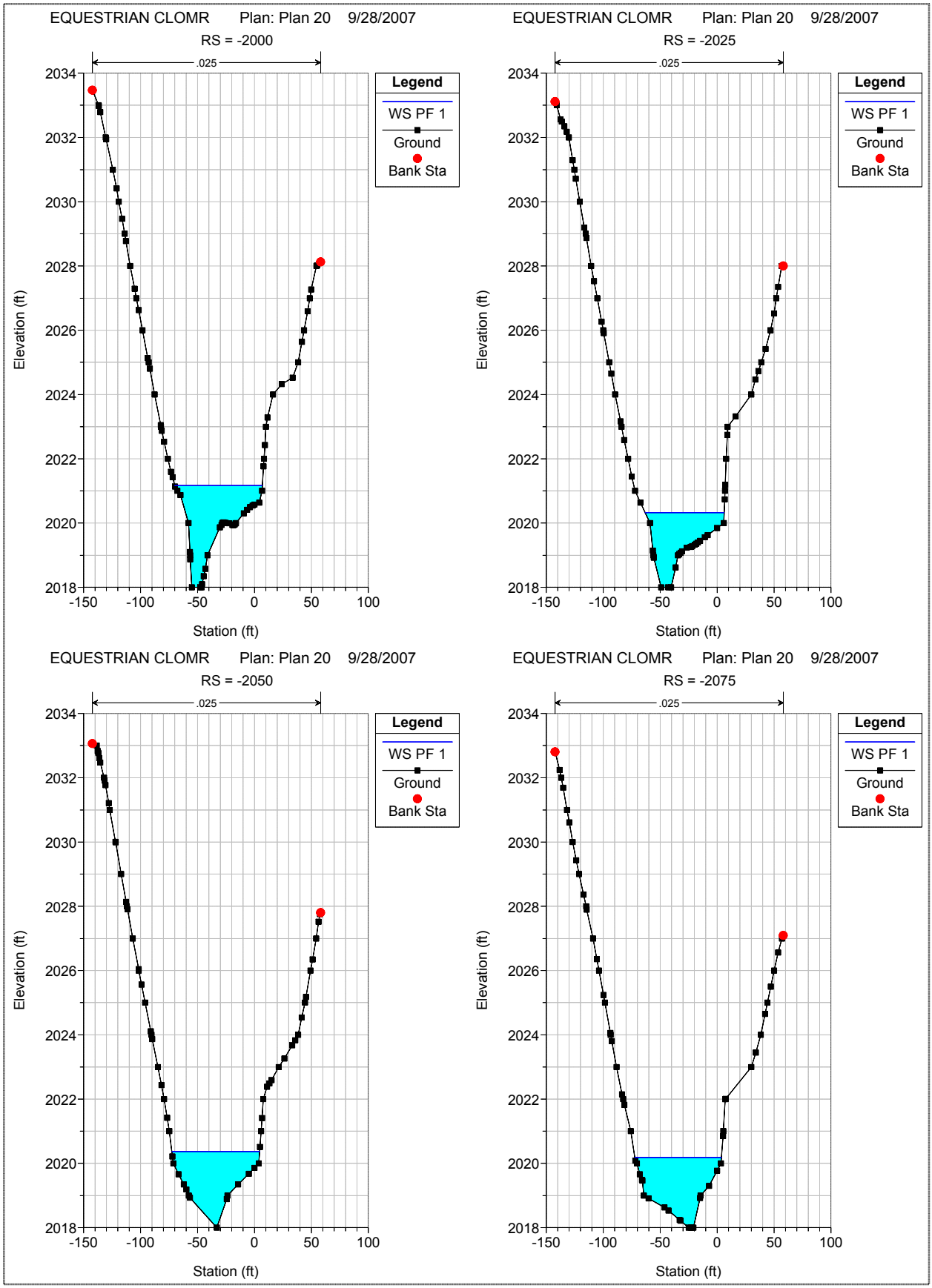

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1500
.025
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1525
.025
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1550
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1575
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

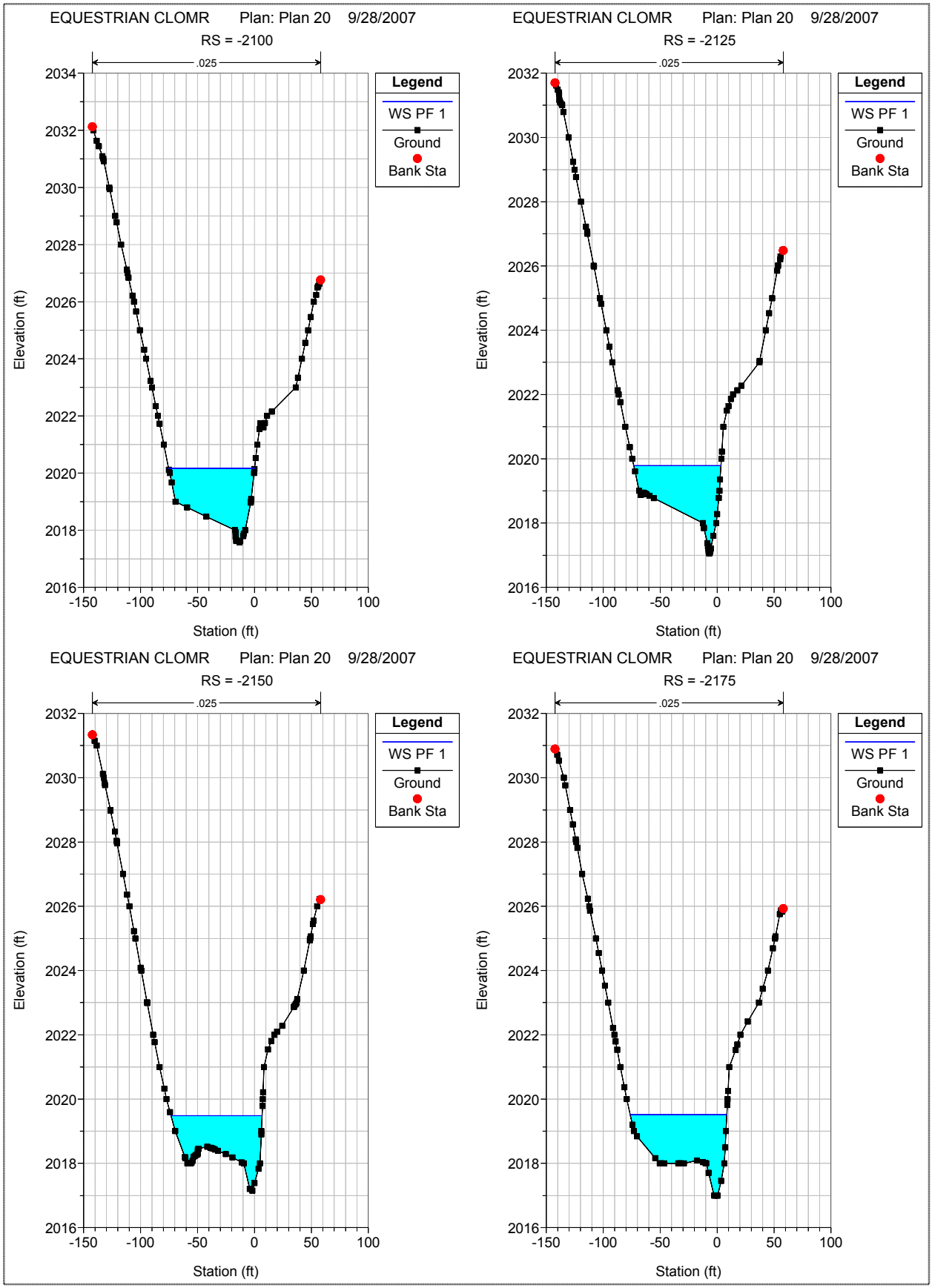

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1600
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1625
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1650
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1675
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

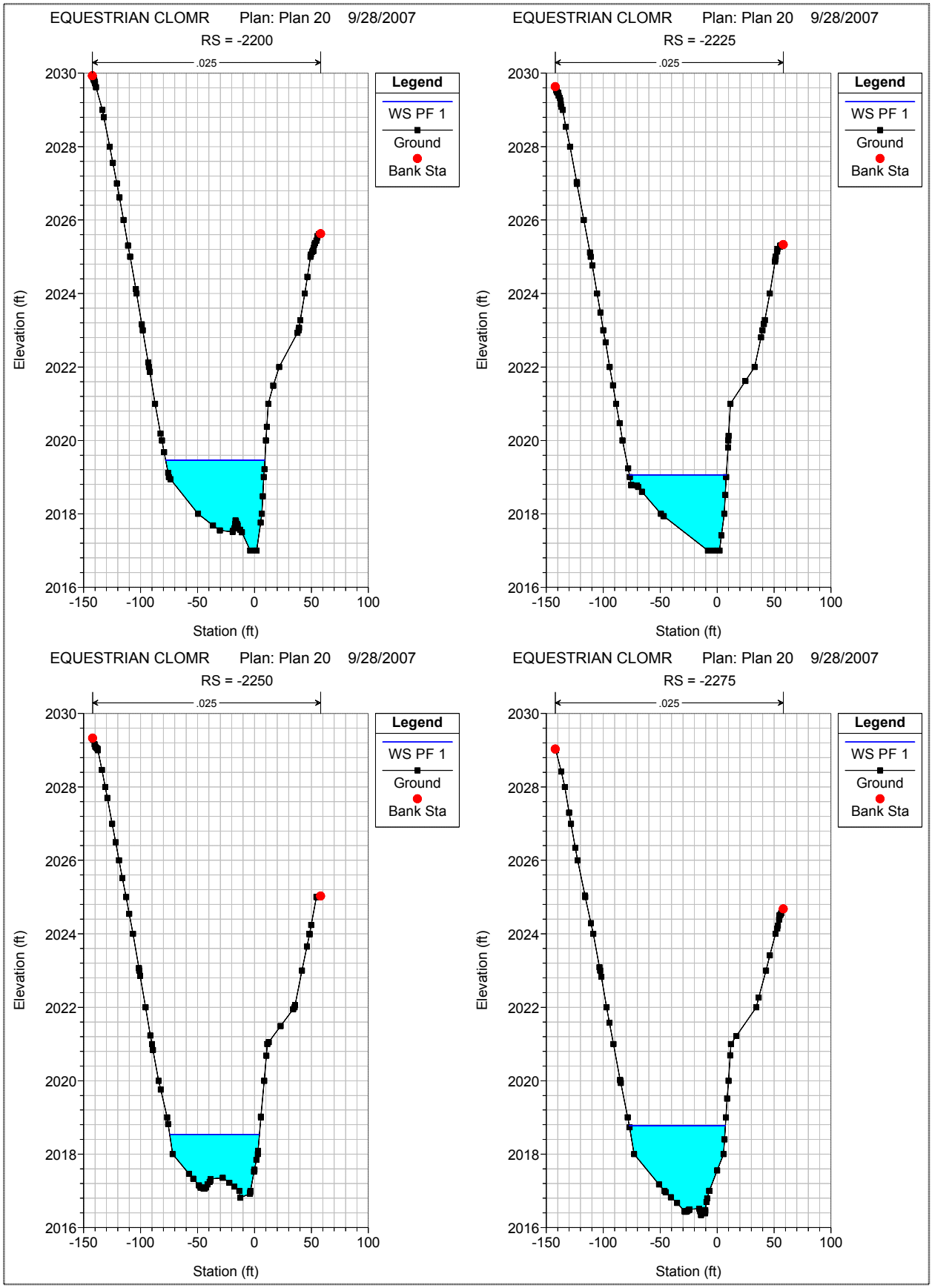

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RS = -1700
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1725
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1750
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1775
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

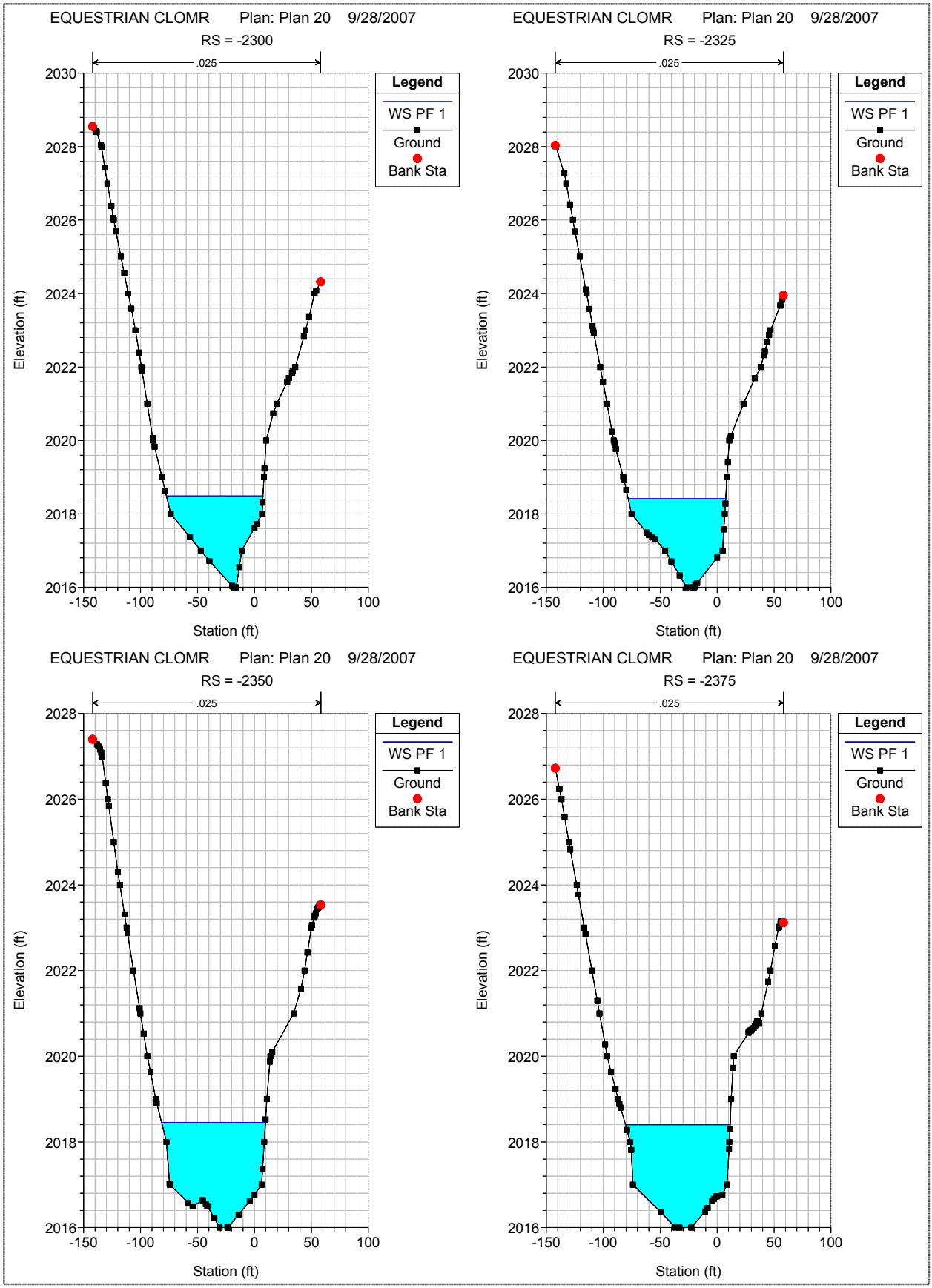

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1800
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1825
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1850
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1875
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

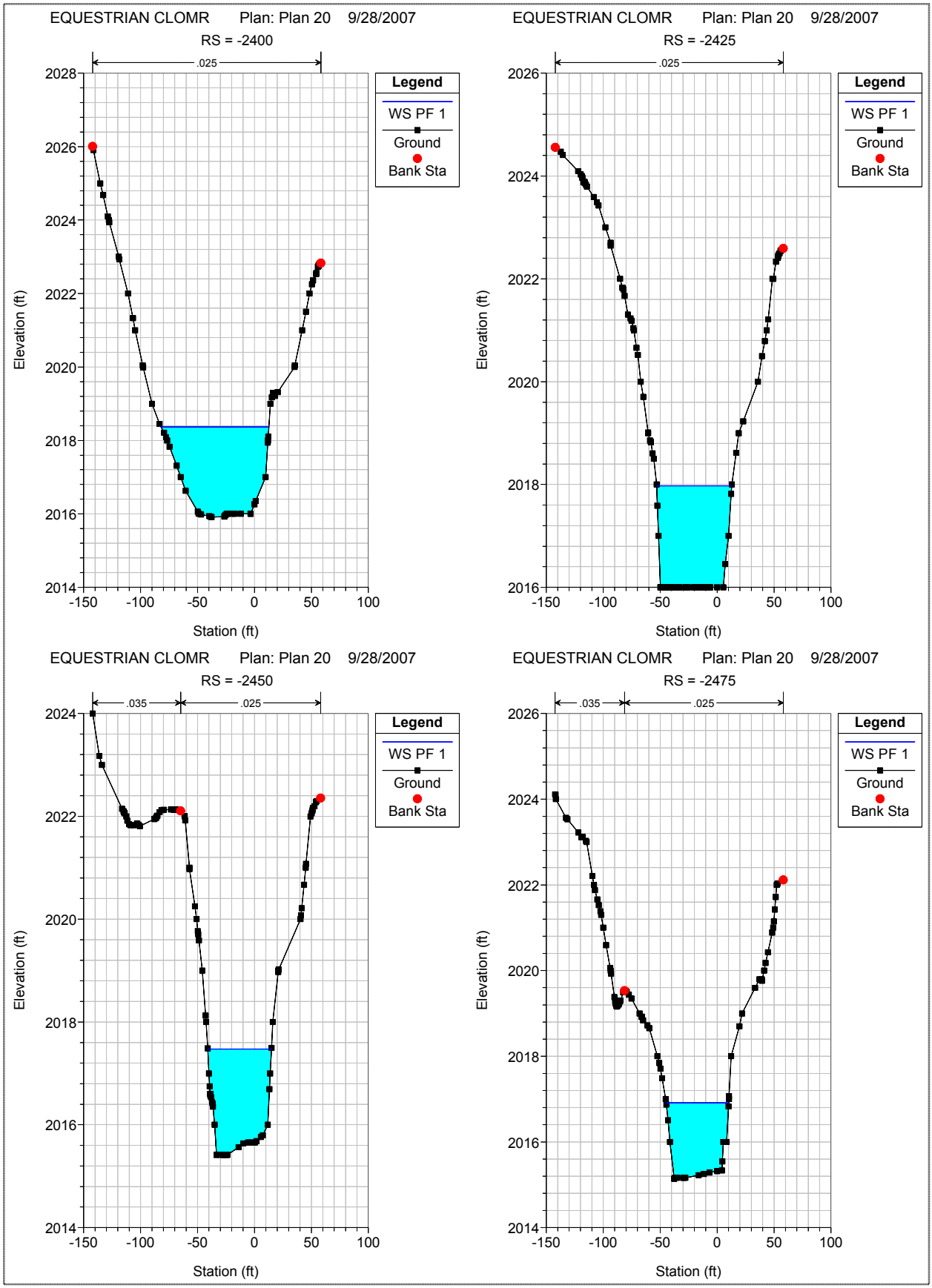

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Legend
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Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1925
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -1950
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
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Legend
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Ground
Bank Sta
Elevation (ft)
Station (ft)

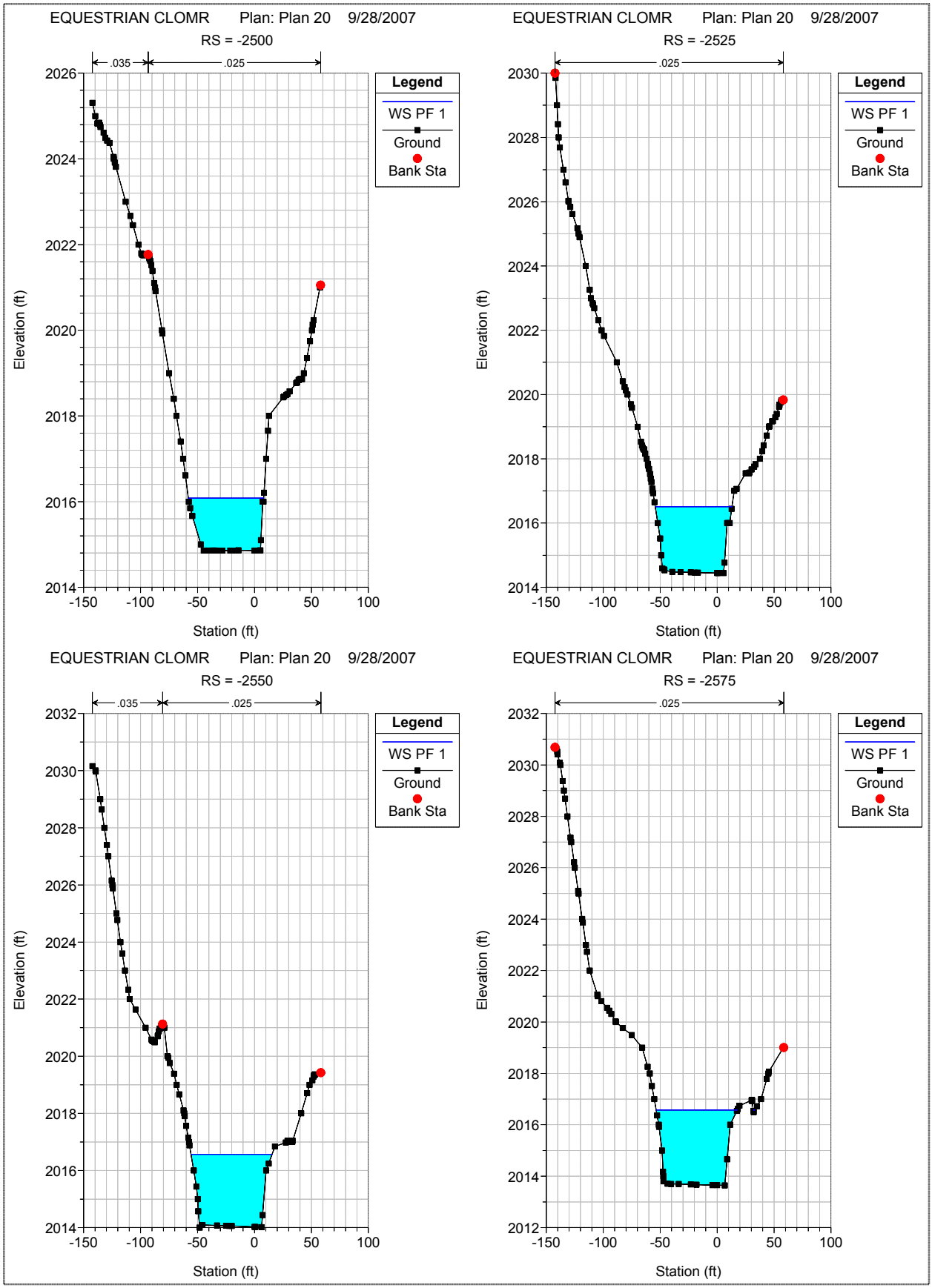

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2025
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2050
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2075
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

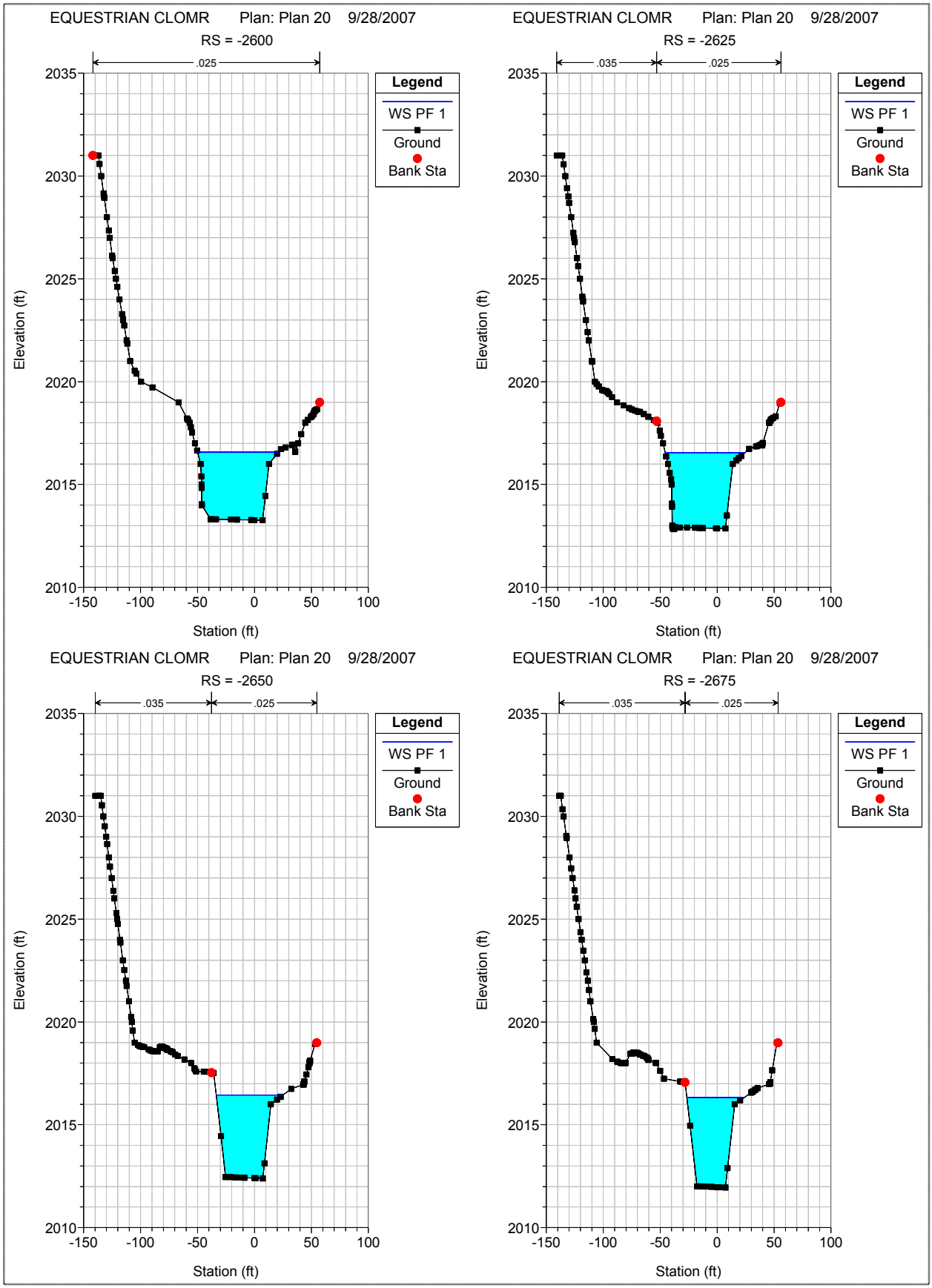

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RS = -2100
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Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2125
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2150
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2175
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Legend
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Ground
Bank Sta
Elevation (ft)
Station (ft)

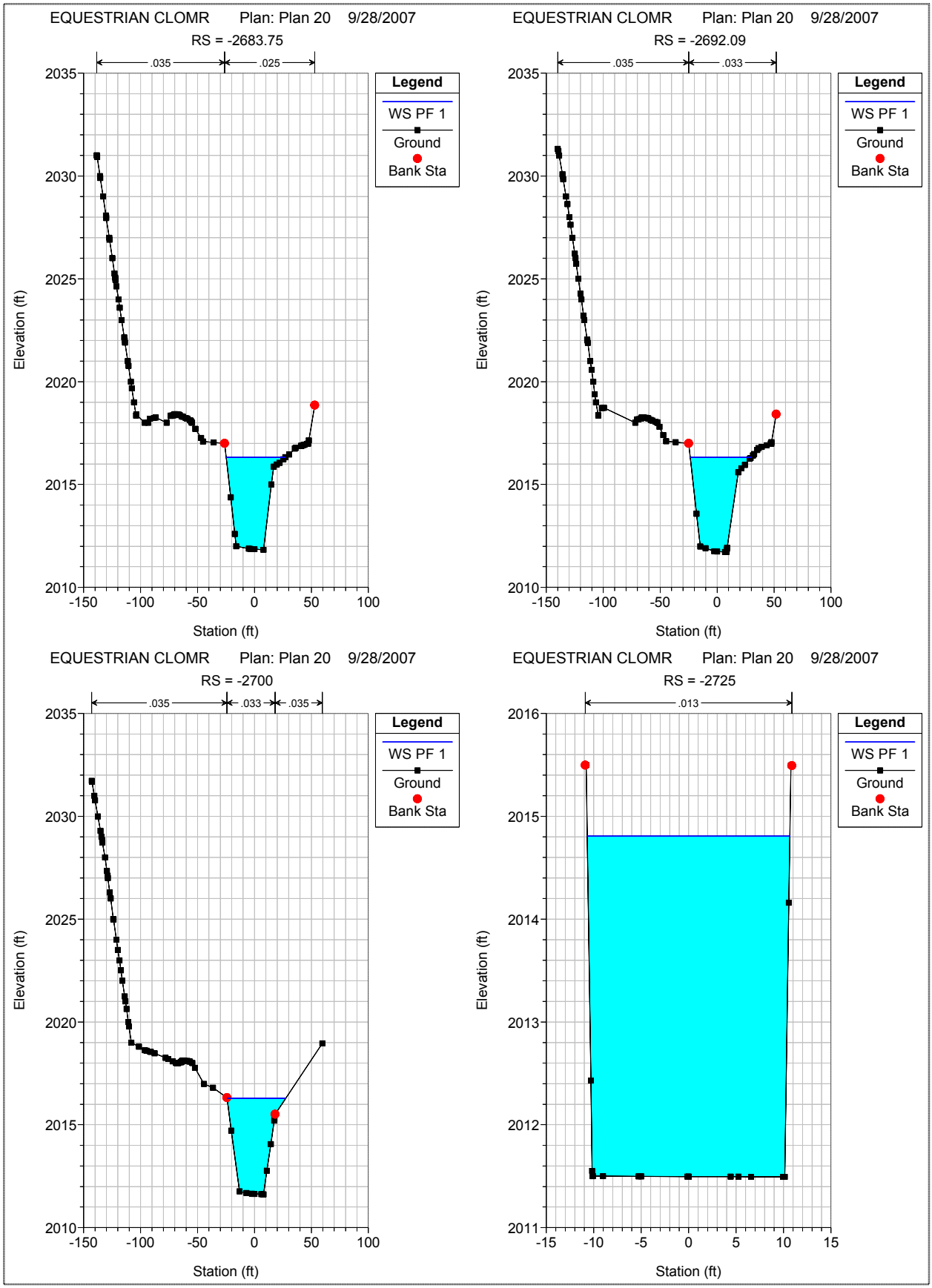

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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2225
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2250
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2275
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

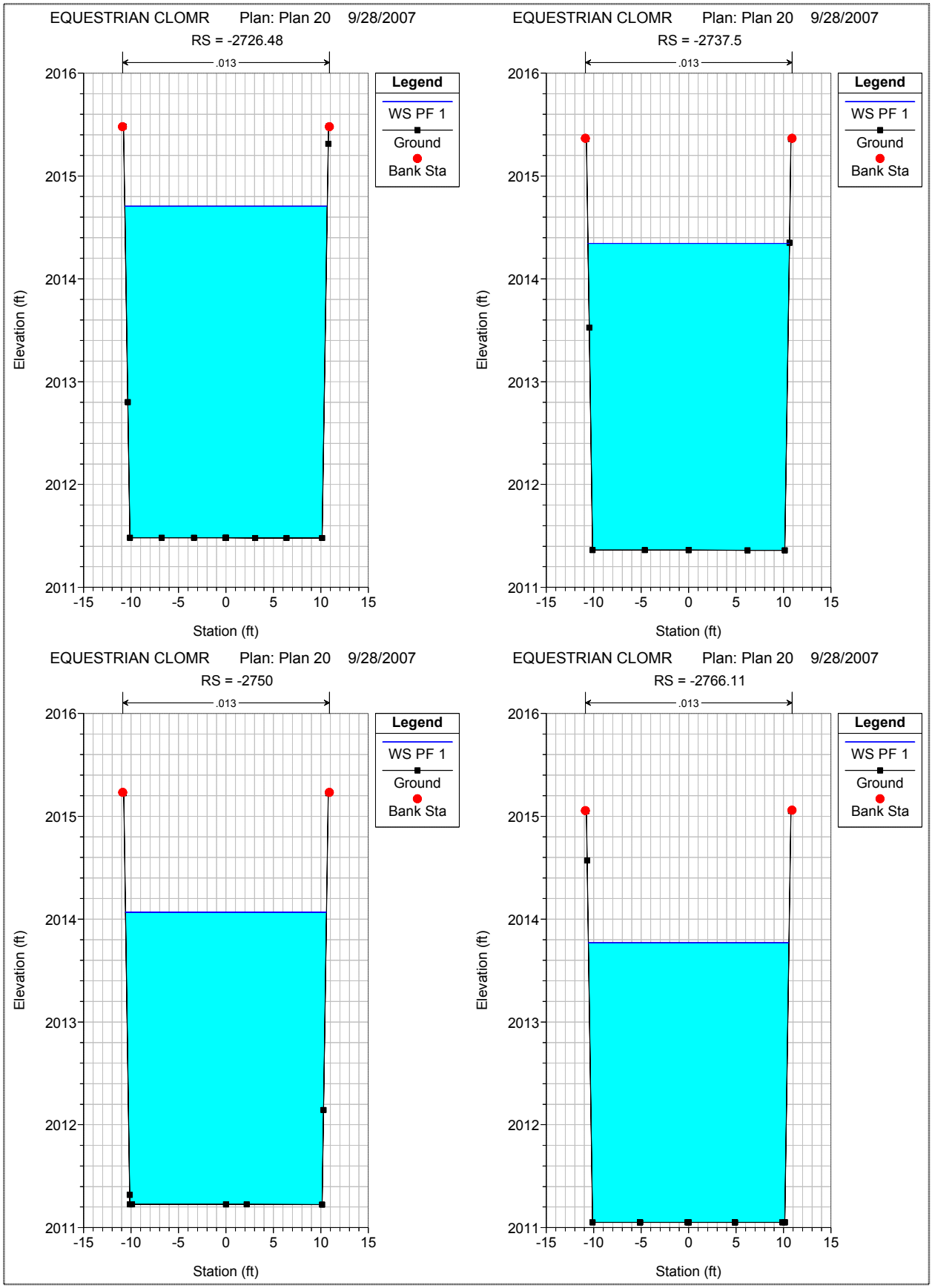

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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2325
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2350
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
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RS = -2375
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

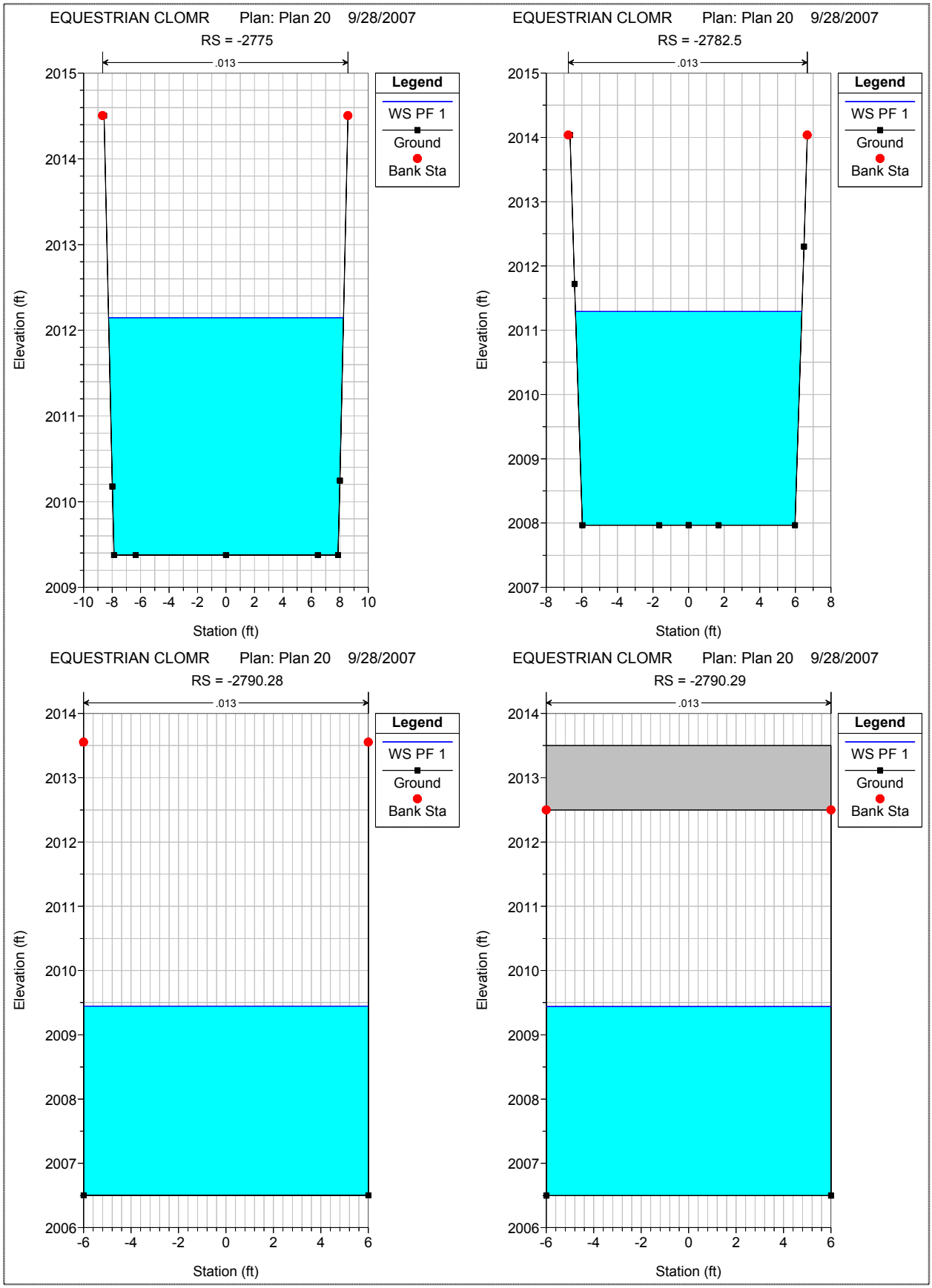

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Ground
Bank Sta
Elevation (ft)
Station (ft)
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RS = -2425
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2450
.035
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2475
.035
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2500
.035
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2525
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2550
.035
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2575
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

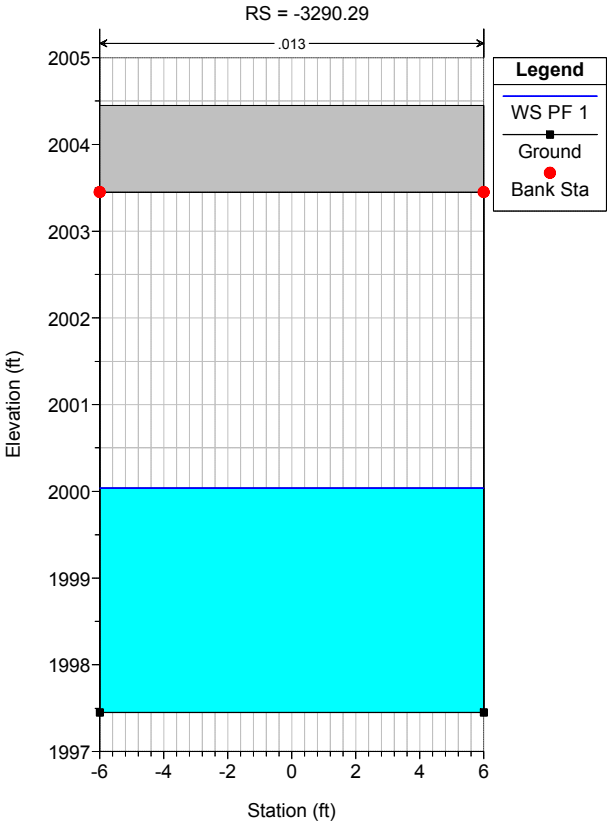

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Legend
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Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2625
.035
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2650
.035
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2675
.035
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2683.75
.035
.025
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2692.09
.035
.033
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2700
.035
.033
.035
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2725
.013
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2726.48
.013
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2737.5
.013
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2750
.013
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2766.11
.013
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2775
.013
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2782.5
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2790.28
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Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007
RS = -2790.29
.013
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

EQUESTRIAN CLOMR Plan: Plan 20 9/28/2007



HERITAGE PARK OUTFALL CHANNEL CLOMR
POST-PROJECT CONDITIONS: CHECK-RAS OUTPUT

CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.prj
Plan File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.p20
Geometry File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g08
Flow File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05
Report File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.nt
Selected profiles: PF 1
Date: 9/28/2007
Time: 09:32:01

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP
EQUESTRIAN DB OF,1						
-1500		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1525		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1550		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1575		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1600		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1625		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1650		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1675		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1700		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1725		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1750		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1775		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1800		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1825		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1850		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1875		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1900		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1925		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1950		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1975		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-2000		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2025		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2050		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-2075		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2100		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2125		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2150		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2175		-----	0.035	0.035	0.1	0.3

	-----	0.025	-----		
-2200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2225	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2250	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-2275	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2325	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2350	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2375	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2425	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2450	0.035	0.025	0.035	0.1	0.3
-2475	0.035	0.025	0.035	0.1	0.3
-2500	0.035	0.025	0.035	0.1	0.3
-2525	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-2550	0.035	0.025	0.035	0.1	0.3
-2575	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2625	0.035	0.025	0.035	0.1	0.3
-2650	0.035	0.025	0.035	0.1	0.3
-2675	0.035	0.025	0.035	0.1	0.3
-2683.75	0.035	0.025	0.035	0.1	0.3
-2692.09	0.035	0.033	0.035	0.1	0.3
-2700	0.035	0.033	0.035	0.1	0.3
-2725	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2726.48	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2737.5	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2750	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2766.11	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2775	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2782.5	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2790.28	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2790.29	-----	0.013	0.013	0.1	0.3
	-----	0.013	-----		
-3290.29	-----	0.013	0.013	0.1	0.3
	-----	0.013	-----		

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.035	0.035
Right Overbank n Value:	0.013	0.035
Channel n Value:	0.013	0.035
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

```
RS:      -2450
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:      -2475
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:      -2500
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:      -2550
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:      -2625
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:      -2650
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:      -2675
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:      -2683.75
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

RS:     -2790.29
NT RC 01 Right overbank n value is less than 0.035
         The n value for overbank is usually larger then 0.035.
         The n value should be reevaluated.

RS:      -2790.29
NT RC 03 Channel n value is equal to or less than 0.025
         The n value of the channel is usually larger than 0.025.
         The n value should be reevaluated it if is not representing a
         concrete lined channel.

TRANSITION LOSS COEFFICIENT CHECK
---------------------------------

ROUGHNESS COEFFICIENT AT STRUCTURES
-----------------------------------

---END---
```

CHECK-RAS Program, XS Check
Cross Section Location and Alignment Review

Project File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.prj
Plan File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.p20
Geometry File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.g08
Flow File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.f05
Report File: J:\JOBS\6928\Hydraulics\CLOMR\HEC-RAS\EQUESTRIAN.xs
Selected profiles: PF 1
Date: 9/28/2007
Time: 09:30:37

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code
EQUESTRIAN DB OF,1						
-1500	25	25	25	40.82	706	
-1525	25	25	0	48.87	706	
-1550	25	25	25	62.46	706	
-1575	25	25	25	83.36	706	C
-1600	25	25	25	78.67	706	
-1625	25	25	25	83.96	706	
-1650	25	25	25	88.88	706	
-1675	25	25	25	94.74	706	
-1700	25	25	25	98.03	706	
-1725	25	25	25	100.62	706	C
-1750	25	25	25	38.89	706	D
-1775	25	25	25	35.41	706	D
-1800	25	25	25	45.02	706	D
-1825	25	25	25	72.52	706	
-1850	25	25	25	33.27	706	
-1875	25	25	25	43.72	706	D
-1900	25	25	25	62.56	706	
-1925	25	25	25	84.58	706	
-1950	25	25	25	84.51	706	
-1975	25	25	25	77.65	706	
-2000	25	25	25	76.91	706	C
-2025	25	25	25	69.36	706	
-2050	25	25	25	77.11	706	
-2075	25	25	25	76.06	706	
-2100	25	25	25	75.4	706	
-2125	25	25	25	76.51	706	C
-2150	25	25	25	79.98	706	
-2175	25	25	25	84.84	706	
-2200	25	25	25	87.14	706	
-2225	25	25	25	85.2	706	C
-2250	25	25	25	78.78	706	
-2275	25	25	25	84.44	706	
-2300	25	25	25	84.84	706	
-2325	25	25	25	85.51	706	
-2350	25	25	25	91.17	706	
-2375	25	25	25	91.85	706	
-2400	25	25	25	94.73	706	
-2425	25	25	25	65.88	706	
-2450	25	25	25	55.91	706	C
-2475	25	25	25	54.97	706	
-2500	25	25	25	66.08	706	
-2525	25	25	25	67.46	706	
-2550	25	25	25	71.18	706	
-2575	25	25	25	72.64	706	D
-2600	25	25	25	71.04	706	
-2625	25	25	25	70.23	706	
-2650	25	25	25	58.53	706	
-2675	8.75	8.75	8.75	50.6	706	
-2683.75	8.33	8.33	8.33	51.79	706	
-2692.09	7.92	7.92	7.92	53.55	706	
-2700	25	25	25	51.54	706	
-2725	1.48	1.48	1.48	21.36	706	C
-2726.48	11.02	11.02	11.02	21.32	706	
-2737.5	12.5	12.5	12.5	21.24	706	

-2750	16.11	16.11	16.11	21.18	706
-2766.11	8.89	8.89	8.89	21.13	706
-2775	7.5	7.5	7.5	16.5	706
-2782.5	7.78	7.78	7.78	12.72	706
-2790.28	0	0	0	12	706
-2790.29	0	0	0	12	706
-3290.29	0	0	0	12	706

B=blocked obstruction XS SC 05
C=critial depth XS SC 03
D=divided flow XS SC 01
E=cross section extended XS SC 02
K=known water-surface XS SC 04

DISTANCE CHECK

RS: -1525
XS DT 02 Right overbank distance is equal to zero.

RS: -2790.28
XS DT 02 Channel distance is equal to zero.

RS: -2790.28
XS DT 02 Left overbank distance is equal to zero.

RS: -2790.28
XS DT 02 Right overbank distance is equal to zero.

RS: -2790.29
XS DT 02 Channel distance is equal to zero.

RS: -2790.29
XS DT 02 Left overbank distance is equal to zero.

RS: -2790.29
XS DT 02 Right overbank distance is equal to zero.

SPACING CHECK

INEFFECTIVE FLOW CHECK

RS: -1500
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -1525
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -4895.41
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -4895.41
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -4900
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements

for levees are met.

RS: -4900
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -4925.31
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -4925.31
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5000
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5000
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5071.59
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5071.59
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5100
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5100
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5144.1
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5144.1
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5200
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5200
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5600
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5600
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -5745.97
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -5800
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -5862.57
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -5900
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -5900
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -6000
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -6000
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -6100
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -6200
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -6300
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -6400
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -6500
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS: -6500
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

```
RS:     -6600
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -6700
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -6700
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -6800
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -6800
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -6900
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -6900
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7000
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7000
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7100
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7100
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7200
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7200
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7300
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7300
```

```
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7400
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7400
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7428.56
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7428.56
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7500
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7500
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7600
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7600
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7700
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7800
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7800
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7893.64
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7893.64
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7900
XS IF 01 Left Levee option is used at this river station
```

```
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7900
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8000
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8100
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8200
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8600
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8600
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8700
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8700
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8774.45
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8800
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8900
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.


DISCHARGE CHECK
---------------

XS DC 02 Constant dicharge used for the EQUESTRIAN DB OF,1


LOCATION CHECK
--------------

RS:     -2700
XS LC 01 Lenchl Up/TopwdthAct Dn = 1.17
         MaxChlDpth Up/MaxChlDpth Dn = 1.41
```

```
         TopwdthAct Up/TopwdthAct Dn = 2.41
         This cross section is located too far upstream from the
         critical depth cross section.


BOUNDARY CONDITION CHECK
------------------------

XS BC 02 The name of the stream is EQUESTRIAN DB OF,1
         Normal S = 0.0137 is specified as the downstream boundary
         for profile PF 1

XS BC 02 The name of the stream is EQUESTRIAN DB OF,1
         Normal S = 0.0304 is specified as the upstream boundary
         for profile PF 1

XS BC 03 Maximum number of iterations is 0
         It should not be less than 20.

XS FR 02 The profile is computed as mixed flow regime.


LATERAL WEIRS CHECK
-----------------------

---END---
```

HERITAGE PARK OUTFALL CHANNEL
POST-PROJECT CONDITIONS: WSPGW MODEL

HPOC15.wsw

vtn nevada

Water Surface Comparison between Pre-Project HEC-RAS and Post-Project WSPGW

10/15/2007

PRE PROJECT HEC-RAS		POST PROJECT - WSPGW							? WSE	Check
Sta	WSE	RIVER STA	WSPGW STA	Q	Y	INV	V	HGL		
-2790.28	2013.67	2790.28	1644.46	706	6.000	2006.50	14.71	2012.50	-1.17	ok
-2800.00	2013.71	2800.00	1657.79	706	6.000	2006.26	14.71	2012.26	-1.45	ok
-2950.26	2011.39	2950.26	1803.68	706	4.573	2003.61	19.30	2008.19	-3.20	ok
-3305.97	2004.39	3305.97	2159.39	706	4.181	1997.17	21.11	2001.35	-3.04	ok
-3391.11	2004.43	3391.10	2244.52	706	4.160	1995.62	21.21	1999.78	-4.65	ok
-3700.00	1999.72	3700.07	2554.25	706	4.132	1990.01	21.36	1994.14	-5.58	ok
-3789.96	1994.84	3789.96	2643.38	706	4.411	1989.12	20.01	1993.53	-1.31	ok
-3868.66	1994.04	3868.65	2722.07	706	4.618	1988.33	19.11	1992.95	-1.09	ok
-4146.01	1991.76	4146.01	2999.42	706	5.059	1985.56	17.44	1990.62	-1.14	ok
-4399.05	1987.94	4399.05	3252.47	706	5.166	1983.03	17.65	1988.19	0.25	ok
-4423.90	1987.94	4423.90	3277.31	706	5.165	1982.78	17.09	1987.94	0.00	ok
-4596.68	1987.9	4596.68	3450.09	706	4.515	1980.11	19.54	1984.63	-3.28	ok
-4834.44	1981.63	4834.44	3687.85	706	3.269	1978.04	18.00	1981.31	-0.32	ok
-4895.41	1976.51	4895.41	3748.82	706	3.941	1973.42	22.40	1977.36	0.85	ok
-4925.31	1976.98	4925.31	3778.72	706	3.750	1972.14	23.54	1975.89	-1.09	ok
-5071.59	1976.77	5071.59	3924.97	1,168	5.999	1969.24	13.91	1975.24	-1.53	ok
-5144.10	1975.17	5144.11	3997.48	1,168	4.614	1968.05	18.08	1972.66	-2.51	ok
-5629.37	1968.34	5629.37	4482.60	1,168	3.805	1959.25	21.93	1963.06	-5.28	ok
-5745.97	1964.6	5745.96	4599.19	1,168	3.760	1957.37	22.19	1961.13	-3.47	ok
-5862.57	1965.32	5862.56	4715.79	1,168	3.732	1955.49	22.35	1959.22	-6.10	ok
-6731.29	1953.125	6731.28	na	1,168	3.708	1941.53	22.5	1945.24	-7.88	ok
-7600	1940.93	7600.00	64+46.06	1,168	3.684	1927.57	22.64	1931.26	-9.67	ok
8187.225	1934.195	8187.22	na	1,168	4.358	1922.68	19.61	1927.03	-7.16	ok
-8774.45	1927.46	8774.44	7665.54	1,168	5.031	1917.78	16.58	1922.81	-4.65	ok

VTN 26 SEP 2007

Values in English Units

HYDRAULICS SUMMARY - Heritage Park Outfall Channel (Post-Project)

Filename: HPOC15.wsw (Manning's n=0.015)

CHANNEL STATION	Reference Plan Stations	REMARKS	DESIGN FLOW Q	DEPTH OF FLOW y	DEPTH W/AIR[1] y*	INVERT ELEV SLOPE (%)	VELOCITY V	H.G.L.	E.G.L.	CHANNEL TYPE	BASE WIDTH/DIA.	SIDE SLOPE	FLOW AREA A	WETTED PERIMETER P	TOP WIDTH T	FROUDE NUMBER	CURVE RADIUS R	SUPER ELEV	CCRFCD MIN FB[2]	MIN WALL HT	DESIGN WALL HT	ACTUAL FB	FB CHECK
16+44.46	75+09.79	Begin Exist. 8'x6' RCB	706	6.000	6.000	2006.50	14.71	2012.50	2015.86	RCB	8	0	47.99	20.00	8.00	1.06			1.67	7.67	6.00	0.00	EXIST RCB
	Eq DB Outfall					1.81%																	
16+57.79	74+96.46		706	6.000	6.000	2006.26	14.71	2012.26	2015.62	RCB	8	0	47.99	20.00	8.00	1.06			1.67	7.67	6.00	0.00	EXIST RCB
16+57.79	74+96.46	PC	706	6.000	6.000	2006.26	14.71	2012.26	2015.62	RCB	8	0	47.99	20.00	8.00	1.06	140	0.384	1.67	8.05	6.00	-0.38	EXIST RCB
	Eq DB Outfall					1.81%																	
18+03.68	73+50.57	PT	706	4.573	4.573	2003.61	19.30	2008.19	2013.97	RCB	8	0	36.58	17.15	8.00	1.59	140	0.661	1.80	7.03	6.00	0.77	EXIST RCB
18+03.68	73+50.57		706	4.573	4.573	2003.61	19.30	2008.19	2013.97	RCB	8	0	36.58	17.15	8.00	1.59			1.80	6.37	6.00	1.43	EXIST RCB
	Eq DB Outfall					1.81%																	
21+59.39	69+94.86		706	4.181	4.237	1997.17	21.11	2001.35	2008.27	RCB	8	0	33.44	16.36	8.00	1.82			1.85	6.03	6.00	1.82	EXIST RCB
21+59.39	69+94.86	PC	706	4.181	4.237	1997.17	21.11	2001.35	2008.27	RCB	8	0	33.44	16.36	8.00	1.82	200	0.554	1.85	6.58	6.00	1.27	EXIST RCB
	Eq DB Outfall					1.81%																	
22+44.52	69+09.73	PT	706	4.160	4.218	1995.62	21.21	1999.78	2006.77	RCB	8	0	33.29	16.32	8.00	1.83	200	0.559	1.85	6.57	6.00	1.28	EXIST RCB
22+44.52	69+09.73		706	4.160	4.218	1995.62	21.21	1999.78	2006.77	RCB	8	0	33.29	16.32	8.00	1.83			1.85	6.01	6.00	1.84	EXIST RCB
	Eq DB Outfall					1.81%																	
25+54.25	66+00.00	GB	706	4.132	4.195	1990.01	21.36	1994.14	2001.23	RCB	8	0	33.05	16.26	8.00	1.85			1.86	5.99	6.00	1.87	EXIST RCB
25+54.25	66+00.00		706	4.132	4.195	1990.01	21.36	1994.14	2001.23	RCB	8	0	33.05	16.26	8.00	1.85			1.86	5.99	6.00	1.87	EXIST RCB
	Eq DB Outfall					1.00%																	
26+43.38	65+10.87		706	4.411	4.431	1989.12	20.01	1993.53	1999.75	RCB	8	0	35.28	16.82	8.00	1.68			1.82	6.23	6.00	1.59	EXIST RCB
26+43.38	65+10.87	PC	706	4.411	4.431	1989.12	20.01	1993.53	1999.75	RCB	8	0	35.28	16.82	8.00	1.68	200	0.497	1.82	6.73	6.00	1.09	EXIST RCB
	Eq DB Outfall					1.00%																	
27+22.07	64+32.18	PT	706	4.618	4.618	1988.33	19.11	1992.95	1998.62	RCB	8	0	36.94	17.24	8.00	1.57	200	0.454	1.80	6.87	6.00	0.93	EXIST RCB
27+22.07	64+32.18		706	4.618	4.618	1988.33	19.11	1992.95	1998.62	RCB	8	0	36.94	17.24	8.00	1.57			1.80	6.41	6.00	1.38	EXIST RCB
	Eq DB Outfall					1.00%																	
29+99.42	61+54.83		706	5.059	5.059	1985.56	17.44	1990.62	1995.34	RCB	8	0	40.48	18.12	8.00	1.37			1.75	6.81	6.00	0.94	EXIST RCB
29+99.42	61+54.83	PC	706	5.059	5.059	1985.56	17.44	1990.62	1995.34	RCB	8	0	40.48	18.12	8.00	1.37	187	0.404	1.75	7.21	6.00	0.54	EXIST RCB
	Eq DB Outfall					1.00%																	
32+52.47	59+01.78	PT	706	5.166	5.166	1983.03	17.65	1988.19	1993.03	RCB	8	0	40.00	18.33	8.00	1.39	187	0.414	1.76	7.34	6.00	0.42	EXIST RCB
32+52.47	59+01.78		706	5.166	5.166	1983.03	17.65	1988.19	1993.03	RCB	8	0	40.00	18.33	8.00	1.39			1.76	6.93	6.00	0.83	EXIST RCB
	Eq DB Outfall					1.00%																	
32+77.31	58+76.94		706	5.165	5.165	1982.78	17.09	1987.94	1992.48	RCB	8	0	41.31	18.33	8.00	1.33			1.74	6.90	6.00	0.84	EXIST RCB
32+77.31	58+76.94	PC	706	5.165	5.165	1982.78	17.09	1987.94	1992.48	RCB	8	0	41.31	18.33	8.00	1.33	80	0.907	1.74	7.81	6.00	-0.07	EXIST RCB
	Eq DB Outfall					1.00%																	
33+01.64	58+52.61	PRC	706	5.159	5.159	1982.53	17.11	1987.69	1992.24	RCB	8	0	41.26	18.32	8.00	1.33	80	0.909	1.74	7.81	6.00	-0.07	EXIST RCB
33+01.64	58+52.61		706	5.159	5.159	1982.53	17.11	1987.69	1992.24	RCB	8	0	41.26	18.32	8.00	1.33	80	0.909	1.74	7.81	6.00	-0.07	EXIST RCB
	Eq DB Outfall					1.00%																	
33+71.94	57+82.31	Tie-in to Exist. 8'x6' RCB, PT	706	5.169	5.169	1981.83	17.07	1987.00	1991.52	RCB	8	0	41.36	18.34	8.00	1.32	80	0.905	1.74	7.81	6.00	-0.07	EXIST RCB
33+71.94		Begin 8'x6' RCB	706	5.169	5.169	1981.83	17.07	1987.00	1991.52	RCB	8	0	41.36	18.34	8.00	1.32			1.74	6.91	6.00	0.83	OK, RCB
						2.20%																	
34+50.09			706	4.515	4.519	1980.11	19.54	1984.63	1990.55	RCB	8	0	36.13	17.03	8.00	1.62			1.81	6.32	6.00	1.49	OK, RCB
34+50.09		PC	706	4.515	4.519	1980.11	19.54	1984.63	1990.55	RCB	8	0	36.13	17.03	8.00	1.62	500	0.190	1.81	6.51	6.00	1.30	OK, RCB
						2.19%																	
34+71.60		End 8'x6' RCB, PT	706	4.425	4.443	1979.64	19.94	1984.07	1990.24	RCB	8	0	35.41	16.85	8.00	1.67	500	0.198	1.82	6.44	6.00	1.38	OK, RCB
34+71.60		Begin Transition Structure	706	4.425	4.443	1979.64	19.94	1984.07	1990.24	RCB	8	0	35.41	16.85	8.00	1.67			1.82	6.24	6.00	1.58	OK, RCB
						2.20%																	
35+01.60		End Transition Structure, GB	706	2.608	2.749	1978.98	22.56	1981.59	1989.49	RCB	12	0	31.29	17.22	12.00	2.46			1.78	4.38	4.00	1.39	OK, RCB
35+01.60		Begin 12'x4' RCB	706	2.608	2.749	1978.98	22.56	1981.59	1989.49	RCB	12	0	31.29	17.22	12.00	2.46			1.78	4.38	4.00	1.39	OK, RCB
						0.50%																	
36+87.85		End 12'x4' RCB, GB	706	3.269	3.298	1978.04	18.00	1981.31	1986.34	RCB	12	0	39.22	18.54	12.00	1.75			1.67	4.94	4.00	0.73	OK, RCB

CHANNEL STATION	Reference Plan Stations	REMARKS	DESIGN FLOW Q	DEPTH OF FLOW y	DEPTH W/AIR[1] y*	INVERT ELEV SLOPE (%)	VELOCITY V	H.G.L.	E.G.L.	CHANNEL TYPE	BASE WIDTH/DIA.	SIDE SLOPE	FLOW AREA A	WETTED PERIMETER P	TOP WIDTH T	FROUDE NUMBER	CURVE RADIUS R	SUPER ELEV	CCRFCD MIN FB[2]	MIN WALL HT	DESIGN WALL HT	ACTUAL FB	FB CHECK
36+87.85		Begin Transition Structure	706	3.269	3.298	1978.04	18.00	1981.31	1986.34	RCB	12	0	39.22	18.54	12.00	1.75			1.67	4.94	4.00	0.73	OK, RCB
						10.97%																	
37+17.85		End Transition Structure, GB	706	4.234	4.280	1974.75	20.84	1978.98	1985.73	RCB	8	0	33.88	16.47	8.00	1.78			1.84	6.08	6.00	1.77	OK, RCB
37+17.85		Begin 8'x6' RCB	706	4.234	4.280	1974.75	20.84	1978.98	1985.73	RCB	8	0	33.88	16.47	8.00	1.78			1.84	6.08	6.00	1.77	OK, RCB
						4.29%																	
37+48.82			706	3.941	4.035	1973.42	22.40	1977.36	1985.15	RCB	8	0	31.52	15.88	8.00	1.99			1.88	5.83	6.00	2.06	OK
37+48.82		PC	706	3.941	4.035	1973.42	22.40	1977.36	1985.15	RCB	8	0	31.52	15.88	8.00	1.99	150	0.831	1.88	6.66	6.00	1.23	OK, RCB
						4.28%																	
37+78.72		PT	706	3.750	3.875	1972.14	23.54	1975.89	1984.49	RCB	8	0	29.99	15.50	8.00	2.14	150	0.918	1.91	6.58	6.00	1.33	OK, RCB
37+78.72			706	3.750	3.875	1972.14	23.54	1975.89	1984.49	RCB	8	0	29.99	15.50	8.00	2.14			1.91	5.66	6.00	2.25	OK
						4.32%																	
37+97.01		End 8'x6' RCB	706	3.657	3.798	1971.35	24.13	1975.01	1984.05	RCB	8	0	29.26	15.31	8.00	2.22			1.93	5.59	6.00	2.34	OK
37+97.01		Begin Confluence Structure	1,168	2.223	2.353	1971.35	21.44	1973.57	1980.71	RCB	24.5	0	54.48	28.95	24.50	2.53			1.70	3.92	6.00	3.78	OK
						1.65%																	
38+46.22		End Confluence Structure	1,168	7.165	7.165	1970.54	7.95	1977.71	1978.69	RCB	24.5	0	146.92	38.83	24.50	0.57			1.48	8.65	6.00	-1.17	OK, RCB
38+46.22		Begin Transition Structure	1,168	7.165	7.165	1970.54	7.95	1977.71	1978.69	RCB	24.5	0	146.92	38.83	24.50	0.57			1.48	8.65	6.00	-1.17	OK, RCB
						1.65%																	
39+24.97		End Transition Structure	1,168	5.999	5.999	1969.24	13.91	1975.24	1978.24	RCB	14	0	83.97	26.00	14.00	1.00			1.63	7.63	6.00	0.00	OK, RCB
39+24.97		Begin 14'x6' RCB, PC	1,168	5.999	5.999	1969.24	13.91	1975.24	1978.24	RCB	14	0	83.97	26.00	14.00	1.00	250	0.337	1.63	7.97	6.00	-0.34	OK, RCB
						1.64%																	
39+97.48		PT	1,168	4.614	4.614	1968.05	18.08	1972.66	1977.74	RCB	14	0	64.60	23.23	14.00	1.48	250	0.568	1.75	6.93	6.00	0.82	OK, RCB
39+97.48			1,168	4.614	4.614	1968.05	18.08	1972.66	1977.74	RCB	14	0	64.60	23.23	14.00	1.48			1.75	6.37	6.00	1.39	OK, RCB
						1.65%																	
42+85.72		End 14'x6' RCB	1,168	3.877	3.955	1963.29	21.52	1967.17	1974.36	RCB	14	0	54.28	21.75	14.00	1.93			1.85	5.72	6.00	2.12	OK
42+85.72		Begin Confluence Structure	1,168	2.315	2.484	1963.29	23.74	1965.61	1974.36	RCB	21.25	0	49.20	25.88	21.25	2.75			1.79	4.10	6.00	3.69	OK
						2.50%																	
43+28.22		End Confluence Structure	1,168	2.312	2.482	1962.23	23.78	1964.54	1973.32	RCB	21.25	0	49.12	25.87	21.25	2.76			1.79	4.10	6.00	3.69	OK
43+28.22		Begin Transition Structure	1,168	2.312	2.482	1962.23	23.78	1964.54	1973.32	RCB	21.25	0	49.12	25.87	21.25	2.76			1.79	4.10	6.00	3.69	OK
						2.50%																	
43+82.60		End Transition Structure	1,168	3.869	3.947	1960.87	21.56	1964.74	1971.95	RCB	14	0	54.17	21.74	14.00	1.93			1.85	5.72	6.00	2.13	OK
43+82.60		Begin 14'x6' RCB	1,168	3.869	3.947	1960.87	21.56	1964.74	1971.95	RCB	14	0	54.17	21.74	14.00	1.93			1.85	5.72	6.00	2.13	OK
						1.61%																	
44+82.60			1,168	3.805	3.894	1959.25	21.93	1963.06	1970.53	RCB	14	0	53.26	21.61	14.00	1.98			1.86	5.66	6.00	2.20	OK
44+82.60		PC	1,168	3.805	3.894	1959.25	21.93	1963.06	1970.53	RCB	14	0	53.26	21.61	14.00	1.98	1,000	0.209	1.86	5.87	6.00	1.99	OK
						1.61%																	
45+99.19		PRC	1,168	3.760	3.857	1957.37	22.19	1961.13	1968.78	RCB	14	0	52.64	21.52	14.00	2.02	1,000	0.214	1.86	5.84	6.00	2.03	OK
45+99.19			1,168	3.760	3.857	1957.37	22.19	1961.13	1968.78	RCB	14	0	52.64	21.52	14.00	2.02	1,000	0.214	1.86	5.84	6.00	2.03	OK
						1.61%																	
47+15.79		PT	1,168	3.732	3.833	1955.49	22.35	1959.22	1966.98	RCB	14	0	52.26	21.46	14.00	2.04	1,000	0.217	1.87	5.82	6.00	2.05	OK
47+15.79			1,168	3.732	3.833	1955.49	22.35	1959.22	1966.98	RCB	14	0	52.26	21.46	14.00	2.04			1.87	5.60	6.00	2.27	OK
						1.61%																	
64+46.06			1,168	3.684	3.793	1927.57	22.64	1931.26	1939.22	RCB	14	0	51.59	21.37	14.00	2.08			1.87	5.56	6.00	2.32	OK
64+46.06		PC	1,168	3.684	3.793	1927.57	22.64	1931.26	1939.22	RCB	14	0	51.59	21.37	14.00	2.08	150	1.486	1.87	7.04	6.00	0.83	OK, RCB
						1.61%																	
66+20.47		PT,GB	1,168	3.685	3.794	1924.76	22.64	1928.45	1936.40	RCB	14	0	51.59	21.37	14.00	2.08	150	1.486	1.87	7.04	6.00	0.83	OK, RCB
66+20.47			1,168	3.685	3.794	1924.76	22.64	1928.45	1936.40	RCB	14	0	51.59	21.37	14.00	2.08			1.87	5.56	6.00	2.32	OK
						0.67%																	
76+65.54			1,168	5.031	5.031	1917.78	16.58	1922.81	1927.08	RCB	14	0	70.45	24.06	14.00	1.30			1.71	6.74	6.00	0.97	OK, RCB
76+65.54		PC	1,168	5.031	5.031	1917.78	16.58	1922.81	1927.08	RCB	14	0	70.45	24.06	14.00	1.30	200	0.598	1.71	7.34	6.00	0.37	OK, RCB
						0.67%																	
78+90.18			1,168	5.034	5.034	1916.28	16.57	1921.31	1925.58	RCB	14	0	70.49	24.07	14.00	1.30	200	0.597	1.71	7.34	6.00	0.37	OK, RCB

CHANNEL STATION	Reference Plan Stations	REMARKS	DESIGN FLOW Q	DEPTH OF FLOW y	DEPTH W/AIR[1] y*	INVERT ELEV SLOPE (%)	VELOCITY V	H.G.L.	E.G.L.	CHANNEL TYPE	BASE WIDTH/DIA.	SIDE SLOPE	FLOW AREA A	WETTED PERIMETER P	TOP WIDTH T	FROUDE NUMBER	CURVE RADIUS R	SUPER ELEV	CCRFCD MIN FB[2]	MIN WALL HT	DESIGN WALL HT	ACTUAL FB	FB CHECK
78+90.18			1,168	5.034	5.034	1916.28	16.57	1921.31	1925.58	RCB	14	0	70.49	24.07	14.00	1.30	200	0.597	1.71	7.34	6.00	0.37	OK, RCB
						0.67%																	
79+80.73		End 14'x6' RCB, PT	1,168	5.028	5.028	1915.67	16.59	1920.70	1924.97	RCB	14	0	70.40	24.06	14.00	1.30	200	0.598	1.71	7.34	6.00	0.37	OK, RCB
79+80.73		Begin Confluence Structure	2,868	3.722	3.722	1915.67	15.41	1919.39	1923.08	RECT	51.25	0	186.11	58.69	51.25	1.43			1.60	5.32	9.00	5.28	OK
						1.97%																	
80+25.00			2,868	3.295	3.316	1914.80	17.41	1918.09	1922.80	RECT	51.25	0	164.73	57.84	51.25	1.71			1.65	4.94	9.00	5.71	OK
80+25.00			2,868	3.295	3.316	1914.80	17.41	1918.09	1922.80	RECT	51.25	0	164.73	57.84	51.25	1.71			1.65	4.94	9.00	5.71	OK
						1.97%																	
80+83.23		End Confluence Structure	2,868	3.012	3.078	1913.65	19.04	1916.66	1922.29	RECT	51.25	0	150.63	57.27	51.25	1.96			1.69	4.70	9.00	5.99	OK
80+83.23		Begin Transition Structure	2,868	3.012	3.078	1913.65	19.04	1916.66	1922.29	RECT	51.25	0	150.63	57.27	51.25	1.96			1.69	4.70	9.00	5.99	OK
						1.97%																	
82+80.11		End Transition Structure	2,868	4.229	4.317	1909.77	20.27	1914.00	1920.38	TRAP	25	2	141.49	43.91	41.92	1.94			1.82	6.05	9.00	4.77	OK
82+80.11	144+91.50	Tie-in to Exist. 25' Trap. Chan. w/ 2:1 SS	2,868	4.229	4.317	1909.77	20.27	1914.00	1920.38	TRAP	25	2	141.49	43.91	41.92	1.94			1.82	6.05	9.00	4.77	OK
	C-1 As-builts					1.25%																	
84+21.61	143+50.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	4.083	4.199	1908.00	21.18	1912.08	1919.05	TRAP	25	2	135.41	43.26	41.33	2.06			1.85	5.93	9.00	4.92	OK
84+21.61	143+50.00	Exist. Trap. Chan. w/ Energy Dissipators	2,868	4.083	4.199	1908.00	21.18	1912.08	1919.05	TRAP	25	2	135.41	43.26	41.33	2.06			1.85	5.93	9.00	4.92	OK
	C-1 As-builts					3.50%																	
86+71.61	141+00.00	End Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.854	4.015	1899.25	22.75	1903.10	1911.14	TRAP	25	2	126.07	42.24	40.42	2.27			1.89	5.75	9.00	5.15	OK
86+71.61	141+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.854	4.015	1899.25	22.75	1903.10	1911.14	TRAP	25	2	126.07	42.24	40.42	2.27			1.89	5.75	9.00	5.15	OK
	C-1 As-builts					1.25%																	
91+71.61	136+00.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.838	4.003	1893.00	22.87	1896.84	1904.96	TRAP	25	2	125.40	42.16	40.35	2.29			1.90	5.73	9.00	5.16	OK
91+71.61	136+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.838	4.003	1893.00	22.87	1896.84	1904.96	TRAP	25	2	125.40	42.16	40.35	2.29			1.90	5.73	9.00	5.16	OK
	C-1 As-builts					3.50%																	
94+71.61	133+00.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.826	3.993	1882.50	22.96	1886.33	1894.51	TRAP	25	2	124.91	42.11	40.30	2.30			1.90	5.72	9.00	5.17	OK
94+71.61	133+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.826	3.993	1882.50	22.96	1886.33	1894.51	TRAP	25	2	124.91	42.11	40.30	2.30			1.90	5.72	9.00	5.17	OK
	C-1 As-builts					1.25%																	
100+80.61	126+91.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.835	4.000	1874.89	22.89	1878.73	1886.86	TRAP	25	2	125.29	42.15	40.34	2.29			1.90	5.73	9.00	5.17	OK

Note:

(1) Depth with air entrainment, $y^*/y = 0.906(e)^{0.0615}$ (Fr >= 1.60; y* = y, Fr < 1.60). See *WASURO User's Manual (Draft), US Army Corps of Engineers Los Angeles District, July 1985.*

(2) For supercritical flow, FB = 1+0.025V(Y1/3); for subcritical flow, FB = 0.5+V2/2g. See Hydrologic Criteria and Drainage Design Manual, CCRFCD, 1999.

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T1  WO#6928 HERITAGE PARK OUTFALL CHANNEL                                        0
T2  Q = 706 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
T3  WSPG FILE: HPOC15.WSW, BY: VTN 09/19/2007
SO -10080.61 1874.890 12
R   -9471.61 1882.500 12      .015
R   -9171.61 1893.000 12      .025
R   -8671.61 1899.250 12      .015
R   -8421.61 1908.000 12      .025
R   -8280.11 1909.770 12      .015
TS  -8083.23 1913.650 11      .015
R   -8025.00 1914.800 11      .015
R   -7980.73 1915.670 11      .015
JX  -7980.73 1915.670  6 10   .015 1700.0           1915.67           0.1         .000
WX  -7980.73 1915.670  6
R   -7890.18 1916.280  6      .015                                  27.97
R   -7665.54 1917.780  6      .015                                  62.17
R   -6620.47 1924.760  6      .015
R   -6446.06 1927.570  6      .015                                  66.62
R   -4715.79 1955.490  6      .015
R   -4599.19 1957.370  6      .015                                   6.68
R   -4482.60 1959.250  6      .015                                   6.68
R   -4382.60 1960.870  6      .015
TS  -4328.22 1962.230  8      .015
R   -4285.72 1963.290  8      .015
JX  -4285.72 1963.290  6  7   .015  000.01           1963.29           0.1         .000
WX  -4285.72 1963.290  6
R   -3997.48 1968.050  6      .015
R   -3924.97 1969.240  6      .015                                  16.62
TS  -3846.22 1970.540  5      .015
R   -3797.01 1971.350  5      .015
JX  -3797.01 1971.350  1  3  4.015  292.0    170.0  1971.35 1971.35   0.1 -0.1    .000
WX  -3797.01 1971.350  1
R   -3778.72 1972.140  1      .015
R   -3748.82 1973.420  1      .015                                  11.42
R   -3717.85 1974.750  1      .015
TS  -3687.85 1978.040  2      .015
R   -3501.60 1978.980  2      .015
TS  -3471.60 1979.640  1      .015
R   -3450.09 1980.110  1      .015                                   2.46
R   -3371.94 1981.830  1      .015
R   -3301.64 1982.530  1      .015                                  50.35
R   -3277.31 1982.780  1      .015                                  17.43
R   -3252.47 1983.030  1      .015                                   0.00
R   -2999.42 1985.560  1      .015                                  77.53
R   -2722.07 1988.330  1      .015                                   0.00
R   -2643.38 1989.120  1      .015                                  22.54
R   -2554.25 1990.010  1      .015                                  00.00
R   -2244.52 1995.620  1      .015                                  00.00
R   -2159.39 1997.170  1      .015                                  24.39
R   -1803.68 2003.610  1      .015                                  00.00
R   -1657.79 2006.260  1      .015                                  59.71
SH  -1644.46 2006.500  1                         2006.50
CD   1  3   0   0.000   6.00     8.00
CD   2  3   0   0.000   4.00    12.00
CD   3  3   0   0.000   4.00     8.00
CD   4  3   0   0.000   4.00     4.00
CD   5  3   0   0.000   6.00    24.50
CD   6  3   0   0.000   6.00    14.00
CD   7  3   0   0.000   4.00     5.00
CD   8  3   0   0.000   6.00    21.25
CD  10  2               9.00    34.00
CD  11  2               9.00    50.00
CD  12  1   0    .000   9.00    25.00  2.000 2.000   .00
CD  13  4            11.0
Q           706.000   .0
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WO#6928 HERITAGE PARK OUTFALL CHANNEL
Q = 706 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: HPOC15.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-10080.610	1874.890	3.835	1878.725	2868.01	22.89	8.14	1886.86	.00	6.24	40.34	9.000	25.000	2.00	0 .0
609.000	.0125					.0125	7.64	3.83	2.29	3.83	.015	.00	2.00	TRAP
-9471.610	1882.500	3.826	1886.326	2868.01	22.96	8.18	1894.51	.00	6.24	40.30	9.000	25.000	2.00	0 .0
36.930	.0350					.0350	1.29	3.83	2.30	3.83	.025	.00	2.00	TRAP
-9434.681	1883.792	3.826	1887.618	2868.01	22.96	8.18	1895.80	.00	6.24	40.30	9.000	25.000	2.00	0 .0
263.070	.0350					.0348	9.16	3.83	2.30	3.83	.025	.00	2.00	TRAP
-9171.610	1893.000	3.838	1896.838	2868.01	22.87	8.12	1904.96	.00	6.24	40.35	9.000	25.000	2.00	0 .0
500.000	.0125					.0124	6.18	3.84	2.29	3.83	.015	.00	2.00	TRAP
-8671.610	1899.250	3.854	1903.104	2868.01	22.75	8.04	1911.14	.00	6.24	40.42	9.000	25.000	2.00	0 .0
146.220	.0350					.0329	4.82	3.85	2.27	3.83	.025	.00	2.00	TRAP
-8525.391	1904.368	3.929	1908.297	2868.01	22.21	7.66	1915.96	.00	6.24	40.72	9.000	25.000	2.00	0 .0
103.780	.0350					.0298	3.09	3.93	2.20	3.83	.025	.00	2.00	TRAP
-8421.610	1908.000	4.083	1912.083	2868.01	21.18	6.97	1919.05	.00	6.24	41.33	9.000	25.000	2.00	0 .0
141.500	.0125					.0094	1.33	4.08	2.06	3.83	.015	.00	2.00	TRAP
-8280.110	1909.770	4.229	1914.000	2868.01	20.27	6.38	1920.38	.00	6.24	41.92	9.000	25.000	2.00	0 .0
TRANS STR	.0197					.0093	1.84	4.23	1.94		.015	.00	2.00	TRAP
-8083.230	1913.650	3.012	1916.662	2868.01	19.04	5.63	1922.29	.00	4.68	50.00	9.000	50.000	.00	0 .0
31.138	.0197					.0093	.29	3.01	1.93	2.43	.015	.00	.00	RECTANG

WO#6928 HERITAGE PARK OUTFALL CHANNEL
Q = 706 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: HPOC15.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-8052.092	1914.265	3.141	1917.406	2868.01	18.26	5.18	1922.58	.00	4.68	50.00	9.000	50.000	.00	0 .0
27.092	.0197					.0080	.22	3.14	1.82	2.43	.015	.00	.00	RECTANG
-8025.000	1914.800	3.295	1918.095	2868.01	17.41	4.71	1922.80	.00	4.68	50.00	9.000	50.000	.00	0 .0
12.398	.0197					.0071	.09	3.29	1.69	2.43	.015	.00	.00	RECTANG
-8012.602	1915.044	3.383	1918.427	2868.01	16.95	4.46	1922.89	.00	4.68	50.00	9.000	50.000	.00	0 .0
18.086	.0197					.0064	.11	3.38	1.62	2.43	.015	.00	.00	RECTANG
-7994.516	1915.399	3.549	1918.948	2868.01	16.16	4.06	1923.01	.00	4.68	50.00	9.000	50.000	.00	0 .0
13.786	.0197					.0055	.08	3.55	1.51	2.43	.015	.00	.00	RECTANG
-7980.730	1915.670	3.722	1919.392	2868.01	15.41	3.69	1923.08	.00	4.68	50.00	9.000	50.000	.00	0 .0
JUNCT STR	.0000					.0059	.00	3.72	1.41		.015	.00	.00	RECTANG

---------- WARNING - Junction Analysis - Change in Channel Type ----------

-7980.730	1915.670	5.029	1920.699	1168.01	16.59	4.27	1924.97	.65	6.00	14.00	6.000	14.000	.00	0 .0
WALL	EXIT													
-7980.730	1915.670	5.028	1920.698	1168.01	16.59	4.27	1924.97	.65	6.00	14.00	6.000	14.000	.00	0 .0
90.550	.0067					.0067	.61	5.67	1.30	5.02	.015	.00	.00	BOX
-7890.180	1916.280	5.034	1921.314	1168.01	16.57	4.26	1925.58	.58	6.00	14.00	6.000	14.000	.00	0 .0
224.640	.0067					.0067	1.50	5.61	1.30	5.03	.015	.00	.00	BOX

WO#6928 HERITAGE PARK OUTFALL CHANNEL
Q = 706 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: HPOC15.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-7665.540	1917.780	5.031	1922.812	1168.01	16.58	4.27	1927.08	.00	6.00	14.00	6.000	14.000	.00	0 .0
376.023	.0067					.0069	2.61	5.03	1.30	5.03	.015	.00	.00	BOX
-7289.517	1920.292	4.905	1925.197	1168.01	17.01	4.49	1929.69	.00	6.00	14.00	6.000	14.000	.00	0 .0
218.459	.0067					.0077	1.68	4.91	1.35	5.03	.015	.00	.00	BOX
-7071.058	1921.751	4.677	1926.428	1168.01	17.84	4.94	1931.37	.00	6.00	14.00	6.000	14.000	.00	0 .0
131.088	.0067					.0088	1.15	4.68	1.45	5.03	.015	.00	.00	BOX
-6939.969	1922.626	4.459	1927.085	1168.01	18.71	5.44	1932.52	.00	6.00	14.00	6.000	14.000	.00	0 .0
99.686	.0067					.0100	1.00	4.46	1.56	5.03	.015	.00	.00	BOX
-6840.284	1923.292	4.252	1927.544	1168.01	19.62	5.98	1933.52	.00	6.00	14.00	6.000	14.000	.00	0 .0
82.962	.0067					.0115	.95	4.25	1.68	5.03	.015	.00	.00	BOX
-6757.321	1923.846	4.054	1927.900	1168.01	20.58	6.58	1934.48	.00	6.00	14.00	6.000	14.000	.00	0 .0
72.251	.0067					.0132	.95	4.05	1.80	5.03	.015	.00	.00	BOX
-6685.070	1924.328	3.865	1928.194	1168.01	21.58	7.23	1935.43	.00	6.00	14.00	6.000	14.000	.00	0 .0
64.600	.0067					.0151	.97	3.87	1.93	5.03	.015	.00	.00	BOX
-6620.470	1924.760	3.685	1928.445	1168.01	22.64	7.96	1936.40	1.49	6.00	14.00	6.000	14.000	.00	0 .0
174.410	.0161					.0161	2.81	5.17	2.08	3.69	.015	.00	.00	BOX
-6446.060	1927.570	3.684	1931.254	1168.01	22.64	7.96	1939.22	.00	6.00	14.00	6.000	14.000	.00	0 .0
1200.902	.0161					.0161	19.38	3.68	2.08	3.68	.015	.00	.00	BOX

WO#6928 HERITAGE PARK OUTFALL CHANNEL
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Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-5245.158	1946.948	3.684	1950.632	1168.01	22.64	7.96	1958.59	.00	6.00	14.00	6.000	14.000	.00	0 .0
529.368	.0161					.0158	8.39	3.68	2.08	3.68	.015	.00	.00	BOX
-4715.790	1955.490	3.732	1959.222	1168.01	22.35	7.76	1966.98	.22	6.00	14.00	6.000	14.000	.00	0 .0
116.600	.0161					.0154	1.79	3.95	2.04	3.69	.015	.00	.00	BOX
-4599.190	1957.370	3.760	1961.130	1168.01	22.19	7.65	1968.78	.21	6.00	14.00	6.000	14.000	.00	0 .0
116.590	.0161					.0150	1.75	3.97	2.02	3.69	.015	.00	.00	BOX
-4482.600	1959.250	3.805	1963.055	1168.01	21.93	7.47	1970.52	.00	6.00	14.00	6.000	14.000	.00	0 .0
100.000	.0162					.0144	1.44	3.80	1.98	3.68	.015	.00	.00	BOX
-4382.600	1960.870	3.869	1964.739	1168.01	21.56	7.22	1971.96	.00	6.00	14.00	6.000	14.000	.00	0 .0
TRANS STR	.0250					.0193	1.05	3.87	1.93		.015	.00	.00	BOX
-4328.220	1962.230	2.312	1964.542	1168.01	23.78	8.78	1973.32	.00	4.54	21.25	6.000	21.250	.00	0 .0
42.500	.0249					.0244	1.04	2.31	2.76	2.30	.015	.00	.00	BOX
-4285.720	1963.290	2.315	1965.605	1168.01	23.74	8.75	1974.36	.00	4.54	21.25	6.000	21.250	.00	0 .0
JUNCT STR	.0000					.0192	.00	2.32	2.75		.015	.00	.00	BOX
-4285.720	1963.290	3.878	1967.168	1168.00	21.51	7.19	1974.35	.00	6.00	14.00	6.000	14.000	.00	0 .0
WALL	EXIT													
-4285.720	1963.290	3.877	1967.167	1168.00	21.52	7.19	1974.36	.00	6.00	14.00	6.000	14.000	.00	0 .0
98.537	.0165					.0133	1.32	3.88	1.93	3.65	.015	.00	.00	BOX

WO#6928 HERITAGE PARK OUTFALL CHANNEL
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WSPG FILE: HPOC15.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-4187.184	1964.917	4.000	1968.917	1168.00	20.86	6.76	1975.67	.00	6.00	14.00	6.000	14.000	.00	0 .0
91.818	.0165					.0120	1.10	4.00	1.84	3.65	.015	.00	.00	BOX
-4095.366	1966.433	4.195	1970.628	1168.00	19.89	6.14	1976.77	.00	6.00	14.00	6.000	14.000	.00	0 .0
58.230	.0165					.0104	.61	4.19	1.71	3.65	.015	.00	.00	BOX
-4037.136	1967.395	4.399	1971.795	1168.00	18.96	5.58	1977.38	.00	6.00	14.00	6.000	14.000	.00	0 .0
39.656	.0165					.0091	.36	4.40	1.59	3.65	.015	.00	.00	BOX
-3997.480	1968.050	4.614	1972.664	1168.00	18.08	5.08	1977.74	.57	6.00	14.00	6.000	14.000	.00	0 .0
15.426	.0164					.0082	.13	5.18	1.48	3.66	.015	.00	.00	BOX
-3982.054	1968.303	4.726	1973.030	1168.00	17.65	4.84	1977.87	.54	6.00	14.00	6.000	14.000	.00	0 .0
23.386	.0164					.0075	.17	5.27	1.43	3.66	.015	.00	.00	BOX
-3958.668	1968.687	4.957	1973.644	1168.00	16.83	4.40	1978.04	.49	6.00	14.00	6.000	14.000	.00	0 .0
15.998	.0164					.0065	.10	5.45	1.33	3.66	.015	.00	.00	BOX
-3942.671	1968.949	5.199	1974.149	1168.00	16.05	4.00	1978.15	.45	6.00	14.00	6.000	14.000	.00	0 .0
10.277	.0164					.0057	.06	5.65	1.24	3.66	.015	.00	.00	BOX
-3932.393	1969.118	5.453	1974.571	1168.00	15.30	3.63	1978.21	.41	6.00	14.00	6.000	14.000	.00	0 .0
5.650	.0164					.0050	.03	5.86	1.15	3.66	.015	.00	.00	BOX

---------- WARNING - Flow depth near top of box conduit ----------

WO#6928 HERITAGE PARK OUTFALL CHANNEL
Q = 706 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
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Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-3926.743	1969.211	5.719	1974.930	1168.00	14.59	3.30	1978.23	6.00	6.00	14.00	6.000	14.000	.00	0 .0
1.773	.0164					.0044	.01	6.00	1.08	3.66	.015	.00	.00	BOX

---------- WARNING - Flow depth near top of box conduit ----------

-3924.970	1969.240	5.999	1975.239	1168.00	13.91	3.00	1978.24	.00	6.00	14.00	6.000	14.000	.00	0 .0
TRANS STR	.0165					.0020	.16	6.00	1.00		.015	.00	.00	BOX

---------- WARNING - Flow depth near top of box conduit ----------

-3846.220	1970.540	7.165	1977.705	1168.00	7.95	.98	1978.69	.00	4.13	24.50	6.000	24.500	.00	0 .0
30.762	.0165					.0020	.06	7.17	.57	2.37	.015	.00	.00	BOX
-3815.458	1971.046	6.717	1977.764	1168.00	7.95	.98	1978.74	.00	4.13	24.50	6.000	24.500	.00	0 .0
HYDRAULIC JUMP														
-3815.458	1971.046	2.233	1973.279	1168.00	21.35	7.08	1980.36	.00	4.13	24.50	6.000	24.500	.00	0 .0
18.448	.0165					.0200	.37	2.23	2.52	2.37	.015	.00	.00	BOX
-3797.010	1971.350	2.223	1973.573	1168.00	21.44	7.14	1980.71	.00	4.13	24.50	6.000	24.500	.00	0 .0
JUNCT STR	.0000					.0226	.00	2.22	2.53		.015	.00	.00	BOX
-3797.010	1971.350	3.659	1975.009	706.00	24.12	9.03	1984.04	.00	6.00	8.00	6.000	8.000	.00	0 .0
WALL	EXIT													

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Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-3797.010	1971.350	3.657	1975.007	706.00	24.13	9.04	1984.05	.00	6.00	8.00	6.000	8.000	.00	0 .0
18.290	.0432					.0242	.44	3.66	2.22	2.99	.015	.00	.00	BOX
-3778.720	1972.140	3.750	1975.890	706.00	23.54	8.60	1984.49	.92	6.00	8.00	6.000	8.000	.00	0 .0
1.450	.0428					.0233	.03	4.67	2.14	3.00	.015	.00	.00	BOX
-3777.270	1972.202	3.757	1975.959	706.00	23.49	8.57	1984.53	.91	6.00	8.00	6.000	8.000	.00	0 .0
28.450	.0428					.0219	.62	4.67	2.14	3.00	.015	.00	.00	BOX
-3748.820	1973.420	3.941	1977.361	706.00	22.40	7.79	1985.15	.00	6.00	8.00	6.000	8.000	.00	0 .0
11.781	.0429					.0198	.23	3.94	1.99	3.00	.015	.00	.00	BOX
-3737.039	1973.926	4.037	1977.963	706.00	21.86	7.42	1985.38	.00	6.00	8.00	6.000	8.000	.00	0 .0
19.189	.0429					.0181	.35	4.04	1.92	3.00	.015	.00	.00	BOX
-3717.850	1974.750	4.234	1978.984	706.00	20.84	6.75	1985.73	.00	6.00	8.00	6.000	8.000	.00	0 .0
TRANS STR	.1097					.0145	.44	4.23	1.78		.015	.00	.00	BOX
-3687.850	1978.040	3.269	1981.309	706.00	18.00	5.03	1986.34	.00	4.00	12.00	4.000	12.000	.00	0 .0
32.613	.0050					.0128	.42	3.27	1.75	4.00	.015	.00	.00	BOX
-3655.237	1978.205	3.156	1981.360	706.00	18.64	5.40	1986.76	.00	4.00	12.00	4.000	12.000	.00	0 .0
41.867	.0050					.0144	.60	3.16	1.85	4.00	.015	.00	.00	BOX
-3613.370	1978.416	3.009	1981.425	706.00	19.55	5.94	1987.36	.00	4.00	12.00	4.000	12.000	.00	0 .0
39.405	.0050					.0166	.65	3.01	1.99	4.00	.015	.00	.00	BOX

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Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-3573.965	1978.615	2.869	1981.484	706.00	20.51	6.53	1988.01	.00	4.00	12.00	4.000	12.000	.00	0 .0
37.192	.0050					.0190	.71	2.87	2.13	4.00	.015	.00	.00	BOX
-3536.773	1978.802	2.735	1981.538	706.00	21.51	7.18	1988.72	.00	4.00	12.00	4.000	12.000	.00	0 .0
35.173	.0050					.0218	.77	2.74	2.29	4.00	.015	.00	.00	BOX
-3501.600	1978.980	2.608	1981.588	706.00	22.56	7.90	1989.49	.00	4.00	12.00	4.000	12.000	.00	0 .0
TRANS STR	.0220					.0192	.58	2.61	2.46		.015	.00	.00	BOX
-3471.600	1979.640	4.425	1984.065	706.00	19.94	6.18	1990.24	.20	6.00	8.00	6.000	8.000	.00	0 .0
21.510	.0218					.0147	.32	4.62	1.67	3.85	.015	.00	.00	BOX
-3450.090	1980.110	4.515	1984.625	706.00	19.54	5.93	1990.56	.00	6.00	8.00	6.000	8.000	.00	0 .0
32.262	.0220					.0136	.44	4.52	1.62	3.84	.015	.00	.00	BOX
-3417.828	1980.820	4.699	1985.519	706.00	18.78	5.48	1991.00	.00	6.00	8.00	6.000	8.000	.00	0 .0
27.133	.0220					.0121	.33	4.70	1.53	3.84	.015	.00	.00	BOX
-3390.695	1981.417	4.929	1986.346	706.00	17.91	4.98	1991.32	.00	6.00	8.00	6.000	8.000	.00	0 .0
18.755	.0220					.0107	.20	4.93	1.42	3.84	.015	.00	.00	BOX
-3371.940	1981.830	5.169	1986.999	706.00	17.07	4.53	1991.53	6.00	6.00	8.00	6.000	8.000	.00	0 .0
70.300	.0100					.0101	.71	6.00	1.32	5.19	.015	.00	.00	BOX
-3301.640	1982.530	5.159	1987.689	706.00	17.11	4.54	1992.23	6.00	6.00	8.00	6.000	8.000	.00	0 .0
24.330	.0103					.0101	.25	6.00	1.33	5.12	.015	.00	.00	BOX

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Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-3277.310	1982.780	5.165	1987.945	706.00	17.09	4.53	1992.48	.00	6.00	8.00	6.000	8.000	.00	0 .0
24.840	.0101					.0101	.25	5.16	1.32	5.16	.015	.00	.00	BOX
-3252.470	1983.030	5.166	1988.196	706.00	17.08	4.53	1992.73	.39	6.00	8.00	6.000	8.000	.00	0 .0
253.050	.0100					.0103	2.62	5.55	1.32	5.18	.015	.00	.00	BOX
-2999.420	1985.560	5.059	1990.619	706.00	17.44	4.72	1995.34	.00	6.00	8.00	6.000	8.000	.00	0 .0
169.526	.0100					.0113	1.91	5.06	1.37	5.18	.015	.00	.00	BOX
-2829.894	1987.253	4.843	1992.096	706.00	18.22	5.16	1997.25	.00	6.00	8.00	6.000	8.000	.00	0 .0
107.824	.0100					.0127	1.37	4.84	1.46	5.18	.015	.00	.00	BOX
-2722.070	1988.330	4.618	1992.948	706.00	19.11	5.67	1998.62	.45	6.00	8.00	6.000	8.000	.00	0 .0
78.690	.0100					.0143	1.13	5.07	1.57	5.17	.015	.00	.00	BOX
-2643.380	1989.120	4.411	1993.531	706.00	20.01	6.22	1999.75	.00	6.00	8.00	6.000	8.000	.00	0 .0
25.940	.0100					.0156	.40	4.41	1.68	5.18	.015	.00	.00	BOX
-2617.440	1989.379	4.333	1993.713	706.00	20.36	6.44	2000.15	.00	6.00	8.00	6.000	8.000	.00	0 .0
63.190	.0100					.0170	1.07	4.33	1.72	5.18	.015	.00	.00	BOX
-2554.250	1990.010	4.132	1994.142	706.00	21.36	7.08	2001.23	.00	6.00	8.00	6.000	8.000	.00	0 .0
309.730	.0181					.0179	5.54	4.13	1.85	4.13	.015	.00	.00	BOX
-2244.520	1995.620	4.160	1999.780	706.00	21.21	6.99	2006.77	.56	6.00	8.00	6.000	8.000	.00	0 .0
85.130	.0182					.0176	1.50	4.72	1.83	4.12	.015	.00	.00	BOX

WO#6928 HERITAGE PARK OUTFALL CHANNEL
Q = 706 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: HPOC15.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-2159.390	1997.170	4.181	2001.351	706.00	21.11	6.92	2008.27	.00	6.00	8.00	6.000	8.000	.00	0 .0
247.160	.0181					.0166	4.10	4.18	1.82	4.13	.015	.00	.00	BOX
-1912.230	2001.645	4.360	2006.005	706.00	20.24	6.36	2012.37	.00	6.00	8.00	6.000	8.000	.00	0 .0
108.550	.0181					.0147	1.60	4.36	1.71	4.13	.015	.00	.00	BOX
-1803.680	2003.610	4.573	2008.183	706.00	19.30	5.78	2013.97	.66	6.00	8.00	6.000	8.000	.00	0 .0
44.128	.0182					.0132	.58	5.23	1.59	4.12	.015	.00	.00	BOX
-1759.552	2004.412	4.727	2009.139	706.00	18.67	5.41	2014.55	.62	6.00	8.00	6.000	8.000	.00	0 .0
41.892	.0182					.0119	.50	5.35	1.51	4.12	.015	.00	.00	BOX
-1717.660	2005.173	4.958	2010.130	706.00	17.80	4.92	2015.05	.56	6.00	8.00	6.000	8.000	.00	0 .0
26.923	.0182					.0105	.28	5.52	1.41	4.12	.015	.00	.00	BOX
-1690.736	2005.662	5.200	2010.861	706.00	16.97	4.47	2015.33	.51	6.00	8.00	6.000	8.000	.00	0 .0
17.278	.0182					.0093	.16	5.71	1.31	4.12	.015	.00	.00	BOX
-1673.459	2005.975	5.454	2011.429	706.00	16.18	4.07	2015.50	.46	6.00	8.00	6.000	8.000	.00	0 .0
10.433	.0182					.0082	.09	5.92	1.22	4.12	.015	.00	.00	BOX

---------- WARNING - Flow depth near top of box conduit ----------

-1663.026	2006.165	5.720	2011.885	706.00	15.43	3.70	2015.58	6.00	6.00	8.00	6.000	8.000	.00	0 .0
5.236	.0182					.0073	.04	6.00	1.14	4.12	.015	.00	.00	BOX

---------- WARNING - Flow depth near top of box conduit ----------

Program Package Serial Number: 1513

WATER SURFACE PROFILE LISTING Date: 9-26-2007 Time: 7:40:21

WO#6928 HERITAGE PARK OUTFALL CHANNEL

Q = 706 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"

WSPG FILE: HPOC15.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-1657.790	2006.260	6.000	2012.260	706.00	14.71	3.36	2015.62	6.00	6.00	8.00	6.000	8.000	.00	0 .0
-1644.460	2006.500	6.000	2012.500	706.00	14.71	3.36	2015.86	6.00	6.00	8.00	6.000	8.000	.00	0 .0

C-1 CHANNEL
PRE-PROJECT CONDITIONS: WSPGW MODEL

C1CHEX.wsw

VTN 26 SEP 2007

Values in English Units

HYDRAULICS SUMMARY - C-1 Channel (Pre-Project)

Filename: C1CHEX.wsw (Manning's n=0.013)

POST-PROJECT STATION	VTN AS-BUILT STATION (USED IN WSPGW)	REMARKS	DESIGN FLOW Q	DEPTH OF FLOW y	DEPTH W/AIR[1] y*	INVERT ELEV SLOPE (%)	VELOCITY V	H.G.L.	E.G.L.	CHANNEL TYPE	BASE WIDTH/DIA.	SIDE SLOPE	FLOW AREA A	WETTED PERIMETER P	TOP WIDTH T	FROUDE NUMBER	CURVE RADIUS R	SUPER ELEV	CCRFCD MIN FB[2]	MIN WALL HT	DESIGN WALL HT	ACTUAL FB	FB CHECK
52+06.17	175+62.65	Exist. 25' Trap. Channel w/ 2:1 SS	1,931	4.959	4.959	1983.73	11.15	1988.69	1990.62	TRAP	25	2	173.18	47.18	44.84	1.00			1.48	6.43	8.00	3.04	OK
						2.57%																	
71+56.17	156+12.65	GB	1,931	4.959	4.959	1933.55	11.15	1938.51	1940.44	TRAP	25	2	173.18	47.18	44.84	1.00			1.48	6.43	8.00	3.04	OK
71+56.17	156+12.65	Exist. 25' Trap. Channel w/ 2:1 SS	1,931	4.959	4.959	1933.55	11.15	1938.51	1940.44	TRAP	25	2	173.18	47.18	44.84	1.00			1.48	6.43	8.00	3.04	OK
						1.98%																	
75+68.82	152+00.00	GB	1,931	2.850	3.013	1925.38	22.07	1928.23	1935.79	TRAP	25	2	87.49	37.75	36.40	2.51			1.78	4.63	8.00	5.15	OK
75+68.82	152+00.00		1,931	2.850	3.013	1925.38	22.07	1928.23	1935.79	TRAP	25	2	87.49	37.75	36.40	2.51			1.78	4.63	8.00	5.15	OK
						3.50%																	
77+25.39	150+43.43		1,931	3.017	3.147	1919.90	20.62	1922.92	1929.52	TRAP	25	2	93.65	38.49	37.07	2.29			1.74	4.76	8.00	4.98	OK
77+25.39	150+43.43	Begin C-1 Improvements	1,931	3.017	3.147	1919.90	20.62	1922.92	1929.52	TRAP	25	2	93.65	38.49	37.07	2.29			1.74	4.76	8.00	4.98	OK
						3.50%																	
	149+00.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	1,931	3.053	3.175	1914.88	20.33	1917.93	1924.35	TRAP	25	2	94.98	38.65	37.21	2.24			1.74	4.79	9.00	5.95	OK
	149+00.00	Begin Exist. Junction w/ Exist. Heritage Park Channel	1,931	3.053	3.175	1914.88	20.33	1917.93	1924.35	TRAP	25	2	94.98	38.65	37.21	2.24			1.74	4.79	9.00	5.95	OK
						1.25%																	
	148+00.00	End Junction	2,868	6.237	6.237	1913.63	12.27	1919.87	1922.20	TRAP	25	2	233.74	52.89	49.95	1.00			1.56	7.80	9.00	2.76	OK
	148+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	6.237	6.237	1913.63	12.27	1919.87	1922.20	TRAP	25	2	233.74	52.89	49.95	1.00			1.56	7.80	9.00	2.76	OK
						1.25%																	
82+80.11	144+85.60	End C-1 Improvements	2,868	4.254	4.340	1909.70	20.12	1913.95	1920.24	TRAP	25	2	142.54	44.02	42.02	1.93			1.82	6.07	9.00	4.75	OK
82+80.11	144+85.60	Tie-in to Exist. 25' Trap. Chan. w/ 2:1 SS	2,868	4.254	4.340	1909.70	20.12	1913.95	1920.24	TRAP	25	2	142.54	44.02	42.02	1.93			1.82	6.07	9.00	4.75	OK
						1.25%																	
84+15.71	143+50.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	4.102	4.216	1908.00	21.06	1912.10	1918.99	TRAP	25	2	136.18	43.34	41.41	2.05			1.84	5.94	9.00	4.90	OK
84+15.71	143+50.00	Exist. Trap. Chan. w/ Energy Dissipators	2,868	4.102	4.216	1908.00	21.06	1912.10	1918.99	TRAP	25	2	136.18	43.34	41.41	2.05			1.84	5.94	9.00	4.90	OK
						3.50%																	
86+65.71	141+00.00	End Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.855	4.016	1899.25	22.74	1903.11	1911.13	TRAP	25	2	126.12	42.24	40.42	2.27			1.89	5.75	9.00	5.15	OK
86+65.71	141+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.855	4.016	1899.25	22.74	1903.11	1911.13	TRAP	25	2	126.12	42.24	40.42	2.27			1.89	5.75	9.00	5.15	OK
						1.25%																	
91+65.71	136+00.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.838	4.003	1893.00	22.87	1896.84	1904.96	TRAP	25	2	125.40	42.16	40.35	2.29			1.90	5.73	9.00	5.16	OK
91+65.71	136+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.838	4.003	1893.00	22.87	1896.84	1904.96	TRAP	25	2	125.40	42.16	40.35	2.29			1.90	5.73	9.00	5.16	OK
						3.50%																	
94+65.71	133+00.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.826	3.993	1882.50	22.96	1886.33	1894.51	TRAP	25	2	124.91	42.11	40.30	2.30			1.90	5.72	9.00	5.17	OK
94+65.71	133+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.826	3.993	1882.50	22.96	1886.33	1894.51	TRAP	25	2	124.91	42.11	40.30	2.30			1.90	5.72	9.00	5.17	OK
						1.25%																	
100+74.71	126+91.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.835	3.905	1874.89	20.22	1878.73	1885.07	TRAP	25	2	141.84	42.15	40.34	1.90			1.79	5.63	9.00	5.17	OK

Note:

(1) Depth with air entrainment, $y^*/y = 0.906(e)^{0.0615}$ (Fr >= 1.60; y* = y, Fr < 1.60). See *WASURO User's Manual (Draft), US Army Corps of Engineers Los Angeles District, July 1985.*

(2) For supercritical flow, FB = 1+0.025V(Y1/3); for subcritical flow, FB = 0.5+V2/2g. See Hydrologic Criteria and Drainage Design Manual, CCRFCD, 1999.

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T1  WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL                        0
T2  Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
T3  WSPG FILE: C1CHEX.WSW, BY: VTN 09/19/2007
SO  12691.00 1874.890 12
R   13300.00 1882.500 12      .015
R   13600.00 1893.000 12      .025
R   14100.00 1899.250 12      .015
R   14350.00 1908.000 12      .025
R   14485.60 1909.700 12      .015
R   14800.00 1913.630 12      .015
R   14800.00 1913.630 12      .015
JX  14900.00 1914.880 12 13   .015  937.00          1914.880         10.0         .000
R   15043.43 1919.900 12      .025
R   15200.00 1925.380 12      .025
R   15612.65 1933.550 12      .015
SH  17562.65 1983.730 12
CD   1  3   0   0.000   6.00     8.00
CD   2  3   0   0.000   4.00    12.00
CD   3  3   0   0.000   4.00     8.00
CD   4  3   0   0.000   4.00     4.00
CD   5  3   0   0.000   6.00    24.50
CD   6  3   0   0.000   6.00    14.00
CD   7  3   0   0.000   4.00     5.00
CD   8  3   0   0.000   6.00    21.25
CD  10  2               8.00    35.00
CD  11  2               8.00    51.25
CD  12  1   0    .000   9.00    25.00  2.000 2.000   .00
CD  13  1   0   0.000   5.00    20.00  2.500 2.500
Q          1931.000   .0
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WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL
Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: C1CHEX.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
12691.000	1874.890	3.835	1878.725	2868.00	22.89	8.14	1886.86	.00	6.24	40.34	9.000	25.000	2.00	0 .0
609.000	.0125					.0125	7.64	3.83	2.29	3.83	.015	.00	2.00	TRAP
13300.000	1882.500	3.826	1886.326	2868.00	22.96	8.18	1894.51	.00	6.24	40.30	9.000	25.000	2.00	0 .0
37.253	.0350					.0350	1.30	3.83	2.30	3.83	.025	.00	2.00	TRAP
13337.250	1883.804	3.826	1887.630	2868.00	22.96	8.18	1895.81	.00	6.24	40.30	9.000	25.000	2.00	0 .0
262.747	.0350					.0348	9.14	3.83	2.30	3.83	.025	.00	2.00	TRAP
13600.000	1893.000	3.838	1896.838	2868.00	22.87	8.12	1904.96	.00	6.24	40.35	9.000	25.000	2.00	0 .0
500.000	.0125					.0124	6.18	3.84	2.29	3.83	.015	.00	2.00	TRAP
14100.000	1899.250	3.855	1903.105	2868.00	22.74	8.03	1911.14	.00	6.24	40.42	9.000	25.000	2.00	0 .0
156.466	.0350					.0327	5.11	3.86	2.27	3.83	.025	.00	2.00	TRAP
14256.470	1904.726	3.947	1908.674	2868.00	22.09	7.58	1916.25	.00	6.24	40.79	9.000	25.000	2.00	0 .0
93.534	.0350					.0293	2.74	3.95	2.18	3.83	.025	.00	2.00	TRAP
14350.000	1908.000	4.102	1912.102	2868.00	21.06	6.89	1918.99	.00	6.24	41.41	9.000	25.000	2.00	0 .0
135.600	.0125					.0092	1.25	4.10	2.05	3.83	.015	.00	2.00	TRAP
14485.600	1909.700	4.254	1913.954	2868.00	20.12	6.28	1920.24	.00	6.24	42.02	9.000	25.000	2.00	0 .0
38.410	.0125					.0084	.32	4.25	1.92	3.83	.015	.00	2.00	TRAP
14524.010	1910.180	4.314	1914.494	2868.00	19.77	6.07	1920.56	.00	6.24	42.26	9.000	25.000	2.00	0 .0
79.652	.0125					.0077	.61	4.31	1.88	3.83	.015	.00	2.00	TRAP

WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL
Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: C1CHEX.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
14603.660	1911.176	4.481	1915.656	2868.00	18.85	5.52	1921.17	.00	6.24	42.92	9.000	25.000	2.00	0 .0
56.712	.0125					.0067	.38	4.48	1.76	3.83	.015	.00	2.00	TRAP
14660.380	1911.885	4.652	1916.537	2868.00	17.97	5.01	1921.55	.00	6.24	43.61	9.000	25.000	2.00	0 .0
41.806	.0125					.0058	.24	4.65	1.66	3.83	.015	.00	2.00	TRAP
14702.180	1912.407	4.829	1917.237	2868.00	17.13	4.56	1921.80	.00	6.24	44.32	9.000	25.000	2.00	0 .0
31.266	.0125					.0051	.16	4.83	1.55	3.83	.015	.00	2.00	TRAP
14733.450	1912.798	5.012	1917.810	2868.00	16.34	4.14	1921.95	.00	6.24	45.05	9.000	25.000	2.00	0 .0
23.362	.0125					.0044	.10	5.01	1.46	3.83	.015	.00	2.00	TRAP
14756.810	1913.090	5.201	1918.291	2868.00	15.58	3.77	1922.06	.00	6.24	45.80	9.000	25.000	2.00	0 .0
17.175	.0125					.0039	.07	5.20	1.37	3.83	.015	.00	2.00	TRAP
14773.980	1913.305	5.395	1918.700	2868.00	14.85	3.43	1922.13	.00	6.24	46.58	9.000	25.000	2.00	0 .0
12.164	.0125					.0034	.04	5.40	1.29	3.83	.015	.00	2.00	TRAP
14786.150	1913.457	5.596	1919.053	2868.00	14.16	3.11	1922.17	.00	6.24	47.38	9.000	25.000	2.00	0 .0
7.998	.0125					.0030	.02	5.60	1.21	3.83	.015	.00	2.00	TRAP
14794.150	1913.557	5.803	1919.360	2868.00	13.50	2.83	1922.19	.00	6.24	48.21	9.000	25.000	2.00	0 .0
4.459	.0125					.0026	.01	5.80	1.13	3.83	.015	.00	2.00	TRAP
14798.600	1913.613	6.016	1919.629	2868.00	12.87	2.57	1922.20	.00	6.24	49.06	9.000	25.000	2.00	0 .0
1.396	.0125					.0023	.00	6.02	1.06	3.83	.015	.00	2.00	TRAP

WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL
Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: C1CHEX.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
14800.000	1913.630	6.237	1919.867	2868.00	12.27	2.34	1922.21	.00	6.24	49.95	9.000	25.000	2.00	0 .0
JUNCT STR	.0125							6.24	1.00		.015	.00	2.00	TRAP
14900.000	1914.880	3.053	1917.933	1931.00	20.33	6.42	1924.35	.00	4.96	37.21	9.000	25.000	2.00	0 .0
143.430	.0350					.0360	5.17	3.05	2.24	3.06	.025	.00	2.00	TRAP
15043.430	1919.900	3.017	1922.917	1931.00	20.62	6.60	1929.52	.00	4.96	37.07	9.000	25.000	2.00	0 .0
75.033	.0350					.0379	2.85	3.02	2.29	3.06	.025	.00	2.00	TRAP
15118.460	1922.526	2.966	1925.492	1931.00	21.04	6.88	1932.37	.00	4.96	36.87	9.000	25.000	2.00	0 .0
81.537	.0350					.0420	3.42	2.97	2.35	3.06	.025	.00	2.00	TRAP
15200.000	1925.380	2.850	1928.230	1931.00	22.07	7.56	1935.79	.00	4.96	36.40	9.000	25.000	2.00	0 .0
48.283	.0198					.0158	.76	2.85	2.51	2.69	.015	.00	2.00	TRAP
15248.280	1926.336	2.887	1929.223	1931.00	21.74	7.34	1936.56	.00	4.96	36.55	9.000	25.000	2.00	0 .0
102.748	.0198					.0145	1.49	2.89	2.46	2.69	.015	.00	2.00	TRAP
15351.030	1928.370	3.005	1931.375	1931.00	20.73	6.67	1938.04	.00	4.96	37.02	9.000	25.000	2.00	0 .0
66.933	.0198					.0126	.84	3.00	2.30	2.69	.015	.00	2.00	TRAP
15417.960	1929.695	3.127	1932.822	1931.00	19.76	6.06	1938.89	.00	4.96	37.51	9.000	25.000	2.00	0 .0
47.874	.0198					.0109	.52	3.13	2.16	2.69	.015	.00	2.00	TRAP
15465.840	1930.643	3.253	1933.896	1931.00	18.84	5.51	1939.41	.00	4.96	38.01	9.000	25.000	2.00	0 .0
35.971	.0198					.0095	.34	3.25	2.02	2.69	.015	.00	2.00	TRAP

WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL
Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: C1CHEX.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
15501.810	1931.355	3.384	1934.739	1931.00	17.96	5.01	1939.75	.00	4.96	38.53	9.000	25.000	2.00	0 .0
27.780	.0198					.0083	.23	3.38	1.90	2.69	.015	.00	2.00	TRAP
15529.590	1931.906	3.519	1935.424	1931.00	17.13	4.56	1939.98	.00	4.96	39.08	9.000	25.000	2.00	0 .0
21.768	.0198					.0072	.16	3.52	1.78	2.69	.015	.00	2.00	TRAP
15551.360	1932.337	3.659	1935.995	1931.00	16.33	4.14	1940.14	.00	4.96	39.63	9.000	25.000	2.00	0 .0
17.140	.0198					.0063	.11	3.66	1.67	2.69	.015	.00	2.00	TRAP
15568.500	1932.676	3.803	1936.479	1931.00	15.57	3.76	1940.24	.00	4.96	40.21	9.000	25.000	2.00	0 .0
13.449	.0198					.0055	.07	3.80	1.56	2.69	.015	.00	2.00	TRAP
15581.940	1932.942	3.953	1936.895	1931.00	14.85	3.42	1940.32	.00	4.96	40.81	9.000	25.000	2.00	0 .0
10.422	.0198					.0048	.05	3.95	1.47	2.69	.015	.00	2.00	TRAP
15592.370	1933.148	4.107	1937.255	1931.00	14.16	3.11	1940.37	.00	4.96	41.43	9.000	25.000	2.00	0 .0
7.883	.0198					.0041	.03	4.11	1.37	2.69	.015	.00	2.00	TRAP
15600.250	1933.305	4.267	1937.571	1931.00	13.50	2.83	1940.40	.00	4.96	42.07	9.000	25.000	2.00	0 .0
5.712	.0198					.0036	.02	4.27	1.29	2.69	.015	.00	2.00	TRAP
15605.960	1933.418	4.431	1937.849	1931.00	12.87	2.57	1940.42	.00	4.96	42.72	9.000	25.000	2.00	0 .0
3.828	.0198					.0032	.01	4.43	1.21	2.69	.015	.00	2.00	TRAP
15609.790	1933.493	4.601	1938.095	1931.00	12.27	2.34	1940.43	.00	4.96	43.41	9.000	25.000	2.00	0 .0
2.169	.0198					.0028	.01	4.60	1.14	2.69	.015	.00	2.00	TRAP

Program Package Serial Number: 1513

WATER SURFACE PROFILE LISTING Date: 9-26-2007 Time:11:19:46

WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL

Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"

WSPG FILE: C1CHEX.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
15611.960	1933.536	4.777	1938.313	1931.00	11.70	2.13	1940.44	.00	4.96	44.11	9.000	25.000	2.00	0 .0
.692	.0198					.0024	.00	4.78	1.07	2.69	.015	.00	2.00	TRAP
15612.650	1933.550	4.959	1938.509	1931.00	11.15	1.93	1940.44	.00	4.96	44.84	9.000	25.000	2.00	0 .0
17562.650	1983.730	4.959	1988.689	1931.00	11.15	1.93	1990.62	.00	4.96	44.84	9.000	25.000	2.00	0 .0

C-1 CHANNEL
POST-PROJECT CONDITIONS: WSPGW MODEL

C1CH15.wsw

VTN 26 SEP 2007

Values in English Units

HYDRAULICS SUMMARY - C-1 Channel (Post-Project)

Filename: C1CH15.wsw (Manning's n=0.015)

POST-PROJECT STATION (USED IN WSPGW)	VTN AS-BUILT STATION	REMARKS	DESIGN FLOW Q	DEPTH OF FLOW y	DEPTH W/AIR[1] y*	INVERT ELEV SLOPE (%)	VELOCITY V	H.G.L.	E.G.L.	CHANNEL TYPE	BASE WIDTH/DIA.	SIDE SLOPE	FLOW AREA A	WETTED PERIMETER P	TOP WIDTH T	FROUDE NUMBER	CURVE RADIUS R	SUPER ELEV	CCRFCD MIN FB[2]	MIN WALL HT	DESIGN WALL HT	ACTUAL FB	FB CHECK
52+06.17	175+62.65	Exist. 25' Trap. Channel w/ 2:1 SS	1,931	4.959	4.959	1983.73	11.15	1988.69	1990.62	TRAP	25	2	173.18	47.18	44.84	1.00			1.48	6.43	8.00	3.04	OK
						2.57%																	
71+56.17	156+12.65	GB	1,931	4.959	4.959	1933.55	11.15	1938.51	1940.44	TRAP	25	2	173.18	47.18	44.84	1.00			1.48	6.43	8.00	3.04	OK
71+56.17	156+12.65	Exist. 25' Trap. Channel w/ 2:1 SS	1,931	4.959	4.959	1933.55	11.15	1938.51	1940.44	TRAP	25	2	173.18	47.18	44.84	1.00			1.48	6.43	8.00	3.04	OK
						1.98%																	
75+68.82	152+00.00	GB	1,931	2.850	3.013	1925.38	22.07	1928.23	1935.79	TRAP	25	2	87.49	37.75	36.40	2.51			1.78	4.63	8.00	5.15	OK
75+68.82	152+00.00		1,931	2.850	3.013	1925.38	22.07	1928.23	1935.79	TRAP	25	2	87.49	37.75	36.40	2.51			1.78	4.63	8.00	5.15	OK
						3.50%																	
77+25.39	150+43.43		1,931	3.017	3.147	1919.90	20.62	1922.92	1929.52	TRAP	25	2	93.65	38.49	37.07	2.29			1.74	4.76	8.00	4.98	OK
77+25.39		Begin Trap. Transition Structure	1,931	3.017	3.147	1919.90	20.62	1922.92	1929.52	TRAP	25	2	93.65	38.49	37.07	2.29			1.74	4.76	8.00	4.98	OK
						1.66%																	
78+00.39		End Trap. Transition Structure	1,931	2.574	2.696	1918.66	21.44	1921.23	1928.37	RECT	35	0	90.07	40.15	35.00	2.36			1.73	4.31	9.00	6.43	OK
78+00.39		Begin 35'x9' Rect. Chan., PC	1,931	2.574	2.696	1918.66	21.44	1921.23	1928.37	RECT	35	0	90.07	40.15	35.00	2.36	1,000	0.500	1.73	4.81	9.00	5.93	OK
						1.66%																	
78+90.56		PRC	1,931	2.562	2.685	1917.16	21.53	1919.73	1926.92	RECT	35	0	89.69	40.12	35.00	2.37	1,000	0.504	1.74	4.80	9.00	5.93	OK
78+90.56			1,931	2.562	2.685	1917.16	21.53	1919.73	1926.92	RECT	35	0	89.69	40.12	35.00	2.37	1,000	0.504	1.74	4.80	9.00	5.93	OK
						1.66%																	
79+80.73		End 35'x9' Rect. Chan., PT	1,931	2.557	2.682	1915.67	21.58	1918.23	1925.46	RECT	35	0	89.48	40.11	35.00	2.38	1,000	0.506	1.74	4.80	9.00	5.94	OK
79+80.73		Begin Confluence Structure	2,868	2.603	2.725	1915.67	21.50	1918.27	1925.45	RECT	51.25	0	133.40	56.46	51.25	2.35			1.74	4.34	9.00	6.40	OK
						1.99%																	
80+25.00			2,868	2.560	2.690	1914.79	21.86	1917.35	1924.77	RECT	51.25	0	131.20	56.37	51.25	2.41			1.75	4.31	9.00	6.44	OK
80+25.00			2,868	2.560	2.690	1914.79	21.86	1917.35	1924.77	RECT	51.25	0	131.20	56.37	51.25	2.41			1.75	4.31	9.00	6.44	OK
						1.99%																	
80+83.23		End Confluence Structure	2,868	2.517	2.655	1913.63	22.24	1916.14	1923.82	RECT	51.25	0	128.96	56.28	51.25	2.47			1.76	4.27	9.00	6.48	OK
80+83.23		Begin Transition Structure	2,868	2.517	2.655	1913.63	22.24	1916.14	1923.82	RECT	51.25	0	128.96	56.28	51.25	2.47			1.76	4.27	9.00	6.48	OK
						1.99%																	
82+80.11		End Transition Structure	2,868	3.993	4.127	1909.70	21.77	1913.69	1921.05	TRAP	25	2	131.74	42.86	40.97	2.14			1.86	5.86	9.00	5.01	OK
82+80.11	144+85.60	Tie-in to Exist. 25' Trap. Chan. w/ 2:1 SS	2,868	3.993	4.127	1909.70	21.77	1913.69	1921.05	TRAP	25	2	131.74	42.86	40.97	2.14			1.86	5.86	9.00	5.01	OK
						1.25%																	
84+15.71	143+50.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.940	4.084	1908.00	22.14	1911.94	1919.55	TRAP	25	2	129.54	42.62	40.76	2.19			1.87	5.81	9.00	5.06	OK
84+15.71	143+50.00	Exist. Trap. Chan. w/ Energy Dissipators	2,868	3.940	4.084	1908.00	22.14	1911.94	1919.55	TRAP	25	2	129.54	42.62	40.76	2.19			1.87	5.81	9.00	5.06	OK
						3.50%																	
86+65.71	141+00.00	End Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.829	3.996	1899.25	22.94	1903.08	1911.25	TRAP	25	2	125.02	42.12	40.32	2.30			1.90	5.73	9.00	5.17	OK
86+65.71	141+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.829	3.996	1899.25	22.94	1903.08	1911.25	TRAP	25	2	125.02	42.12	40.32	2.30			1.90	5.73	9.00	5.17	OK
						1.25%																	
91+65.71	136+00.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.834	3.999	1893.00	22.90	1896.83	1904.98	TRAP	25	2	125.24	42.15	40.34	2.29			1.90	5.73	9.00	5.17	OK
91+65.71	136+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.834	3.999	1893.00	22.90	1896.83	1904.98	TRAP	25	2	125.24	42.15	40.34	2.29			1.90	5.73	9.00	5.17	OK
						3.50%																	
94+65.71	133+00.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.826	3.993	1882.50	22.96	1886.33	1894.51	TRAP	25	2	124.91	42.11	40.30	2.30			1.90	5.72	9.00	5.17	OK
94+65.71	133+00.00	Exist. 25' Trap. Channel w/ 2:1 SS	2,868	3.826	3.993	1882.50	22.96	1886.33	1894.51	TRAP	25	2	124.91	42.11	40.30	2.30			1.90	5.72	9.00	5.17	OK
						1.25%																	
100+74.71	126+91.00	Exist. 25' Trap. Channel w/ 2:1 SS, GB	2,868	3.835	4.000	1874.89	22.89	1878.73	1886.86	TRAP	25	2	125.29	42.15	40.34	2.29			1.90	5.73	9.00	5.17	OK

Note:

(1) Depth with air entrainment, $y^*/y = 0.906(e)^{0.0615}$ (Fr >= 1.60; y* = y, Fr < 1.60). See *WASURO User's Manual (Draft), US Army Corps of Engineers Los Angeles District, July 1985.*

(2) For supercritical flow, FB = 1+0.025V(Y1/3); for subcritical flow, FB = 0.5+V2/2g. See Hydrologic Criteria and Drainage Design Manual, CCRFCD, 1999.

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T1  WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL                          0
T2  Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
T3  WSPG FILE: C1CH15.WSW, BY: VTN 09/19/2007
SO -10074.71 1874.890 12
R   -9465.71 1882.500 12      .015
R   -9165.71 1893.000 12      .025
R   -8665.71 1899.250 12      .015
R   -8415.71 1908.000 12      .025
R   -8280.11 1909.700 12      .015
TS  -8083.23 1913.630 11      .015
R   -8025.00 1914.790 11      .015
R   -7980.73 1915.670 11      .015
JX  -7980.73 1915.670 10  6   .015  937.00          1915.67           0.1         .000
WX  -7980.73 1915.670 10
R   -7890.56 1917.160 10      .015                                  5.16
R   -7800.39 1918.660 10      .015                                  5.16
TS  -7725.39 1919.900 12      .015
R   -7568.82 1925.380 12      .025
R   -7156.17 1933.550 12      .015
SH  -5206.17 1983.730 12
CD   1  3   0   0.000   6.00     8.00
CD   2  3   0   0.000   4.00    12.00
CD   3  3   0   0.000   4.00     8.00
CD   4  3   0   0.000   4.00     4.00
CD   5  3   0   0.000   6.00    24.50
CD   6  3   0   0.000   6.00    14.00
CD   7  3   0   0.000   4.00     5.00
CD   8  3   0   0.000   6.00    21.25
CD  10  2               8.00    35.00
CD  11  2               8.00    51.25
CD  12  1   0    .000   9.00    25.00  2.000 2.000   .00
Q          1931.000   .0
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WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL
Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: C1CH15.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-10074.710	1874.890	3.835	1878.725	2868.00	22.89	8.14	1886.86	.00	6.24	40.34	9.000	25.000	2.00	0 .0
609.000	.0125					.0125	7.64	3.83	2.29	3.83	.015	.00	2.00	TRAP
-9465.710	1882.500	3.826	1886.326	2868.00	22.96	8.18	1894.51	.00	6.24	40.30	9.000	25.000	2.00	0 .0
36.986	.0350					.0350	1.29	3.83	2.30	3.83	.025	.00	2.00	TRAP
-9428.724	1883.795	3.826	1887.620	2868.00	22.96	8.18	1895.81	.00	6.24	40.30	9.000	25.000	2.00	0 .0
263.014	.0350					.0349	9.17	3.83	2.30	3.83	.025	.00	2.00	TRAP
-9165.710	1893.000	3.834	1896.834	2868.00	22.90	8.14	1904.98	.00	6.24	40.34	9.000	25.000	2.00	0 .0
500.000	.0125					.0125	6.27	3.83	2.29	3.83	.015	.00	2.00	TRAP
-8665.710	1899.250	3.829	1903.079	2868.00	22.94	8.17	1911.25	.00	6.24	40.31	9.000	25.000	2.00	0 .0
250.000	.0350					.0332	8.30	3.83	2.30	3.83	.025	.00	2.00	TRAP
-8415.710	1908.000	3.940	1911.940	2868.00	22.14	7.61	1919.55	.00	6.24	40.76	9.000	25.000	2.00	0 .0
135.600	.0125					.0111	1.50	3.94	2.19	3.83	.015	.00	2.00	TRAP
-8280.110	1909.700	3.993	1913.693	2868.00	21.77	7.36	1921.05	.00	6.24	40.97	9.000	25.000	2.00	0 .0
TRANS STR	.0200					.0137	2.71	3.99	2.14		.015	.00	2.00	TRAP
-8083.230	1913.630	2.517	1916.147	2868.00	22.24	7.68	1923.82	.00	4.60	51.25	8.000	51.250	.00	0 .0
58.230	.0199					.0162	.95	2.52	2.47	2.38	.015	.00	.00	RECTANG
-8025.000	1914.790	2.560	1917.350	2868.00	21.86	7.42	1924.77	.00	4.60	51.25	8.000	51.250	.00	0 .0
44.270	.0199					.0154	.68	2.56	2.41	2.38	.015	.00	.00	RECTANG

WO#6928 HERITAGE PARK OUTFALL CHANNEL, C-1 CHANNEL
Q = 1,931 CFS, START @ CRITICAL DEPTH, "MANNING'S n=0.015"
WSPG FILE: C1CH15.WSW, BY: VTN 09/19/2007

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-7980.730	1915.670	2.603	1918.273	2868.00	21.50	7.18	1925.45	.00	4.60	51.25	8.000	51.250	.00	0 .0
JUNCT STR	.0000					.0156	.00	2.60	2.35		.015	.00	.00	RECTANG
-7980.730	1915.670	2.558	1918.228	1931.00	21.57	7.22	1925.45	.51	4.56	35.00	8.000	35.000	.00	0 .0
WALL	EXIT													
-7980.730	1915.670	2.557	1918.227	1931.00	21.58	7.23	1925.46	.51	4.56	35.00	8.000	35.000	.00	0 .0
90.170	.0165					.0162	1.46	3.06	2.38	2.54	.015	.00	.00	RECTANG
-7890.560	1917.160	2.562	1919.722	1931.00	21.53	7.20	1926.92	.50	4.56	35.00	8.000	35.000	.00	0 .0
90.170	.0166					.0161	1.45	3.07	2.37	2.54	.015	.00	.00	RECTANG
-7800.390	1918.660	2.574	1921.234	1931.00	21.44	7.13	1928.37	.00	4.56	35.00	8.000	35.000	.00	0 .0
TRANS STR	.0165					.0146	1.09	2.57	2.35		.015	.00	.00	RECTANG
-7725.390	1919.900	3.017	1922.917	1931.00	20.62	6.60	1929.52	.00	4.96	37.07	9.000	25.000	2.00	0 .0
75.033	.0350					.0379	2.85	3.02	2.29	3.06	.025	.00	2.00	TRAP
-7650.357	1922.526	2.966	1925.492	1931.00	21.04	6.88	1932.37	.00	4.96	36.87	9.000	25.000	2.00	0 .0
81.538	.0350					.0420	3.42	2.97	2.35	3.06	.025	.00	2.00	TRAP
-7568.820	1925.380	2.850	1928.230	1931.00	22.07	7.56	1935.79	.00	4.96	36.40	9.000	25.000	2.00	0 .0
48.284	.0198					.0158	.76	2.85	2.51	2.69	.015	.00	2.00	TRAP
-7520.536	1926.336	2.887	1929.223	1931.00	21.74	7.34	1936.56	.00	4.96	36.55	9.000	25.000	2.00	0 .0
102.748	.0198					.0145	1.49	2.89	2.46	2.69	.015	.00	2.00	TRAP

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-7417.789	1928.370	3.005	1931.375	1931.00	20.73	6.67	1938.04	.00	4.96	37.02	9.000	25.000	2.00	0 .0
66.932	.0198					.0126	.84	3.00	2.30	2.69	.015	.00	2.00	TRAP
-7350.856	1929.695	3.127	1932.822	1931.00	19.76	6.06	1938.89	.00	4.96	37.51	9.000	25.000	2.00	0 .0
47.874	.0198					.0109	.52	3.13	2.16	2.69	.015	.00	2.00	TRAP
-7302.982	1930.643	3.253	1933.896	1931.00	18.84	5.51	1939.41	.00	4.96	38.01	9.000	25.000	2.00	0 .0
35.970	.0198					.0095	.34	3.25	2.02	2.69	.015	.00	2.00	TRAP
-7267.012	1931.355	3.384	1934.739	1931.00	17.96	5.01	1939.75	.00	4.96	38.53	9.000	25.000	2.00	0 .0
27.781	.0198					.0083	.23	3.38	1.90	2.69	.015	.00	2.00	TRAP
-7239.231	1931.906	3.519	1935.424	1931.00	17.13	4.56	1939.98	.00	4.96	39.08	9.000	25.000	2.00	0 .0
21.768	.0198					.0072	.16	3.52	1.78	2.69	.015	.00	2.00	TRAP
-7217.464	1932.337	3.659	1935.995	1931.00	16.33	4.14	1940.14	.00	4.96	39.63	9.000	25.000	2.00	0 .0
17.140	.0198					.0063	.11	3.66	1.67	2.69	.015	.00	2.00	TRAP
-7200.324	1932.676	3.803	1936.479	1931.00	15.57	3.76	1940.24	.00	4.96	40.21	9.000	25.000	2.00	0 .0
13.449	.0198					.0055	.07	3.80	1.56	2.69	.015	.00	2.00	TRAP
-7186.875	1932.942	3.953	1936.895	1931.00	14.85	3.42	1940.32	.00	4.96	40.81	9.000	25.000	2.00	0 .0
10.422	.0198					.0048	.05	3.95	1.47	2.69	.015	.00	2.00	TRAP
-7176.454	1933.148	4.107	1937.255	1931.00	14.16	3.11	1940.37	.00	4.96	41.43	9.000	25.000	2.00	0 .0
7.883	.0198					.0041	.03	4.11	1.37	2.69	.015	.00	2.00	TRAP

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
-7168.571	1933.305	4.267	1937.571	1931.00	13.50	2.83	1940.40	.00	4.96	42.07	9.000	25.000	2.00	0 .0
5.712	.0198					.0036	.02	4.27	1.29	2.69	.015	.00	2.00	TRAP
-7162.858	1933.418	4.431	1937.849	1931.00	12.87	2.57	1940.42	.00	4.96	42.72	9.000	25.000	2.00	0 .0
3.828	.0198					.0032	.01	4.43	1.21	2.69	.015	.00	2.00	TRAP
-7159.031	1933.493	4.601	1938.095	1931.00	12.27	2.34	1940.43	.00	4.96	43.41	9.000	25.000	2.00	0 .0
2.169	.0198					.0028	.01	4.60	1.14	2.69	.015	.00	2.00	TRAP
-7156.862	1933.536	4.777	1938.313	1931.00	11.70	2.13	1940.44	.00	4.96	44.11	9.000	25.000	2.00	0 .0
.692	.0198					.0024	.00	4.78	1.07	2.69	.015	.00	2.00	TRAP
-7156.170	1933.550	4.959	1938.509	1931.00	11.15	1.93	1940.44	.00	4.96	44.84	9.000	25.000	2.00	0 .0
-5206.170	1983.730	4.959	1988.689	1931.00	11.15	1.93	1990.62	.00	4.96	44.84	9.000	25.000	2.00	0 .0

DRAKE CHANNEL
MANNING'S EQUATION CALCULATIONS

Worksheet for Sta 19+50 - Drake Channel

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.02080	ft/ft
Left Side Slope	1.85	ft/ft (H:V)
Right Side Slope	1.85	ft/ft (H:V)
Bottom Width	10.00	ft
Discharge	3914.00	ft³/s

Results

Normal Depth	5.77	ft
Flow Area	119.28	ft²
Wetted Perimeter	34.27	ft
Top Width	31.35	ft
Critical Depth	9.92	ft
Critical Slope	0.00206	ft/ft
Velocity	32.81	ft/s
Velocity Head	16.73	ft
Specific Energy	22.50	ft
Froude Number	2.97	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	5.77	ft
Critical Depth	9.92	ft
Channel Slope	0.02080	ft/ft
Critical Slope	0.00206	ft/ft

Cross Section for Sta 19+50 - Drake Channel

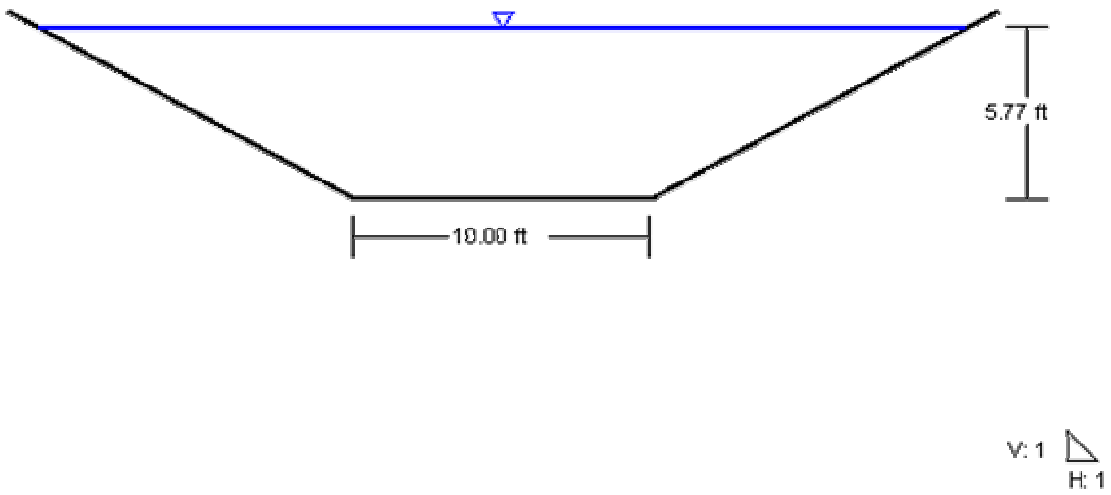
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.02080	ft/ft
Normal Depth	5.77	ft
Left Side Slope	1.85	ft/ft (H:V)
Right Side Slope	1.85	ft/ft (H:V)
Bottom Width	10.00	ft
Discharge	3914.00	ft³/s

Cross Section Image



Worksheet for Sta 18+50 - Drake Channel

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.20800	ft/ft
Bottom Width	25.00	ft
Discharge	3914.00	ft^3/s

Results

Normal Depth	2.25	ft
Flow Area	56.30	ft^2
Wetted Perimeter	29.50	ft
Top Width	25.00	ft
Critical Depth	9.13	ft
Critical Slope	0.00326	ft/ft
Velocity	69.52	ft/s
Velocity Head	75.10	ft
Specific Energy	77.35	ft
Froude Number	8.17	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.25	ft
Critical Depth	9.13	ft
Channel Slope	0.20800	ft/ft
Critical Slope	0.00326	ft/ft

Cross Section for Sta 18+50 - Drake Channel

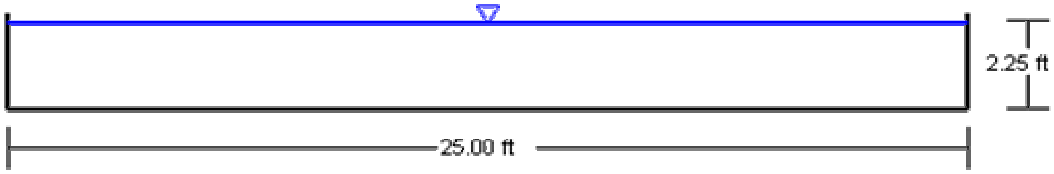
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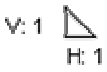
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.20800	ft/ft
Normal Depth	2.25	ft
Bottom Width	25.00	ft
Discharge	3914.00	ft³/s

Cross Section Image





Worksheet for Sta 18+00 - Drake Channel

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.08100	ft/ft
Bottom Width	25.00	ft
Discharge	3914.00	ft^3/s

Results

Normal Depth	3.05	ft
Flow Area	76.32	ft^2
Wetted Perimeter	31.11	ft
Top Width	25.00	ft
Critical Depth	9.13	ft
Critical Slope	0.00326	ft/ft
Velocity	51.29	ft/s
Velocity Head	40.88	ft
Specific Energy	43.93	ft
Froude Number	5.17	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.05	ft
Critical Depth	9.13	ft
Channel Slope	0.08100	ft/ft
Critical Slope	0.00326	ft/ft

Cross Section for Sta 18+00 - Drake Channel

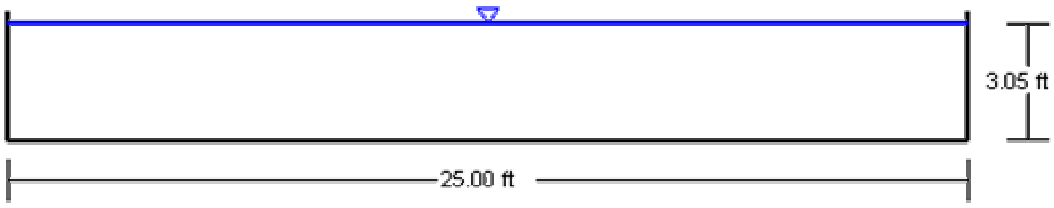
Project Description

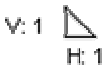
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.08100	ft/ft
Normal Depth	3.05	ft
Bottom Width	25.00	ft
Discharge	3914.00	ft³/s

Cross Section Image





Worksheet for Sta 15+47.13 - Drake Channel

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.00100	ft/ft
Bottom Width	25.00	ft
Discharge	3914.00	ft^3/s

Results

Normal Depth	14.15	ft
Flow Area	353.78	ft^2
Wetted Perimeter	53.30	ft
Top Width	25.00	ft
Critical Depth	9.13	ft
Critical Slope	0.00326	ft/ft
Velocity	11.06	ft/s
Velocity Head	1.90	ft
Specific Energy	16.05	ft
Froude Number	0.52	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	14.15	ft
Critical Depth	9.13	ft
Channel Slope	0.00100	ft/ft
Critical Slope	0.00326	ft/ft

Cross Section for Sta 15+47.13 - Drake Channel

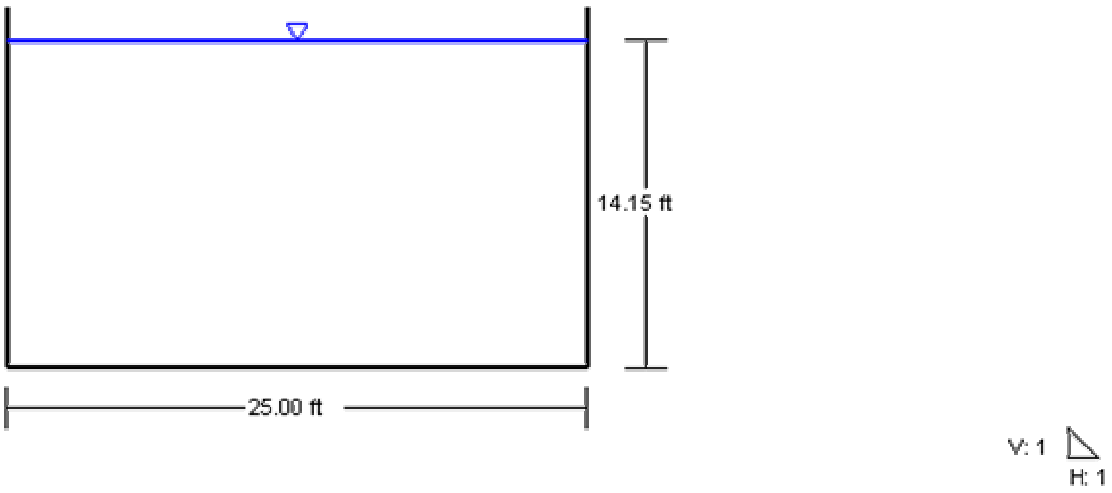
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.00100	ft/ft
Normal Depth	14.15	ft
Bottom Width	25.00	ft
Discharge	3914.00	ft³/s

Cross Section Image



NOTE:
EXISTING CONCRETE DRAKE CHANNEL CONFLUENCE STRUCTURE AND EXISTING CONCRETE DRAKE CHANNEL TO BE REMOVED TO STA. 19+50, WHERE NEW CONSTRUCTION ENDS.

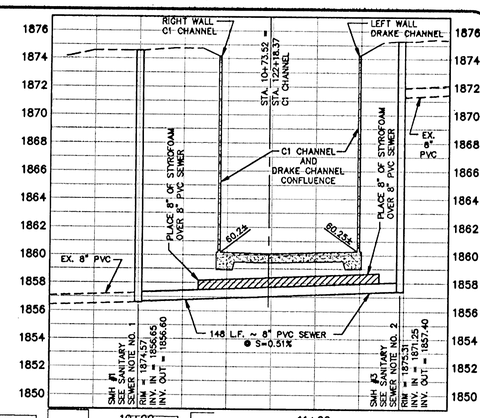
NOTE:
SEE SHEET NO. 15 FOR C1 CHANNEL PLAN AND PROFILE. SEE SHEET NO. 20 FOR 1"=20' PLAN VIEW OF CHANNEL CONFLUENCE AREA.

SANITARY SEWER NOTES:

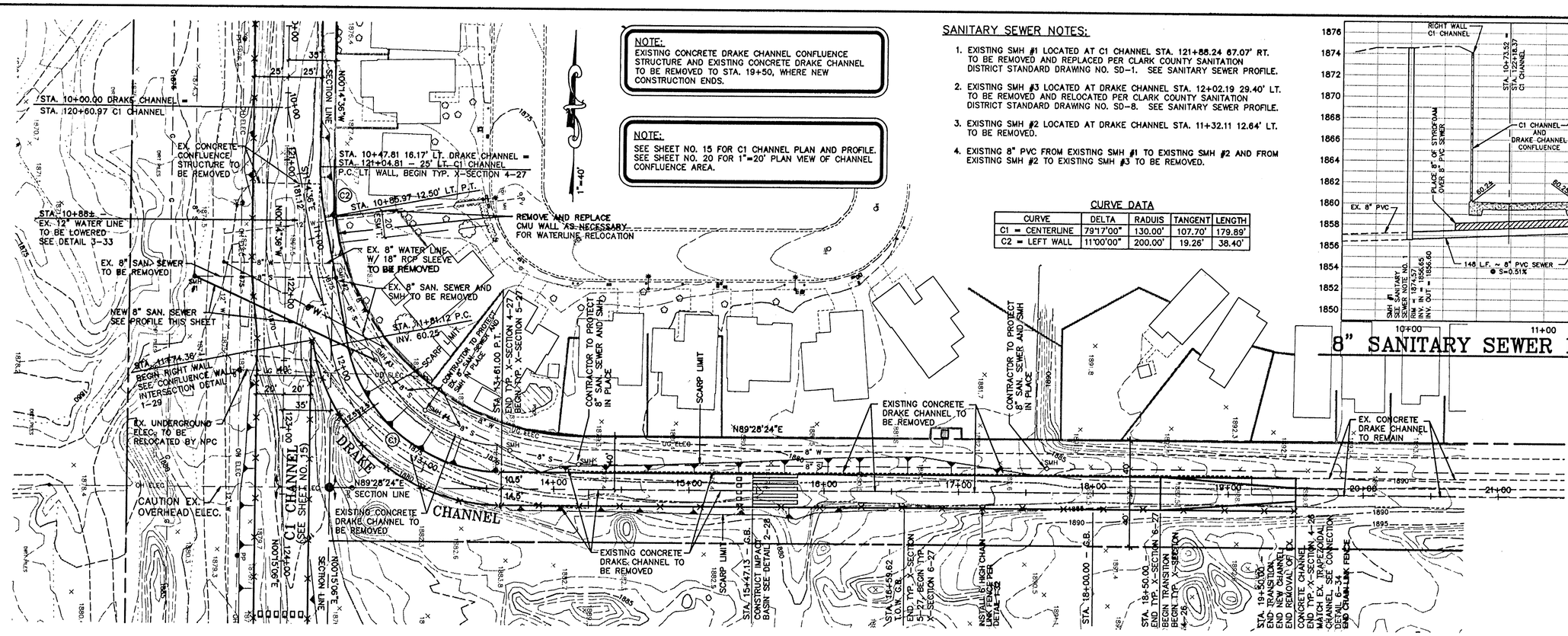
1. EXISTING SMH #1 LOCATED AT C1 CHANNEL STA. 121+88.24 67.07' RT. TO BE REMOVED AND REPLACED PER CLARK COUNTY SANITATION DISTRICT STANDARD DRAWING NO. SD-1. SEE SANITARY SEWER PROFILE.
2. EXISTING SMH #3 LOCATED AT DRAKE CHANNEL STA. 12+02.19 29.40' LT. TO BE REMOVED AND RELOCATED PER CLARK COUNTY SANITATION DISTRICT STANDARD DRAWING NO. SD-8. SEE SANITARY SEWER PROFILE.
3. EXISTING SMH #2 LOCATED AT DRAKE CHANNEL STA. 11+32.11 12.64' LT. TO BE REMOVED.
4. EXISTING 8" PVC FROM EXISTING SMH #1 TO EXISTING SMH #2 AND FROM EXISTING SMH #2 TO EXISTING SMH #3 TO BE REMOVED.

CURVE DATA

CURVE	DELTA	RADIUS	TANGENT	LENGTH
C1 = CENTERLINE	79°17'00"	130.00'	107.70'	179.89'
C2 = LEFT WALL	11°00'00"	200.00'	19.26'	38.40'

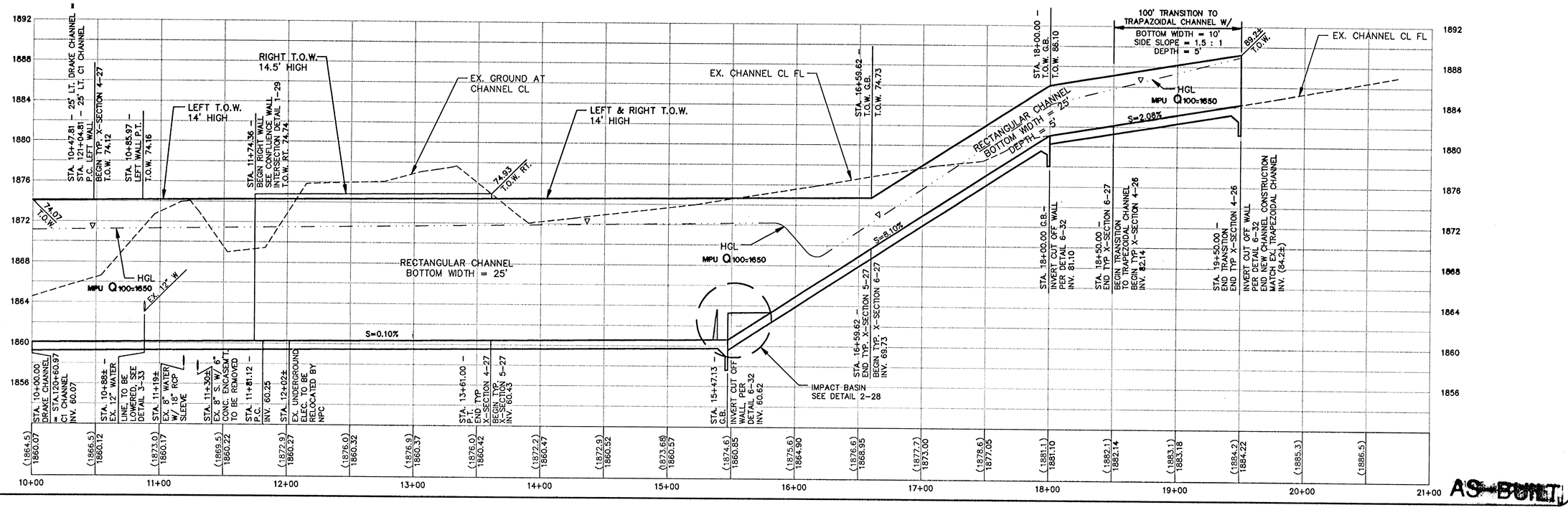


8" SANITARY SEWER PROFILE



NOTE:
SEE DETAIL (5/32) FOR CUTOFF WALL, EXPANSION JOINT, AND CONTRACTION JOINT SPACING.

NOTE:
CONTRACTOR MUST VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



AS-BUILT

04632

CITY OF HENDERSON
CLARK COUNTY, NEVADA

vtn nevada
CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89102-5148 PHONE (702) 873-7550 FAX (702) 362-2597

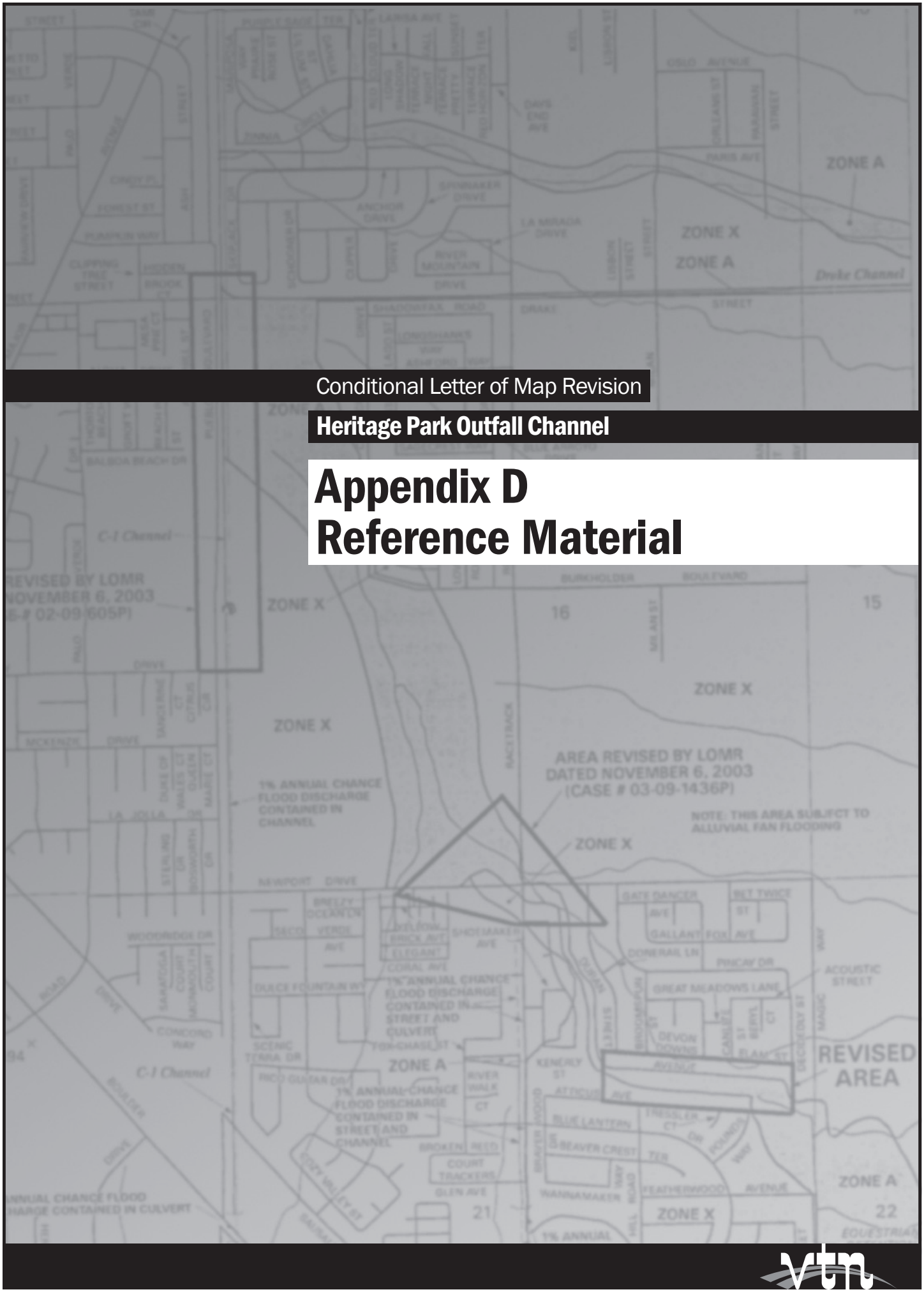
REV	DATE	BY	REVISION

TITLE
PLAN & PROFILE
DRAKE CHANNEL IMPROVEMENTS
STA. 10+00 TO STA. 19+50

PROJECT
C1 CHANNEL
LAKE MEAD DR. TO THE DRAKE/C1 CONFLUENCE

SEAL
REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
No. 9177
DAVID GILBRETH
CIVIL
1-26-94

WO NO.	4300
BY	JC, TMM
DATE	1/26/94
SCALE HORIZ.	1"=40'
SCALE VERT.	1"=5'
SHEET	19 OF 34 SHEETS



Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix D
Reference Material

C-1 CHANNEL SYSTEM FLOOD INSURANCE RESTUDY
SUBBASIN MAP
(2002)

FIGURE 7: C-1 System Flood Insurance Restudy Watershed Map

STORM FLOW SUMMARIES

Point of Concentration Summary

Concentration Point	Area (acres)	Area (sq. mi.)	100-yr Pk. Discharge (cfs)
1	2566.40	4.01	198
2	2854.39	4.46	481
3	3027.19	4.73	637
4	3494.39	5.46	1343
5	4166.38	6.51	2442
6	6067.18	9.48	4916
7	7155.17	11.18	915
8	7417.57	11.59	799
9	281.60	0.44	626
10	454.40	0.71	665
11	844.80	1.32	798
12	908.80	1.42	870
13	403.20	0.63	574
14	1407.99	2.20	1315
15	1452.79	2.27	1185
16	198.40	0.31	291
17	288.00	0.45	478
18	1855.99	2.90	1522
19	2092.79	3.27	1431
20	9561.56	14.94	1178
21	403.20	0.63	531
22	10246.36	16.01	1511
23	10335.96	16.15	1549
24	3743.99	5.85	4748
25	396.80	0.62	307

Concentration Point	Area (acres)	Area (sq. mi.)	100-yr Pk. Discharge (cfs)
26	608.00	0.95	508
27	774.40	1.21	589
28	601.60	0.94	1447
29	742.40	1.16	1506
30	1056.00	1.65	2023
31	1542.39	2.41	2964
32	1644.79	2.57	3001
33	2668.79	4.17	4356
34	4620.78	7.22	1209
35	5177.58	8.09	1403
36	364.80	0.57	615
37	524.80	0.82	704
38	16198.34	25.31	2394
39	3731.19	5.83	607
40	3891.18	6.08	953
41	998.40	1.56	2788
42	5215.98	8.15	3427
43	5305.58	8.29	3482
44	5734.38	8.96	3914
45	22092.71	34.52	4272
46	633.60	0.99	1052
47	793.60	1.24	1104
48	23039.91	36.00	4547
49	23334.31	36.46	4583
50	953.60	1.49	1434
51	24524.70	38.32	5043

Subbasin Summary (SDN3)

Subbasin Number	Area (acres)	Area (sq. mi.)	100-yr Pk. Discharge (cfs)
C1G1A	143.36	0.22	255
C1G1B	90.88	0.14	200
C1G2C	187.52	0.29	210
C1G2D	143.36	0.22	153
C1G3B	469.12	0.73	1014
C1G3C	670.72	1.05	1372
C1G3D	535.68	0.84	1246
C1A	89.60	0.14	149
C1B	241.28	0.38	450
C1C	147.20	0.23	213
C1D	256.00	0.40	338
C1G2A	221.44	0.35	309
C1G2B1	321.92	0.50	260
C1G2B2	197.76	0.31	230
C1G3A	174.72	0.27	358
C1H	2559.99	4.00	5490
C1HA	46.72	0.07	27
C1HB	94.08	0.15	278
C1HB1	288.00	0.45	305
C1HCB	115.84	0.18	249
C1HD	46.72	0.07	72
C1HE	94.08	0.15	115
C1HF	56.32	0.09	90
C1NA	264.96	0.41	744
C3A1A	239.36	0.37	433
C3A1B	673.92	1.05	1403
C3A2A	303.36	0.47	825
C3A2B	327.68	0.51	769
C3B1A	160.64	0.25	170
C3B1B	128.00	0.20	139
C3B1C	153.60	0.24	374
C3B1D	156.80	0.25	215
C3B3A	327.68	0.51	838
C3B3B	204.80	0.32	508
C3B3C	793.60	1.24	2610
C3B3D	160.00	0.25	455
C3B3E	147.20	0.23	396
C4A1	223.36	0.35	248
C4A1A	189.44	0.30	109
C4A1B	172.80	0.27	134

Subbasin Number	Area (acres)	Area (sq. mi.)	100-yr Pk. Discharge (cfs)
C4A1C	332.80	0.52	481
C4A1D	38.40	0.06	52
C4A2A	160.00	0.25	322
C4A2B	160.00	0.25	203
C4BA1	294.40	0.46	289
C4BA2	72.32	0.11	92
C4BA3	260.48	0.41	296
C4BB	222.72	0.35	377
C4BC	153.60	0.24	255
C4BD	335.36	0.52	409
C4BE	140.80	0.22	241
C4BF	166.40	0.26	417
C4CA	128.00	0.20	237
C4CB	3455.99	5.40	10493
C5GA	174.08	0.27	109
C5GB	204.80	0.32	451
C5GC	70.85	0.11	223
C5GD	289.28	0.45	163
C5CA	190.08	0.30	185
C5CB	89.60	0.14	127
C5CC	214.40	0.34	286
C5CD	170.88	0.27	153
C5CE	207.36	0.32	221
C5CF	206.72	0.32	228
C5DA	650.24	1.02	2210
C5DB	346.24	0.54	1079
C5DC	206.08	0.32	601
C5EA	311.68	0.49	690
C5EB	369.28	0.58	806
C5EC	140.80	0.22	179
C5ED	103.68	0.16	178
C5FA	334.72	0.52	1125
C5FB	158.08	0.25	167
C5FC	142.08	0.22	191
C5FD	112.64	0.18	294
C5I1	153.60	0.24	238
C5I1B	337.92	0.53	479
C5I1C	32.00	0.05	68
C5I1D	71.04	0.11	126
C5I1E	104.32	0.16	266
C5I2A	896.00	1.40	1698
C5ICB	469.12	0.73	850

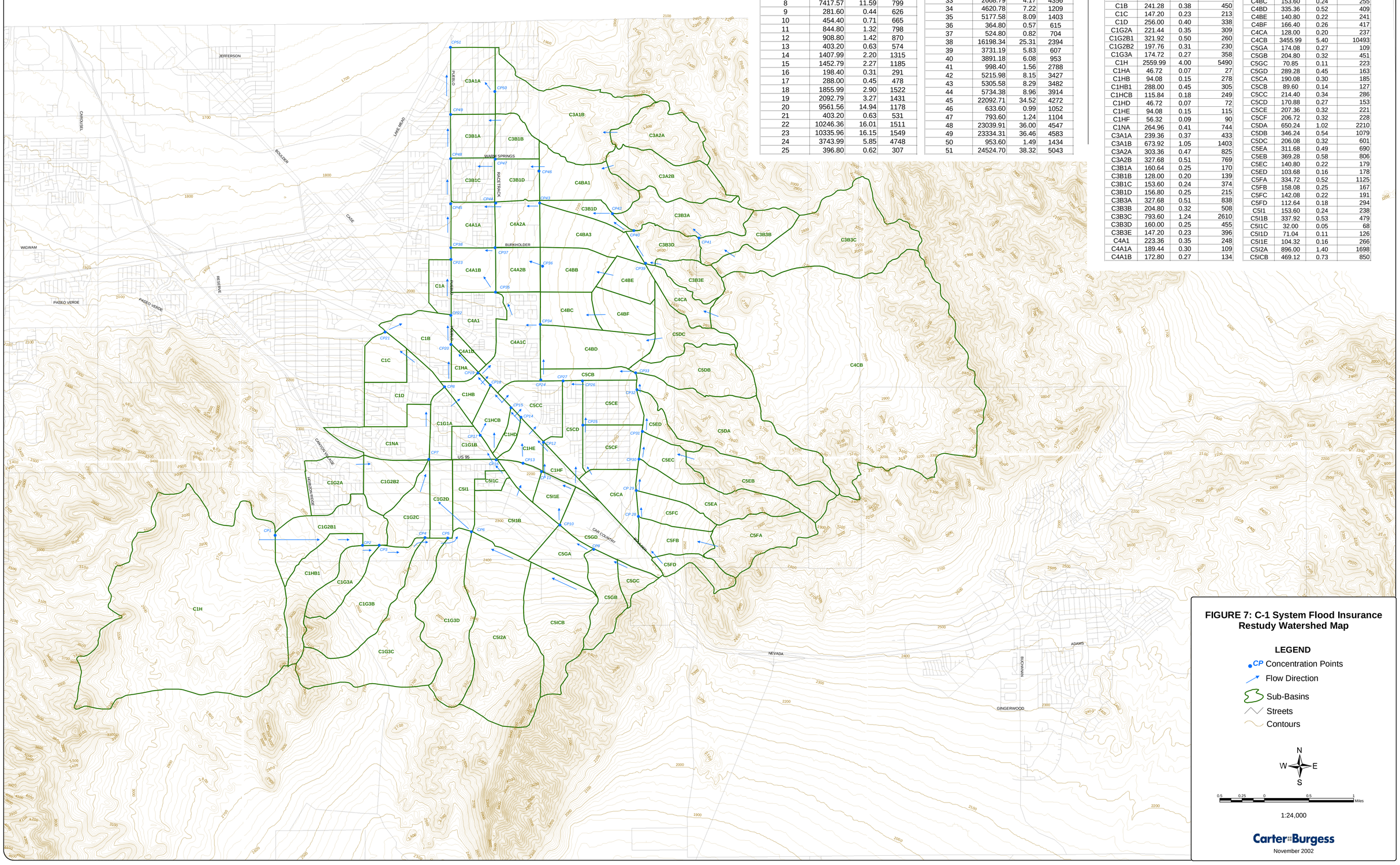


FIGURE 7: C-1 System Flood Insurance Restudy Watershed Map

LEGEND

- CP Concentration Points
- Flow Direction
- Sub-Basins
- Streets
- Contours

N W E S

0.5 0.25 0 0.5 1 Miles

1:24,000

Carter & Burgess

November 2002

FIGURE 2: C-1 Channel System FIS Restudy Existing Facilities/Location Map

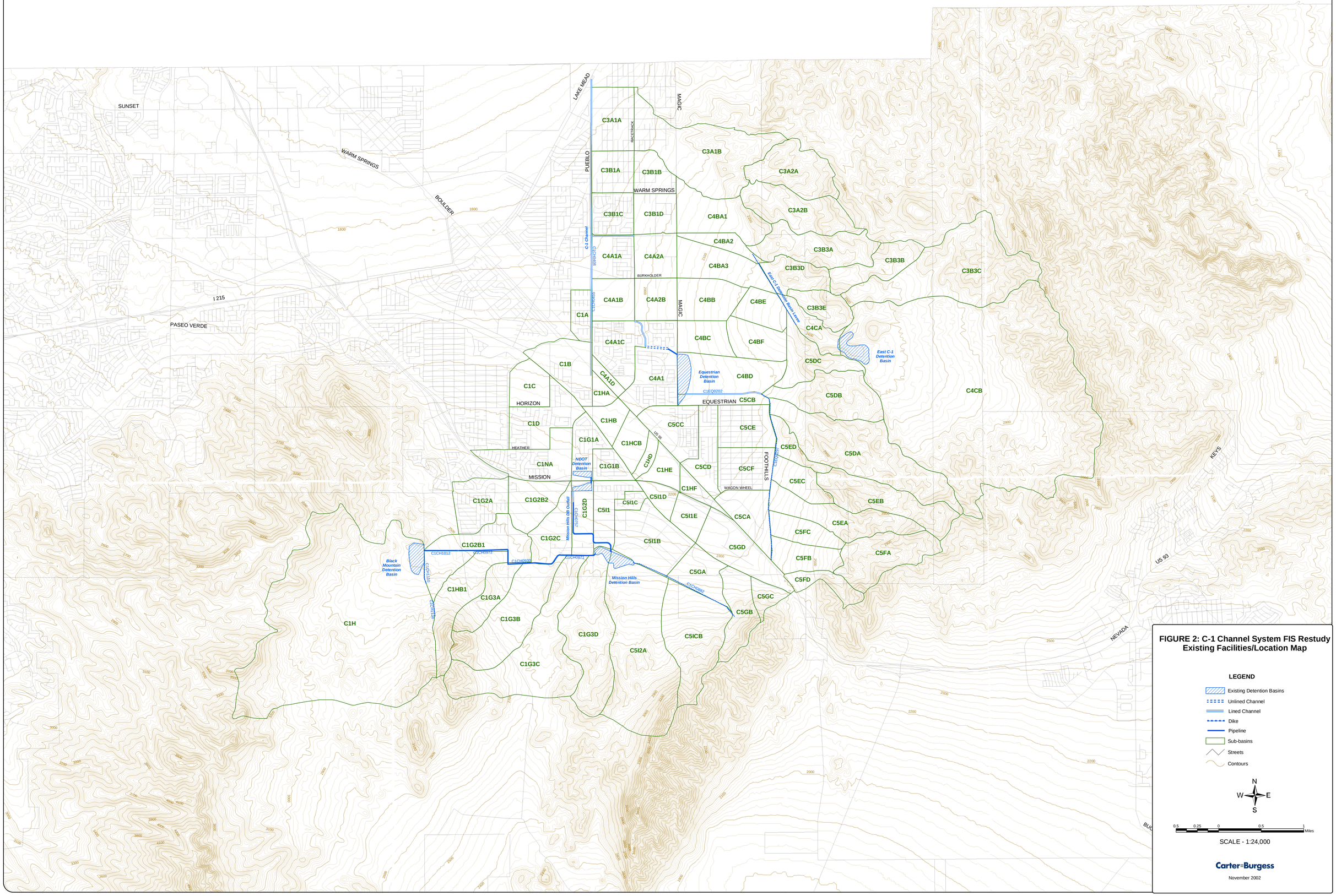


FIGURE 2: C-1 Channel System FIS Restudy Existing Facilities/Location Map

LEGEND

- Existing Detention Basins
- Unlined Channel
- Lined Channel
- Dike
- Pipeline
- Sub-basins
- Streets
- Contours

N
W E
S

0.5 0.25 0 0.5 1 Miles

SCALE - 1:24,000

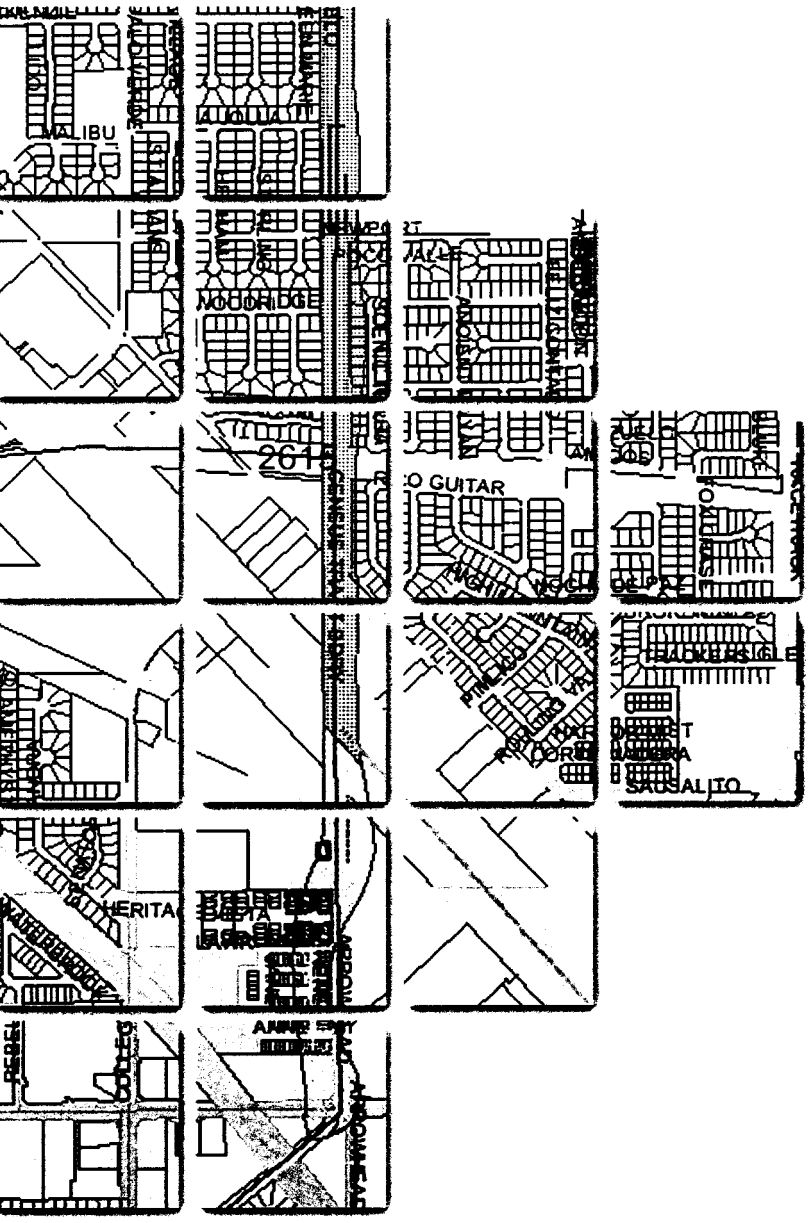
Carter & Burgess

November 2002

BOULDER HIGHWAY CHANNEL PROJECT
HYDROLOGY REVISION
(2005-2006)

Request for Letter of Map Revision
Boulder Highway Channel

City of Henderson, Nevada



DRAFT

05-09-A429P

Submitted to:

City of Henderson

Submitted by:

THE **Louis Berger Group,** INC.
Las Vegas, Nevada

August 22, 2005

II. HYDROLOGIC ANALYSIS OF C-1 CHANNEL WATERSHED

The Effective model for the hydrologic analysis for the C-1 Channel Watershed, which includes the Boulder Highway Channel, is the C-1 FIS. The hydrology in the C-1 FIS was revised herein in order to incorporate the newly-completed Boulder Highway Channel.

Referring to Figure 7 of the C-1 FIS (Appendix G), the Boulder Highway Channel is located along the upstream side of Boulder Highway, running diagonally from basin C1HF to concentration point CP20. The channel intercepts flow approaching from the southwest and conveys it to point CP20, discharging flow into the C-1 Channel at that point. Prior to construction of the Boulder Highway Channel, runoff flow approaching from the southwest was conveyed partially beneath the highway by way of at least fifteen culvert crossings.

In general, changes to the C-1 FIS hydrologic model included:

1. Removal of culvert diversions from basins C1HE, C1HD, C1HCB, and C1HB;
2. Modification of routing reaches to reflect concrete-lined channel improvements.

The changes were made to all three effective HEC-1 hydrologic models; for SDN3, SDN4, and SDN5. **All of the flows in the Boulder Highway Channel are SDN3 flows. Flows in the C-1 Channel downstream of Boulder Highway are all SDN5 flows.** The Proposed SDN3 flow at the downstream end of the Boulder Highway Channel is 2571 cfs. The Effective flow in the C-1 Channel downstream of the Boulder Highway Channel confluence is only 1295 cfs. Changing from SDN3 to SDN5 should not be allowed to result in a lower flow downstream of a confluence than exists in one of the upstream tributaries. The SDN3 flow should have been maintained downstream of the confluence to a point where the SDN5 flow exceeds the higher of the two flows at the confluence. The C-1 Channel was designed to convey future buildout condition flows. The design flow below the confluence is 4599 cfs. Therefore, neither the error in the Effective flow nor the construction of the Boulder Highway Channel will cause the capacity of the C-1 Channel to be exceeded. The revised HEC-1 hydrologic models are included herein on a data disk in Appendix C. Results of the revised hydrologic models are summarized in Table 1 on the following page.

It is important to note that in the C-1 FIS, a detailed sediment analysis of the entire watershed was completed. The final result of the sediment analysis was to increase the flow rates for all hydraulic analyses by 10 percent. Thus the flow quantities used for hydraulic analysis in the C-1 FIS are the peak flow rates generated in the hydrologic analysis times a sediment bulking factor of 1.1. The hydraulic analysis herein also utilizes the same peak flow rates that were generated by increasing the expected peak flow rates by a bulking factor of 1.1 in order to concur with the Effective model.

The 100-year peak flow rates in the C-1 Channel were found to increase downstream of the Boulder Highway Channel. The increase in peak flow rate varies from about 200 to 500 cfs, depending on location.

Table 1 – Storm Flow Summary (SDN3 – SDN5)
Comparison of Effective FIS and Proposed LOMR Hydrology

					Effective FIS Data		Proposed LOMR Data	
Concentration Point	Area (acres)	Area (sq mi)	Storm Dist. No. (SDN#)	Facility Location	100-yr pk discharge (cfs)	Facility Flow, (10% bulked, cfs)	100-yr pk discharge (cfs)	Facility Flow, (10% bulked, cfs)
2	2854.39	4.46	3		481			
3	3027.19	4.73	3		637			
4	3494.39	5.46	3		1343			
5	4166.38	6.51	3		2442			
6	6067.18	9.48	4		4916			
7	7155.17	11.18	4		915			
8	7417.57	11.59	4		799			
9	281.6	0.44	3		626			
10	454.4	0.71	3		665			
11	844.8	1.32	3		798			
12	908.8	1.42	3	Boulder Hwy. Channel at US 95 onramp (headworks)	870	957	870	957
13	403.2	0.63	3		574			
14	1407.99	2.2	3	Boulder Hwy. Channel Downstream of Magic Way	1315	NA	1399	1538.9
15	1452.79	2.27	3	Boulder Hwy. Channel Upstream of Equestrian Drive	1185	NA	1448	1592.8
16	198.4	0.31	3		291			
17	288	0.45	3		478			
18	1855.99	2.9	3	Boulder Hwy. Channel Downstream of Equestrian Dr.	1522	NA	1999	2198.9
19	2092.79	3.27	3	Boulder Hwy. Channel at Horizon Dr. (Racetrack Rd)	1431	NA	2337	2570.7
20	9561.56	14.94	5	C-1 Channel after Boulder Hwy. Channel Confluence	1178	1295.8	1535	1688.5
21	403.2	0.63	3		531			
22	10246.36	16.01	5	C-1 Channel North of Sausalito Drive	1511	1662.1	1869	2055.9
23	10335.96	16.15	5	C-1 Channel at Dooley Drive	1549	1703.9	1931	2124.1
24	3743.99	5.85	3		4748			
25	396.8	0.62	3		307			
26	608	0.95	3		508			
27	774.4	1.21	3		589			
28	601.6	0.94	3		1447			
29	742.4	1.16	3		1506			
30	1056	1.65	3		2023			
31	1542.39	2.41	3		2964			
32	1644.79	2.57	3		3001			
33	2668.79	4.17	3		4356			
34	4620.78	7.22	3		960	NA	706	NA
35	5177.58	8.09	4		1417	NA	1168	NA
36	364.8	0.57	3		615			
37	524.8	0.82	3		704			
38	16198.34	25.31	5	C-1 Channel at Burkholder Boulevard	2546	2800.6	2868	3154.8
39	3731.19	5.83	3		607			
40	3891.18	6.08	3		953			
41	998.4	1.56	3		2788			
42	5215.98	8.15	4		3427			
43	5305.58	8.29	4		3482			
44	5734.38	8.96	4		3914			
45	22092.71	34.52	5	C-1 Channel after Drake Channel Confluence	4380	4818	4537	4990.7
46	633.6	0.99	3		1052			
47	793.6	1.24	3		1104			
48	23039.91	36	5	C-1 Channel at Warm Springs Road	4660	5126	4831	5314.1
49	23334.31	36.46	5	C-1 Channel at Ithica Avenue	4702	5172.2	4887	5375.7
50	953.6	1.49	3		1434			
51	24524.7	38.32	5	C-1 Channel at Lake Mead Drive	5175	5692.5	5377	5914.7

Federal Emergency Management Agency

Washington, D.C. 20472

FEB 0 8 2006

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable James B. Gibson
Mayor, City of Henderson
240 Water Street, Fourth Floor
Henderson, NV 89015

IN REPLY REFER TO:
Case No.: 05-09-A429P
(Formerly Case No.: 05-09-2100429P)
Community Name: City of Henderson, NV
Community No.: 320005
Effective Date of This Revision: FEB 0 8 2006

Dear Mayor Gibson:

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

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

Sincerely,

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

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

List of Enclosures:
Letter of Map Revision Determination Document
Annotated Flood Insurance Rate Map

cc: Mr. Curt Chandler, P.E., CFM
Land Development Manager
City of Henderson

Mr. Kevin Eubanks, P.E., CFM
Assistant General Manager
Clark County Regional Flood Control District

Mr. Roger J. Patton, P.E.
The Louis Berger Group, Inc.

 | Issue Date: FEB 0 8 2006 | Effective Date: FEB 0 8 2006 | Case No.: 05-09-A429P | LOMR-APP

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	City of Henderson Clark County Nevada	CHANNELIZATION CULVERT	HYDRAULIC ANALYSIS NEW TOPOGRAPHIC DATA
	COMMUNITY NO.: 320005		
IDENTIFIER	Boulder Highway Channel	APPROXIMATE LATITUDE & LONGITUDE: 36.0139°, -114.6708° SOURCE: USGS QUADRANGLE DATUM: NAD 83	
FLOODING SOURCE(S) & REVISED REACH(ES)	Unnamed Tribuary 1 to C-1 Channel - from just upstream of Sausalito Drive to just upstream of Boulder Highway Unnamed Tributary 2 to C-1 Channel - from just upstream of Equestrain Drive to just upstream of Boulder Highway		

SUMMARY OF REVISIONS

	Unnamed Tributary 1 to C–1 Channel		Unnamed Tributary 2 to C–1 Channel	
Effective Flooding:	Zone A	Zone A	Zone A	Zone A
Revised Flooding:	Contained	Zone X (unshaded)	Contained	Zone X (unshaded)
Increases:	NONE	NONE	NONE	NONE
Decreases:	YES	YES	YES	YES

* BFEs – Base Flood Elevations

ANNOTATED MAPPING ENCLOSURES	ANNOTATED STUDY ENCLOSURES
TYPE: FIRM* NO.: 32003C2615 E Date: September 27, 2002	NO REVISION TO THE FLOOD INSURANCE STUDY REPORT

* FIRM – Flood Insurance Rate Map; ** FBFM – Flood Boundary and Floodway Map; *** FHBM – Flood Hazard Boundary Map

DETERMINATION

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

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional information about the NFIP is available on our website at http://www.fema.gov/nfip.

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

106979 103105092100429 102-D

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

COMMUNITY INFORMATION

APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

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

NFIP regulations Subparagraph 60.3(b)(7) requires communities to ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management ordinances; therefore, responsibility for maintenance of the modified channel and culverts rests with your community. We may request that your community submit a description and schedule of channel and culvert activities.

COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance flood discharges computed in the FIS for your community without considering subsequent changes in watershed characteristics that could increase flood discharges. Future development of projects upstream could cause increased flood discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on flood discharges subsequent to the publication of the FIS report for your community and could, therefore, establish greater flood hazards in this area.

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

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

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional information about the NFIP is available on our website at http://www.fema.gov/nfip.

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

106979 103105092100429 102-D

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

COMMUNITY INFORMATION (CONTINUED)

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

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

STATUS OF THE COMMUNITY NFIP MAPS

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

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional information about the NFIP is available on our website at http://www.fema.gov/nfip.

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

106979 103105092100429 102-D

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

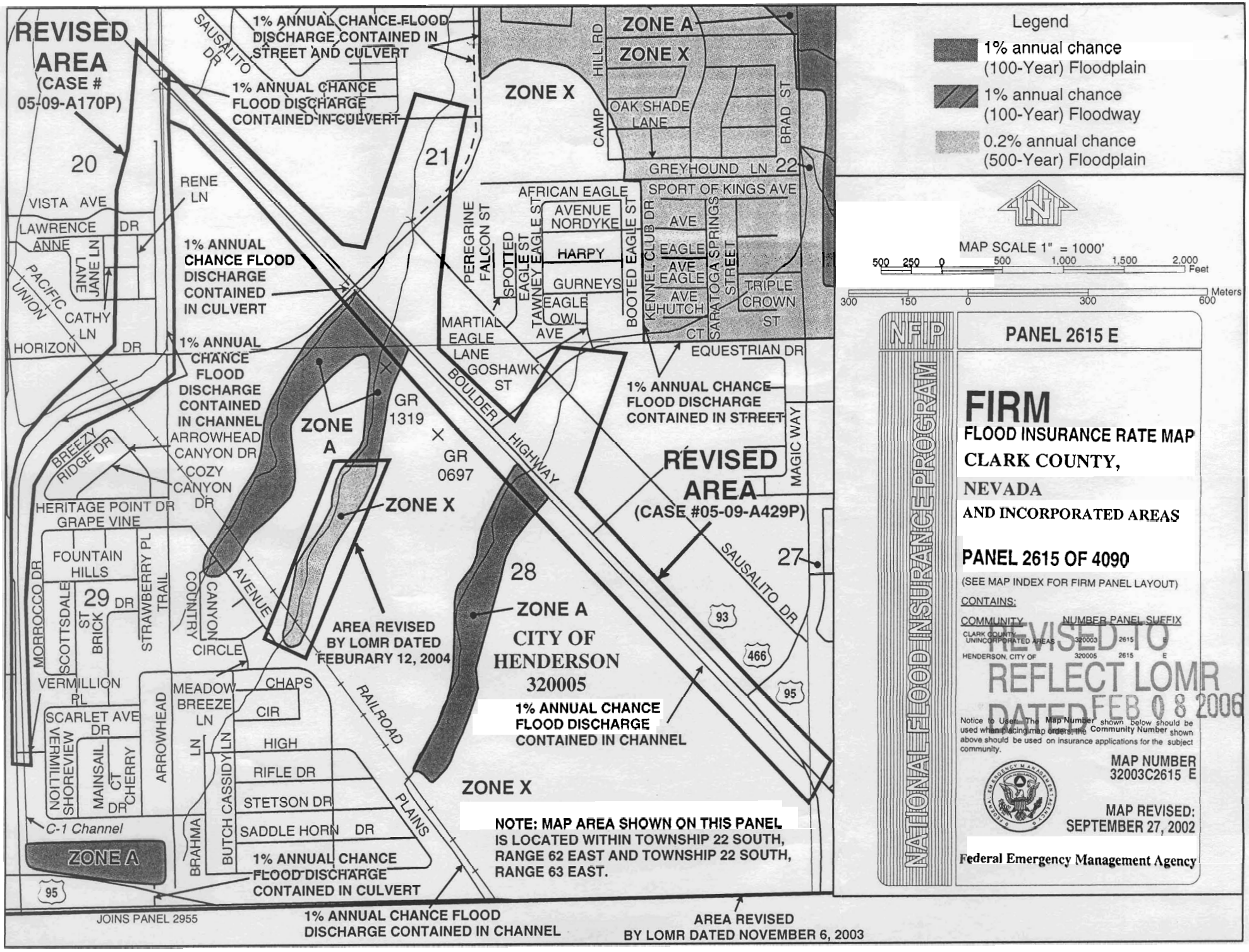
PUBLIC NOTIFICATION OF REVISION

This revision is effective as of the date of this letter. Any requests to review or alter this determination should be made within 30 days and must be based on scientific or technical data.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-827-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional information about the NFIP is available on our website at http://www.fema.gov/nfip.

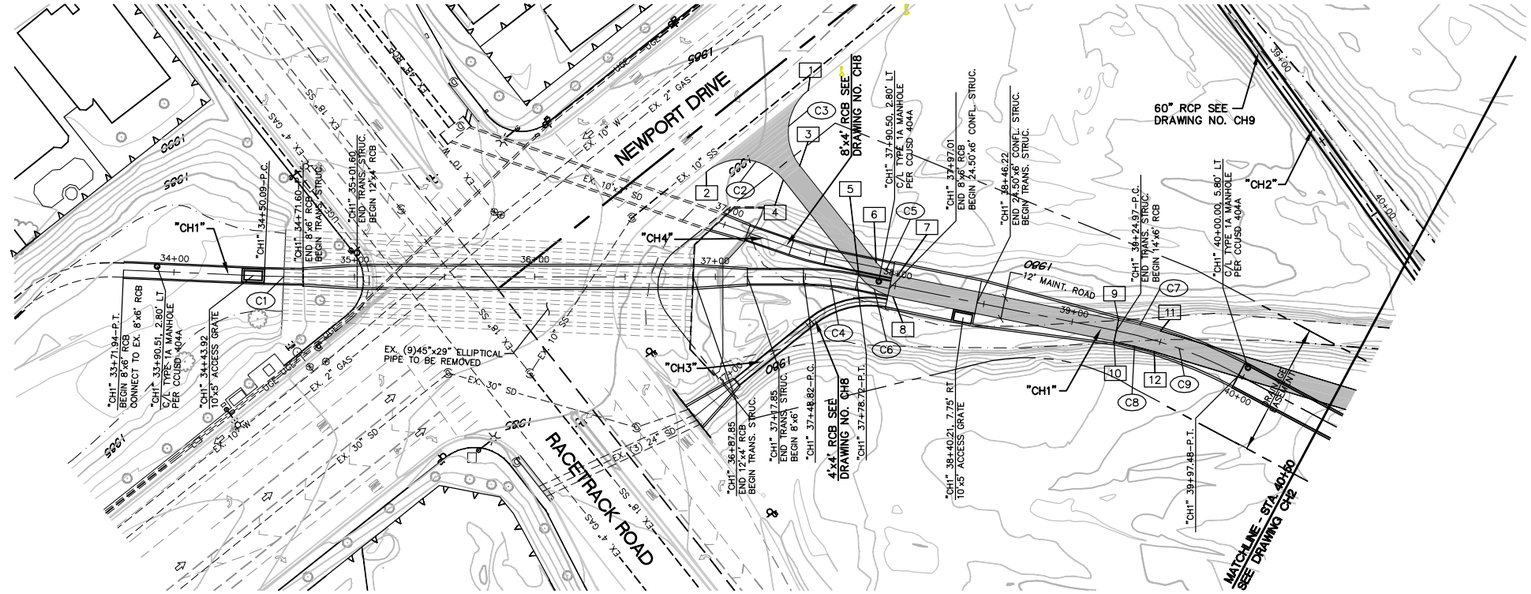
Michael B. Godesky, CFM, Project Engineer
Hazard Identification Section
Mitigation Division

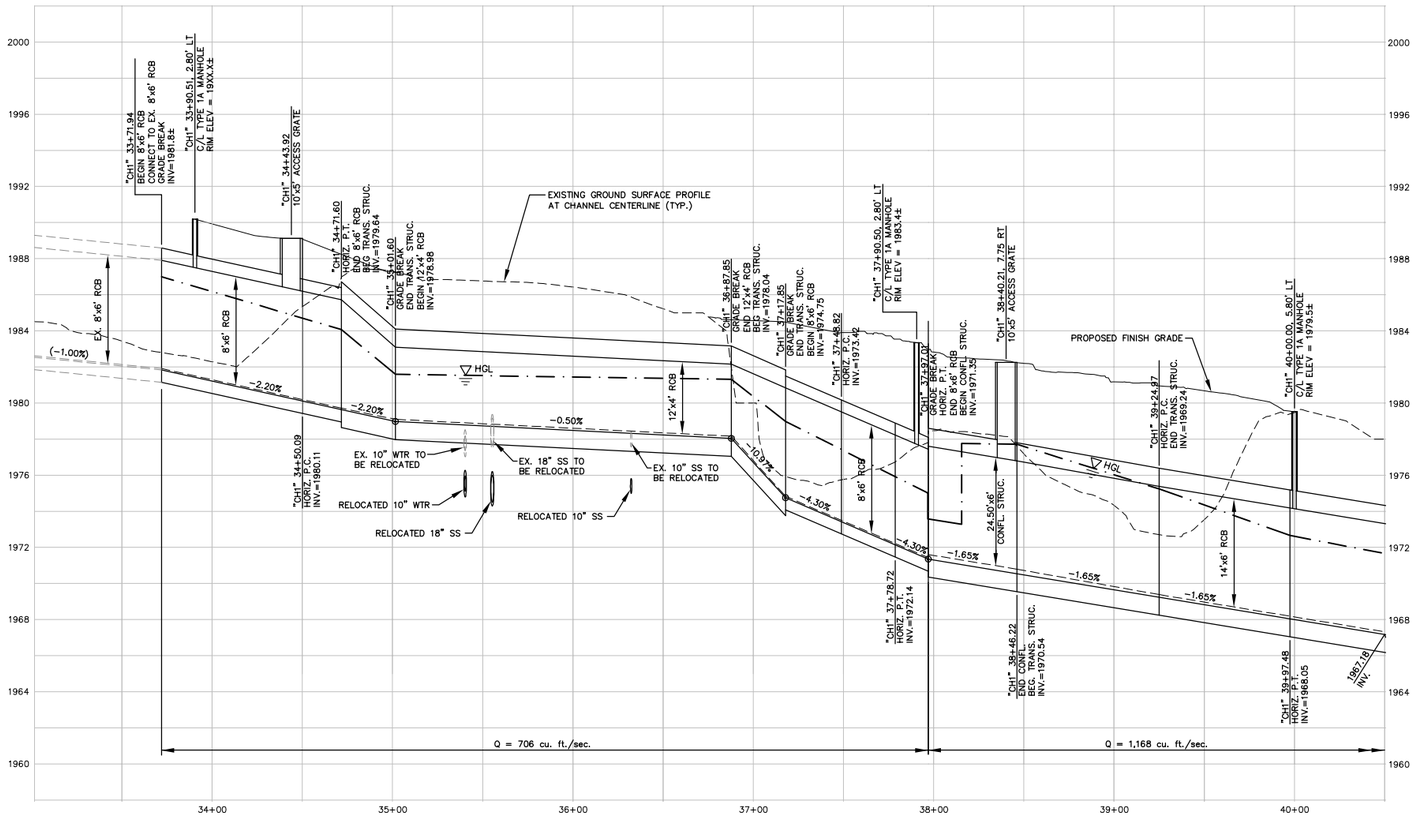
106979 103105092100429 102-D


REVISED AREA (CASE # 05-09-A170P)
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN STREET AND CULVERT
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT
SAUSALITO DR
ZONE A
ZONE X
HILL RD
CAMP
OAK SHADE LANE
BRAD ST
GREYHOUND LN
20
21
22
RENE LN
VISTA AVE
LAWRENCE DR
ANNE LN
JANE LANE
PACIFIC UNION
CATHY LN
HORIZON DR
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
AFRICAN EAGLE AVENUE NORDYKE
HARPY
GURNEYS
EAGLE OWL AVE
PEREGRINE FALCON ST
SPOTTED EAGLE ST
TAWNEY EAGLE ST
BOOTED EAGLE ST
KENNEL CLUB DR
SPORT OF KINGS AVE
EAGLE AVE
EAGLE AVE
HUTCH CT
SARATOGA SPRINGS STREET
TRIPLE CROWN ST
MARTIAL EAGLE LANE
GOSHAWK ST
EQUESTRIAN DR
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN STREET
BOULDER HIGHWAY
GR 1319
GR 0697
ZONE A
ZONE X
REVISED AREA (CASE #05-09-A429P)
MAGIC WAY
BREEZY RIDGE DR
ARROWHEAD CANYON DR
COZY CANYON DR
HERITAGE POINT DR
GRAPE VINE
FOUNTAIN HILLS
MORROCCO DR
SCOTTSDALE ST
29
BRICK DR
STRAWBERRY PL TRAIL
COUNTRY CANYON AVENUE
CIRCLE
AREA REVISED BY LOMR DATED FEBURARY 12, 2004
28
ZONE A
CITY OF HENDERSON 320005
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
27
SAUSALITO DR
93
466
95
VERMILLION PL
SCARLET AVE
VERMILLION SHOREVIEW DR
MAINSAIL CT
CHERRY DR
ARROWHEAD LN
MEADOW BREEZE LN
CHAPS CIR
HIGH
RIFLE DR
STETSON DR
SADDLE HORN DR
BUTCH CASSIDY LN
BRAHMA
RAILROAD
PLAINS
C-1 Channel
ZONE A
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT
ZONE X
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 22 SOUTH, RANGE 62 EAST AND TOWNSHIP 22 SOUTH, RANGE 63 EAST.
JOINS PANEL 2955
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
AREA REVISED BY LOMR DATED NOVEMBER 6, 2003
Legend
1% annual chance (100-Year) Floodplain
1% annual chance (100-Year) Floodway
0.2% annual chance (500-Year) Floodplain
MAP SCALE 1" = 1000'
500 250 0 500 1,000 1,500 2,000 Feet
300 150 0 300 600 Meters
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 2615 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 2615 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLARK COUNTY UNINCORPORATED AREAS 320003 2615 E
HENDERSON, CITY OF 320005 2615 E
REVISED TO REFLECT LOMR DATED FEB 0 8 2006
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C2615 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency

HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN D.B. OUTFALL CHANNEL)

CHANNEL PLAN & PROFILE





LEGEND

MAINTENANCE ROAD

NORTH

CURVE DATA

CURVE NO.	RADIUS	DELTA	LENGTH
C1	500.00'	2°27'52"	21.51'
C2	30.00'	91°16'42"	47.79'
C3	30.00'	89°26'04"	46.83'
C4	150.00'	11°25'15"	29.90'
C5	20.00'	40°16'17"	14.06'
C6	32.00'	40°16'17"	22.49'
C7	256.00'	5°24'28"	78.54'
C8	244.00'	5°24'28"	23.03'
C9	250.00'	16°37'06"	72.51'

DESIGN POINT DATA

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	12659.5323	9785.3288	1984.6±	FL P.C.
2	12660.3995	9857.6987	1985.2±	FL P.T.
3	12689.6959	9814.8655	XX	MAINT. ROAD P.T.
4	12690.2206	9826.8628	XX	MAINT. ROAD P.T.
5	12758.0572	9826.4848	XX	MAINT. ROAD P.C.
6	12757.9903	9814.4849	XX	MAINT. ROAD P.C.
7	12770.8918	9809.6728	XX	MAINT. ROAD P.T.
8	12778.6996	9818.7854	XX	MAINT. ROAD P.T.
9	12865.7582	9728.3896	XX	MAINT. ROAD P.C.
10	12873.5660	9737.5022	XX	MAINT. ROAD P.T.
11	12884.8207	9713.5570	XX	MAINT. ROAD P.T.
12	12891.7349	9723.3648	XX	MAINT. ROAD P.T.

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

40 0 20 40 80 160

GRAPHIC SCALE 1"=40'

PROFESSIONAL ENGINEER-STATE OF NEVADA
JEFFREY P. GRIEST
EXP. 12-91-07
CIVIL
No. 17158

Avoid cutting underground utility lines. It's costly.

IT'S THE LAW
1-800-227-2600
UNDERGROUND SERVICE (USA)

Call before you Dig

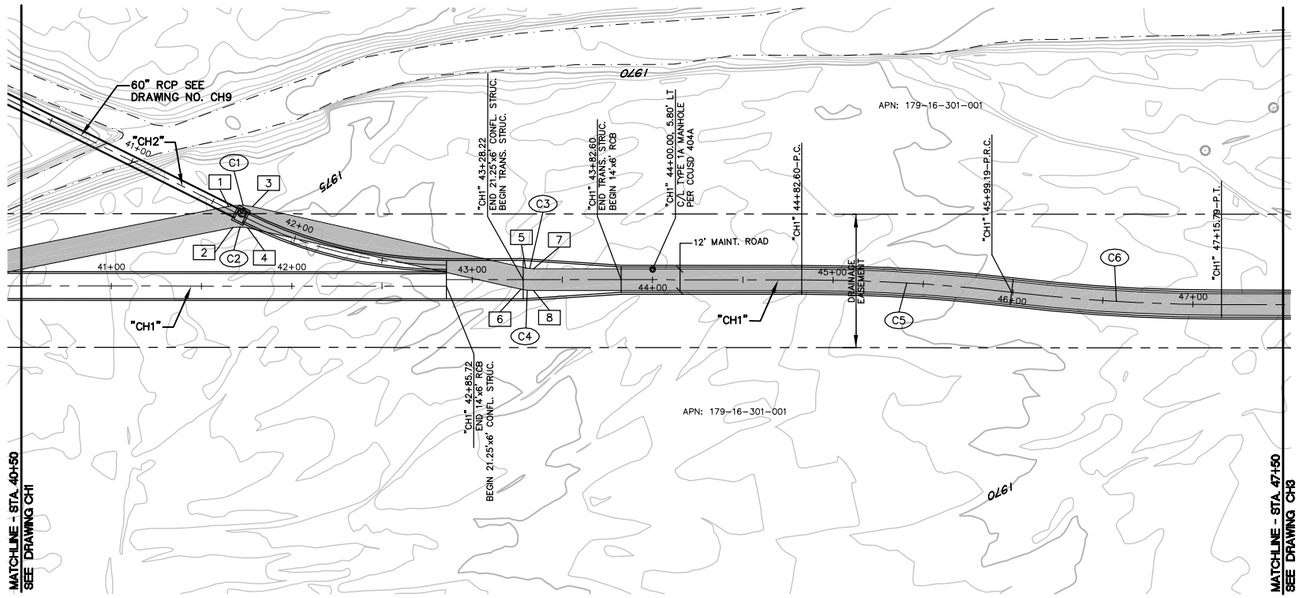
City of Henderson, Nevada
Department of Public Works
Engineering Services Division

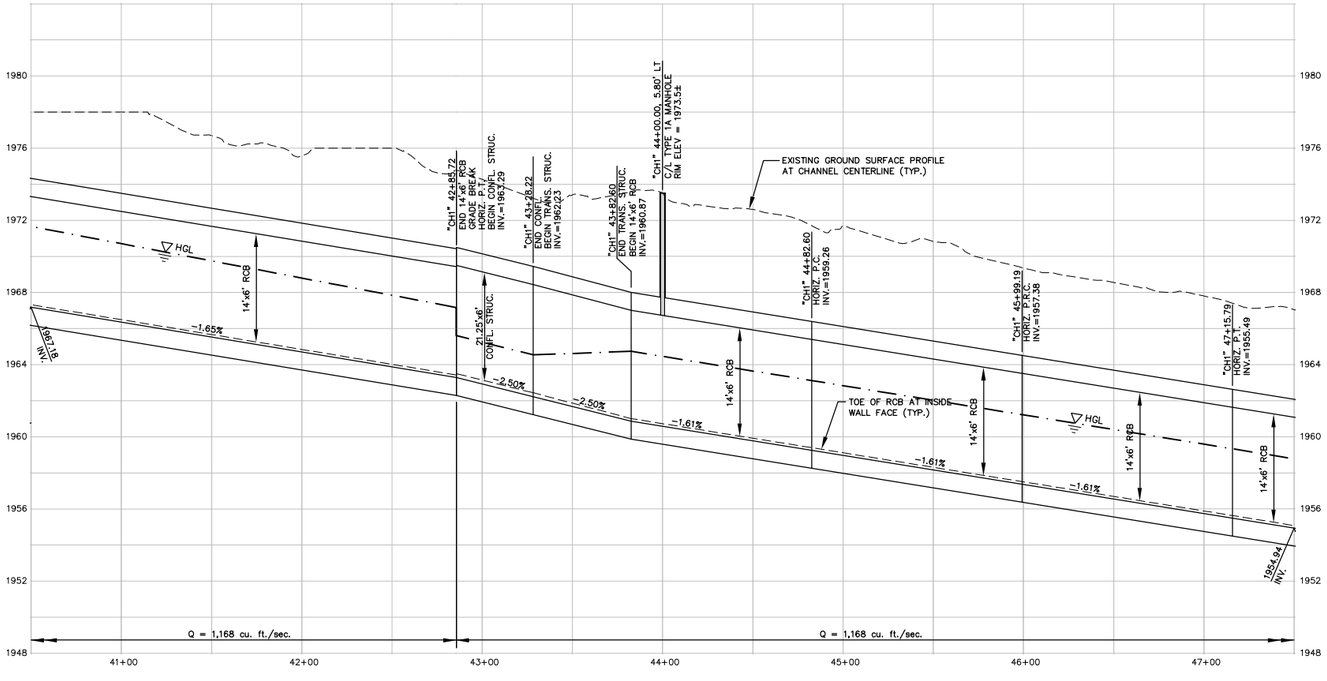
HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
CHANNEL PLANS

SCALE :	DATE : AUG. 2007	DRAWING No.	
HORIZONTAL : 1"=40'	DRAWN : DKP	CH1	
VERTICAL : 1"=4'	CHECKED : JNG	SHEET No. -	
		COH DRAWING No.	

VTN
2727 SOUTH RAINBOW BOULEVARD
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PH. (702) 873-7550
FAX (702) 362-2597
WEB SITE WWW.VTNNV.COM

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LEGEND

MAINTENANCE ROAD

NORTH

CURVE DATA

CURVE NO.	RADIUS	DELTA	LENGTH
C1	32.00'	23°49'17"	13.30'
C2	20.00'	23°49'17"	8.32'
C3	20.00'	12°36'39"	4.40'
C4	32.00'	12°36'39"	7.04'
C5	1000.00'	6°40'50"	116.60'
C6	1000.00'	6°40'50"	116.60'

DESIGN POINT DATA

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	13065.8219	9585.9563	XX	MAINT. ROAD P.C.
2	13072.7361	9595.7642	XX	MAINT. ROAD P.C.
3	13077.9560	9580.7376	XX	MAINT. ROAD P.T.
4	13080.3200	9592.5024	XX	MAINT. ROAD P.T.
5	13230.1880	9550.1492	XX	MAINT. ROAD P.C.
6	13232.5522	9561.9132	XX	MAINT. ROAD P.C.
7	13234.3739	9548.8159	XX	MAINT. ROAD P.T.
8	13239.2495	9559.7808	XX	MAINT. ROAD P.T.

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

40 0 20 40 80 160

GRAPHIC SCALE 1"=40'

PROFESSIONAL ENGINEER-STATE OF NEVADA
JEFFREY N. GRIEST
EXP. 12-31-07
CIVIL
No. 17158

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UNDERGROUND SERVICE (USA)

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City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
CHANNEL PLANS

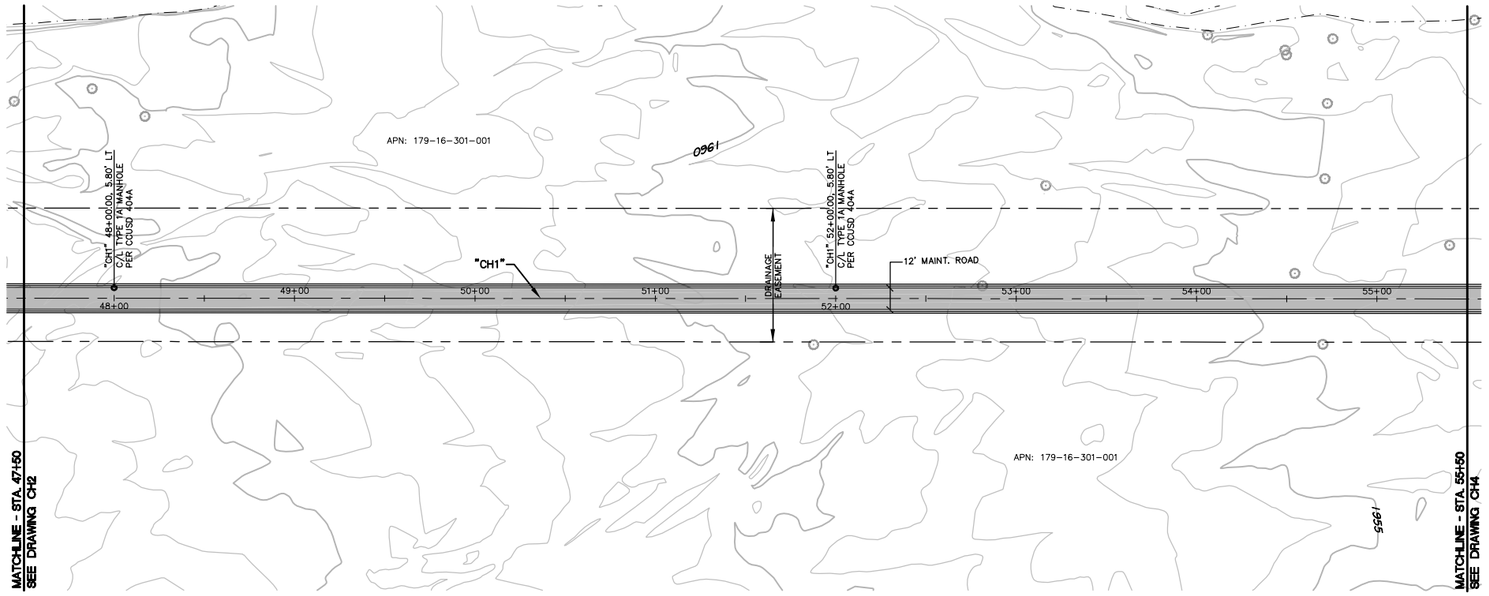
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HORIZONTAL : 1"=40'
VERTICAL : 1"=4'

DATE : AUG. 2007
DRAWN : DKP
CHECKED : JNG

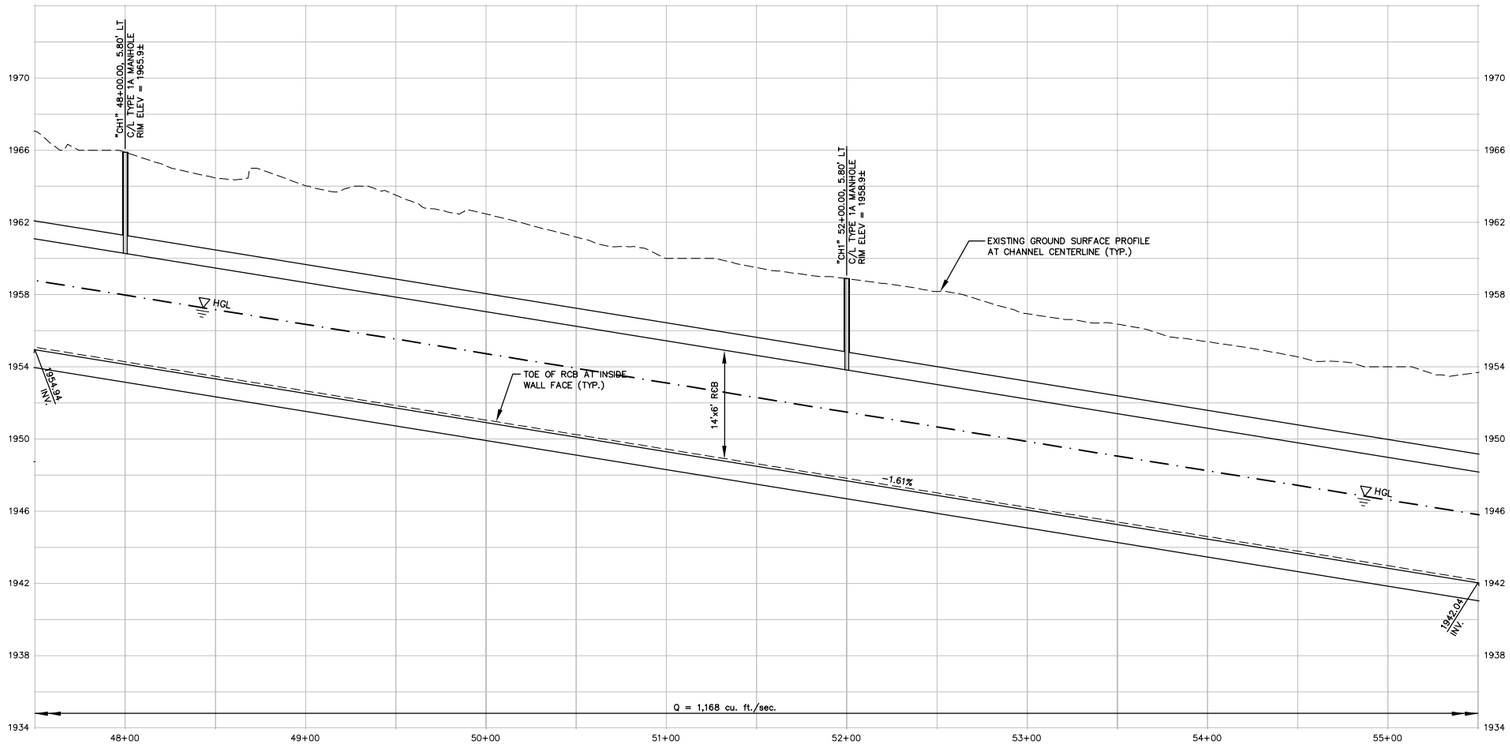
DRAWING No. CH2
SHEET No. -
COH DRAWING No.

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LEGEND

MAINTENANCE ROAD

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

40 0 20 40 80 160

GRAPHIC SCALE 1"=40'

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JEFFREY N. GRIEST
EXP. 12-31-07
CIVIL
No. 17158

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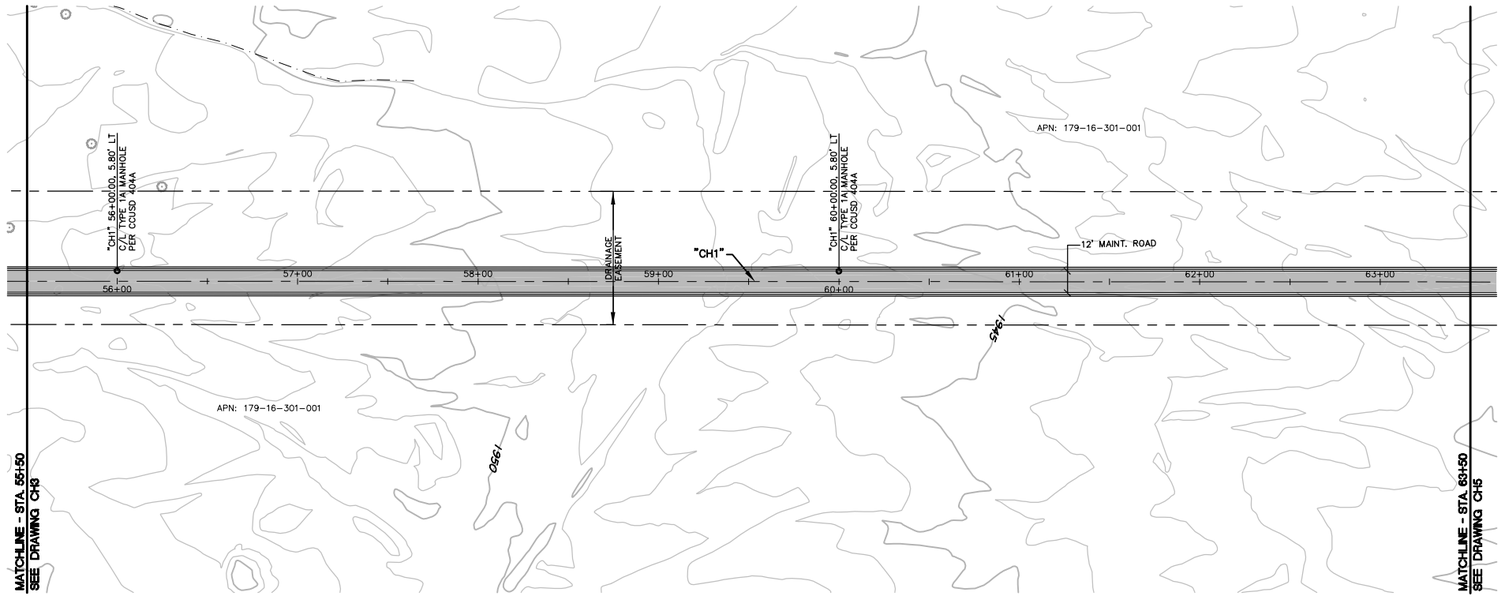
City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
CHANNEL PLANS

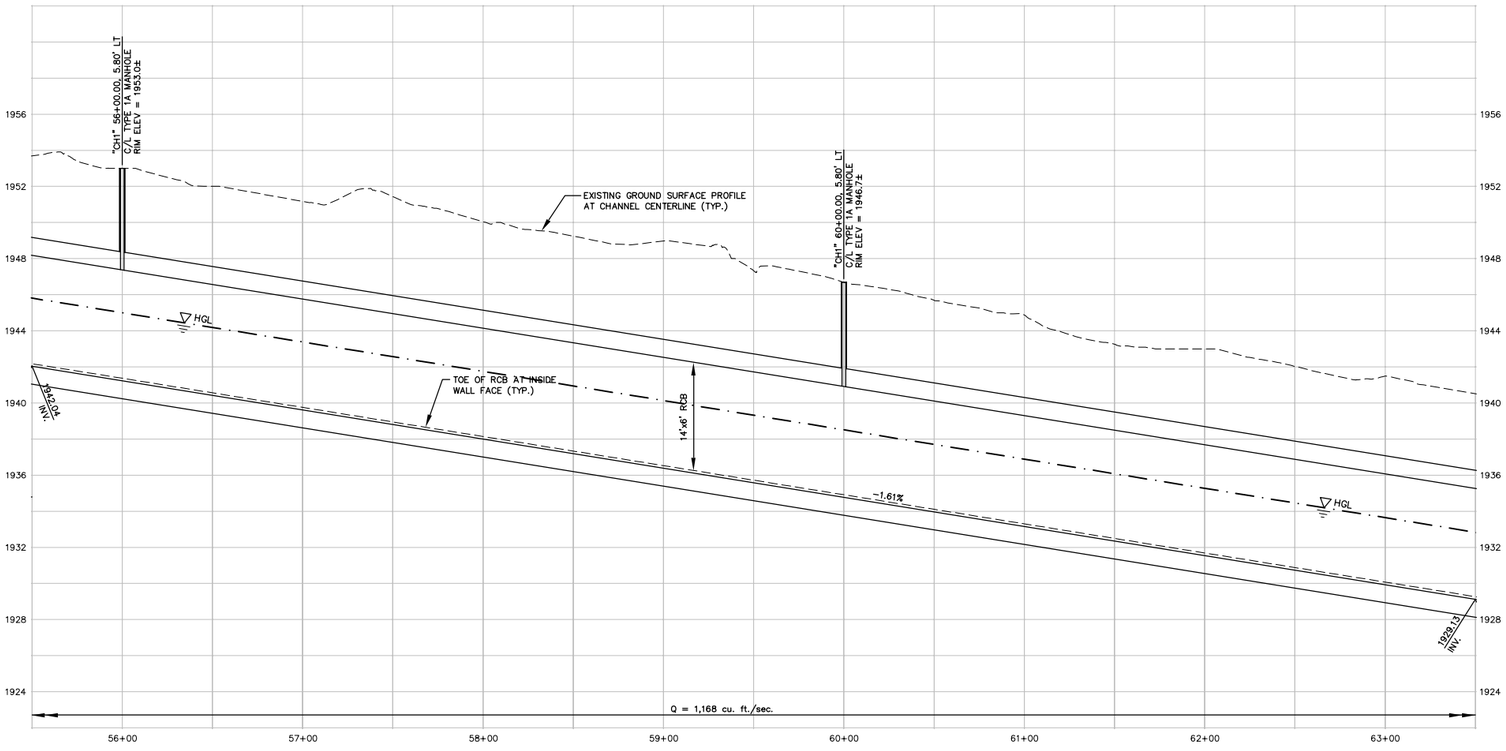
SCALE :		DATE : AUG. 2007	DRAWING No. CH3
HORIZONTAL :	1"=40'	DRAWN : DKP	SHEET No. -
VERTICAL :	1"=4'	CHECKED : JNG	COH DRAWING No.

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LEGEND

MAINTENANCE ROAD

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

40 0 20 40 80 160

GRAPHIC SCALE 1"=40'

PROFESSIONAL ENGINEER-STATE OF NEVADA
JEFFREY N. GRIEST
EXP. 12-31-07
CIVIL
No. 17158

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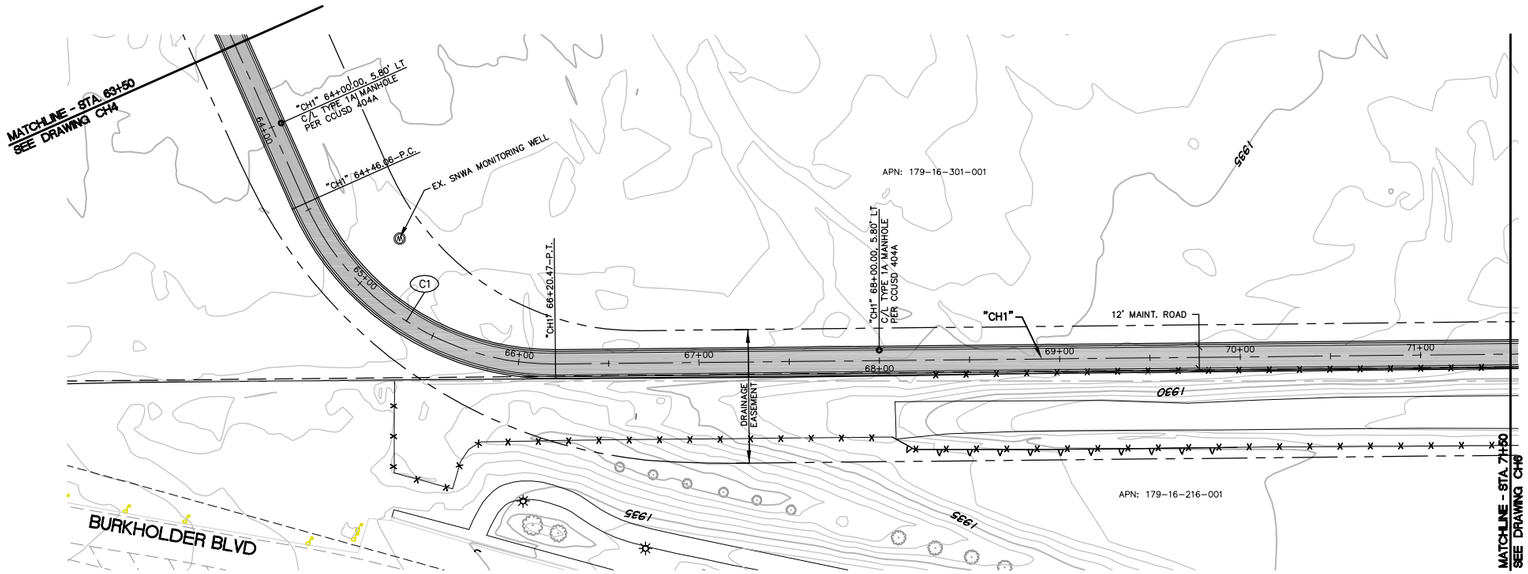
City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
CHANNEL PLANS

SCALE :	DATE : AUG. 2007	DRAWING No.
HORIZONTAL : 1"=40'	DRAWN : DKP	CH4
VERTICAL : 1"=4'	CHECKED : JNG	SHEET No. -
		COH DRAWING No.

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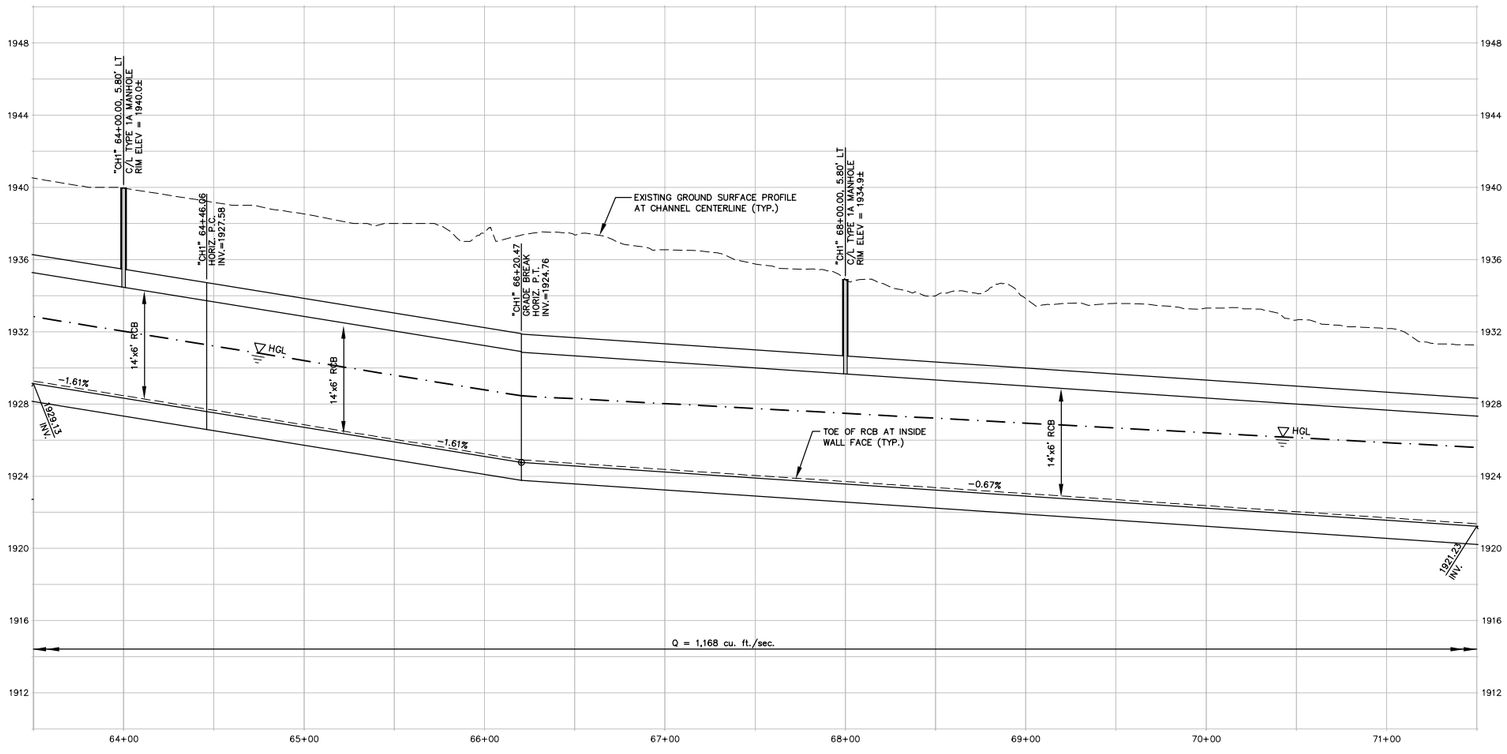
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CURVE DATA

CURVE NO.	RADIUS	DELTA	LENGTH
C1	150.00'	66°37'01"	174.40'



LEGEND

MAINTENANCE ROAD

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

40 0 20 40 80 160

GRAPHIC SCALE 1"=40'

PROFESSIONAL ENGINEER-STATE OF NEVADA
JEFFREY N. GRIEST
EXP. 12-31-07
CIVIL
No. 17158

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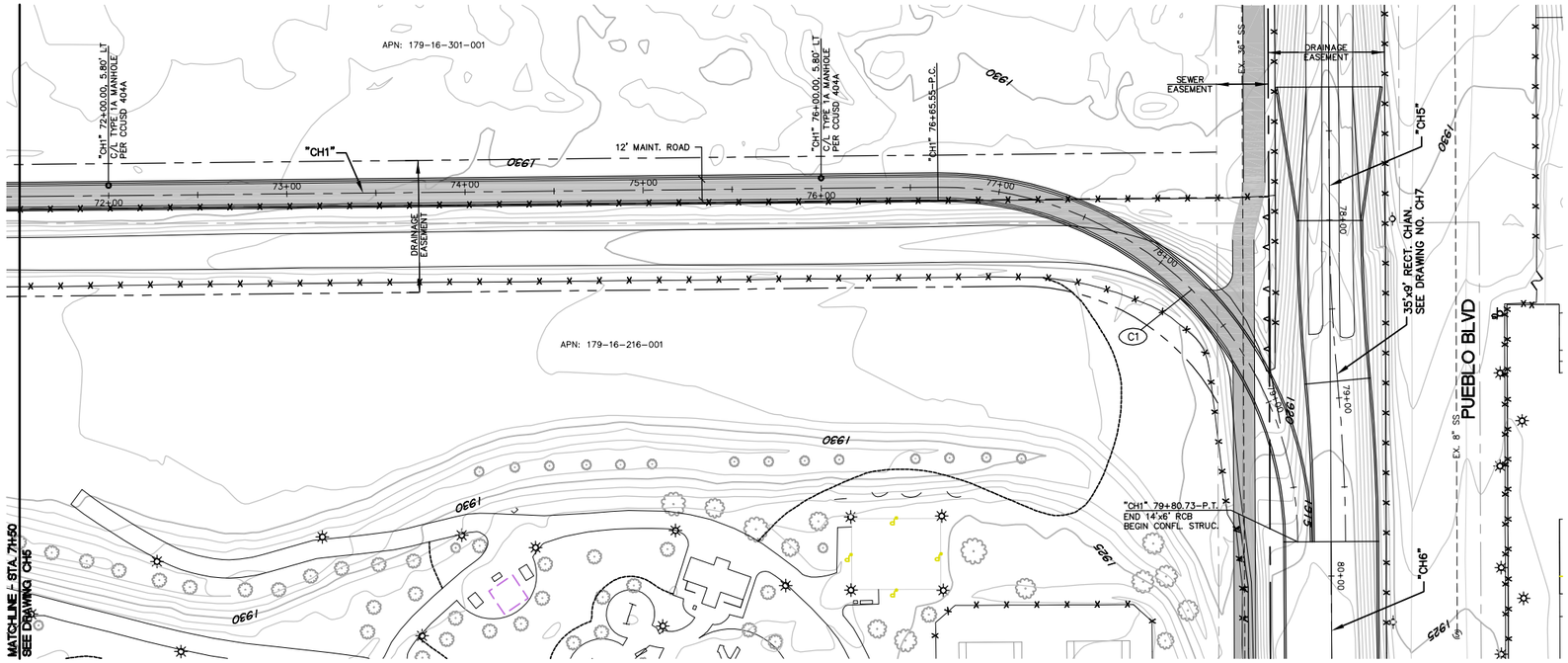
City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
CHANNEL PLANS

SCALE :	DATE : AUG. 2007	DRAWING No.	CH5
HORIZONTAL : 1"=40'	DRAWN : DKP	SHEET No.	-
VERTICAL : 1"=4'	CHECKED : JNG	COH DRAWING No.	

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NOTE

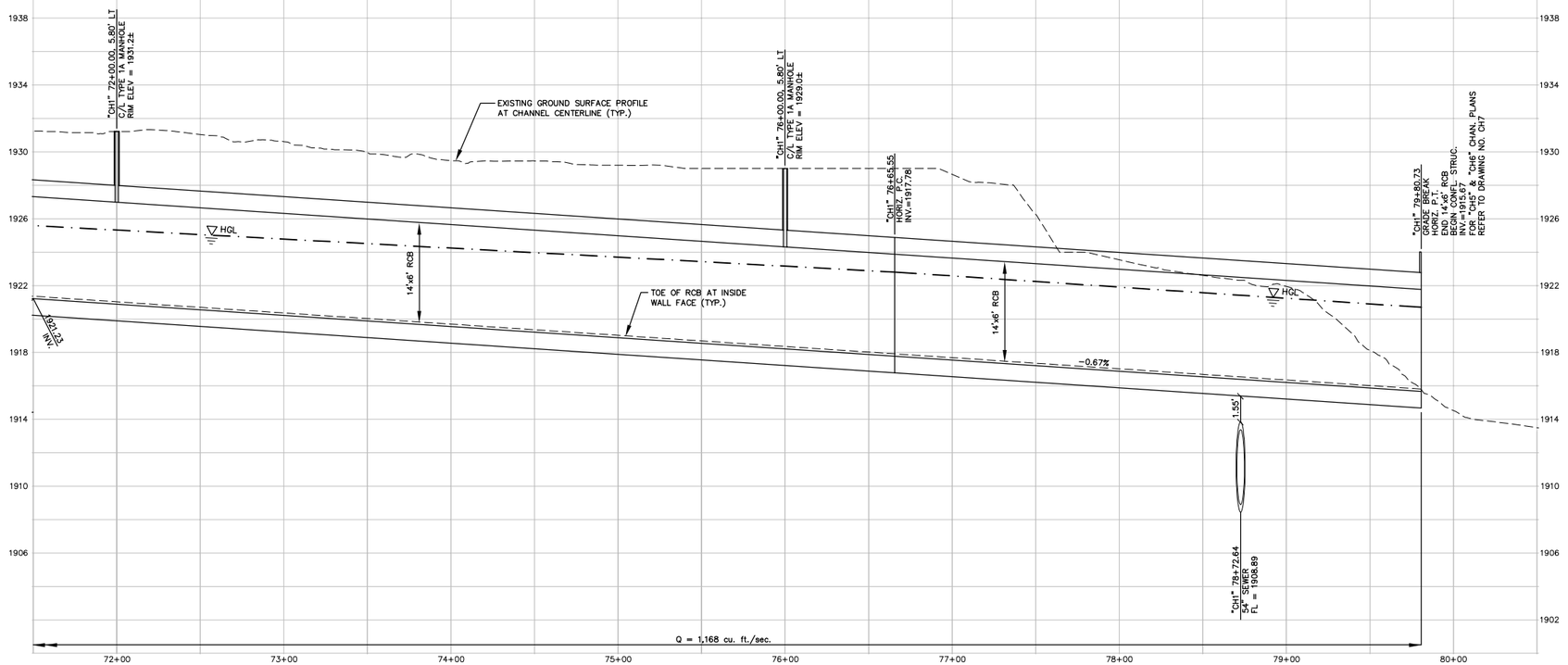
FOR MAINTENANCE ROAD INFORMATION SEE DRAWING NO. CH7.

LEGEND

MAINTENANCE ROAD

CURVE DATA

CURVE NO.	RADIUS	DELTA	LENGTH
C1	200.00'	90°17'34"	315.18'



Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

40 0 20 40 80 160

GRAPHIC SCALE 1"=40'

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JEFFREY N. GRIEST
EXP. 12-31-07
CIVIL
No. 17156

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Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
CHANNEL PLANS

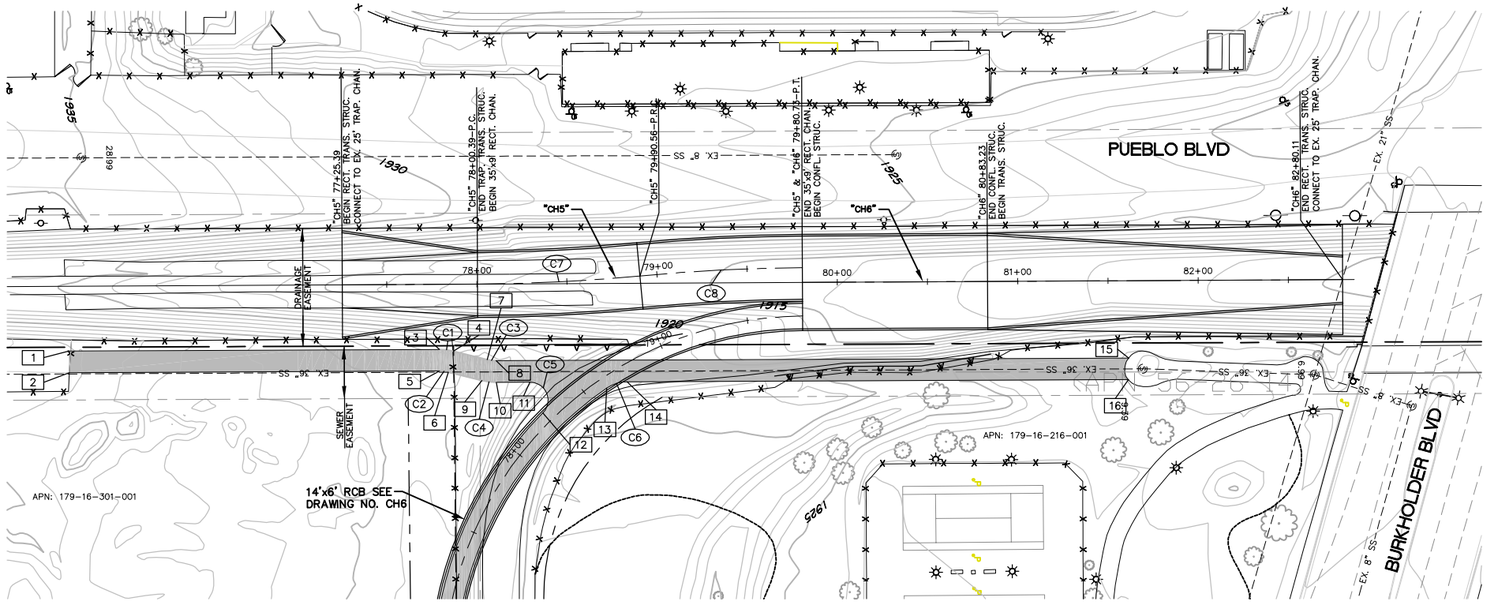
SCALE :
HORIZONTAL : 1"=40'
VERTICAL : 1"=4'

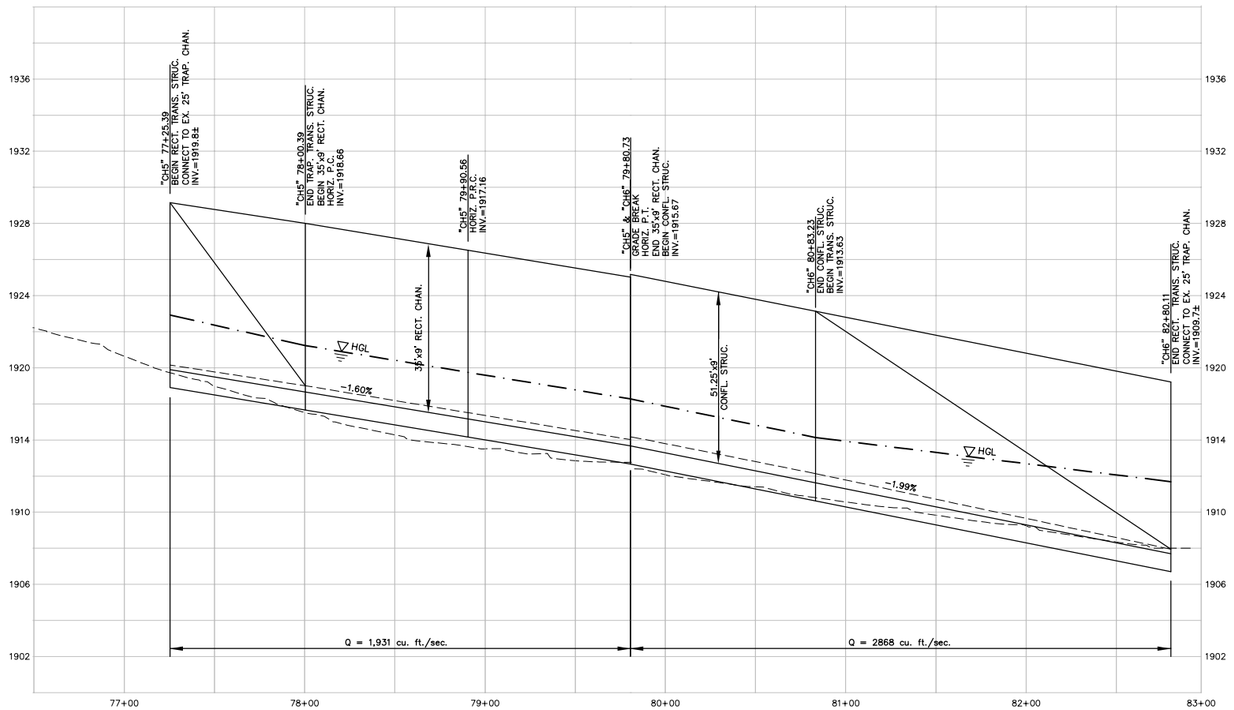
DATE : AUG. 2007
DRAWN : DKP
CHECKED : JNG

DRAWING No. CH6
SHEET No. -
COH DRAWING No.

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LEGEND

MAINTENANCE ROAD

NORTH

CURVE DATA

CURVE NO.	RADIUS	DELTA	LENGTH
C1	32.00'	14°18'23"	7.99'
C2	20.00'	14°18'23"	4.99'
C3	20.00'	14°18'21"	4.99'
C4	32.00'	14°18'21"	7.99'
C5	10.00'	135°28'18"	23.64'
C6	20.00'	34°09'21"	11.92'
C7	1000.00'	5°09'59"	90.17'
C8	1000.00'	5°09'59"	90.17'

DESIGN POINT DATA

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	15042.4145	7342.4901	XX	FL P.C.
2	15042.4646	7354.4900	XX	FL P.T.
3	15247.6120	7341.6334	XX	MAINT. ROAD P.T.
4	15255.5235	7342.5928	XX	MAINT. ROAD P.T.
5	15247.6617	7353.6333	XX	MAINT. ROAD P.C.
6	15252.6066	7354.2329	XX	MAINT. ROAD P.C.
7	15274.1208	7347.2530	XX	MAINT. ROAD P.T.
8	15279.0653	7347.8527	XX	MAINT. ROAD P.T.
9	15271.2039	7358.8931	XX	MAINT. ROAD P.C.
10	15279.1151	7359.8526	XX	MAINT. ROAD P.C.
11	15297.8210	7359.7749	XX	MAINT. ROAD P.T.
12	15304.9047	7376.8746	XX	MAINT. ROAD P.T.
13	15340.3868	7363.0478	XX	MAINT. ROAD P.T.
14	15351.6013	7359.5514	XX	MAINT. ROAD P.T.
15	15629.6241	7346.3842	XX	MAINT. ROAD P.T.
16	15629.4592	7358.3970	XX	MAINT. ROAD P.T.

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

40 0 20 40 80 160

GRAPHIC SCALE 1"=40'

PROFESSIONAL ENGINEER-STATE OF NEVADA
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EXP. 12-31-07
CIVIL
No. 17166

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Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
CHANNEL PLANS

SCALE :
HORIZONTAL : 1"=40'
VERTICAL : 1"=4'

DATE : AUG. 2007
DRAWN : DKP
CHECKED : JNG

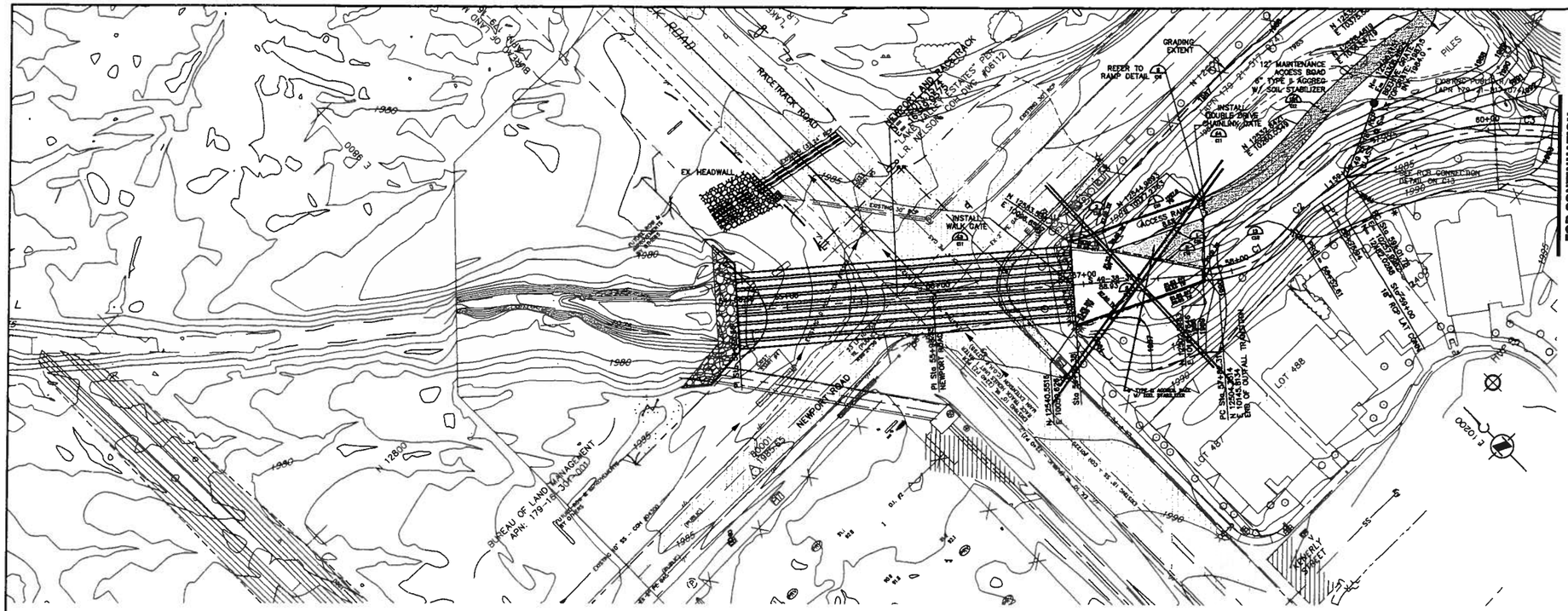
DRAWING No. CH7
SHEET No. -
COH DRAWING No.

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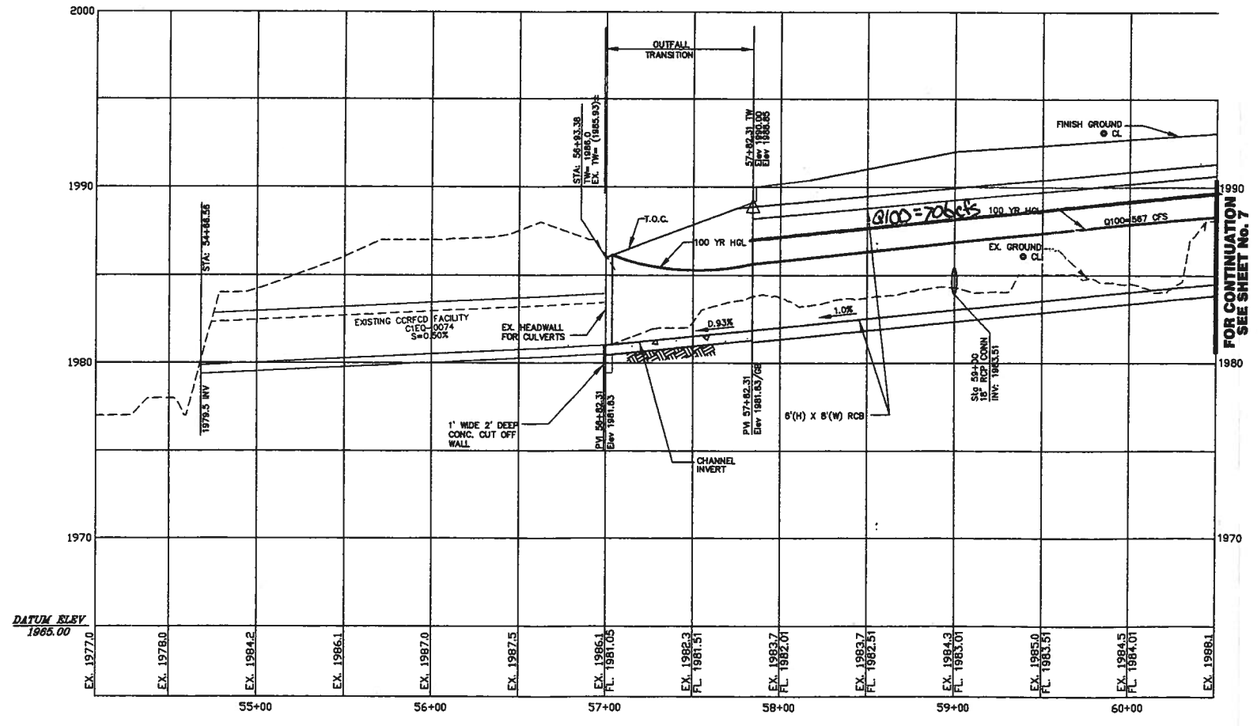
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EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL

CHANEL PLAN & PROFILE



STORM DRAIN PLAN STA 54+68.21 TO STA 60+00



CONSTRUCTION NOTES

1. CONSTRUCT 6' (H) X 8' (W) RCB PER PLAN AND PROFILE AS SHOWN.
2. CONSTRUCT MANHOLES PER PLAN AND PROFILE AS SHOWN, AND DETAILS ON SHEET C12.
3. MAINTENANCE ACCESS ROAD TO BE CONSTRUCTED W/ 6" OF TYPE II AGGREGATE BASE AS SHOWN ON PLAN, WITH SOIL STABILIZER (TYP)
4. PROJECT R/W (TEMPORARY CONSTRUCTION EASEMENT) AS DEFINED ON SHEET C15.
5. CONSTRUCT BEEHIVE DROP INLET PER CLARK COUNTY STD. DWG. #416
6. MANWAY AREAS TO BE 5' WIDE WITH 6" THICK TYPE II AGGREGATE. (W/ SOIL STABILIZER)

CITY OF HENDERSON BENCHMARK

BENCH MARK NO. 631
ALUMINUM CAP IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF RACETRACK ROAD AND ZURICH AVENUE.
ELEVATION:
FEET = 1978.23' (NAVD88)
METERS = 602.967 M (NAVD88)

BASIS OF BEARING

NORTH 00°15'03" WEST, BEING THE CENTERLINE OF A PORTION OF RACETRACK ROAD AS SHOWN BY MAP IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 11, PAGE 40 OR PARCEL MAPS.

STORM DRAIN CONTROL CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA
C1	76.36	80.00	54°21'00"
C2	24.33	80.00	17°25'39"
C3	253.64	187.00	77°31'51"
C4	78.76	200.00	22°33'42"
C5	85.13	200.00	24°23'22"
C6	145.88	140.00	59°42'15"

STORM DRAIN CONTROL LINE TABLE

LINE	LENGTH	BEARING
L1	84.84	S80°58'36"E
L2	277.35	S02°50'47"E
L3	398.86	S25°53'59"E
L4	355.71	S01°16'07"E
L5	99.59	S60°49'21"E
L6	278.88	S83°33'47"E

QUANTITIES

DESCRIPTION	
EXCAVATION	4125 CY
COMPACTION	4549 CY
TYPE II ACCESS ROAD	641 CY
DROP INLETS	1 EA
18" RCP	98 LF
8 FT(W) X 6 ST(H) RCB'S	219.5 LF
72" CHAINLINK FENCE	276 LF
14' METAL DRIVE GATE	1 EA
5' METAL WALK GATE	1 EA

NOTE: CONTRACTOR TO VERIFY QUANTITY ESTIMATES

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40 0 20 40 80 180
GRAPHIC SCALE 1"=40'

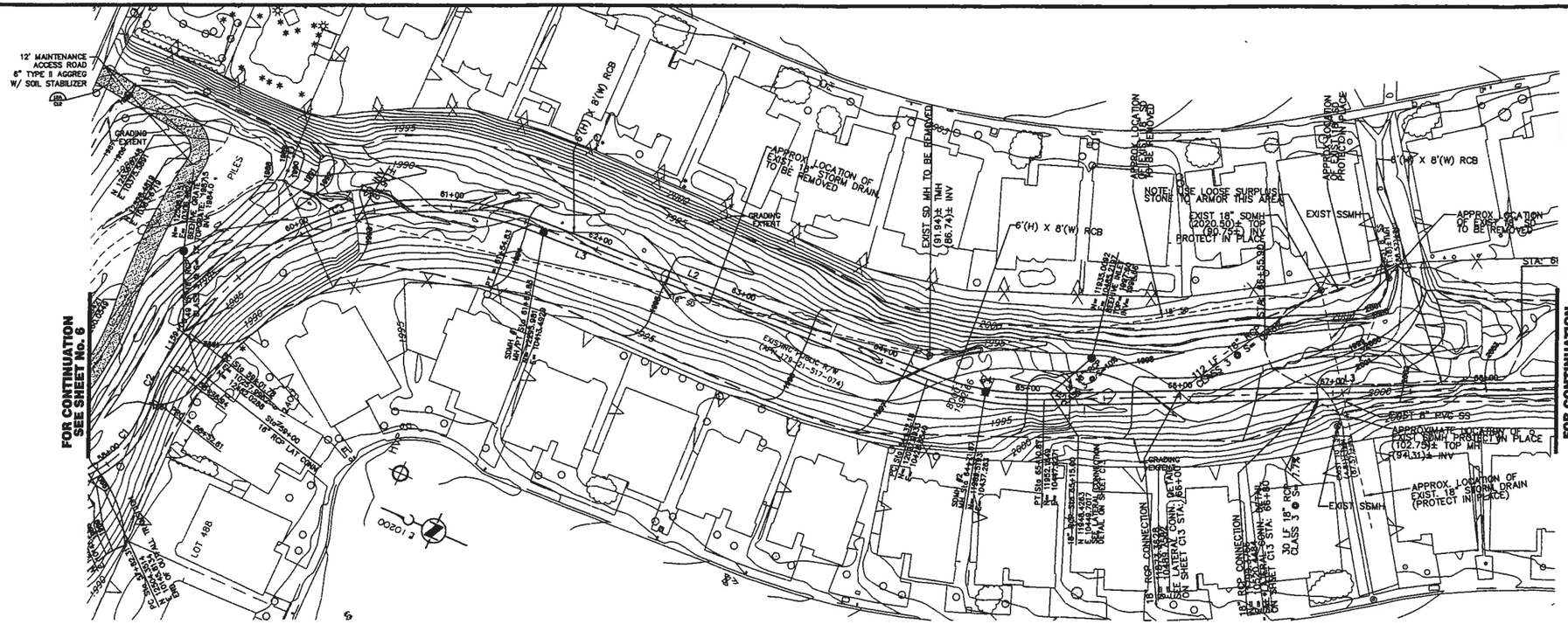
Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

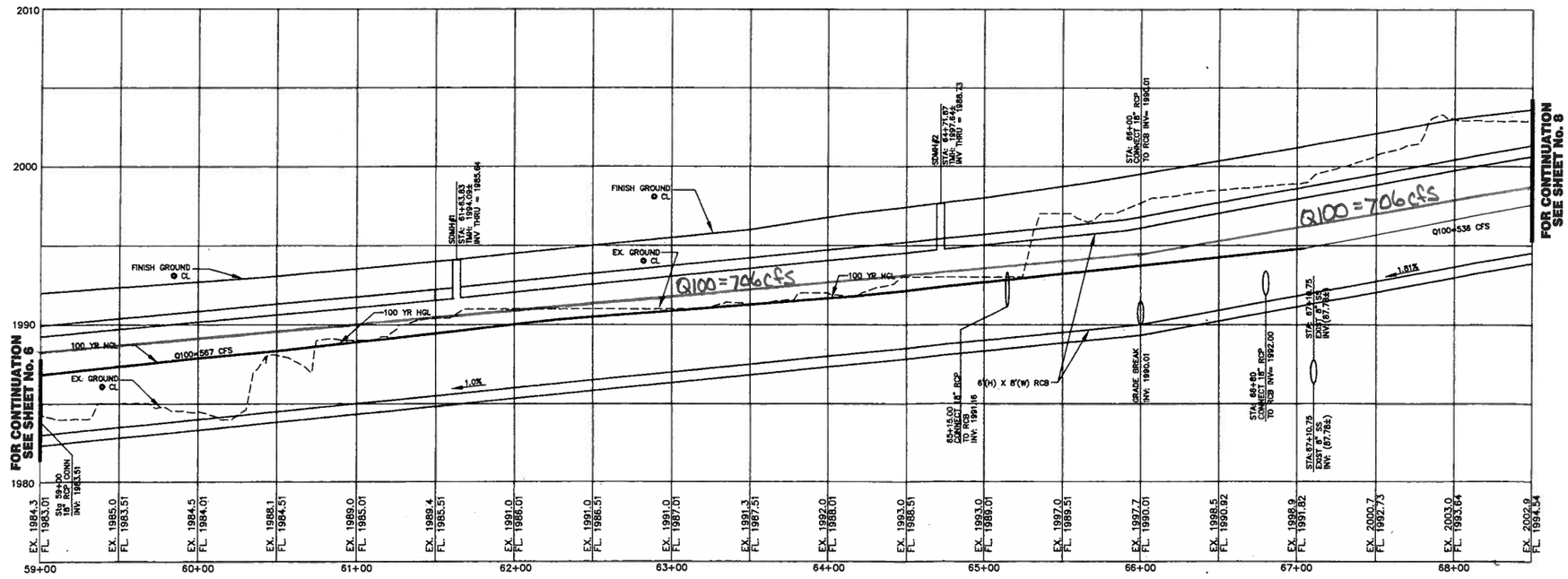
City of Henderson, Nevada
Department of Public Works
Engineering Services Division

Equestrian Detention Basin Outfall Channel
Storm Drain Plan and Profile
Sta. 54+58.33 - Sta. 60+00.00

SCALE :	DATE : JULY 2007	SHEET No. 6
HORIZONTAL : 1"=40'	DRAWN : TAD	
VERTICAL : 1"=4'	CHECKED : RLH	
	REVIEWED :	DRAWING No. C2



STORM DRAIN PLAN STA 60+00.00 TO STA 68+00



CONSTRUCTION NOTES

1. CONSTRUCT 6' (H) X 8' (W) RCB PER PLAN AND PROFILE AS SHOWN.
2. CONSTRUCT MANHOLES PER PLAN AND PROFILE AS SHOWN, AND DETAILS ON SHEET C11.
3. MAINTENANCE ACCESS ROAD TO BE CONSTRUCTED W/ 6" OF TYPE II AGGREGATE BASE AS SHOWN ON PLAN, WITH SOIL STABILIZER (TYP)
4. PROJECT R/W (TEMPORARY CONSTRUCTION EASEMENT) AS DEFINED ON SHEET C15.
5. CONSTRUCT BEEHIVE DROP INLET PER CLARK COUNTY STD. DWG. #416
6. MANWAY AREAS TO BE 5' WIDE WITH 6" THICK TYPE II AGGREGATE. (W/ SOIL STABILIZER)

CITY OF HENDERSON BENCHMARK

BENCH MARK NO. 631
ALUMINUM CAP IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF RACETRACK ROAD AND ZURICH AVENUE.
ELEVATION:
FEET = 1978.23' (NAVD88)
METERS = 602.967 M (NAVD88)

BASIS OF BEARING

NORTH 00°15'03" WEST, BEING THE CENTERLINE OF A PORTION OF RACETRACK ROAD AS SHOWN BY MAP IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 11, PAGE 40 OR PARCEL MAPS.

STORM DRAIN CONTROL CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA
C1	70.39	80.00	50°21'00"
C2	24.33	80.00	17°25'38"
C3	253.04	187.00	77°31'51"
C4	78.70	200.00	22°32'42"
C5	85.13	200.00	24°23'22"
C6	145.88	140.00	59°42'15"

STORM DRAIN CONTROL LINE TABLE

LINE	LENGTH	BEARING
L1	24.84	S80°58'36"E
L2	277.35	S02°59'47"E
L3	398.86	S25°29'29"E
L4	355.71	S01°00'07"E
L5	99.59	S60°42'21"E
L6	278.88	S83°33'47"E

QUANTITIES

DESCRIPTION	
EXCAVATION	3283 CY±
COMPACTION	8241CY±
TYPE II ACCESS ROAD	20 CY ±
DROP INLETS	1 EA
18" RCP	177 LF±
8 FT(W) X 6 FT(H) RCB'S	800 LF ±

NOTE: CONTRACTOR TO VERIFY QUANTITY ESTIMATES

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40 0 20 40 80 160
GRAPHIC SCALE 1"=40'

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

City of Henderson, Nevada
Department of Public Works
Engineering Services Division

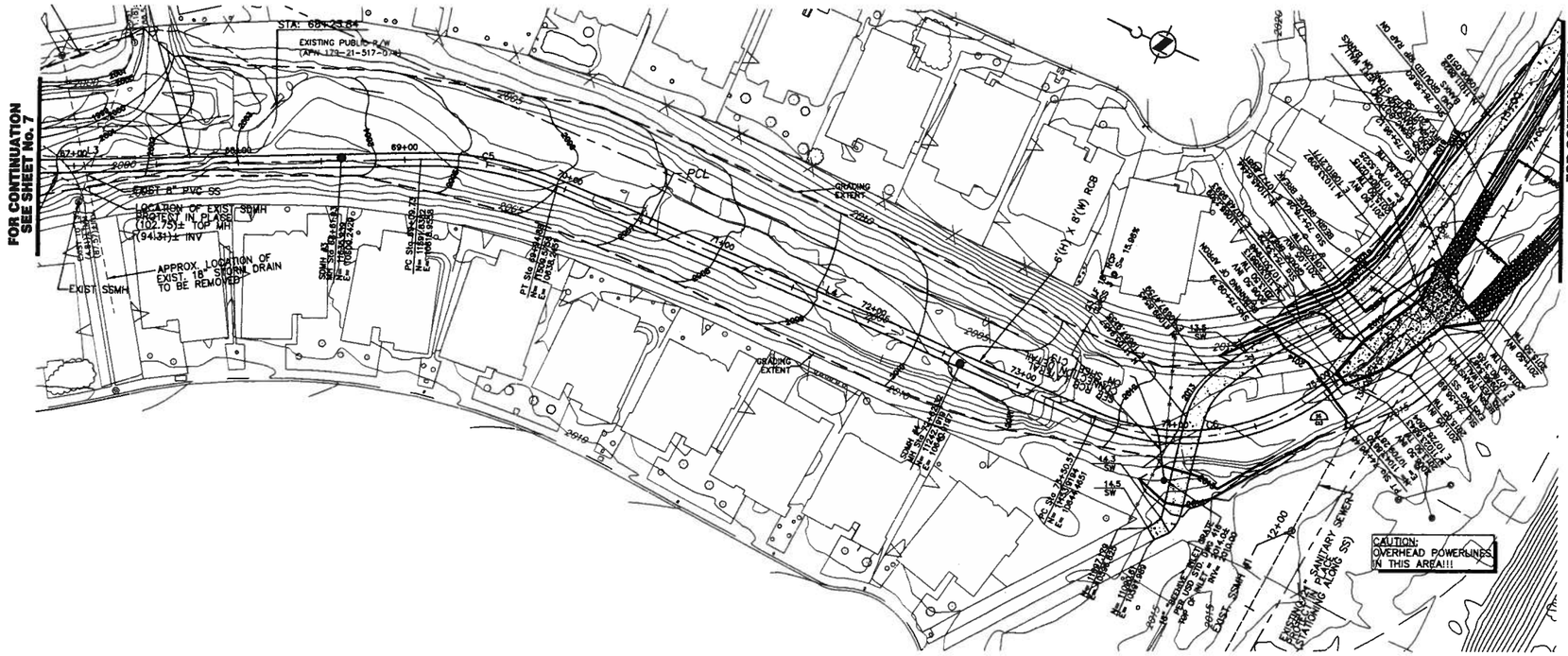
Equestrian Detention Basin Outfall Channel
Storm Drain Plan and Profile
Sta. 60+00.00 - Sta. 68+00.00

SCALE :
HORIZONTAL : 1"=40'
VERTICAL : 1"=4'

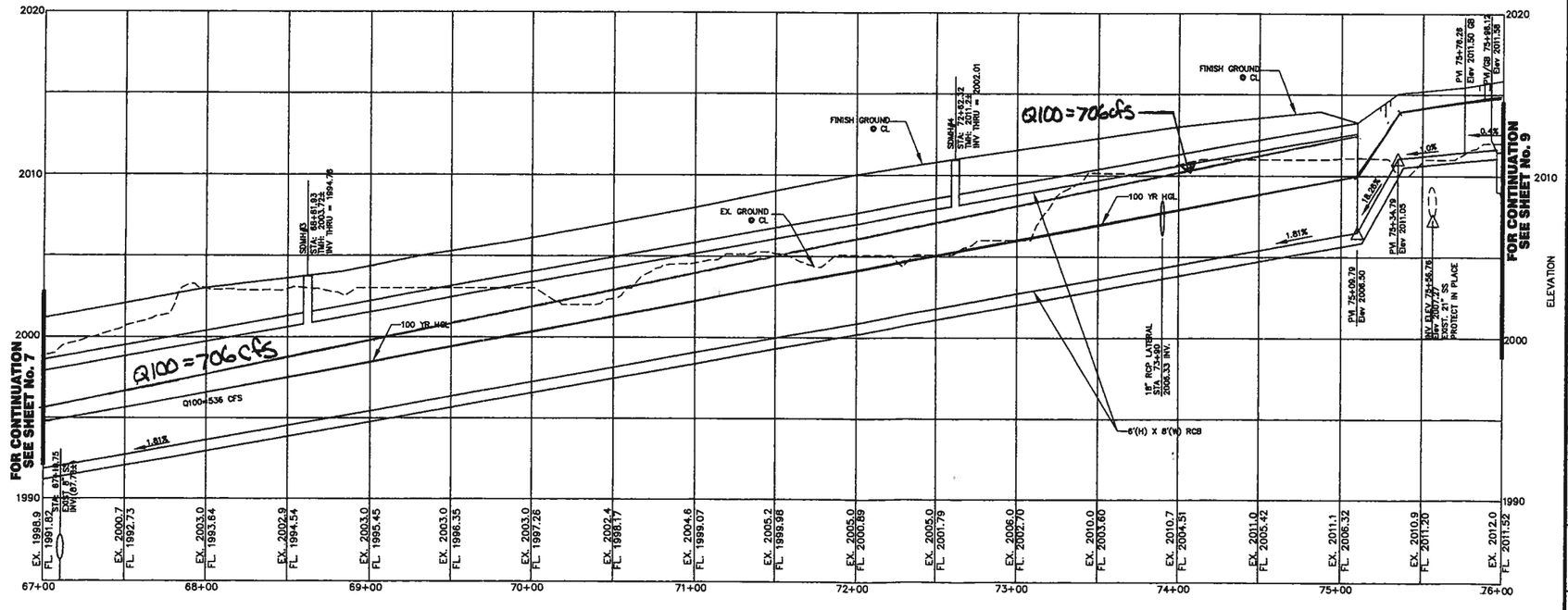
DATE : AUGUST 2007
DRAWN : TAD
CHECKED : RLH
REVIEWED :

SHEET No. 7

DRAWING No. C3



STORM DRAIN PLAN STA 68+00 TO STA 76+00



CONSTRUCTION NOTES

1. CONSTRUCT 6' (H) X 8' (W) RCB PER PLAN AND PROFILE AS SHOWN.
2. CONSTRUCT MANHOLES PER PLAN AND PROFILE AS SHOWN, AND DETAILS ON SHEET C11.
3. MAINTENANCE ACCESS ROAD TO BE CONSTRUCTED W/ 6" OF TYPE II AGGREGATE BASE AS SHOWN ON PLAN, WITH SOIL STABILIZER (TYP)
4. PROJECT R/W (TEMPORARY CONSTRUCTION EASEMENT) AS DEFINED ON SHEET C15.
5. CONSTRUCT BEEHIVE DROP INLET PER CLARK COUNTY STD. DWG. #416
6. MANWAY AREAS TO BE 5' WIDE WITH 6" THICK TYPE II AGGREGATE. (W/ SOIL STABILIZER)

CITY OF HENDERSON BENCHMARK

BENCH MARK NO. 631
ALUMINUM CAP IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF RACETRACK ROAD AND ZURICH AVENUE.
ELEVATION:
FEET = 1978.23' (NAVD88)
METERS = 602.967 M (NAVD88)

BASIS OF BEARING

NORTH 00°15'03" WEST, BEING THE CENTERLINE OF A PORTION OF RACETRACK ROAD AS SHOWN BY MAP IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 11, PAGE 40 OR PARCEL MAPS.

STORM DRAIN CONTROL CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA
C1	70.30	80.00	50°21'00"
C2	24.33	80.00	17°25'38"
C3	253.04	187.00	77°31'51"
C4	78.70	200.00	22°32'42"
C5	85.13	200.00	24°23'22"
C6	145.88	140.00	59°42'15"

STORM DRAIN CONTROL LINE TABLE

LINE	LENGTH	BEARING
L1	24.84	S80°58'36"E
L2	277.35	S02°59'47"E
L3	398.86	S23°23'29"E
L4	355.71	S01°00'07"E
L5	99.59	S60°42'21"E
L6	278.88	S83°33'47"E

QUANTITIES

DESCRIPTION	
EXCAVATION	4128 CY
COMPACTION	8563 CY
CONCRETE SIDEWALK	58 CY
DROP INLETS	1 EA
18" RCP	23 LF
8 FT(W) X 6 ST(H) RCB'S	709.79 LF

NOTE: CONTRACTOR TO VERIFY QUANTITY ESTIMATES

Avoid cutting underground utility lines. It's costly.

Call before you Dig

IT'S THE LAW
1-800-227-2600
UNDERGROUND SERVICE (USA)

40 0 20 40 80 160
GRAPHIC SCALE 1"=40'

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

City of Henderson, Nevada
Department of Public Works
Engineering Services Division

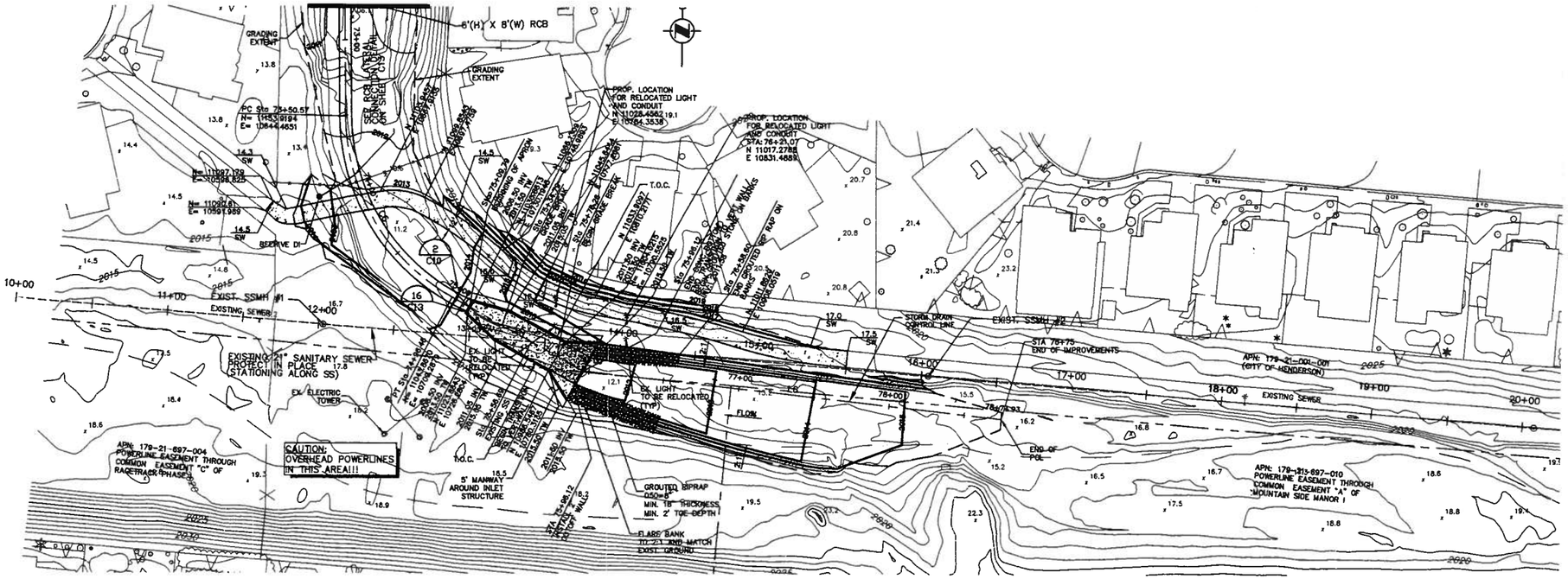
Equestrian Detention Basin Outfall Channel
Storm Drain Plan and Profile
Sta. 68+00.00 - Sta. 76+00.00

SCALE :
HORIZONTAL : 1"=40'
VERTICAL : 1"=4'

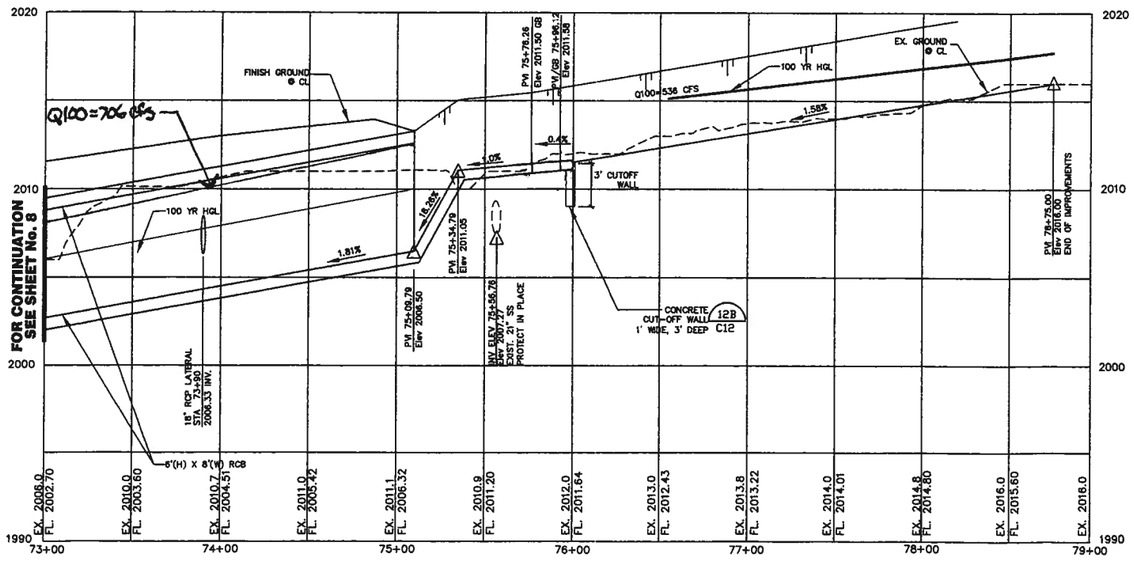
DATE : JULY 2007
DRAWN : TAD
CHECKED : RLH
REVIEWED :

SHEET No. 8

DRAWING No. C4



STORM DRAIN PLAN STA 76+00 TO STA 78+75.00



CONSTRUCTION NOTES

1. CONSTRUCT 6' (H) X 8' (W) RCB PER PLAN AND PROFILE AS SHOWN.
2. CONSTRUCT MANHOLES PER PLAN AND PROFILE AS SHOWN, AND DETAILS ON SHEET C11.
3. MAINTENANCE ACCESS ROAD TO BE CONSTRUCTED W/ 6" OF TYPE II AGGREGATE BASE AS SHOWN ON PLAN, WITH SOIL STABILIZER (TYP)
4. PROJECT R/W (TEMPORARY CONSTRUCTION EASEMENT) AS DEFINED ON SHEET C15.
5. CONSTRUCT BEEHIVE DROP INLET PER CLARK COUNTY STD. DWG. #416
6. MANWAY AREAS TO BE 5' WIDE WITH 6" THICK TYPE II AGGREGATE. (W/ SOIL STABILIZER)

CITY OF HENDERSON BENCHMARK

BENCH MARK NO. 631
ALUMINUM CAP IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF RACETRACK ROAD AND ZURICH AVENUE.
ELEVATION:
FEET = 1978.23' (NAVD88)
METERS = 602.967 M (NAVD88)

BASIS OF BEARING

NORTH 00°15'03" WEST, BEING THE CENTERLINE OF A PORTION OF RACETRACK ROAD AS SHOWN BY MAP IN THE OFFICE OF THE CLARK COUNTY, NEVADA RECORDER IN FILE 11, PAGE 40 OR PARCEL MAPS.

STORM DRAIN CONTROL CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA
C1	70.30	80.00	50°21'00"
C2	24.33	80.00	17°25'38"
C3	253.64	197.00	77°31'51"
C4	78.70	200.00	22°32'42"
C5	95.13	200.00	24°22'22"
C6	145.88	140.00	59°42'15"

STORM DRAIN CONTROL LINE TABLE

LINE	LENGTH	BEARING
L1	24.84	S89°58'36"E
L2	277.35	S32°50'47"E
L3	398.86	S25°23'29"E
L4	355.71	S01°09'07"E
L5	99.59	S60°48'51"E
L6	278.88	S83°33'47"E

QUANTITIES

DESCRIPTION	
RELOCATE AREA LIGHTS	2 EA
EXCAVATION	980 CY
COMPACTION	1686 CY
GROUTED RIP-RAP	81 CY
TYPE II FOR MANWAY	17 CY

NOTE: CONTRACTOR TO VERIFY QUANTITY ESTIMATES

Avoid cutting underground utility lines. It's costly.
Call before you Dig
IT'S THE LAW
1-800-227-2600
UNDERGROUND SERVICE (USA)

40 0 20 40 80 160
GRAPHIC SCALE 1"=40'

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

City of Henderson, Nevada
Department of Public Works
Engineering Services Division

Equestrian Detention Basin Outfall Channel
Storm Drain Plan and Profile
Sta. 76+00.00 - Sta. 78+46.94

SCALE :
HORIZONTAL : 1"=40'
VERTICAL : 1"=4'

DATE : AUGUST 2007
DRAWN : TAD
CHECKED : RLH
REVIEWED :

SHEET No. 9

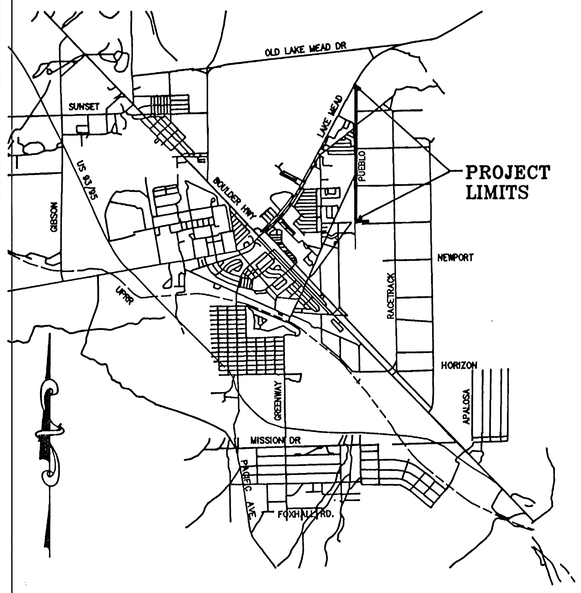
DRAWING No. C5

C-1 CHANNEL AS-BUILTS
LAKE MEAD DRIVE TO THE DRAKE/C1 CONFLUENCE

CHANNEL PLAN & PROFILE

LOCATION MAP

(NO SCALE)



CITY OF HENDERSON

CLARK COUNTY , NEVADA

DEPARTMENT OF PUBLIC WORKS

ENGINEERING DESIGN DIVISION

C1 CHANNEL

LAKE MEAD DRIVE TO THE DRAKE/C1 CONFLUENCE

FUNDED BY:

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT

CONTRACT NO. 93-94 *19

CONSTRUCTION DRAWINGS

PREPARED BY:

VTN NEVADA

MAYOR	CITY COUNCIL	CITY MANAGER
ROBERT GROESBECK	JACK CLARK PAUL RUTH ARTHUR A. HAFEN LARRY SCHEFFLER	PHILIP D. SPEIGHT

DIRECTOR OF PUBLIC WORKS

MARK T. CALHOUN

PROFESSIONAL ENGINEER STATE OF NEVADA No. 9177 KEITH A. GIBSON CIVIL 1-31-94

INDEX OF SHEETS

No.	DESCRIPTION
1.	COVER/TITLE SHEET, VICINITY MAP, INDEX AND APPROVALS
2.	GENERAL INFORMATION
3.	SURVEY CONTROL PLAN, C1 CHANNEL IMPROVEMENTS, STA. 28+80.11 TO STA. 72+00
4.	SURVEY CONTROL PLAN, C1 CHANNEL IMPROVEMENTS, STA. 72+00 TO STA. 116+00
5.	SURVEY CONTROL PLAN, C1 CHANNEL IMPROVEMENTS, STA. 116+00 TO STA. 159+50
6.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 29+14 TO STA. 32+00
7.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 32+00 TO STA. 43+00
8.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 43+00 TO STA. 53+00
9.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 53+00 TO STA. 64+00
10.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 64+00 TO STA. 75+00
11.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 75+00 TO STA. 86+00
12.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 86+00 TO STA. 97+00
13.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 97+00 TO STA. 107+00
14.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 107+00 TO STA. 118+00
15.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, STA. 118+00 TO STA. 129+00
16.	REMOVED FROM PROJECT
17.	REMOVED FROM PROJECT
18.	REMOVED FROM PROJECT
19.	PLAN & PROFILE: DRAKE CHANNEL IMPROVEMENTS, STA. 10+00 TO STA. 19+50
20.	DETAILED PLAN VIEW: DRAKE CHANNEL CONFLUENCE
21.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, ACCESS RAMP @ WARM SPRINGS ROAD
22.	PLAN & PROFILE: C1 CHANNEL IMPROVEMENTS, 12'x7' RCB @ WARM SPRINGS ROAD
~~23.~~	~~USGS STILLING WELL DETAIL, C1 CHANNEL IMPROVEMENTS, STATION 96+83± LT.~~
24.	STRUCTURAL DETAILS, C1 CHANNEL IMPROVEMENTS, TYPICAL FLOOD WALL SECTIONS
25.	STRUCTURAL DETAILS, C1 CHANNEL IMPROVEMENTS, TYPICAL CROSS-SECTIONS
26.	STRUCTURAL DETAILS, C1 CHANNEL IMPROVEMENTS, TYPICAL CROSS-SECTIONS
27.	STRUCTURAL DETAILS, C1 CHANNEL IMPROVEMENTS, TYPICAL CROSS-SECTIONS
28.	STRUCTURAL DETAILS, C1 CHANNEL IMPROVEMENTS, CHANNEL IMPACT BASINS
29.	STRUCTURAL DETAILS, C1 CHANNEL IMPROVEMENTS, CONFLUENCE WALL/12'x7' RCB'S
30.	STRUCTURAL DETAILS, C1 CHANNEL IMPROVEMENTS, ACCESS RAMP DETAILS
31.	STRUCTURAL DETAILS, C1 CHANNEL IMPROVEMENTS, FOOT BRIDGE MODIFICATIONS
32.	MISCELANEOUS DETAILS, C1 CHANNEL IMPROVEMENTS
33.	MISCELANEOUS DETAILS, C1 CHANNEL IMPROVEMENTS
34.	MISCELANEOUS DETAILS, C1 CHANNEL IMPROVEMENTS

~~REMOVED FROM PROJECT PER ADDENDUM #1~~

TITLE	APPROVED	DATE
DIRECTOR OF PUBLIC WORKS	Mark T. Calhoun	3/29/94

AGENCY	NO SERVICE	REVIEWED BY	DATE
C.C.R.F.C.D.			3/25/94
BASIC MANAGEMENT INC.			3/22/94
FIRE SAFETY DIVISION			
NEVADA POWER			8-10-93
SOUTHWEST GAS CORPORATION			1-18-94
SPRINT CENTRAL TELEPHONE-NV.			8-2-93
PRIME CABLE			8-4-93

REVISIONS				
No.	DESCRIPTION	BY	DATE	APPR.
1	PER ADDENDUM #1	WBM	5/19/94	

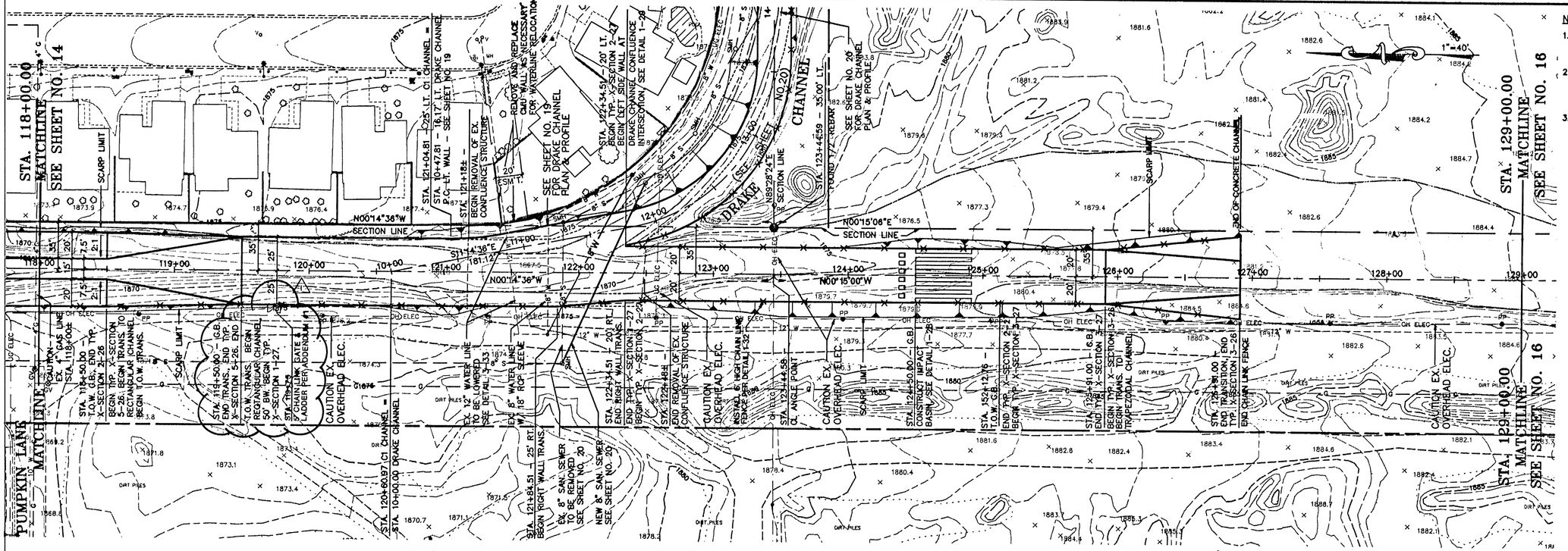
DATE :

DRAWING No.

SHEET 1 OF 34

*AS-BUILT

04632



NOTES:

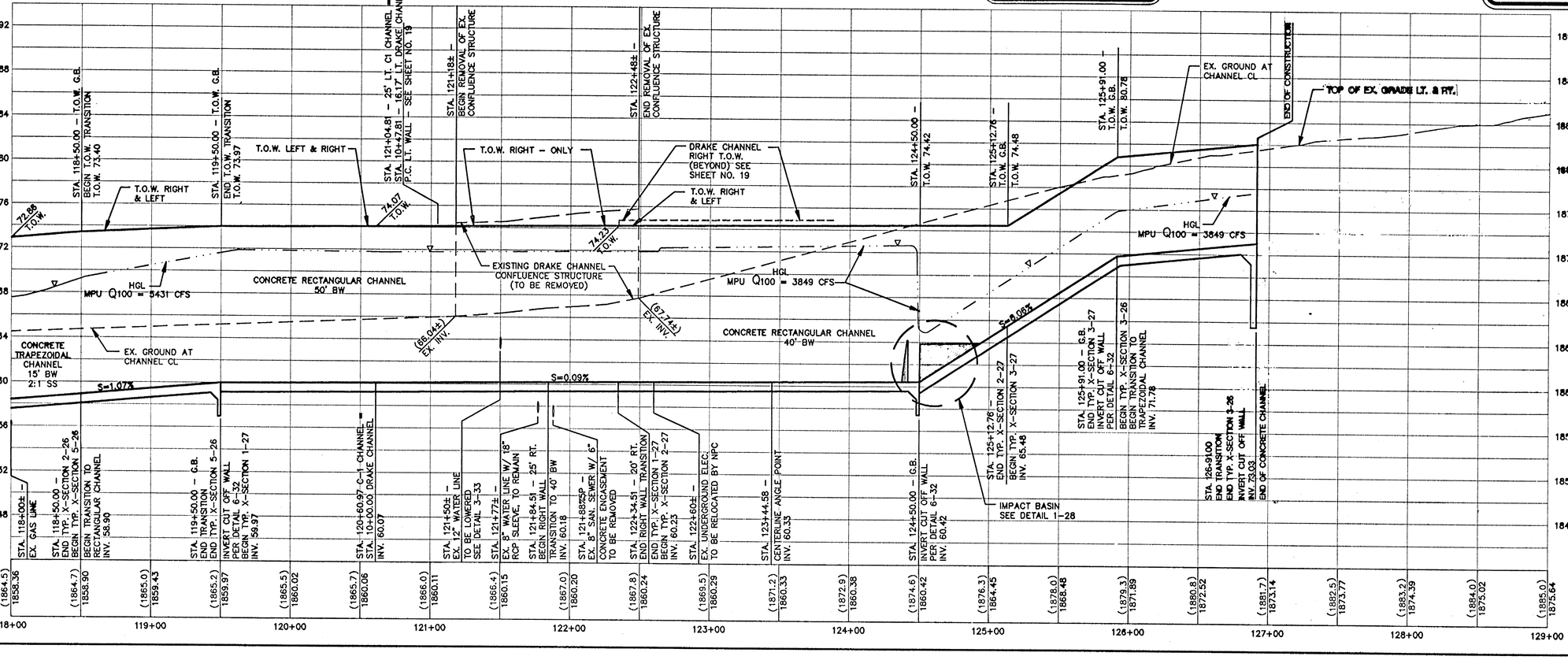
1.) SEE SHEET NO. 19 FOR DRAKE CHANNEL PLAN & PROFILE.

2.) SEE SHEET NO. 20 FOR 1"=20' PLAN VIEW OF CHANNEL CONFLUENCE AREA.

3.) EXISTING CONCRETE CHANNEL CONFLUENCE STRUCTURE TO BE REMOVED.

NOTE:
SEE DETAIL (5/32) FOR CUTOFF WALL, EXPANSION JOINT, AND CONTRACTION JOINT SPACING.

NOTE:
CONTRACTOR MUST VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



AS-BUILT

REV	DATE	BY	REVISION
1	5/19/94	WBM	PER ADDENDUM #1

CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89102-5148 PHONE (702) 873-7550 FAX (702) 362-2597

vtn nevada

CITY OF HENDERSON
CLARK COUNTY, NEVADA

TITLE: PLAN & PROFILE
C1 CHANNEL IMPROVEMENTS
STA. 118+00 TO STA. 129+00

PROJECT: C1 CHANNEL
LAKE MEAD DR. TO THE DRAKE/C1 CONFLUENCE

SEAL
REGISTERED CIVIL ENGINEER
KEN D. GALSWORTH
CIVIL
8177
STATE OF NEVADA
1-31-94

WO NO.	4468
BY	JC, TMM
DATE	1/26/94
SCALE HORIZ.	1"=40'
SCALE VERT.	1"=5'
SHEET	15 OF 34 SHEETS

04632

NOTE:
EXISTING CONCRETE DRAKE CHANNEL CONFLUENCE STRUCTURE AND EXISTING CONCRETE DRAKE CHANNEL TO BE REMOVED TO STA. 19+50, WHERE NEW CONSTRUCTION ENDS.

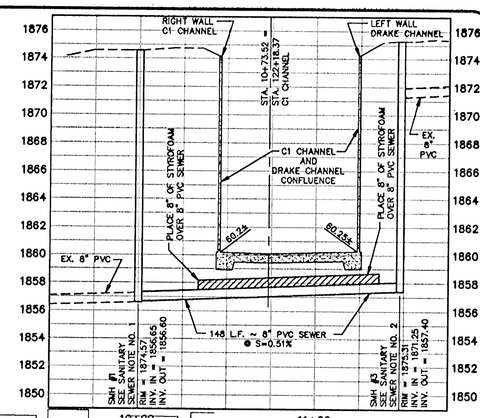
NOTE:
SEE SHEET NO. 15 FOR C1 CHANNEL PLAN AND PROFILE. SEE SHEET NO. 20 FOR 1"=20' PLAN VIEW OF CHANNEL CONFLUENCE AREA.

SANITARY SEWER NOTES:

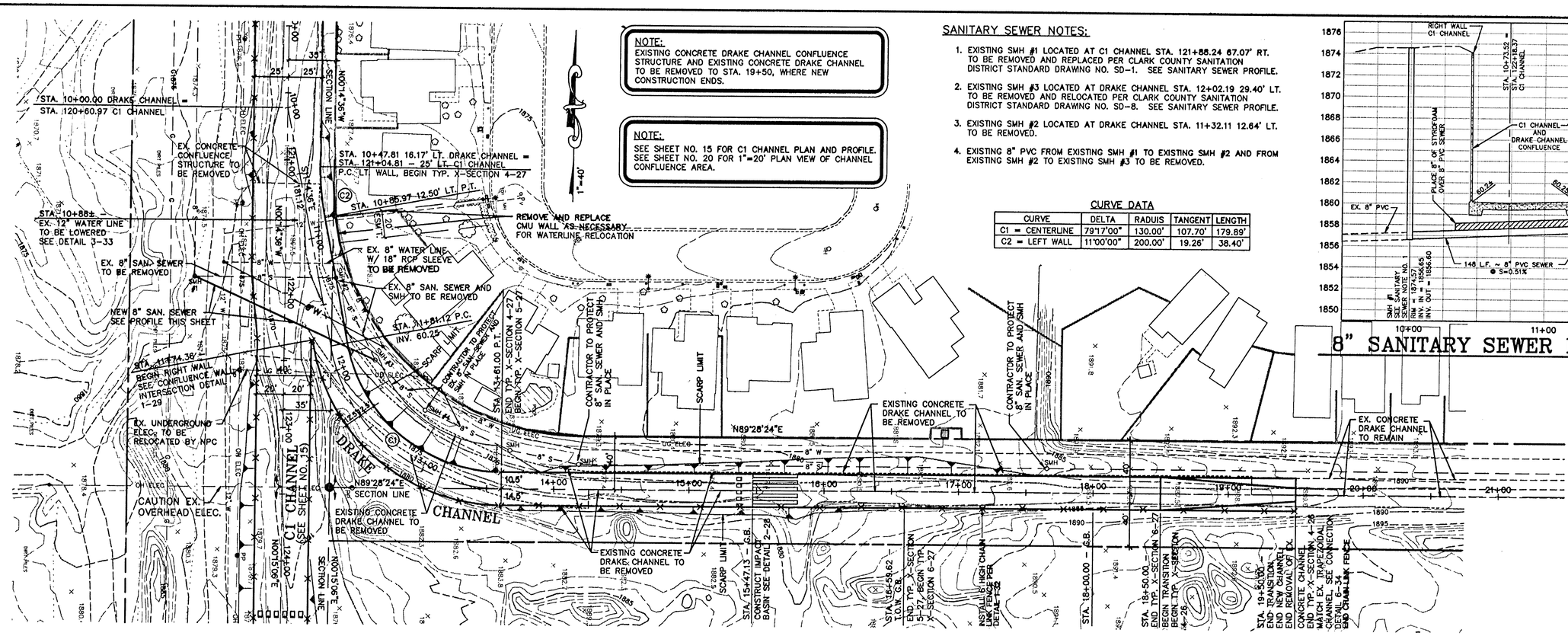
1. EXISTING SMH #1 LOCATED AT C1 CHANNEL STA. 121+88.24 67.07' RT. TO BE REMOVED AND REPLACED PER CLARK COUNTY SANITATION DISTRICT STANDARD DRAWING NO. SD-1. SEE SANITARY SEWER PROFILE.
2. EXISTING SMH #3 LOCATED AT DRAKE CHANNEL STA. 12+02.19 29.40' LT. TO BE REMOVED AND RELOCATED PER CLARK COUNTY SANITATION DISTRICT STANDARD DRAWING NO. SD-8. SEE SANITARY SEWER PROFILE.
3. EXISTING SMH #2 LOCATED AT DRAKE CHANNEL STA. 11+32.11 12.64' LT. TO BE REMOVED.
4. EXISTING 8" PVC FROM EXISTING SMH #1 TO EXISTING SMH #2 AND FROM EXISTING SMH #2 TO EXISTING SMH #3 TO BE REMOVED.

CURVE DATA

CURVE	DELTA	RADIUS	TANGENT	LENGTH
C1 = CENTERLINE	79°17'00"	130.00'	107.70'	179.89'
C2 = LEFT WALL	11°00'00"	200.00'	19.26'	38.40'

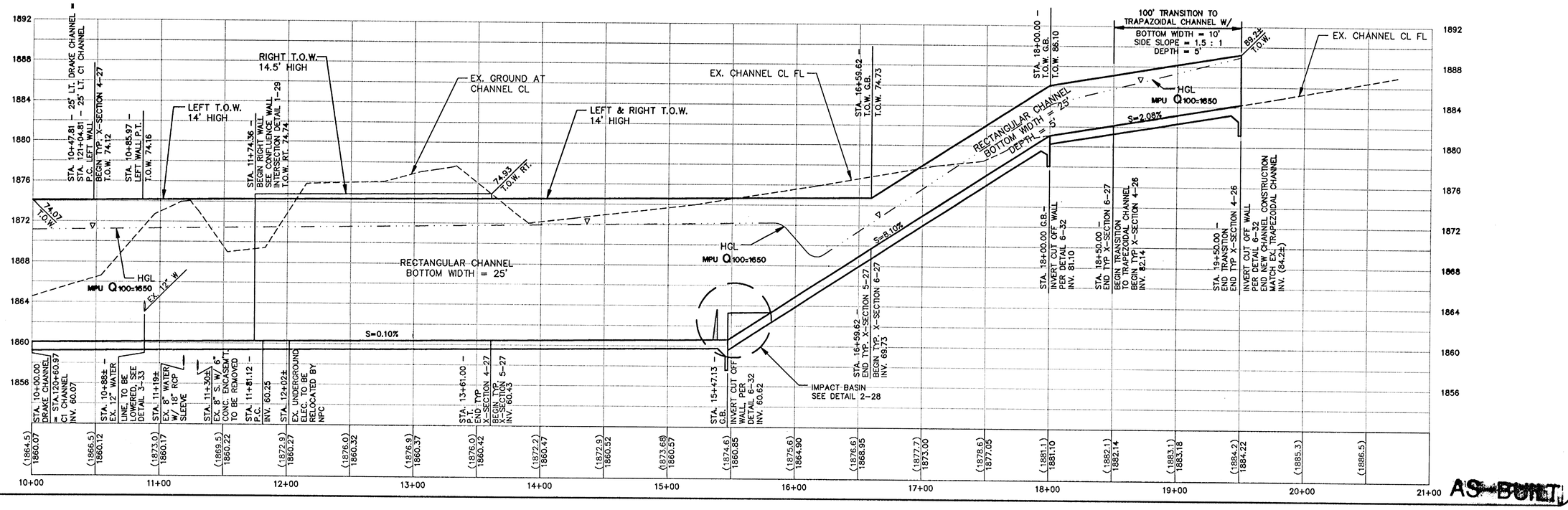


8" SANITARY SEWER PROFILE



NOTE:
SEE DETAIL (5/32) FOR CUTOFF WALL, EXPANSION JOINT, AND CONTRACTION JOINT SPACING.

NOTE:
CONTRACTOR MUST VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



AS-BUILT

04632

CITY OF HENDERSON
CLARK COUNTY, NEVADA

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LAS VEGAS, NEVADA 89102-5148 PHONE (702) 873-7550 FAX (702) 362-2597

REV	DATE	BY	REVISION

TITLE
PLAN & PROFILE
DRAKE CHANNEL IMPROVEMENTS
STA. 10+00 TO STA. 19+50

PROJECT
C1 CHANNEL
LAKE MEAD DR. TO THE DRAKE/C1 CONFLUENCE

SEAL
REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
No. 9177
DAVID GILBRETH
CIVIL
1-26-94

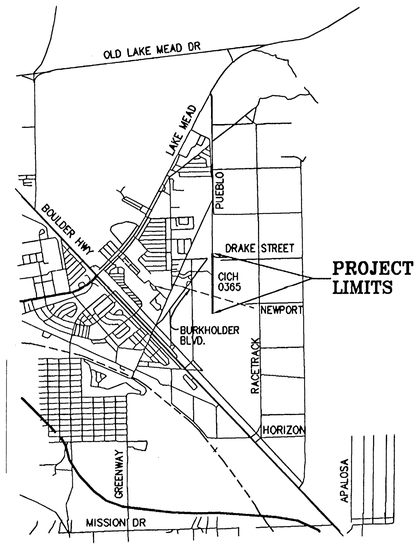
WO NO.	4300
BY	JC, TMM
DATE	1/26/94
SCALE HORIZ.	1"=40'
SCALE VERT.	1"=5'
SHEET	19 OF 34 SHEETS

C-1 CHANNEL AS-BUILTS
DRAKE CONFLUENCE TO BURKHOLDER BOULEVARD

CHANNEL PLAN & PROFILE

LOCATION MAP

(NO SCALE)



CITY OF HENDERSON

CLARK COUNTY , NEVADA

DEPARTMENT OF PUBLIC WORKS

ENGINEERING DESIGN DIVISION

C1 CHANNEL PHASE II

DRAKE CONFLUENCE TO BURKHOLDER BOULEVARD

FUNDED BY:

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT

CONTRACT NO. 94-95 *11

CONSTRUCTION DRAWINGS

PREPARED BY:

VTN NEVADA

MAYOR	CITY COUNCIL	CITY MANAGER
ROBERT GROESBACK	JACK CLARK PAUL ROUTH ARTHUR A. HAFEN LARRY SCHEFFLER	PHILIP D. SPEIGHT

DIRECTOR OF PUBLIC WORKS

MARK T. CALHOUN

PROFESSIONAL ENGINEER STATE OF NEVADA JOHN D. OLSEN CIVIL 9177 10-25-94

INDEX OF SHEETS

No.	DESCRIPTION
1	COVER SHEET
2	GENERAL INFORMATION
3	SURVEY CONTROL PLAN
4	PLAN AND PROFILE STA. 116+00 TO STA. 129+00
5	PLAN AND PROFILE STA. 129+00 TO STA. 140+00
6	PLAN AND PROFILE STA. 140+00 TO STA. 151+00
7	PLAN AND PROFILE STA. 151+00 TO STA. 163+97
8	STRUCTURAL DETAILS - TYPICAL CROSS SECTIONS
9	MISCELLANEOUS DETAILS
10	MISCELLANEOUS DETAILS

TITLE	APPROVED	DATE
DIRECTOR OF PUBLIC WORKS	Mark T. Calhoun	11/8/94

AGENCY	NO SERVICE	REVIEWED BY	DATE
C.C.R.F.C.D.		Calvin Frame Jr.	11-3-94
N. D. O. T. DIST. ENGINEER			
FIRE SAFETY DIVISION			
NEVADA POWER			10-18-94
SOUTHWEST GAS CORPORATION		Lynn O'Kelley	10-17-94
SPRINT CENTRAL TELE.-NEVADA			10-21-94
PRIME CABLE		Randall Burke	10-17-94

REVISIONS				
No.	DESCRIPTION	BY	DATE	APPR.

DATE :

DRAWING No.

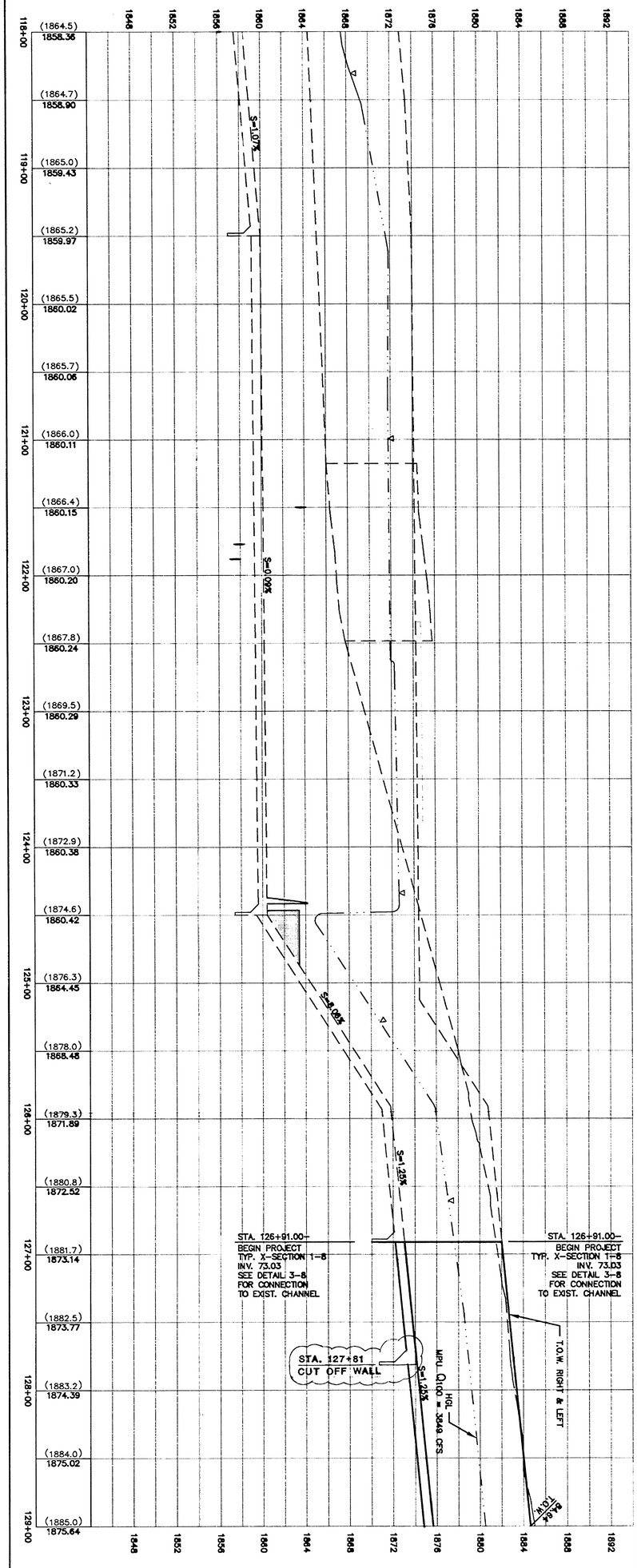
04601

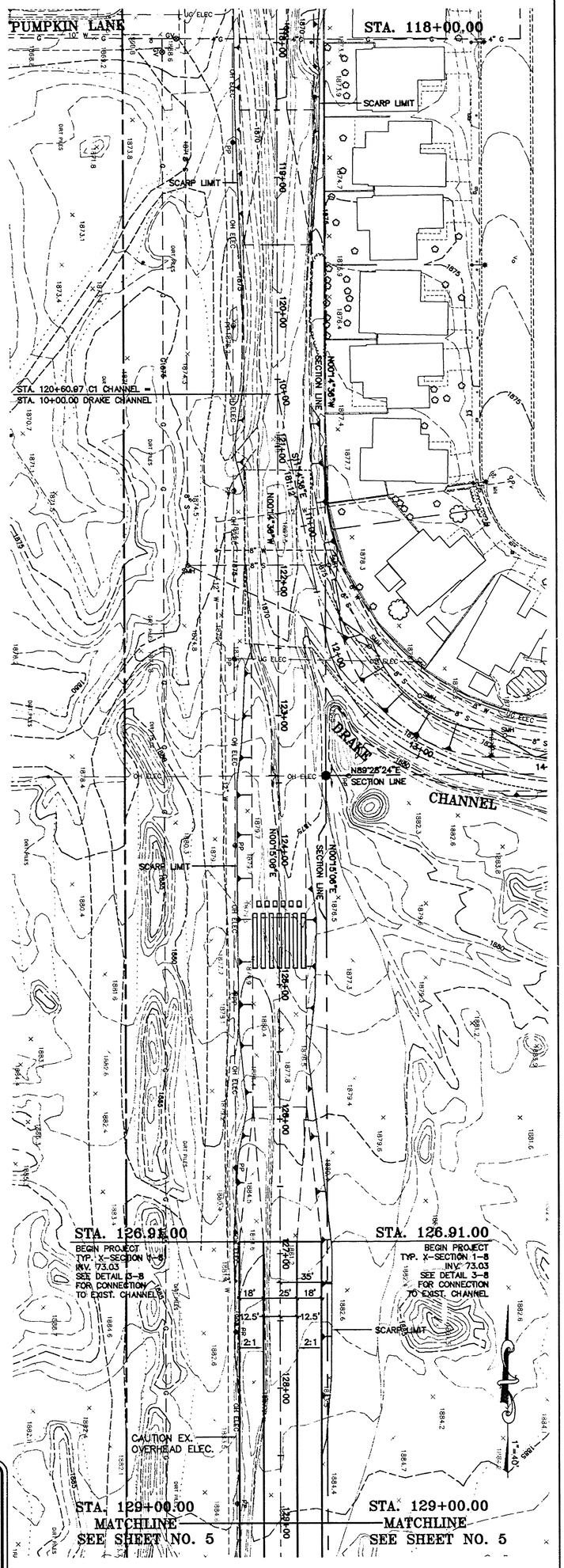
SHEET 1 OF 10

RECORD DRAWING

Record Drawings

F:\CAD\PUBWRK\1468\D06-P2, Wed Oct 5 09:26:41 1994





NOTE:
CONTRACTOR MUST VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

04601 RECORD DRAWING

WO NO. 4468-B
BY TMM,SIF
DATE 10/13/94
SCALE HORIZ. 1"=40' VERT. 1"=8'
SHEET 4 OF 10 SHEETS

REGISTERED PROFESSIONAL ENGINEER — JEFFREY J. HEIN — No. 9177 — STATE OF NEVADA — 10-7-94
SEAL

TITLE
PLAN & PROFILE
C1 CHANNEL IMPROVEMENTS
STA. 118+00 TO STA. 129+00

PROJECT
C1 CHANNEL – PHASE II
DRAKE CONFLUENCE TO BURKHOLDER BLVD.

CITY OF HENDERSON
CLARK COUNTY, NEVADA

REV	DATE	BY	REVISION

vtn nevada
CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS
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LAS VEGAS, NEVADA 89102-5148 PHONE (702) 873-7550 FAX (702) 362-2597

RECORD DRAWING
04601

PLAN & PROFILE
C1 CHANNEL IMPROVEMENTS
STA. 129+00 TO STA. 140+00

PROJECT: C1 CHANNEL – PHASE II
DRAKE CONFLUENCE TO BURKHOLDER BLVD.

TITLE

SEAL: REGISTERED ENGINEER – STATE OF NEVADA – KEN D. GILBERT – 10-7-94

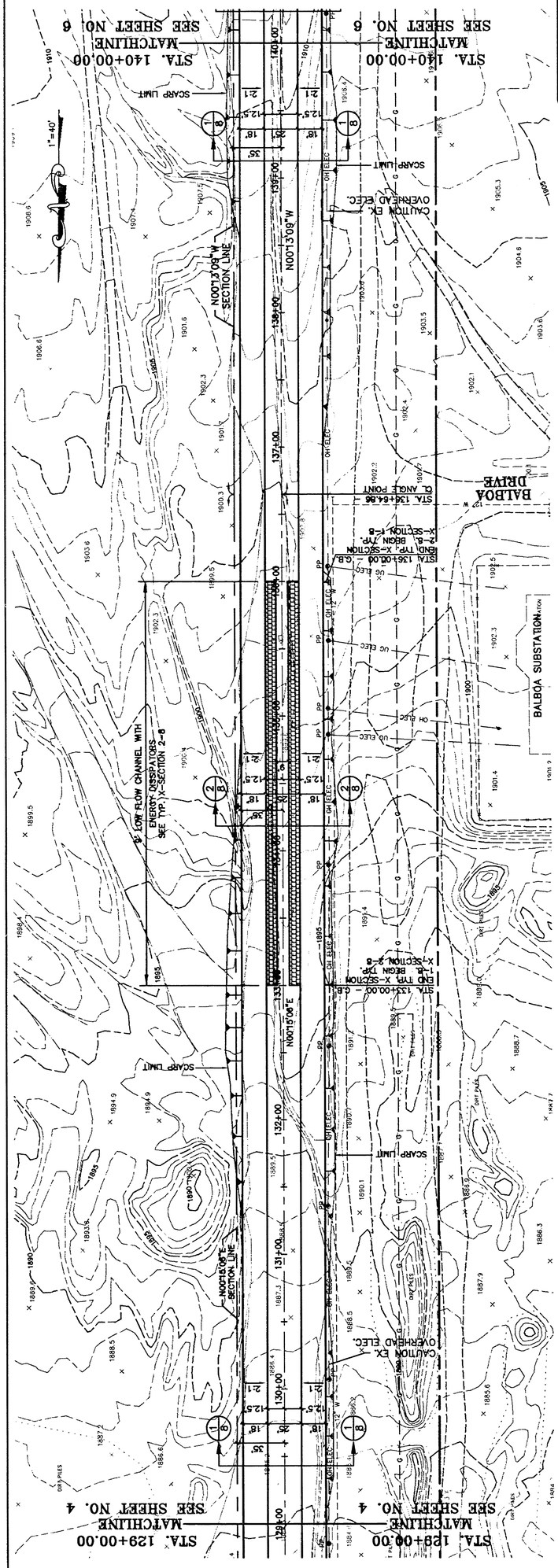
WO NO.	4468-B
BY	TMM,SJF
DATE	10/13/94
SCALE HORIZ. VERT.	1"=40' 1"=8'
SHEET	5 OF 10 SHEETS

CITY OF HENDERSON
CLARK COUNTY, NEVADA

REV	DATE	BY	REVISION

VTN nevada
CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89102-5148 PHONE (702) 873-7550 FAX (702) 362-2597

NOTE:
CONTRACTOR MUST VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.



NOTE:
CONTRACTOR MUST VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

| | | |

STA. 151+00.00
MATCHLINE
SEE SHEET NO. 6

STA. 151+00.00
MATCHLINE
SEE SHEET NO. 5

9' LOW FLOW CHANNEL WITH ENERGY DISSIPATORS SEE TYP. X-SECTION 2-8

N00°13'09"W
SECTION LINE

STA. 156+65.43 – 35.00' LT.
FOUND 1/2" REBAR

N00°13'09"W

STA. 152+00.00 – END NEW CONCRETE TRAPEZOIDAL CHANNEL TRAPEZOIDAL X-SECTION SEE DETAIL 3-19

SCARP LIMIT

CAUTION EX. OVERHEAD ELEC.

STA. 153+97.00± CONSTRUCT RIP-RAP CUTOFF WALL SEE DETAIL 4-10 MATCH EX. GROUND N.G. (32.00±)

DOOLEY DRIVE

STA. 156+45.79 – 65.00' LT.
FOUND BC IN WELL, RLS 1871

PUEBLO BOULEVARD

FILL PILES

BLEACHERS

BASEBALL FIELD

TREES

POOL

MH

OH ELEC

PP

1" = 40'

NOTE:
CONTRACTOR MUST VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

9' LOW FLOW CHANNEL WITH ENERGY DISSIPATORS SEE TYP. X-SECTION 2-8

T.O.W. RIGHT & LEFT

EX. GROUND AT CHANNEL CL

CONCRETE TRAPEZOIDAL CHANNEL 25' BW / 2:1 SS

S=3.50%

S=4.50%

HGL MPU Q100 = 3489 CFS

TOP OF RIP-RAP CHANNEL SECTION

SEE RIP-RAP CHANNEL SECTION 3-10

STA. 153+97± END RIP-RAP CHANNEL CONSTRUCT RIP-RAP CUTOFF WALL SEE DETAIL 4-10 MATCH EX. GROUND N.G. (32.36±)

EX. GROUND AT CL

STA. 152+00.00 – END NEW CONCRETE TRAPEZOIDAL CHANNEL END TYP. X-SECTION 2-8

INVERT CUT OFF WALL PER DETAIL 4-10 BEGIN RIP-RAP CHANNEL PER DETAIL 3-10 INV. 23.52

(1926.8) 1920.02 | (1927.6) 1921.77 | (1928.0) 1923.52 | (1929.2) | (1929.9) | (1931.9) | (1932.4) | (1933.6) | (1935.8) | (1936.6) | (1936.7) | (1936.0) | (1939.9) | (1941.0) | (1941.9) | (1943.3) | (1944.1) | (1945.1) | (1946.3) | (1947.3) | (1948.0) | (1949.0) | (1949.8)

151+00 | 152+00 | 153+00 | 154+00 | 155+00 | 156+00 | 157+00 | 158+00 | 159+00 | 160+00 | 161+00 | 162+00

1956 | 1952 | 1948 | 1944 | 1940 | 1936 | 1932 | 1928 | 1924 | 1920 | 1916 | 1912 | 1908

04601
RECORD DRAWING

CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89102-5148 PHONE (702) 873-7550 FAX (702) 362-2597

REV	DATE	BY	REVISION

CITY OF HENDERSON
CLARK COUNTY, NEVADA

TITLE: PLAN & PROFILE
C1 CHANNEL IMPROVEMENTS
STA. 151+00 TO STA. 153+97

PROJECT: C1 CHANNEL – PHASE II
DRAKE CONFLUENCE TO BURKHOLDER BLVD.

SEAL
PROFESSIONAL ENGINEER STATE OF NEVADA
KEN D. ALBRITH
CIVIL
No. 9177
10-25-94

WO NO.	4468-B
BY	TMM,SJF
DATE	10/13/94
SCALE HORIZ. VERT.	1"=40' 1"=5'
SHEET	7 OF 10 SHEETS

C-1 CHANNEL AS-BUILTS
UPPER AND MIDDLE REACHES OF THE C-1 CHANNEL
PHASE I

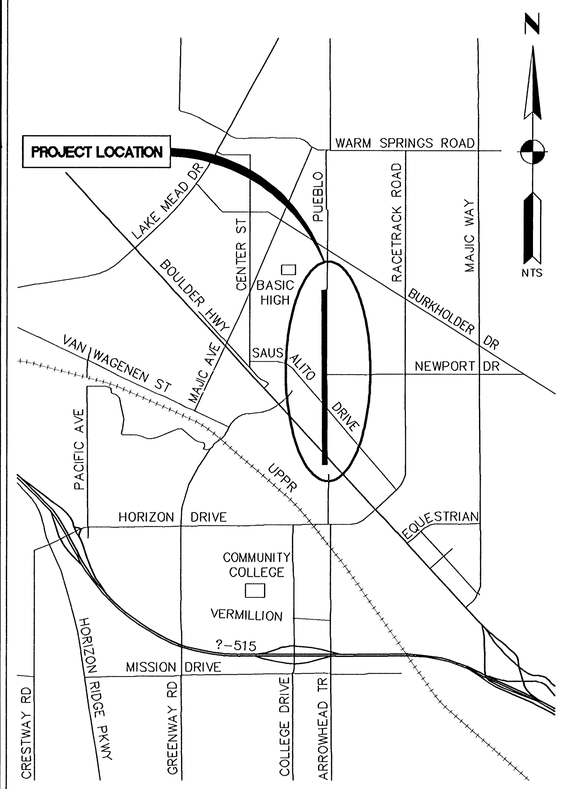
CHANNEL PLAN & PROFILE

Upper and Middle Reaches of the C-1 Channel - Phase 1

Funded by the Clark County Regional Flood Control District

Contract No 00-01*03

Vicinity Map



Revisions

NO	DESCRIPTION	BY	DATE	APPROVAL

City Of Henderson

Clark County, Nevada

Department Of Public Works

AS-BUILT
Based on Contractor Supplied Information Which Has Not Been Field Verified By The Louis Berger Group, Inc.

Mayor
James B. Gibson

City Council
Arthur A. Hafen
Jack Clark
Amanda M. Cyphers
Steven D. Kirk

City Manager
Philip D. Speight

Director Of Public Works
Robert A. Murname

Index of Sheets

NO	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	LEGEND, QUANTITIES & ABBREVIATIONS
CP-1 TO CP-3	HORIZONTAL CONTROL PLANS
SD-1 TO SD-8	GRADING & DRAINAGE PLANS & PROFILES
SD-9 TO SD-19	DRAINAGE DETAILS
TC-1	BOULDER HIGHWAY STAGING PLAN
TC-2	BOULDER HIGHWAY TYPICAL CLOSURE DETAIL
U-1 TO U-7	UTILITY RELOCATION PLANS AND DETAILS

Clark County Regional Flood Control District
Approved:

Gale Wm. Fraser II, P.E.
General Manager/Chief Engineer

Approval

TITLE	APPROVED	DATE
DIRECTOR OF PUBLIC WORKS		
FLOOD CONTROL COORDINATOR		
UTILITY SERVICES MANAGER		
ENGINEERING SERVICES MANAGER		
SURVEY / RIGHT-OF-WAY		
NEW DEVELOPMENT		
FIRE PROTECTION		

Agency Approval

AGENCY	REVIEWED BY	DATE
NEVADA POWER COMPANY (DISTRIBUTION)		
SPRINT		
SOUTHWEST GAS		
COX COMMUNICATIONS OF LAS VEGAS		

THE LOUIS BERGER GROUP, INC
500 AMIGO COURT SUITE 100
LAS VEGAS, NEVADA 89119
(702) 736-6632

Upper and Middle Reaches of the C-1 Channel - Phase 1
Contract No 00-01*03

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
SYNDI J. PUPPIN-DUDLEY
No. 11070
CIVIL

DATE: JUNE 2001

DRAWING NO
1
SHEET 1 OF 34

U:\8396\C1-CHANNEL\BASESHEETS\8396BV-P1P2.DWG 4/8/02 11:42:47 cm pst

CONSTRUCTION ITEMS:

①	"C-1" 46+00.00 TO "C-1" 50+50.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
②	"C-1" 50+50.00 TO "C-1" 50+56.00	CONSTRUCT 6.00' WIDE, 6' HIGH SINGLE-SWING CHAIN LINK ACCESS GATE, PER CCASD NO 253.
③	"C-1" 50+56.00 TO "C-1" 57+00.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
④	"C-1" 50+64.00 TO "C-1" 51+07.10	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
⑤	"C-1" 50+50.00 TO "C-1" 50+64.00	CONSTRUCT 14' WIDE, 6' HIGH DOUBLE-SWING CHAIN LINK ACCESS GATE, PER CCASD NO 253.
⑥	"C-1" 46+00.00 TO "C-1" 50+50.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
⑦	"C-1" 46+00.00 TO "C-1" 57+00.00	CONSTRUCT TRAPEZOIDAL CONCRETE CHANNEL. (SEE DETAIL B, SHEET SD-12).
⑧	"C-1" 48+00.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑨	"C-1" 47+75.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑩	"C-1" 54+25.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑪	"C-1" 54+00.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑫	"C-1" 48+13.09 TO "C-1" 49+99.45	CONSTRUCT ACCESS RAMP. (SEE SHEET SD-19).

NOTES:

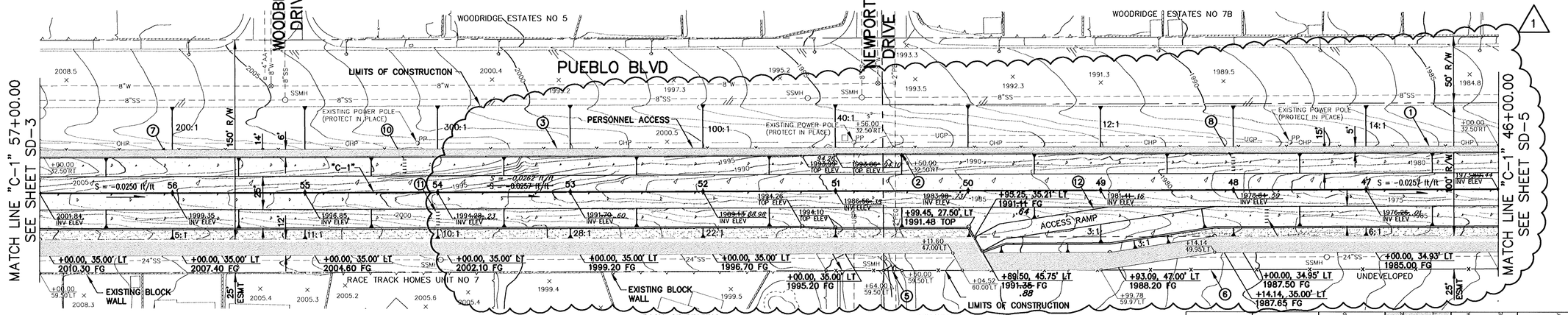
1. ALL EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL UTILITIES ARE SHOWN HEREON.
2. CONTRACTOR TO KEEP IN SERVICE AND PROTECT ALL UTILITIES.
3. SCARP AREAS AND EARTHWORK SHALL NOT PLACE SOIL AGAINST EXISTING BLOCK WALLS SUCH AS TO CREATE A RETAINING SITUATION.
4. GROUND CHAIN LINK FENCE PER SPECIFICATION SECTION 616.

SAFETY ALERT

Call Before You Overhead
1-702-593-6111

Avoid cutting underground utility lines. It's costly.
Call Before You Dig
1-800-227-2600

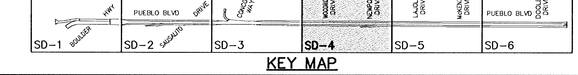
HORIZONTAL: 1" = 40'



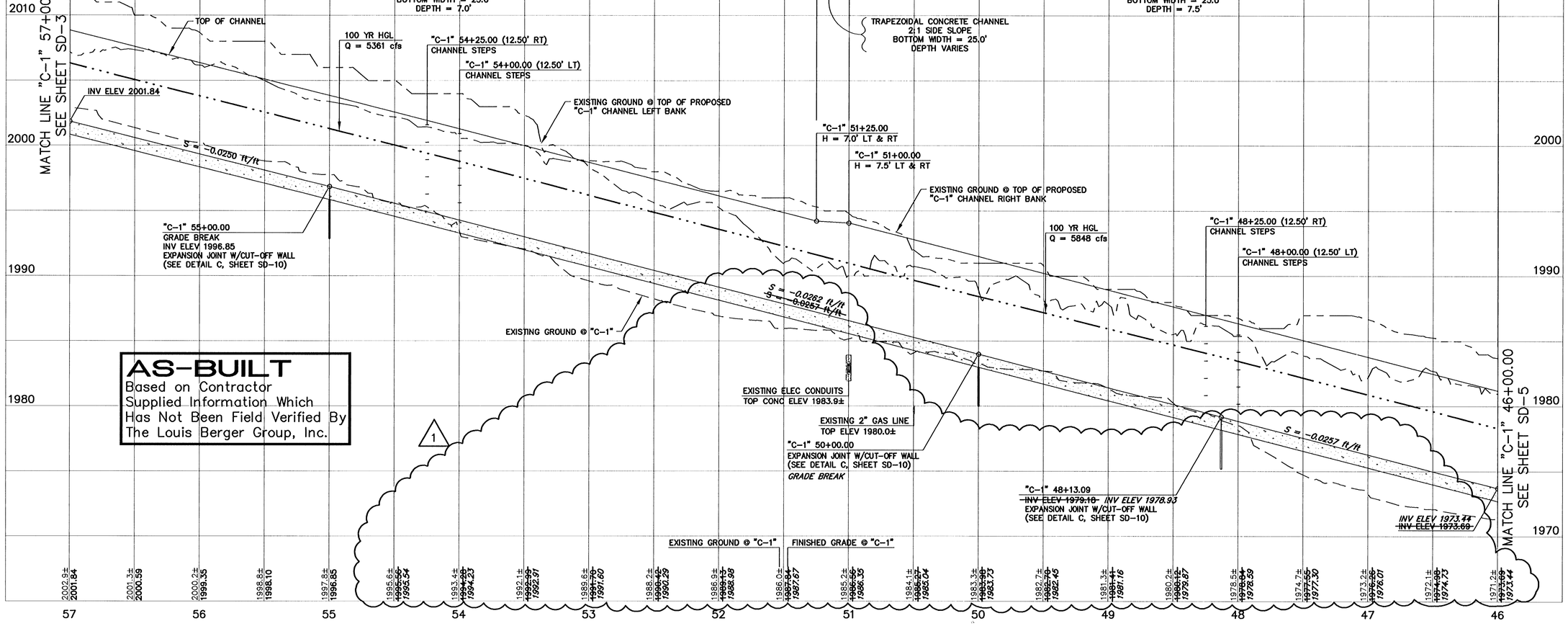
⑤	"C-1" 50+50.00 TO "C-1" 50+64.00	CONSTRUCT 14' WIDE, 6' HIGH DOUBLE-SWING CHAIN LINK ACCESS GATE, PER CCASD NO 253.
⑥	"C-1" 46+00.00 TO "C-1" 50+50.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
⑪	"C-1" 54+00.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑫	"C-1" 48+13.09 TO "C-1" 49+99.45	CONSTRUCT ACCESS RAMP. (SEE SHEET SD-19).

BASIS OF BEARING
N 89°24'41" E BEING THE NORTH LINE OF THE NE 1/4 OF THE NE 1/4 OF SECTION 29, T 22 S, R 63 E, MDM, CITY OF HENDERSON, NEVADA, PER PARCEL MAP ON FILE WITH CLARK COUNTY RECORDER IN FILE 61, PAGE 70.

BENCHMARK
CITY OF HENDERSON BENCHMARK #18, BEING A BOLT AND WASHER IN THE NORTH LEG OF A STEEL TRANSMISSION TOWER #9-4, 0.2 MILES +/- NORTHWEST OF HORIZON DR ON THE WEST SIDE OF HIGHWAY 93.
ELEV = 639.258 METERS (2097.30 FEET) NAVD 88



KEY MAP



AS-BUILT
Based on Contractor Supplied Information Which Has Not Been Field Verified By The Louis Berger Group, Inc.

REV NO	DATE	DESCRIPTION	APPROVED
1	12/14/01	PLAN REVISION No. 1	SJD

THE LOUIS BERGER GROUP, INC
LAS VEGAS, NEVADA

UPPER AND MIDDLE REACHES OF THE C-1 CHANNEL - PHASE 1
GRADING & DRAINAGE PLAN & PROFILE
"C-1" 57+00.00 TO "C-1" 46+00.00
HENDERSON NEVADA, DEPARTMENT OF PUBLIC WORKS

REGISTERED PROFESSIONAL ENGINEER — SYNDI J. FLIPPIN-DUDLEY — CIVIL — No. 11070 — STATE OF NEVADA

PROJECT NO:	839
DRAWN BY:	ARB
DESIGNED BY:	SRF
CHECKED BY:	SJD
APPROVED BY:	TDL
SCALE	
HORIZ:	1" = 40'
VERT:	1" = 4'

DRAWING NO
SD-4
SHEET 10 OF 34

U:\839C1-CHANNEL\DRAINAGE\839C1-PHIMASTER.DWG 7/3/2001 11:11:35 pm pst RR

CONSTRUCTION ITEMS:

①	"C-1" 35+00.00 TO "C-1" 37+50.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
②	"C-1" 37+50.00 TO "C-1" 37+56.00	CONSTRUCT 6.00' WIDE, 6' HIGH SINGLE-SWING CHAIN LINK ACCESS GATE, PER CCASD NO 253.
③	"C-1" 37+50.00 TO "C-1" 46+00.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
④	"C-1" 37+64.00 TO "C-1" 46+00.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
⑤	"C-1" 37+50.00 TO "C-1" 37+64.00	CONSTRUCT 14' WIDE, 6' HIGH DOUBLE-SWING CHAIN LINK ACCESS GATE, PER CCASD NO 253.
⑥	"C-1" 35+00.00 TO "C-1" 37+50.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
⑦	"C-1" 35+00.00 TO "C-1" 46+00.00	CONSTRUCT TRAPEZOIDAL CONCRETE CHANNEL. (SEE DETAIL B, SHEET SD-12).
⑧	"C-1" 36+25.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑨	"C-1" 36+00.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9)
⑩	"C-1" 42+25.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑪	"C-1" 42+00.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).

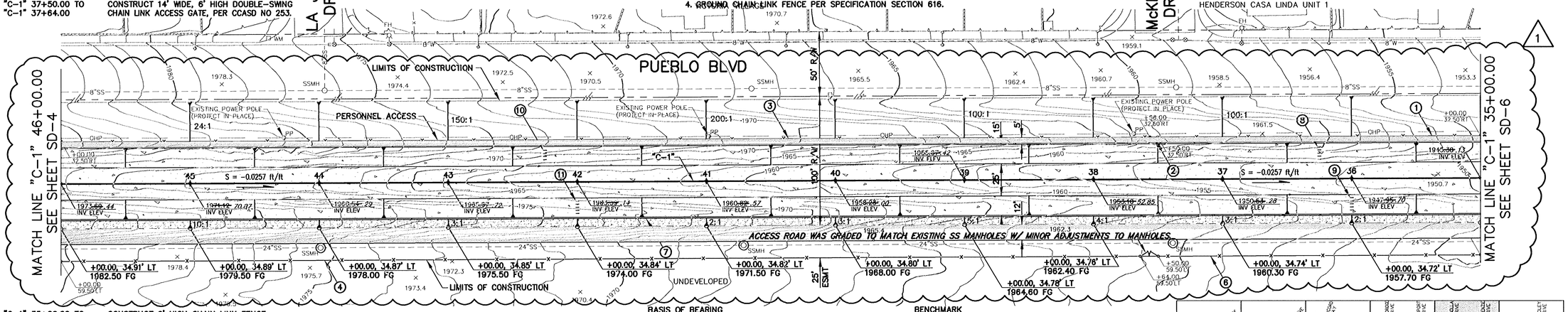
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4. GROUND CHAIN LINK FENCE PER SPECIFICATION SECTION 616.

SAFETY ALERT
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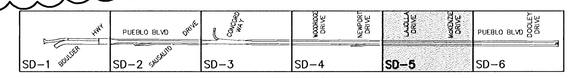
Avoid cutting underground utility lines. It's costly.
Call Before You Dig
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HORIZONTAL: 1" = 40'

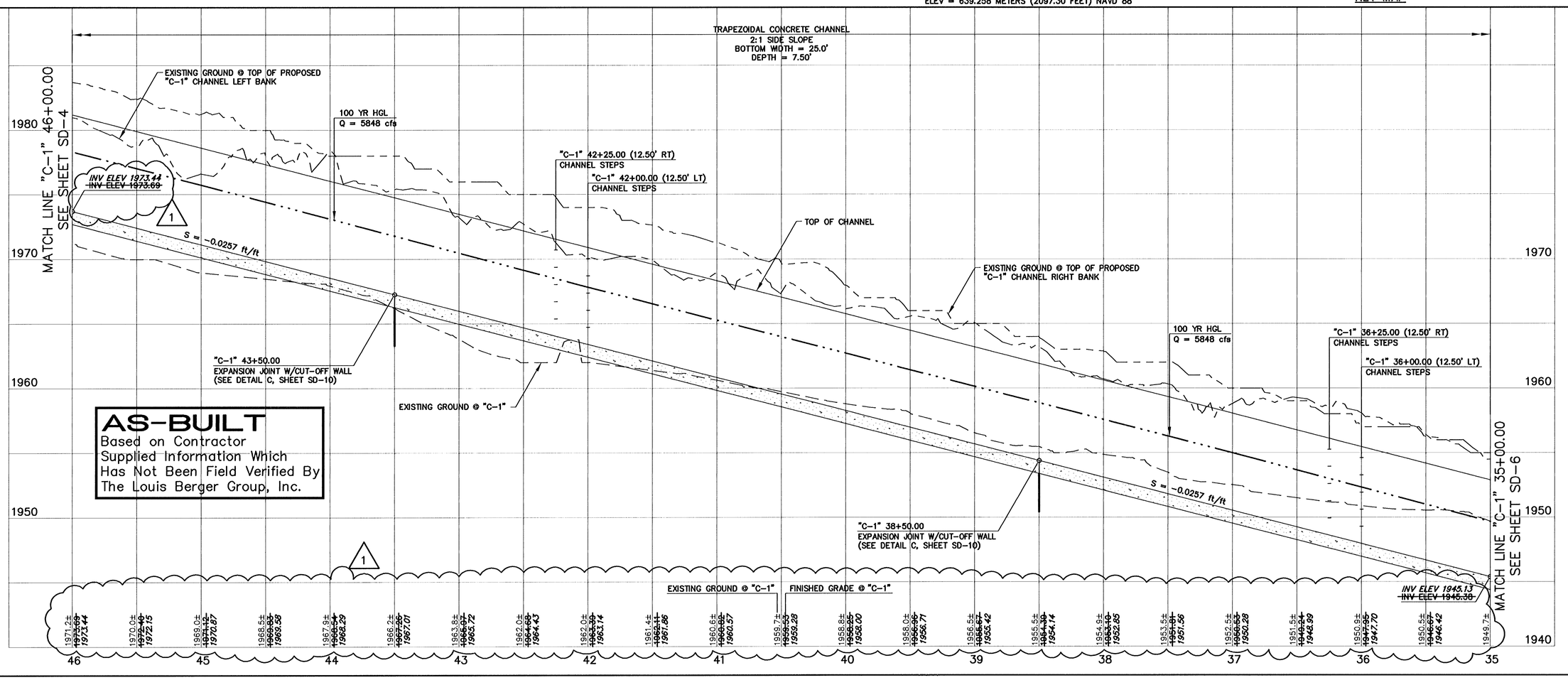


BASIS OF BEARING
N 89°24'41" E BEING THE NORTH LINE OF THE NE 1/4 OF THE NE 1/4 OF SECTION 29, T 22 S, R 63 E, MDM, CITY OF HENDERSON, NEVADA, PER PARCEL MAP ON FILE WITH CLARK COUNTY RECORDER IN FILE 61, PAGE 70.

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ELEV = 639.258 METERS (2097.30 FEET) NAVD 88



KEY MAP



AS-BUILT
Based on Contractor Supplied Information Which Has Not Been Field Verified By The Louis Berger Group, Inc.

THE LOUIS BERGER GROUP, INC
LAS VEGAS, NEVADA

REV NO	DATE	DESCRIPTION	
1	12/14/01	PLAN REVISION No. 1	SJD
			APPROVED

UPPER AND MIDDLE REACHES OF THE C-1 CHANNEL - PHASE 1
GRADING & DRAINAGE PLAN & PROFILE
"C-1" 46+00.00 TO "C-1" 35+00.00
HENDERSON NEVADA, DEPARTMENT OF PUBLIC WORKS

RESIDENTIAL PROFESSIONAL ENGINEER-STATE OF NEVADA
SYNDI J. FLIPPIN-DUDLEY
CIVIL
No. 11070

PROJECT NO:	839
DRAWN BY:	ARB
DESIGNED BY:	SRF
CHECKED BY:	SJD
APPROVED BY:	TDL
SCALE	
HORIZ:	1" = 40'
VERT:	1" = 4'

DRAWING NO
SD-5
SHEET 11 OF 34

U:\839C1-CHANNEL\DRAINAGE\839C1-PH1MASTER.DWG v5 10/10/02 15:00:00 pst RR

CONSTRUCTION ITEMS:

①	"C-1" 26+37.35 TO "C-1" 35+00.00	CONSTRUCT TRAPEZOIDAL CONCRETE CHANNEL. (SEE DETAIL B, SHEET SD-12).
②	"C-1" 26+37.35	CONSTRUCT 6' WIDE, 6' HIGH SINGLE-SWING CHAIN LINK ACCESS GATE, CONNECT TO EXISTING FENCE, PER CCASD NO 253.
③	"C-1" 26+37.35 TO "C-1" 35+00.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.
④	"C-1" 26+37.35 TO "C-1" 35+00.00	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252. CONNECT TO EXISTING FENCE,
⑤	"C-1" 26+37.35	CONSTRUCT 14' WIDE, 6' HIGH DOUBLE-SWING CHAIN LINK ACCESS GATE, PER CCASD NO 253.
⑥	"C-1" 30+00.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑦	"C-1" 29+75.00	CONSTRUCT CHANNEL STEPS. (SEE DETAIL C, SHEET SD-9).
⑧	"C-1" 30+35.00 TO "C-1" 30+75.00	CONSTRUCT AC PAVEMENT DIP SECTION. (SEE SHEET SD-18).
⑨	"C-1" 19+07.33 TO "C-1" 34+05.06	CONSTRUCT 8" X 1480' PVC SANITARY SEWER. (SEE SHEETS U-4 & U-5).
⑩	"C-1" 26+27.35 TO "C-1" 26+70.00	CONSTRUCT CHANNEL INVERT TRANSITION. (SEE SHEET SD-18).
⑪	"C-1" 26+37.35	CONSTRUCT 6' HIGH CHAIN LINK FENCE, PER CCASD NO 252.

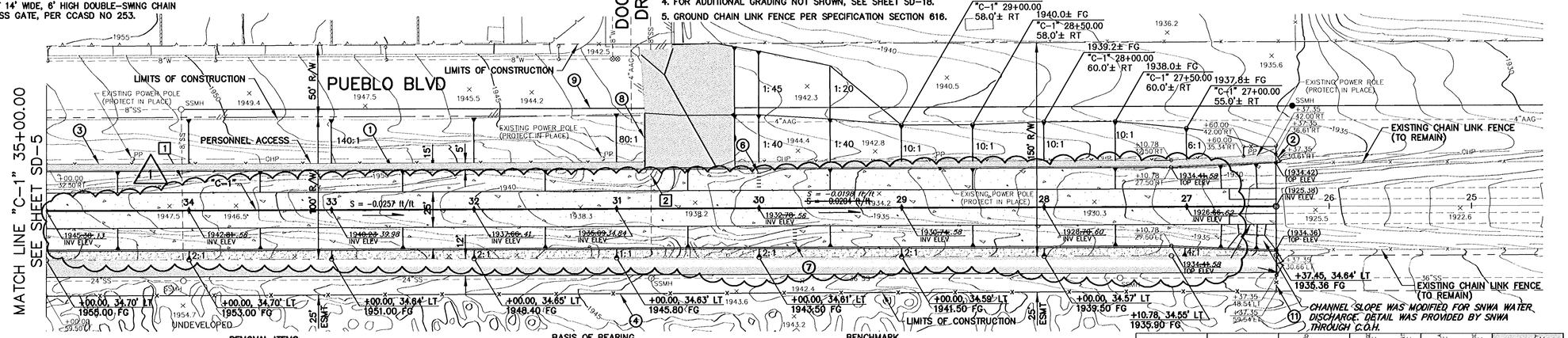
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4. FOR ADDITIONAL GRADING NOT SHOWN, SEE SHEET SD-18.
5. GROUND CHAIN LINK FENCE PER SPECIFICATION SECTION 616.

SAFETY ALERT
Call Before You Overhead
1-702-593-6111

Avoid cutting underground utility lines. It's costly.
Call Before You Dig
1-800-227-2600

HORIZONTAL: 1" = 40'



REMOVAL ITEMS:

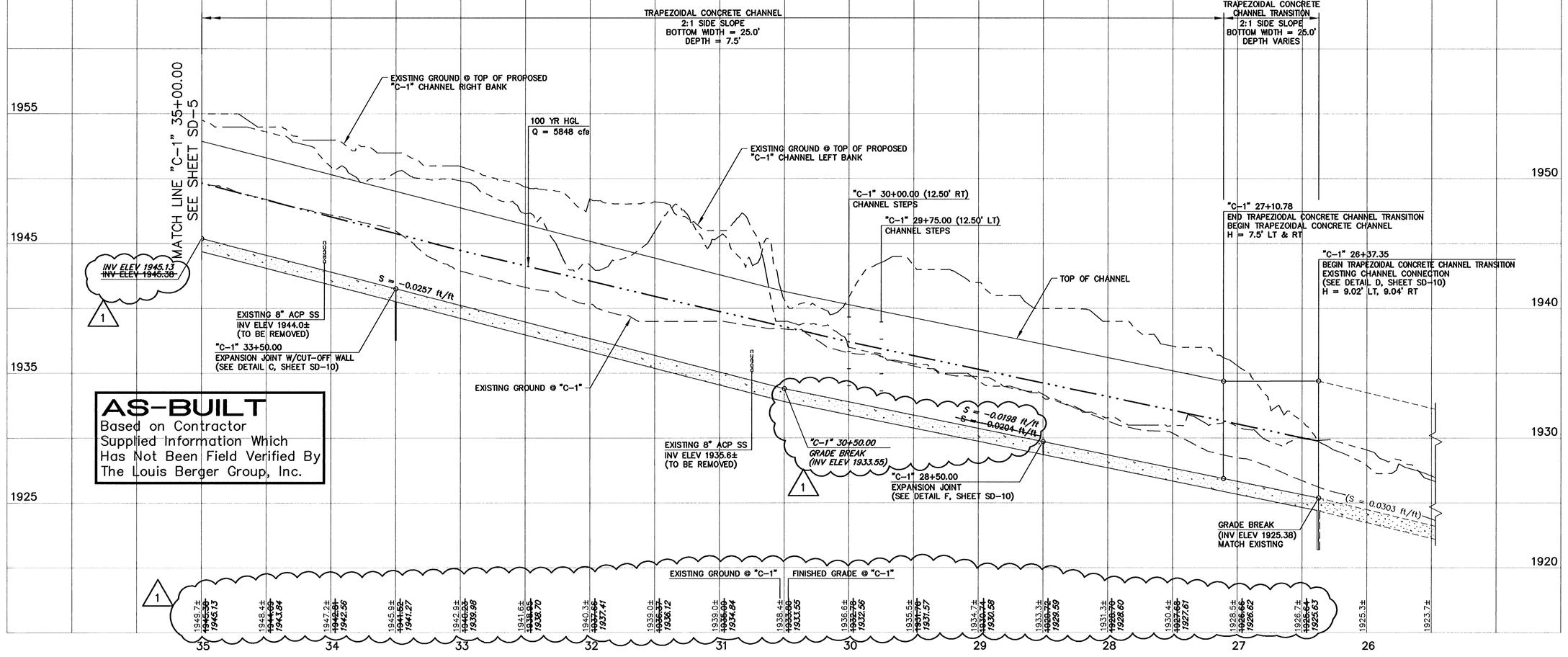
1	"C-1" 34+04.0±	REMOVE 8" ACP SANITARY SEWER. (SEE SHEET U-4).
2	"C-1" 30+75.0±	REMOVE 8" ACP SANITARY SEWER. (SEE SHEET U-4).

BASIS OF BEARING
N 89°24'41" E BEING THE NORTH LINE OF THE NE 1/4 OF THE NE 1/4 OF SECTION 29, T 22 S, R 63 E, MDM, CITY OF HENDERSON, NEVADA, PER PARCEL MAP ON FILE WITH CLARK COUNTY RECORDER IN FILE 61, PAGE 70.

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ELEV = 639.258 METERS (2097.30 FEET) NAVD 88



KEY MAP



AS-BUILT
Based on Contractor Supplied Information Which Has Not Been Field Verified By The Louis Berger Group, Inc.

REV NO	DATE	DESCRIPTION	
1	12/14/01	PLAN REVISION No. 1	SJD
			APPROVED

THE LOUIS BERGER GROUP, INC
LAS VEGAS, NEVADA

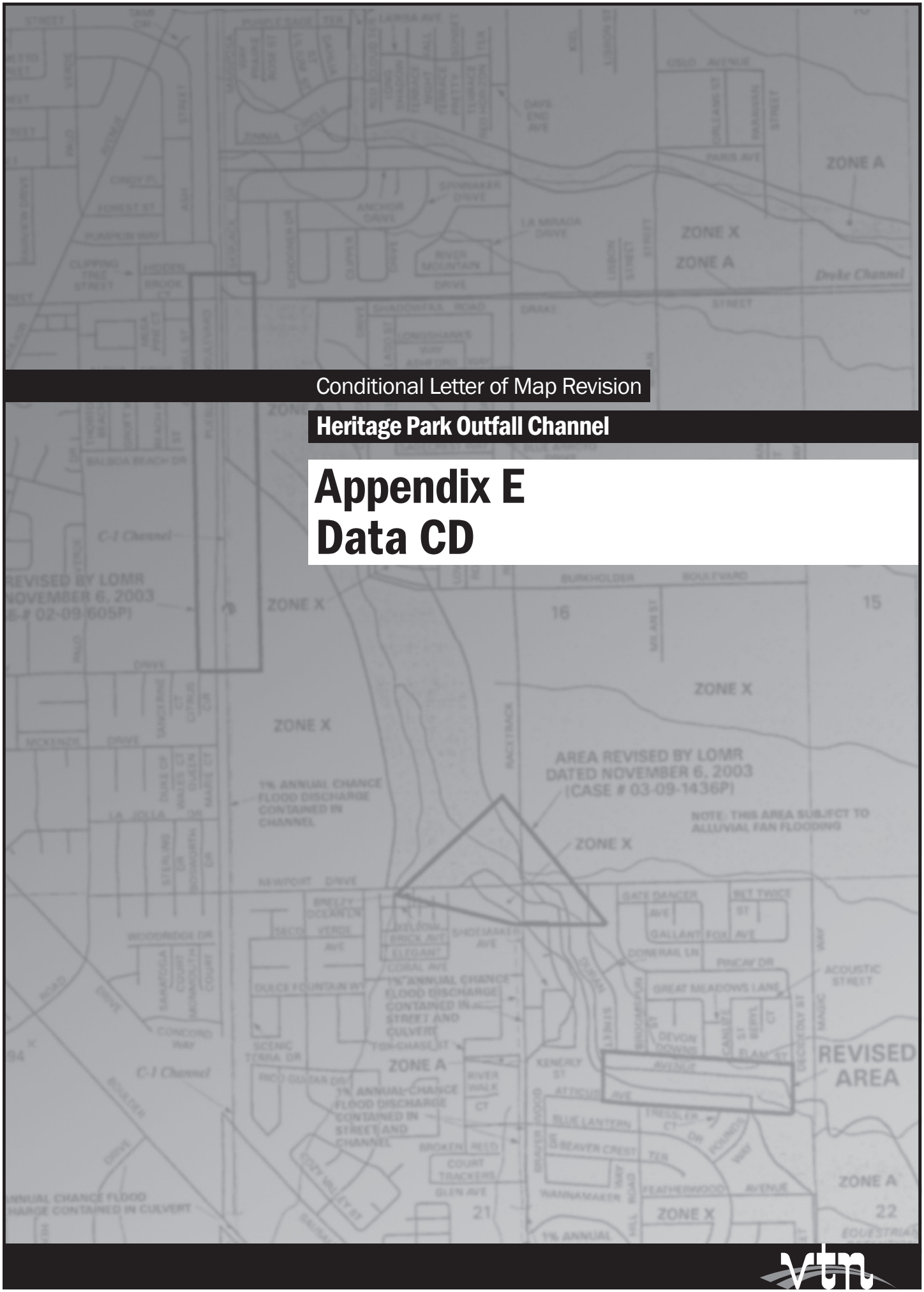
UPPER AND MIDDLE REACHES OF THE C-1 CHANNEL - PHASE 1
GRADING & DRAINAGE PLAN & PROFILE
"C-1" 35+00.00 TO "C-1" 26+15.39
HENDERSON NEVADA, DEPARTMENT OF PUBLIC WORKS

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
SYNDI J. FLIPPIN-DUDLEY
CIVIL
No. 11070
EXPIRES 12/31/2002

PROJECT NO:	839
DRAWN BY:	ARB
DESIGNED BY:	SRF
CHECKED BY:	SJD
APPROVED BY:	TDL
SCALE	
HORIZ:	1" = 40'
VERT:	1" = 4'

DRAWING NO
SD-6
SHEET 12 OF 34

U:\839C1-CHANNEL\DRAINAGE\839C1-PHIMASTER.DWG v6 10/10/02 15:50:00 pst RR



Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix E
Data CD

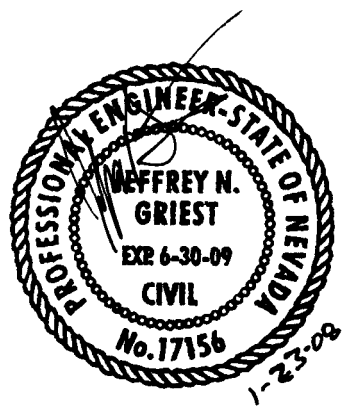
RFCD
2008 JAN 25 PM 2:50

1ST ADDENDUM TO THE FEMA REQUEST FOR CONDITIONAL LETTER OF MAP REVISION

HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)

PREPARED FOR:

CITY OF HENDERSON
240 Water Street
Henderson, NV 89009



PREPARED BY:

VTN NEVADA
2727 S. Rainbow Boulevard
Las Vegas, NV 89146
(702) 247-4020

January 2008

nevada

CONSULTING ENGINEERS • PLANNERS • SURVEYORS

PROVIDING QUALITY PROFESSIONAL
SERVICES SINCE 1960

January 25, 2008
File: 6928-CLOMR

Syed Qayum, CFM
National LOMR Technical Manager
Michael Baker Jr., Inc.

Federal Emergency Management Agency
3601 Eisenhower Avenue
Alexandria, VA 22304-6425

Reference: Case No.: 08-09-0009R (Heritage Park Outfall Channel CLOMR)
Community: City of Henderson, NV
Community No.: 320005

Dear Mr. Qayum:

The enclosed addendum #1 is being provided in response to the comment letter dated October 30, 2007 for the Heritage Park Outfall Channel CLOMR; Case No.: 08-09-0009R. The comments that you provided for the specified project are addressed within the following response summary:

RESPONSE TO COMMENTS

Comment 1: The HEC-RAS models for the existing conditions (Pre-Project) and proposed conditions (Post-Project) were revised to use a subcritical flow regime. The existing conditions and proposed conditions base floodplain boundary delineations on the topographic work maps were updated to reflect the revision.

Comment 2: There are three property owners affected by the increase in base flood water-surface elevations within the existing Special Flood Hazard Area (SFHA). The City of Henderson, CMN Enterprises, Inc., and the Mountainside Manor Homeowners Association own land directly upstream of the 8'x6' RCB improvements. The CMN Enterprises, Inc. and the Mountainside Manor Homeowners Associations' parcels are presently designated as a drainage

2727 SOUTH RAINBOW BOULEVARD LAS VEGAS, NEVADA 89146-5148
TEL. (702) 873-7550 FAX: 362-2597

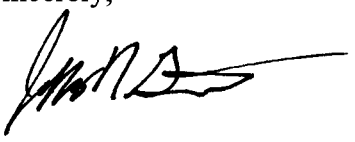
easement and are located within the City of Henderson jurisdictional boundary. Therefore, the City of Henderson has written a letter to these owners to inform them of the proposed revision within the existing SFHA. Copies of these letters are included in Appendix B.

As mentioned above, the City of Henderson is also the property owner of a parcel upstream of the 8'x6' RCB. The City acknowledges the change within the existing SFHA, and does not take exception to this change. Refer to the letter included in Appendix B.

Comment 3: The "Heritage Park Outfall Channel (AKA Equestrian Detention Basin Outfall Channel) Pre-Project Conditions Work Map" and the "Heritage Park Outfall Channel (AKA Equestrian Detention Basin Outfall Channel) Post-Project Conditions Work Map" have been revised for this addendum. Both topographic work maps were plotted at scale and certified by a registered professional engineer. Copies of the maps are included in the Appendix and the digital files are included on the Data CD.

If you have any questions or require additional information, do not hesitate to contact me.

Sincerely,



Jeffrey N. Griest, P.E.
VTN Consulting
2727 South Rainbow Boulevard
Las Vegas, NV 89146
(702) 253-2373

ATTACHMENT

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

October 30, 2007

Mr. Jeffrey Griest, P.E.
VTN Nevada
2727 South Rainbow Boulevard
Las Vegas, NV 89146

IN REPLY REFER TO:
Case No.: 08-09-0009R
Community: City of Henderson, NV
Community No.: 320005

316-AD

Dear Mr. Griest:

This is in regard to your request dated September 28, 2007, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a conditional revision to the Flood Insurance Rate Map (FIRM) for Clark County, Nevada and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Heritage Park Outfall Channel
Flooding Source:	Unnamed Tributary to C-1 Channel
FIRM Panel(s) Affected:	32003C2615 E

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. Therefore, we are unable to grant extensions for the submission of required data/fees for revision requests. If a requester is informed by letter that additional data are required to complete our review of a request, the data/fee **must** be submitted within 90 days of the date of the letter. Any fees already paid will be forfeited for any request for which the requested data are not received within 90 days.

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 contact your case reviewer, Mr. Mark Schneck, CFM, by e-mail at mark.schneck@mapmodteam.com or by telephone at (703) 960-8800, or the

Revisions Coordinator for your State, Mr. Sacha Tohme, CFM, at sacha.tohme@mapmodteam.com or at (703) 317-6250.

Sincerely,

Syed Qayum

Syed Qayum, CFM
National LOMR Technical Manager
Michael Baker Jr., Inc.

Enclosures

cc: Mr. Curt Chandler, P.E., CFM
Land Development Manager
Department of Public Works
City of Henderson

Mr. Joseph Damiani, P.E.
Project Engineer
Department of Public Works
City of Henderson

Mr. Kevin Eubanks, P.E., CFM
Assistant General Manager
Clark County Regional Flood Control District

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

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

Case No.: 08-09-0009R

Requester: Mr. Jeffrey Griest, P.E.

Community: City of Henderson, NV

Community No.: 320005

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

1. Our preliminary review revealed that the submitted existing conditions and proposed conditions HEC-RAS models were run using a mixed flow regime. Base (1-percent-annual-chance) floodplain boundary delineations based on supercritical flow depths are acceptable only for concrete-lined, engineered channels. Because the project reach is not entirely concrete-lined, critical depth is the minimum depth permissible to map the base floodplain boundary delineations for the project reach. Please revise the existing conditions and proposed conditions HEC-RAS models to use a subcritical flow regime. In addition, please revise the existing conditions and proposed conditions base floodplain boundary delineations to reflect critical depth as the minimum depth.

2. Our preliminary review revealed an increase in base flood water-surface elevations (WSELs) between the existing conditions and the proposed conditions for the unnamed tributary to C-1 Channel. Because the proposed conditions base flood WSELs will increase more than 1.0 foot over the existing conditions base flood WSELs, please provide evidence that the project satisfies the requirements of Paragraphs 65.12(a)(3) and (a)(5) of the National Flood Insurance Program regulations, including the following:

   a. Documentation of the individual legal notices sent to all affected property owners to explain the effects of the increase in base flood WSELs on their property; and
   b. Certification that no structures are located in the areas affected by the increased base flood WSELs.

3. Our preliminary review revealed that the submitted undated topographic work map entitled "Heritage Park Outfall Channel (AKA Equestrian Detention Basin Outfall Channel), Pre-Project Conditions Work Map," prepared by your firm, was not certified by a registered professional engineer or a licensed land surveyor. In addition, the work map was reduced at an unknown scale. Please submit a topographic work map, certified by a registered professional engineer or licensed land surveyor, at full accurate scale. If available, please provide the digital files for the work map in addition to the paper copy.

Effective October 1, 2007, 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. In accordance with this schedule, the fee for your request is $4,400 and must be submitted before we can continue processing your request. The amount you submitted, $4,000, is not sufficient. The balance, $400, 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 (Visa or MasterCard only). 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.

Please send the required data and/or fee directly 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.

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 1, 2007, or later and supersedes the fee schedule that was established on October 30, 2005.

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), and Letters of Map Revision (LOMRs).

Based on our review of actual cost data for Fiscal Years 2005 and 2006, FEMA has maintained 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 FEMA)	$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 by FEMA)	$700

Based on our review of actual cost data for Fiscal Years 2005 and 2006, FEMA has established the following review and processing fees, which are to be submitted with all requests that are not otherwise exempted.

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	$5,500

Fee Schedule for Requests for Map Revisions

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

Request based on bridge, culvert, channel, or combination of these	$4,800
Request based on levee, berm, or other structural measure	$6,500
Request based on as-built information submitted as follow-up to CLOMR	$4,800

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

FEMA has maintained 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

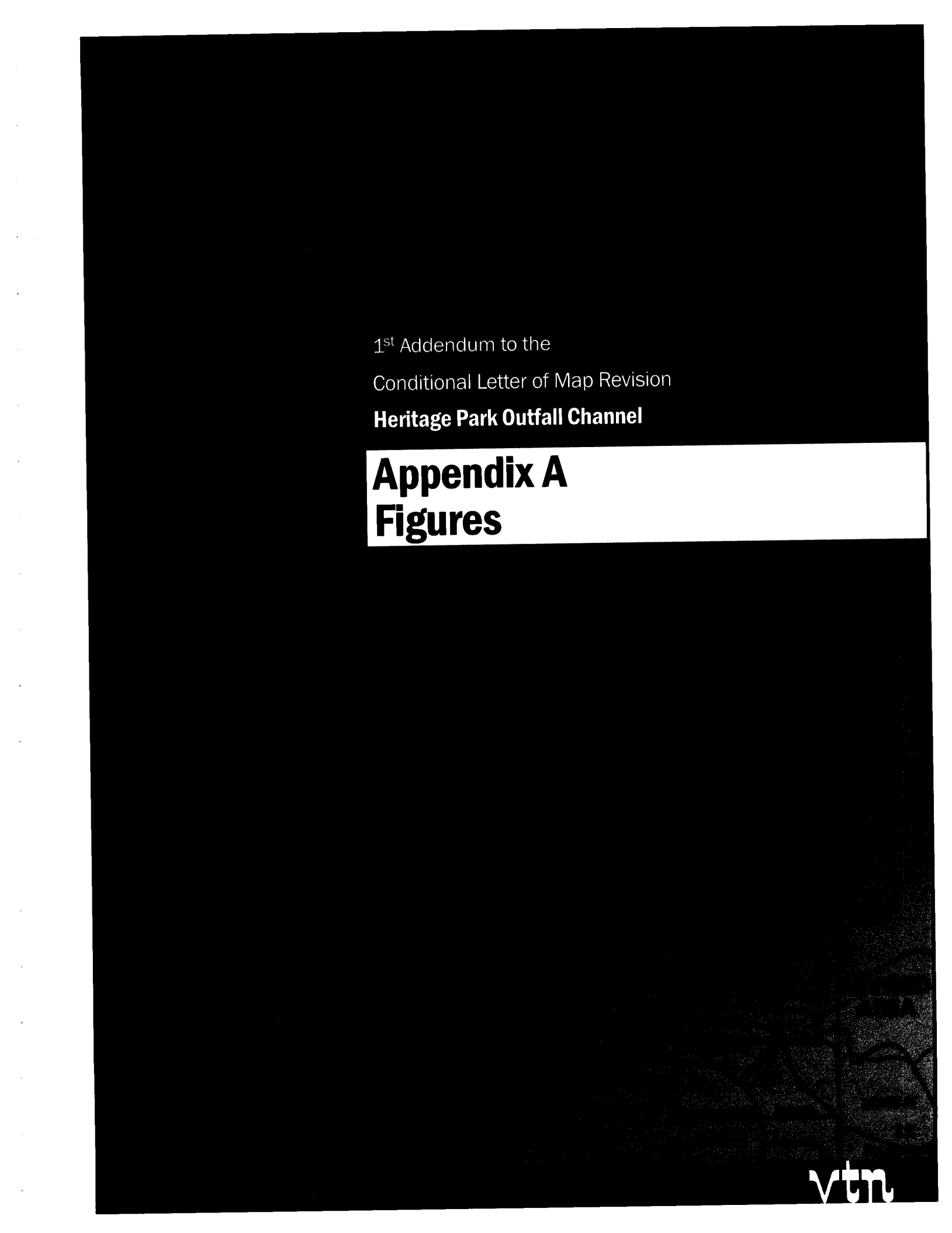
Requesters must make fee payments for non-exempt requests before we render services. This payment must be in the form of a check or money order or by credit card payment. Please make all checks and money orders in U.S. funds payable to the *National Flood Insurance Program.* FEMA will deposit all fees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

1st Addendum to the

Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix A
Figures



PRE-PROJECT CONDITIONS WORK MAP
- FIGURE 3.2

LEGEND

- EXISTING FEMA FLOOD ZONE A
- EXISTING FEMA FLOOD ZONE X
- PRE-PROJECT 100-YEAR FLOOD ZONE
- FEMA APPROVED 100-YEAR FLOW
- PRE-PROJECT HEC-RAS STATION

NORTH

GRAPHIC SCALE

150 0 75 150 300

(IN FEET)
1 inch = 150 ft.

BROOMSPUN ST.

COLONEL CUP ST.

CANLITE ST.

DECIDEDLY ST.

S. MAGIC WY.

ELAM ST.

DEVON DOWNS AVE.

ATTICUS AVE.

CAMP HILL RD.

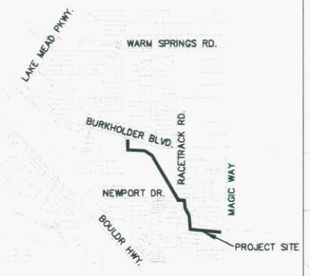
ZONE X

ZONE A

706 CFS

34+00
33+91.11
33+05.97
33+00
32+00
31+00
30+00
29+50.20
29+00
26+83.75
26+00
25+00
24+00
23+00
22+00
21+00
20+00
19+00
18+00
17+00
16+00
15+00
27+90.28
27+75
27+50
27+26.48
27+00

2015 2020 2025 2030 2035 2040 2050



VICINITY MAP

PROFESSIONAL ENGINEER-STATE OF NEVADA
JEFFREY N. GRIEST
EXP. 06-30-09
CIVIL
No. 17156
1-23-08

HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)
PRE-PROJECT CONDITIONS WORK MAP

FIGURE 3.2

DATE MODIFIED: JANUARY 2008

POST-PROJECT CONDITIONS WORK MAP
- FIGURE 3.3

LEGEND
EXISTING FEMA FLOOD ZONE A
EXISTING FEMA FLOOD ZONE A TO BE REMOVED
POST PROJECT 100-YEAR FLOOD ZONE
FEMA APPROVED 100-YEAR FLOW
PROPOSED CONCRETE BOX CHANNEL
POST-PROJECT HEC-RAS STATION

NORTH

GRAPHIC SCALE
150 0 75 150 300
(IN FEET)
1 inch = 150 ft.

AREA TO BE REMOVED FROM FLOOD ZONE A
1% ANNUAL CHANGE FLOOD DISCAHRGE CONTAINED IN CONCRETE BOX CHANNEL
59 CFS
8'x6' RCB
PROPOSED CONCRETE TRANSITION STRUCTURE
706 CFS

BROOMSPUN ST.
COLONEL CUP ST.
CANLITE ST.
DECIDEDLY ST.
S. MAGIC WY.
DEVON DOWNS AVE.
ELAM ST.
ATTICUS AVE.
CAMP HILL RD.

ZONE X
ZONE A
ZONE A
ZONE X

26+83.75 26+00 25+00 24+00 23+00 22+00 21+00 20+00 19+00 18+00 17+00 16+00 15+00
27+90.28 27+75 27+50 27+26.48 27+00

2025 2030 2035 2040 2020 2050 2052.91

VICINITY MAP
LAKE MEAD PKWY.
WARM SPRINGS RD.
BURKHOLDER BLVD.
RACETRACK RD.
NEWPORT DR.
MAGIC WAY
BOULDR HWY.
PROJECT SITE

PROFESSIONAL ENGINEER-STATE OF NEVADA
JEFFREY N. GRIEST
EXP. 06-30-09
CIVIL
No. 17156
1-23-08

HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)
POST-PROJECT CONDITIONS WORK MAP

FIGURE 3.3

DATE MODIFIED: JANUARY 2008

1st Addendum to the

Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix B
Reference Material

vtn

NOTIFICATION LETTERS

CITY OF HENDERSON
240 Water Street
P. O. Box 95050
Henderson, NV 89009

January 22, 2008
WO#6928 – Heritage Park Outfall Channel CLOMR

Federal Emergency Management Agency
3601 Eisenhower Avenue
Alexandria, VA 22304-6425

Attention: Syed Qayum, CFM
National LOMR Technical Manager
Michael Baker Jr. Inc.

Reference: Affected Special Flood Hazard Area (SFHA) Property Notification
Case No.: 08-09-0009R (Heritage Park Outfall Channel)
Community: City of Henderson, NV
Community No.: 320005

Dear Mr Qayum,

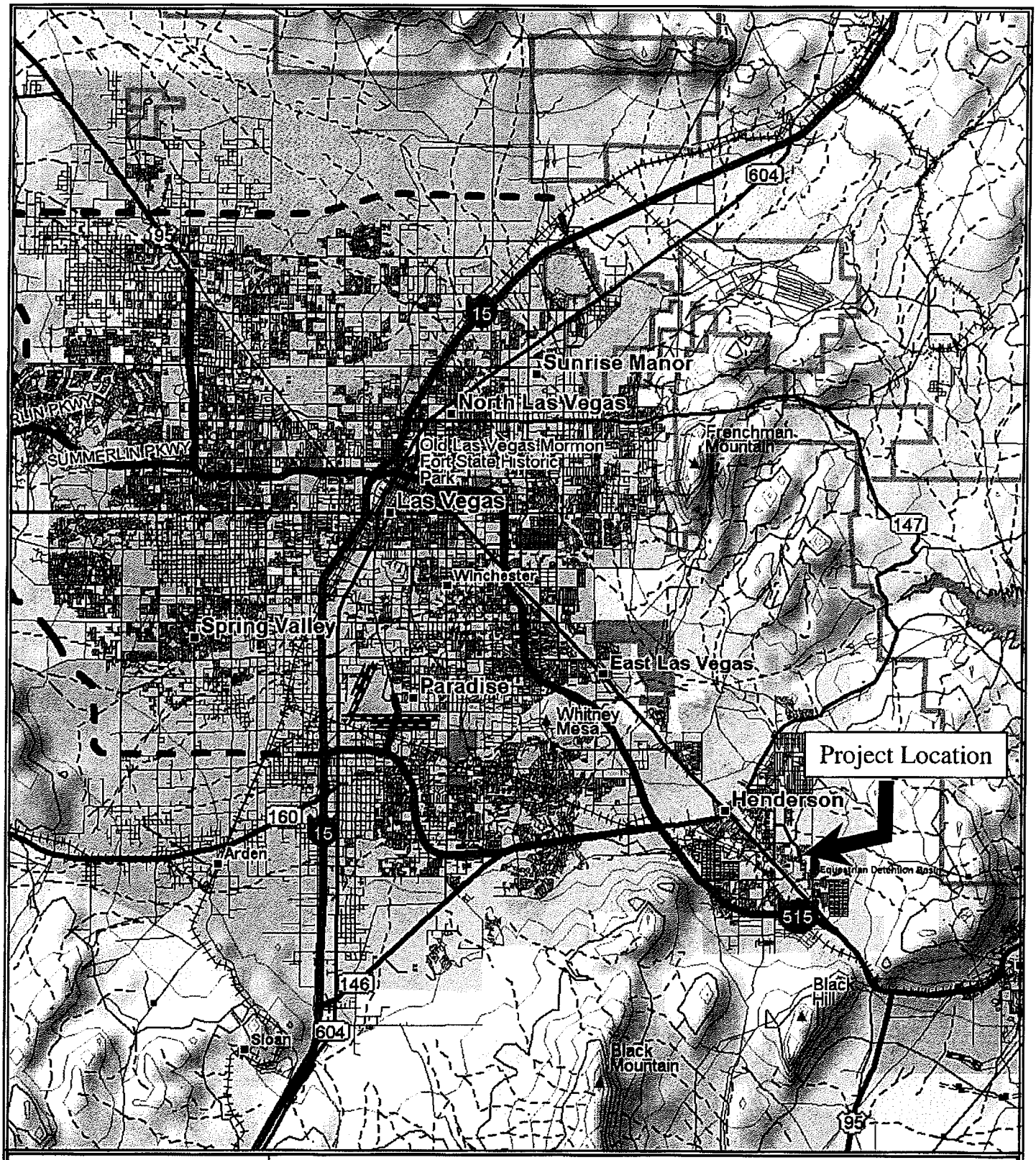
The City of Henderson was notified by VTN Nevada that there has been a revision to the current flood zone due to the Heritage Park Outfall Channel CLOMR Report Case No.: 08-09-0009R. The revised flood zone affects parcel number 179-21-601-001 owned by City of Henderson. The City of Henderson understands that the flood zone has been revised in parcel number 179-21-601-001 and accepts the changes that are shown on the Heritage Park Outfall Channel CLOMR done by VTN Nevada. An exhibit showing the existing and future flood zone width is attached to this letter for your information.

Sincerely,

Joseph V. Damiani

Joseph V. Damiani, P.E., CFM
Project Engineer III
City of Henderson Public Works
Phone: 267-3061
Fax: 267-3051
email: joe.damiani@cityofhenderson.com

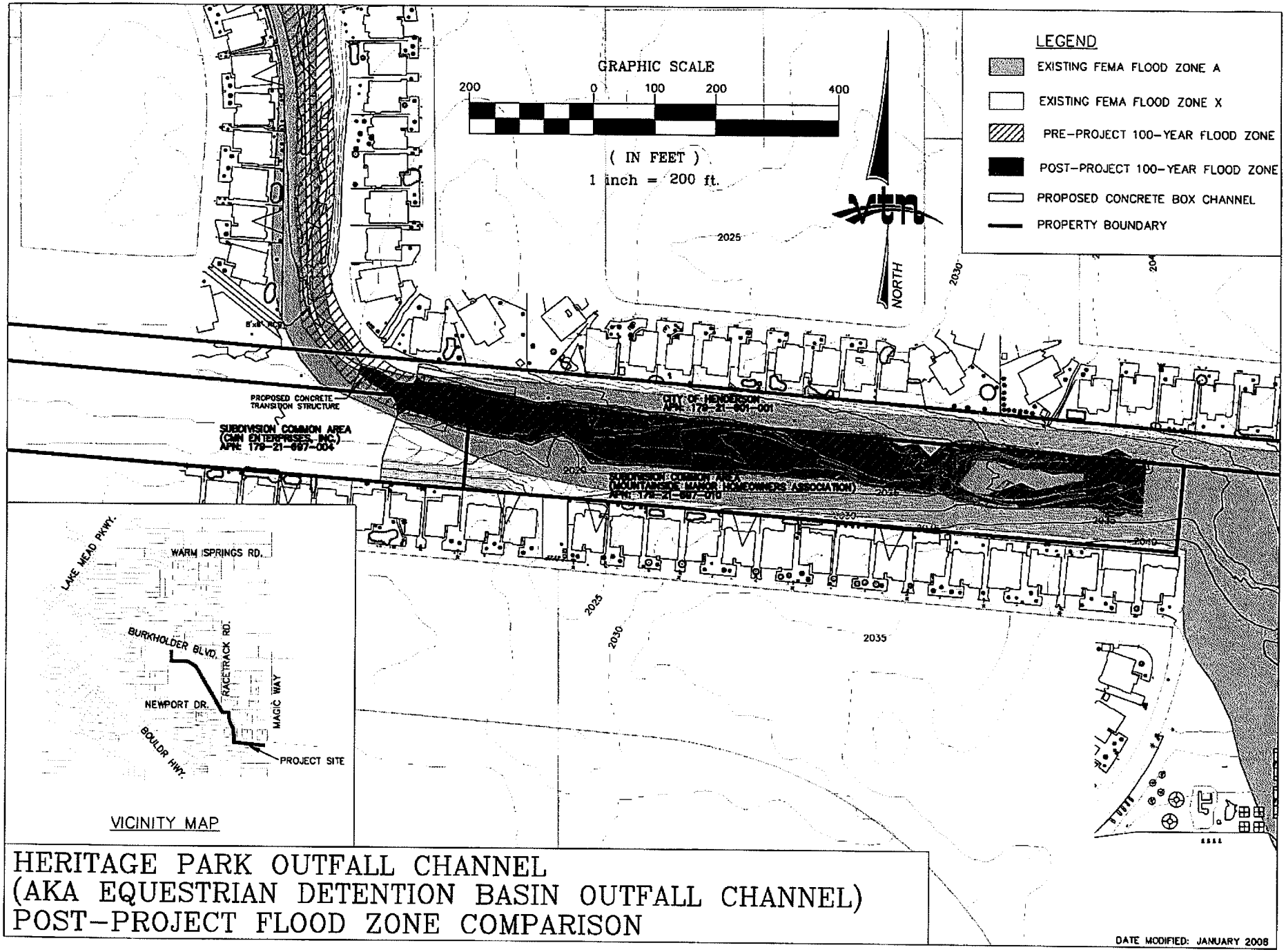
ATTACHMENT



Vicinity Map

Heritage Park Outfall Channel

(AKA Equestrian Detention Basin Outfall Channel)



HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)
POST-PROJECT FLOOD ZONE COMPARISON

DATE MODIFIED: JANUARY 2008

CITY OF HENDERSON
240 Water Street
P. O. Box 95050
Henderson, NV 89009

January 22, 2008

Mountainside Manor Homeowners Association
C/O Steven A. Nicklin, President
Nicklin Property Management
375 N. Stephanie Street, Suite 911A
Henderson, Nevada 89014

Subject: HERITAGE PARK OUTFALL CHANNEL PROJECT – CONDITIONAL LETTER OF MAP REVISION

Dear Steven A. Nicklin:

The City of Henderson Public Works Department is working with the Clark County Regional Flood Control District to build a Regional Master Planned channel facility that will convey storm runoff from the Subdivision Common Area located downstream of the Equestrian Detention Basin, west of Magic Way, to the C-1 Channel at Burkholder Boulevard (see attached vicinity map). The channel improvements have caused slight changes in the flood elevations and flood zone widths that traverse your property, *APN 179-21-697-010.* An exhibit showing the existing and future flood zone width is attached to this letter for your information.

The City of Henderson Public Works Department is processing a Conditional Letter of Map Revision through FEMA to update the flood zone mapping. Legal notification to all property owners affected by the proposed action is required. This letter shall be considered your legal notification of the proposed changes.

If you have any questions or require additional information, do not hesitate to contact me.

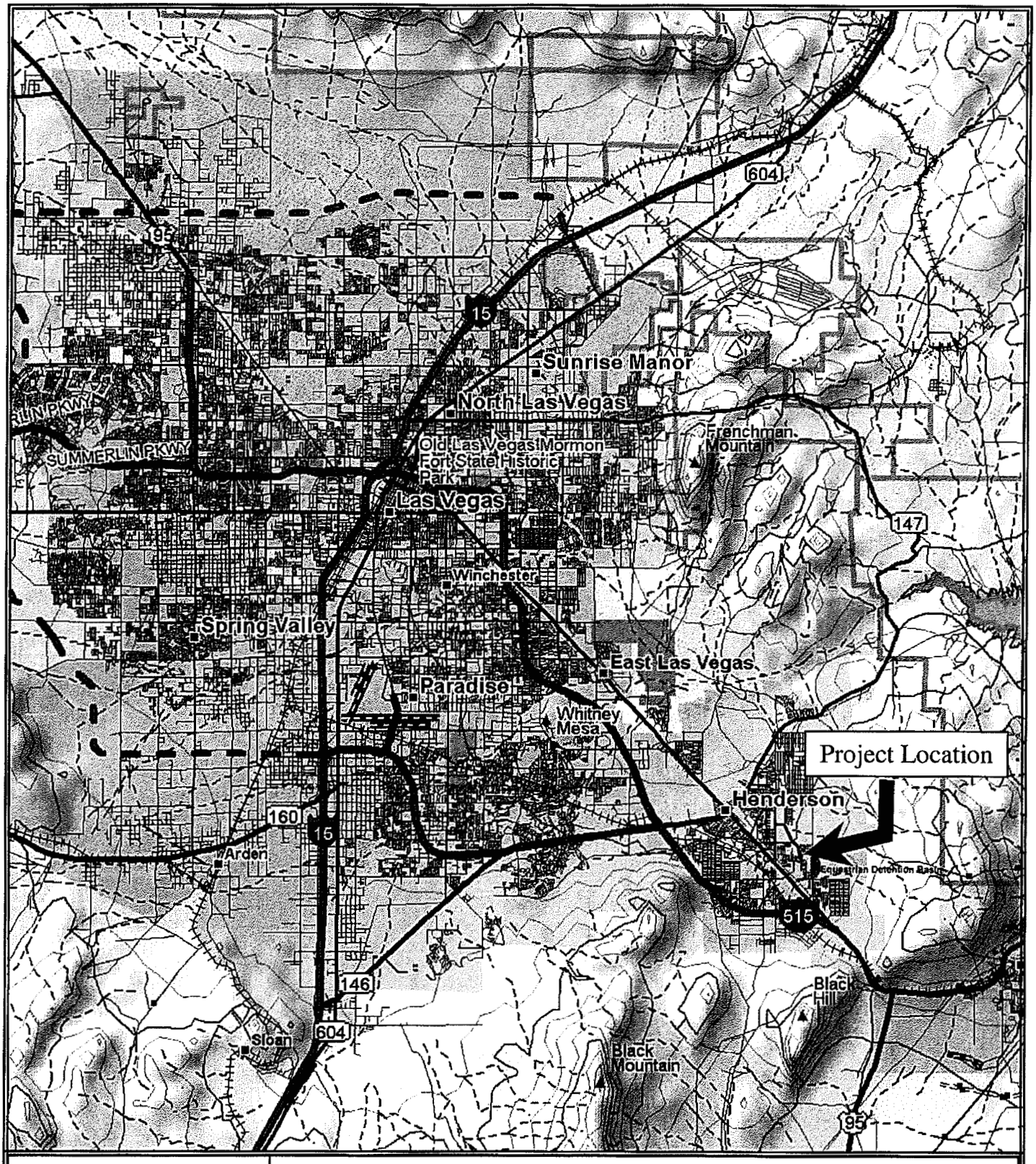
Sincerely,

Joseph V. Damiani

Joseph V. Damiani, P.E., CFM
Project Engineer III
Phone: 267-3061
Fax: 267-3051
email: joe.damiani@cityofhenderson.com

ATTACHMENT

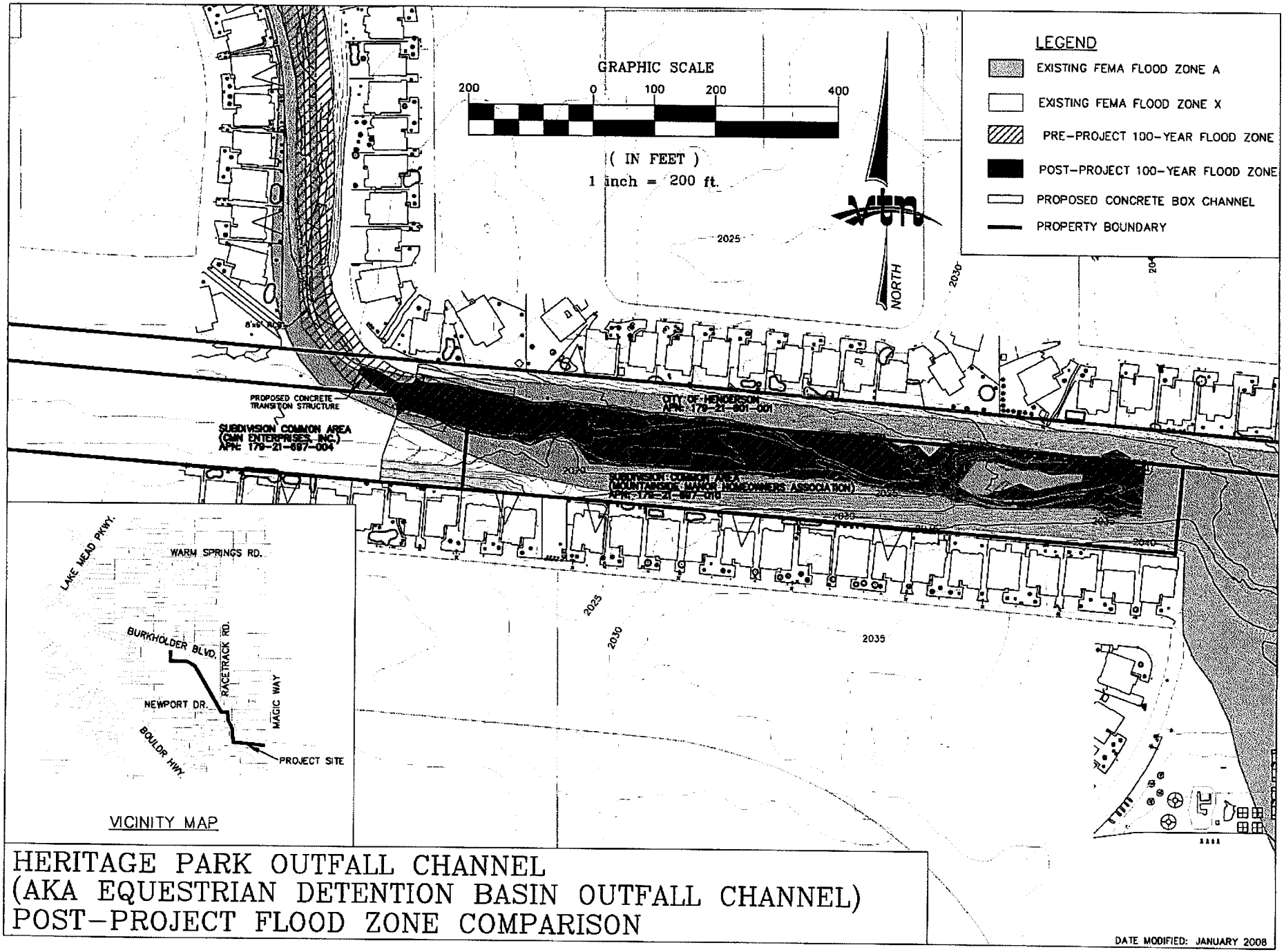
CC: Jeff Griest, VTN Consulting



Vicinity Map

Heritage Park Outfall Channel

(AKA Equestrian Detention Basin Outfall Channel)



HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)
POST-PROJECT FLOOD ZONE COMPARISON

DATE MODIFIED: JANUARY 2008

CITY OF HENDERSON
240 Water Street
P. O. Box 95050
Henderson, NV 89009

January 22, 2008

Philip D. Irwin, President
CMN Enterprises, Inc.
720 Austin Avenue, Suite 200
Erie, Colorado 80516

Subject: HERITAGE PARK OUTFALL CHANNEL PROJECT – CONDITIONAL LETTER OF MAP REVISION

Dear Philip D. Irwin:

The City of Henderson Public Works Department is working with the Clark County Regional Flood Control District to build a Regional Master Planned channel facility that will convey storm runoff from the Subdivision Common Area located downstream of the Equestrian Detention Basin, west of Magic Way, to the C-1 Channel at Burkholder Boulevard (see attached vicinity map). The channel improvements have caused slight changes in the flood elevations and flood zone widths that traverse your property, *APN 179-21-697-004*. An exhibit showing the existing and future flood zone width is attached to this letter for your information.

The City of Henderson Public Works Department is processing a Conditional Letter of Map Revision through FEMA to update the flood zone mapping. Legal notification to all property owners affected by the proposed action is required. This letter shall be considered your legal notification of the proposed changes.

If you have any questions or require additional information, do not hesitate to contact me.

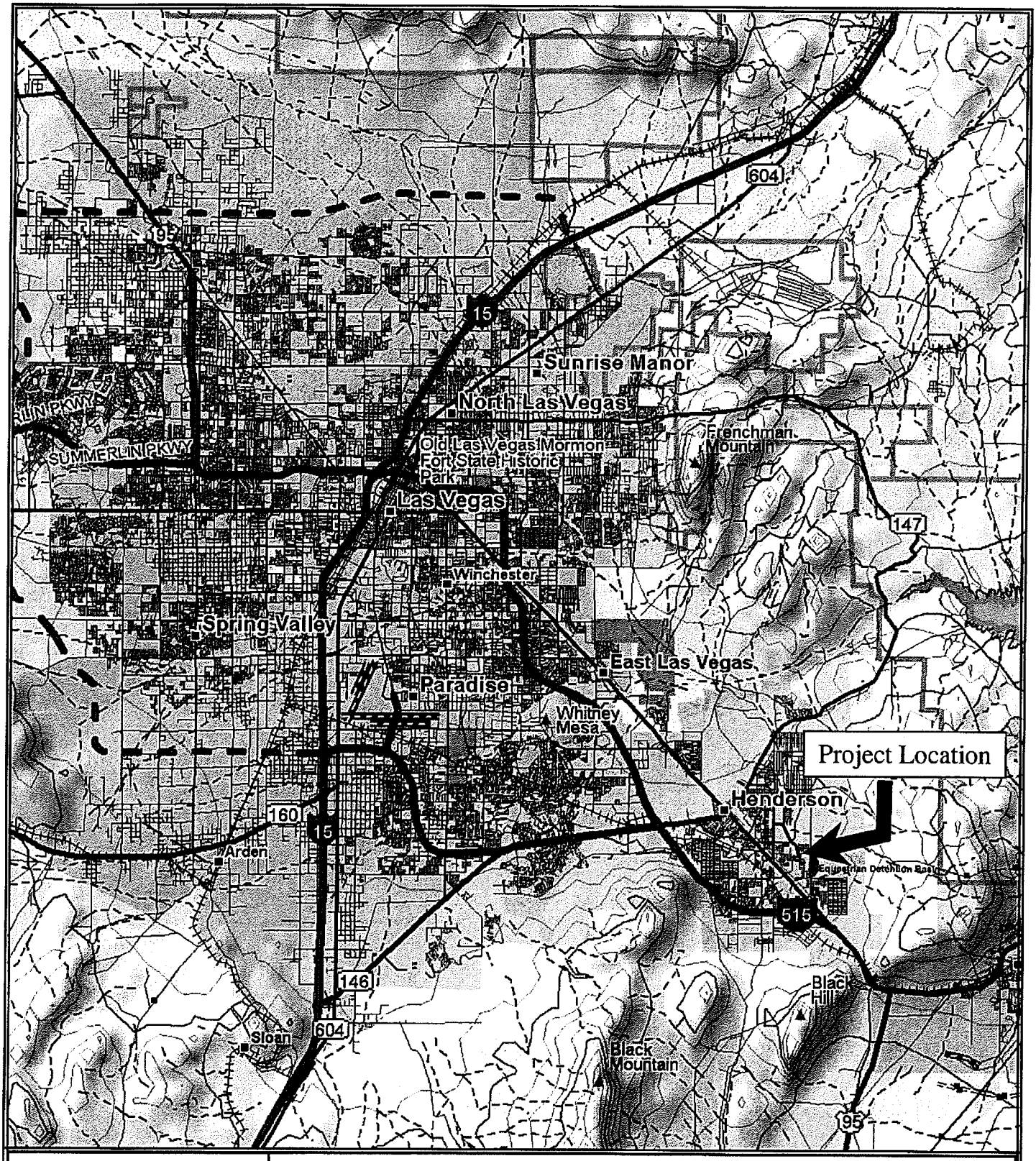
Sincerely,

Joseph V. Damiani

Joseph V. Damiani, P.E., CFM
Project Engineer III
Phone: 267-3061
Fax: 267-3051
email: joe.damiani@cityofhenderson.com

ATTACHMENT

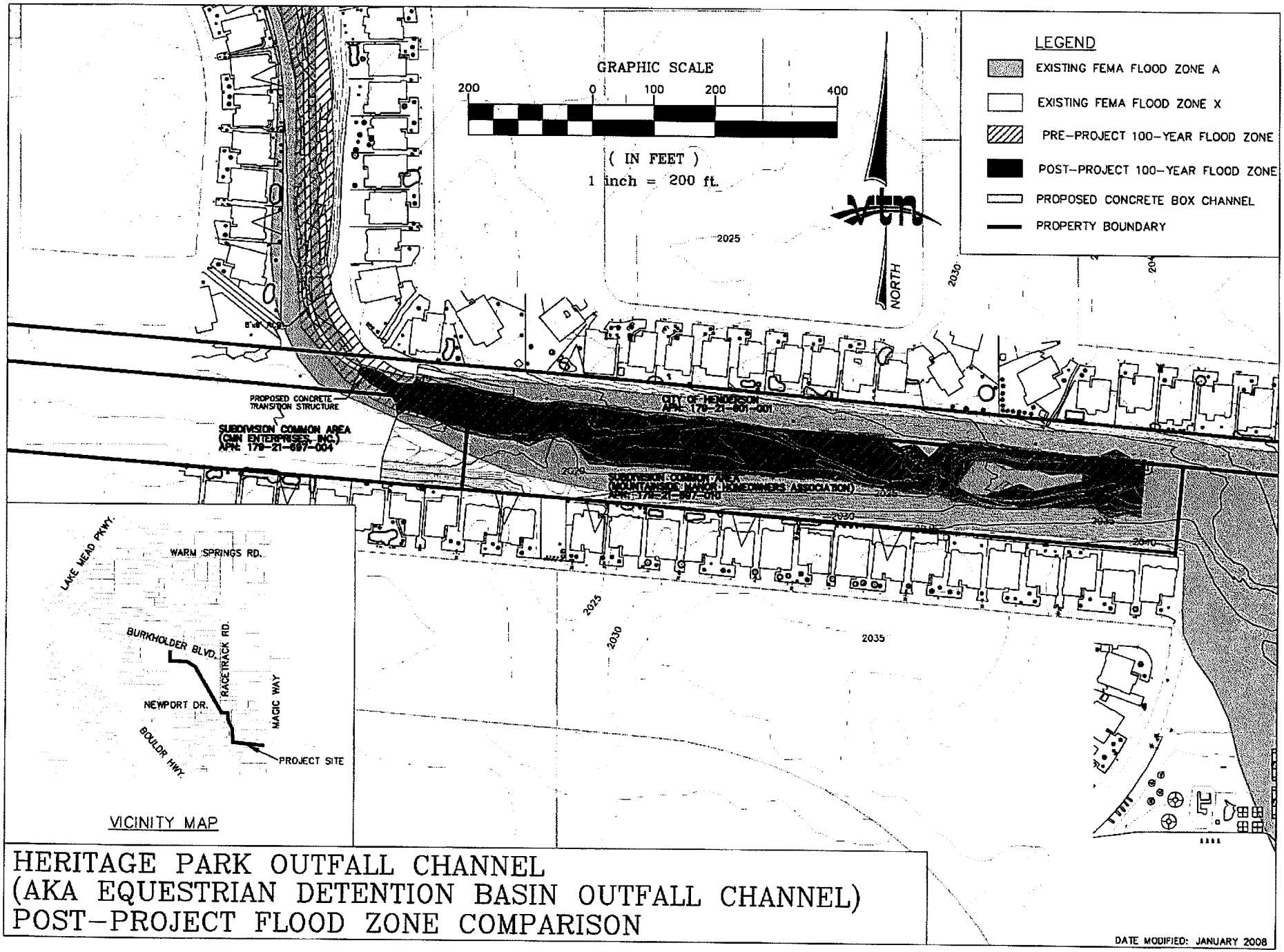
CC: Jeff Griest, VTN Consulting



Vicinity Map

Heritage Park Outfall Channel

(AKA Equestrian Detention Basin Outfall Channel)



HERITAGE PARK OUTFALL CHANNEL
(AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL)
POST-PROJECT FLOOD ZONE COMPARISON

DATE MODIFIED: JANUARY 2008

AERIAL PHOTO SHOWING ALL STRUCTURES ARE OUTSIDE OF FLOOD ZONE



VICINITY MAP

GRAPHIC SCALE

200 0 100 200 400

(IN FEET)

1 inch = 200 ft.

NORTH

HERITAGE PARK OUTFALL CHANNEL (AKA EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL) AERIAL PHOTO WITH POST-PROJECT FLOOD ZONE

NOTE: AERIAL PHOTO SHOWING CURRENT CONDITION OF EQUESTRIAN DETENTION BASIN OUTFALL CHANNEL. NO STRUCTURES ARE LOCATED WITHIN THE SFHA.

DATE MODIFIED: JANUARY 2008

1st Addendum to the

Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix C
Hydraulic Analysis

vtn

HERITAGE PARK OUTFALL CHANNEL CLOMR
PRE-PROJECT CONDITIONS: HEC-RAS OUTPUT

CLOMR.prj, Plan: Pre-Project (CLOMR.p01)

Existing Conditions Pre-Project - FEMA Flow
HEC-RAS Summary

HEC-RAS Plan: PRE River: EQUESTRIAN DB OF Reach: 1 Profile: PF 1													
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Hydr Depth	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)	(ft/s)	(sq ft)	(ft)	
1	-1500	PF 1	706	2030.00	2032.44	1.23	2032.44	2033.04	0.008474	6.24	113.22	92.38	0.99
1	-1525	PF 1	706	2029.24	2032.01	1.34	2032.00	2032.56	0.006866	5.94	118.78	88.62	0.90
1	-1550	PF 1	706	2028.25	2032.12	1.91		2032.38	0.002063	4.13	170.92	89.53	0.53
1	-1575	PF 1	706	2028.63	2031.73	1.39	2031.61	2032.27	0.006504	5.91	119.47	86.24	0.88
1	-1600	PF 1	706	2028.00	2031.50	1.33	2031.44	2032.09	0.007381	6.14	115.00	86.24	0.94
1	-1625	PF 1	706	2028.00	2031.35	1.34	2031.26	2031.90	0.006884	5.93	119.15	89.18	0.90
1	-1650	PF 1	706	2027.69	2031.07	1.23	2031.07	2031.69	0.008779	6.31	111.95	90.74	1.00
1	-1675	PF 1	706	2027.27	2030.86	1.83		2031.46	0.005181	6.21	113.76	62.11	0.81
1	-1700	PF 1	706	2026.68	2030.91	1.79		2031.29	0.003377	4.89	144.51	80.87	0.64
1	-1725	PF 1	706	2026.25	2030.24	1.72	2030.24	2031.11	0.008469	7.50	94.18	54.77	1.01
1	-1750	PF 1	706	2025.67	2029.51	1.92	2029.51	2030.47	0.008107	7.89	89.46	46.57	1.00
1	-1775	PF 1	706	2025.00	2028.68	2.04	2028.68	2029.72	0.007951	8.16	86.56	42.52	1.01
1	-1800	PF 1	706	2024.22	2027.83	1.19	2027.83	2028.45	0.009083	6.31	111.83	93.81	1.02
1	-1825	PF 1	706	2022.29	2024.39	1.27	2024.39	2025.05	0.008742	6.50	108.69	85.39	1.01
1	-1850	PF 1	706	2019.79	2022.72	1.75	2022.72	2023.62	0.007957	7.63	92.54	52.77	1.02
1	-1875	PF 1	706	2019.00	2022.36	1.34	2022.36	2023.06	0.008882	6.72	105.02	78.60	1.02
1	-1900	PF 1	706	2019.00	2021.99	1.47	2021.99	2022.74	0.008314	6.91	102.16	69.32	1.00
1	-1925	PF 1	706	2018.98	2022.05	1.95		2022.34	0.002172	4.26	165.71	85.12	0.54
1	-1950	PF 1	706	2018.37	2022.01	1.99		2022.28	0.002034	4.18	168.86	84.75	0.52
1	-1975	PF 1	706	2018.00	2021.44	1.35	2021.44	2022.14	0.008725	6.74	104.71	77.29	1.02
1	-2000	PF 1	706	2018.00	2021.15	1.36	2021.15	2021.86	0.008714	6.76	104.44	76.75	1.02
1	-2025	PF 1	706	2018.00	2020.91	1.59		2021.42	0.004975	5.69	124.12	77.83	0.79
1	-2050	PF 1	706	2018.48	2020.74	1.51		2021.28	0.005775	5.92	119.32	79.16	0.85
1	-2075	PF 1	706	2018.00	2020.41	1.37	2020.41	2021.09	0.008280	6.65	106.15	77.43	1.00
1	-2100	PF 1	706	2017.57	2020.11	1.40	2020.11	2020.81	0.008281	6.73	104.92	74.94	1.00
1	-2125	PF 1	706	2017.06	2019.84	1.37	2019.84	2020.53	0.008362	6.68	105.72	76.90	1.00
1	-2150	PF 1	706	2017.15	2019.84	1.56	2019.55	2020.30	0.004668	5.43	129.94	83.07	0.77
1	-2175	PF 1	706	2017.00	2019.48	1.29	2019.48	2020.13	0.008473	6.46	109.32	84.55	1.00
1	-2200	PF 1	706	2017.00	2019.43	1.51		2019.88	0.004735	5.37	131.55	86.93	0.77
1	-2225	PF 1	706	2017.00	2019.13	1.33	2019.06	2019.72	0.007417	6.18	114.26	85.70	0.94
1	-2250	PF 1	706	2016.82	2018.84	1.32	2018.84	2019.51	0.008589	6.60	106.91	81.02	1.01
1	-2275	PF 1	706	2016.34	2018.82	1.54		2019.28	0.004693	5.41	130.50	84.78	0.77
1	-2300	PF 1	706	2016.00	2018.68	1.49	2018.45	2019.15	0.005001	5.46	129.19	86.73	0.79
1	-2325	PF 1	706	2016.00	2018.33	1.29	2018.33	2018.97	0.008451	6.45	109.42	84.76	1.00
1	-2350	PF 1	706	2016.00	2018.26	1.43		2018.74	0.005412	5.53	127.56	89.00	0.81
1	-2375	PF 1	706	2016.00	2018.21	1.59		2018.60	0.003810	4.97	142.16	89.50	0.69
1	-2400	PF 1	706	2015.94	2018.19	1.74		2018.49	0.002665	4.43	159.36	91.45	0.59
1	-2425	PF 1	706	2015.43	2017.90	1.91		2018.39	0.003900	5.66	124.79	65.50	0.72
1	-2450	PF 1	706	2014.88	2017.35	1.70	2017.35	2018.22	0.007955	7.49	94.31	55.33	1.01
1	-2475	PF 1	706	2014.14	2016.81	1.73	2016.81	2017.69	0.007830	7.52	93.83	54.31	1.01
1	-2500	PF 1	706	2013.58	2016.03	1.52	2016.03	2016.81	0.008127	7.06	100.04	65.75	1.01
1	-2525	PF 1	706	2013.04	2015.48	1.63	2015.48	2016.32	0.008012	7.32	96.43	59.25	1.01
1	-2550	PF 1	706	2012.00	2015.45	2.03		2015.94	0.003547	5.61	125.86	62.14	0.69
1	-2575	PF 1	706	2011.77	2015.37	2.10		2015.85	0.003349	5.55	127.21	60.46	0.67
1	-2600	PF 1	706	2011.26	2015.26	1.99		2015.76	0.003849	5.68	124.31	62.43	0.71
1	-2625	PF 1	706	2011.44	2015.23	1.99		2015.64	0.003168	5.19	136.14	68.25	0.65
1	-2650	PF 1	706	2012.00	2014.68	1.59	2014.68	2015.49	0.008041	7.22	97.80	61.48	1.01
1	-2675	PF 1	706	2012.00	2014.74	1.87		2015.22	0.003887	5.59	126.31	67.62	0.72
1	-2700	PF 1	706	2011.49	2014.28	1.51	2014.28	2015.06	0.008304	7.08	99.77	65.98	1.01
1	-2730	PF 1	706	2011.00	2013.80	1.64	2013.76	2014.58	0.007449	7.07	99.81	60.87	0.97
1	-2750	PF 1	706	2010.23	2013.88	2.04		2014.39	0.003683	5.74	122.99	60.16	0.71
1	-2775	PF 1	706	2010.00	2013.85	2.20		2014.29	0.002856	5.32	132.77	60.26	0.63
1	-2790.28	PF 1	706	2011.00	2013.67	1.95		2014.23	0.004174	5.96	118.50	60.86	0.75
1	-2791.78	PF 1	706	2010.20	2013.71	2.05		2014.20	0.003508	5.62	125.53	61.22	0.69
1	-2800	PF 1	706	2011.00	2013.54	1.86		2014.16	0.004945	6.29	112.33	60.47	0.81
1	-2804.37	PF 1	706	2011.00	2013.51	1.83		2014.14	0.005159	6.36	111.08	60.71	0.83
1	-2900	PF 1	706	2011.00	2012.76	1.48	2012.76	2013.51	0.008176	6.95	101.63	68.74	1.01
1	-2950.26	PF 1	706	2009.00	2011.79	1.64	2011.79	2012.63	0.008187	7.35	96.06	58.57	1.01
1	-3000	PF 1	706	2006.00	2008.06	1.72	2008.06	2008.93	0.007825	7.50	94.11	54.57	1.01
1	-3100	PF 1	706	2004.00	2007.45	2.19		2007.84	0.002526	5.01	141.04	64.35	0.60
1	-3200	PF 1	706	2003.84	2006.56	1.60	2006.56	2007.38	0.008018	7.25	97.43	61.02	1.01
1	-3300	PF 1	706	2002.22	2005.19	1.90		2005.71	0.004122	5.82	121.34	63.95	0.74
1	-3305.97	PF 1	706	2002.29	2005.16	1.90		2005.68	0.004107	5.81	121.61	64.14	0.74
1	-3391.11	PF 1	706	2002.47	2004.43	1.50	2004.43	2005.18	0.008069	6.98	101.19	67.47	1.00
1	-3400	PF 1	706	2002.33	2004.31	1.49	2004.31	2005.07	0.008163	7.00	100.90	67.55	1.01
1	-3500	PF 1	706	2001.00	2003.30	1.59	2003.30	2004.11	0.007999	7.21	97.89	61.56	1.01
1	-3600	PF 1	706	1998.00	2000.56	1.96		2001.12	0.004199	5.98	118.03	60.21	0.75
1	-3700	PF 1	706	1997.61	1999.72	1.57	1999.72	2000.52	0.008125	7.18	98.38	62.72	1.01
1	-3789.96	PF 1	706	1993.00	1996.28	2.06	1996.00	1996.99	0.005066	6.76	104.42	50.72	0.83
1	-3800	PF 1	706	1993.00	1995.97	1.82	1995.97	1996.90	0.007864	7.73	91.29	50.25	1.01
1	-3868.66	PF 1	706	1991.78	1994.54	1.71	1994.54	1995.41	0.007888	7.51	94.00	54.85	1.01
1	-3900	PF 1	706	1991.00	1994.14	1.90	1993.95	1994.87	0.005759	6.85	103.00	54.13	0.88
1	-4000	PF 1	706	1991.00	1993.82	2.01		1994.34	0.003777	5.79	122.03	60.75	0.72
1	-4100	PF 1	706	1991.00	1992.98	1.59	1992.98	1993.78	0.007962	7.20	98.05	61.67	1.01
1	-4146.01	PF 1	706	1989.45	1992.17	1.69	1992.17	1993.02	0.007747	7.39	95.51	56.35	1.00
1	-4200	PF 1	706	1988.01	1991.28	1.67	1991.28	1992.12	0.007885	7.37	95.80	57.29	1.00
1	-4300	PF 1	706	1983.97	1987.92	2.61		1988.03	0.000550	2.63	268.57	103.09	0.29

vtn

Existing Conditions Pre-Project - FEMA Flow
HEC-RAS Summary

1/21/2008

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Hydr Depth	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)	(ft/s)	(sq ft)	(ft)	
1	-4399.05	PF 1	706	1982.00	1987.94	3.53		1987.98	0.000128	1.55	455.25	128.84	0.15
1	-4400	PF 1	706	1982.00	1987.94	3.53		1987.98	0.000129	1.55	454.75	128.72	0.15
1	-4423.9	PF 1	706	1982.00	1987.94	3.69		1987.98	0.000116	1.52	465.12	126.11	0.14
1	-4500	PF 1	706	1982.00	1987.94	4.01		1987.97	0.000067	1.22	577.97	144.27	0.11
1	-4528.19	PF 1	706	1982.00	1987.95	4.17		1987.96	0.000047	1.05	670.86	161.01	0.09
1	-4563.86	PF 1	706	1982.00	1987.94	4.08		1987.96	0.000065	1.22	580.65	142.15	0.11
1	-4596.68	PF 1	706	1982.00	1987.90	4.07		1987.96	0.000152	1.83	385.62	94.80	0.16
1	-4600	PF 1	706	1982.00	1987.90	4.29		1987.96	0.000147	1.86	379.53	88.39	0.16
1	-4607.48	PF 1	706	1981.83	1987.81	5.98	1983.96	1987.95	0.000088	2.97	237.65	39.75	0.21
1	-4608.44		Culvert										
1	-4834.44	PF 1	706	1979.50	1981.63	2.13	1981.63	1982.71	0.002217	8.33	84.76	39.76	1.01
1	-4895.41	PF 1	706	1975.00	1978.76	2.49	1977.75	1979.09	0.001824	4.60	153.51	61.71	0.51
1	-4900	PF 1	706	1975.00	1978.71	2.48	1977.77	1979.08	0.002053	4.85	145.43	58.68	0.54
1	-4925.31	PF 1	706	1974.32	1978.22	2.40	1977.82	1978.97	0.004386	6.95	101.54	42.33	0.79
1	-5000	PF 1	706	1973.32	1977.65	2.80	1977.27	1978.60	0.004790	7.85	89.97	32.17	0.83
1	-5071.59	PF 1	706	1972.69	1976.77	2.76	1976.77	1978.15	0.007061	9.44	74.81	27.06	1.00
1	-5100	PF 1	706	1972.26	1976.28	2.72	1976.28	1977.63	0.007014	9.33	75.67	27.84	1.00
1	-5144.1	PF 1	706	1972.00	1976.28	3.05	1975.70	1977.19	0.004081	7.64	92.43	30.29	0.77
1	-5200	PF 1	706	1971.00	1975.35	2.99	1975.35	1976.83	0.007141	9.78	72.19	24.16	1.00
1	-5300	PF 1	706	1970.29	1973.93	2.40	1973.93	1975.15	0.007231	8.85	79.74	33.25	1.01
1	-5400	PF 1	706	1969.13	1972.72	2.66	1972.72	1974.07	0.007303	9.31	75.82	28.46	1.01
1	-5500	PF 1	706	1968.03	1971.28	2.34	1971.28	1972.47	0.007354	8.75	80.65	34.48	1.01
1	-5600	PF 1	706	1967.07	1970.25	2.26	1970.25	1971.37	0.007145	8.50	83.04	36.73	1.00
1	-5629.37	PF 1	706	1966.00	1969.11	2.33	1969.11	1970.29	0.007280	8.71	81.05	34.76	1.01
1	-5700	PF 1	706	1965.00	1968.14	2.03	1967.80	1968.78	0.004676	6.42	109.99	54.26	0.79
1	-5745.97	PF 1	706	1964.60	1967.35	2.26	1967.35	1968.47	0.007155	8.48	83.28	36.86	0.99
1	-5800	PF 1	706	1964.11	1966.89	2.11	1966.89	1967.95	0.007343	8.27	85.37	40.38	1.00
1	-5862.57	PF 1	706	1963.00	1965.92	1.91	1965.86	1966.90	0.006490	7.95	89.51	46.86	0.94
1	-5900	PF 1	706	1962.74	1965.60	2.11	1965.60	1966.65	0.007299	8.22	85.93	40.70	1.00
1	-6000	PF 1	706	1961.71	1963.92	1.75	1963.92	1964.78	0.007649	7.47	94.50	53.87	0.99
1	-6100	PF 1	706	1959.94	1962.05	1.37	1962.05	1962.73	0.008192	6.60	106.95	78.00	0.99
1	-6200	PF 1	706	1958.33	1961.14	0.83	1961.14	1961.56	0.009815	5.17	136.50	164.30	1.00
1	-6300	PF 1	706	1956.86	1959.15	1.32	1959.15	1959.82	0.008555	6.57	107.40	81.18	1.01
1	-6400	PF 1	706	1955.39	1957.47	1.47	1957.47	1958.20	0.008035	6.85	103.09	70.30	1.00
1	-6500	PF 1	706	1953.82	1956.01	0.97	1956.01	1956.34	0.006418	4.61	153.04	158.58	0.83
1	-6600	PF 1	706	1952.40	1954.10	1.02	1954.10	1954.60	0.008915	5.66	124.67	122.51	0.99
1	-6700	PF 1	706	1951.01	1952.85	1.04	1952.85	1953.37	0.009123	5.81	121.57	117.40	1.01
1	-6800	PF 1	706	1950.00	1951.71	1.03	1951.71	1952.23	0.009141	5.78	122.19	118.92	1.00
1	-6900	PF 1	706	1948.80	1950.34	0.79	1950.34	1950.74	0.009938	5.06	139.66	176.95	1.00
1	-7000	PF 1	706	1947.30	1949.01	0.88	1949.01	1949.44	0.009375	5.28	133.66	151.91	0.99
1	-7100	PF 1	706	1945.88	1948.00	0.79	1948.00	1948.07	0.002409	2.47	349.67	444.75	0.49
1	-7200	PF 1	706	1944.59	1946.14	1.03	1946.14	1946.65	0.008878	5.70	123.82	120.39	0.99
1	-7300	PF 1	706	1942.80	1944.42	0.67	1944.42	1944.56	0.005270	3.32	243.96	364.52	0.71
1	-7400	PF 1	706	1940.97	1943.01	0.85	1943.01	1943.08	0.001984	2.24	342.61	405.33	0.45
1	-7428.56	PF 1	706	1940.61	1942.82	1.48	1942.82	1942.83	0.000093	0.54	1289.39	874.13	0.10
1	-7500	PF 1	706	1940.16	1941.81	1.15	1941.81	1941.83	0.000714	1.22	541.20	472.48	0.26
1	-7600	PF 1	706	1939.29	1940.93	1.33	1940.93	1940.96	0.000747	1.59	483.50	364.07	0.28
1	-7700	PF 1	706	1937.00	1939.70	1.18	1938.91	1939.78	0.001229	2.32	304.82	257.31	0.38
1	-7800	PF 1	706	1934.65	1938.28	2.21	1938.28	1939.42	0.007921	8.56	82.44	37.24	1.01
1	-7893.64	PF 1	706	1931.65	1934.27	1.87	1934.27	1935.20	0.007407	7.71	91.60	49.06	0.99
1	-7900	PF 1	706	1931.49	1934.19	1.83	1934.19	1935.10	0.007485	7.64	92.36	50.54	1.00
1	-8000	PF 1	706	1927.91	1931.56	1.54	1931.56	1932.33	0.008044	7.03	100.39	65.06	1.00
1	-8100	PF 1	706	1927.40	1930.83	1.14	1930.83	1931.40	0.008660	6.02	117.27	102.43	0.99
1	-8200	PF 1	706	1926.88	1930.11	1.01	1930.01	1930.49	0.006862	4.95	142.52	140.46	0.87
1	-8300	PF 1	706	1926.34	1929.68	1.18		1929.95	0.003943	4.15	170.28	144.16	0.67
1	-8400	PF 1	706	1925.84	1929.50	1.35		1929.65	0.001872	3.13	225.33	166.64	0.47
1	-8500	PF 1	706	1925.39	1928.95	1.08		1929.32	0.005939	4.90	145.30	134.46	0.82
1	-8600	PF 1	706	1924.92	1928.56	1.50	1928.10	1928.87	0.003337	4.48	157.48	104.66	0.64
1	-8700	PF 1	706	1924.32	1927.77	1.12	1927.77	1928.33	0.008967	6.02	117.28	105.02	1.00
1	-8774.45	PF 1	706	1924.00	1927.46	1.40	1927.11	1927.78	0.003715	4.51	156.37	111.55	0.67
1	-8800	PF 1	706	1924.00	1927.04	1.09	1927.04	1927.61	0.009292	6.05	116.66	106.66	1.02
1	-8900	PF 1	706	1921.29	1924.05	1.71	1924.05	1924.89	0.007603	7.37	95.79	55.96	0.99
1	-9000	PF 1	706	1915.74	1918.45	2.14	1918.45	1919.53	0.007391	8.36	84.45	39.47	1.01
1	-9089.63	PF 1	706	1914.20	1917.04	1.70	1917.04	1917.90	0.007932	7.47	94.52	55.67	1.01
1	-9100	PF 1	706	1914.03	1916.63	1.75	1916.63	1917.53	0.007866	7.59	93.00	53.08	1.01
1	-9192.13	PF 1	706	1912.77	1915.09	1.97	1915.09	1916.09	0.007529	8.00	88.28	44.91	1.01

HEC-RAS Version 3.1.3 May 2005
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
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X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
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PROJECT DATA
Project Title: EQUESTRIAN CLOMR
Project File : CLOMR.prj
Run Date and Time: 1/21/2008 10:38:14 AM

Project in English units

Project Description:
1st Addendum to the Conditional Letter of Map Revision
Heritage Park Outfall
Channel

****

PLAN DATA

Plan Title: Pre-Project
Plan File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.p01

Geometry Title: PRE-PROJECT; PARK
Geometry File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.g08

Flow Title : Neighborhood
Flow File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.f05

Plan Summary Information:
Number of: Cross Sections = 142 Multiple Openings = 0
Culverts = 1 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

****

FLOW DATA

Flow Title: Neighborhood
Flow File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.f05

Flow Data (cfs)

River	Reach	RS	PF 1
EQUESTRIAN DB OF1		-1500	706

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
EQUESTRIAN DB OF1		PF 1	Normal S = 0.0304	Normal S = 0.0137

****

GEOMETRY DATA

Geometry Title: PRE-PROJECT; PARK
Geometry File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.g08

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1500

INPUT
Description:
Station Elevation Data num= 102

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 3.1228952030.7324.0218322030.8095.530625    20316.2684612031.209 8.29692    2032
 10.706172032.39512.191112032.60913.80411    203317.203742033.29818.788332033.416
 20.773072033.542 23.88432033.78424.787242033.78127.437922033.66733.43209    2034
 35.482132034.48537.46578    203539.492592035.54441.45111    203643.923312036.594
 45.55312    203746.454682037.23949.83693    203850.099752038.05650.811212038.228
 51.96051 2038.4553.774492038.81554.98262    203956.810192039.15157.517462039.157
 58.213942039.23858.34977 2039.25

 Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 ********************************************
 -142.261    .035-142.261    .02558.34977    .035

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.26158.34977               25      25       25            .1       .3
 Left Levee      Station=   -39.9      Elevation= 2032.25

 CROSS SECTION OUTPUT  Profile #PF 1
 ********************************************************************************************
 * E.G. Elev (ft)         * 2033.04  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.60  * Wt. n-Val.            *          *    0.025 *          *
 * W.S. Elev (ft)         * 2032.44  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
 * Crit W.S. (ft)         * 2032.44  * Flow Area (sq ft)     *          *  113.22  *          *
 * E.G. Slope (ft/ft)     *0.008474  * Area (sq ft)          *          *  113.22  *          *
 * Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
 * Top Width (ft)         *   92.38  * Top Width (ft)        *          *   92.38  *          *
 * Vel Total (ft/s)       *    6.24  * Avg. Vel. (ft/s)      *          *    6.24  *          *
 * Max Chl Dpth (ft)      *    2.44  * Hydr. Depth (ft)      *          *    1.23  *          *
 * Conv. Total (cfs)      *  7669.3  * Conv. (cfs)           *          *  7669.3  *          *
 * Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   93.06  *          *
 * Min Ch El (ft)         * 2030.00  * Shear (lb/sq ft)      *          *    0.64  *          *
 * Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.01  *          *
 * Frctn Loss (ft)        *    0.19  * Cum Volume (acre-ft)  *    1.41  *   23.19  *    2.94  *
 * C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   14.86  *    2.75  *
 ********************************************************************************************

 Warning: The energy equation could not be balanced within the specified number of iterations.  The
          program selected the water surface that had the least amount of error between computed and
          assumed values.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical
          depth, the calculated water surface came back below critical depth.  This indicates that there
          is not a valid subcritical answer.  The program defaulted to critical depth.

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                 RS: -1525

 INPUT
 Description:
 Station Elevation Data    num=      94
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ********************************************************************************
 -142.2682042.509 -140.672042.565-140.6612042.565-140.1722042.508-138.4372042.353
 -136.0812042.035-135.828    2042 -131.922041.303-130.192    2041-126.926 2040.42
 -124.509    2040-119.4862039.115-118.823    2039-117.3562038.744 -113.05    2038
  -109.782037.423-107.337    2037-104.4682036.495-101.556    2036-100.0952035.738
 -95.9636    2035-90.59542034.021-90.4798    2034-90.19082033.945-89.47542033.825
 -84.4017    2033-82.45242032.609-80.83392032.358-78.2929    2032-77.29262031.875
 -76.65292031.768-75.26332031.554-71.9249    2031-69.88522030.612-68.58372030.352
 -66.7094    2030-66.0606    2030-65.5086    2030-64.62572030.283-62.1973    2031
 -61.04192031.177-60.70242031.219-59.59252031.314-55.83922031.755-51.0886    2032
 -48.8225    2032-44.1329    2032-43.40552031.689-41.7082    2031-39.28942030.127
  -38.949    2030-38.45352029.781 -38.3492029.763-38.23492029.757-37.95972029.759
 -37.87532029.774-37.06812029.615-35.9814 2029.55-35.00932029.472-34.78982029.435
 -34.68772029.384-33.78292029.256-33.64412029.249-33.59152029.239-29.36472029.276
 -26.08912029.448-16.1598    2030-3.649712030.556-1.398832030.673       02030.762
 2.2393232030.9043.711227    20314.592877 2031.126.4156132031.38310.19792    2032
 13.961862032.62116.08633    203328.442932033.65535.07403    203435.807822034.174
 39.27631    203541.515732035.55843.29516    203647.09778 2036.8847.58003    2037
 48.374022037.15552.40611    203853.60807 2038.1355.190842038.27655.926252038.414
 56.542912038.45557.725882038.51758.13948 2038.5558.350222038.577

 Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 ********************************************
 -142.268    .035-142.268    .02558.35022    .035

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.26858.35022               25      25                  .1       .3
 Left Levee      Station=  -44.13      Elevation=    2032

 CROSS SECTION OUTPUT  Profile #PF 1
```

E.G. Elev (ft)	2032.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.		0.025	
W.S. Elev (ft)	2032.01	Reach Len. (ft)	25.00	25.00	0.00
Crit W.S. (ft)	2032.00	Flow Area (sq ft)		118.78	
E.G. Slope (ft/ft)	0.006866	Area (sq ft)		118.78	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	88.62	Top Width (ft)		88.62	
Vel Total (ft/s)	5.94	Avg. Vel. (ft/s)		5.94	
Max Chl Dpth (ft)	2.77	Hydr. Depth (ft)		1.34	
Conv. Total (cfs)	8520.3	Conv. (cfs)		8520.3	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		89.59	
Min Ch El (ft)	2029.24	Shear (lb/sq ft)		0.57	
Alpha	1.00	Stream Power (lb/ft s)		3.38	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	1.41	23.12	2.94
C & E Loss (ft)	0.09	Cum SA (acres)	0.92	14.81	2.75

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1550

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.274	2042.56	-140.161	2042.424	-139.724	2042.283	-139.708	2042.283	-139.544	2042
-136.724	2041.609	-132.788	2041	-130.682	2040.615	-127.179	2040	-122.466	2039.178
-121.471	2039	-120.736	2038.886	-114.928	2038	-114.571	2037.946	-110.951	2037.383
-108.694	2037	-105.278	2036.45	-102.68	2036	-99.85222	2035.517	-96.8097	2035
-92.03772	2034.183	-91.0282	2034	-89.7979	2033.78	-85.4234	2033	-82.36152	2032.559
-81.45242	2032.449	-79.03392	2032.098	-78.3905	2032	-77.37562	2031.898	-76.74942	2031.845
-71.85162	2031.402	-68.36662	2031.082	-67.4322	2031	-63.7417	2030.48	-59.6808	2030
-56.38132	2029.439	-54.67532	2029.168	-54.2352	2029.272	-54.20922	2029.334	-53.98342	2029.478
-53.51852	2029.569	-52.90472	2029.583	-51.85882	2029.454	-51.37282	2029.403	-50.3982	2029.232
-50.22172	2029.194	-49.5825	2029	-49.17982	2028.906	-47.27332	2028.529	-45.75652	2028.405
-45.14262	2028.342	-44.88332	2028.308	-41.56342	2028.252	-38.68372	2028.502	-34.3191	2028.93
-33.7689	2029	-33.1132	2029.131	-30.1965	2030	-26.37862	2030.226	-26.30152	2030.226
-19.05272	2030.613	-18.85452	2030.541	-4.218522	2030.634	-.7453712	2030.754		2030.779
4.631117	2030.9295	6.368612	2030.9746	10.8246	2031.4				
9.598696	2032	12.57994	2032.45	117.2013	2033	29.07638	2033.61	636.6579	2034
40.34856	2034.757	41.42886	2035	45.27423	2035.794	46.3264	2036	47.05028	2036.146
51.34959	2037	52.80746	2037.303	55.35497	2037.674	57.3991	2038	57.901	2038.04
58.35067	2038.097								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.274	.035	-142.274	.02	558.35067	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.274	58.35067	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2032.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.		0.025	
W.S. Elev (ft)	2032.12	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		170.92	
E.G. Slope (ft/ft)	0.002063	Area (sq ft)		170.92	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	89.53	Top Width (ft)		89.53	
Vel Total (ft/s)	4.13	Avg. Vel. (ft/s)		4.13	
Max Chl Dpth (ft)	3.86	Hydr. Depth (ft)		1.91	
Conv. Total (cfs)	15544.1	Conv. (cfs)		15544.1	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		90.30	
Min Ch El (ft)	2028.25	Shear (lb/sq ft)		0.24	
Alpha	1.00	Stream Power (lb/ft s)		1.01	
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	1.41	23.04	2.94
C & E Loss (ft)	0.03	Cum SA (acres)	0.92	14.76	2.75

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1575

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.281	2041.543	-137.674	2041	-132.992	2040.223	-131.734	2040	-127.925	2039.339
-125.838	2039	-119.672	2038.027	-119.501	2038	-118.903	2037.909	-112.666	2037
-110.993	2036.76	-105.737	2036	-100.642	2035.238	-99.1234	2035	-93.51232	2034.051
-93.2414	2034	-92.54072	2033.878	-87.5038	2033	-84.04872	2032.414	-81.5103	2032
-78.56932	2031.759	-71.7086	2031	-64.68592	2030.374	-58.4664	2030	-58.07792	2029.429
-57.7772	2029	-56.71452	2028.874	-54.9742	2028.684	-54.8182	2028.675	-53.22142	2028.646
-52.43732	2028.628	-44.19542	2028.716	-43.74682	2028.828	-42.8585	2029	-40.14672	2029.982
-40.1052	2030	-38.92162	2030.123	-30.5823	2031	-29.1278	2031	-25.9479	2031

```
-24.2293    2031-22.2955    2031-19.52372030.783-15.41682030.745-14.98692030.779
-14.15872030.793-13.79572030.785-13.70342030.785-13.21362030.754-12.9915 2030.72
 -12.6162030.565-1.124962030.491 -.230912030.569       02030.5883.2965732030.853
5.270041    20317.6132112031.5928.698822    203215.160432032.50221.74082    2033
28.439482033.36232.425752033.56233.989852033.619 34.52842033.60134.670142033.492
37.94581    203441.87897 2034.7743.09396    203547.622542035.89348.20878    2036
49.102872036.13755.58899    203756.50538 2037.2456.512832037.24357.017062037.409
 57.0616 2037.4257.784532037.59557.785942037.59757.801112037.61757.815512037.621
57.928362037.64657.951642037.64858.064452037.65558.122752037.65658.223872037.657
58.314522037.658

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.281    .035-142.281    .02558.31452    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.28158.31452               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2032.27  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.54  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2031.73  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2031.61  * Flow Area (sq ft)     *          *  119.47  *          *
* E.G. Slope (ft/ft)     *0.006504  * Area (sq ft)          *          *  119.47  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   86.24  * Top Width (ft)        *          *   86.24  *          *
* Vel Total (ft/s)       *    5.91  * Avg. Vel. (ft/s)      *          *    5.91  *          *
* Max Chl Dpth (ft)      *    3.10  * Hydr. Depth (ft)      *          *    1.39  *          *
* Conv. Total (cfs)      *  8754.5  * Conv. (cfs)           *          *  8754.5  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   87.28  *          *
* Min Ch El (ft)         * 2028.63  * Shear (lb/sq ft)      *          *    0.56  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.28  *          *
* Frctn Loss (ft)        *    0.17  * Cum Volume (acre-ft)  *    1.41  *   22.95  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   14.70  *    2.75  *
*************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1600

INPUT
Description:
Station Elevation Data    num=     100
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.2872040.843-141.5012040.759-141.4922040.757-141.3452040.725-141.3292040.724
-140.9442040.683-140.9362040.681-140.6882040.643-140.676 2040.64-140.1292040.505
-140.1122040.501 -138.482040.201-138.474  2040.2-137.126    2040-132.9932039.419
 -131.382039.207-129.929    2039-122.9152038.058-122.7952038.043-122.513    2038
-122.3352037.971-116.308    2037-111.3942036.196-110.179    2036-106.7992035.447
-104.027    2035-101.5542034.612-97.6174    2034-93.49152033.349-91.0638    2033
-88.83342032.639-84.7211    2032-75.73352031.137-74.2416    2031-72.45752030.802
-65.1648    2030 -65.0822029.976-62.6426    2029-56.17652028.078-55.4664    2028
-55.3938    2028-51.00752028.686-49.9677 2028.86-49.2178    2029-47.42042029.873
-47.0971    2030 -43.9142030.247-34.1454    2031-28.8967    2031-24.1364    2031
-10.6686 2030.07-9.70563    2030-9.423312029.941-8.316742029.857-8.252752029.761
-8.174282029.742-7.864222029.741-7.42446 2029.75 -6.2231 2029.81-5.453862029.828
-3.193622029.851-2.076262029.867-1.166612029.893       02029.9471.155898    2030
 3.487622030.4994.7374452030.8175.216611    20316.1990522031.3168.104875    2032
13.668822032.43921.01462    203322.29984    203322.616872032.857 22.93722032.633
23.338272032.64123.827392032.63924.227012032.64524.928812032.66526.685272032.725
 28.82872032.80633.78006    203335.581152033.37238.76359    203442.66583 2034.74
43.94832    203547.25335 2035.6349.21566    203653.235232036.51956.64665    2037
56.954232037.07556.954412037.075 56.99212037.12656.995032037.126 57.28292037.192
57.289822037.19357.593892037.21157.612642037.21157.958192037.21758.267942037.218

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.287    .035-142.287    .02558.26794    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.28758.26794               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2032.09  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.59  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2031.50  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2031.44  * Flow Area (sq ft)     *          *  115.00  *          *
* E.G. Slope (ft/ft)     *0.007381  * Area (sq ft)          *          *  115.00  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   86.24  * Top Width (ft)        *          *   86.24  *          *
* Vel Total (ft/s)       *    6.14  * Avg. Vel. (ft/s)      *          *    6.14  *          *
* Max Chl Dpth (ft)      *    3.50  * Hydr. Depth (ft)      *          *    1.33  *          *
* Conv. Total (cfs)      *  8217.6  * Conv. (cfs)           *          *  8217.6  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   87.23  *          *
* Min Ch El (ft)         * 2028.00  * Shear (lb/sq ft)      *          *    0.61  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.73  *          *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)  *    1.41  *   22.88  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.92  *   14.66  *    2.75  *
*************************************************************************************************

CROSS SECTION
```

```
RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -1625

INPUT
Description:
Station Elevation Data    num=     121
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.294  2040.5-139.5182040.203-139.5152040.203-139.0032040.092-139.0012040.092
-138.137    2040-134.8092039.464-131.888    2039-128.2552038.431-125.573    2038
-120.8742037.282-119.033    2037-114.8482036.375-112.312    2036 -109.862035.648
-105.484    2035-104.1542034.791-98.9239    2034-96.33542033.566-92.8248    2033
 -87.3252032.126-86.5518    2032-85.11362031.794-79.6584    2031-76.24972030.465
-71.9631    2030-69.92112029.263-69.2087    2029-68.30752028.665-66.5817    2028
-62.0481    2028-59.4133    2028-56.2262 2028.75-55.62062028.886-55.1096    2029
-55.00192029.066-54.83262029.091-54.75572029.112-54.59512029.167-51.6201    2030
-51.13862030.042-50.93962030.061-47.03312030.389-45.9461 2030.49-41.49412030.825
-40.69382030.899-39.2967    2031-36.5125    2031-35.9417    2031-30.6968    2031
 -30.181    2031-29.6396    2031-29.1682    2031-27.2879    2031-26.8681    2031
-23.9542    2031-23.7472    2031-23.2098    2031-20.46992030.722-18.66192030.603
-18.28142030.517-17.60212030.434-16.17522030.144-15.84982030.087-15.4229    2030
-15.2218    2030-14.7789    2030-13.1705    2030-12.7479    2030-10.6775    2030
-9.257372029.554 -8.89512029.499-7.900772029.251   -7.562029.152-7.474572029.116
-7.384372029.093 -7.35422029.075 -7.3294 2029.07 -7.24762029.063-7.242872029.056
-7.237072029.055-7.214152029.055-7.181642029.055-7.09283 2029.06-7.035972029.061
-6.868882029.063-6.786282029.064-6.719042029.066-6.466422029.078-6.229422029.094
-6.03248 2029.11-5.032442029.212-4.255162029.246       02029.6653.414118    2030
3.7388662030.152 5.56635    20315.8844072031.0938.0012542031.53610.18128    2032
15.392922032.21724.408252032.61830.458312032.88733.04204    203337.778942033.999
37.78277    203437.823182034.009 42.04022034.88542.58107    203543.068632035.091
47.79948    203648.57362 2036.0850.798322036.267 54.2813 2036.5154.839862036.556
54.92939 2036.5855.858832036.66957.426452036.68557.758582036.69258.109152036.696
58.221372036.695

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
-142.294    .035-142.294    .02558.22137    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.29458.22137               25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)       * 2031.90  * Element              *  Left OB *  Channel * Right OB *
* Vel Head (ft)        *    0.55  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)       * 2031.35  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)       * 2031.26  * Flow Area (sq ft)    *          *  119.15  *          *
* E.G. Slope (ft/ft)   *0.006884  * Area (sq ft)         *          *  119.15  *          *
* Q Total (cfs)        *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)       *   89.18  * Top Width (ft)       *          *   89.18  *          *
* Vel Total (ft/s)     *    5.93  * Avg. Vel. (ft/s)     *          *    5.93  *          *
* Max Chl Dpth (ft)    *    3.35  * Hydr. Depth (ft)     *          *    1.34  *          *
* Conv. Total (cfs)    *  8509.3  * Conv. (cfs)          *          *  8509.3  *          *
* Length Wtd. (ft)     *   25.00  * Wetted Per. (ft)     *          *   90.46  *          *
* Min Ch El (ft)       * 2028.00  * Shear (lb/sq ft)     *          *    0.57  *          *
* Alpha                *    1.00  * Stream Power (lb/ft s) *        *    3.35  *          *
* Frctn Loss (ft)      *    0.19  * Cum Volume (acre-ft)  *    1.41  *   22.82  *    2.94  *
* C & E Loss (ft)      *    0.01  * Cum SA (acres)        *    0.92  *   14.61  *    2.75  *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -1650

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
  -142.32040.157-140.828    2040 -134.062039.064-133.669    2039-129.288 2038.23
-127.867    2038-123.5582037.269-121.857    2037-119.7532036.698-114.974    2036
-112.5942035.663-107.992    2035-102.5792034.183-101.357    2034-100.0622033.794
-95.2359    2033-91.35782032.362-89.1938    2032 -88.0532031.811-82.9322    2031
-80.45082030.337-79.0147    2030-77.6689 2029.08-77.4936    2029-77.34242028.938
 -75.631    2028-74.34362027.831 -73.955 2027.69-69.48322027.724-69.33742027.732
-68.95562027.742-66.8884 2027.77-66.33122027.781-65.56772027.866-63.4976    2028
-63.31992028.133-62.95042028.443-62.57452028.854-62.4065    2029-62.27812029.093
-60.6338    2030-58.58752030.184-58.05152030.232-48.3308    2031-46.7235    2031
-45.8934    2031-44.9385    2031-42.2592    2031-40.3136    2031-37.1779    2031
-35.4215    2031-34.3702    2031-17.44092030.325-11.2919    2030  -9.2222029.178
-8.74169    2029-4.942032028.451-1.561242028.497-1.506142028.505-.8811452028.546
      02028.652 .0797832028.662 .9748772028.7392.0374132028.8692.844485    2029
3.770298 2029.455.015427    20306.5814552030.7737.091821    20317.8248322031.198
10.054682031.74111.11249    203222.745312032.51733.68086    203335.172262033.328
38.29308    203441.15609 2034.6342.94591    203545.300882035.45547.043142035.779
49.98783    203650.15836    203650.98348    203651.130522036.01455.80463 2036.06
56.794912036.08157.840182036.09258.174792036.091

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
  -142.3    .035  -142.3    .02558.17479    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.358.17479               25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
```

E.G. Elev (ft)	2031.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.		0.025	
W.S. Elev (ft)	2031.07	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2031.07	Flow Area (sq ft)		111.95	
E.G. Slope (ft/ft)	*0.008779	Area (sq ft)		111.95	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	90.74	Top Width (ft)		90.74	
Vel Total (ft/s)	6.31	Avg. Vel. (ft/s)		6.31	
Max Chl Dpth (ft)	3.38	Hydr. Depth (ft)		1.23	
Conv. Total (cfs)	7535.1	Conv. (cfs)		7535.1	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		92.91	
Min Ch El (ft)	2027.69	Shear (lb/sq ft)		0.66	
Alpha	1.00	Stream Power (lb/ft s)		4.16	
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	1.41	22.75	2.94
C & E Loss (ft)	0.01	Cum SA (acres)	0.92	14.55	2.75

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1675

INPUT
Description:
Station Elevation Data num= 145

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3072039.698	-142.2562039.698	-142.22039.691	-141.4882039.601	-141.4752039.597					
-141.2122039.534	-141.187	2039.53	-140.1082039.375	-140.0942039.373	-138.576	2039.24			
-138.5682039.239	-136.6372039.016	-136.6362039.016	-136.463	2039	-136.3422038.972				
-130.165	2038	-127.3522037.545	-124.142	2037	-118.4052036.115	-117.627	2036		
-116.478	2035.83	-114.9632035.595	-111.263	2035	-109.2422034.661	-105.2	2034		
-102.36	2033.53	-99.2018	2033	-94.55712032.235	-93.1535	2032	-90.06372031.475		
-87.5251	2031	-86.73792030.597	-85.927	2030	-85.20162029.056	-85.157	2029		
-85.10392028.909	-84.0617	2028	-83.57372027.756	-82.60352027.536	-82.4922027.499				
-81.66072027.391	-81.47822027.324	-79.3779	2027.34	-79.30942027.344	-79.13012027.349				
-78.15922027.362	-77.89752027.367	-77.53892027.407	-76.45752027.477	-76.1532027.527					
-75.13582027.702	-72.3408	2028	-72.06292028.147	-70.3396	2029	-69.91162029.172			
-69.70182029.225	-69.02152029.368	-68.68152029.475	-67.72722029.826	-67.1791	2030				
-59.37392030.716	-56.3593	2031	-56.1946	2031	-52.841	2031	-51.5785	2031	
-49.3142	2031	-47.8257	2031	-45.1519	2031	-44.8038	2031	-42.0054	2031
-40.7108	2031	-37.3739	2031	-37.0677	2031	-35.8482	2031	-34.7335	2031
-30.0131	2031	-28.91132030.963	-25.45432030.875	-22.73912030.779	-14.0992030.045				
-13.80942030.025	-13.69562030.016	-13.64292030.011	-13.5709	2030	-13.52172029.975				
-11.6603	2029	-9.972932028.252	-9.44346	2028	-8.44358	2027.83	-8.280162027.821		
-8.091852027.814	-5.7462027.467	-5.23812027.407	-4.72943	2027.36	-4.045592027.315				
-3.701632027.286	-3.458762027.276	-3.11732027.272	-2.740192027.272	-2.41682027.274					
-2.219462027.278	-2.120362027.283	-2.002642027.295	-1.307512027.336	-.8785282027.366					
-.6634432027.397	-.5613542027.443	02027.556	.3592962027.628	1.6583652027.977					
1.751907	20281.8227672028.037	3.843728	20295.549385	2029.825.871013	2030				
7.9442522030.954	8.033331	20318.3375322031.091	11.15101	203226.130392032.633					
33.281412032.874	36.71986	203338.257872033.173	43.44971	203445.979362034.506					
48.34933	2035	49.88352035.116	49.947612035.115	49.987792035.113	49.991892035.114				
50.366322035.155	50.410112035.158	52.530742035.305	53.06364	2035.28	53.18862035.293				
53.763412035.352	53.931192035.361	54.451392035.388	55.61872035.435	56.837942035.483					
57.97292035.521	58.085352035.525	58.222912035.535	58.224942035.535	58.252012035.542					

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.307	.035	-142.307	.025	58.25201	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.30	58.25201	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2031.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.		0.025	
W.S. Elev (ft)	2030.86	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		113.76	
E.G. Slope (ft/ft)	*0.005181	Area (sq ft)		113.76	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	62.11	Top Width (ft)		62.11	
Vel Total (ft/s)	6.21	Avg. Vel. (ft/s)		6.21	
Max Chl Dpth (ft)	3.59	Hydr. Depth (ft)		1.83	
Conv. Total (cfs)	9808.2	Conv. (cfs)		9808.2	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		65.12	
Min Ch El (ft)	2027.27	Shear (lb/sq ft)		0.57	
Alpha	1.00	Stream Power (lb/ft s)		3.51	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	1.41	22.69	2.94
C & E Loss (ft)	0.07	Cum SA (acres)	0.92	14.51	2.75

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1700

```
INPUT
Description:
Station Elevation Data    num=     114
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.3142039.104-141.9812039.109-141.9722039.108-141.127    2039-136.8252038.282
-135.103    2038-129.191 2037.19-127.847    2037-126.7922036.845-120.8582036.021
 -120.71    2036-119.9412035.885-114.015    2035-108.9852034.219-107.653    2034
-107.0192033.895 -101.61    2033-98.0814 2032.41-95.4715    2032-93.29772031.624
-90.0633    2031-89.78532030.055-89.6582    2030-89.46582029.452-89.2922    2029
-89.17652028.545-88.99282028.108-88.9149    2028-88.86212027.931-88.5596    2027
-88.4673    2027-88.4334    2027-87.6331    2027-79.15642027.711  -77.942027.808
-77.72272027.822-77.61172027.833-76.3519    2028-76.22062028.092-74.8813    2029
-73.30012029.617-72.0409    2030-67.96272030.149-67.83512030.152-64.07652030.239
-62.5929  2030.3 -58.8472030.443-44.35682030.974-43.6216    2031-43.3012    2031
-36.1934    2031-32.0919    2031-30.9536    2031-29.6346    2031-29.5108    2031
-29.2715    2031-28.69722030.955-25.73822030.711-23.67372030.519-17.4105    2030
-16.88152029.762 -14.846    2029-14.06432028.635-12.3696    2028-10.1253 2027.09
-9.91048    2027-9.844242026.988-7.773712026.795-7.382982026.775-3.578612026.687
 -3.12292026.681-2.569262026.678-2.021252026.678-1.559592026.682-1.19764 2026.69
-.7809782026.707-.1696822026.797       02026.829  .900079    20271.3211362027.303
2.258151    2028 3.111332028.6293.589581    20295.0851782029.9895.106313    2030
8.558848  2030.98.929314    203111.92212 2031.3512.760732031.45914.087942031.612
17.13408    203220.259472032.13921.774942032.20231.054232032.40332.041172032.466
36.210852032.77238.86683    203345.103492033.88645.90857    203446.52653  2034.1
48.835272034.45853.25048    203554.447032035.04154.457722035.04254.729012035.061
54.749252035.06655.062842035.14255.354392035.15556.461512035.20356.549212035.212
56.746962035.23256.921862035.243 57.1741 2035.2658.338672035.302

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
-142.314    .035-142.314    .02558.33867    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.31458.33867               25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2031.29  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.37  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 2030.91  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  144.51  *          *
* E.G. Slope (ft/ft)     *0.003377  * Area (sq ft)          *          *  144.51  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   80.87  * Top Width (ft)       *          *   80.87  *          *
* Vel Total (ft/s)       *    4.89  * Avg. Vel. (ft/s)     *          *    4.89  *          *
* Max Chl Dpth (ft)      *    4.24  * Hydr. Depth (ft)     *          *    1.79  *          *
* Conv. Total (cfs)      * 12148.4  * Conv. (cfs)          *          * 12148.4  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   85.91  *          *
* Min Ch El (ft)         * 2026.68  * Shear (lb/sq ft)     *          *    0.35  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    1.73  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *    1.41  *   22.61  *    2.94  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)        *    0.92  *   14.47  *    2.75  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1725

INPUT
Description:
Station Elevation Data    num=     159
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
 -142.322038.626-141.9832038.629-141.3662038.531-137.392    2038-136.7752037.925
-133.4972037.467-132.0982037.284-130.7152037.082-130.173    2037-125.469 2036.29
-123.527    2036-121.1942035.656  -116.9    2035-112.5332034.301-110.575    2034
-109.1282033.759  -104.3    2033-99.38882032.133-98.6419    2032-96.89882031.696
-94.92852031.301-93.5322    2031-92.74952030.798-90.5347 2030.04-90.43892030.008
-90.42882030.004-90.4224    2030  -90.422029.997 -90.3542029.907-89.78442029.092
-89.6869    2029-89.6462 2028.94-88.9794    2028-88.6824 2027.61-88.2658    2027
-85.5615    2027-84.4889    2027-81.53412027.525-80.1889 2027.75-79.60952027.843
-78.6022    2028-78.02432028.547-77.25972028.969-77.2272 2028.99-77.1907    2029
-71.40562029.889 -70.842    2030-66.37122030.161-62.22322030.304-56.80012030.478
 -56.5452030.483-56.03152030.506-54.69052030.599-53.31292030.676-52.96342030.693
-52.50162030.706-51.9083 2030.72-51.59182030.726-51.52182030.728 -51.3252030.754
-51.00672030.774-50.88322030.772-49.8921 2030.73-49.53272030.717-49.29642030.715
-48.38482030.711-46.62962030.708-46.60492030.679 -46.5842030.669-46.07082030.639
-45.75282030.606-45.56292030.596-45.19762030.589-44.62192030.587-44.21072030.579
-43.59072030.584 -43.3862030.576-43.24952030.563-39.12412030.446-38.61612030.456
-37.8658 2030.46-37.20852030.475-36.8539 2030.48 -36.4842030.478-35.75322030.492
-35.33952030.514-35.0491 2030.56-34.75012030.587-34.20712030.614-33.65442030.632
-33.28742030.647-32.68142030.681 -32.4232030.691 -32.1422030.697-31.79952030.698
-29.18942030.687 -28.9822030.685-28.87332030.681-28.70062030.654-28.4583 2030.63
-28.29422030.626-27.93062030.635-27.69112030.639-27.37662030.636-27.00942030.628
-26.63462030.617-25.48282030.577 -24.4152030.534-23.05082030.469-20.68652030.321
-19.36262030.247-13.8714    2030-13.22422029.889-10.7884    2029-9.623442028.512
-8.52232    2028-7.166632027.413-6.28148    2027-6.115982026.659-5.73493 2026.51
-4.924222026.362-4.165282026.292-4.022062026.284 -2.62762026.252-2.46056 2026.25
-2.257632026.249-2.056762026.249-1.88754 2026.25-1.754882026.253-1.602152026.259
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-1.378082026.292-.9041272026.382       0 2026.53 .1334272026.5512.774007    2027
3.2357722027.3674.157831    20284.7877232028.4885.528466    20296.5579472029.616
7.283088    20307.399833 2030.0313.81127    203119.783182031.29121.289252031.364
22.655312031.423 27.00572031.62727.81368 2031.6629.987292031.72331.674472031.786
34.029242031.88536.51522    203238.760272032.25444.01895    203346.191392033.416
50.28986    203450.783632034.06358.01715    203558.327772035.011

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -142.32    .035 -142.32    .02558.32777    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.3258.32777               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2031.11  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.87  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2030.24  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2030.24  * Flow Area (sq ft)     *          *   94.18  *          *
* E.G. Slope (ft/ft)      *0.008469  * Area (sq ft)          *          *   94.18  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   54.77  * Top Width (ft)        *          *   54.77  *          *
* Vel Total (ft/s)        *    7.50  * Avg. Vel. (ft/s)      *          *    7.50  *          *
* Max Chl Dpth (ft)       *    3.99  * Hydr. Depth (ft)      *          *    1.72  *          *
* Conv. Total (cfs)       *  7671.5  * Conv. (cfs)           *          *  7671.5  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)      *          *   58.70  *          *
* Min Ch El (ft)          * 2026.25  * Shear (lb/sq ft)      *          *    0.85  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    6.36  *          *
* Frctn Loss (ft)         *    0.21  * Cum Volume (acre-ft)  *    1.41  *   22.54  *    2.94  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)        *    0.92  *   14.43  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1750

INPUT
Description:
Station Elevation Data    num=     127
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.3272037.701-142.3132037.701 -141.672037.708-139.5482037.601 -139.192037.576
-138.0162037.448-136.1362037.273-134.055    2037-128.5812036.133-127.703    2036
-125.8852035.706-121.383    2035-119.2732034.667 -114.92    2034-109.7382033.207
-108.411    2033-107.4872032.816-102.657    2032-101.7192031.811-98.7723 2031.24
-98.2408 2031.14-97.4461    2031-96.63922030.854-91.8549    2030-90.35412029.271
-89.6299    2029-89.41622028.882 -87.953    2028-87.51582027.774-86.2499    2027
-85.77252026.806-85.3889 2026.69-81.20192026.624-81.11682026.647-79.88632026.707
-79.49942026.737-78.71032026.924-78.2728    2027-77.7804 2027.53-77.43292027.831
-77.2571    2028-76.27722028.934-76.2047    2029-76.02652029.015-75.77292029.035
-62.9567    2030-62.45582030.066-61.24812030.143-60.77922030.134-57.6281    2030
-56.50732029.968-54.54332029.917-53.67452029.908-50.70062029.895-45.31742029.886
-45.01372029.886-44.13092029.876-37.98042029.842 -36.2092029.914-34.17612029.976
-33.4802    2030 -32.8752030.025-31.20212030.118-30.48862030.146-29.71282030.163
-28.76722030.165-21.56162030.136-20.98892030.129-20.68882030.118-20.21192030.044
-19.7537    2030-18.3725    2030-17.6728    2030 -17.4252030.004-16.9724    2030
-16.37422029.939-14.9473 2029.69-11.7631    2029-10.46662028.731-7.31478    2028
-6.911142027.896-4.89974    2027-3.234592026.343-2.46001    2026 -.805962025.672
-.6378582025.683       02025.7581.3439192025.9172.311248    20264.2272852026.358
8.916181    20279.4188112027.5079.841789    202810.430252028.59510.72442    2029
10.870472029.198  11.671    203017.598692030.514 18.06482030.54618.391482030.557
19.231852030.56419.649252030.57322.641052030.61223.806762030.63424.682242030.661
25.297912030.68726.552672030.76928.750322030.89131.06146    203131.67757 2031.04
 34.64642031.17734.796782031.18535.53165 2031.2340.631012031.45847.15505    2032
47.907632032.08648.12263 2032.1148.434822032.13850.295022032.31951.611682032.437
52.349922032.473 53.60052032.63254.316352032.69454.710012032.714 54.98382032.699
56.547682032.55858.223122032.546

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.327    .035-142.327    .025 53.6005    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.327 53.6005               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2030.47  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.97  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2029.51  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2029.51  * Flow Area (sq ft)     *          *   89.46  *          *
* E.G. Slope (ft/ft)      *0.008107  * Area (sq ft)          *          *   89.46  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   46.57  * Top Width (ft)        *          *   46.57  *          *
* Vel Total (ft/s)        *    7.89  * Avg. Vel. (ft/s)      *          *    7.89  *          *
* Max Chl Dpth (ft)       *    3.83  * Hydr. Depth (ft)      *          *    1.92  *          *
* Conv. Total (cfs)       *  7841.1  * Conv. (cfs)           *          *  7841.1  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)      *          *   49.95  *          *
```

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* Min Ch El (ft)          * 2025.67  * Shear (lb/sq ft)       *          *    0.91  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    7.15  *          *
* Frctn Loss (ft)         *    0.20  * Cum Volume (acre-ft)   *    1.41  *   22.49  *    2.94  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *    0.92  *   14.40  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1775

INPUT
Description:
Station Elevation Data    num=     138
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.333    2037-142.294    2037-141.6242036.858-140.8132036.814-140.0092036.781
-139.7322036.767 -139.482036.751-138.954 2036.71-137.6292036.621-134.2232036.369
-129.034    2036-125.643 2035.56-121.334    2035-114.5542034.101-113.789    2034
-112.6362033.848-106.792    2033-105.1852032.736-100.836    2032-98.34512031.553
-95.3548    2031-90.68632030.135-89.9611    2030-86.26972029.128-85.7658    2029
-83.76742028.019  -83.73    2028-83.65782027.961-81.7801    2027-80.45462026.393
-79.6384    2026-79.4114    2026-78.8659    2026-77.13112026.273-72.8035    2027
-72.38292027.781-72.1716    2028 -71.8752028.269-71.63452028.332-70.6494    2029
-70.00232029.055-68.16062029.132-66.25262029.196-64.37022029.229-63.68542029.255
-62.9623  2029.3-62.60262029.304-62.08682029.299-61.42362029.285-57.99412029.201
-55.34112029.154-52.86522029.086-51.20052029.051-51.18992029.051 -48.9892029.029
-48.95062029.027-48.73592029.021-48.6939 2029.02-48.67542029.019-48.61182029.019
-48.49682029.019-45.8788 2029.02 -45.859 2029.02-45.72142029.019-45.68182029.021
-45.63632029.022 -45.5952029.023-45.47562029.028-45.4149 2029.03-36.70352029.094
-36.57182029.099-36.45452029.099-26.47952029.279-24.42742029.307-23.6809  2029.3
-23.16472029.284-19.95072029.078-18.0227    2029-17.14882028.865-16.50372028.731
-12.90732028.083-12.52962028.014-12.4636    2028-9.927052027.434-8.51522    2027
-7.637182026.604-5.94914    2026-4.718832025.501-2.98361    2025-2.03967    2025
-.539061    2025-.5299352025.001       02025.0462.5235632025.2627.412665    2026
8.858536 2026.569.451361    202710.315322027.54711.02176    202811.749862028.487
12.250052028.67813.31825    202915.565532029.15718.139412029.26422.692852029.537
24.308362029.59828.125942029.78129.538572029.85329.855242029.86930.473672029.908
30.601232029.91530.671942029.917 30.76622029.91830.935882029.91931.211182029.917
31.501872029.91531.629622029.91231.64713 2029.9131.660382029.89431.695042029.884
32.456992029.95232.475242029.95133.39433    203041.246112030.32145.895222030.645
46.797422030.69947.759342030.76150.72546    203151.507812031.09553.050772031.226
53.540522031.23754.168282031.20456.213572031.004 56.21772031.00456.230542031.003
56.890382031.03957.290212031.37758.250822031.697

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
-142.333    .035-142.333    .02558.25082    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -142.33358.25082               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)          * 2029.72  * Element                * Left OB * Channel * Right OB *
* Vel Head (ft)           *    1.03  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2028.68  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2028.68  * Flow Area (sq ft)     *          *   86.56  *          *
* E.G. Slope (ft/ft)      *0.007951  * Area (sq ft)          *          *   86.56  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   42.52  * Top Width (ft)        *          *   42.52  *          *
* Vel Total (ft/s)        *    8.16  * Avg. Vel. (ft/s)      *          *    8.16  *          *
* Max Chl Dpth (ft)       *    3.68  * Hydr. Depth (ft)      *          *    2.04  *          *
* Conv. Total (cfs)       *  7917.5  * Conv. (cfs)           *          *  7917.5  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)      *          *   45.34  *          *
* Min Ch El (ft)          * 2025.00  * Shear (lb/sq ft)      *          *    0.95  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    7.73  *          *
* Frctn Loss (ft)         *    0.21  * Cum Volume (acre-ft)   *    1.41  *   22.44  *    2.94  *
* C & E Loss (ft)         *    0.12  * Cum SA (acres)         *    0.92  *   14.37  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1800

INPUT
Description:
Station Elevation Data    num=     139
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
```

```
 -142.34    2037-142.319    2037-139.1162036.324-135.2462036.112-132.512    2036
-131.6032035.863-125.808    2035-123.0652034.614-118.762    2034-111.8332033.021
 -111.69    2033-111.6632032.996-110.8192032.877-105.5272032.121-104.702    2032
-104.4152031.947-98.7739    2031-96.40342030.607-92.6831    2030-89.93962029.358
-88.8683  2029.1-88.0569    2029-87.78182028.838-86.5772    2028-81.67312027.391
-81.39212027.382-80.87962027.451-80.72982027.445-79.1793    2027-76.77622026.414
-74.63882026.339-74.0383 2026.35-73.76852026.303-73.68662026.278-73.65942026.252
-73.42492026.143-72.00612026.145-70.26632026.313-68.63612026.452-67.33522026.574
 -66.6012026.683 -65.4972026.824-64.5289 2026.89 -64.4612026.891-64.45012026.888
-63.8492    2027-62.74012027.286  -59.83    2028-59.70792028.022-59.56542028.016
-59.2994    2028-58.44422027.907 -56.4192027.814-51.51722027.713-47.59542027.652
-46.08542027.597-41.21232027.355-36.06262027.357-35.74872027.353-35.1945 2027.36
-33.58572027.368-30.09672027.329-28.99082027.325-26.93482027.285-25.9977 2027.27
-23.79222027.265-22.6501 2027.22-21.11692027.102-20.0845    2027-18.4925 2026.81
-16.75132026.585-13.2843    2026-11.08442025.144-10.6582    2025 -5.71782024.324
-5.523922024.308-4.283342024.257-4.116682024.245-4.082242024.234-3.557772024.217
-3.428862024.222-3.261832024.231 -3.14562024.248-3.001822024.258-2.384012024.281
-2.036512024.297-1.753282024.318-1.207182024.385       02024.5241.6326162024.713
 3.77333    20255.718366 2025.666.619939    20269.2253082026.9289.399814    2027
9.4512432027.0259.5036982027.03910.984852027.68713.79264    202815.088152028.073
15.164162028.07615.322192028.07716.785432028.22517.524522028.21920.89036  2028.5
21.607492028.53722.372092028.56122.763672028.56623.719372028.56725.026952028.561
25.689942028.54826.303632028.52426.870112028.48927.366642028.45128.381282028.358
29.244292028.31530.454872028.30130.847432028.29331.35463 2028.28 31.44642028.272
31.670022028.231 31.80662028.21431.898082028.21232.051562028.21632.864852028.262
35.746512028.44836.081462028.45636.459652028.47640.10226    202946.295042029.959
46.58597    203052.151172030.78253.486772030.92653.905952030.92354.61692    2031
55.38928    203156.27757    203157.28383    203158.278512031.331

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -142.34    .035 -142.34    .02558.27851    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -142.3458.27851               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2028.45  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.62  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2027.83  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2027.83  * Flow Area (sq ft)     *          *  111.83  *          *
* E.G. Slope (ft/ft)     *0.009083  * Area (sq ft)          *          *  111.83  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   93.81  * Top Width (ft)       *          *   93.81  *          *
* Vel Total (ft/s)       *    6.31  * Avg. Vel. (ft/s)     *          *    6.31  *          *
* Max Chl Dpth (ft)      *    3.61  * Hydr. Depth (ft)     *          *    1.19  *          *
* Conv. Total (cfs)      *  7407.7  * Conv. (cfs)          *          *  7407.7  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   95.04  *          *
* Min Ch El (ft)         * 2024.22  * Shear (lb/sq ft)     *          *    0.67  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *         *    4.21  *          *
* Frctn Loss (ft)        *    0.22  * Cum Volume (acre-ft)  *    1.41  *   22.38  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   14.34  *    2.75  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1825

INPUT
Description:
Station Elevation Data    num=     146
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**********************************************************************************
-142.346    2037-142.343    2037-140.8612036.687-140.7492036.678-138.736    2036
-136.7172035.617 -134.752035.282-134.215 2035.14-133.987    2035-130.5522034.434
-127.978    2034-123.8892033.319 -122.12    2033-121.6532032.914-116.571    2032
-113.2842031.401-110.912    2031-107.8942030.436-105.458    2030-102.9962029.508
-100.249    2029-97.87232028.501-95.0661    2028-91.43572027.342-89.2095    2027
-88.40532026.899-87.44142026.824 -86.7312026.806-86.2092 2026.83-85.27472026.954
-84.8156    2027-84.15172027.059-83.10792027.085-82.6917 2027.07-82.37862027.038
-82.2057    2027-81.10262026.396-80.3731    2026-79.15932025.308-78.5805    2025
-77.13282024.154-76.8628    2024-76.61772023.861-74.7197    2023-69.80062022.493
-68.84162022.479 -66.773 2022.47-65.86032022.395-65.39522022.363  -64.932022.343
-64.21952022.324 -63.122  2022.3-62.68362022.295-62.36882022.294-60.45142022.312
 -59.5512022.328-58.95832022.344 -57.7652022.385-57.18912022.409 -55.9352022.511
-54.41712022.645-53.08232022.848-52.3633 2022.93-52.23022022.935-52.06022022.944
-51.3094    2023-48.96742023.123-47.61552023.219-46.69492023.251-45.0553    2023
-43.2207    2023-42.9609    2023-42.0391    2023-41.9048    2023-41.4294    2023
 -41.063    2023-40.9222    2023-36.90882023.286-34.79362023.281-33.90112023.293
-32.46462023.335-31.50962023.339-27.35042023.317-26.2182 2023.32-25.54522023.103
-25.31912023.078-24.7231 2023.05-24.64732023.049 -24.5522023.047-24.43622023.051
-23.21362023.007-22.9393    2023-21.8334    2023-21.6915    2023-17.3873    2023
-15.8946    2023-15.2674    2023-11.7332    2023-10.2854    2023-7.836162023.458
-7.772552023.465-6.655532023.693-6.500892023.682  -2.128    2024       02023.919
3.7259712023.777 4.920072023.8225.7448092023.8836.774657    20246.8820862024.031
9.499689    202510.93743  2025.611.778372025.82412.27904    202613.047092026.262
14.299132026.71815.01026    202716.104642027.15816.662172027.21817.619642027.281
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17.929332027.31118.094092027.352 20.76412027.32220.777582027.27120.896662027.223
21.540692027.219 21.80062027.21321.945962027.20321.998172027.19222.655742027.183
24.845032027.30129.943272027.56531.23188 2027.6232.200422027.65633.128332027.679
37.86465    202838.620252028.12143.56652    202945.086462029.28449.03102    2030
 51.03332030.37755.00216    203157.26827    203157.74985    203158.304152030.956
58.305152030.956

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.346    .035-142.346    .02558.30515    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.34658.30515               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2025.05  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.66  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2024.39  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2024.39  * Flow Area (sq ft)     *          *  108.69  *          *
* E.G. Slope (ft/ft)     *0.008742  * Area (sq ft)          *          *  108.69  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   85.39  * Top Width (ft)       *          *   85.39  *          *
* Vel Total (ft/s)       *    6.50  * Avg. Vel. (ft/s)     *          *    6.50  *          *
* Max Chl Dpth (ft)      *    2.10  * Hydr. Depth (ft)     *          *    1.27  *          *
* Conv. Total (cfs)      *  7550.7  * Conv. (cfs)          *          *  7550.7  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   86.02  *          *
* Min Ch El (ft)         * 2022.29  * Shear (lb/sq ft)     *          *    0.69  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.48  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *    1.41  *   22.32  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   14.28  *    2.75  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1850

INPUT
Description:
Station Elevation Data    num=     139
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
********************************************************************************
-142.353 2036.23-142.329 2036.23-142.3052036.232-141.618    2036-139.4992035.598
 -138.242035.433-135.498    2035 -132.142034.248-130.892    2034-130.3962033.909
-125.169    2033-119.4822032.012-119.415    2032-119.3182031.982 -113.45    2031
-110.9612030.544-107.825    2030 -104.792029.371 -103.02    2029-100.9042028.559
-98.0777    2028-93.69822027.129-93.0442    2027-92.32362026.869-91.42162026.683
-88.4293    2026-85.60632025.258-84.7138    2025-83.08042024.529-81.0774    2024
-78.90692023.003-78.8985    2023-77.71462022.034-77.6412    2022-76.63872021.665
-76.30762021.547-75.70282021.307 -75.046    2021-73.1633 2020.36-72.0755    2020
-71.91592019.975-70.70122019.824-70.23812019.821-54.8486 2019.79-53.30952019.927
-52.4172    2020 -49.9952020.367 -47.9942020.661 -47.6592020.697-47.25682020.721
-46.97932020.751 -45.799    2021-43.3824 2021.43 -40.0842021.913-39.75712021.964
-39.62172021.984-39.4608    2022-35.17622022.423-34.94062022.445-34.77352022.456
-34.51022022.459-33.29972022.604-30.0896    2023-26.73722022.604-26.21452022.586
-26.15692022.579-21.86252022.551 -21.5782022.638 -20.9382022.735-19.42362022.899
-18.5845    2023-16.7141    2023 -15.305    2023-13.4352    2023-12.8303    2023
-12.2076    2023 -11.862    2023-9.45262    2023-9.36931    2023 -8.9138    2023
-8.20337    2023-7.71543    2023-6.133232022.982-5.927762022.961-5.908162022.826
      02022.8443.2167412022.8545.779499    20236.9624712023.441  8.0614    2024
8.8175962024.448  9.6935    2025 12.5451 2025.9812.59951    202612.60327    2026
12.613522026.00413.086982026.06813.839222026.13115.921892026.23718.243382026.316
 18.54912026.30118.857922026.29518.983842026.28719.086952026.27319.229862026.237
19.264972026.22219.337912026.21219.538182026.22119.806592026.22920.242582026.235
22.311392026.25122.461882026.25422.670432026.26324.122382026.33825.814062026.418
27.86436 2026.5232.797472026.78434.834392026.90536.32972    202736.957042027.118
41.87353    2028 43.04582028.22543.926432028.39946.59165    202949.504912029.698
50.84414    203051.805892030.20851.890192030.28752.070832030.32352.734642030.387
54.454072030.52654.74717 2030.5455.015142030.55955.259772030.56655.559382030.542
56.441982030.637 56.44842030.63858.31017 2030.4958.321692030.489

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.353    .035-142.353    .02556.44198    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.35356.44198               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2023.62  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.90  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2022.72  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2022.72  * Flow Area (sq ft)     *          *   92.54  *          *
* E.G. Slope (ft/ft)     *0.007957  * Area (sq ft)          *          *   92.54  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   52.77  * Top Width (ft)       *          *   52.77  *          *
* Vel Total (ft/s)       *    7.63  * Avg. Vel. (ft/s)     *          *    7.63  *          *
```

```
* Max Chl Dpth (ft)      *    2.93  * Hydr. Depth (ft)       *          *    1.75  *          *
* Conv. Total (cfs)      *  7914.6  * Conv. (cfs)            *          *  7914.6  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   53.62  *          *
* Min Ch El (ft)         * 2019.79  * Shear (lb/sq ft)       *          *    0.86  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.54  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)   *    1.41  *   22.26  *    2.94  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)         *    0.92  *   14.24  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1875

INPUT
Description:
Station Elevation Data    num=     114
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.3542035.522-142.3232035.523-142.2962035.523-142.2792035.523 -139.79 2035.18
-139.4912035.166-138.9122035.158  -138.62035.143-138.021    2035-135.0212034.456
-132.664    2034-130.9022033.684-126.851    2033-123.9742032.483-121.275    2032
 -119.222031.632-115.584    2031-112.9432030.533-109.967    2030-106.5862029.306
-105.082    2029-100.4482028.049-100.207    2028-99.89342027.932-94.8277    2027
-90.66042026.298-89.1183    2026 -87.5482025.567-85.7555    2025-82.42932024.057
-82.2489    2024-81.78692023.866-78.6457    2023-78.4548  2022.6-76.4992    2022
-75.4138 2021.02-75.3897    2021 -75.347 2020.97-74.2907    2020-70.85132019.736
-63.99222019.551-63.98622019.556-63.92342019.568-61.1132    2019 -59.373    2019
-58.3408    2019  -57.772019.106-53.1368    2020-48.71212020.935-48.4145    2021
-47.85792021.041 -47.2042021.078-44.62682021.146-41.65372021.257-38.3736    2021
-28.62482021.927-28.60582021.921-28.4027 2021.98-28.39332021.979-28.2614    2022
-28.1265    2022-27.5114    2022-25.91242022.117-23.70972022.228-22.88462022.256
-21.11492022.293 -19.513 2022.31-18.4763 2022.31-18.17442022.299-17.60332022.215
-16.5938    2022-16.37432021.964-14.77972021.772-14.58762021.773-11.91942021.517
-11.61242021.483-11.17472021.453-11.10712021.469-11.08252021.496-10.75132021.525
-6.91009 2021.69-6.39531 2021.71-4.501992021.811-1.64792    2022-1.578822022.008
      02022.211 .3577282022.2574.752805    2023 6.629512023.7646.9497462023.802
7.629095    20248.2725932024.2269.7893882024.83610.079822024.95910.17996    2025
22.827582025.73227.45249    202627.983712026.049 30.43982026.24733.621232026.493
35.796442026.676 38.3512    202739.838242027.21645.26952    202848.077782028.419
 51.9215    2029 56.58992029.73456.623332029.73957.972012029.99757.98821    2030
58.236952030.02758.254182030.029 58.31622030.02458.319152030.023

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.354    .035-142.354    .02558.31915    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.35458.31915               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2023.06  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.70  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 2022.36  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2022.36  * Flow Area (sq ft)      *          *  105.02  *          *
* E.G. Slope (ft/ft)     *0.008882  * Area (sq ft)           *          *  105.02  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   78.60  * Top Width (ft)         *          *   78.60  *          *
* Vel Total (ft/s)       *    6.72  * Avg. Vel. (ft/s)       *          *    6.72  *          *
* Max Chl Dpth (ft)      *    3.36  * Hydr. Depth (ft)       *          *    1.34  *          *
* Conv. Total (cfs)      *  7491.0  * Conv. (cfs)            *          *  7491.0  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   79.89  *          *
* Min Ch El (ft)         * 2019.00  * Shear (lb/sq ft)       *          *    0.73  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.90  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)   *    1.41  *   22.21  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.92  *   14.21  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1900

INPUT
Description:
Station Elevation Data    num=     104
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.3422035.139-142.2452035.135-139.789 2034.64-138.9912034.548-134.811    2034
-130.7172033.197-129.047    2033-125.1722032.169-124.255    2032-123.8692031.933
-118.305    2031-112.722 2030.05-112.5642030.024-112.429    2030-112.2952029.975
```

```
-106.919    2029-103.2072028.313-101.597    2028-98.97282027.492-96.4613    2027
-94.19272026.599-91.1489    2026-88.78442025.543-85.9297    2025-81.15072024.087
-80.7489    2024-80.31782023.894-77.40512023.286-76.0648    2023-75.8261 2022.14
-75.7991    2022-75.52272021.027-75.5183    2021-75.50082020.969-75.0784    2020
-72.77272019.764-72.43242019.739-71.8528 2019.71-71.34612019.692-63.0884    2019
-54.37982019.951-54.33932019.953-53.8642    2020-49.36442020.657-49.06522020.665
-48.80422020.651-48.63192020.578 -46.5242020.478-43.47822020.661-37.4353    2021
-34.9738    2021-34.1641    2021-22.4553    2021-21.9386    2021-18.4236    2021
-18.2448    2021-16.79242021.159-16.24952021.144 -15.5832021.194-14.07092021.269
-13.2103 2021.32-12.86712021.348-6.42397    2022-6.028472022.129-3.79311    2023
-3.682962023.158-3.314422023.222 -1.34252023.324       02023.374 .5750132023.396
1.2301692023.4041.5044612023.3842.8608612023.2013.8337742023.1054.3928722023.269
5.2782322023.1275.4019172023.1726.1149082023.2276.7789682023.4817.2783282023.677
7.921235    2024 8.338142024.06412.70669    2025 14.63522025.08316.387432025.165
22.270052025.43534.58223    202639.040732026.47943.33145    202747.722692027.804
48.245392027.90748.74528    202852.87693 2028.7953.99361    202954.377422029.072
54.377772029.07255.030842029.25955.032852029.25955.826672029.42755.828372029.427
56.177752029.46556.186282029.466 57.08392029.511 58.23942029.582

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.342    .035-142.342    .025 58.2394    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -142.342 58.2394               25       25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2022.74  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.74  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2021.99  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2021.99  * Flow Area (sq ft)     *          *  102.16  *          *
* E.G. Slope (ft/ft)      *0.008314  * Area (sq ft)          *          *  102.16  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   69.32  * Top Width (ft)        *          *   69.32  *          *
* Vel Total (ft/s)        *    6.91  * Avg. Vel. (ft/s)      *          *    6.91  *          *
* Max Chl Dpth (ft)       *    2.99  * Hydr. Depth (ft)      *          *    1.47  *          *
* Conv. Total (cfs)       *  7742.9  * Conv. (cfs)           *          *  7742.9  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)      *          *   70.95  *          *
* Min Ch El (ft)          * 2019.00  * Shear (lb/sq ft)      *          *    0.75  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    5.16  *          *
* Frctn Loss (ft)         *    0.10  * Cum Volume (acre-ft)  *    1.41  *   22.15  *    2.94  *
* C & E Loss (ft)         *    0.14  * Cum SA (acres)        *    0.92  *   14.16  *    2.75  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1925

INPUT
Description:
Station Elevation Data    num=      99
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -142.332035.918-142.3212035.917-141.4182035.735-140.5492035.461-135.993    2034
-131.6972033.214-130.545    2033-126.1742032.189 -125.18    2032-120.2112031.075
-119.818    2031-119.6892030.976-114.526    2030-111.6682029.462-109.8672029.113
-109.233    2029-107.9422028.744 -104.04    2028-102.2552027.653-98.8772    2027
 -95.7152026.367-93.7497    2026-90.75212025.396 -88.722    2025-86.4608 2024.56
-83.3346    2024-79.68942023.357-77.3052    2023-77.23022022.634-76.8767    2022
-76.68132021.517-76.4292    2021-76.08122020.137-75.9894    2020  -75.452019.859
 -75.2742019.793-75.23732019.767-74.59322019.556-72.7621    2019-72.57262018.981
-71.1134    2019-62.8437    2019-52.66572019.759-49.5726    2020-48.62642020.043
-48.44472020.046-45.35332020.161-45.04422020.165-40.49762020.351-38.39562020.428
-28.33582020.481-27.71852020.433-27.00392020.414-26.55852020.417-26.25822020.414
-25.93362020.394-25.27062020.418-25.23712020.444-25.08252020.457-24.78692020.469
-24.39362020.479-20.31112020.387-19.61392020.337-15.7669    2020-9.23745    2020
 -7.8374    2020-7.55332    2020-7.34061    2020-6.02456    2020-5.78771    2020
-5.493192020.027-5.335542020.056-2.56035 2020.51-.6060432020.879-.127735    2021
       02021.0154.4880762021.5587.902814 2021.91 7.932062021.8967.9922842021.895
8.0471252021.9098.157803    20228.2336852022.0739.253572    20239.7799132023.462
10.24712    202416.008542024.60921.45665    2025 23.56062025.09236.79843    2026
39.001882026.32743.34631    202745.61799 2027.3549.84865    202852.161982028.456
55.599492028.96855.80473    202955.80632    202958.159642029.145

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
 -142.33    .035 -142.33    .02558.15964    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -142.3358.15964               25       25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2022.34  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.28  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2022.05  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
```

```
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          *  165.71  *          *
* E.G. Slope (ft/ft)     *0.002172  *  Area (sq ft)          *          *  165.71  *          *
* Q Total (cfs)          *  706.00  *  Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   85.12  * Top Width (ft)         *          *   85.12  *          *
* Vel Total (ft/s)       *    4.26  * Avg. Vel. (ft/s)       *          *    4.26  *          *
* Max Chl Dpth (ft)      *    3.07  * Hydr. Depth (ft)       *          *    1.95  *          *
* Conv. Total (cfs)      * 15147.2  * Conv. (cfs)            *          * 15147.2  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   86.89  *          *
* Min Ch El (ft)         * 2018.98  * Shear (lb/sq ft)       *          *    0.26  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.10  *          *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)   *    1.41  *   22.07  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.92  *   14.12  *    2.75  *
*****************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1950

INPUT
Description:
Station Elevation Data    num=     106
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.3192034.714-142.2472034.717-140.382    2034-135.212  2033.2-134.006    2033
-129.8532032.285-128.7812032.118-128.144    2032 -126.642031.723-122.622    2031
-119.1262030.361-117.152    2030-112.6132029.167-111.691    2029-111.1922028.906
-106.261    2028-102.2122027.235 -100.92    2027 -96.5762026.176-95.6492    2026
-94.3431 2025.74-90.2731    2025-88.68162024.663-84.9651    2024 -81.0962023.449
-77.8634    2023-77.46672022.774 -76.319    2022-75.97252021.442-75.6107    2021
-75.42252020.502 -74.986    2020-73.43132019.623-70.9961    2019-69.8298 2018.89
-68.18812018.677-67.65432018.632-66.10152018.548-65.83542018.528-65.48642018.471
-64.48582018.371-60.85162018.418-60.62932018.467-60.54862018.643-59.98732018.742
-58.2585    2019-49.71582019.899-48.4783    2020-42.27912020.417-39.82582020.564
-39.31832020.593-38.30112020.665 -37.9442020.698-32.3848 2020.64 -32.1232020.662
-31.74582020.674-31.14382020.678-30.40792020.673-29.66412020.661-29.02192020.642
-28.44442020.613-27.83582020.568-23.77512020.186-23.53322020.175-22.68342020.124
-22.28762020.091-21.53062020.085-19.45132020.106-17.88332020.083-15.55482020.002
-15.4986    2020-12.4413    2020-5.07057    2020-3.360322020.279-.604521    2021
       0    2021 .280092    2021 .567611    20212.095741    20213.879506    2021
7.059446    20217.3702862021.2828.404664    20229.1566572022.5069.749907    2023
11.205852023.82411.40346    202415.145092024.21619.148282024.41925.708922024.748
30.09716    202531.329712025.11240.21735    202641.715442026.275 45.6277    2027
46.670362027.19350.91859    202853.345152028.379 53.38422028.38355.320532028.566
55.342492028.56855.914512028.60655.924022028.60756.132072028.62957.351522028.808
58.092112028.917

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.319    .035-142.319    .02558.09211    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -142.31958.09211                 25      25      25              .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)          * 2022.28  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.27  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2022.01  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          *  168.86  *          *
* E.G. Slope (ft/ft)      *0.002034  * Area (sq ft)           *          *  168.86  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   84.75  * Top Width (ft)         *          *   84.75  *          *
* Vel Total (ft/s)        *    4.18  * Avg. Vel. (ft/s)       *          *    4.18  *          *
* Max Chl Dpth (ft)       *    3.64  * Hydr. Depth (ft)       *          *    1.99  *          *
* Conv. Total (cfs)       * 15652.6  * Conv. (cfs)            *          * 15652.6  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   86.70  *          *
* Min Ch El (ft)          * 2018.37  * Shear (lb/sq ft)       *          *    0.25  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    1.03  *          *
* Frctn Loss (ft)         *    0.09  * Cum Volume (acre-ft)   *    1.41  *   21.97  *    2.94  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)         *    0.92  *   14.07  *    2.75  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1975

INPUT
Description:
Station Elevation Data    num=     100
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.3072033.823-142.2872033.823-142.1952033.823 -140.412033.668-138.7642033.512
 -137.582033.439-136.9242033.378-134.244    2033-131.0562032.356-129.126    2032
-128.0822031.807-123.838    2031 -122.412030.737 -118.52    2030-116.9132029.703
-113.158    2029-110.4372028.488-107.907    2028-102.8732027.018-102.776    2027
-98.58012026.196-97.5571    2026 -97.5192025.993 -92.114    2025-88.32632024.331
-86.5166    2024-85.18852023.769-81.1746    2023-76.10932022.215-74.2117    2022
-70.25262021.476 -68.027    2021-66.17872020.316-65.4241    2020-65.09992019.865
-62.7318    2019-59.50242018.442-57.8722    2018-56.8022    2018-55.3406    2018
-54.89572018.091-49.5438    2019-47.19852019.537-47.04892019.537-45.8876    2020
-42.63182020.255-42.10182020.286 -41.1782020.323-40.3662 2020.34-39.30432020.352
-37.23362020.358-35.99082020.343-35.71932020.346-35.60372020.343-34.8957 2020.37
```

```
-28.5452    2020-12.36412020.684-11.56932020.703-10.99582020.719-9.573452020.754
-7.786232020.812-6.679182020.846-6.308122020.855-5.980052020.862-4.563142020.887
 -4.4013 2020.89-4.287422020.893-4.226332020.894-4.142162020.892-4.040622020.892
-3.676362020.891-3.352082020.886-3.231222020.885-3.131342020.887-2.867582020.891
-2.637982020.875       0 2020.883.8602392020.8886.623309    20216.9396092021.262
8.138368    20229.475868 2022.739.929945    202311.081262023.25213.761482023.562
14.566582023.66616.81291    202423.605882024.35835.60689    202537.102062025.272
 40.20622025.74941.449542025.94641.78279    202642.436252026.10847.30086    2027
52.178892027.975 52.2814    202852.811222028.05552.918532028.07158.08537 2028.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.307    .035-142.307    .02558.08537    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.30758.08537               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2022.14  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.71  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2021.44  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2021.44  * Flow Area (sq ft)     *          *  104.71  *          *
* E.G. Slope (ft/ft)     *0.008725  * Area (sq ft)          *          *  104.71  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   77.29  * Top Width (ft)        *          *   77.29  *          *
* Vel Total (ft/s)       *    6.74  * Avg. Vel. (ft/s)      *          *    6.74  *          *
* Max Chl Dpth (ft)      *    3.44  * Hydr. Depth (ft)      *          *    1.35  *          *
* Conv. Total (cfs)      *  7558.1  * Conv. (cfs)           *          *  7558.1  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   78.23  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)      *          *    0.73  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.92  *          *
* Frctn Loss (ft)        *    0.22  * Cum Volume (acre-ft)  *    1.41  *   21.90  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   14.03  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2000

INPUT
Description:
Station Elevation Data    num=      90
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.2952033.469-142.2352033.468-142.1832033.468-136.8292033.004-136.785    2033
-136.6742032.982 -135.492032.792-130.521    2032-130.1742031.939-124.291    2031
-121.1182030.411-119.068    2030-116.3452029.466-114.058    2029-112.9112028.773
-109.072    2028-105.2652027.292-103.711    2027-101.7392026.631-98.3498    2026
-93.73642025.138-92.9889    2025-91.93932024.804-87.6703    2024-85.02562023.508
-82.1189    2023-81.42122022.869-79.31032022.531-76.1065    2022-73.25212021.592
-71.80042021.422-69.73332021.135-67.6208    2021-65.03392020.871-57.8604    2020
-56.62782019.099-56.5199    2019-56.35632018.874 -55.022    2018-47.6472    2018
-46.5153    2018-46.05012018.099-44.6279 2018.35 -43.1712018.578-41.1827    2019
 -30.3792019.869-29.04312019.944-28.2975    2020-27.91822020.011-27.35272020.016
-26.57362020.001-25.63362020.003 -24.698    2020-22.23522019.989-19.43782019.938
-18.47372019.931 -17.5592019.947-16.61822019.983-16.2897    2020-9.345542020.304
-6.513662020.416-4.032482020.494-1.657822020.547       02020.5724.2023892020.638
6.671445    20218.0115262021.7618.388204    20229.1033222022.42910.05721    2023
11.479932023.284  16.272    202424.012212024.32533.524812024.52338.32729    2025
 41.6044 2025.6443.52592    202646.635812026.58748.59024    202749.364512027.156
53.22828    202854.35386    202854.35534    202854.528922028.25855.211782028.365
55.366542028.38956.658792028.54956.936162028.58357.274322028.62558.078632028.743

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.295    .035-142.295    .02558.07863    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.29558.07863               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2021.86  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.71  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2021.15  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2021.15  * Flow Area (sq ft)     *          *  104.44  *          *
* E.G. Slope (ft/ft)     *0.008714  * Area (sq ft)          *          *  104.44  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   76.75  * Top Width (ft)        *          *   76.75  *          *
* Vel Total (ft/s)       *    6.76  * Avg. Vel. (ft/s)      *          *    6.76  *          *
* Max Chl Dpth (ft)      *    3.15  * Hydr. Depth (ft)      *          *    1.36  *          *
* Conv. Total (cfs)      *  7562.9  * Conv. (cfs)           *          *  7562.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   77.66  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)      *          *    0.73  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.95  *          *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)  *    1.41  *   21.84  *    2.94  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *    0.92  *   13.98  *    2.75  *
*************************************************************************************************
```

```
Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2025

INPUT
Description:
Station Elevation Data    num=      93
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.2842033.114-142.1842033.113-142.1712033.113-140.864    2033-139.326    2033
-138.926    2033-137.812    2033-135.918    2033-135.769    2033-134.8392032.814
-134.3942032.754-133.9572032.761-131.5382032.287 -131.382032.267-130.207    2032
-126.8612031.293-125.504    2031-124.1112030.719 -120.65    2030-116.5912029.197
-115.516    2029-114.8592028.874-110.541    2028-108.0852027.529-105.245    2027
-101.4172026.264-100.023    2026-99.56282025.914-94.7671    2025-92.89922024.651
-89.5396    2024-84.84522023.164-83.8673    2023-81.69932022.584-78.0974    2022
-74.94522021.444-72.1843    2021-67.28682020.635-58.9935    2020-56.40272019.141
-56.0012    2019-55.72772018.939 -55.6392018.924-49.1999    2018-42.8266    2018
-40.3401    2018-36.50052018.622-34.3783    2019-33.38962019.035-33.25212019.036
 -32.0842019.081-30.83852019.121-26.71482019.229-23.24872019.254-22.74042019.261
-21.89862019.281-19.68552019.327-18.42152019.355-16.82572019.395-14.96032019.445
-10.7345 2019.56-8.326612019.621       02019.8455.750599    20206.5762372020.735
6.922939    20217.2384692021.447 7.96012    2022 8.450932022.4239.237174    2023
15.449522023.79616.554172023.84316.951922023.87117.56357 2023.87  18.4762023.928
19.157022023.91719.692692023.89619.969252023.86724.483842023.69729.93166    2024
 33.48492024.46736.278692024.72838.77658    202542.495152025.41646.86977    2026
 50.05182026.52151.88755    202754.001722027.43954.065452027.43255.248412027.697
57.731932028.22758.016492028.28858.098842028.314

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.284    .035-142.284    .02558.09884    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.28458.09884               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2021.42  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.50  * Wt. n-Val.           *          *    0.025 *          *
* W.S. Elev (ft)         * 2020.91  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  124.12  *          *
* E.G. Slope (ft/ft)     *0.004975  * Area (sq ft)         *          *  124.12  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   77.83  * Top Width (ft)       *          *   77.83  *          *
* Vel Total (ft/s)       *    5.69  * Avg. Vel. (ft/s)     *          *    5.69  *          *
* Max Chl Dpth (ft)      *    2.91  * Hydr. Depth (ft)     *          *    1.59  *          *
* Conv. Total (cfs)      * 10009.7  * Conv. (cfs)          *          * 10009.7  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   78.54  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)     *          *    0.49  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.79  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *    1.41  *   21.77  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   13.94  *    2.75  *
*************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2050

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.2722033.063-138.638    2033-137.8012032.831 -137.562032.809-137.1582032.764
-136.3312032.609-136.2092032.615-135.265 2032.48-134.8452032.445-132.128    2032
-131.621 2031.91-130.879 2031.77-128.019 2031.21-127.031    2031-121.9982030.008
-121.961    2030-121.9322029.994-116.997    2029-112.7322028.141-111.982    2028
-111.4742027.903-106.817    2027 -101.772026.041-101.564    2026 -99.1572025.562
 -96.028    2025 -91.0292024.111-90.4256    2024-89.7114 2023.87-84.8313    2023
-81.68322022.436-79.3977    2022-77.77512021.717-76.62182021.419-74.8177    2021
-72.04962020.217-71.2754    2020-66.67832019.664-62.14432019.346-59.8309 2019.19
-57.6054    2019-56.65672018.933-55.0376 2018.79-54.75662018.735-52.57992018.609
 -50.1612018.626-50.01932018.656-49.64022018.686-48.61552018.734-48.11392018.763
-48.04722018.793-47.92652018.808-47.5749 2018.82-47.10292018.811-46.85612018.811
-44.12952018.742-37.5284    2019-27.18242018.475-25.85142018.583-25.12372018.664
-24.27292018.888-23.6724    2019-14.29642019.344-5.000442019.679        0 2019.86
  3.8516    20204.773934 2020.51 5.84529    20216.6352112021.4127.744112    2022
11.084882022.38613.134882022.484 15.04472022.59321.28886    202326.174332023.259
33.099332023.67535.741152023.83138.34481    202441.525382024.54244.34405    2025
45.255742025.17949.11367    202650.97117 2026.3554.20389    202755.292422027.345
 56.05172027.486 57.4655 2027.7558.127192027.803

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.272    .035-142.272    .02558.12719    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.27258.12719               25      25      25            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2021.28  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.54  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2020.74  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  119.32  *          *
* E.G. Slope (ft/ft)     *0.005775  * Area (sq ft)          *          *  119.32  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   79.16  * Top Width (ft)        *          *   79.16  *          *
* Vel Total (ft/s)       *    5.92  * Avg. Vel. (ft/s)      *          *    5.92  *          *
* Max Chl Dpth (ft)      *    2.26  * Hydr. Depth (ft)      *          *    1.51  *          *
* Conv. Total (cfs)      *  9289.9  * Conv. (cfs)           *          *  9289.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   79.60  *          *
* Min Ch El (ft)         * 2018.48  * Shear (lb/sq ft)      *          *    0.54  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.20  *          *
* Frctn Loss (ft)        *    0.17  * Cum Volume (acre-ft)  *    1.41  *   21.70  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.92  *   13.89  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2075

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -142.262032.806-142.2542032.806-142.1492032.811-138.2752032.253-136.836    2032
-135.2252031.693-131.807    2031-129.7922030.612-126.777    2030-123.6962029.434
-121.176    2029-117.3472028.363-115.092    2028-114.4842027.899-108.928    2027
 -105.572026.354-103.657    2026-99.8083 2025.24-98.5729    2025-93.79252024.057
-93.5045    2024 -92.4962023.802 -88.293    2023-83.49932022.151-82.5763    2022
-81.35862021.821 -75.765    2021-71.8192 2020.08-70.4232    2020 -67.9162019.662
-66.01512019.486-65.58682019.463-64.4294    2019-64.2275    2019-63.1535    2019
-62.8411    2019-58.0176    2019  -57.11    2019-56.9117    2019-51.8264    2019
-49.4899    2019-49.2766    2019-45.5839    2019-37.0808    2019-29.67542018.437
-24.9925    2018 -23.037    2018 -22.004    2018-20.7727    2018-14.98882018.925
-14.4841    2019-7.067192019.297       02019.771 3.40929    20205.118398 2020.85
5.413903    20217.1585742021.9997.160525    20227.1840762022.0017.2161572022.003
7.4099942022.01129.99083    202333.890852023.44638.32705    202442.075112024.652
44.17972    202547.106952025.49549.96383    202652.261382026.52755.43693    2027
55.87979    202755.88921    202756.94963    202756.97376    202758.155542027.095

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -142.26    .035 -142.26    .02558.15554    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.2658.15554               25      25      25            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2021.09  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.69  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2020.41  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2020.41  * Flow Area (sq ft)     *          *  106.15  *          *
* E.G. Slope (ft/ft)     *0.008280  * Area (sq ft)          *          *  106.15  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   77.43  * Top Width (ft)        *          *   77.43  *          *
* Vel Total (ft/s)       *    6.65  * Avg. Vel. (ft/s)      *          *    6.65  *          *
* Max Chl Dpth (ft)      *    2.40  * Hydr. Depth (ft)      *          *    1.37  *          *
* Conv. Total (cfs)      *  7758.9  * Conv. (cfs)           *          *  7758.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   77.84  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)      *          *    0.70  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.69  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *    1.41  *   21.64  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   13.85  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2100

INPUT
Description:
Station Elevation Data    num=     102
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.249 2032.12-142.222 2032.12-142.2062032.121-141.369    2032-138.541 2031.63
-136.5732031.443-133.5052031.096-132.775    2031-132.262 2030.92-127.466    2030
-127.1372029.937-122.324    2029 -121.142028.774-117.085    2028-112.1452027.123
-111.478    2027-110.6522026.847-105.875    2026-103.9762025.652-100.525    2025
-96.96722024.318-95.2575    2024-91.2183 2023.23-89.9847    2023-86.58132022.341
```

```
-84.7706    2022 -83.3792021.727-79.6322    2021-76.12112020.309-75.11462020.117
-74.4189    2020-72.80062019.672-69.4768    2019-68.87522018.933-65.79182018.783
 -64.4182018.736-58.89162018.742-58.84272018.751-58.34252018.766-57.68662018.774
 -53.6962018.807-52.01682018.826-49.13662018.867-47.85472018.888-47.23352018.894
-46.30312018.918-44.0797    2019-38.8833    2019-37.0414    2019  -35.15    2019
-33.7366    2019 -21.0682018.248-20.63312018.225-20.36812018.215-17.0207    2018
-16.68672017.937-16.66672017.776-16.01122017.664-16.00492017.623 -13.0582017.573
-12.4696 2017.62-9.801762017.793-9.307572017.877-8.02552    2018-3.35264 2018.96
 -3.1123    2019-2.849762019.086-.398428    2020       02020.1461.0472492020.529
 2.56771    20215.2959992021.7795.9376352021.9136.1385432021.9636.6002912021.976
7.3546812021.6157.8525572021.6069.1966742021.75311.07221    202215.26649 2022.15
36.20401    202338.155342023.338 41.6977    202444.620222024.562  47.014    2025
49.378832025.46152.08158    202653.663012026.31854.285682026.23854.298582026.241
55.569362026.496 55.58352026.49756.112892026.54656.15162 2026.55 56.94222026.634
 56.95062026.63757.081572026.67657.249762026.69457.894862026.76557.921222026.766
57.983252026.76858.183892026.764

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.249    .035-142.249    .02558.18389    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.24958.18389               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2020.81  * Element               •  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.70  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2020.11  * Reach Len. (ft)       •   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2020.11  * Flow Area (sq ft)     *          *  104.92  *          *
* E.G. Slope (ft/ft)     *0.008281  * Area (sq ft)          *          *  104.92  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   74.94  • Top Width (ft)       *          *   74.94  *          *
* Vel Total (ft/s)       *    6.73  * Avg. Vel. (ft/s)     *          *    6.73  *          *
* Max Chl Dpth (ft)      *    2.53  * Hydr. Depth (ft)     *          *    1.40  *          *
* Conv. Total (cfs)      *  7758.1  * Conv. (cfs)          *          •  7758.1  *          *
• Length Wtd. (ft)       *   25.00  • Wetted Per. (ft)     *          *   75.61  *          *
• Min Ch El (ft)         * 2017.57  * Shear (lb/sq ft)     *          *    0.72  •          *
• Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    4.83  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *    1.41  *   21.57  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   13.80  *    2.75  •
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2125

INPUT
Description:
Station Elevation Data    num=     155
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
-142.2362031.701-141.8822031.665-141.3882031.615-139.9352031.494 -139.02  2031.4
-138.739 2031.34-138.4572031.165-138.2092031.118-137.7392031.088-136.4922031.034
-136.121    2031-134.8972030.792-130.413    2030-126.379 2029.24-125.134    2029
-123.856 2028.77  -119.6    2028-115.1992027.223-114.269 2027.07-113.876    2027
-108.2832026.005-108.257    2026-108.2452025.998-108.1672025.983-102.837    2025
-101.8652024.821-97.3891    2024-94.64022023.494-91.9903    2023-87.24122022.132
-86.4949    2022-85.06772021.766-80.5431    2021-76.6426 2020.36-74.5226    2020
-72.09962019.608-68.6203    2019-67.08782018.875-65.96112018.723-65.04962018.636
-63.98782018.495-63.51162018.441-62.05232018.371-61.40222018.348-58.78672018.351
-58.76362018.356-58.52682018.363-58.21642018.366-56.32782018.382-55.53312018.391
  -54.17 2018.41-53.5633 2018.42-53.26932018.423 -52.8292018.434-50.91572018.505
-50.26062018.524 -49.5852018.534-46.35892018.562-44.07392018.574-43.44442018.582
-41.42882018.624-41.0969 2018.63-40.41772018.642-39.31032018.655-38.3124 2018.67
-36.59882018.703-35.87672018.712-35.1004 2018.72-34.48162018.724-34.14572018.729
-33.83482018.736-33.46932018.747-33.22232018.753-32.7582 2018.76-32.2829 2018.77
-31.74862018.778-31.50512018.783-31.45392018.786-31.39032018.796 -31.2952018.802
-31.08272018.808-30.72592018.813-29.87742018.823-29.54532018.829-29.30872018.834
-29.0862 2018.84-28.78272018.837-28.71582018.834-28.53352018.827-28.24072018.818
-27.86872018.809-27.47132018.803 -26.7752018.794-26.52562018.789-26.34232018.783
-26.14872018.774-25.71162018.761-24.76992018.728-24.19792018.699-23.59822018.657
-21.89142018.573-20.16382018.455-12.5521    2018-11.65772017.849-11.62432017.846
-8.595732017.374-8.08368 2017.28-7.77433 2017.21-7.566462017.147-7.452622017.124
 -7.30332017.106-7.244592017.095-7.242562017.079-7.175912017.068-7.175272017.063
-6.875612017.058-6.815772017.063-6.544492017.081-6.494232017.089-6.159872017.121
-6.030722017.138-5.861422017.169-5.53555 2017.21-3.295812017.599-.867356    2018
       02018.2841.515174 2018.781.995361    20192.5956932019.3583.653104    2020
4.073206 2020.225.388734    20218.481772  2021.59.9164242021.63511.985672021.859
13.94001    202217.634922022.13321.234452022.27337.12452    202337.375912023.046
   42.73    202445.625762024.53248.24586    202552.667632025.85553.43669    2026
 53.58542026.01453.586362026.01455.385872026.20655.388592026.20755.688462026.296
55.762212026.30457.454192026.48957.47104 2026.4957.646092026.49658.212242026.485

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.236    .035-142.236    .02558.21224    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
      -142.23658.21224               25      25      25             .1       .3

 CROSS SECTION OUTPUT  Profile #PF 1
 ********************************************************************************************
 * E.G. Elev (ft)         * 2020.53  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.69  * Wt. n-Val.            *          *   0.025  *          *
 * W.S. Elev (ft)         * 2019.84  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
 * Crit W.S. (ft)         * 2019.84  * Flow Area (sq ft)     *          *  105.72  *          *
 * E.G. Slope (ft/ft)     *0.008362  * Area (sq ft)          *          *  105.72  *          *
 * Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
 * Top Width (ft)         *   76.90  * Top Width (ft)        *          *   76.90  *          *
 * Vel Total (ft/s)       *    6.68  * Avg. Vel. (ft/s)      *          *    6.68  *          *
 * Max Chl Dpth (ft)      *    2.78  * Hydr. Depth (ft)      *          *    1.37  *          *
 * Conv. Total (cfs)      *  7720.4  * Conv. (cfs)           *          *  7720.4  *          *
 * Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   77.62  *          *
 * Min Ch El (ft)         * 2017.06  * Shear (lb/sq ft)      *          *    0.71  *          *
 * Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.75  *          *
 * Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)  *    1.41  *   21.51  *    2.94  *
 * C & E Loss (ft)        *    0.07  * Cum SA (acres)        *    0.92  *   13.76  *    2.75  *
 ********************************************************************************************

 Warning: The energy equation could not be balanced within the specified number of iterations.  The
          program selected the water surface that had the least amount of error between computed and
          assumed values.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical
          depth, the calculated water surface came back below critical depth.  This indicates that there
          is not a valid subcritical answer.  The program defaulted to critical depth.

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                  RS: -2150

 INPUT
 Description:
 Station Elevation Data    num=     109
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ********************************************************************************
 -142.2232031.334-140.5032031.161-140.3842031.149-138.603    2031 -133.092030.117
 -132.237    2030-131.6032029.836-131.2782029.771-126.504    2029-126.4782028.996
 -126.4652028.994 -126.372028.977-122.6042028.325-121.0382028.037-120.829    2028
 -120.6012027.959 -115.37    2027 -111.852026.364-109.847    2026-105.8122025.224
 -104.629    2025-99.89962024.089-99.4254    2024-94.28992023.009-94.2433    2023
 -94.1885 2022.99-89.0178    2022 -87.8112021.774-83.2685    2021-79.15742020.321
 -77.1929    2020-74.13562019.591-69.4914    2019-61.10382018.195-60.83762018.175
 -60.64562018.164-59.0162    2018-57.4306    2018-55.9971    2018-54.60732018.017
 -51.76452018.059-46.88232018.154-44.8253 2018.18-42.61352018.201-40.85072018.214
 -39.89372018.228-39.00792018.247-37.96662018.279-37.26282018.297-35.94072018.317
 -34.58662018.345-33.06432018.367-32.37062018.382-32.2249 2018.39-32.04352018.418
 -31.77222018.435-31.16732018.452-30.15092018.467-27.73342018.496-26.78722018.512
 -26.11312018.527-25.47942018.544-24.61472018.536 -24.4242018.526-23.90482018.507
 -23.07052018.481-22.01082018.456-20.87842018.438-18.89482018.413-18.18442018.398
 -17.66192018.381-17.11042018.357-15.8652 2018.32-13.18242018.226-11.55272018.142
 -9.844132018.024-9.36363    2018-4.151062017.205-1.891562017.151       02017.388
 3.537841 2017.834.863621    20185.9789522018.9016.097659    20197.0438482019.789
 7.280115    20207.5551072020.214 8.42141    202111.804972021.54114.809242021.805
 17.49164    202219.873932022.09924.354992022.27734.512782022.86335.081172022.894
 35.958752022.94736.83669    202337.585212023.10943.35014    202448.642862024.937
 49.04051    202549.405642025.06254.02213    202655.05735    202657.013512026.213
 57.020862026.21457.308922026.22457.571562026.21958.195732026.207

 Manning's n Values        num=       3
      Sta   n Val     Sta   n Val     Sta   n Val
 ************************************************
 -142.223    .035-142.223    .02558.19573    .035

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.22358.19573               25      25      25             .1       .3

 CROSS SECTION OUTPUT  Profile #PF 1
 ********************************************************************************************
 * E.G. Elev (ft)         * 2020.30  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.46  * Wt. n-Val.            *          *   0.025  *          *
 * W.S. Elev (ft)         * 2019.84  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
 * Crit W.S. (ft)         * 2019.55  * Flow Area (sq ft)     *          *  129.94  *          *
 * E.G. Slope (ft/ft)     *0.004668  * Area (sq ft)          *          *  129.94  *          *
 * Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
 * Top Width (ft)         *   83.07  * Top Width (ft)        *          *   83.07  *          *
 * Vel Total (ft/s)       *    5.43  * Avg. Vel. (ft/s)      *          *    5.43  *          *
 * Max Chl Dpth (ft)      *    2.69  * Hydr. Depth (ft)      *          *    1.56  *          *
 * Conv. Total (cfs)      * 10333.1  * Conv. (cfs)           *          * 10333.1  *          *
 * Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   83.96  *          *
 * Min Ch El (ft)         * 2017.15  * Shear (lb/sq ft)      *          *    0.45  *          *
 * Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.45  *          *
 * Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)  *    1.41  *   21.45  *    2.94  *
 * C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   13.71  *    2.75  *
 ********************************************************************************************

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                  RS: -2175

 INPUT
 Description:
 Station Elevation Data    num=     108
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ********************************************************************************
```

```
 -142.21 2030.92-141.126  2030.8-141.0752030.794-139.7792030.645-139.7072030.636
-134.652    2030-133.2532029.767-129.105    2029-126.6632028.547-124.2362028.083
-123.834    2028-122.8082027.813-118.483    2027-113.5912026.233-112.351    2026
-111.585 2025.87-106.404    2025-103.9782024.548-101.053    2024-98.53092023.527
-95.7101    2023-91.45522022.216-90.3077    2022-89.20642021.797-87.78962021.536
-84.9139    2021 -81.3712020.368-79.3439    2020-74.43752019.203-73.1087    2019
-72.2887    2019-72.0237    2019-70.5588    2019-64.8174    2019-63.6663    2019
-63.0687    2019-61.6502    2019-55.77632018.465-51.2618 2018.06-50.4827    2018
-49.3652    2018-48.7698    2018-46.4073    2018-34.0875    2018-33.5023    2018
-32.9584    2018-32.6968 2018.04-32.24942018.069-31.25182018.097-29.57582018.121
-25.58952018.169-24.02912018.195-22.91752018.219-21.87262018.248-20.44672018.235
-20.13232018.219-19.27612018.186-17.90032018.144-16.15292018.102-14.28562018.072
-11.01462018.033-9.843172018.008-9.61119    2018-7.588082017.705-2.72204    2017
-1.70887    2017       0    2017 .487735    2017 3.545552017.4576.184544    2018
7.0442022018.4957.698636    20198.9247822019.8129.187682    20209.6280322020.248
10.63052    202116.152782021.52517.782822021.69720.32174    202226.869472022.412
36.75497    202340.101942023.43244.62345    202448.977392024.69750.83465    2025
51.19637 2025.0654.261612025.60555.035112025.75855.908752025.85856.08141 2025.87
56.192922025.87556.231322025.87856.234272025.88756.294352025.90156.394572025.908
56.569822025.91856.662612025.93156.686552025.93756.854082025.94156.871572025.943
56.891432025.94456.910742025.94556.973162025.94557.087242025.94657.087382025.946
57.091262025.94657.241622025.94358.178162025.927

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
 -142.21    .035 -142.21    .02558.17816    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.2158.17816               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)          * 2020.13  * Element               *  Left OB * Channel * Right OB *
* Vel Head (ft)           *    0.65  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2019.48  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2019.48  * Flow Area (sq ft)     *          *  109.32  *          *
* E.G. Slope (ft/ft)      *0.008473  * Area (sq ft)          *          *  109.32  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   84.55  * Top Width (ft)       *          *   84.55  *          *
* Vel Total (ft/s)        *    6.46  * Avg. Vel. (ft/s)     *          *    6.46  *          *
* Max Chl Dpth (ft)       *    2.48  * Hydr. Depth (ft)     *          *    1.29  *          *
* Conv. Total (cfs)       *  7669.7  * Conv. (cfs)          *          *  7669.7  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)     *          *   85.25  *          *
* Min Ch El (ft)          * 2017.00  * Shear (lb/sq ft)     *          *    0.68  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    4.38  *          *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)  *    1.41  *   21.38  *    2.94  *
* C & E Loss (ft)         *    0.06  * Cum SA (acres)        *    0.92  *   13.67  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2200

INPUT
Description:
Station Elevation Data    num=     113
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.1972029.921-142.1712029.918-142.1092029.912-142.0812029.909-142.0252029.905
-142.0052029.904-141.9472029.901-141.9272029.901 -141.842029.899-141.8342029.899
-141.8072029.898-141.7932029.896-141.7092029.884-141.6872029.882-141.5022029.871
 -141.49 2029.87-141.3772029.859-141.3732029.858-141.331 2029.84-141.3252029.839
-141.2482029.826-141.2172029.824-140.5642029.778-140.5472029.776-140.0722029.727
-140.0552029.724-139.3342029.629-139.2932029.624-133.578    2029  -132.32028.798
-127.033    2028-124.3442027.562-120.804    2027-118.5752026.616-114.919    2026
-110.9532025.307-109.177    2025-104.2192024.121-103.568    2024-98.89612023.164
-98.0252    2023-93.26272022.121-92.6172    2022-91.89382021.867-87.2605    2021
-84.77592020.573-81.3374    2020 -79.4412019.683-75.9064 2019.12-75.1972    2019
-73.80242018.943-49.5969    2018-38.61132017.727-35.20532017.647-33.1552  2017.6
-21.02312017.562-20.5596 2017.59-18.82332017.659-18.12342017.709-17.64782017.766
 -17.296 2017.88-16.87342017.856-16.53832017.833-15.80712017.776-15.34832017.777
-14.77492017.735-13.0891 2017.63-12.78822017.615-11.41182017.543-3.72771    2017
       0    20171.529489    20171.833045    20175.3938542017.7666.440764    2018
7.240929 2018.488.205366    2019 8.649742019.21410.08841    202010.821022020.371
12.01488    202112.815522021.43413.068632021.45113.22504  2021.418.37162    2022
18.74129    2022  21.717    202237.714422022.93238.76264    202339.144622023.064
40.264032023.26944.11292    202446.362932024.45549.08379    202549.582362025.057
50.727832025.13651.467622025.16951.722352025.19151.741892025.25452.140512025.341
52.80539 2025.3953.968062025.456 54.58362025.54154.74243 2025.5855.85392 2025.61
55.969962025.62356.101672025.63156.229762025.63356.643912025.63257.400762025.641
57.401632025.64157.42741 2025.6458.151622025.628

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
-142.197    .035-142.197    .02558.15162    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.19758.15162               25      25      25             .1       .3
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2019.88	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.45	Wt. n-Val.		0.025		
W.S. Elev (ft)	2019.43	Reach Len. (ft)	25.00	25.00	25.00	
Crit W.S. (ft)		Flow Area (sq ft)		131.55		
E.G. Slope (ft/ft)	0.004735	Area (sq ft)		131.55		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	86.93	Top Width (ft)		86.93		
Vel Total (ft/s)	5.37	Avg. Vel. (ft/s)		5.37		
Max Chl Dpth (ft)	2.43	Hydr. Depth (ft)		1.51		
Conv. Total (cfs)	10260.1	Conv. (cfs)		10260.1		
Length Wtd. (ft)	25.00	Wetted Per. (ft)		87.52		
Min Ch El (ft)	2017.00	Shear (lb/sq ft)		0.44		
Alpha	1.00	Stream Power (lb/ft s)		2.38		
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	1.41	21.31	2.94	
C & E Loss (ft)	0.01	Cum SA (acres)	0.92	13.62	2.75	

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2225

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.1842029.632	-142.0892029.631	-142.0632029.626	-141.9672029.606	-141.9272029.602					
-141.322029.535	-141.3042029.534	-140.8792029.501	-140.8682029.501	-140.4722029.482					
-140.4612029.482	-139.912029.471	-139.9072029.471	-139.7372029.463	-139.732029.462					
-139.2182029.389	-139.2082029.388	-138.132029.324	-138.1262029.323	-137.473 2029.26					
-137.4722029.259	-137.234 2029.16	-137.233 2029.16	-136.7952029.086	-136.7922029.086					
-135.579	2029	-132.832028.543	-129.206	2028	-123.3492027.034	-123.127	2027		
-123.0272026.984	-117.024	2026	-111.6192025.116	-110.957	2025	-109.6412024.762			
-105.315	2024	-102.5322023.487	-99.9016	2023	-98.005 2022.67	-94.3582	2022		
-91.47162021.496	-88.7663	2021	-85.72692020.467	-83.1311	2020	-78.18042019.241			
-76.7045	2019	-75.47092018.782	-75.37692018.782	-75.35172018.787	-70.40152018.769				
-69.4032018.732	-66.11842018.605	-49.3702	2018	-46.82282017.936	-8.21179	2017			
-3.25209	2017	0	20171.989913	2017	3.686062017.4116.162466	2018			
7.165674 2018.527.998346	20199.526755 2019.81	9.84046	202010.063492020.125						
11.69856	202120.924762021.79123.42868	202224.80558	202227.76932	2022					
29.48646	202230.98551	202232.89685	202238.508032022.80439.89475	2023					
41.06355 2023.1741.831692023.27846.18979	2024 50.79962024.86751.055912024.925								
51.40986	2025 52.50462025.15152.798312025.22454.853762025.27955.068352025.303								
55.311912025.31855.548772025.32156.31466 2025.3257.714272025.33657.715882025.336									
57.763562025.33558.093312025.329									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.184	.035	-142.184	.02558.09331	.035	

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.18458.09331		25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2019.72	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.59	Wt. n-Val.		0.025		
W.S. Elev (ft)	2019.13	Reach Len. (ft)	25.00	25.00	25.00	
Crit W.S. (ft)	2019.06	Flow Area (sq ft)		114.26		
E.G. Slope (ft/ft)	0.007417	Area (sq ft)		114.26		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	85.70	Top Width (ft)		85.70		
Vel Total (ft/s)	6.18	Avg. Vel. (ft/s)		6.18		
Max Chl Dpth (ft)	2.12	Hydr. Depth (ft)		1.33		
Conv. Total (cfs)	8197.7	Conv. (cfs)		8197.7		
Length Wtd. (ft)	25.00	Wetted Per. (ft)		86.16		
Min Ch El (ft)	2017.00	Shear (lb/sq ft)		0.61		
Alpha	1.00	Stream Power (lb/ft s)		3.79		
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	1.41	21.24	2.94	
C & E Loss (ft)	0.01	Cum SA (acres)	0.92	13.57	2.75	

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2250

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.1672029.335	-142.0562029.334	-141.9232029.333	-141.909 2029.33	-141.7022029.287					
-141.6832029.285	-140.5322029.159	-140.5272029.159	-139.7332029.097	-139.7312029.097					
-138.9962029.063	-138.9952029.063	-137.982029.043	-137.9792029.043	-137.6672029.028					
-137.6662029.028	-137.47	2029	-134.0092028.463	-130.995	2028	-129.1532027.703			
-124.963	2027	-121.8682026.493	-118.875	2026	-115.9972025.521	-112.759	2025		
-110.042024.545	-106.724	2024	-104.2412023.573	-101.151	2023	-100.394 2022.86			
-95.6329	2022	-91.3665 2021.23	-90.0544	2021	-89.08742020.837	-84.068	2020		
-82.28792019.756	-76.6235	2019	-75.77822018.823	-71.8111	2018	-68.2355	2018		
-65.1095	2018	-60.4001	2018	-54.0212	2018	-52.8088	2018	-51.8406	2018
-51.30562017.918	-50.89212017.862	-47.79672017.398	-46.81642017.298	-46.04852017.235					
-45.39492017.156	-44.67972017.146	-43.99682017.059	-42.63392017.089	-41.33582017.173					
-39.30082017.247	-38.62532017.285	-38.52892017.323	-27.98392017.356	-22.14572017.223					

```
-17.79762017.115-13.3806    2017-12.43782016.815-3.895332016.922-3.847592016.959
-3.58513    2017-.3172932017.525       02017.5722.900259    20185.5582992018.976
5.621325    20195.676773 2019.028.472083    202010.363262020.68211.27952    2021
12.449022021.05222.987472021.48934.05772 2021.9535.26942    202235.68512 2022.06
41.70604    202346.137852023.65248.26303 2023.98 48.3767    202449.835362024.239
54.44552    202554.522162025.00554.86779 2025.01 55.98542025.00758.027782025.031
58.030132025.03158.05532 2025.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.167    .035-142.167    .02558.05532    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.16758.05532               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          • 2019.51  • Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.68  • Wt. n-Val.             *          *   0.025  •          *
* W.S. Elev (ft)          * 2018.84  * Reach Len. (ft)        •   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2018.84  * Flow Area (sq ft)      *          •  106.91  •          *
* E.G. Slope (ft/ft)      *0.008589  * Area (sq ft)           *          *  106.91  *          *
* Q Total (cfs)           •  706.00  * Flow (cfs)             *          •  706.00  •          *
* Top Width (ft)          *   81.02  * Top Width (ft)        *          •   81.02  •          *
* Vel Total (ft/s)        *    6.60  * Avg. Vel. (ft/s)      *          *    6.60  *          *
* Max Chl Dpth (ft)       *    2.02  * Hydr. Depth (ft)      *          *    1.32  *          *
* Conv. Total (cfs)       *  7618.0  * Conv. (cfs)           *          *  7618.0  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)      *          *   81.44  *          *
* Min Ch El (ft)          • 2016.82  * Shear (lb/sq ft)      *          •    0.70  *          *
* Alpha                   •    1.00  * Stream Power (lb/ft s) •          *    4.65  *          *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)  *    1.41  *   21.17  *    2.94  *
* C & E Loss (ft)         *    0.07  * Cum SA (acres)        *    0.92  *   13.52  •    2.75  *
*************************************************************************************************

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -2275

INPUT
Description:
Station Elevation Data    num=      81
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
**************************************************************************************
-142.1452029.038-141.7712029.034-141.7572029.034-141.7562029.034-141.591    2029
 -136.922028.419-133.766    2028-129.9312027.304-128.366    2027 -122.852026.031
-122.666    2026-122.5632025.984-118.6212025.416-116.0272025.042-115.734    2025
-110.7462024.293-108.775    2024-103.2952023.091-102.767    2023-101.7692022.833
-97.0763    2022 -94.5942021.581-91.1153    2021-85.17332020.026-85.0169    2020
-84.63772019.942 -78.562    2019-76.89462018.731-72.8774    2018-51.01742017.178
-46.2632    2017-46.0595    2017-46.0377    2017-32.8834    2017-32.6869    2017
-27.3547    2017-27.1541    2017-24.8389    2017-18.7761    2017-17.9549 2016.93
-16.75652016.721-16.40932016.604 -16.0992016.536-15.86762016.515-15.01212016.465
-14.7546 2016.44 -14.2622016.343-10.66522016.388-10.64512016.404-10.47072016.431
-10.40092016.477-9.326662016.698-8.749032016.796-6.90172    2017-6.89926    2017
-6.885222017.001       02017.5545.559669    20186.4347362018.3997.717485    2019
8.7791472019.5169.930632    202011.458482020.68612.15888    202116.94313 2021.22
34.38989    202236.547122022.26442.94725    202346.311952023.41551.17529    2024
52.768442024.14653.418132024.22154.447272024.39154.725172024.489 54.8508  2024.5
 55.53192024.52756.222622024.56358.095582024.67658.108682024.676 58.11952024.676
58.120862024.676

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.145    .035-142.145    .02558.12086    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.14558.12086               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
• E.G. Elev (ft)          • 2019.28  * Element                *  Left OB *  Channel • Right OB *
* Vel Head (ft)           *    0.45  * Wt. n-Val.             *          •   0.025  *          *
* W.S. Elev (ft)          * 2018.82  * Reach Len. (ft)        *   25.00  •   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          *  130.50  •          *
* E.G. Slope (ft/ft)      *0.004693  * Area (sq ft)           *          *  130.50  *          *
* Q Total (cfs)           •  706.00  * Flow (cfs)             *          *  706.00  •          *
• Top Width (ft)          *   84.78  • Top Width (ft)        *          *   84.78  *          *
* Vel Total (ft/s)        •    5.41  * Avg. Vel. (ft/s)      *          *    5.41  •          *
• Max Chl Dpth (ft)       *    2.48  • Hydr. Depth (ft)      *          *    1.54  *          *
• Conv. Total (cfs)       * 10305.5  • Conv. (cfs)           *          • 10305.5  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)      *          •   85.22  *          *
* Min Ch El (ft)          * 2016.34  • Shear (lb/sq ft)      *          •    0.45  *          *
* Alpha                   •    1.00  * Stream Power (lb/ft s) *          *    2.43  •          *
• Frctn Loss (ft)         •    0.12  * Cum Volume (acre-ft)  *    1.41  *   21.11  •    2.94  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)        •    0.92  *   13.47  *    2.75  *
*************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -2300
```

```
INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.1232028.545-141.9182028.546-139.3312028.411 -138.95 2028.41-138.6342028.407
-138.4522028.399-134.8092028.042-134.438    2028-131.3742027.427-129.119    2027
-125.6612026.383-123.9042026.061-123.552    2026-121.6052025.694-117.273    2025
-114.3342024.549-110.787    2024-108.1632023.586-104.486    2023-101.3022022.393
-99.2989    2022-98.76572021.896-94.1826    2021 -89.438 2020.06-89.1216    2020
-87.74362019.827-81.3276    2019-78.36672018.613-73.6049    2018-56.75122017.366
-46.9999    2017-44.8896    2017-43.1238    2017-41.4233    2017-39.1255    2017
-37.3174    2017-36.8145    2017-23.41232016.269-20.41332016.104-19.73262016.066
-18.4562    2016-18.3611    2016-16.0372    2016-13.34912016.551-11.2869    2017
       02017.6241.8330752017.7256.644048    20187.1669232018.3048.365707    2019
8.8209592019.23410.10839    202010.985282020.54811.80248    202111.97875    2021
12.36246    202114.50717    202119.67825    202128.84079  2021.630.302212021.699
  32.8642021.84733.456142021.88835.77612    202243.417112022.82444.82804    2023
47.937752023.36252.70544    202452.719872024.00154.179042024.07858.135732024.316
 58.16342024.31658.186252024.31558.186412024.315

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.123    .035-142.123    .02558.18641    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.12358.18641               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2019.15  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.46  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 2018.68  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2018.45  * Flow Area (sq ft)    *          *  129.19  *          *
* E.G. Slope (ft/ft)     *0.005001  * Area (sq ft)         *          *  129.19  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   86.73  * Top Width (ft)       *          *   86.73  *          *
* Vel Total (ft/s)       *    5.46  * Avg. Vel. (ft/s)     *          *    5.46  *          *
* Max Chl Dpth (ft)      *    2.68  * Hydr. Depth (ft)     *          *    1.49  *          *
* Conv. Total (cfs)      *  9983.5  * Conv. (cfs)          *          *  9983.5  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   87.14  *          *
* Min Ch El (ft)         * 2016.00  * Shear (lb/sq ft)     *          *    0.46  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    2.53  *          *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)  *    1.41  *   21.03  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   13.42  *    2.75  *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2325

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.1012028.031-141.502    2028-134.507 2027.29-134.3162027.289-134.1572027.285
-132.506    2027-129.1392026.426-126.691    2026-124.7982025.685 -120.67    2025
-115.3422024.112-114.656    2024-112.1662023.581-109.4052023.109-108.725    2023
-108.3252022.931 -102.65    2022-100.2212021.592-96.6496    2021-92.20432020.239
-90.7915    2020-90.27372019.933-89.74322019.871-88.92332019.768-82.4317    2019
 -81.8152018.923-79.80242018.654-75.1613    2018-62.00982017.493-59.74242017.422
-57.07742017.355-54.80822017.315-45.5867    2017 -44.877    2017-43.7298    2017
-42.5258    2017-39.4902    2017-39.2629    2017-35.15072016.649-26.8476    2016
-21.4617    2016-20.0507    2016-19.29072016.155-15.4363    2017-4.30425    2017
       0    20173.090245    2017 4.25066    20174.754236    20175.8534762017.574
6.663273    20187.1957722018.2818.597715    20199.3175062019.395  10.628    2020
10.758582020.06510.782732020.06610.802022020.06110.807342020.04311.021762020.035
11.454892020.06712.187362020.12423.05029    2021 33.20192021.69738.34293    2022
41.110062022.32441.821642022.41744.11415 2022.6945.536672022.87246.77594    2023
55.517172023.67255.832282023.70156.379442023.76356.936632023.83657.119992023.866
57.205672023.88457.338092023.89857.571592023.91757.606962023.92257.695832023.928
57.825222023.93857.893372023.94157.961682023.94458.020982023.94858.043262023.951
58.175562023.94958.214182023.949

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.101    .035-142.101    .02558.21418    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.10158.21418               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2018.97  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.65  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 2018.33  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2018.33  * Flow Area (sq ft)    *          *  109.42  *          *
* E.G. Slope (ft/ft)     *0.008451  * Area (sq ft)         *          *  109.42  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   84.76  * Top Width (ft)       *          *   84.76  *          *
* Vel Total (ft/s)       *    6.45  * Avg. Vel. (ft/s)     *          *    6.45  *          *
* Max Chl Dpth (ft)      *    2.33  * Hydr. Depth (ft)     *          *    1.29  *          *
* Conv. Total (cfs)      *  7679.8  * Conv. (cfs)          *          *  7679.8  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   85.28  *          *
```

```
* Min Ch El (ft)          * 2016.00  * Shear (lb/sq ft)        *          *    0.68  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    4.37  *          *
* Frctn Loss (ft)         *    0.17  * Cum Volume (acre-ft)   *    1.41  *   20.96  *    2.94  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)         *    0.92  *   13.37  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2350

INPUT
Description:
Station Elevation Data    num=      79
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.0792027.394-138.4372027.283-138.4342027.283-137.0562027.232-137.0542027.232
-135.5472027.161-135.5462027.161-134.5312027.084-133.804    2027-130.6962026.382
-128.781    2026-127.947 2025.84-123.625    2025-119.9162024.297-118.146    2024
-114.1842023.312-112.247    2023-109.6262022.565-106.163    2022-100.8522021.121
-100.117    2021-97.2987 2020.53-94.0683    2020-91.24992019.623-86.7375    2019
-85.80842018.906-77.2994    2018-74.53282017.032-74.4384    2017-74.4295    2017
-73.9087    2017-55.8747    2017-52.2355    2017-51.34432016.962-51.17212016.955
-48.95022016.853-36.99982016.304-30.6741    2016-23.7481    2016-23.2806    2016
 -21.3772016.293-18.94962016.599-17.7231    2017-16.1116    2017-15.2549    2017
-14.8482    2017-14.7086    2017-13.2838    2017  -12.99    2017-11.4701    2017
-11.0702    2017-1.93037    2017-.151055    2017       0    20174.108562    2017
6.293607    20177.0878652017.359 8.63777    2018 9.832032018.526 10.8732    2019
13.630412019.87414.05392    202015.726742020.09934.37738    202140.824462021.579
44.06134    202246.44358 2022.4249.92291    202350.506662023.06152.655342023.234
52.980872023.28253.798652023.33354.989242023.43355.616362023.461  56.2452023.481
56.790652023.52156.995642023.54858.213042023.53558.236112023.534

Manning's n Values        num=      3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.079    .035-142.079    .02558.23611    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.07958.23611               25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)          * 2018.74  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.48  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2018.26  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *           * Flow Area (sq ft)      *          *  127.56  *          *
* E.G. Slope (ft/ft)      *0.005412  * Area (sq ft)           *          *  127.56  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   89.00  * Top Width (ft)         *          *   89.00  *          *
* Vel Total (ft/s)        *    5.53  * Avg. Vel. (ft/s)       *          *    5.53  *          *
* Max Chl Dpth (ft)       *    2.26  * Hydr. Depth (ft)       *          *    1.43  *          *
* Conv. Total (cfs)       *  9596.6  * Conv. (cfs)            *          *  9596.6  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   89.58  *          *
* Min Ch El (ft)          * 2016.00  * Shear (lb/sq ft)       *          *    0.48  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    2.66  *          *
* Frctn Loss (ft)         *    0.11  * Cum Volume (acre-ft)   *    1.41  *   20.90  *    2.94  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)         *    0.92  *   13.32  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2375

INPUT
Description:
Station Elevation Data    num=     103
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.0732026.721-142.0722026.721-138.4382026.235 -136.58    2026-133.9482025.583
-130.125    2025-128.8632024.823-123.291    2024-121.7712023.779-116.598    2023
-115.6242022.859-109.917    2022-105.115 2021.29-103.268    2021-98.30512020.274
-96.5878    2020-93.06022019.628-89.15142019.233-87.0351    2019-85.86872018.886
-84.87292018.801-79.20572018.279-76.2258    2018-75.4553 2017.81 -73.972    2017
-70.53972016.831-66.75582016.901-64.97582016.939-63.84572016.977-63.3864    2017
-62.8893    2017-61.1239    2017-59.15522016.981-59.11542016.981-58.94542016.979
-58.90642016.978-58.87922016.977-58.82382016.974-58.7548 2016.97-58.71092016.967
-58.68742016.966-56.63572016.925-55.19212016.887-54.72122016.871 -52.2432016.764
-49.72562016.649-46.49812016.512-36.4079    2016 -33.078    2016-22.7846    2016
-15.65812016.388-13.74682016.496-13.52692016.506-12.31372016.592 -10.4662016.736
-9.857272016.774-8.99574 2016.82-8.628872016.841-8.358822016.862-8.244132016.868
-8.067172016.875-7.823692016.882-7.372272016.893 -5.53752016.844-5.526622016.841
-5.362442016.797-5.323912016.614-5.230022016.602-3.645972016.528-3.32839  2016.5
-.4563232016.439       02016.472 .2057242016.487 4.618792016.756 8.54834    2017
 10.33582017.828 10.6386    201811.158432018.30412.39488    201913.988712019.733
14.48634    2020 27.5035 2020.5528.432052020.58728.858272020.59829.697512020.602
30.310312020.61431.982332020.663 33.12232020.70233.704422020.72634.167922020.752
35.170782020.81436.893262020.76736.901632020.75838.82706    202144.720542021.741
46.80458    202250.655282022.56753.97591    202354.528312023.01855.560322023.094
55.948032023.14658.25051 2023.1258.25804 2023.12
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.073    .035-142.073    .02558.25804    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.07358.25804               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2018.60  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.38  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2018.21  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  142.16  *          *
* E.G. Slope (ft/ft)     *0.003810  * Area (sq ft)          *          *  142.16  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   89.50  * Top Width (ft)        *          *   89.50  *          *
* Vel Total (ft/s)       *    4.97  * Avg. Vel. (ft/s)      *          *    4.97  *          *
* Max Chl Dpth (ft)      *    2.21  * Hydr. Depth (ft)      *          *    1.59  *          *
* Conv. Total (cfs)      * 11438.3  * Conv. (cfs)           *          * 11438.3  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   90.26  *          *
* Min Ch El (ft)         * 2016.00  * Shear (lb/sq ft)      *          *    0.37  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.86  *          *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)  *    1.41  *   20.82  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   13.27  *    2.75  *
*****************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2400

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.0842026.006-142.042    2026-141.451 2025.91-135.421    2025-132.8812024.679
-128.7412024.098-128.019    2024-127.5242023.936-119.266    2023-118.7052022.929
-111.133    2022-106.7482021.331-104.782    2021-98.16472020.044-97.8353    2020
-97.71172019.983-90.0287    2019-83.40092018.448-79.39412018.208-77.69532018.089
-76.5634    2018-74.48032017.832-68.34432017.313-64.6888    2017-60.40372016.626
-49.84322016.059-49.13852016.012-49.1026 2016.01-49.01472016.005 -48.9722016.003
-48.95632016.004-48.94892016.004-48.94422016.004-48.94162016.004-48.93822016.004
-48.92482016.004-48.6649    2016-46.93992015.985  -39.842015.939-37.6782    2016
-35.9591    2016-24.8879    2016-24.4031    2016-21.91052016.062-19.5742    2016
 -4.0087    2016-3.53073    2016-3.35587    2016       02016.2631.1299462016.352
9.878996    201711.765722017.93611.92067    201812.161662018.10914.03082    2019
 23.49952019.85825.11959    202025.52364    202032.17784    202034.62252    2020
34.93451    2020 35.2036    202035.506192020.04241.82622    202145.146932021.502
48.30624    202249.67987  2022.2 50.26422022.27655.27969    202356.003632022.979
56.791932022.95656.916412022.95356.951272022.95258.05429 2022.9258.279982022.913

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.084    .035-142.084    .02555.27969    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.08455.27969               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2018.49  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.30  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2018.19  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  159.36  *          *
* E.G. Slope (ft/ft)     *0.002665  * Area (sq ft)          *          *  159.36  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   91.45  * Top Width (ft)        *          *   91.45  *          *
* Vel Total (ft/s)       *    4.43  * Avg. Vel. (ft/s)      *          *    4.43  *          *
* Max Chl Dpth (ft)      *    2.25  * Hydr. Depth (ft)      *          *    1.74  *          *
* Conv. Total (cfs)      * 13676.4  * Conv. (cfs)           *          * 13676.4  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   91.84  *          *
* Min Ch El (ft)         * 2015.94  * Shear (lb/sq ft)      *          *    0.29  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.28  *          *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)  *    1.41  *   20.73  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   13.22  *    2.75  *
*****************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2425

INPUT
Description:
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.0962024.558-137.3682024.471-135.5292024.409-122.0262024.095-119.6982024.031
 -118.79    2024-118.2972023.965-118.2372023.963-117.5262023.884-117.2862023.884
-116.9082023.874-116.8042023.891-116.5632023.888-116.2212023.878-115.9492023.866
-115.1892023.832-114.3372023.797-108.3812023.592-105.6432023.491-104.0682023.426
-98.1024    2023-93.57252022.704-93.51682022.646-85.1533    2022-83.27412021.829
 -82.7162021.821 -82.3482021.794-81.30642021.671-78.43232021.305-76.0349 2021.23
-75.28342021.186-73.47352021.042-73.1631    2021-70.8467 2020.66-69.67212020.521
```

```
-67.0718    2020-64.86252019.704-60.6217 2019.01-60.57612019.003-60.5528    2019
 -58.9832018.855-58.32272018.834-58.1522 2018.82-56.56842018.604-55.67952018.499
-53.1221    2018-52.44372017.586-51.4205    2017-49.69482016.002-49.6909    2016
-49.68712015.999-48.86712015.903-47.81662015.823-46.81072015.761-45.59382015.612
-44.8249 2015.57-43.9705 2015.53-43.57212015.505-43.35852015.497-43.01912015.491
-40.77372015.463-39.86142015.455-36.58362015.433-27.26472015.697-27.04372015.734
 -25.8612015.818-25.40892015.871-25.18722015.959-24.8777    2016-24.7818    2016
-24.5521    2016-17.8131    2016 -15.709    2016-13.5954    2016-2.55368    2016
-.957367    2016-.397845    2016       0    2016 .493438    20161.092694    2016
2.398657    20165.365632    2016 7.107042016.4549.967904    201712.275882017.818
12.90054    201816.653782018.61718.94975    201922.960532019.22935.88189    2020
39.337122020.495 41.84652020.78943.44988    202144.732462021.21148.60596    2022
50.290142022.35552.46328    202352.48349    202352.494462022.99956.520552022.882
58.301842022.831

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.096    .035-142.096    .02552.46328    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.09652.46328               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2018.39  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.50  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2017.90  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  124.79  *          *
* E.G. Slope (ft/ft)     *0.003900  * Area (sq ft)          *          *  124.79  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   65.50  * Top Width (ft)       *          *   65.50  *          *
* Vel Total (ft/s)       *    5.66  * Avg. Vel. (ft/s)     *          *    5.66  *          *
* Max Chl Dpth (ft)      *    2.46  * Hydr. Depth (ft)     *          *    1.91  *          *
* Conv. Total (cfs)      * 11304.9  * Conv. (cfs)          *          * 11304.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   66.32  *          *
* Min Ch El (ft)         * 2015.43  * Shear (lb/sq ft)     *          *    0.46  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    2.59  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *    1.41  *   20.65  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *    0.92  *   13.17  *    2.75  *
*****************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2450

INPUT
Description:
Station Elevation Data    num=     120
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
 -142.14    2024-136.3212023.173-133.983    2023-116.1712022.148-115.0882022.099
-114.5162022.076-114.1372022.065-113.8552022.058-112.576    2022-111.7372021.915
-110.3032021.847-108.9182021.826-105.7342021.826-103.0452021.858-101.7632021.838
-100.5322021.811-87.99412021.948-87.93972021.947 -87.8922021.948 -86.4632021.964
-85.7645    2022-85.27722022.014-83.40052022.083-81.70442022.116-79.57462022.128
-73.30912022.131 -70.5622022.124-68.8705 2022.13-64.76372022.103-64.31072022.094
-61.44422022.006-61.2357    2022-60.93272021.918 -57.165    2021-57.01392020.976
 -52.3092020.251-50.7825    2020-49.70132019.765-49.32852019.704-48.65212019.585
-45.7654    2019   -42.92018.123-42.5573    2018-41.04122017.488 -39.935    2017
-39.38672016.748-38.94492016.598 -38.7182016.565-38.48232016.595 -38.0252016.536
 -37.381 2016.44 -36.8752016.416-36.48932016.353-34.9704    2016-33.38972015.034
  -33.33    2015 -33.314    2015-32.29222014.895 -28.9622014.878-28.33292014.883
-27.78872014.897-26.13172014.983 -25.682    2015-24.0106 2015.09-23.8148  2015.1
-23.60372015.111-22.31622015.201-15.18842015.587-14.54632015.631-13.86952015.673
 -13.4352015.681-12.37442015.755-12.1397 2015.78-11.6268 2015.86-11.56972015.863
-10.92112015.857 -10.8062015.857-10.28342015.834-9.43048 2015.75-8.663662015.603
-8.304762015.571-7.735712015.533-7.05953  2015.5-6.347292015.478-5.62614 2015.47
-4.528912015.469-4.398742015.463-2.234892015.467-1.627492015.552-1.525832015.606
-1.27127 2015.63-1.03188 2015.64-.7398662015.646       02015.652 .8229582015.659
 3.251782015.699 5.735542015.7517.2294952015.7927.996731 2015.8211.59209    2016
12.299872016.28513.80098    201714.952432017.49515.94837    201820.799382018.974
20.88994    201921.203472019.01840.51964    202040.911962020.07741.558662020.211
43.539922020.67144.90902    202145.224382021.074 49.0909    2022 52.55582022.852
53.15871    2023 53.59812022.984 53.74812022.97856.629232022.87958.226792022.824

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
 -142.14    .035-61.4442    .02553.15871    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -61.444253.15871               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2018.22  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.87  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2017.35  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2017.35  * Flow Area (sq ft)     *          *   94.31  *          *
* E.G. Slope (ft/ft)     *0.007955  * Area (sq ft)          *          *   94.31  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   55.33  * Top Width (ft)       *          *   55.33  *          *
* Vel Total (ft/s)       *    7.49  * Avg. Vel. (ft/s)     *          *    7.49  *          *
* Max Chl Dpth (ft)      *    2.47  * Hydr. Depth (ft)     *          *    1.70  *          *
```

```
* Conv. Total (cfs)       *  7915.8  * Conv. (cfs)            *          *  7915.8  *          *
* Length Wtd. (ft)        *    25.00 * Wetted Per. (ft)       *          *    56.20 *          *
* Min Ch El (ft)          * 2014.88  * Shear (lb/sq ft)       *          *     0.83 *          *
* Alpha                   *     1.00 * Stream Power (lb/ft s) *          *     6.24 *          *
* Frctn Loss (ft)         *     0.20 * Cum Volume (acre-ft)   *    1.41  *    20.59 *    2.94  *
* C & E Loss (ft)         *     0.00 * Cum SA (acres)         *    0.92  *    13.14 *    2.75  *
*****************************************************************************************
```

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2475

INPUT
Description:
Station Elevation Data num= 134

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.1922024.111-141.9082024.109-141.603    2024-140.176    2024-140.159    2024
-138.751    2024-137.867    2024-135.516    2024-133.139    2024-132.251    2024
-131.438    2024-130.812    2024-127.645    2024-125.916    2024-125.779    2024
-125.351    2024-124.395    2024 -123.94    2024-123.878    2024-123.4062023.942
-121.6942023.765-114.508    2023-109.6052022.208-108.083    2022-107.2052021.875
-105.1812021.658-103.8562021.526-102.6042021.385-101.945  2021.3-100.035    2021
-97.44182020.595-93.98842020.063-93.5585    2020-93.1918 2019.93-90.16882019.379
 -89.5692019.286-89.08922019.228-88.66422019.189 -88.3172019.167-88.04272019.159
-87.81512019.166-87.59232019.183-87.1431 2019.23-86.89582019.206-86.48762019.208
-86.07572019.238-85.52652019.275-84.73552019.295-82.58812019.489-81.96972019.523
-81.22622019.532-80.41992019.525 -79.3222019.503-77.51982019.434-75.22042019.349
-68.1211    2019-66.37262018.926-66.13452018.922-66.01282018.916-64.98282018.837
-61.24812018.724-59.65522018.656-52.5993    2018-50.82392017.843-49.85432017.707
-48.24322017.485-45.2248    2017-44.58352016.873-43.1608 2016.51-41.4768    2016
  -37.682015.139-37.1556    2015-30.69562014.287 -30.1822014.297-29.83492014.245
 -29.7232014.219-29.6712 2014.19 -29.6022014.185-29.3627 2014.18-29.11512014.168
-29.03432014.162-29.00982014.155-28.84972014.139-28.33362014.136-28.23622014.137
-28.15182014.139-27.89512014.152-27.6811 2014.16-26.54552014.191-26.2481  2014.2
-25.46442014.229-25.13082014.247-22.24732014.442-21.45612014.474-21.01632014.495
-20.35792014.531-18.67552014.486-18.18652014.491-17.59572014.511-16.78552014.548
-14.17312014.686-12.63232014.781-11.34772014.879 -9.8702    2015-.4685222015.504
       02015.5292.6914182015.6754.3857522015.7728.298864    201610.02121 2016.83
10.36211    201712.156592017.88312.38126    201819.603082018.70121.77287    2019
33.390452019.59837.151042019.79639.121622019.794 39.13672019.77439.270992019.764
 41.1539    202042.586112020.17944.575732020.42548.383352020.88549.17499    2021
  49.7182021.14550.534792021.42551.422572021.71552.30144    202253.374272022.173
55.416742022.47658.112362022.786  58.1152022.78658.151742022.787
```

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-142.192    .035-81.9697    .02558.15174    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -81.969758.15174               25      25      25            .1       .3
```

CROSS SECTION OUTPUT Profile #PF 1

```
*****************************************************************************************
* E.G. Elev (ft)          * 2017.69  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.88  * Wt. n-Val.            *          *    0.025 *          *
* W.S. Elev (ft)          * 2016.81  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2016.81  * Flow Area (sq ft)     *          *   93.83  *          *
* E.G. Slope (ft/ft)      *0.007830  * Area (sq ft)          *          *   93.83  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          * 706.00  *          *
* Top Width (ft)          *   54.31  * Top Width (ft)        *          *   54.31  *          *
* Vel Total (ft/s)        *    7.52  * Avg. Vel. (ft/s)      *          *    7.52  *          *
* Max Chl Dpth (ft)       *    2.67  * Hydr. Depth (ft)      *          *    1.73  *          *
* Conv. Total (cfs)       *  7978.8  * Conv. (cfs)           *          * 7978.8  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)      *          *   54.84  *          *
* Min Ch El (ft)          * 2014.14  * Shear (lb/sq ft)      *          *    0.84  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    6.29  *          *
* Frctn Loss (ft)         *    0.20  * Cum Volume (acre-ft)  *    1.41  *   20.53  *    2.94  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)        *    0.92  *   13.11  *    2.75  *
*****************************************************************************************
```

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2500

INPUT
Description:
Station Elevation Data num= 117

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.2152025.307-139.708    2025-137.8992024.825-137.4842024.836-137.1842024.828
-136.9612024.825-136.3342024.841-135.7222024.785-135.2332024.746-132.5662024.608
-131.0342024.496-129.4032024.427-127.3332024.373-123.8312024.046-123.7882024.043
```

-123.756 2024.04-123.505 2024-122.6482023.915-121.5772023.816-113.033 2023
-109.0112022.667 -106.622022.453-101.857 2022-99.40422021.793-98.78562021.763
-97.49432021.748-93.33762021.764-92.41342021.701-92.24242021.682-92.0736 2021.65
-91.47722021.614-90.60132021.524-89.56572021.384-88.02882021.103-87.3926 2021
-86.94382020.915-81.2587 2020-80.80182019.924-75.0488 2019-70.8649 2018.4
-68.5463 2018-64.69822017.403-62.6328 2017-60.5743 2016.61 -57.668 2016
-56.44172015.847-54.62432015.667-46.9941 2015-44.68362014.681-43.8027 2014.59
-40.77262014.375-39.1125 2014.2 -37.2312014.045 -36.765 2014-35.88812013.959
-35.09872013.906-34.33862013.811-33.88712013.662 -32.7442013.582-30.9429 2013.65
-30.7317 2013.75 -28.903 2014-26.73462014.107-21.40542014.248-20.89242014.233
-19.97342014.231-17.83952014.251-15.49562014.045 -15.413 2014 -11.781 2014
-11.6796 2014-11.45112014.025-11.43092014.026-11.40832014.026-11.39982014.024
-11.19752014.027 02014.6855.351444 20157.3163492015.786 7.83668 2016
 8.34381 2016.21 10.2726 201711.481242017.51112.72288 201820.001382018.484
20.473362018.50621.854112018.53822.47824 2018.5623.057292018.59124.154792018.667
24.365112018.67724.859922018.68726.387782018.70627.338222018.71327.511222018.713
28.44904 2018.7129.526412018.70130.660392018.63831.234062018.58631.848982018.505
32.463572018.45932.854952018.44133.262712018.42933.653052018.42434.006632018.427
34.313212018.43734.889652018.47538.774572018.65639.664762018.70941.639422018.858
43.24331 201948.694422019.74450.35817 202051.13959 2020.13 51.82512020.232
57.58298 202158.10184 2021.05

Manning's n Values num= 3
Sta	n Val	Sta	n Val	Sta	n Val
-142.215	.035	-93.3376	.02526.38778		.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-93.337626.38778		25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.		0.025	
W.S. Elev (ft)	2016.03	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2016.03	Flow Area (sq ft)		100.04	
E.G. Slope (ft/ft)	0.008127	Area (sq ft)		100.04	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	65.75	Top Width (ft)		65.75	
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)		7.06	
Max Chl Dpth (ft)	2.45	Hydr. Depth (ft)		1.52	
Conv. Total (cfs)	7831.2	Conv. (cfs)		7831.2	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		66.18	
Min Ch El (ft)	2013.58	Shear (lb/sq ft)		0.77	
Alpha	1.00	Stream Power (lb/ft s)		5.41	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	1.41	20.48	2.94
C & E Loss (ft)	0.01	Cum SA (acres)	0.92	13.07	2.75

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2525

INPUT
Description:
Station Elevation Data num= 139
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3052030.136		-142.32030.144-139.251		2028-138.0412027.687-135.054		2027			
-133.0562026.595-130.5662026.031-130.391				2026-129.0542025.835-127.0542025.615					
-122.6732025.173-121.627		2025-120.8652024.892-115.411		2024-111.9062023.261					
-110.891	2023-109.4642022.845-108.9532022.803-107.8232022.684-104.3832022.308								
-101.475	2022-99.33422021.824-88.1188		2021 -82.8222020.413-81.29262020.235						
-80.23882020.135-78.6848		2020-75.65542019.698-74.7768 2019.59-69.7818		2019					
-66.83722018.531-66.04552018.414		-65.422018.347 -64.8732018.303-64.45612018.287							
-63.95792018.286-63.24132018.164-63.16082018.157-61.9133				2018-60.87242017.843					
-60.52862017.787-59.77332017.682-58.97712017.526-58.2468 2017.39-57.71682017.275									
-56.90312017.072-56.6179		2017-56.30122016.927-55.09682016.651-52.0955		2016					
-50.06212015.521-49.0684		2015-48.21972014.594-46.35542014.552-46.14972014.533							
-43.7867	2014-39.05782013.286-38.47832013.273-37.99122013.212-36.9992 2013.13								
-36.89482013.116-36.83982013.103-36.80212013.098-36.67362013.092-36.46552013.086									
-36.1279 2013.08-36.02772013.077-35.94552013.073-35.88562013.069 -35.8282013.062									
-35.7938 2013.05-35.70722013.044-35.57072013.049-35.55472013.057-35.36552013.083									
-35.19492013.118-35.10242013.129-35.03582013.132-31.17782013.191-30.05342013.198									
-29.1342013.189-27.6064 2013.14-27.0064 2013.13-26.92892013.129-26.16912013.153									
-26.05292013.147-25.94932013.139-25.81552013.121-25.73822013.115-25.62642013.113									
-25.48832013.113-25.19452013.116-24.86842013.122 -24.7692013.123-23.2825 2013.16									
-18.59042013.427-15.9153 2013.55-14.07092013.643-7.75448		2014-2.824052014.285							
02014.4784.144015 2014.764.9249542014.8117.663423		20158.1413412015.158							
11.03091	201612.795142016.44414.93004		201717.290592017.19818.649222017.292						
19.781972017.35220.723292017.38922.481742017.44323.870012017.43825.209242017.424									
25.454122017.42826.313382017.46728.777592017.59731.428842017.72637.55482				2018					
39.505232018.23540.912452018.41743.476022018.72345.63113		2019 45.7672019.009							
48.361992019.16848.937732019.17451.039262019.29552.308862019.39554.401972019.622									
54.58572019.66454.786922019.68356.020512019.75756.280582019.79756.364592019.805									
56.48532019.81156.614852019.81856.776052019.81958.147422019.833									

Manning's n Values num= 3
Sta	n Val	Sta	n Val	Sta	n Val
-142.305	.035	-142.305	.02558.14742		.035

```
 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.30558.14742               25      25      25             .1       .3

 CROSS SECTION OUTPUT  Profile #PF 1
 ********************************************************************************************
 * E.G. Elev (ft)         * 2016.32  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.83  * Wt. n-Val.            *          *    0.025  *          *
 * W.S. Elev (ft)         * 2015.48  * Reach Len. (ft)       *   25.00  *    25.00  *   25.00  *
 * Crit W.S. (ft)         * 2015.48  * Flow Area (sq ft)     *          *    96.43  *          *
 * E.G. Slope (ft/ft)     *0.008012  * Area (sq ft)          *          *    96.43  *          *
 * Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   706.00  *          *
 * Top Width (ft)         *   59.25  * Top Width (ft)        *          *    59.25  *          *
 * Vel Total (ft/s)       *    7.32  * Avg. Vel. (ft/s)      *          *     7.32  *          *
 * Max Chl Dpth (ft)      *    2.44  * Hydr. Depth (ft)      *          *     1.63  *          *
 * Conv. Total (cfs)      *  7887.5  * Conv. (cfs)           *          *   7887.5  *          *
 * Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *    59.73  *          *
 * Min Ch El (ft)         * 2013.04  * Shear (lb/sq ft)      *          *     0.81  *          *
 * Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     5.91  *          *
 * Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *    1.41  *    20.42  *    2.94  *
 * C & E Loss (ft)        *    0.10  * Cum SA (acres)        *    0.92  *    13.04  *    2.75  *
 ********************************************************************************************

 Warning: The energy equation could not be balanced within the specified number of iterations.  The
          program selected the water surface that had the least amount of error between computed and
          assumed values.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
          0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical
          depth, the calculated water surface came back below critical depth.  This indicates that there
          is not a valid subcritical answer.  The program defaulted to critical depth.

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                  RS: -2550

 INPUT
 Description:
 Station Elevation Data    num=     116
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 **********************************************************************************
 -142.3192030.153-139.5762030.009-139.508    2030-135.3482029.028-135.249    2029
 -135.1162028.958-131.776    2028-129.6852027.403-128.348    2027-125.395 2026.15
 -124.892    2026-124.4472025.882-121.354    2025 -120.432024.765-117.709    2024
 -116.0332023.594-113.725    2023-110.751 2022.33-109.518    2022-104.3442021.633
 -95.7155    2021-90.39372020.581-89.9262 2020.55-89.46182020.531-88.19282020.497
 -87.69562020.489-87.43992020.491-86.95472020.539-85.00542020.697 -84.6912020.731
 -84.02562020.876-83.14462020.967-83.13232020.965-82.2459    2021-81.84432021.066
 -80.54682021.122-80.43822021.138-79.2754    2021-79.2556    2021-76.4154    2020
 -75.66152019.942-74.31282019.764-70.69242019.389-68.3458    2019-66.10012018.663
 -62.30292018.105-61.7592    2018-61.34992017.899-59.98062017.562-58.22082017.149
 -57.5637    2017-57.11382016.884-53.4183    2016 -52.721 2015.76-49.8938    2015
  -49.2752014.574-48.1692    2014-47.17952013.379-46.2864    2013-41.02752012.094
 -40.5481    2012-37.4296    2012-35.9149    2012-34.4448    2012-33.68382012.113
 -33.37942012.147-31.89542012.295-25.1165    2013-21.79012013.276-19.55142013.481
 -18.59142013.556-17.6282 2013.62-14.98472013.778-14.63122013.796-14.34052013.807
 -13.92722013.819-13.82232013.815-13.8079 2013.74-13.61332013.714-12.9587  2013.7
 -11.68052013.702-10.01742013.716 -8.34242013.738-7.000412013.763-5.93158 2013.79
        02013.969 1.04134    20145.9622782014.6288.2926322014.9198.811322    2015
 10.707392015.48212.639842015.95712.77758    201613.448722016.063 13.60752016.075
 14.222032016.11615.655022016.20719.141792016.43927.40237    201727.97227    2017
 28.74789    201731.55671    201731.99533    201732.98962    201733.14506    2017
 33.512552017.03641.08717    201846.209972018.70548.35847    201950.898232019.153
 51.805472019.29152.09851 2019.3252.519592019.339 52.97152019.36453.043292019.365
 58.349652019.418

 Manning's n Values        num=       3
      Sta   n Val     Sta   n Val     Sta   n Val
 ***********************************************
 -142.319    .035-80.5468    .02558.34965    .035

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -80.546858.34965               25      25      25             .1       .3

 CROSS SECTION OUTPUT  Profile #PF 1
 ********************************************************************************************
 * E.G. Elev (ft)         * 2015.94  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.49  * Wt. n-Val.            *          *    0.025  *          *
 * W.S. Elev (ft)         * 2015.45  * Reach Len. (ft)       *   25.00  *    25.00  *   25.00  *
 * Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *   125.86  *          *
 * E.G. Slope (ft/ft)     *0.003547  * Area (sq ft)          *          *   125.86  *          *
 * Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   706.00  *          *
 * Top Width (ft)         *   62.14  * Top Width (ft)        *          *    62.14  *          *
 * Vel Total (ft/s)       *    5.61  * Avg. Vel. (ft/s)      *          *     5.61  *          *
 * Max Chl Dpth (ft)      *    3.45  * Hydr. Depth (ft)      *          *     2.03  *          *
 * Conv. Total (cfs)      * 11855.1  * Conv. (cfs)           *          * 11855.1  *          *
 * Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *    63.09  *          *
 * Min Ch El (ft)         * 2012.00  * Shear (lb/sq ft)      *          *     0.44  *          *
 * Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     2.48  *          *
 * Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)  *    1.41  *    20.36  *    2.94  *
 * C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *    13.00  *    2.75  *
 ********************************************************************************************

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                  RS: -2575
```

```
INPUT
Description:
Station Elevation Data    num=      94
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
 -142.292030.683-141.2642030.629-140.3712030.513-140.2392030.412-138.164 2030.09
-137.742    2030 -135.722029.368-134.515    2029-133.624 2028.69-131.514    2028
 -128.672027.165-128.176    2027-125.6722026.214-124.979    2026-122.0442025.096
-121.743    2025-118.5022024.011-118.467    2024-118.0192023.864-115.204    2023
-114.2762022.725-111.901    2022-105.3122021.072-104.739    2021 -101.612020.811
-96.6316 2020.55-94.80522020.441-92.99212020.315-89.21132020.023-89.10092020.016
 -88.874    2020-82.9335 2019.77-75.09962019.493-65.8421    2019-61.07932018.256
 -59.224    2018-57.32012017.505-55.2886    2017-52.76662016.359-51.2836    2016
-50.9965 2015.92-48.2811    2015-47.44412014.176-47.3076    2014-47.14282013.797
-46.5092    2013-45.0227 2012.59-43.8678    2012-42.25442011.903-41.07572011.768
-35.81072011.786-35.3357    2012-32.52242012.443-27.4063    2013-23.27692013.141
-17.15862013.356 -5.82612013.777-4.028322013.844-2.650182013.899-1.81709 2013.93
-1.424252013.944-1.021812013.958 -.476082013.966-.4685762013.966-.4358232013.966
-.3801382013.968       02013.986 .293042    2014 .457523    2014 .984399    2014
2.181943    20142.640252    20142.831692    20143.853142    20148.051115    2014
9.0859092014.49510.29075    201511.416082015.52212.54795    201614.55955    2016
15.11629    201619.68022    201622.62945    201625.54612    2016 30.55382016.376
35.063332016.72838.56611    201743.610492017.78245.02454    201845.416132018.069
50.01232    201951.911542018.98354.289292018.96158.551872019.003

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
 -142.29    .035 -142.29    .02558.55187    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -142.2958.55187               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2015.85  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.48  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2015.37  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  127.21  *          *
* E.G. Slope (ft/ft)     *0.003349  * Area (sq ft)         *          *  127.21  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   60.46  * Top Width (ft)       *          *   60.46  *          *
* Vel Total (ft/s)       *    5.55  * Avg. Vel. (ft/s)     *          *    5.55  *          *
* Max Chl Dpth (ft)      *    3.60  * Hydr. Depth (ft)     *          *    2.10  *          *
* Conv. Total (cfs)      * 12200.1  * Conv. (cfs)          *          * 12200.1  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   62.06  *          *
* Min Ch El (ft)         * 2011.77  * Shear (lb/sq ft)     *          *    0.43  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    2.38  *          *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)  *    1.41  *   20.28  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   12.97  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2600

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
 -142.25    2032-142.126    2032 -142.02    2032-141.705    2032-141.243    2032
-140.979    2032-140.451    2032-137.3422031.169-136.944    2031-135.9552030.582
-134.481    2030 -132.442029.148-132.073    2029-131.9122028.932 -129.57    2028
-127.968 2027.36-127.135    2027    -1252026.131 -124.68    2026-122.7612025.381
-121.673    2025-120.3972024.605-118.509    2024-116.2192023.285-115.4882023.047
-115.344    2023-114.4782022.731-112.215    2022-111.7032021.851-109.092    2021
 -105.172020.524-103.7522020.388-99.4889    2020-89.60062019.721-66.6489    2019
-59.19812018.211-58.68812018.162-58.22162018.127-56.8783    2018-55.8884 2017.78
-54.78632017.527-52.2133    2017-50.4598 2016.65-47.3734    2016-46.70442015.398
-46.5572    2015-46.51872014.828-46.2312 2014.04-46.2061    2014-46.20272013.992
-45.7471    2013-45.74032012.988-45.1445    2012-44.18072011.797-43.05442011.618
-41.80032011.479-41.47442011.452-39.00262011.304-38.60622011.258-36.83552011.265
-36.62082011.361-36.30192011.412 -36.0052011.527-34.89512011.719-33.0656    2012
-30.65242012.889-30.2792    2013-27.41982013.089-12.96832013.528 -8.02512013.672
-3.910732013.663-3.79834 2013.65-3.248672013.649-2.504052013.657 -1.86562013.668
-.9949852013.659-.6275062013.647       02013.6441.4701092013.6393.5803682013.766
7.446778    20148.7617322014.52610.27882    201520.512422015.47431.19498    2016
33.450442016.26638.40538    201741.078142017.45444.51415    201848.300422018.676
50.31651    201952.813452018.97754.68033 2018.9656.982262018.938 58.75412018.921

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
 -142.25    .035 -142.25    .02550.31651    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -142.2550.31651               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2015.76  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.50  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2015.26  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  124.31  *          *
* E.G. Slope (ft/ft)     *0.003849  * Area (sq ft)         *          *  124.31  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
```

```
* Top Width (ft)          *   62.43  * Top Width (ft)          *          *   62.43  *          *
* Vel Total (ft/s)        *    5.68  * Avg. Vel. (ft/s)       *          *    5.68  *          *
* Max Chl Dpth (ft)       *    4.00  * Hydr. Depth (ft)       *          *    1.99  *          *
* Conv. Total (cfs)       * 11379.5  * Conv. (cfs)            *          * 11379.5  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   65.04  *          *
* Min Ch El (ft)          * 2011.26  * Shear (lb/sq ft)       *          *    0.46  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    2.61  *          *
* Frctn Loss (ft)         *    0.09  * Cum Volume (acre-ft)   *    1.41  *   20.21  *    2.94  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)         *    0.92  *   12.93  *    2.75  *
*****************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2625

INPUT
Description:
Station Elevation Data    num=     100
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
-141.993    2032-139.358    2032-138.693    2032-137.3372031.477-135.998    2031
-134.8632030.567-133.393    2030-131.8532029.408-130.728    2029-129.9382028.698
-128.136    2028-126.2022027.241 -125.56    2027-125.0162026.794-123.066    2026
-122.0342025.611-120.473    2025 -118.242024.126-117.925    2024-117.6922023.912
-115.272    2023-113.7182022.404 -112.63    2022-111.9972021.764-110.0192021.011
-109.988    2021-109.8912020.964-107.306    2020-105.8072019.881-104.0352019.765
-101.0452019.591-99.6385 2019.56 -97.5492019.546 -96.7062019.518-95.79522019.468
-94.75742019.401-92.27082019.249-87.8466    2019-85.0914    2019-79.5395    2019
-75.8303    2019-75.4263    2019 -66.186    2019-65.2882    2019-58.9198 2018.53
-52.2222    2018-50.50042017.627-47.6303    2017 -45.251 2016.49-43.0557    2016
-41.60922015.568-40.49142015.255-40.0707    2015-39.73672014.071-39.7069    2014
-39.67892013.919-39.3098    2013-39.29592012.961 -38.756    2012-37.3593 2011.72
 -36.0212011.546-35.77562011.499-35.23442011.438-30.48222011.538-30.17452011.589
-28.72112011.731-28.0577    2012 -24.3582012.522-19.32992012.994-19.2738    2013
-14.7396    2013-8.92496    2013 -7.7264    2013-5.52338    2013-5.01682    2013
 -3.65262013.206-3.627592013.202       02013.3211.5011622013.37112.70597    2014
16.343292014.323 17.49692014.397 25.8224    201526.433132015.06534.42366    2016
39.986432016.993  40.029    201740.150522017.02245.51675    2018 47.18132018.313
50.85612    2019  52.4512018.98452.971762018.97952.971982018.97955.088632018.955
 57.09512018.93357.978532018.93358.310712018.93458.460362018.93258.886652018.928

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-141.993    .035 -66.186    .02550.85612    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -66.18650.85612               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)          * 2015.64  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.42  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2015.23  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          *  136.14  *          *
* E.G. Slope (ft/ft)      *0.003168  * Area (sq ft)           *          *  136.14  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   68.25  * Top Width (ft)         *          *   68.25  *          *
* Vel Total (ft/s)        *    5.19  * Avg. Vel. (ft/s)       *          *    5.19  *          *
* Max Chl Dpth (ft)       *    3.79  * Hydr. Depth (ft)       *          *    1.99  *          *
* Conv. Total (cfs)       * 12543.1  * Conv. (cfs)            *          * 12543.1  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   70.54  *          *
* Min Ch El (ft)          * 2011.44  * Shear (lb/sq ft)       *          *    0.38  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    1.98  *          *
* Frctn Loss (ft)         *    0.12  * Cum Volume (acre-ft)   *    1.41  *   20.14  *    2.94  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)         *    0.92  *   12.90  *    2.75  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2650

INPUT
Description:
Station Elevation Data    num=      98
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
-141.735    2032-139.695    2032-137.871    2032 -137.69    2032-137.354    2032
-136.2942031.531-135.071    2031-133.8882030.539-132.616    2030-131.4672029.513
-130.272    2029-129.4142028.644-127.915    2028-126.8022027.555-125.473    2027
-123.9472026.372-123.073    2026-121.3442025.306 -120.57    2025-120.0042024.767
-118.111    2024-117.7722023.861-115.566    2023  -114.42022.521-112.982    2022
-112.3032021.754-110.284    2021-108.3962020.235-107.675    2020 -106.812019.577
-105.203    2019-102.9632018.888 -101.812018.845-100.9182018.823-100.1212018.813
-98.6743  2018.8-98.00342018.785-94.65962018.671-93.10462018.627-91.53682018.597
-89.97612018.585-87.5038 2018.58-87.04942018.571-82.93262018.619-82.88022018.669
-80.0958    2019-76.6677    2019-66.1626    2019-59.24242018.389-55.5423    2018
-49.30732017.411-44.9343    2017-42.33172016.321-41.0713    2016-38.14972015.257
-37.1642    2015-35.31332014.536-32.9943    2014-31.84892013.567-30.3952    2013
 -29.1772012.467-28.1192    2012-20.4689    2012-18.8506    2012-18.6785    2012
-18.5394    2012-18.4013    2012-16.2194 2012.12-15.92182012.136       02012.974
 .496214    2013 1.29473    20132.823131    20138.7529022013.47914.54001    2014
25.861442014.69530.70447    2015 32.50422015.24237.41516    201641.346512016.666
```

```
43.25423    201744.628452017.26647.56376 2017.8648.24799    201849.206172018.214
52.47721    201953.434272018.99454.07642 2018.99 55.28752018.98256.116662018.977
56.211192018.97356.639792018.954   56.642018.95457.088452018.94858.210862018.931
 58.21122018.93158.342612018.929 58.93242018.917

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-141.735    .035-66.1626    .02552.47721    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -66.162652.47721               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2015.49  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.81  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2014.68  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2014.68  * Flow Area (sq ft)      *          *   97.80  *          *
* E.G. Slope (ft/ft)      *0.008041  * Area (sq ft)           *          *   97.80  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   61.48  * Top Width (ft)         *          *   61.48  *          *
* Vel Total (ft/s)        *    7.22  * Avg. Vel. (ft/s)       *          *    7.22  *          *
* Max Chl Dpth (ft)       *    2.68  * Hydr. Depth (ft)       *          *    1.59  *          *
* Conv. Total (cfs)       *  7873.2  * Conv. (cfs)            *          *  7873.2  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   62.05  *          *
* Min Ch El (ft)          * 2012.00  * Shear (lb/sq ft)       *          *    0.79  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    5.71  *          *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)   *    1.41  *   20.07  *    2.94  *
* C & E Loss (ft)         *    0.10  * Cum SA (acres)         *    0.92  *   12.86  *    2.75  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2675

INPUT
Description:
Station Elevation Data    num=     142
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-141.478    2032-140.787    2032-139.936    2032-138.7832031.546-137.365    2031
-135.7532030.345-134.831    2030-132.4052029.054-132.255    2029-132.1112028.945
-130.5072028.388-129.557    2028-127.9342027.395-126.903    2027-125.3112026.395
-124.298    2026-123.2452025.607-121.591    2025-119.9212024.364 -118.97    2024
-117.5422023.464-116.272    2023-115.3442022.676  -113.6    2022-112.4452021.552
-111.165    2021-108.7712020.149-108.368    2020-107.4712019.659-105.855    2019
-91.97962018.196-87.7722 2018.07-87.29892018.047 -86.8352018.023-86.80452018.022
 -86.7812018.022  -86.762018.021-86.72182018.021-86.70412018.021-86.61592018.018
-86.57492018.017-86.53352018.016-86.49232018.015-86.42712018.015-86.41512018.015
-86.30652018.016-86.30512018.018-86.21442018.028-86.16112018.033-86.07672018.045
-84.7022    2018-83.6379    2018-83.0283    2018-82.1536    2018-80.5699    2018
 -80.4872018.002-80.48462018.003-80.47892018.003-80.47442018.004-80.47142018.003
-73.05042018.898-72.99312018.897-72.92422018.898  -72.892018.898 -72.851  2018.9
-72.65162018.904-72.57492018.906-72.53152018.914-72.48962018.918-72.45882018.918
-72.41412018.919-72.28622018.918-72.08692018.915-71.94062018.912-71.8755 2018.91
 -71.8162018.907-71.4943 2018.89-71.24912018.879-70.71632018.858-70.44122018.848
-70.30912018.841-69.56882018.805-69.18222018.784-68.82662018.761-67.99522018.693
-67.41492018.659-65.48132018.607-64.80982018.595-63.65812018.591-55.4598 2018.12
-55.2225 2018.11-53.4811    2018-49.17722017.538-44.3572    2017-39.21682016.144
-38.3454    2016-36.5874 2015.55-34.85982015.134-34.2557    2015-33.46352014.788
  -30.51    2014-28.07422013.317-27.1349    2013-25.62592012.519-25.19072012.342
-24.1328    2012-23.3923    2012-21.2834    2012-20.9284    2012-20.2193    2012
-19.70472012.026 -19.1152012.107-18.91122012.193-8.842132012.244-3.151122012.078
-.342344    2012       0    20122.897662    20123.325622    2012 5.239212012.309
  6.04452012.3526.9972072012.43712.99733    201313.042812013.01128.08326    2014
 28.47942013.99228.64565    201432.003422014.39632.812022014.43833.23246 2014.49
33.768382014.59135.35853    201536.469632015.25939.90495    201641.422452016.362
44.01831    201746.958442017.692 48.2465    201849.905492018.38552.44697    2019
56.334062018.97259.33662 2018.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-141.478    .035-73.0504    .02552.44697    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -73.050452.44697               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2015.22  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.49  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2014.74  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          *  126.31  *          *
* E.G. Slope (ft/ft)      *0.003887  * Area (sq ft)           *          *  126.31  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   67.62  * Top Width (ft)         *          *   67.62  *          *
* Vel Total (ft/s)        *    5.59  * Avg. Vel. (ft/s)       *          *    5.59  *          *
```

```
* Max Chl Dpth (ft)      *    2.74  * Hydr. Depth (ft)       *          *    1.87  *          *
* Conv. Total (cfs)      * 11323.3  * Conv. (cfs)            *          * 11323.3  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   68.19  *          *
* Min Ch El (ft)         * 2012.00  * Shear (lb/sq ft)       *          *    0.45  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.51  *          *
* Frctn Loss (ft)        *    0.14  * Cum Volume (acre-ft)   *    1.41  *   20.01  *    2.94  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *    0.92  *   12.82  *    2.75  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2700

INPUT
Description:
Station Elevation Data    num=     122
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-141.071    2032-140.1392031.702 -137.99    2031-135.405 2030.16-134.965    2030
-132.2282029.048-132.092    2029-131.8192028.897 -129.24    2028-128.2072027.587
 -126.63    2027-125.2842026.495-123.922    2026-122.396 2025.42-121.331    2025
-120.1492024.557-118.621    2024-117.061  2023.4-115.955    2023  -113.82022.191
-113.266    2022 -112.232021.617-110.676    2021 -109.862020.684-108.093    2020
-106.4892019.294-105.748    2019-103.5542018.305-103.4482018.312-100.2962018.699
-99.02322018.715-98.4378 2018.72-70.5839    2018-68.28842018.277-67.88122018.271
-67.39132018.272-67.14812018.277-66.87052018.292-65.4539 2018.32-64.90842018.336
-64.60012018.389 -64.3022018.414-64.08332018.421-63.76592018.422-62.85652018.415
  -61.442018.396-60.40012018.375-59.9374 2018.36-59.51432018.342-57.22842018.218
-55.48512018.141-51.9561    2018-49.87922017.758-45.93232017.307-45.25542017.217
 -43.485    2017-42.53052016.871 -35.108    2016-32.7873 2015.33 -31.652    2015
-29.15732014.228-28.3586    2014-27.27782013.648-25.81132013.154-25.3949    2013
-24.3052 2012.95-23.85792012.932-16.00442012.575-14.10432012.512-11.37362012.429
-8.265272012.343-6.368842012.306-3.50183 2012.25       02012.1263.571764    2012
4.972468 2011.76 6.39544 2011.56 7.121732011.48810.931522011.49812.14961    2012
12.241162012.04114.22708    201314.848462013.27615.393872013.42416.335152013.558
16.536672013.61316.638322013.62818.246272013.67918.731852013.67719.364972013.656
20.160072013.61622.581942013.47526.709012013.27128.439962013.16228.686472013.144
28.799892013.134 30.92382013.09331.051862013.09831.155182013.09931.195022013.101
31.234732013.106 31.3082 2013.1231.769782013.26235.38584    201438.680482014.722
39.94346    201543.226852015.73344.41349    201646.421632016.43848.59175    2017
50.425322017.45452.50932    201855.715062018.701 56.12182018.77457.38616    2019
58.222082018.994 59.06572018.98859.446212018.98560.449242018.97762.105932018.963
62.213242018.96262.274432018.961

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-141.071    .035-64.6001    .02557.38616    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -64.600157.38616               30      30      30             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2015.06  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.78  * Wt. n-Val.             *          *    0.025  *          *
* W.S. Elev (ft)         * 2014.28  * Reach Len. (ft)        *   30.00  *   30.00  *   30.00  *
* Crit W.S. (ft)         * 2014.28  * Flow Area (sq ft)      *          *   99.77  *          *
* E.G. Slope (ft/ft)     *0.008304  * Area (sq ft)           *          *   99.77  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   65.98  * Top Width (ft)         *          *   65.98  *          *
* Vel Total (ft/s)       *    7.08  * Avg. Vel. (ft/s)       *          *    7.08  *          *
* Max Chl Dpth (ft)      *    2.79  * Hydr. Depth (ft)       *          *    1.51  *          *
* Conv. Total (cfs)      *  7747.5  * Conv. (cfs)            *          *  7747.5  *          *
* Length Wtd. (ft)       *   30.00  * Wetted Per. (ft)       *          *   66.81  *          *
* Min Ch El (ft)         * 2011.49  * Shear (lb/sq ft)       *          *    0.77  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.48  *          *
* Frctn Loss (ft)        *    0.24  * Cum Volume (acre-ft)   *    1.41  *   19.94  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.92  *   12.78  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2730

INPUT
Description:
Station Elevation Data    num=     131
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-167.0982032.825-166.4532032.645-166.0312032.541-164.085    2032-161.4212031.236
-160.599    2031-160.0632030.851 -157.282030.035-157.166    2030 -157.132029.987
-154.044    2029-152.6652028.487-151.325    2028 -150.182027.545-148.769    2027
-147.598 2026.54-146.098    2026-144.6082025.402-143.566    2025-142.2592024.476
-140.918    2024-138.7572023.142-138.382    2023-136.866 2022.44-135.694    2022
-135.5092021.924-134.8772021.686-132.863    2021-131.5672020.563-129.929    2020
```

```
-127.3752019.126-127.012    2019-121.5512018.862-111.0752018.625-108.5482018.574
-99.14062018.598-98.2381  2018.6-91.96172018.569-88.87352018.585-88.7207 2018.58
-83.19762018.592-83.11862018.595-82.03542018.606-80.76412018.613-77.35582018.914
-77.18582018.958-76.7358    2019-76.2795    2019-76.0415    2019-74.4653    2019
-73.7379    2019 -70.247    2019-68.72022018.818-68.32852018.755-66.23192018.455
-63.2806    2018   -62.42017.872-57.5935    2017 -54.6282016.847-46.63172016.447
-39.4095 2016.03-39.18112016.018-38.9031    2016-38.79652015.975-34.9518    2015
-31.17122014.046-30.9775    2014-30.88122013.976-28.6405 2013.39 -27.154    2013
-22.72822012.049-21.66632012.032-20.41342012.034-19.25652012.052-17.88932012.117
-17.53172012.176-12.66512012.242-7.87953    2012-7.682482011.964-7.583752011.957
-7.391222011.946-6.847052011.857-5.158142011.584  -1.324    2011-.978592    2011
-.290936    2011       0    2011  .77508    20112.523273    20114.360954    2011
6.434451    20116.650157    20117.1605472011.10810.05987    201210.711632012.181
12.626422012.29813.271982012.319 14.76522012.48715.644072012.56917.000482012.671
17.312472012.70317.438162012.72717.547262012.766 17.77112012.79317.876912012.801
19.424392012.82820.855612012.75921.193852012.73621.706582012.679 22.75382012.647
23.65355 2012.5924.85556 2012.4825.869772012.42625.992422012.44426.319762012.598
26.33439  2012.7 27.5137    201328.673122013.28531.44015    201432.603622014.301
35.30573    201538.396542015.80539.14032    2016 39.4114 2016.07 42.9968    2017
43.901062017.23346.94737    201848.271012018.33852.24606    201955.586412018.977
57.814182018.962

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-167.098    .035 -70.247    .02552.24606    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -70.24752.24606               20      20      30             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2014.58  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.78  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)          * 2013.80  * Reach Len. (ft)       *   20.00  *   20.00  *   30.00  *
* Crit W.S. (ft)          * 2013.76  * Flow Area (sq ft)     *          *   99.81  *          *
* E.G. Slope (ft/ft)      *0.007449  * Area (sq ft)          *          *   99.81  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   60.87  * Top Width (ft)       *          *   60.87  *          *
* Vel Total (ft/s)        *    7.07  * Avg. Vel. (ft/s)     *          *    7.07  *          *
* Max Chl Dpth (ft)       *    2.80  * Hydr. Depth (ft)     *          *    1.64  *          *
* Conv. Total (cfs)       *  8180.0  * Conv. (cfs)          *          *  8180.0  *          *
* Length Wtd. (ft)        *   20.00  * Wetted Per. (ft)     *          *   61.65  *          *
* Min Ch El (ft)          * 2011.00  * Shear (lb/sq ft)     *          *    0.75  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    5.33  *          *
* Frctn Loss (ft)         *    0.10  * Cum Volume (acre-ft)  *    1.41  *   19.87  *    2.94  *
* C & E Loss (ft)         *    0.08  * Cum SA (acres)        *    0.92  *   12.74  *    2.75  *
************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2750

INPUT
Description:
Station Elevation Data    num=     127
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**********************************************************************************
-175.897  2032.8-175.689 2032.76-175.6672032.765-172.975    2032-171.8212031.667
-169.382    2031-168.8822030.858 -165.85    2030-163.5962029.362-162.361    2029
-161.8842028.818 -161.572028.653-159.631    2028-158.7862027.677 -157.02    2027
-156.3742026.747-154.447    2026-153.8152025.756-151.862    2025-151.2572024.762
-149.316    2024-146.8582023.061-146.699    2023-146.5252022.932-145.3142022.465
-144.4392022.108-144.173    2022-142.0462021.146-141.686    2021-141.2842020.832
-139.254    2020-137.3232019.258-136.266    2019-134.775    2019-120.012    2019
-118.825    2019-117.842    2019-116.177    2019-114.867    2019-114.097    2019
 -109.92    2019-108.808    2019-107.354    2019-102.651    2019-99.97432018.867
-91.4038 2018.82-91.15422018.853-89.5631    2019-89.4623    2019-89.3974    2019
-87.9956    2019-87.7415    2019-84.2498    2019-83.9068    2019-83.4038    2019
-81.1567    2019 -81.049    2019-80.8521    2019-80.1933    2019-80.12172018.997
 -80.1152018.997-79.4222 2018.93-79.04092018.924-78.87612018.919-78.77152018.913
-78.19322018.873 -76.706 2018.78-70.39172018.363-64.9719    2018-59.93372017.446
-56.2212    2017-50.87152016.634-42.2756    2016-37.6909 2015.17  -36.78    2015
-36.01562014.889-31.9466    2014-28.27812013.203-27.3184    2013-26.43492012.809
 -22.704    2012-19.49962011.775-17.94672011.676 -12.329 2011.29 -11.3042011.214
-10.44882011.239 -10.4142011.252-10.07012011.261-9.533222011.264-8.998952011.261
-6.92898    2011-2.729432010.478-2.107172010.441-1.725862010.432-.257224 2010.23
       0 2010.242.4400012010.3332.7002742010.3643.750665    20115.1677092011.988
5.177078    2012 5.223382012.003  12.9692012.14115.86943    201216.364852011.813
22.26227    201222.34539    201222.39469    201225.034932012.84425.51587    2013
26.189462013.17529.20902    201431.658872014.72532.73556    201533.929282015.299
36.56068    201638.302892016.43440.39241    201742.28286 2017.4944.03857    2018
 46.28472018.67747.46563    2019 48.72312018.98848.729692018.98849.362532018.983
53.514422018.94856.268262018.924

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-175.897    .035-79.0409    .02547.46563    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -79.040947.46563               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2014.39  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.51  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2013.88  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
```

* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	*	122.99	*	*
* E.G. Slope (ft/ft)	*0.003683	* Area (sq ft)	*	*	122.99	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	*	706.00	*	*
* Top Width (ft)	* 60.16	* Top Width (ft)	*	*	60.16	*	*
* Vel Total (ft/s)	* 5.74	* Avg. Vel. (ft/s)	*	*	5.74	*	*
* Max Chl Dpth (ft)	* 3.65	* Hydr. Depth (ft)	*	*	2.04	*	*
* Conv. Total (cfs)	* 11633.2	* Conv. (cfs)	*	*	11633.2	*	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	*	61.27	*	*
* Min Ch El (ft)	* 2010.23	* Shear (lb/sq ft)	*	*	0.46	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	2.65	*	*
* Frctn Loss (ft)	* 0.08	* Cum Volume (acre-ft)	* 1.41	*	19.82	* 2.94	*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.92	*	12.71	* 2.75	*

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2775

INPUT
Description:
Station Elevation Data num= 105

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-185.382	2032.268	-184.618	2032.121	-184.615	2032.122	-184.185	2032	-181.109	2031.111
-180.749	2031	-180.643	2030.967	-179.847	2030.73	-177.445	2030	-174.391	2029.144
-173.9	2029	-171.432	2028.056	-171.411	2028.045	-171.277	2028	-168.765	2027.039
-168.664	2027	-166.362	2026.099	-166.09	2026	-163.961	2025.199	-163.437	2025
-163.143	2024.889	-161.851	2024.382	-160.835	2024	-158.287	2023.027	-158.218	2023
-156.011	2022.158	-155.593	2022	-155.575	2021.993	-155.445	2021.942	-153	2021
-152.267	2020.71	-150.442	2020	-148.981	2019.824	-148.856	2019.823	-145.218	2019.46
-139.898	2019.53	-138.244	2019.571	-137.955	2019.587	-137.947	2019.599	-133.802	2019.585
-132.255	2019.54	-125.488	2019.333	-115.295	2019	-108.905	2018.67	-108.491	2018.664
-106.371	2018.64	-104.683	2018.643	-104.353	2018.639	-103.055	2018.61	-99.356	2018.519
-96.81342	2018.467	-94.68282	2018.433	-92.74872	2018.417	-89.5149	2018.36	-86.14162	2018.293
-80.98712	2018.183	-72.7863	2018	-72.77132	2017.999	-72.76322	2017.999	-69.4962	2017.825
-67.3247	2017.73	-64.68072	2017.607	-60.75262	2017.409	-51.8476	2017	-44.80852	2016.276
-43.09912	2016.096	-42.80632	2016.064	-42.2502	2016	-40.2778	2015.68	-36.1906	2015
-35.29022	2014.831	-31.5836	2014	-27.52182	2013.095	-27.0892	2013	-26.82452	2012.939
-22.745	2012	-16.03320	2011.403	-11.7784	2011	-9.593522	2010.556	-6.50985	2010
-2.17762	2010	-2.12616	2010	-2.101872	2010.029	-1.20254	2011	0	2011.051
15.75179	2011.72	522.35754	2012	24.55396	2012.553	26.20628	2013	27.42256	2013.34
29.90913	2014	31.48657	2014.403	33.81311	2015	35.00459	2015.333	7.64273	2016
38.73285	2016.303	41.48923	2017	44.76862	2017.853	45.34332	2018	46.43989	2018.24
50.81053	2019	51.80807	2018.977	52.51102	2018.965	3.979242	2018.936	56.19953	2018.899

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-185.382	.035	-133.802	.025	50.81053	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-133.802	50.81053	15.28	15.28	15.28	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2014.29	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.44	* Wt. n-Val.	*	* 0.025	*	*
* W.S. Elev (ft)	* 2013.85	* Reach Len. (ft)	* 15.28	* 15.28	* 15.28	*
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	* 132.77	*	*
* E.G. Slope (ft/ft)	*0.002856	* Area (sq ft)	*	* 132.77	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*	*
* Top Width (ft)	* 60.26	* Top Width (ft)	*	* 60.26	*	*
* Vel Total (ft/s)	* 5.32	* Avg. Vel. (ft/s)	*	* 5.32	*	*
* Max Chl Dpth (ft)	* 3.85	* Hydr. Depth (ft)	*	* 2.20	*	*
* Conv. Total (cfs)	* 13209.9	* Conv. (cfs)	*	* 13209.9	*	*
* Length Wtd. (ft)	* 15.28	* Wetted Per. (ft)	*	* 61.31	*	*
* Min Ch El (ft)	* 2010.00	* Shear (lb/sq ft)	*	* 0.39	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 2.05	*	*
* Frctn Loss (ft)	* 0.05	* Cum Volume (acre-ft)	* 1.41	* 19.75	* 2.94	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.92	* 12.68	* 2.75	*

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2790.28

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-191.651	2032	-191.352	2031.905	-188.55	2031	-188.084	2030.847	-182.119	2029
-180.244	2028.374	-179.073	2028	-178.156	2027.716	-175.887	2027	-173.655	2026.24
-172.908	2026	-172.352	2025.817	-170.818	2025.281	-167.273	2024	-165.659	2023.46
-164.748	2023.132	-164.362	2023	-164.005	2022.879	-163.202	2022.589	-161.567	2022
-159.868	2021.394	-158.814	2021	-157.506	2020.753	-157.355	2020.734	-155.166	2020.538
-145.515	2019.3	-136.96	2019	-135.679	2019	-135.157	2019	-128.733	2019
-127.166	2019	-126.001	2019	-125.003	2019	-120.399	2019	-116.322	2019
-111.383	2018.813	-109.732	2018.758	-102.259	2018.492	-99.593	2018.402	-96.152	2018.304
-92.753	2018.189	-84.462	2018	-73.097	2017.704	-71.885	2017.669	-71.247	2017.653
-68.068	2017.577	-63.153	2017.45	-61.022	2017.391	-55.212	2017.166	-54.362	2017.138
-51.103	2017	-47.752	2016.643	-41.806	2016	-37.597	2015.225	-29.981	2014
-27.412	2013.245	-26.496	2013	-25.972	2012.869	-22.859	2012	-19.198	2011.696
-9.805	2011	-8.29	2011	-2.977	2011	-1.174	2011	-.368	2011
0	2011.015	3.582	2011.166	23.916	2012	25.809	2012.347	28.825	2013
31.304	2013.532	33.565	2014	42.447	2015.931	42.74	2016	42.982	2016.056

```
  47.997    2017   49.922017.344  53.174    2018  54.4512018.166  58.4282018.982

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-191.651    .035-116.322    .025  58.428    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -116.322  58.428              1.5     1.5     1.5             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2014.23  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.55  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)          * 2013.67  * Reach Len. (ft)      *    1.50  *    1.50  *    1.50  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)    *          *  118.50  *          *
* E.G. Slope (ft/ft)      *0.004174  * Area (sq ft)         *          *  118.50  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   60.86  * Top Width (ft)       *          *   60.86  *          *
* Vel Total (ft/s)        *    5.96  * Avg. Vel. (ft/s)     *          *    5.96  *          *
* Max Chl Dpth (ft)       *    2.67  * Hydr. Depth (ft)     *          *    1.95  *          *
* Conv. Total (cfs)       * 10927.9  * Conv. (cfs)          *          * 10927.9  *          *
* Length Wtd. (ft)        *    1.50  * Wetted Per. (ft)     *          *   61.32  *          *
* Min Ch El (ft)          * 2011.00  * Shear (lb/sq ft)     *          *    0.50  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *        *    3.00  *          *
* Frctn Loss (ft)         *    0.01  * Cum Volume (acre-ft)  *    1.41  *   19.70  *    2.94  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)        *    0.92  *   12.66  *    2.75  *
************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2791.78

INPUT
Description:
Station Elevation Data    num=     115
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-192.023    2032 -191.652031.881-188.921    2031-188.6322030.907-186.7682030.305
-185.9212030.042-185.781    2030-185.1052029.788-182.517    2029 -179.852028.109
-179.508    2028-179.2392027.917-176.332    2027-174.5332026.387-173.329    2026
-172.626 2025.77-170.469    2025-168.1112024.191-167.632    2024-166.5722023.646
-165.2942023.186-164.753    2023-164.252 2022.83-163.1262022.424 -161.95    2022
-159.3042021.057-159.144    2021-159.0722020.974-159.0412020.966-158.9792020.949
-156.279    2020-150.6022019.571-149.3772019.464-148.693  2019.4-146.2952019.219
 -145.982019.199-145.772 2019.19-145.0572019.177-144.258 2019.16-143.882 2019.15
-136.2342019.019-136.1962019.018 -134.94    2019-128.925    2019-127.814    2019
-126.855    2019-126.122    2019-122.832    2019-116.237    2019-108.2462018.697
-105.5722018.608-99.57772018.395-97.43872018.322-93.53822018.212-91.17152018.132
-85.3943    2018-69.56942017.588-68.55772017.559-68.02522017.545-65.37042017.482
-61.26572017.376 -59.4862017.327-53.05832017.077-52.66152017.064-51.1424    2017
-49.57952016.833-41.8709    2016-35.51842015.059 -35.108    2015-34.97962014.979
-29.8665    2014-26.81732013.105-26.4272    2013-26.20232012.944-22.8219    2012
-20.23672011.785-9.63734    2011-9.170522010.943-8.999792010.927-5.468172010.501
 -4.59462010.376-4.268712010.341-3.300122010.268-3.14368 2010.25-2.757742010.236
 -2.36882010.214-2.117072010.195-.5235952010.294-.145086    2011       02011.006
11.218822011.47823.95583    201226.512982012.46928.96547    201330.981942013.433
33.72343    201434.289752014.12435.571852014.40138.40697    2015 41.52732015.679
42.653312015.91543.09034    201644.697992016.264 45.4141 2016.3948.65665    2017
 49.74312017.19553.74166    201853.839242018.01354.198152018.08654.710382018.192
54.830932018.21654.90061 2018.2358.68188 2018.9858.697172018.98458.709192018.978

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-192.023    .035-192.023    .02558.70919    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -192.02358.70919             8.22    8.22    8.22             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2014.20  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.49  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)          * 2013.71  * Reach Len. (ft)      *    8.22  *    8.22  *    8.22  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)    *          *  125.53  *          *
* E.G. Slope (ft/ft)      *0.003508  * Area (sq ft)         *          *  125.53  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   61.22  * Top Width (ft)       *          *   61.22  *          *
* Vel Total (ft/s)        *    5.62  * Avg. Vel. (ft/s)     *          *    5.62  *          *
* Max Chl Dpth (ft)       *    3.52  * Hydr. Depth (ft)     *          *    2.05  *          *
* Conv. Total (cfs)       * 11920.5  * Conv. (cfs)          *          * 11920.5  *          *
* Length Wtd. (ft)        *    8.22  * Wetted Per. (ft)     *          *   62.16  *          *
* Min Ch El (ft)          * 2010.20  * Shear (lb/sq ft)     *          *    0.44  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *        *    2.49  *          *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)  *    1.41  *   19.70  *    2.94  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)        *    0.92  *   12.65  *    2.75  *
************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2800

INPUT
Description:
Station Elevation Data    num=      77
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-195.975    2032-194.8132031.631-192.859    2031-187.2952029.172-186.738    2029
-186.4242028.895 -183.73    2028-182.7972027.687-180.744    2027-178.2432026.146
 -177.79    2026-173.2652024.519-171.781    2024-171.0922023.752-168.902    2023
-166.8742022.312-166.009    2022-164.0912021.351-163.098    2021-159.4872020.537
 -156.572020.435-152.4542020.306-151.4232020.283-151.3642020.295-140.2662019.997
-120.0192019.095-117.875    2019-117.4872018.989-117.4812018.989 -116.012018.951
-114.4342018.892 -112.142018.813 -88.124    2018 -82.3782017.856 -78.2632017.758
  -68.292017.568 -62.0352017.416 -59.8942017.375 -58.5152017.311 -53.9222017.133
 -51.2922017.018 -50.923    2017 -49.6562016.891 -40.112    2016 -36.6692015.429
 -32.5752014.699 -28.704    2014 -26.0772013.379 -24.676    2013 -23.9442012.793
 -21.802    2012 -11.4952011.199  -9.8322011.073  -8.702    2011  -5.884    2011
  -2.882    2011   -.273    2011       0    2011   2.224    2011   6.2052011.167
  14.9312011.513  25.621    2012  28.0952012.487  30.847    2013   34.52013.691
  36.153    2014  43.703 2015.37  46.901    2016  47.996 2016.18  48.522016.278
  53.265    2017  57.5372017.621  59.854    2018  60.9062018.209  61.5072018.363
   61.722018.267  61.9792018.372

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-195.975    .035  -68.29    .025  61.979    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -68.29  61.979             4.37    4.37    4.37             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2014.16  * Element                * Left OB * Channel * Right OB *
* Vel Head (ft)          *    0.61  * Wt. n-Val.             *         *   0.025 *          *
* W.S. Elev (ft)         * 2013.54  * Reach Len. (ft)        *    4.37 *    4.37 *    4.37  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *         *  112.33 *          *
* E.G. Slope (ft/ft)     *0.004945  * Area (sq ft)           *         *  112.33 *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *         *  706.00 *          *
* Top Width (ft)         *   60.47  * Top Width (ft)         *         *   60.47 *          *
* Vel Total (ft/s)       *    6.29  * Avg. Vel. (ft/s)       *         *    6.29 *          *
* Max Chl Dpth (ft)      *    2.54  * Hydr. Depth (ft)       *         *    1.86 *          *
* Conv. Total (cfs)      * 10039.5  * Conv. (cfs)            *         * 10039.5 *          *
* Length Wtd. (ft)       *    4.37  * Wetted Per. (ft)       *         *   60.92 *          *
* Min Ch El (ft)         * 2011.00  * Shear (lb/sq ft)       *         *    0.57 *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *         *    3.58 *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)   *    1.41 *   19.68 *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.92 *   12.64 *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2804.37

INPUT
Description:
Station Elevation Data    num=      85
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-197.922    2032-196.3722031.508  -194.8    2031-189.6722029.316-188.677    2029
-188.0162028.778-185.721    2028-185.3462027.867-182.786    2027-182.427 2026.88
-179.784    2026-174.2452024.134-173.857    2024-173.7312023.956-170.946    2023
-168.1662022.057-168.009    2022 -166.332021.432-164.934    2021-163.8222020.927
 -163.782020.926 -163.052020.914-162.8692020.905 -162.57 2020.89-162.2552020.876
-157.6062020.677-119.547    2019-117.7552018.945 -117.472018.938-109.8352018.718
-109.6832018.717 -81.481    2018 -81.416    2018  -79.68    2018  -71.782017.808
 -67.6212017.729 -67.0232017.701 -65.0312017.624  -63.892017.574 -62.4062017.501
 -60.5052017.397 -58.2692017.266  -54.06    2017 -50.3532016.824 -45.4982016.468
 -43.2962016.326  -42.052016.241 -39.274    2016 -37.8412015.745 -28.184    2014
 -26.0042013.485 -23.813    2013 -22.5472012.496  -21.21    2012 -17.4232011.706
 -16.8122011.659 -12.2572011.365  -8.4132011.097  -7.7752011.053  -7.5112011.036
  -7.4082011.029  -6.701    2011  -6.243    2011  -4.106    2011  -1.018    2011
       0    2011     .34    2011    3.86    2011    9.612011.228  26.556    2012
  26.8532012.058  31.907    2013  33.3972013.282  37.242    2014  44.5032015.318
  48.692    2016  54.0212016.737  55.749    2017  58.0912017.341  62.669    2018
  62.8912018.057  62.9252018.042  63.4512018.256  63.5792018.308   63.592018.312

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-197.922    .035 -81.481    .025   63.59    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -81.481  63.59             95.63   95.63   95.63             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2014.14  * Element                * Left OB * Channel * Right OB *
* Vel Head (ft)          *    0.63  * Wt. n-Val.             *         *   0.025 *          *
* W.S. Elev (ft)         * 2013.51  * Reach Len. (ft)        *   95.63  *   95.63 *   95.63  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *         *  111.08 *          *
* E.G. Slope (ft/ft)     *0.005159  * Area (sq ft)           *         *  111.08 *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *         *  706.00 *          *
* Top Width (ft)         *   60.71  * Top Width (ft)         *         *   60.71 *          *
* Vel Total (ft/s)       *    6.36  * Avg. Vel. (ft/s)       *         *    6.36 *          *
* Max Chl Dpth (ft)      *    2.51  * Hydr. Depth (ft)       *         *    1.83 *          *
* Conv. Total (cfs)      *  9829.4  * Conv. (cfs)            *         *  9829.4 *          *
* Length Wtd. (ft)       *   95.63  * Wetted Per. (ft)       *         *   61.14 *          *
* Min Ch El (ft)         * 2011.00  * Shear (lb/sq ft)       *         *    0.59 *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *         *    3.72 *          *
* Frctn Loss (ft)        *    0.61  * Cum Volume (acre-ft)   *    1.41 *   19.67 *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *    0.92 *   12.64 *    2.75  *
```

```
*******************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -2900

INPUT
Description:
Station Elevation Data    num=     105
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
-216.7872016.988-216.2682016.946-215.8432016.932-215.2532016.947-214.599    2017
-211.2472017.296-210.9982017.327-210.6722017.351-209.4282017.429-205.6492017.393
-205.4062017.384-204.7452017.307 -202.012017.155-201.7632017.134-200.5752017.077
-198.347    2017-186.1762016.433-183.2382016.221-182.6032016.177-181.1462016.096
-180.872 2016.07-177.998    2016-177.919    2016 -177.84    2016 -177.642015.999
 -177.622015.999-175.7042015.987-175.6642015.987-173.6472015.966-173.5372015.965
-161.1112015.874-158.1332015.852-156.3692015.842-155.7642015.838 -151.38    2016
-151.052    2016-148.575    2016-146.263    2016 -145.32    2016-140.595    2016
-139.516    2016-136.465    2016-134.465    2016-132.944    2016-125.048    2016
-124.538    2016-124.144    2016-123.337    2016-113.821    2016-113.437    2016
-113.159    2016-112.4312015.981-110.5722015.933-109.7172015.899-109.0992015.875
  -59.442014.496 -58.503  2014.5 -57.642 2014.51 -57.0962014.512 -55.7692014.481
 -55.4422014.479 -54.7332014.508 -54.2642014.561 -53.4782014.595 -51.9412014.581
 -49.7872014.532 -43.2132014.362 -39.1512014.275 -37.6822014.237 -36.3882014.176
 -33.174    2014  -29.262013.455 -27.6112013.207  -25.96    2013 -15.3432012.003
  -15.342012.002 -15.3292012.002 -15.3282012.003 -15.3252012.003  -15.31    2012
 -13.6932011.435 -12.725    2011 -10.973    2011  -7.579    2011       0    2011
  28.388    2011  35.119    2011  35.189    2011  35.335    2011  37.547    2011
  39.4032011.418  41.974    2012   42.912012.207  46.377    2013  50.3252013.886
  50.908    2014  52.3512014.299  53.4192014.473  55.4712014.843  61.573    2016
  62.602 2016.19  67.077    2017  68.5622017.331   70.432017.921  70.5182017.949

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-216.787    .035-113.821    .025  70.518    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -113.821  70.518           50.262  50.262  50.262            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*******************************************************************************************
* E.G. Elev (ft)         * 2013.51  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.75  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 2012.76  * Reach Len. (ft)      *   50.26  *   50.26  *   50.26  *
* Crit W.S. (ft)         * 2012.76  * Flow Area (sq ft)    *          *  101.63  *          *
* E.G. Slope (ft/ft)     *0.008176  * Area (sq ft)         *          *  101.63  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   68.74  * Top Width (ft)       *          *   68.74  *          *
* Vel Total (ft/s)       *    6.95  * Avg. Vel. (ft/s)     *          *    6.95  *          *
* Max Chl Dpth (ft)      *    1.76  * Hydr. Depth (ft)     *          *    1.48  *          *
* Conv. Total (cfs)      *  7807.7  * Conv. (cfs)          *          *  7807.7  *          *
* Length Wtd. (ft)       *   50.26  * Wetted Per. (ft)     *          *   69.16  *          *
* Min Ch El (ft)         * 2011.00  * Shear (lb/sq ft)     *          *    0.75  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    5.21  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)  *    1.41  *   19.43  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.92  *   12.49  *    2.75  *
*******************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -2950.26

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 -44.8022013.299 -44.2772013.298 -44.0492013.302 -44.0482013.302 -43.9222013.311
 -43.6262013.317 -43.6252013.317 -39.9312013.378 -39.5912013.387 -39.2672013.389
 -37.9812013.389 -35.7552013.387 -35.3232013.384   -33.82013.365  -33.032013.354
 -32.5782013.344 -29.6242013.244 -29.2012013.174 -28.2092013.102 -26.132    2013
   -22.92012.417 -20.585    2012 -16.7292011.322 -14.982    2011 -10.632 2010.61
 -10.6222010.613  -9.9712010.663  -9.5032010.676   -9.092010.681  -8.4372010.683
   -8.262010.688  -8.1482010.696  -8.0512010.713  -7.5852010.703  -7.402 2010.69
  -7.2472010.681  -7.0332010.669   -6.832010.662  -6.4512010.649  -5.4662010.613
  -3.2672010.524       0 2010.39   3.1252010.261  29.2162009.203  31.3492009.113
  32.0452009.085  32.6132009.062  34.389    2009  34.866    2009  35.109    2009
  35.5552009.896  35.967    2011  36.5852011.201  36.9582011.278  40.048    2012
  41.004 2012.18  44.797    2013  46.8342013.434  49.409    2014  57.1492015.476
  59.716    2016  60.7092016.187  64.842    2017  66.6722017.415  69.208    2018
  69.3152018.003  69.4612018.008

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -44.802    .035   -33.8    .025  69.461    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
```

```
        -33.8  69.461            49.74   49.74   49.74            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2012.63  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.84  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2011.79  * Reach Len. (ft)       *   49.74  *   49.74  *   49.74  *
* Crit W.S. (ft)         * 2011.79  * Flow Area (sq ft)     *          *   96.06  *          *
* E.G. Slope (ft/ft)     *0.008187  * Area (sq ft)          *          *   96.06  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          * 706.00  *          *
* Top Width (ft)         *   58.57  * Top Width (ft)        *          *   58.57  *          *
* Vel Total (ft/s)       *    7.35  * Avg. Vel. (ft/s)      *          *    7.35  *          *
* Max Chl Dpth (ft)      *    2.79  * Hydr. Depth (ft)      *          *    1.64  *          *
* Conv. Total (cfs)      *  7802.7  * Conv. (cfs)           *          * 7802.7  *          *
* Length Wtd. (ft)       *   49.74  * Wetted Per. (ft)      *          *   60.12  *          *
* Min Ch El (ft)         * 2009.00  * Shear (lb/sq ft)      *          *    0.82  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.00  *          *
* Frctn Loss (ft)        *    0.40  * Cum Volume (acre-ft)  *    1.41  *   19.32  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   12.42  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -3000

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -43.4692012.621 -43.4612012.621 -43.4592012.621 -38.5952012.052  -38.01    2012
 -35.2972011.643 -33.7872011.482 -33.0692011.441 -31.9672011.439 -31.7132011.429
 -29.194    2011 -23.3922009.725 -21.242    2009 -19.8322008.476 -18.505    2008
 -17.7332007.727 -15.766    2007 -14.2832006.654 -12.0692006.457  -7.9542006.127
  -7.4842006.077  -6.586    2006  -2.324    2006        0    2006   2.711    2006
   2.948    2006   8.069    2006    8.42    2006  14.301    2006  15.978    2006
  27.623    2006  28.378    2006  29.1782006.503  29.871    2007  34.9422007.883
  35.596    2008 36.3262008.134  40.0062008.786  40.5422008.889  41.103    2009
  41.8652009.182  48.104    2011  48.997 2011.26  51.576    2012  53.2122012.485
  54.988    2013  57.3032013.782  57.881    2014   58.112014.091  63.242    2016
  65.7352016.939  65.878    2017  67.0512017.619  67.4012017.607  67.574  2017.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -43.469    .035 -43.469    .025  67.574    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -43.469  67.574              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2008.93  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.87  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2008.06  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 2008.06  * Flow Area (sq ft)     *          *   94.11  *          *
* E.G. Slope (ft/ft)     *0.007825  * Area (sq ft)          *          *   94.11  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          * 706.00  *          *
* Top Width (ft)         *   54.57  * Top Width (ft)        *          *   54.57  *          *
* Vel Total (ft/s)       *    7.50  * Avg. Vel. (ft/s)      *          *    7.50  *          *
* Max Chl Dpth (ft)      *    2.06  * Hydr. Depth (ft)      *          *    1.72  *          *
* Conv. Total (cfs)      *  7981.1  * Conv. (cfs)           *          * 7981.1  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   55.22  *          *
* Min Ch El (ft)         * 2006.00  * Shear (lb/sq ft)      *          *    0.83  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.25  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)  *    1.41  *   19.21  *    2.94  *
* C & E Loss (ft)        *    0.15  * Cum SA (acres)        *    0.92  *   12.36  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -3100

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
```

```
  -40.6862010.392 -39.082 2010.39 -37.6642010.389 -37.3612010.362 -37.0412010.312
  -36.4892010.253 -35.3482010.097  -34.072009.868 -31.0772009.444 -30.6442009.344
  -28.269    2009 -25.4652008.339 -24.007    2008  -22.122007.521 -20.564    2007
  -19.6122006.333  -19.05    2006 -17.7552005.779 -15.9942005.519 -15.7012005.533
  -15.5612005.565       02004.171   1.907    2004  27.4732005.481  30.4022005.682
   31.9272005.835  33.914    2006  35.3232006.226  40.227    2007  40.9632007.127
   45.029    2008  48.9162008.862  49.541    2009   50.952009.373   57.58    2011
   58.8762011.399  60.829    2012  62.4462012.481  64.133    2013  66.1272013.626
   67.582    2014  68.4942014.459  69.5982014.909  69.7372014.907

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -40.686    .035 -40.686    .025  69.737    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -40.686  69.737              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2007.84  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.39  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2007.45  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  141.04  *          *
* E.G. Slope (ft/ft)     *0.002526  * Area (sq ft)          *          *  141.04  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   64.35  * Top Width (ft)       *          *   64.35  *          *
* Vel Total (ft/s)       *    5.01  * Avg. Vel. (ft/s)     *          *    5.01  *          *
* Max Chl Dpth (ft)      *    3.45  * Hydr. Depth (ft)     *          *    2.19  *          *
* Conv. Total (cfs)      * 14047.2  * Conv. (cfs)          *          * 14047.2  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   65.02  *          *
* Min Ch El (ft)         * 2004.00  * Shear (lb/sq ft)     *          *    0.34  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    1.71  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)  *    1.41  *   18.94  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *    0.92  *   12.22  *    2.75  *
*****************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3200

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 -37.978 2009.35 -37.1012009.313 -36.3492009.281 -36.325 2009.28 -33.9032009.193
 -30.9422009.087 -30.9352009.087 -30.3932009.064 -28.851    2009 -26.5162008.516
 -24.188    2008 -19.3082007.019 -19.217    2007 -19.0842006.973 -14.498    2006
       02004.828   2.4652004.629   7.9622004.283    12.6    2004  12.6442003.998
  12.7252003.976  20.1832003.844  20.863    2004  29.0812004.899  40.214    2006
  41.0822006.134  46.718    2007  48.5742007.361  51.915    2008  54.7892008.646
  56.356    2009  65.5812010.583  67.3842010.888  67.984    2011  72.6412011.994
   72.652011.996  72.6572011.997  72.6582011.997  72.6592011.997

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -37.978    .035 -37.978    .025  72.659    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -37.978  72.659              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2007.38  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.82  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2006.56  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 2006.56  * Flow Area (sq ft)     *          *   97.43  *          *
* E.G. Slope (ft/ft)     *0.008018  * Area (sq ft)          *          *   97.43  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   61.02  * Top Width (ft)       *          *   61.02  *          *
* Vel Total (ft/s)       *    7.25  * Avg. Vel. (ft/s)     *          *    7.25  *          *
* Max Chl Dpth (ft)      *    2.72  * Hydr. Depth (ft)     *          *    1.60  *          *
* Conv. Total (cfs)      *  7884.6  * Conv. (cfs)          *          *  7884.6  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   61.33  *          *
* Min Ch El (ft)         * 2003.84  * Shear (lb/sq ft)     *          *    0.80  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    5.76  *          *
* Frctn Loss (ft)        *    0.56  * Cum Volume (acre-ft)  *    1.41  *   18.67  *    2.94  *
* C & E Loss (ft)        *    0.09  * Cum SA (acres)        *    0.92  *   12.08  *    2.75  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3300
```

```
INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
  -39.37 2009.09 -38.5682009.064 -36.532    2009 -35.9072008.888 -31.502    2008
 -27.5622007.087  -27.24    2007 -26.5022006.821 -24.8982006.439 -22.971    2006
 -20.1172005.351  -14.21    2004 -11.6162003.216 -10.828    2003   -7.232002.574
  -6.4182002.456  -5.7732002.385  -4.6422002.289  -4.3992002.263  -3.8622002.225
  -3.7622002.223  -3.2282002.217       0 2002.23   2.9252002.241   3.0372002.247
   3.9172002.315   4.661 2002.37   5.0472002.415    5.262002.434   6.817 2002.52
   7.4242002.549   8.2442002.578   9.9172002.659  11.4552002.743  12.0922002.792
  12.4842002.842   13.062002.943   13.652002.991  13.788    2003  15.0092003.049
   20.572003.264  27.6782003.525  39.221    2004  42.9092004.836  48.369    2006
   53.362006.831  54.2032006.974   54.34    2007  54.7182007.064  60.757    2008
  62.5422008.294  64.6282008.702  66.232    2009  67.6152009.536  69.043 2009.54
  69.5282009.542

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
  -39.37    .035  -39.37    .025  69.528    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -39.37  69.528             5.97    5.97    5.97             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2005.71  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.53  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 2005.19  * Reach Len. (ft)      *    5.97  *     5.97  *    5.97  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)    *          *  121.34  *          *
* E.G. Slope (ft/ft)     *0.004122  * Area (sq ft)         *          *  121.34  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   63.95  * Top Width (ft)       *          *   63.95  *          *
* Vel Total (ft/s)       *    5.82  * Avg. Vel. (ft/s)     *          *    5.82  *          *
* Max Chl Dpth (ft)      *    2.97  * Hydr. Depth (ft)     *          *    1.90  *          *
* Conv. Total (cfs)      * 10996.5  * Conv. (cfs)          *          * 10996.5  *          *
* Length Wtd. (ft)       *    5.97  * Wetted Per. (ft)     *          *   64.45  *          *
* Min Ch El (ft)         * 2002.22  * Shear (lb/sq ft)     *          *    0.48  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    2.82  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *    1.41  *   18.42  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   11.93  *    2.75  *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -3305.97

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
 -40.0472009.084 -38.6062009.039 -37.378    2009 -33.4942008.306 -31.977    2008
  -30.622007.685 -28.071    2007 -25.1542006.293 -23.993    2006  -22.712005.665
 -15.793    2004 -14.7862003.718  -12.17    2003 -10.2652002.774  -9.1692002.615
  -8.2982002.519  -6.771 2002.39  -6.4442002.355  -5.7192002.303  -5.5842002.301
  -4.8632002.294       02002.312   3.4412002.325   3.5932002.334   4.7792002.425
   5.7842002.499   6.3062002.561   6.5932002.585   8.6932002.702   9.5132002.741
   10.62 2002.78  12.8772002.889  14.897    2003  15.375 2003.02  38.486    2004
  44.0562005.281  47.363    2006  48.7042006.239  53.371    2007  59.8972007.867
  60.787    2008  61.2522008.091  66.145    2009  67.1242009.379  68.7052009.384
   69.032009.385

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 -40.047    .035 -40.047    .025   69.03    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -40.047   69.03             85.14   85.14   85.14             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2005.68  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.52  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 2005.16  * Reach Len. (ft)      *   85.14  *   85.14  *   85.14  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)    *          *  121.61  *          *
* E.G. Slope (ft/ft)     *0.004107  * Area (sq ft)         *          *  121.61  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   64.14  * Top Width (ft)       *          *   64.14  *          *
* Vel Total (ft/s)       *    5.81  * Avg. Vel. (ft/s)     *          *    5.81  *          *
* Max Chl Dpth (ft)      *    2.87  * Hydr. Depth (ft)     *          *    1.90  *          *
* Conv. Total (cfs)      * 11016.7  * Conv. (cfs)          *          * 11016.7  *          *
* Length Wtd. (ft)       *   85.14  * Wetted Per. (ft)     *          *   64.63  *          *
* Min Ch El (ft)         * 2002.29  * Shear (lb/sq ft)     *          *    0.48  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    2.80  *          *
* Frctn Loss (ft)        *    0.48  * Cum Volume (acre-ft)  *    1.41  *   18.40  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   11.92  *    2.75  *
**********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION
```

```
RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -3391.11

INPUT
Description:
Station Elevation Data    num=      64
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -35.5262008.115 -34.624    2008 -32.5822007.632 -27.554    2007 -25.9722006.517
 -23.519    2006 -20.342 2005.35 -14.416    2004 -12.3932003.612  -9.253    2003
  -8.1852002.847  -7.7632002.765  -7.4062002.733  -6.7212002.703   -4.82002.635
  -4.4892002.619  -4.3852002.607       02002.563   9.7282002.466  10.4992002.476
  12.5992002.524   13.662002.543  15.0362002.562  15.4652002.565  16.8292002.571
  17.5342002.579  18.4912002.596  20.7572002.645  22.268 2002.67  26.7292002.728
  27.2442002.736  38.4152002.948  41.465    2003  41.644 2003.02  46.9742003.786
  48.4182003.991  48.459    2004  58.7652005.622  61.285    2006  65.9262006.313
  68.6852006.475  71.6992006.689  72.2292006.703  73.4392006.792  74.313 2006.84
  74.3842006.845  74.7772006.865   75.062006.883  75.3112006.896  75.4162006.904
  75.4962006.908  75.6152006.911  75.9332006.915  75.9962006.917  76.1852006.936
  76.2362006.938  76.2852006.936  76.3892006.925  76.3922006.925  76.4882006.915
  76.528 2006.91  76.743 2006.89   76.772006.888  76.9292007.029

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -35.526    .035 -35.526    .025  76.929    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -35.526  76.929             8.89    8.89    8.89             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2005.18  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.76  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)          * 2004.43  * Reach Len. (ft)      *    8.89  *    8.89  *    8.89  *
* Crit W.S. (ft)          * 2004.43  * Flow Area (sq ft)    *          *  101.19  *          *
* E.G. Slope (ft/ft)      *0.008069  * Area (sq ft)         *          *  101.19  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   67.47  * Top Width (ft)       *          *   67.47  *          *
* Vel Total (ft/s)        *    6.98  * Avg. Vel. (ft/s)     *          *    6.98  *          *
* Max Chl Dpth (ft)       *    1.96  * Hydr. Depth (ft)     *          *    1.50  *          *
* Conv. Total (cfs)       *  7859.4  * Conv. (cfs)          *          *  7859.4  *          *
* Length Wtd. (ft)        *    8.89  * Wetted Per. (ft)     *          *   67.75  *          *
* Min Ch El (ft)          * 2002.47  * Shear (lb/sq ft)     *          *    0.75  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *        *    5.25  *          *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)  *    1.41  *   18.18  *    2.94  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)        *    0.92  *   11.79  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -3400

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -33.556 2007.91 -33.553 2007.91 -33.551 2007.91 -33.3932007.892  -33.252007.869
 -33.0022007.833 -32.988 2007.82 -32.4212007.754 -31.8312007.705 -30.6492007.591
 -25.666    2007 -25.2212006.898 -22.182    2006 -17.2192004.928 -12.694    2004
 -10.1522003.537  -8.5922003.267  -7.101    2003  -6.5212002.927  -4.2522002.602
  -3.9522002.544  -3.6992002.521  -3.2122002.499  -1.8482002.451  -1.626 2002.44
  -1.5532002.431       02002.415   8.4752002.331   9.0232002.338  10.5152002.372
  11.2692002.386  12.2462002.399  12.5512002.401  13.5212002.406  14.0222002.411
  14.7022002.424  16.3112002.459  17.3852002.476  20.5542002.517  20.9212002.523
  28.8582002.674  31.2082002.714  38.1272002.821  46.849    2003  47.6442003.166
  51.404    2004  53.1982004.285  58.1332005.071  63.896    2006  67.2972006.251
  70.4422006.424  70.6982006.441  72.1092006.516   73.132006.579  74.0312006.626
  74.4112006.656  74.6982006.669  75.1242006.678  76.2672006.695  76.4942006.703
  77.1772006.769  77.3572006.777  77.536 2006.77   77.912006.732  77.9192006.731
  78.2642006.693   78.412006.677  78.5082006.668   78.59 2006.66  78.5922006.662

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -33.556    .035 -33.556    .025  78.592    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -33.556  78.592              100     100     100             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2005.07  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.76  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)          * 2004.31  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 2004.31  * Flow Area (sq ft)    *          *  100.90  *          *
* E.G. Slope (ft/ft)      *0.008163  * Area (sq ft)         *          *  100.90  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   67.55  * Top Width (ft)       *          *   67.55  *          *
```

```
* Vel Total (ft/s)       *    7.00  * Avg. Vel. (ft/s)       *          *    7.00  *          *
* Max Chl Dpth (ft)      *    1.98  * Hydr. Depth (ft)       *          *    1.49  *          *
* Conv. Total (cfs)      *  7813.9  * Conv. (cfs)            *          *  7813.9  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *          *   67.84  *          *
* Min Ch El (ft)         * 2002.33  * Shear (lb/sq ft)       *          *    0.76  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.30  *          *
* Frctn Loss (ft)        *    0.81  * Cum Volume (acre-ft)   *    1.41  *   18.16  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.92  *   11.78  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -3500

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 -25.2172007.257 -25.1022007.254 -24.9752007.251 -24.702 2007.24 -24.5552007.234
 -24.0892007.203 -23.3222007.152 -23.0362007.139 -21.6792007.074 -21.5762007.071
 -20.1252007.032   -20.12007.031 -19.449    2007 -16.2212006.319  -14.75    2006
   -7.082004.366  -5.394    2004  -3.4142003.595  -1.9232003.317   -.244    2003
       02002.965   1.8572002.703   3.7962002.461   4.9892002.252   6.205    2002
  7.5592001.916   8.9852001.811  12.0332001.627  13.2862001.562  14.373 2001.52
 15.3292001.504  18.9742001.514  19.3892001.474  20.0152001.462  20.6942001.434
 21.0992001.411  24.0022001.432  24.4872001.358  29.558 2001.36  32.545 2001.26
 33.5632001.199  36.199    2001  38.722    2001  40.941    2001  45.2212001.449
 50.6642001.451  52.561    2002  53.3562002.132  54.8932002.401  56.8332002.743
 57.4542002.798  57.8662002.853   58.25    2003  62.7692003.925  62.9482003.953
   63.1    2004   67.592004.327  71.1882004.595  71.8292004.638  72.3212004.681
 72.6932004.699  73.1762004.711  73.865 2004.72  75.9792004.734  79.598 2004.77
 83.487  2004.8  83.7222004.787

Manning's n Values        num=      3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -25.217    .035 -25.217    .025  83.722    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -25.217  83.722              100     100     100             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2004.11  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.81  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2003.30  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 2003.30  * Flow Area (sq ft)     *          *   97.89  *          *
* E.G. Slope (ft/ft)     *0.007999  * Area (sq ft)          *          *   97.89  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   61.56  * Top Width (ft)        *          *   61.56  *          *
* Vel Total (ft/s)       *    7.21  * Avg. Vel. (ft/s)      *          *    7.21  *          *
* Max Chl Dpth (ft)      *    2.30  * Hydr. Depth (ft)      *          *    1.59  *          *
* Conv. Total (cfs)      *  7893.9  * Conv. (cfs)           *          *  7893.9  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   61.93  *          *
* Min Ch El (ft)         * 2001.00  * Shear (lb/sq ft)      *          *    0.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.69  *          *
* Frctn Loss (ft)        *    0.56  * Cum Volume (acre-ft)   *    1.41  *   17.93  *    2.94  *
* C & E Loss (ft)        *    0.08  * Cum SA (acres)         *    0.92  *   11.63  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -3600

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 -34.5182005.524 -32.9772005.549 -32.7042005.488 -32.6772005.474 -32.4972005.465
 -31.9772005.419 -30.8592005.245   -30.42005.148 -28.9142004.894  -26.05 2004.56
 -24.7112004.384 -24.1042004.336 -22.592    2004 -22.052    2004 -20.513    2004
  -19.84    2004  -19.67    2004 -19.163    2004 -17.875 2003.37 -17.072    2003
 -16.1232002.669 -14.282    2002 -12.4472001.312 -11.8342001.105 -11.507    2001
  -4.782 1999.49  -3.045    1999       01998.907   4.3791998.773   7.3341998.687
  13.6871998.535  17.0631998.433  20.9691998.331  27.9391998.119  32.191    1998
  35.819    1998  45.244    1998  45.7021998.193  47.473    1999  50.3182000.411
  51.632    2001  55.3892001.441  58.844    2002  66.052 2002.54  70.446    2003
    70.7    2003  73.457    2003  73.868    2003  77.4822003.239
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -34.518    .035 -34.518    .025  77.482    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -34.518  77.482              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2001.12  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.56  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2000.56  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  118.03  *          *
* E.G. Slope (ft/ft)     *0.004199  * Area (sq ft)          *          *  118.03  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   60.21  * Top Width (ft)        *          *   60.21  *          *
* Vel Total (ft/s)       *    5.98  * Avg. Vel. (ft/s)      *          *    5.98  *          *
* Max Chl Dpth (ft)      *    2.56  * Hydr. Depth (ft)      *          *    1.96  *          *
* Conv. Total (cfs)      * 10895.2  * Conv. (cfs)          *          * 10895.2  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   60.99  *          *
* Min Ch El (ft)         * 1998.00  * Shear (lb/sq ft)     *          *    0.51  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.03  *          *
* Frctn Loss (ft)        *    0.57  * Cum Volume (acre-ft)  *    1.41  *   17.68  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   11.49  *    2.75  *
*****************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3700

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -46.2752004.193 -46.0382004.186 -45.7012004.176   -45.72004.176 -43.2982004.106
 -43.0042004.097 -39.683    2004 -39.2482003.909  -35.83    2003 -34.534 2002.64
 -32.397    2002 -30.6492001.539 -28.525    2001 -21.0941999.114 -20.623    1999
 -20.3861998.941 -16.518    1998 -15.6951997.744  -15.011997.636 -14.6841997.613
 -14.4411997.622 -14.034    1998  -14.031998.038 -13.6411998.179 -13.3611998.406
  -13.281998.416 -13.1121998.416 -12.7271998.402 -10.9371998.308  -5.629    1998
  -4.5081997.892   -3.491997.829  -1.7931997.763       01997.711    .2091997.706
    .7751997.682  15.253    1998  22.6481997.618  29.166    1998  30.3751998.228
  32.6821998.623  34.966    1999    40.31999.908  42.9632000.338  46.302    2001
  50.2392001.786  51.418    2002  54.1832002.548  56.524    2003  60.7082003.703
  62.633    2004  63.3592003.994  63.4622003.993   63.54 2003.99  63.5682003.989
   64.132003.984  64.4922003.982  64.5342003.981

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -46.275    .035 -46.275    .025  64.534    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -46.275  64.534             89.64   89.64   89.64             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2000.52  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.80  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1999.72  * Reach Len. (ft)       *   89.64  *   89.64  *   89.64  *
* Crit W.S. (ft)         * 1999.72  * Flow Area (sq ft)     *          *   98.38  *          *
* E.G. Slope (ft/ft)     *0.008125  * Area (sq ft)          *          *   98.38  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   62.72  * Top Width (ft)        *          *   62.72  *          *
* Vel Total (ft/s)       *    7.18  * Avg. Vel. (ft/s)      *          *    7.18  *          *
* Max Chl Dpth (ft)      *    2.11  * Hydr. Depth (ft)      *          *    1.57  *          *
* Conv. Total (cfs)      *  7832.6  * Conv. (cfs)          *          *  7832.6  *          *
* Length Wtd. (ft)       *   89.64  * Wetted Per. (ft)      *          *   63.46  *          *
* Min Ch El (ft)         * 1997.61  * Shear (lb/sq ft)     *          *    0.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.64  *          *
* Frctn Loss (ft)        *    0.57  * Cum Volume (acre-ft)  *    1.41  *   17.44  *    2.94  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.92  *   11.35  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -3789.96

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -41.3892003.701 -39.236    2003 -35.7422002.231 -35.345    2002 -32.3752001.658
 -31.4742001.577 -30.3822001.493  -29.662001.452 -27.137    2001 -21.8371999.246
 -21.027    1999 -20.9081998.934 -19.493    1998 -18.4691997.399 -17.887    1997
```

```
 -17.0861996.508 -16.194    1996 -12.6781994.674 -11.029    1994 -10.1361993.752
  -7.475    1993   -.068    1993        0    1993   3.912    1993   8.688    1993
  10.6281993.359  14.027    1994  15.1191994.361  17.1061994.445   20.141994.933
  21.3071995.151  22.0851995.313  22.3851995.353  24.9991995.618  25.0681995.489
  25.0771995.472  25.1541995.466  25.4931995.475  27.7571995.539  28.6691995.598
  32.267    1996   36.931996.729  37.798    1997   38.51 1997.26  40.506    1998
  42.8781998.774  43.523    1999  46.1381999.885  49.385    2001  50.4672001.364
  52.226    2002  54.2842002.677  55.213    2003  55.9292003.129  59.7882003.765
  60.794    2004   61.052003.992  61.125 2003.99  61.5482003.965  61.6152003.962
  62.2272003.949  62.3692003.946  63.5132003.913  64.0822003.896   64.972003.877
  65.755 2003.86  66.2712003.846  67.1092003.824   67.62003.814  69.1652003.782
  69.2342003.781  69.4182003.778

Manning's n Values         num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
 -41.389    .035 -41.389    .025  60.794    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       -41.389  60.794             10.04   10.04   10.04              .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 1996.99  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.71  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)          * 1996.28  * Reach Len. (ft)      *   10.04  *   10.04  *   10.04  *
* Crit W.S. (ft)          * 1996.00  * Flow Area (sq ft)    *          *  104.42  *          *
* E.G. Slope (ft/ft)      *0.005066  * Area (sq ft)         *          *  104.42  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   50.72  * Top Width (ft)       *          *   50.72  *          *
* Vel Total (ft/s)        *    6.76  * Avg. Vel. (ft/s)     *          *    6.76  *          *
* Max Chl Dpth (ft)       *    3.28  * Hydr. Depth (ft)     *          *    2.06  *          *
* Conv. Total (cfs)       *  9919.3  * Conv. (cfs)          *          *  9919.3  *          *
* Length Wtd. (ft)        *   10.04  * Wetted Per. (ft)     *          *   51.68  *          *
* Min Ch El (ft)          * 1993.00  * Shear (lb/sq ft)     *          *    0.64  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *         *    4.32  *          *
* Frctn Loss (ft)         *    0.06  * Cum Volume (acre-ft)  *    1.41  *   17.23  *    2.94  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)        *    0.92  *   11.23  *    2.75  *
*************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -3800

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -40.8652001.845 -36.839    2001 -27.2091999.955 -22.927    1999 -20.5661998.168
 -20.019    1998 -19.6681997.872 -17.483    1997  -17.421996.976 -17.0641996.833
  -15.15    1996 -11.5841994.749  -9.302    1994  -8.5781993.689  -7.002    1993
      0    1993   1.908    1993   8.952    1993  10.6191993.694  11.442    1994
  11.895 1994.06  19.961994.886  20.1691994.513  20.1941994.464  20.4251994.447
  21.4351994.478  22.1931994.503  22.5021994.525  31.1361995.508  34.3061995.741
  35.262    1996  37.7751996.753  38.459    1997   40.871997.947  41.012    1998
  41.1681998.052  42.7141998.632  43.765    1999  44.1981999.147  44.7851999.324
  50.496    2001  53.4212001.831  54.003    2002  54.6292002.181  57.369    2003
  58.6162003.358  61.345    2004  62.6692003.961  63.051 2003.95  63.382 2003.93
  63.5142003.922  63.9872003.913  64.2282003.908  65.0922003.882   65.85 2003.86
   66.472003.847  67.4352003.826  67.7382003.818  68.7192003.791  68.9072003.787
  69.6092003.773

Manning's n Values         num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
 -40.865    .035 -40.865    .025  61.345    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       -40.865  61.345             68.66   68.66   68.66              .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 1996.90  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.93  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)          * 1995.97  * Reach Len. (ft)      *   68.66  *   68.66  *   68.66  *
* Crit W.S. (ft)          * 1995.97  * Flow Area (sq ft)    *          *   91.29  *          *
* E.G. Slope (ft/ft)      *0.007864  * Area (sq ft)         *          *   91.29  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   50.25  * Top Width (ft)       *          *   50.25  *          *
* Vel Total (ft/s)        *    7.73  * Avg. Vel. (ft/s)     *          *    7.73  *          *
* Max Chl Dpth (ft)       *    2.97  * Hydr. Depth (ft)     *          *    1.82  *          *
* Conv. Total (cfs)       *  7961.5  * Conv. (cfs)          *          *  7961.5  *          *
* Length Wtd. (ft)        *   68.66  * Wetted Per. (ft)     *          *   51.37  *          *
* Min Ch El (ft)          * 1993.00  * Shear (lb/sq ft)     *          *    0.87  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *         *    6.75  *          *
* Frctn Loss (ft)         *    0.54  * Cum Volume (acre-ft)  *    1.41  *   17.20  *    2.94  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)        *    0.92  *   11.22  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
```

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3868.66

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-49.4151999.123		-47.7221999.112		-47.518 1999.11		-47.36	1999	-46.4611998.604	
-44.827	1998	-42.4271997.112		-42.159	1997	-41.941996.909		-39.283	1996
-31.781994.909		-25.785	1994	-23.6361993.702		-15.398	1993	-12.9811992.884	
-9.2271992.745		-5.4651992.598		01992.369		4.8761992.165		10.279	1992
11.291991.779		11.581991.802		14.092	1992	15.881991.806		16.629	1992
18.5061992.441		20.716	1993	21.6341993.271		23.1741993.778		23.815	1994
25.7451994.609		29.93	1996	32.1451996.705		33.126	1997	33.541997.133	
36.185	1998	39.1661998.936		39.361	1999	40.5231999.375		45.555	2001
48.1982001.878		48.557	2002	49.1152002.165		52.288	2003	53.732003.328	
56.57	2004	57.001	2004	58.9	2004	59.3432003.955		60.0082003.888	
60.8562003.857		61.5052003.833		61.5632003.827		61.7062003.813		61.813 2003.81	
62.1822003.801		62.3062003.798		62.3172003.797					

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-49.415	.035	-49.415	.025	56.57	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-49.415 56.57 21.34 21.34 21.34 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1995.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.		0.025	
W.S. Elev (ft)	1994.54	Reach Len. (ft)	21.34	21.34	21.34
Crit W.S. (ft)	1994.54	Flow Area (sq ft)		94.00	
E.G. Slope (ft/ft)	0.007888	Area (sq ft)		94.00	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	54.85	Top Width (ft)		54.85	
Vel Total (ft/s)	7.51	Avg. Vel. (ft/s)		7.51	
Max Chl Dpth (ft)	2.76	Hydr. Depth (ft)		1.71	
Conv. Total (cfs)	7949.2	Conv. (cfs)		7949.2	
Length Wtd. (ft)	21.34	Wetted Per. (ft)		55.39	
Min Ch El (ft)	1991.78	Shear (lb/sq ft)		0.84	
Alpha	1.00	Stream Power (lb/ft s)		6.28	
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	1.41	17.06	2.94
C & E Loss (ft)	0.04	Cum SA (acres)	0.92	11.14	2.75

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -3900

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-53.2571998.842		-52.9511998.841		-52.861998.799		-50.435	1998	-50.1781997.916	
-49.4271997.675		-47.263	1997	-46.4481996.746		-43.785	1996	-38.7471995.138	
-32.051	1994	-27.1721993.165		-26.297	1993	-13.5711992.033		-12.808	1992
-6.861	1992	-2.122	1992	-1.265	1992	-.745	1992	-.5121991.993	
-.2971991.969		01991.941		2.9481991.653		7.2911991.208		7.692 1991.16	
7.8921991.133		8.597	1991	9.276	1991	13.939	1991	15.0981991.671	
17.678 1992.82		17.994	1993	18.2251993.086		20.879	1994	25.9611995.737	
26.713	1996	28.081996.524		29.388	1997	30.7441997.511		32.133	1998
33.3851998.443		34.9	1999	37.5562000.008		40.786	2001	43.1942001.521	
45.245	2002	48.5352002.669		50.23	2003	54.8022003.902		55.299	2004
55.32003.996		56.6172003.863		57.6312003.761					

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-53.257	.035	-53.257	.025	57.631	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-53.257 57.631 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1994.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.		0.025	
W.S. Elev (ft)	1994.14	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1993.95	Flow Area (sq ft)		103.00	
E.G. Slope (ft/ft)	0.005759	Area (sq ft)		103.00	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	54.13	Top Width (ft)		54.13	
Vel Total (ft/s)	6.85	Avg. Vel. (ft/s)		6.85	
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)		1.90	
Conv. Total (cfs)	9302.9	Conv. (cfs)		9302.9	

* Length Wtd. (ft)	*	100.00	*	Wetted Per. (ft)	*		*	54.99	*		*
* Min Ch El (ft)	*	1991.00	*	Shear (lb/sq ft)	*		*	0.67	*		*
* Alpha	*	1.00	*	Stream Power (lb/ft s)	*		*	4.62	*		*
* Frctn Loss (ft)	*	0.46	*	Cum Volume (acre-ft)	*	1.41	*	17.01	*	2.94	*
* C & E Loss (ft)	*	0.06	*	Cum SA (acres)	*	0.92	*	11.11	*	2.75	*

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4000

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-56.177	1997.704	-55.506	1997.71	-55.333	1997.712	-54.729	1997.504	-53.783	1997.228
-52.839	1997	-51.261	1996.642	-48.315	1996	-38.643	1994.655	-33.961	1994
-32.577	1993.614	-30.265	1993	-26.342	1992.145	-25.595	1992	-24.722	1992
-24.719	1992	-24.71	1992	-24.132	1992	-19.383	1991.784	-2.54	1991
0	1991	2.212	1991	7.855	1991	8.11	1991.021	11.061	1991.291
18.401	1992	22.592	1992.907	23.09	1993	23.649	1993.102	28.377	1994
35.744	1995.4	38.484	1996	39.552	1996.413	40.806	1997	41.815	1997.482
42.832	1998	44.642	1998.892	44.869	1999	48.509	2000.814	48.806	2000.954
48.9	2001	49.195	2001.148	50.946	2002	51.722	2002.182	51.764	2002.191
54.321	2002.762	54.332	2002.764	54.468	2002.783	54.558	2002.793	54.892	2002.831
55.094	2002.821								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-56.177	.035	-56.177	.025	55.094	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-56.177	55.094	100	100	100	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	*	1994.34	*	Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (ft)	*	0.52	*	Wt. n-Val.	*		*	0.025	*		*
* W.S. Elev (ft)	*	1993.82	*	Reach Len. (ft)	*	*100.00*	*	*100.00*	*	*100.00*	*
* Crit W.S. (ft)	*		*	Flow Area (sq ft)	*		*	122.03	*		*
* E.G. Slope (ft/ft)	*	0.003777	*	Area (sq ft)	*		*	122.03	*		*
* Q Total (cfs)	*	706.00	*	Flow (cfs)	*		*	706.00	*		*
* Top Width (ft)	*	60.75	*	Top Width (ft)	*		*	60.75	*		*
* Vel Total (ft/s)	*	5.79	*	Avg. Vel. (ft/s)	*		*	5.79	*		*
* Max Chl Dpth (ft)	*	2.82	*	Hydr. Depth (ft)	*		*	2.01	*		*
* Conv. Total (cfs)	*	11488.2	*	Conv. (cfs)	*		*	11488.2	*		*
* Length Wtd. (ft)	*	100.00	*	Wetted Per. (ft)	*		*	61.22	*		*
* Min Ch El (ft)	*	1991.00	*	Shear (lb/sq ft)	*		*	0.47	*		*
* Alpha	*	1.00	*	Stream Power (lb/ft s)	*		*	2.72	*		*
* Frctn Loss (ft)	*	0.53	*	Cum Volume (acre-ft)	*	1.41	*	16.75	*	2.94	*
* C & E Loss (ft)	*	0.03	*	Cum SA (acres)	*	0.92	*	10.98	*	2.75	*

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4100

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-51.399	1996.427	-46.993	1996	-40.939	1995.006	-39.23	1994.71	-35.93	1994
-34.554	1993.665	-31.618	1993	-31.477	1992.965	-27.178	1992	-17.524	1991.173
-15.291	1991	-11.585	1991	0	1991	15.311	1991	15.851	1991
16.893	1991	16.963	1991	17.157	1991	18.674	1991.215	24.453	1991.914
25.148	1992	28.088	1992.594	30.265	1993	32.588	1993.431	35.95	1994
41.121	1995.404	43.822	1996	45.171	1996.589	46.231	1997	48.383	1997.933
48.553	1998	50.735	1998.895	50.998	1999	51.294	1999.159	55.222	2001
56.176	2001.509	57.532	2002	58.616	2002.008	58.88	2002.01		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-51.399	.035	-51.399	.025	58.88	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-51.399	58.88	46.01	46.01	46.01	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	*	1993.78	*	Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (ft)	*	0.81	*	Wt. n-Val.	*		*	0.025	*		*
* W.S. Elev (ft)	*	1992.98	*	Reach Len. (ft)	*	46.01	*	46.01	*	46.01	*
* Crit W.S. (ft)	*	1992.98	*	Flow Area (sq ft)	*		*	98.05	*		*
* E.G. Slope (ft/ft)	*	0.007962	*	Area (sq ft)	*		*	98.05	*		*
* Q Total (cfs)	*	706.00	*	Flow (cfs)	*		*	706.00	*		*
* Top Width (ft)	*	61.67	*	Top Width (ft)	*		*	61.67	*		*
* Vel Total (ft/s)	*	7.20	*	Avg. Vel. (ft/s)	*		*	7.20	*		*
* Max Chl Dpth (ft)	*	1.98	*	Hydr. Depth (ft)	*		*	1.59	*		*
* Conv. Total (cfs)	*	7912.0	*	Conv. (cfs)	*		*	7912.0	*		*

```
* Length Wtd. (ft)      *   46.01  * Wetted Per. (ft)       *          *   61.98  *          *
* Min Ch El (ft)        * 1991.00  * Shear (lb/sq ft)       *          *    0.79  *          *
* Alpha                 *    1.00  * Stream Power (lb/ft s) *          *    5.66  *          *
* Frctn Loss (ft)       *    0.36  * Cum Volume (acre-ft)   *    1.41  *   16.50  *    2.94  *
* C & E Loss (ft)       *    0.00  * Cum SA (acres)         *    0.92  *   10.84  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4146.01

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 -50.8891995.242   -50.71995.232 -50.5891995.225 -48.446  1995.1 -48.437  1995.1
 -45.5471994.901 -42.6111994.641 -40.8221994.461 -37.114    1994 -32.7921993.033
 -32.663    1993 -32.4061992.937 -28.745    1992  -28.331991.951 -27.9231991.912
 -26.0641991.721 -19.321    1991 -14.8961990.744  -5.8861990.195  -1.6921989.963
       01989.874   1.781 1989.78   8.3371989.449  13.9291989.523  14.0221989.526
  14.272 1989.52  14.3951989.506  16.5531989.516  16.6141989.537  16.8131989.556
  17.5371989.598  17.6661989.613  21.085    1991  21.1321991.011  22.3171991.251
  25.997    1992  31.5851992.999  31.593    1993  31.5981993.001  31.6331993.007
  36.7781993.956  37.043    1994  38.5061994.336  45.843    1996  46.3111996.226
  48.011    1997  48.5621997.266   50.17    1998  50.9871998.377  52.381    1999
  54.0141999.745  56.725    2001  57.6662001.443  58.872    2002

Manning's n Values        num=      3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -50.889    .035 -50.889    .025  58.872    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -50.889  58.872             53.99   53.99   53.99            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)        * 1993.02  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)         *    0.85  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)        * 1992.17  * Reach Len. (ft)       *   53.99  *   53.99  *   53.99  *
* Crit W.S. (ft)        * 1992.17  * Flow Area (sq ft)     *          *   95.51  *          *
* E.G. Slope (ft/ft)    *0.007747  * Area (sq ft)          *          *   95.51  *          *
* Q Total (cfs)         *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)        *   56.35  * Top Width (ft)       *          *   56.35  *          *
* Vel Total (ft/s)      *    7.39  * Avg. Vel. (ft/s)     *          *    7.39  *          *
* Max Chl Dpth (ft)     *    2.72  * Hydr. Depth (ft)     *          *    1.69  *          *
* Conv. Total (cfs)     *  8021.4  * Conv. (cfs)          *          *  8021.4  *          *
* Length Wtd. (ft)      *   53.99  * Wetted Per. (ft)     *          *   56.87  *          *
* Min Ch El (ft)        * 1989.45  * Shear (lb/sq ft)     *          *    0.81  *          *
* Alpha                 *    1.00  * Stream Power (lb/ft s) *          *    6.00  *          *
* Frctn Loss (ft)       *    0.42  * Cum Volume (acre-ft)  *    1.41  *   16.40  *    2.94  *
* C & E Loss (ft)       *    0.00  * Cum SA (acres)        *    0.92  *   10.78  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4200

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 -50.8841994.595   -50.361994.574 -50.1661994.566 -49.042 1994.51 -48.0931994.463
 -47.8841994.451 -47.2391994.414 -45.0891994.291 -44.9461994.283 -44.9191994.282
 -40.431    1994 -39.3191993.819 -36.8691993.416 -34.443    1993 -32.2591992.491
 -30.279    1992 -28.8271991.604 -26.956    1991  -17.641989.126 -17.002    1989
 -16.915 1988.98 -16.6611988.926 -15.149 1988.64 -11.9031988.024 -11.898 1988.02
  -11.891988.018 -11.8521988.014 -11.8391988.014 -11.8341988.014  -11.831988.014
 -11.8261988.015 -11.8251988.017 -11.7691988.047 -11.5531988.009 -11.0521988.178
 -10.024    1989       0    1989   2.248    1989    2.71    1989   6.1621989.179
  12.5641989.717  16.3991990.005  20.2411990.299  23.6921990.554  27.932    1991
  31.4781991.639  33.564    1992  34.7151992.209  39.097    1993  40.3341993.229
  44.787    1994  47.4941994.858   50.69    1996  51.7751996.569  52.665    1997
  53.986 1997.68  54.697    1998  56.2011998.788  56.644    1999  59.3552000.205
  61.067    2001  62.3422001.458  62.396 2001.48  62.9962001.729  63.0372001.744
  63.2852001.828  63.3232001.835    63.52001.865  63.5352001.865  63.6742001.864
  64.327 2001.86  64.7342001.858

Manning's n Values        num=      3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -50.884    .035 -50.884    .025  64.734    .035
```

```
 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -50.884  64.734               100     100     100             .1       .3

 CROSS SECTION OUTPUT  Profile #PF 1
 ********************************************************************************************
 * E.G. Elev (ft)         * 1992.12  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.84  * Wt. n-Val.            *          *    0.025 *          *
 * W.S. Elev (ft)         * 1991.28  * Reach Len. (ft)       *  100.00  *   100.00 *   100.00 *
 * Crit W.S. (ft)         * 1991.28  * Flow Area (sq ft)     *          *    95.80 *          *
 * E.G. Slope (ft/ft)     *0.007885  * Area (sq ft)          *          *    95.80 *          *
 * Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   706.00 *          *
 * Top Width (ft)         *   57.29  * Top Width (ft)        *          *    57.29 *          *
 * Vel Total (ft/s)       *    7.37  * Avg. Vel. (ft/s)      *          *     7.37 *          *
 * Max Chl Dpth (ft)      *    3.27  * Hydr. Depth (ft)      *          *     1.67 *          *
 * Conv. Total (cfs)      *  7950.6  * Conv. (cfs)           *          *   7950.6 *          *
 * Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *    58.07 *          *
 * Min Ch El (ft)         * 1988.01  * Shear (lb/sq ft)      *          *     0.81 *          *
 * Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     5.99 *          *
 * Frctn Loss (ft)        *    0.14  * Cum Volume (acre-ft)  *    1.41  *    16.28 *    2.94  *
 * C & E Loss (ft)        *    0.22  * Cum SA (acres)        *    0.92  *    10.71 *    2.75  *
 ********************************************************************************************

 Warning: The energy equation could not be balanced within the specified number of iterations.  The
          program used critical depth for the water surface and continued on with the calculations.
 Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
          additional cross sections.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
          0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
 Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross
          section.  This may indicate the need for additional cross sections.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical
          depth, the calculated water surface came back below critical depth.  This indicates that there
          is not a valid subcritical answer.  The program defaulted to critical depth.

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                  RS: -4300

 INPUT
 Description:
 Station Elevation Data    num=      71
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ********************************************************************************
  -42.3471993.595 -40.1191993.819 -40.111    1994 -37.0911993.182 -36.407    1993
  -35.1331992.371 -34.261    1992 -33.6451991.762 -31.667    1991 -29.4911990.228
   -25.871989.098 -25.577    1989 -25.3711988.934 -22.866    1988 -21.9241987.645
  -20.511    1987 -17.1181986.378 -14.786    1986  -8.7731985.182  -8.234 1985.15
   -7.5031985.123  -5.1431985.062  -4.7391985.032  -2.5391984.833   -.5391984.638
        01984.578   1.1951984.445   4.232    1984   5.9941983.965    8.22    1984
   11.133    1984  11.406    1984  11.6721984.012  16.5031984.243   34.171984.933
   41.142 1985.23  42.8381985.272  48.2171985.385  53.7531985.485  56.7231985.558
   59.4341985.635  62.3241985.729  70.364    1986  71.5071986.263   72.181986.368
   75.632    1987  77.3861987.439  80.1341987.863  80.904    1988  82.6071988.418
   83.3691988.585  83.7561988.639   84.331988.732  85.521    1989  88.1741989.636
   93.747    1991  96.2841991.972  96.358    1992  96.4621992.039  98.748    1993
   99.6761993.362 101.364    1994 103.2151994.743 106.496    1996  109.011996.939
  109.172    1997  110.451997.465 111.816    1998 113.3091998.735 113.4431998.741
  113.4871998.736

 Manning's n Values        num=       3
      Sta   n Val     Sta   n Val     Sta   n Val
 ********************************************
  -42.347    .035 -40.111    .025 113.487    .035

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -40.111 113.487             99.05   99.05   99.05             .1       .3

 CROSS SECTION OUTPUT  Profile #PF 1
 ********************************************************************************************
 * E.G. Elev (ft)         * 1988.03  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.11  * Wt. n-Val.            *          *    0.025 *          *
 * W.S. Elev (ft)         * 1987.92  * Reach Len. (ft)       *   99.05  *    99.05 *   99.05  *
 * Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *   268.57 *          *
 * E.G. Slope (ft/ft)     *0.000550  * Area (sq ft)          *          *   268.57 *          *
 * Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   706.00 *          *
 * Top Width (ft)         *  103.09  * Top Width (ft)        *          *  103.09  *          *
 * Vel Total (ft/s)       *    2.63  * Avg. Vel. (ft/s)      *          *     2.63 *          *
 * Max Chl Dpth (ft)      *    3.95  * Hydr. Depth (ft)      *          *     2.61 *          *
 * Conv. Total (cfs)      * 30101.2  * Conv. (cfs)           *          * 30101.2  *          *
 * Length Wtd. (ft)       *   99.05  * Wetted Per. (ft)      *          *   103.71 *          *
 * Min Ch El (ft)         * 1983.97  * Shear (lb/sq ft)      *          *    0.09  *          *
 * Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.23  *          *
 * Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *    1.41  *   15.86  *    2.94  *
 * C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *   10.52  *    2.75  *
 ********************************************************************************************

 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
          0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                  RS: -4399.05

 INPUT
 Description:
```

```
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -29.5071991.274 -27.689 1991.06 -27.182    1991 -25.1291990.493 -20.6831989.379
 -19.8321989.158 -19.252    1989  -19.15 1988.97 -15.936    1988 -14.4911987.553
 -12.503    1987 -10.6391986.491  -8.944    1986  -4.7651985.295  -1.3651984.728
       01984.513   3.272    1984   4.697    1984   5.836    1984  10.0431983.886
  10.338    1984   10.61    1984  13.619    1984  15.893    1984  16.315    1984
  17.1291983.709  19.355    1983  23.9491982.372  26.848    1982  28.051    1982
  29.751    1982  40.9681982.771  44.105    1983  44.6271983.314  45.639    1984
  47.862    1984  48.038    1984  48.268    1984  48.588    1984  48.975    1984
  57.695    1984  57.714    1984  57.717    1984  57.731    1984  65.578    1984
  67.078    1984  67.962    1984  68.168    1984  95.1371985.501  97.5111985.624
 100.2621985.762 100.9861985.795 101.3731985.809 101.7831985.819 102.2781985.792
 102.3461985.794 104.822    1986 105.9921986.308 108.653    1987  112.281987.771
 113.346    1988 113.7161988.037 114.2921988.132 115.1811988.327 115.3881988.413
 115.4051988.419 115.7231988.522

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -29.507    .035 -29.507    .025 115.723    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -29.507 115.723              .95     .95     .95             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1987.98  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)       *    0.95  *    0.95  *    0.95  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  455.25  *          *
* E.G. Slope (ft/ft)     *0.000128  * Area (sq ft)          *          *  455.25  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  128.84  * Top Width (ft)        *          *  128.84  *          *
* Vel Total (ft/s)       *    1.55  * Avg. Vel. (ft/s)      *          *    1.55  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)      *          *    3.53  *          *
* Conv. Total (cfs)      * 62352.0  * Conv. (cfs)           *          * 62352.0  *          *
* Length Wtd. (ft)       *    0.95  * Wetted Per. (ft)      *          *  130.14  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)      *          *    0.03  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.04  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    1.41  *   15.04  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   10.26  *    2.75  *
*********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4400

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -29.353 1991.25 -27.9711991.087 -27.231    1991 -24.2321990.259 -19.204    1989
 -17.9521988.646 -15.809    1988 -15.1251987.788 -12.292    1987  -9.6361986.275
  -8.688    1986  -6.3491985.605  -4.4471985.288       0 1984.59   3.5271984.037
   3.6841984.011   3.753    1984   3.7821983.998  10.7021983.811  11.195    1984
  11.646    1984  12.952    1984  15.568    1984  16.054    1984  16.4091983.873
  19.152    1983   24.811982.226  26.573    1982  27.304    1982  29.935    1982
  38.4681982.587  44.134    1983  45.0781983.568  45.716    1984  47.118    1984
  47.636    1984  47.817    1984  56.489    1984  58.367    1984  65.199    1984
  65.452    1984  67.231    1984  67.701    1984  88.9621985.183  92.8481985.384
  97.351 1985.61  98.5361985.665  99.1691985.688  99.8411985.704 100.6511985.659
 100.7621985.663 104.816    1986 105.5271986.187 108.652    1987 112.9131987.906
 113.353    1988 113.5051988.015 114.0941988.112 115.0041988.312 115.215  1988.4
 115.2321988.405 115.5621988.513

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -29.353    .035 -29.353    .025 115.562    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -29.353 115.562             23.9    23.9    23.9             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1987.98  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)       *   23.90  *   23.90  *   23.90  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  454.75  *          *
* E.G. Slope (ft/ft)     *0.000129  * Area (sq ft)          *          *  454.75  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  128.72  * Top Width (ft)        *          *  128.72  *          *
* Vel Total (ft/s)       *    1.55  * Avg. Vel. (ft/s)      *          *    1.55  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)      *          *    3.53  *          *
* Conv. Total (cfs)      * 62278.4  * Conv. (cfs)           *          * 62278.4  *          *
* Length Wtd. (ft)       *   23.90  * Wetted Per. (ft)      *          *  130.02  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)      *          *    0.03  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.04  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    1.41  *   15.03  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   10.26  *    2.75  *
*********************************************************************************************

CROSS SECTION
```

```
RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -4423.9

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -26.425 1990.43 -26.4131990.429 -26.4061990.428 -26.3731990.423 -26.2961990.413
 -24.5421990.149 -23.6661989.999 -23.2191989.887 -20.019    1989 -17.5241988.389
 -15.918    1988 -14.4261987.631 -11.845    1987  -8.7681986.256  -7.714    1986
       01984.731    .9761984.571   4.093    1984  17.7951983.003  17.833    1983
  22.6491982.396  23.9361982.292  25.0911982.227  26.1161982.113  26.6021982.138
  28.747    1982  29.666    1982   30.42    1982  32.966    1982  34.554    1982
  35.298    1982  38.7861982.266  38.8871982.206  39.9261982.169  40.4961982.364
  41.0081982.412  41.3741982.486  42.539    1983  43.9961983.649  44.9531983.705
  45.6811983.724  46.1781983.702  47.2271983.931  47.5891983.907  47.6061983.872
  60.5571983.843  61.6411983.886  62.3461983.906  62.4461983.894  66.7131983.917
  68.178 1983.97  69.109    1984  70.417    1984  73.514    1984  76.114    1984
   78.37    1984  79.475    1984  79.731    1984  96.3281985.637 100.341    1986
 103.3251986.509 105.809    1987 108.4071987.527 110.706    1988 110.8541988.062
 110.8561988.063 111.5091988.274

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -26.425    .035 -26.425    .025 111.509    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -26.425 111.509             76.1    76.1    76.1             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1987.98  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)      *   76.10  *   76.10  *   76.10  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  465.12  *          *
* E.G. Slope (ft/ft)     *0.000116  * Area (sq ft)         *          *  465.12  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *  126.11  * Top Width (ft)       *          *  126.11  *          *
* Vel Total (ft/s)       *    1.52  * Avg. Vel. (ft/s)     *          *    1.52  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)     *          *    3.69  *          *
* Conv. Total (cfs)      * 65597.5  * Conv. (cfs)          *          * 65597.5  *          *
* Length Wtd. (ft)       *   76.10  * Wetted Per. (ft)     *          *  127.25  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)     *          *    0.03  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.04  *          *
* Frctn Loss (ft)        *    0.01  * Cum Volume (acre-ft)  *    1.41  *   14.78  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *   10.19  *    2.75  *
*************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -4500

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -37.587 1989.13 -37.4221989.124 -37.1691989.117  -34.821989.041 -33.559    1989
 -32.0751988.556 -30.315    1988 -27.0811987.113   -26.7    1987 -26.3891986.919
 -23.7021986.421 -21.784 1986.07 -21.357    1986 -13.4951984.698 -11.8541984.342
 -11.4931984.268 -10.196    1984  -4.6471983.558       01983.954      .54    1984
  11.133 1983.33  14.019    1983  17.013    1983  18.577    1983  20.847    1983
  26.938    1983  28.8071982.614  31.609    1982  36.731    1982  51.107    1982
  51.2041982.038  52.912    1983  61.1661983.224  79.9591983.733  82.6621983.803
  91.176    1984  99.4211985.303 104.077    1986 108.0991986.764 109.114    1987
 110.1921987.147 112.1831987.469 113.0471987.657 113.3541987.743 114.1141987.829
 114.1581987.842

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -37.587    .035 -37.587    .025 114.158    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -37.587 114.158            28.19   28.19   28.19             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1987.97  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.02  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 1987.94  * Reach Len. (ft)      *   28.19  *   28.19  *   28.19  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  577.97  *          *
* E.G. Slope (ft/ft)     *0.000067  * Area (sq ft)         *          *  577.97  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *  144.27  * Top Width (ft)       *          *  144.27  *          *
* Vel Total (ft/s)       *    1.22  * Avg. Vel. (ft/s)     *          *    1.22  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)     *          *    4.01  *          *
* Conv. Total (cfs)      * 86140.7  * Conv. (cfs)          *          * 86140.7  *          *
* Length Wtd. (ft)       *   28.19  * Wetted Per. (ft)     *          *  145.56  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)     *          *    0.02  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.02  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    1.41  *   13.86  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *    9.95  *    2.75  *
*************************************************************************************************

Warning: The cross-section end points had to be extended vertically for the computed water surface.
```

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4528.19

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-66.006	1989.243	-65.744	1989.232	-65.714	1989.231	-64.209	1989.178	-63.921	1989.168
-60.076	1989.07	-57.33	1989	-55.265	1988.458	-54.349	1988.198	-53.557	1988
-52.153	1987.604	-49.884	1987	-47.481	1986.541	-44.501	1986	-35.333	1984.543
-31.575	1984	-31.457	1983.988	-28.531	1983.726	-27.647	1983.647	-25.951	1983.433
-21.639	1983.175	-20.197	1983.071	-19.803	1983.038	-19.347	1983	-18.38	1983
-17.932	1983	-16.146	1983.565	-14.585	1984	-13.521	1984	-12.784	1984
-9.948	1984	-8.57	1984	-7.92	1984	0	1983.559	3.903	1983.342
5.096	1983.28	7.245	1983.182	8.816	1983	15.549	1983	16.713	1983
18.415	1983	18.653	1983	19.382	1982.842	22.829	1982	27.866	1982
35.417	1982	43.447	1982	43.469	1982	45.202	1982.183	45.658	1982.197
46.649	1982.211	47.607	1982.241	49.977	1982.325	52.677	1982.431	59.226	1982.703
66.19	1983	67.771	1983.123	83.205	1984	85.667	1984.362	90.958	1985.047
94.651	1985.565	97.424	1985.935	97.881	1986	98.664	1986.133	103.406	1987
104.911	1987.283	105.685	1987.468	107.536	1987.655	107.639	1987.682		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-66.006	.035	-66.006	.025	107.639	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-66.006	107.639	35.67	35.67	35.67	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1987.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.025	
W.S. Elev (ft)	1987.95	Reach Len. (ft)	35.67	35.67	35.67
Crit W.S. (ft)		Flow Area (sq ft)		670.86	
E.G. Slope (ft/ft)	0.000047	Area (sq ft)		670.86	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	161.01	Top Width (ft)		161.01	
Vel Total (ft/s)	1.05	Avg. Vel. (ft/s)		1.05	
Max Chl Dpth (ft)	5.95	Hydr. Depth (ft)		4.17	
Conv. Total (cfs)	102687.1	Conv. (cfs)		102687.1	
Length Wtd. (ft)	35.67	Wetted Per. (ft)		162.33	
Min Ch El (ft)	1982.00	Shear (lb/sq ft)		0.01	
Alpha	1.00	Stream Power (lb/ft s)		0.01	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	1.41	13.46	2.94
C & E Loss (ft)	0.00	Cum SA (acres)	0.92	9.85	2.75

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -4563.86

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-78.266	1989.083	-76.804	1989.075	-76.732	1989.069	-76.384	1989.041	-76.361	1989.04
-76.292	1989.039	-76.289	1989.039	-76.212	1989.035	-75.488	1989	-75.432	1988.989
-72.117	1988.4	-69.602	1988	-64.106	1987.242	-62.066	1987	-60.265	1986.709
-57.643	1986.304	-56.03	1986	-52.866	1985.512	-50.343	1985.17	-46.461	1984.644
-41.129	1984	-33.947	1983.342	-32.143	1983.138	-30.799	1983	-30.056	1982.945
-28.428	1982.841	-26.684	1982.741	-25.969	1982.695	-23.971	1982.599	-21.344	1982.59
-21.309	1982.618	-20.979	1982.646	-17.869	1982.763	-17.222	1982.826	-16.223	1982.864
-13.928	1983	-12.211	1983.061	-11.824	1983.059	-9.567	1983.008	-9.257	1983
-7.111	1982.648	-4.323	1982.001	-2.566	1982.129	-1.133	1982.208	0	1982.297
.581	1982.343	.791	1982.399	14.053	1982.313	14.475	1982.297	15.517	1982.274
19.296	1982.131	21.671	1982.053	23.261	1982.008	24.275	1982.049	27.248	1982.252
30.772	1982.476	35.298	1982.302	35.453	1982.258	35.888	1982.222	36.5	1982.203
37.104	1982.211	42.424	1983	44.119	1983.305	45.741	1983.641	47.036	1983.909
47.369	1984	52.907	1985.018	54.967	1985.306	61.091	1986	69.083	1986.607
72.517	1987	72.991	1987						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-78.266	.035	-78.266	.025	72.991	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-78.266	72.991	32.82	32.82	32.82	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1987.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.025	
W.S. Elev (ft)	1987.94	Reach Len. (ft)	32.82	32.82	32.82
Crit W.S. (ft)		Flow Area (sq ft)		580.65	
E.G. Slope (ft/ft)	0.000065	Area (sq ft)		580.65	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	142.15	Top Width (ft)		142.15	

```
* Vel Total (ft/s)       *    1.22  * Avg. Vel. (ft/s)       *          *    1.22  *          *
* Max Chl Dpth (ft)      *    5.94  * Hydr. Depth (ft)       *          *    4.08  *          *
* Conv. Total (cfs)      * 87448.7  * Conv. (cfs)            *          * 87448.7  *          *
* Length Wtd. (ft)       *   32.82  * Wetted Per. (ft)       *          *  143.96  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)       *          *    0.02  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.02  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)   *    1.41  *   12.95  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.92  *    9.73  *    2.75  *
*********************************************************************************************

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -4596.68

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -57.0931988.712 -56.858  1988.7 -56.4961988.686  -56.061988.673 -55.5911988.661
 -54.5441988.515 -51.554 1988.08 -50.829    1988 -49.9991987.877 -49.7741987.851
  -49.211987.815 -48.9131987.777 -46.9491987.456 -43.942    1987 -41.8141986.721
 -36.557    1986 -34.0441984.822 -32.046    1984 -30.3931983.234 -29.883    1983
 -29.6661982.897 -29.0911982.645 -27.8451982.118 -27.483    1982 -26.0331982.275
 -24.3991982.498 -22.535 1982.69 -21.9431982.728 -21.6291982.751 -21.3651982.768
 -20.9581982.798 -20.6251982.816 -20.2281982.848 -20.1791982.861 -17.1041982.841
 -17.0061982.837 -16.7641982.832 -15.8881982.798 -15.337 1982.78 -14.969 1982.77
 -13.731 1982.75 -13.1851982.738 -11.9451982.704  -11.55 1982.69  -6.7731982.587
       01982.449    .1271982.446    1.31982.425   3.5671982.392   4.5981982.375
   5.5731982.355   7.7061982.304   10.621982.244  19.3071982.082  23.463    1982
  26.073 1982.63  28.595    1983  28.6071983.005   28.621983.013  30.324    1984
  33.4831985.432   34.15 1985.73  34.3221985.788  34.923    1986  37.5661986.842
  38.041    1987  39.581    1987  40.588    1987   41.02    1987  42.389    1987
  43.226    1987  43.681    1987  43.894    1987  44.059    1987  44.334    1987
  44.479    1987  44.628    1987

Manning's n Values        num=      3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -57.093    .035 -57.093    .025  44.628    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -57.093  44.628             3.32    3.32    3.32            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1987.96  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.05  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1987.90  * Reach Len. (ft)       *    3.32  *     3.32  *    3.32  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  385.62  *          *
* E.G. Slope (ft/ft)     *0.000152  * Area (sq ft)          *          *  385.62  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   94.80  * Top Width (ft)        *          *   94.80  *          *
* Vel Total (ft/s)       *    1.83  * Avg. Vel. (ft/s)      *          *    1.83  *          *
* Max Chl Dpth (ft)      *    5.90  * Hydr. Depth (ft)      *          *    4.07  *          *
* Conv. Total (cfs)      * 57241.2  * Conv. (cfs)           *          * 57241.2  *          *
* Length Wtd. (ft)       *    3.32  * Wetted Per. (ft)      *          *   97.70  *          *
* Min Ch El (ft)         * 1982.00  * Shear (lb/sq ft)      *          *    0.04  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.07  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    1.41  *   12.58  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *    9.64  *    2.75  *
*********************************************************************************************

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -4600

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -53.3111988.592 -52.9751988.575 -52.4581988.556 -51.8341988.537 -51.163 1988.52
 -49.6631988.312 -47.503    1988 -43.178 1987.36 -41.077    1987 -36.3791986.072
 -36.163    1986  -33.031984.499 -32.4591984.248 -32.018    1984 -30.4731983.276
  -29.89    1983 -29.5971982.866 -27.958    1982 -27.7721982.117 -27.3431982.283
 -26.1741982.505  -25.061982.658 -23.7911982.788 -23.3891982.815 -23.1761982.831
 -22.9971982.842 -22.7211982.863 -22.4951982.875 -22.2261982.896 -22.1931982.905
 -20.1141982.892 -20.0481982.889 -19.8851982.886 -19.2941982.863 -18.9241982.851
 -18.6761982.844 -17.8441982.831 -17.4771982.822 -16.646  1982.8 -16.381 1982.79
 -13.1921982.721  -8.6221982.628  -7.8481982.615  -6.3581982.593  -5.6821982.582
  -5.0431982.568  -3.6491982.535   -1.751982.496       01982.464   3.8691982.392
  17.5221982.122  23.809    1982  24.5441982.134   29.24    1983  30.7421983.598
  31.494    1984  32.7081984.986  34.624    1986   36.321986.547  36.8621986.635
  37.3871986.634  38.0811986.538   38.531986.547  39.3371986.639  41.4571986.982
  41.558    1987   41.56    1987

Manning's n Values        num=      3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
```

```
 -53.311    .035 -53.311    .025   41.56    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -53.311   41.56             7.44    7.44    7.44            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)          * 1987.96  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.            *          *    0.025 *          *
* W.S. Elev (ft)          * 1987.90  * Reach Len. (ft)       *    7.44  *    7.44  *    7.44  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *          *  379.53  *          *
* E.G. Slope (ft/ft)      *0.000147  * Area (sq ft)          *          *  379.53  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   88.39  * Top Width (ft)        *          *   88.39  *          *
* Vel Total (ft/s)        *    1.86  * Avg. Vel. (ft/s)      *          *    1.86  *          *
* Max Chl Dpth (ft)       *    5.90  * Hydr. Depth (ft)      *          *    4.29  *          *
* Conv. Total (cfs)       * 58211.2  * Conv. (cfs)           *          * 58211.2  *          *
* Length Wtd. (ft)        *    7.44  * Wetted Per. (ft)      *          *   91.55  *          *
* Min Ch El (ft)          * 1982.00  * Shear (lb/sq ft)      *          *    0.04  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    0.07  *          *
* Frctn Loss (ft)         *    0.00  * Cum Volume (acre-ft)  *    1.41  *   12.55  *    2.94  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)        *    0.92  *    9.63  *    2.75  *
*********************************************************************************************

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4607.48

INPUT
Description:
Station Elevation Data    num=       4
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************
  -47.39    1987  -47.39 1981.83   -7.64 1981.83   -7.64    1987

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
  -47.39    .035  -47.39    .013   -7.64    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -47.39   -7.64              227     227     227            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)          * 1987.95  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.14  * Wt. n-Val.            *          *    0.013 *          *
* W.S. Elev (ft)          * 1987.81  * Reach Len. (ft)       *  227.00  *  227.00  *  227.00  *
* Crit W.S. (ft)          * 1983.96  * Flow Area (sq ft)     *          *  237.65  *          *
* E.G. Slope (ft/ft)      *0.000088  * Area (sq ft)          *          *  237.65  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   39.75  * Top Width (ft)        *          *   39.75  *          *
* Vel Total (ft/s)        *    2.97  * Avg. Vel. (ft/s)      *          *    2.97  *          *
* Max Chl Dpth (ft)       *    5.98  * Hydr. Depth (ft)      *          *    5.98  *          *
* Conv. Total (cfs)       * 75087.8  * Conv. (cfs)           *          * 75087.8  *          *
* Length Wtd. (ft)        *  227.00  * Wetted Per. (ft)      *          *   51.71  *          *
* Min Ch El (ft)          * 1981.83  * Shear (lb/sq ft)      *          *    0.03  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    0.08  *          *
* Frctn Loss (ft)         *          * Cum Volume (acre-ft)  *    1.41  *   12.50  *    2.94  *
* C & E Loss (ft)         *          * Cum SA (acres)        *    0.92  *    9.62  *    2.75  *
*********************************************************************************************

CULVERT


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4608.44

INPUT
Description:
Distance from Upstream XS =       1
Deck/Roadway Width        =     225
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
***********************************************
  -47.39    1988    1987   -7.64    1988    1987

Upstream Bridge Cross Section Data
Station Elevation Data    num=       4
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************
  -47.39    1987  -47.39 1981.83   -7.64 1981.83   -7.64    1987

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
  -47.39    .035  -47.39    .013   -7.64    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
        -47.39   -7.64             .1       .3

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
```

```
**********************************************
   56.18    1988    1983   95.94    1988    1983

Downstream Bridge Cross Section Data
Station Elevation Data    num=     211
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001990.137-399.6361990.136-399.5351990.136-399.2651990.138-399.0771990.139
 -397.771990.152-390.2471990.141-383.3391990.136-379.7831990.136-378.6481990.137
-377.9781990.138-375.7731990.142-375.7421990.142-375.7361990.143-375.6241990.143
-375.2821990.144-374.7761990.146-370.0061990.165-369.9081990.166-369.4971990.166
-368.7911990.168-368.5561990.169-368.5461990.169 -368.491990.169-368.4481990.168
-368.2031990.168 -367.621990.168-367.6171990.168-367.5831990.167-367.5721990.167
-367.4211990.166-367.0991990.164-367.0981990.164-367.0691990.163-367.0641990.163
-366.9351990.161-366.6671990.157-366.5391990.155-365.9441990.149-364.7921990.136
-363.501 1990.12-353.807    1990-352.466    1990-348.345    1990-348.339    1990
-348.1671989.991-348.0651989.979 -339.56    1989-339.1261988.959-338.7631988.886
-336.3941988.762 -335.351988.697-334.7881988.639-333.8071988.605-332.2841988.611
-331.2631988.616-329.8011988.625-327.679 1988.64-324.8411988.658 -321.331988.674
-317.3851988.682-313.655 1988.68 -310.891988.666-309.5551988.642-309.2421988.616
-308.7941988.579-305.1131988.673-294.3621988.953-292.339    1989-287.6181989.287
-284.6261989.442-283.2681989.489-282.503  1989.5-281.6291989.508-264.265    1990
-257.9321990.378 -249.581990.876-247.2221990.927-243.0771990.996-242.784    1991
 -240.19    1991-238.039    1991-237.8741990.964-235.2811990.953-232.6651990.948
-229.9531990.951-227.1251990.961-226.657    1991-221.382    1991-221.032    1991
-220.338 1990.96 -219.86 1990.97-208.4451990.622 -205.98 1990.48 -173.671988.615
-164.1651988.169-163.9631988.122 -163.811988.148-163.792 1988.15-163.008    1988
-162.6281987.913 -159.13    1987-155.1211986.188-154.233    1986-146.1651985.122
-145.129    1985-145.0071984.992-143.8251984.884-143.2261984.789-142.8591984.617
-142.671 1984.53-142.368 1984.51-141.6361984.509-140.1871984.536-133.6741984.696
-120.978    1985-117.8711985.072-108.2791985.287-104.032 1985.38-103.0881985.396
-102.5181985.402-102.3781985.403 -102.351985.403-101.9581985.406-101.9471985.406
-101.8311985.406-101.8291985.406-101.8061985.406-101.4641985.407-101.4521985.407
-101.2931985.406-101.2911985.406-101.2591985.406-100.8111985.406-100.7761985.406
-100.1771985.406 -100.171985.406-100.0481985.406 -98.5651985.407 -93.2041985.411
 -91.8331985.412 -87.4361985.414  -82.911985.417 -81.5421985.417 -81.4681985.417
 -81.2291985.417 -81.1951985.417 -81.1191985.417 -79.5481985.417 -78.5911985.417
 -76.0691985.417 -72.1351985.413 -69.5111985.407 -66.2271985.394 -65.5811985.388
 -64.2351985.366 -63.1731985.355  -61.791985.345 -61.2611985.338 -58.429 1985.29
 -57.7561985.281 -56.2131985.267 -54.4591985.259 -50.5751985.283 -48.0241985.274
 -46.2371985.271 -44.2781985.273 -41.6861985.279 -40.8971985.279 -39.3391985.273
 -38.1981985.265 -33.758  1985.2 -24.605 1985.07  -21.47    1985 -19.9091984.631
 -18.7541984.371 -18.2481984.257 -18.2061984.251 -16.649    1984  48.6351983.683
   48.721983.675  48.768 1983.67  48.9541983.654  49.1911983.634  50.2391983.562
  50.8741983.519  52.0461983.446  55.1051983.257  55.1471983.255  55.1551983.254
  55.3121983.244   56.18    1983   56.18  1979.5   95.94  1979.5   95.94    1983
  99.8141983.642 101.8241983.709 103.852 1983.73 108.3081983.774 108.6061983.785
 115.8181983.844 116.0741983.846 116.0761983.869 120.218 1983.93 120.2571983.929
 127.4951983.943 127.7111983.943 134.3671983.943 134.4621983.943 134.6161983.944
     1401983.937

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
    -400    .035   56.18    .013   95.94    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
         56.18   95.94            .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1       Ellipse    2.42    3.75
FHWA Chart # 29- Horizontal Ellipse; Concrete
FHWA Scale # 1 - Square edge with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  1     226     .013     .013        0                   .5               1
Number of Barrels =  9
Upstream   Elevation =  1981.83
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.
  -45.19  -40.77  -36.35  -31.93  -27.51  -23.09  -18.67  -14.25   -9.83
Downstream Elevation =  1979.5
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.
   58.38    62.8   67.22   71.64   76.06   80.48    84.9   89.32   93.74

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1
**********************************************************************
* Q Culv Group (cfs)     *  706.00  * Culv Full Len (ft)     *  226.00  *
* # Barrels              *       9  * Culv Vel US (ft/s)     *   11.01  *
* Q Barrel (cfs)         *   78.44  * Culv Vel DS (ft/s)     *   11.01  *
* E.G. US. (ft)          * 1987.95  * Culv Inv El Up (ft)    * 1981.83  *
* W.S. US. (ft)          * 1987.81  * Culv Inv El Dn (ft)    * 1979.50  *
* E.G. DS (ft)           * 1982.71  * Culv Frctn Ls (ft)     *    3.21  *
* W.S. DS (ft)           * 1981.63  * Culv Exit Loss (ft)    *    1.09  *
* Delta EG (ft)          *    5.24  * Culv Entr Loss (ft)    *    0.94  *
* Delta WS (ft)          *    6.18  * Q Weir (cfs)           *          *
* E.G. IC (ft)           * 1988.26  * Weir Sta Lft (ft)      *          *
* E.G. OC (ft)           * 1987.95  * Weir Sta Rgt (ft)      *          *
* Culvert Control        *   Inlet  * Weir Submerg           *          *
```

```
* Culv WS Inlet (ft)     * 1984.25  * Weir Max Depth (ft)    *          *
* Culv WS Outlet (ft)    * 1981.92  * Weir Avg Depth (ft)    *          *
* Culv Nml Depth (ft)    *    2.42  * Weir Flow Area (sq ft) *          *
* Culv Crt Depth (ft)    *    2.42  * Min El Weir Flow (ft)  * 1988.01  *
*************************************************************************

Note:    The normal depth exceeds the height of the culvert.  The program assumes that the normal
         depth is equal to the height of the culvert.
Note:    Culvert critical depth exceeds the height of the culvert.
Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note:    The culvert inlet is submerged and the culvert flows full over part or all of its length.  Therefore,
         the culvert inlet equations are not valid and the supercritical result has been discarded.  The
         outlet answer will be used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4834.44

INPUT
Description:
Station Elevation Data    num=     211
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001990.137-399.6361990.136-399.5351990.136-399.2651990.138-399.0771990.139
 -397.771990.152-390.2471990.141-383.3391990.136-379.7831990.136-378.6481990.137
-377.9781990.138-375.7731990.142-375.7421990.142-375.7361990.143-375.6241990.143
-375.2821990.144-374.7761990.146-370.0061990.165-369.9081990.166-369.4971990.166
-368.7911990.168-368.5561990.169-368.5461990.169 -368.491990.169-368.4481990.168
-368.2031990.168 -367.621990.168-367.6171990.168-367.5831990.167-367.5721990.167
-367.4211990.166-367.0991990.164-367.0981990.164-367.0691990.163-367.0641990.163
-366.9351990.161-366.6671990.157-366.5391990.155-365.9441990.149-364.7921990.136
-363.501 1990.12-353.807    1990-352.466    1990-348.345    1990-348.339    1990
-348.1671989.991-348.0651989.979 -339.56    1989-339.1261988.959-338.7631988.886
-336.3941988.762 -335.351988.697-334.7881988.639-333.8071988.605-332.2841988.611
-331.2631988.616-329.8011988.625-327.679 1988.64-324.8411988.658 -321.331988.674
-317.3851988.682-313.655 1988.68 -310.891988.666-309.5551988.642-309.2421988.616
-308.7941988.579-305.1131988.673-294.3621988.953-292.339    1989-287.6181989.287
-284.6261989.442-283.2681989.489-282.503  1989.5-281.6291989.508-264.265    1990
-257.9321990.378 -249.581990.876-247.2221990.927-243.0771990.996-242.784    1991
 -240.19    1991-238.039    1991-237.8741990.964-235.2811990.953-232.6651990.948
-229.9531990.951-227.1251990.961-226.657    1991-221.382    1991-221.032    1991
-220.338 1990.96 -219.86 1990.97-208.4451990.622 -205.98 1990.48 -173.671988.615
-164.1651988.169-163.9631988.122 -163.811988.148-163.792 1988.15-163.008    1988
-162.6281987.913 -159.13    1987-155.1211986.188-154.233    1986-146.1651985.122
-145.129    1985-145.0071984.992-143.8251984.884-143.2261984.789-142.8591984.617
-142.671 1984.53-142.368 1984.51-141.6361984.509-140.1871984.536-133.6741984.696
-120.978    1985-117.8711985.072-108.2791985.287-104.032 1985.38-103.0881985.396
-102.5181985.402-102.3781985.403 -102.351985.403-101.9581985.406-101.9471985.406
-101.8311985.406-101.8291985.406-101.8061985.406-101.4641985.407-101.4521985.407
-101.2931985.406-101.2911985.406-101.2591985.406-100.8111985.406-100.7761985.406
-100.1771985.406 -100.171985.406-100.0481985.406 -98.5651985.407 -93.2041985.411
 -91.8331985.412 -87.4361985.414  -82.911985.417 -81.5421985.417 -81.4681985.417
 -81.2291985.417 -81.1951985.417 -81.1191985.417 -79.5481985.417 -78.5911985.417
 -76.0691985.417 -72.1351985.413 -69.5111985.407 -66.2271985.394 -65.5811985.388
 -64.2351985.366 -63.1731985.355  -61.791985.345 -61.2611985.338 -58.429 1985.29
 -57.7561985.281 -56.2131985.267 -54.4591985.259 -50.5751985.283 -48.0241985.274
 -46.2371985.271 -44.2781985.273 -41.6861985.279 -40.8971985.279 -39.3391985.273
 -38.1981985.265 -33.758  1985.2 -24.605 1985.07  -21.47    1985 -19.9091984.631
 -18.7541984.371 -18.2481984.257 -18.2061984.251 -16.649    1984  48.6351983.683
   48.721983.675  48.768 1983.67  48.9541983.654  49.1911983.634  50.2391983.562
  50.8741983.519  52.0461983.446  55.1051983.257  55.1471983.255  55.1551983.254
  55.3121983.244   56.18    1983   56.18  1979.5   95.94  1979.5   95.94    1983
  99.8141983.642 101.8241983.709 103.852 1983.73 108.3081983.774 108.6061983.785
 115.8181983.844 116.0741983.846 116.0761983.869 120.218 1983.93 120.2571983.929
 127.4951983.943 127.7111983.943 134.3671983.943 134.4621983.943 134.6161983.944
    1401983.937

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    -400    .035   56.18    .013   95.94    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          56.18   95.94             60.97   60.97   60.97            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1982.71  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.08  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1981.63  * Reach Len. (ft)        *   60.97  *   60.97  *   60.97  *
* Crit W.S. (ft)         * 1981.63  * Flow Area (sq ft)      *          *   84.76  *          *
* E.G. Slope (ft/ft)     *0.002217  * Area (sq ft)           *          *   84.76  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   39.76  * Top Width (ft)         *          *   39.76  *          *
* Vel Total (ft/s)       *    8.33  * Avg. Vel. (ft/s)       *          *    8.33  *          *
* Max Chl Dpth (ft)      *    2.13  * Hydr. Depth (ft)       *          *    2.13  *          *
* Conv. Total (cfs)      * 14993.0  * Conv. (cfs)           *          * 14993.0  *          *
* Length Wtd. (ft)       *   60.97  * Wetted Per. (ft)       *          *   44.02  *          *
* Min Ch El (ft)         * 1979.50  * Shear (lb/sq ft)      *          *    0.27  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.22  *          *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)   *    1.41  *   11.66  *    2.94  *
* C & E Loss (ft)        *    0.22  * Cum SA (acres)         *    0.92  *    9.41  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
```

```
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -4895.41

INPUT
Description:
Station Elevation Data    num=     261
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001989.153-389.831    1989-388.3961988.844-387.4381988.756 -386.63 1988.74
-386.3521988.717-386.2351988.708-380.7281988.263-379.4011988.399-378.0571988.315
-376.6741988.229-375.6961988.173-375.4591988.164-375.2191988.159-375.1551988.157
-374.8531988.131-374.6451988.112-374.6031988.103-374.3271988.089-374.2051988.081
-374.1391988.074-374.025 1988.07-373.8481988.071-373.7291988.072-373.5581988.073
-373.3111988.075-372.9811988.077-372.5721988.079-372.1121988.079-371.6771988.079
-371.3551988.078  -371.21988.075-371.1631988.072-371.1111988.067-370.6821988.078
 -369.431988.111 -368.811988.125 -368.271988.136-367.891 1988.14-367.6611988.142
-367.3911988.143    -3661988.167-365.737 1988.17-365.5311988.172-365.2261988.174
-364.6761988.177-363.8371988.184-362.6631988.195-358.396 1988.27 -358.381988.278
-356.5181988.328-355.9231988.347-325.257    1989-305.5011989.401-302.4011989.415
-301.4361989.423-300.4161989.437-299.3181989.462-298.059  1989.5-296.5111989.556
 -287.791989.908-287.3721989.925-287.0691989.931-286.4191989.944-286.3911989.945
-286.2691989.946-285.899 1989.95-285.7541989.953-284.3821989.838-284.2011989.823
-282.8451989.759-280.7631989.719 -277.711989.709-273.9541989.724 -269.991989.754
-266.3541989.795-262.928 1989.85-259.2711989.931-256.689    1990-254.0371990.071
 -253.811990.076 -215.06    1991-214.5571990.751-211.1511989.065-206.666    1988
 -206.051987.833-203.457    1987-202.2941986.692-199.928    1986-197.0361985.197
-196.378    1985-195.3591984.886-187.871    1984-187.153    1984-183.495    1984
-169.6771984.297-169.0511984.309-166.5321984.355-162.2711984.428-160.8951984.455
 -159.141984.493-157.201 1984.54-153.0111984.643-151.9771984.664-151.6421984.674
-150.6391984.715-149.8271984.728-149.5031984.733-148.4641984.739-147.2471984.741
-145.9631984.739-143.5591984.735-141.4951984.731-138.9011984.727-138.0321984.724
-137.0611984.717 -134.58 1984.69-133.1921984.677-131.9391984.671-131.4611984.672
-130.4831984.671-129.688 1984.67 -127.241984.672-125.9971984.676-125.5441984.673
-124.5121984.667-124.3971984.666-124.2631984.666-122.901 1984.66-119.5571984.642
-118.9711984.638-111.0091984.647-107.4751984.651-105.4471984.643  -99.031984.648
 -98.6431984.648 -93.0291984.648 -91.6051984.653 -89.836 1984.65 -87.1611984.646
 -84.2991984.635 -83.5751984.659 -83.4611984.688 -79.2161984.733 -78.1231984.725
 -74.819  1984.7 -73.0641984.691 -71.734 1984.69 -70.8521984.695 -70.2561984.701
  -69.781984.703 -69.3961984.703 -68.9911984.703 -68.9531984.704  -65.891984.704
 -65.6791984.701 -65.3671984.699 -64.9411984.697 -63.8251984.693   -62.61984.687
  -61.841984.682 -61.654 1984.68 -59.2821984.626 -58.2091984.598 -55.6251984.539
 -53.2091984.475 -50.3281984.399 -44.359 1984.24 -43.3681984.213 -35.955    1984
 -34.3781983.376 -33.346    1983 -30.9221982.141 -30.577    1982 -30.5241981.981
 -29.8391981.738 -28.2971981.165 -27.765    1981 -26.6351980.664 -24.566    1980
 -22.8231979.547 -20.877    1979 -19.2911978.583 -17.234    1978  -9.1421977.301
  -6.221    1977  -4.6251976.615  -2.024    1976       01975.746   3.5061975.306
   5.1131975.017   5.215    1975   8.461    1975   9.218    1975  11.6711975.176
  12.1671975.234  12.2331975.231  12.2581975.209  13.9451975.194   15.21975.283
  15.3531975.306  17.9041975.535  22.861    1976  26.294    1976  26.904    1976
  27.6531975.688  29.078    1975  29.294    1975  29.336    1975  29.385    1975
  30.482    1975  31.8761975.522  33.229    1976  34.8121976.491  37.085    1977
  39.6411977.857  40.062    1978  40.6461978.271  42.268    1979  43.8091979.723
  44.446    1980  46.2261980.808  46.679    1981  47.4521981.194  51.016    1982
  54.398  1982.7  56.047    1983  60.1611983.455   62.641983.708  64.3931983.825
  66.3931983.957  66.5351983.972  66.5491983.973  66.5731983.975  66.625 1983.98
  66.6821983.982  66.7091983.983  66.7311983.985  66.7971983.988  67.0931983.966
  67.1911983.959  90.1921983.144  94.242    1983  99.0921983.226 102.2341983.372
 110.2771983.747 110.8661983.698 110.9171983.703 111.2251983.732 111.6921983.713
 112.1551983.732  115.491983.707 122.1661983.857 122.4291983.859 125.2561983.971
 125.3181983.973 125.3711983.976 125.978    1984 137.709    1984 138.539    1984
     140    1984

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    -400    .035  -65.89    .025  66.393    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -65.89  66.393             4.59    4.59    4.59            .1       .3
Left Levee      Station=  -65.89      Elevation=  1984.7
Right Levee     Station=  66.393      Elevation=1983.957

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1979.09  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.33  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 1978.76  * Reach Len. (ft)      *    4.59  *    4.59  *    4.59  *
* Crit W.S. (ft)         * 1977.75  * Flow Area (sq ft)    *          *  153.51  *          *
* E.G. Slope (ft/ft)     *0.001824  * Area (sq ft)         *          *  153.51  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   61.71  * Top Width (ft)       *          *   61.71  *          *
* Vel Total (ft/s)       *    4.60  * Avg. Vel. (ft/s)     *          *    4.60  *          *
* Max Chl Dpth (ft)      *    3.76  * Hydr. Depth (ft)     *          *    2.49  *          *
* Conv. Total (cfs)      * 16529.1  * Conv. (cfs)          *          * 16529.1  *          *
* Length Wtd. (ft)       *    4.59  * Wetted Per. (ft)     *          *   62.96  *          *
* Min Ch El (ft)         * 1975.00  * Shear (lb/sq ft)     *          *    0.28  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    1.28  *          *
* Frctn Loss (ft)        *    0.01  * Cum Volume (acre-ft)  *    1.41  *   11.50  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.92  *    9.34  *    2.75  *
**********************************************************************************************
```

```
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4900

INPUT
Description:
Station Elevation Data    num=     228
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001988.654-395.7571988.185-394.037    1988-390.8241987.909-388.8361987.876
-386.4711987.873-383.3521987.909-379.6811987.974-378.353    1988-373.507 1988.15
 -365.981988.392-336.282    1989-325.668 1989.55-311.3381989.541-299.9361989.767
-294.1221989.787-292.3271989.801-290.4371989.826-288.4131989.872-286.0991989.942
-284.462    1990-281.2651989.888-269.1511989.711-266.2311989.755-261.2461989.713
-256.1491989.626-252.1441989.528-249.1431989.422 -245.811989.292-234.4851990.616
-231.9111990.677-229.919 1990.73-227.7361990.781-218.484    1991-217.6591990.595
-213.5321988.571-212.879    1988-212.5111987.918-212.2071987.851-209.156    1987
-205.2141986.036-205.073    1986-204.9981985.979-201.495    1985-201.1581984.968
 -200.611984.909-194.355 1984.22-192.474    1984-186.994    1984-185.362    1984
-182.4251984.054-181.9641984.062-175.5081984.173-173.4411984.214-170.8151984.271
-167.928 1984.34-161.746 1984.49-160.2311984.522 -159.741984.536-158.2771984.595
-157.0961984.613-156.6241984.621-155.262 1984.63-155.116 1984.63-154.6281984.631
-153.3571984.633-151.5071984.632-148.0611984.626 -145.121984.622-141.4481984.619
-140.2231984.615 -138.861984.606-135.389 1984.57-133.4581984.552-131.7221984.544
-131.3341984.545-129.9811984.545-129.3361984.544-127.3471984.547-125.9481984.551
-125.6321984.552-125.0681984.549-125.0071984.549 -124.421984.545-123.5891984.541
-123.431 1984.54-123.388 1984.54-121.3831984.533-116.4991984.508 -116.041984.506
-106.9521984.521-106.5251984.519-104.178 1984.51 -99.0831984.517 -98.7731984.517
 -94.269 1984.52 -92.3331984.528  -92.321984.528 -88.7061984.524 -86.3661984.516
 -85.3981984.548 -85.2461984.587 -79.6131984.648 -78.1741984.638 -73.8481984.607
 -71.5671984.596 -69.8451984.596 -68.7061984.603 -67.9391984.611 -67.3261984.614
 -66.8341984.615 -66.3141984.614 -66.2641984.615 -62.3531984.617 -62.0841984.614
 -61.6891984.611 -61.1471984.608 -59.7341984.604 -58.1871984.597  -57.231984.592
 -56.9961984.589 -54.0241984.521 -52.6851984.486 -49.4781984.413 -46.4981984.333
 -42.9711984.238  -39.491984.145 -34.5591984.013 -34.115    1984 -34.0171983.961
 -31.412    1983 -30.2841982.596 -28.436    1982 -27.6411981.702 -25.411    1981
 -23.2741980.356 -21.965    1980 -18.6371979.023 -18.556    1979 -18.5421978.996
 -15.072    1978 -13.7441977.884 -12.8311977.789  -9.7191977.486  -5.9731977.132
  -5.7891977.118  -5.6061977.108  -5.4361977.107  -4.623    1977  -4.3521976.925
  -1.3791976.106  -1.044    1976       01975.818   2.2451975.427   4.856    1975
   5.108    1975   5.567    1975   6.205    1975  11.764    1975  14.6091975.272
  17.3291975.522  19.306 1975.68  20.4271975.759  20.7821975.804  22.323    1976
  24.818    1976   25.35    1976  25.5271975.606  26.806    1975  28.121    1975
  28.368    1975  28.666    1975  29.224    1975  31.7151975.924  31.934    1976
  32.195 1976.08  33.4331976.355  36.642    1977  38.3531977.512  38.835 1977.68
  39.3291977.895   39.57    1978  40.1281978.242  41.741    1979  41.8421979.039
  41.975 1979.09  43.9611979.965  44.041    1980  44.5151980.191  46.1491980.999
  46.151    1981  46.3441981.051  47.661 1981.37  50.463    1982  54.0971982.748
  55.358    1983  57.5851983.287  58.7131983.411  64.274    1984  64.356    1984
  64.383    1984  64.422    1984  64.517    1984  66.077    1984  67.467    1984
  71.2891983.873  71.3461983.871  73.1751983.834  91.7341983.155  95.976    1983
 100.9951983.241 103.2761983.351 109.4661983.649 110.2961983.582 110.3681983.589
 110.6011983.612 111.2851983.587 111.6711983.603 116.4621983.585 122.0131983.733
 122.5011983.739 124.9631983.847 125.2821983.861 125.555 1983.88 128.337    1984
 137.686    1984  138.68    1984     140    1984

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035  -39.49    .025  66.077    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -39.49  66.077             25.31   25.31   25.31          .1       .3
Left Levee      Station=  -39.49      Elevation= 1984.15
Right Levee     Station=  66.077      Elevation=    1984

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)        * 1979.08  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)         *    0.37  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)        * 1978.71  * Reach Len. (ft)       *   25.31  *   25.31  *   25.31  *
* Crit W.S. (ft)        * 1977.77  * Flow Area (sq ft)     *          *  145.43  *          *
* E.G. Slope (ft/ft)    *0.002053  * Area (sq ft)          *          *  145.43  *          *
* Q Total (cfs)         *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)        *   58.68  * Top Width (ft)        *          *   58.68  *          *
* Vel Total (ft/s)      *    4.85  * Avg. Vel. (ft/s)      *          *    4.85  *          *
* Max Chl Dpth (ft)     *    3.71  * Hydr. Depth (ft)      *          *    2.48  *          *
* Conv. Total (cfs)     * 15580.0  * Conv. (cfs)           *          * 15580.0  *          *
* Length Wtd. (ft)      *   25.31  * Wetted Per. (ft)      *          *   60.10  *          *
* Min Ch El (ft)        * 1975.00  * Shear (lb/sq ft)      *          *    0.31  *          *
* Alpha                 *    1.00  * Stream Power (lb/ft s) *          *    1.51  *          *
* Frctn Loss (ft)       *    0.07  * Cum Volume (acre-ft)  *    1.41  *   11.48  *    2.94  *
* C & E Loss (ft)       *    0.04  * Cum SA (acres)        *    0.92  *    9.34  *    2.75  *
*********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -4925.31
```

```
INPUT
Description:
Station Elevation Data    num=     291
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001988.832-391.5841988.711-383.3421988.593-378.0031988.679-377.137 1988.69
-373.8751988.714 -373.361988.721-372.7761988.709-371.8151988.697-369.8491988.692
-367.6851988.676 -365.88 1988.67-356.0521988.669-355.3421988.673-354.4141988.684
 -353.341988.702-352.3251988.724-350.5751988.778-349.0311988.818-342.8731988.948
-340.622    1989-339.6831989.044-339.4851989.048 -298.45    1990-295.5061989.658
 -276.68    1988-276.4281987.923-273.205    1987-272.5741986.804 -269.67    1986
-267.0071985.391-265.369    1985-261.131 1984.02-261.039    1984-260.929 1983.99
-249.987    1983-248.746    1983-247.868    1983-235.9041983.273-223.0131983.568
-217.583 1983.69-215.0521983.744-213.4161983.775-209.3421983.851-208.4681983.869
-207.8991983.884-207.5141983.896-206.9711983.916-206.7861983.924-202.7991983.946
-202.7411983.943-202.7291983.941-202.7091983.941-202.653 1983.94-202.464 1983.94
-202.1251983.937-202.1061983.937-201.9081983.937-201.8521983.937-201.6721983.934
-201.5941983.933-201.5221983.933-201.4531983.933-201.0861983.935-200.9581983.935
-200.8981983.936 -200.841983.935-200.7871983.934-200.7531983.933-200.6911983.932
-200.3821983.929-200.2661983.928-199.5581983.928-199.3351983.927-199.1281983.926
-198.8991983.925-198.7561983.925-198.6221983.926-198.5181983.927 -198.381983.929
-198.329 1983.93-198.254 1983.93-198.0961983.929-197.7021983.928-197.4991983.927
-196.1221983.893-196.0911983.892-192.7981983.915-192.7471983.915-188.2151983.927
-188.0831983.925-178.7931983.934-178.5451983.934-170.9711983.942-170.9261983.942
-161.3431983.961-161.2851983.962 -158.031983.957-157.9781983.957-157.785 1983.96
-157.4331983.964 -153.521983.945 -153.271983.948-153.2361983.948-152.2471983.949
-152.1741983.949-152.1691983.949-152.1351983.952-151.8871983.948-151.8481983.947
-151.8271983.947-151.7111983.946-151.4571983.946-151.2591983.945-150.4341983.928
-150.4211983.928-150.3771983.927-138.0651983.832-133.1631983.799-129.791 1983.79
-127.5691983.796-124.967 1983.82-123.7371983.815-121.0671983.805 -117.24  1983.8
-111.046    1984 -99.926    1984 -99.392    1984 -85.8081984.171 -82.3541984.155
 -79.2421984.139 -72.3111984.105 -68.2881984.095 -67.2161984.092 -65.8631984.095
 -63.4531984.101 -62.0471984.113 -61.0051984.121 -59.3741984.142  -58.081984.152
 -57.0461984.156 -55.9611984.157 -55.858 1984.16 -50.6151984.174 -47.8961984.182
 -47.724 1984.18 -47.6921984.179  -47.361984.175 -46.575 1984.17 -45.5071984.168
 -42.7461984.164 -39.7731984.157 -39.2011984.155 -37.957 1984.15  -37.821984.149
 -37.6861984.147 -37.5171984.145   -35.81984.106 -32.0031984.019 -31.8661984.016
 -31.279    1984 -30.182 1983.68 -28.926 1983.48 -26.168    1983 -25.4711982.873
 -25.017 1982.78 -21.437    1982 -18.908 1981.28 -17.982    1981 -17.5041980.857
 -14.267    1980 -11.2651979.178 -10.524    1979  -9.7021978.855  -4.669    1978
  -1.8491977.205  -1.3951977.087  -1.074    1977       0 1976.74   2.4141976.155
   3.0081976.014   3.066    1976   3.1031975.992   7.423    1975  10.517 1974.55
  12.3111974.355  12.451974.331  12.5731974.317  14.726 1974.33   14.751974.341
  15.0691974.361  15.6311974.383  16.1281974.397  16.3351974.408  16.5081974.428
  16.6721974.434  17.3561974.442  17.8851974.443  18.3251974.435  19.891 1974.53
  20.0061974.631  20.3331974.754  21.4131974.928  21.693    1975  23.3581975.302
  27.728    1976   28.94 1976.32  29.1831976.339  33.148    1977  35.0141977.659
  35.878    1978  37.5671978.705  38.396    1979   39.451979.377  41.078    1980
  42.483 1980.52   43.74    1981  46.5471981.845   47.07    1982  51.775 1982.76
  53.304    1983  53.7841983.048   54.891983.118  55.0211983.123  55.8231983.157
  56.0261983.166  57.9321983.218   58.421983.231  59.1951983.263  59.8261983.289
  60.2941983.317  61.213 1983.37  63.2231983.504  63.887 1983.54   64.971983.581
  65.9461983.608  65.9671983.608  66.3721983.615  66.7491983.618  67.0971983.616
  67.7541983.604  68.0331983.594  68.2281983.576  68.3631983.473  68.5121983.439
  68.8311983.416  69.3771983.408  69.6541983.405  70.1661983.398  70.4941983.388
  71.2251983.399  71.429 1983.39  71.4881983.387  72.271 1983.41  72.8861983.438
  73.9251983.537  74.5131983.563  74.7391983.567  74.7581983.567  75.0051983.566
  79.2111983.472  79.4791983.466  82.0561983.418  84.0571983.381  86.0311983.342
  87.7121983.308  91.914 1983.21  92.2751983.199  92.6131983.188  94.9191983.144
  95.0521983.139  95.319 1983.13  98.0851983.087 102.8991983.012 103.174    1983
 103.4791983.017  103.78    1983 106.8011982.943 106.8311982.942 108.725 1982.93
 119.779    1983 120.5211983.011 120.6321983.017 122.4351983.083 122.7351983.103
 124.6561983.231 126.1321983.366 135.763    1984 137.342    1984 139.225    1984
     140    1984

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    -400    .035 -39.773    .025  63.223    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -39.773  63.223             74.69   74.69   74.69             .1       .3
Left Levee      Station=  -39.77       Elevation= 1984.16
Right Levee     Station=   63.22       Elevation=  1983.5

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)          * 1978.97  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.75  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 1978.22  * Reach Len. (ft)       *   74.69  *   74.69  *   74.69  *
* Crit W.S. (ft)          * 1977.82  * Flow Area (sq ft)     *          *  101.54  *          *
* E.G. Slope (ft/ft)      *0.004386  * Area (sq ft)          *          *  101.54  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   42.33  * Top Width (ft)        *          *   42.33  *          *
* Vel Total (ft/s)        *    6.95  * Avg. Vel. (ft/s)      *          *    6.95  *          *
* Max Chl Dpth (ft)       *    3.90  * Hydr. Depth (ft)      *          *    2.40  *          *
* Conv. Total (cfs)       * 10660.4  * Conv. (cfs)          *          * 10660.4  *          *
* Length Wtd. (ft)        *   74.69  * Wetted Per. (ft)      *          *   43.25  *          *
* Min Ch El (ft)          * 1974.32  * Shear (lb/sq ft)     *          *    0.64  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    4.47  *          *
* Frctn Loss (ft)         *    0.34  * Cum Volume (acre-ft)  *    1.41  *   11.41  *    2.94  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)        *    0.92  *    9.31  *    2.75  *
**********************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION
```

```
RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -5000

INPUT
Description:
Station Elevation Data    num=     368
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001984.489-398.9791984.464-398.6421984.456-397.1951984.405-394.0021984.294
-393.5851984.299-393.2231984.288-392.9531984.276-392.7561984.269-392.5981984.268
  -392.31984.273 -391.521984.308-391.3771984.304-389.8951984.265-386.3551984.495
 -385.151984.573-384.1521984.596-382.4021984.716-378.262    1985-377.7431985.665
-377.261    1986-376.3211986.525-375.469 1986.23-373.5781986.437-373.2971986.458
-373.1151986.472-372.4791986.521-371.802 1986.55-371.564 1986.56-366.0331986.858
-365.6891986.866-365.3481986.866 -362.671986.986-362.6331986.985-360.7611986.973
-360.6851986.966-359.4791986.789-358.685 1986.65-357.2111986.279 -355.78    1986
-355.123 1985.89-350.593    1985-349.8031984.888-348.8881984.713-347.0261984.364
-345.333    1984-340.3171983.531-334.146    1983-318.784    1983-313.617    1983
-313.3411983.003 -313.341983.003-306.9941983.078-297.978    1983-257.9811983.221
-257.1391983.185-256.9661983.156-256.6831983.147-255.8761983.142-253.1721983.134
-248.3091983.098-248.0271983.096-245.1951983.097-244.394 1983.09-241.8091983.055
-240.6811983.043-239.6611983.038-238.6611983.039-238.464 1983.04  -233.41983.067
-231.6871983.074-231.5591983.074-230.7071983.075-229.8711983.065-229.1111983.053
-228.6181983.034-227.7271983.019-225.816    1983-222.9021982.902-222.7161982.896
-221.1841982.874 -221.051982.877-212.9111982.849 -212.621982.848-211.7241982.872
-211.4141982.886-211.3231982.888-211.2051982.887 -211.041982.881-210.525 1982.86
-207.8251982.838-207.7621982.838-205.4741982.799-205.4011982.798 -203.041982.773
-201.5771982.771 -200.061982.786-198.5081982.826-195.4271982.938-194.277 1982.97
-193.083 1982.98-193.0641982.981-193.0051982.985 -192.981982.986 -192.961982.987
-192.9441982.988 -192.921982.988-192.8891982.989-192.874 1982.99-192.8481982.991
-192.8411982.991-192.8371982.992-192.8321982.992 -192.831982.992-192.8021982.992
-192.7731982.992-192.705 1982.99  -192.71982.989-192.6891982.989-192.6731982.989
-192.6561982.989-190.3031982.971-184.9361982.932-184.8541982.932-184.7881982.934
-184.6441982.939 -184.41 1982.94-184.3331982.932-184.2911982.929-184.0951982.924
-183.8991982.921 -183.571982.913-180.526 1982.87-178.3551982.884-177.8531982.873
-177.6961982.867-177.3061982.849-177.2941982.849-175.8681982.849-175.7771982.846
-174.507 1982.83-168.6271982.719-166.0581982.651-164.5341982.628-164.1641982.621
-163.9781982.624-163.8531982.617 -163.851982.617-163.8081982.599-163.3081982.574
 -162.691982.549-162.6271982.536-160.096 1982.48-157.6141982.526-157.2321982.531
-156.5251982.542-153.4871982.576 -152.56 1982.58 -141.261982.587-140.338 1982.59
-139.8821982.603-138.192 1982.66-137.6231982.673-136.2121982.689-136.1811982.689
-135.1171982.698-129.8391982.696-129.8121982.695 -129.711982.692 -129.53 1982.69
-129.4551982.691 -129.361982.692-129.2871982.693-129.0891982.696-121.5251982.549
  -121.41982.542-121.0091982.537-120.2851982.526-116.9631982.434-116.5291982.415
-116.337 1982.41-115.4271982.401 -113.591982.391-112.2121982.387-111.349 1982.39
-110.0441982.389-109.5531982.394-108.982 1982.41-108.1931982.444-107.6611982.462
-102.9231982.441-102.2391982.432-101.6351982.415-101.1071982.391-100.6621982.365
 -95.938    1982 -93.987    1982 -91.593    1982 -86.204    1982 -83.799    1982
 -81.807    1982 -77.6831981.887 -77.1181981.924 -76.8291981.989 -76.737    1982
 -75.8891982.078 -73.6331982.244 -73.5221982.243 -70.8211982.396 -70.0291982.457
 -69.4871982.531 -69.3321982.561 -69.2411982.598 -68.6291982.693 -68.0031982.749
 -67.8441982.791  -67.741982.797 -67.6691982.799 -67.5761982.798 -67.4761982.796
 -67.3291982.793 -66.946 1982.77 -66.8041982.758 -66.6971982.754 -66.518 1982.75
 -66.1051982.744 -65.8721982.738 -65.766 1982.73 -65.6311982.709 -65.4981982.698
 -64.5231982.663  -62.921982.614 -62.5421982.598 -59.0971982.428 -58.933 1982.42
 -58.8921982.419 -58.3221982.404 -58.0581982.397 -57.6951982.389 -57.1131982.368
 -56.3041982.335 -55.0891982.297 -54.8051982.291 -54.2141982.284 -52.2641982.269
  -52.11982.273 -49.1431982.398 -47.7491982.447 -46.299 1982.49 -44.8561982.533
 -44.298 1982.55 -42.2271982.647 -41.273 1982.71 -41.1161982.727 -41.0971982.739
 -41.0571982.773 -40.9171982.785  -40.361982.823 -39.7711982.859  -39.361982.861
 -39.3171982.861 -39.0261982.862   -38.81982.864 -38.7951982.863 -38.7881982.862
 -38.7871982.862 -38.777 1982.86 -38.7051982.858 -37.8361982.844 -37.648 1982.84
 -37.5211982.835 -37.4021982.828 -37.2721982.807 -36.9911982.761 -36.8511982.717
 -36.449 1982.65 -35.9851982.596 -33.3111982.328 -32.1851982.458 -32.0621982.463
 -29.723    1982 -28.2071981.666 -24.963    1981 -21.9511980.558 -18.572    1980
 -15.5391979.718 -12.7561979.444  -7.239    1979  -1.7951978.017  -1.7731978.014
  -1.7531978.012  -1.7371978.009  -1.7281978.006  -1.714    1978   -.3131977.045
   -.251    1977   -.0551976.879       01976.844   1.363    1976   3.1261975.664
   9.691    1975   9.9541974.946  10.0581974.916  11.3621974.559  12.813    1974
  15.4571973.742  17.6351973.557  18.3091973.514  19.3181973.466  19.4971973.446
  20.3091973.398  20.5661973.368  20.7351973.357  20.977 1973.35   21.391973.341
  21.4061973.335  22.1581973.317  22.3121973.329  23.1131973.416  23.9341973.484
  24.1431973.529  24.8351973.803   25.38    1974  26.4771974.944  26.547    1975
  26.6291975.063  27.698    1976  28.0531976.173  29.612    1977  30.4241977.384
  31.731    1978  33.7881978.951  33.891    1979  33.9921979.048    36.4    1980
  37.3711980.293  37.8681980.356  41.6631980.728  44.203    1981  46.811    1981
  48.127    1981   60.611981.039  64.9861981.053  70.224 1981.07  71.2671981.022
  72.052    1981  74.046    1981  74.579    1981  92.625    1981 100.054    1981
 101.038    1981  105.44    1981 105.516    1981 106.981    1981 107.0391981.001
 110.3271981.031 111.1171981.045 111.3341981.064 114.8141981.046 123.468    1981
 125.383    1981 129.593    1981 130.824    1981 131.666    1981  137.68    1981
 138.475    1981 138.535    1981     140    1981

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035  -40.36    .025  44.203    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
        -40.36  44.203             71.59   71.59   71.59             .1       .3
Left Levee      Station=  -40.36       Elevation= 1982.82
Right Levee     Station=    44.2       Elevation=    1981

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1978.60  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.96  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1977.65  * Reach Len. (ft)       *   71.59  *   71.59  *   71.59  *
* Crit W.S. (ft)         * 1977.27  * Flow Area (sq ft)     *          *   89.97  *          *
```

```
* E.G. Slope (ft/ft)     *0.004790  * Area (sq ft)           *          *  89.97  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   32.17  * Top Width (ft)        *          *   32.17  *          *
* Vel Total (ft/s)       *    7.85  * Avg. Vel. (ft/s)      *          *    7.85  *          *
* Max Chl Dpth (ft)      *    4.33  * Hydr. Depth (ft)      *          *    2.80  *          *
* Conv. Total (cfs)      * 10200.5  * Conv. (cfs)           *          * 10200.5  *          *
* Length Wtd. (ft)       *   71.59  * Wetted Per. (ft)      *          *   34.15  *          *
* Min Ch El (ft)         * 1973.32  * Shear (lb/sq ft)      *          *    0.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.18  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)  *    1.41  *   11.24  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *    0.92  *    9.24  *    2.75  *
*********************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -5071.59

INPUT
Description:
Station Elevation Data num= 348

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001983.781-395.8161983.809-388.6911983.851-385.8731983.854-382.3221983.859
-379.0611983.855-376.7941983.846-376.1461983.844-375.8151983.843-373.8861983.831
-373.3011983.827-369.8861983.799-369.2581983.801-368.385 1983.79-368.334 1983.79
-367.921 1983.78-355.3181983.646-350.5961983.695-348.2991983.713-346.9081983.725
-343.2011983.764-341.5161983.782-340.4531983.787-337.0461983.813-335.2381983.825
-334.9881983.825-334.483 1983.83-334.0461983.835-333.8061983.836-333.1411983.839
-332.888 1983.84-331.4861983.853-330.5481983.862-329.6141983.872-329.4771983.873
-329.2671983.876-328.7961983.881-324.7471983.846-324.1551983.841-322.7291983.829
-321.9321983.822-321.8221983.814-321.5041983.805-321.0371983.797-320.549 1983.79
-319.8811983.781 -319.661983.778 -319.461983.773-319.1571983.763-319.0611983.756
-319.0051983.752-318.5551983.738-318.0791983.719-317.7341983.702-316.8071983.671
-314.4581983.604-313.4761983.574-313.1511983.559-312.2351983.504-303.445    1983
-291.7221982.701-290.4081982.713-289.8711982.713-289.5961982.715-289.308 1982.72
 -288.591982.734-288.2571982.738 -287.781982.742-287.2961982.742-284.3211982.661
-284.2791982.655-284.1341982.648-283.5131982.626 -282.771982.596-282.3061982.567
-281.6761982.539-276.4751982.345-276.4221982.343-275.431  1982.3-273.2181982.196
-271.9671982.163-268.424    1982-268.2221981.975-265.5051981.631-262.8771981.399
 -259.671981.073-258.988    1981-257.8491980.808 -253.75    1980 -252.381979.733
-247.9931979.004-247.972    1979 -247.97    1979-247.967    1979-241.516    1978
-238.2851977.402-236.092    1977-231.7571976.173-230.926    1976-226.7521975.167
-225.937    1975 -222.591974.293-221.192    1974-220.749    1974-215.171    1974
 -209.09    1974-206.2511974.739-205.273    1975-201.5961975.986-201.541    1976
-201.4931976.013 -197.79    1977-195.3681977.646-194.109    1978-191.5621978.683
-190.426    1979-187.7041979.737 -186.77    1980-184.2791980.652-183.147    1981
-176.6241981.784-175.7221981.834-173.317    1982-173.257    1982-172.259    1982
-172.022    1982-169.427    1982-166.966    1982-165.207    1982-163.967    1982
-158.113    1982-157.5431981.764 -157.491981.742-151.2271981.318-149.7581981.267
-149.6721981.259-149.4931981.247-149.4861981.244-146.8381981.208-146.6971981.213
  -146.31981.217-145.4681981.243-145.4381981.249-145.3131981.254-144.9811981.264
-144.6671981.276 -144.571981.278-144.3711981.277-143.2851981.292 -142.431981.312
-141.5541981.347-140.885 1981.36 -140.751981.369-139.468  1981.4-138.7431981.418
-134.867 1981.35-129.9621981.264-124.8651981.159 -120.861981.069-118.967    1981
-114.9181980.877-114.7121980.871-114.3711980.862-101.7611980.492-101.0781980.472
 -99.8721980.427 -98.7431980.389 -95.8331980.302  -95.161980.279 -94.9161980.273
 -94.7511980.271 -94.4591980.271 -92.7541980.257 -91.7741980.253 -91.6911980.254
 -91.6081980.263 -91.4211980.273  -90.941980.289 -90.6211980.293   -90.31980.292
 -90.0021980.287 -89.3091980.266  -89.171980.264 -89.0861980.266  -89.011980.286
 -88.6451980.338 -88.3141980.369 -88.2721980.371 -87.9721980.385 -87.4971980.371
 -87.2781980.373 -87.029 1980.37 -86.7791980.362 -86.3751980.342 -85.9321980.311
 -85.2161980.224 -85.1331980.221 -85.0381980.225 -84.6341980.259 -83.1851980.406
 -80.8741980.757 -80.8551980.759 -80.1381980.833 -80.0251980.831 -79.783 1980.85
 -77.896    1981 -77.7491981.007 -75.6331981.126   -75.61981.126 -75.1291981.129
 -75.0831981.129 -74.4871981.121 -74.2171981.116 -71.5231981.067 -70.2631981.052
 -67.2011981.017 -66.329    1981 -66.1141980.985 -65.728    1981  -64.43    1981
 -63.571    1981 -61.905    1981 -56.2061981.986 -56.133    1982 -56.025    1982
 -55.932    1982 -55.727    1982 -55.147    1982 -46.254    1982 -46.175    1982
 -44.9561981.917 -32.893    1981 -25.7151980.077 -25.7061980.076 -25.052    1980
 -21.9861979.416 -19.886    1979 -18.8251978.758 -15.825    1978 -14.8051977.304
  -14.37    1977 -13.7841976.391 -13.139    1976 -12.144 1975.56 -10.458    1975
  -8.6691974.296  -7.755    1974  -6.9251973.698  -5.161    1973  -4.0451972.892
  -2.2721972.772  -1.5341972.739   -.7251972.717       01972.703    .7391972.689
   4.6161972.804   4.974    1973   7.145 1973.98   7.182    1974   7.3381974.073
   9.723    1975  11.3391975.826  11.618    1976  11.976  1976.2  13.306    1977
  15.131977.957  15.1761977.977   15.23    1978  15.4261978.106  16.996    1979
  17.339  1979.2  18.832    1980  20.451 1980.84  20.636    1981  20.637    1981
  20.645    1981  24.382    1981  31.5871980.929  32.1171980.964  32.2611980.975
  32.3181980.979  32.4381980.983  32.4571980.984  32.4711980.984  32.4791980.985
  32.5391980.985  32.5641980.986  32.5871980.986  32.6041980.985  32.6171980.985
  32.6351980.984  32.6471980.984  32.6691980.983  32.7021980.983  32.7571980.982
  32.8031980.981  32.837 1980.98  32.8941980.978  32.9411980.976  33.0651980.971
   33.09 1980.97  33.2111980.967  33.3711980.963  34.0611980.958  42.3291980.892
  43.8331980.833  47.0781980.786   48.161980.761  49.6291980.721  50.399 1980.71
  55.4861980.638   61.31 1980.52  66.222 1980.43  69.0871980.376  69.8821980.358
  73.2761980.311  74.307 1980.29  75.6661980.244  77.3951980.173  79.2611980.086
  80.848    1980  80.907    1980  89.205    1980  90.1231980.147  90.2231980.151
  90.2991980.153  92.7041980.232  96.5151980.549 102.108    1981 105.232    1981
 107.813    1981 108.8391980.965 109.3871980.935 109.5791980.909 110.0971980.887
 112.0041980.828 113.881 1980.75 121.958 1980.79 122.1251980.813 122.536 1980.83
 123.6041980.854  124.921980.892 127.2181980.976 127.771    1981 137.352    1981
 138.778    1981 139.2611980.928     1401980.836
```

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
**********************************************
    -400    .035-329.267    .025  20.636    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -329.267  20.636            28.41   28.41   28.41          .1        .3
Left Levee      Station=  -46.25      Elevation=    1982
Right Levee     Station=   20.64      Elevation=    1981

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 1978.15  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.38  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1976.77  * Reach Len. (ft)       *   28.41  *   28.41  *   28.41  *
* Crit W.S. (ft)         * 1976.77  * Flow Area (sq ft)     *          *   74.81  *          *
* E.G. Slope (ft/ft)     *0.007061  * Area (sq ft)          *          *   74.81  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   27.06  * Top Width (ft)        *          *   27.06  *          *
* Vel Total (ft/s)       *    9.44  * Avg. Vel. (ft/s)      *          *    9.44  *          *
* Max Chl Dpth (ft)      *    4.08  * Hydr. Depth (ft)      *          *    2.76  *          *
* Conv. Total (cfs)      *  8401.6  * Conv. (cfs)           *          *  8401.6  *          *
* Length Wtd. (ft)       *   28.41  * Wetted Per. (ft)      *          *   28.81  *          *
* Min Ch El (ft)         * 1972.69  * Shear (lb/sq ft)      *          *    1.14  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   10.80  *          *
* Frctn Loss (ft)        *    0.20  * Cum Volume (acre-ft)  *    1.41  *   11.11  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.92  *    9.20  *    2.75  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -5100

INPUT
Description:
Station Elevation Data    num=     409
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
**********************************************************************************
    -4001984.407-385.663 1984.23-381.2971984.177-376.2751984.114-372.3991984.066
-371.2361984.051-368.2041984.011-367.9191984.004-367.738    1984-367.194 1983.99
-367.1491983.988 -366.92 1983.98-364.7761983.883-362.5211983.809-359.5111983.682
 -357.191983.584-350.0811983.355-349.7491983.345-343.2981983.099-342.8461983.089
-338.716    1983-328.5531982.572-327.4661982.533-325.9961982.495-324.3891982.463
-320.8561982.409-320.2521982.386-319.4951982.335-316.4081982.095-315.182    1982
 -300.971981.328-296.374 1981.11-294.232    1981 -293.171980.928-285.9471980.471
-284.1871980.369-283.4431980.334-282.9851980.319-281.9171980.293-281.3731980.284
-281.0881980.285-280.7961980.292-280.5211980.305-280.3041980.321-280.189 1980.34
 -280.181980.389-278.7471980.431-278.1641980.459-277.7261980.496 -277.641980.509
-276.9291980.615-276.6541980.602-276.1421980.642-275.8881980.675 -273.521980.978
-273.4961980.978-273.292    1981-273.2711981.001-273.271    1981-265.0021980.076
-264.141    1980-257.3111979.434-256.9441979.414-256.7281979.399-255.9871979.346
-255.1321979.292-254.7411979.261 -254.461979.226-254.2231979.203-253.8811979.179
-253.7821979.175-253.5691979.178-251.6411979.216-251.6171979.216 -251.271979.228
-250.9941979.231-250.234 1979.24-248.8221979.306-247.9491979.362-245.9091979.493
-244.921 1979.53-241.192  1979.8-238.962    1980 -235.911980.842-235.4161980.977
-235.351    1981-235.315    1981-235.287    1981-234.871    1981-232.396    1981
-227.929    1981-227.406    1981-227.0951980.976-225.1621980.812-211.979    1980
-208.1131979.411-204.501    1979-204.0621978.934  -199.4    1978-198.8381977.886
-195.256    1977-195.1451976.978-194.2541976.818-189.9661976.046-189.563    1976
-187.8221975.654 -184.24    1975-183.7931974.933 -182.591974.789-179.5061974.448
 -178.761974.343-176.8971974.151-176.5081974.116-175.198    1974-174.741    1974
-173.845    1974 -173.19    1974-172.9541974.093-172.4671974.264-171.0251974.769
-170.368    1975-168.6391975.646-167.644    1976-166.3421976.477-164.927    1977
-163.9651977.356-163.5411977.511-162.206    1978-160.321 1978.64-160.146  1978.7
 -159.31    1979-158.0111979.473-156.9621979.854-156.561    1980-156.1041980.169
-155.7821980.289-154.0551980.896-153.758    1981-151.394    1981-150.291    1981
-149.408    1981-148.997    1981-137.9411980.664-136.6681980.709-132.131 1980.85
-130.9731980.881-130.3211980.904-129.6861980.926-129.531 1980.93-129.4741980.931
-129.3081980.931-128.8911980.936-128.7421980.939 -128.71 1980.94-128.676 1980.94
-128.5281980.942-128.4081980.942 -128.291980.942-128.185 1980.94-128.0921980.937
-128.0351980.934-128.0191980.934 -127.921980.927-127.8491980.924-127.7511980.922
-127.617 1980.92-127.5641980.916-127.4371980.906-127.3561980.901-127.2351980.896
-127.077 1980.89-126.8941980.885-126.7061980.882-126.1691980.852 -126.051980.845
-125.8511980.835-119.6941980.567-118.3311980.504-117.4191980.458-116.8951980.435
-114.6951980.342  -113.11980.265-110.8511980.188-109.1211980.103-108.5531980.076
-108.3131980.062-108.1321980.053-108.1151980.051 -107.561980.033-107.0091980.024
-106.7881980.036     -981980.081 -93.916    1980 -93.6191979.985 -93.3271979.951
 -92.802 1979.86 -92.6651979.788 -91.6241979.704 -91.4961979.649 -91.1521979.611
  -90.381979.555 -90.3041979.544  -90.151979.539 -89.8551979.533 -89.471 1979.53
 -89.0691979.529 -88.7041979.534 -88.1631979.549 -87.7131979.574 -87.1341979.616
 -84.1051979.783 -82.978 1979.86 -81.7961979.963 -81.646    1980  -76.071980.346
 -72.9171980.542 -68.3851980.833 -65.678    1981 -64.6141981.102 -60.0331981.303
 -59.9791981.304 -57.9641981.406 -57.141 1981.46 -56.3321981.506 -56.1591981.528
 -55.6951981.656   -55.61981.669  -54.881981.697  -54.181981.717 -53.8551981.724
 -53.5711981.726 -53.3391981.724 -53.156 1981.72 -51.955 1981.67 -51.3431981.631
 -51.0281981.603 -50.4051981.556 -49.7481981.521  -48.751981.454 -46.7631981.354
 -40.7191981.004 -40.653    1981 -40.565 1980.99 -31.512    1980  -28.091979.125
  -27.55    1979 -26.951 1978.74 -24.926    1978 -23.8791977.331 -23.247    1977
 -22.6751976.698 -21.463    1976 -20.5561975.481 -19.751    1975 -19.1531974.643
 -18.027    1974 -17.2661973.546 -16.316    1973 -13.9141972.775 -11.9241972.589
  -11.91972.574  -9.2941972.334  -8.614 1972.29  -8.3281972.278  -8.0151972.271
  -7.4441972.261  -5.9121972.307   -5.731972.403  -4.6561972.555  -2.9351972.962
```

```
  -2.9191972.966  -2.784    1973  -2.4441973.107       01973.821    .613    1974
    3.421974.925   3.5571974.972   3.617    1975   3.7641975.078   5.382    1976
   6.6151976.668   7.142    1977   7.5991977.238   8.945    1978   9.6921978.427
  10.599    1979  12.1271979.843  12.429    1980  15.1561980.198  16.153 1980.27
  17.9281980.392  21.5871980.513  22.1481980.544  22.5581980.558  22.7951980.564
  24.5571980.587  25.2881980.596   25.941980.599  26.4381980.594  26.8111980.582
  27.3251980.556  27.6611980.545  28.2991980.533  29.211 1980.52  30.7391980.498
  32.0231980.477  32.9391980.456  34.462  1980.4  35.714 1980.36  38.9391980.223
  39.5951980.207  41.0561980.181  42.6271980.154  45.7381980.076  46.5311980.057
  47.0471980.055  48.561    1980  61.703    1980  68.887    1980  71.623    1980
  72.214    1980  74.615    1980  78.173    1980  79.502    1980  79.831    1980
  80.016    1980  83.7231980.467  85.1991980.679  86.4781980.822  86.7941980.846
  86.9691980.866  87.5131980.892  87.5221980.893  88.0291980.967  88.056 1980.97
  88.0571980.971  88.1391980.978  88.2071980.983   88.221980.984  88.2571980.987
  88.2931980.987  88.2981980.987  88.3091980.984  88.3171980.984  88.3441980.983
  88.3951980.982  88.5371980.981  88.6251980.981  88.6271980.978  88.6361980.976
  88.6591980.973  88.7021980.969  88.7741980.965  88.8751980.961  90.0711980.938
  90.2371980.935  93.8941980.781  94.4631980.749  95.3691980.596  95.7651980.592
  96.0541980.588 101.2731980.527 104.234 1980.82  105.421980.967 105.4411980.969
 105.727    1981 106.318    1981 107.039    1981 107.429    1981  109.511980.819
 111.7731980.686 113.1131980.635 114.0821980.603 114.4121980.585 114.5281980.569
 114.8411980.556 116.0021980.522 117.1571980.475  122.261980.512 122.3681980.527
 122.6341980.538 123.3281980.555 124.1891980.582 125.7081980.641 127.0641980.703
 129.1251980.825  130.531980.885 133.2621980.966 134.6671980.997 134.6791980.997
  134.681980.997 134.6871980.997  134.691980.998 134.6911980.998 134.7041980.998
 134.7051980.998 134.7081980.998 134.7111980.998 134.7161980.997 134.7211980.996
 134.7281980.996 134.7291980.995 134.773 1980.99 134.918    1981 135.912    1981
 136.202    1981  136.781980.953 137.2951980.889     1401980.463

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             44.1    44.4    44.1             .1       .3
Left Levee      Station=  -54.88      Elevation=  1981.7
Right Levee     Station=   88.06      Elevation= 1980.97

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1977.63  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.35  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1976.28  * Reach Len. (ft)      *   44.10  *   44.40  *   44.10  *
* Crit W.S. (ft)         * 1976.28  * Flow Area (sq ft)    *          *   75.67  *          *
* E.G. Slope (ft/ft)     *0.007014  * Area (sq ft)         *          *   75.67  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   27.84  * Top Width (ft)       *          *   27.84  *          *
* Vel Total (ft/s)       *    9.33  * Avg. Vel. (ft/s)     *          *    9.33  *          *
* Max Chl Dpth (ft)      *    4.02  * Hydr. Depth (ft)     *          *    2.72  *          *
* Conv. Total (cfs)      *  8429.6  * Conv. (cfs)          *          *  8429.6  *          *
* Length Wtd. (ft)       *   44.40  * Wetted Per. (ft)     *          *   29.49  *          *
* Min Ch El (ft)         * 1972.26  * Shear (lb/sq ft)     *          *    1.12  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *   10.48  *          *
* Frctn Loss (ft)        *    0.23  * Cum Volume (acre-ft)  *    1.41  *   11.06  *    2.94  *
* C & E Loss (ft)        *    0.13  * Cum SA (acres)        *    0.92  *    9.18  *    2.75  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5144.1

INPUT
Description:
Station Elevation Data    num=     380
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001980.935-398.8911980.946-397.9221980.974-396.8831980.993-395.613    1981
 -394.371981.034-394.3281981.026-394.3091981.022-394.299 1981.02-394.2581981.018
-394.0791981.023-393.429 1981.04-392.9131981.043-392.5521981.045-392.3941981.036
-392.2941981.028-392.2651981.026 -392.231981.024-392.1771981.023-392.1551981.022
-391.9021981.033-391.8961981.034-391.8781981.036-391.8491981.038-391.811 1981.04
-388.686    1981-383.7891980.972-379.7651980.975-376.2961980.963-375.522    1981
-375.345    1981-356.9721980.087-356.9341980.092-356.8381980.093-356.7391980.092
-355.894    1980-355.1181979.942-354.0121979.868-353.1641979.826-352.5131979.816
-351.6161979.844-349.423    1980-345.4031980.356-345.1441980.365-343.7151980.547
-343.1591980.617    -3431980.631 -342.22  1980.7-341.8841980.632-341.6621980.587
-339.849    1980-336.602 1979.03-336.507    1979-336.428    1979-335.286    1979
-331.3631979.488-327.576    1980-327.4961980.183 -327.34    1980 -325.821979.769
-319.236    1979-312.221    1979-307.505    1979-307.113    1979-305.918    1979
-305.4361979.036-305.3631979.067-297.238    1979-293.028    1979 -291.43    1979
 -290.43    1979-289.629    1979-289.442    1979-287.717    1979-287.573    1979
-286.873    1979-286.409    1979-282.295    1979 -280.921978.965-280.9021978.962
-280.8461978.955 -276.84    1978-268.543    1978-266.195    1978-260.9541978.273
-253.6191978.643-248.581    1979-248.3691979.487-248.3671979.492-245.9121979.461
-245.8291979.413-245.2521979.342-244.8621979.247-244.267 1979.17-243.7711979.134
-242.7641979.061-241.5931979.011 -241.56 1979.01-241.548 1979.01-240.2471979.001
-240.2461979.001-240.2391979.001-238.1661979.074-237.5961979.094-237.4151979.101
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 -215.041    1979-213.2041979.118-206.2671979.093-206.0961979.074-205.7931979.053
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 -202.0081979.112-201.4021979.161-188.7361979.405-188.2131979.393-186.8021979.337
  -185.941979.318-185.0411979.304-185.0291979.304-183.8461979.298-183.4021979.301
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 -175.9891979.157 -174.821979.095-172.823    1979-168.5891978.512-164.5541978.045
 -164.211    1978-164.1471977.987-163.4771977.848-163.4581977.844-159.7331977.087
   -159.61977.058-159.326    1977-155.4821976.215-154.481    1976-150.8661975.242
 -149.729    1975-144.9731974.042-144.757    1974-143.6681973.777-141.4471973.262
   -141.41973.247-139.4651973.237-138.9951973.294-137.7841973.419-136.2131973.583
 -136.0631973.599-132.235    1974 -130.961974.526-129.615    1975-127.1341975.754
 -126.346    1976-123.346 1976.82-122.705    1977 -122.621977.023-119.093    1978
 -118.6531978.097 -118.361978.151-117.8551978.259-116.7291978.469-113.774    1979
  -113.651979.015-113.5841979.026-112.4691979.206-112.1551979.241-111.8091979.279
 -110.3831979.379-110.0851979.429-109.0921979.409-107.861    1979-106.968 1978.87
 -104.9741978.707-102.8071978.716-102.7341978.737-101.8851978.784-101.0181978.866
 -100.346    1979 -99.453    1979 -98.822    1979 -91.164 1979.27 -83.332 1979.49
  -73.5471979.756 -72.2171979.796 -70.2381979.866 -69.8211979.879 -69.4011979.891
  -68.7881979.903 -68.5651979.908 -65.583    1980  -65.451980.004 -65.3641980.007
  -64.5341980.029 -64.3011980.035 -63.7721980.044 -63.4811980.049 -63.2711980.053
  -62.5961980.054 -62.5341980.054 -62.4331980.054 -61.3251980.035 -60.7751980.014
  -60.486    1980 -60.4451979.997 -51.521  1979.3 -50.247    1979 -48.256 1978.43
  -46.868    1978 -45.6951977.659 -43.758    1977 -43.2991976.695 -42.215    1976
  -41.6991975.702 -40.576    1975 -39.9351974.557 -39.113    1974 -38.3511973.467
  -37.697    1973  -37.421972.807 -36.185    1972 -29.579    1972  -28.54    1972
  -23.303    1972 -21.4561972.689 -20.653    1973 -19.3131973.522 -18.086    1974
   -16.061974.796 -15.551    1975 -14.9791975.217 -14.1971975.538 -13.047    1976
  -12.3451976.283  -10.55    1977   -8.871977.709  -8.177    1978  -5.8441978.956
   -5.737    1979  -4.5521979.081       01979.391   4.3341979.686   6.255 1979.86
    6.3241979.861   6.5961979.865   7.0021979.868   7.4561979.869   8.0311979.877
    8.9191979.886   9.3361979.889    9.661979.891  10.834 1979.89  11.1451979.888
   11.5641979.884  11.826 1979.88  12.4631979.867  14.112 1979.85  16.638 1979.81
   19.0891979.762  22.8531979.678  24.262 1979.65  25.9561979.625  27.7931979.604
    30.421979.574  32.3381979.549  33.6261979.526   35.521979.476  36.618 1979.45
   50.0111979.821  50.633    1980  51.774    1980  54.192    1980  55.9031979.747
   56.018 1979.73  56.5331979.679  58.302 1979.56  58.8681979.459  58.9321979.407
   59.0451979.386  61.3081979.454    61.41979.483   62.361979.635  65.3671979.905
   66.087    1980  66.465 1980.04  66.5091980.044   68.481980.178  68.9971980.214
   70.702 1980.25  71.1091980.259  71.2841980.263  71.5471980.236  71.6151980.229
   71.6381980.226  72.3251980.098  72.8451980.069  74.5281980.036  77.6571980.006
   81.284    1980  85.8171979.985  85.9131979.978  85.9191979.979  88.311    1980
   90.3871980.006  90.391    1980  99.736    1980 100.118    1980  100.87    1980
  101.3821980.136 101.5111980.163 103.0921980.539 103.1921980.576 103.2331980.696
  103.9161980.789 104.1851980.844   104.51980.894  104.571980.911 104.5741980.917
  104.5751980.919 104.7291980.938  104.751980.898 105.288 1980.69 106.798    1980
  107.1631979.907 107.3361979.896 108.1541979.904 113.783    1980  116.081980.239
  117.4331980.131 117.7221980.106 118.001 1980.09  118.171980.084 118.294 1980.08
  118.3371980.078 118.3521980.076 118.3931980.074 118.545 1980.07 118.6981980.064
  119.4061980.072 119.4221980.074  119.461980.076  119.561980.078 119.6861980.083
  119.9121980.092 120.1181980.102 120.4381980.121 120.6621980.131  121.111980.146
  121.3481980.153 125.0331980.233  125.541980.244 127.5841980.297 128.3451980.327
  128.6031980.364 128.9011980.478 132.505 1980.54  132.711980.484 133.5251980.444
  134.2871980.371 135.7061980.137 136.8031980.016 136.982    1980     1401979.806

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             55.9    55.9    55.9             .1       .3
Left Levee      Station=  -64.53      Elevation= 1980.03
Right Levee     Station=    6.26      Elevation= 1979.86

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1977.19  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.91  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 1976.28  * Reach Len. (ft)      *   55.90  *   55.90  *   55.90  *
* Crit W.S. (ft)         * 1975.70  * Flow Area (sq ft)    *          *   92.43  *          *
* E.G. Slope (ft/ft)     *0.004081  * Area (sq ft)         *          *   92.43  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   30.29  * Top Width (ft)       *          *   30.29  *          *
* Vel Total (ft/s)       *    7.64  * Avg. Vel. (ft/s)     *          *    7.64  *          *
* Max Chl Dpth (ft)      *    4.28  * Hydr. Depth (ft)     *          *    3.05  *          *
* Conv. Total (cfs)      * 11052.0  * Conv. (cfs)         *          * 11052.0  *          *
* Length Wtd. (ft)       *   55.90  * Wetted Per. (ft)     *          *   32.39  *          *
* Min Ch El (ft)         * 1972.00  * Shear (lb/sq ft)    *          *    0.73  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    5.55  *          *
* Frctn Loss (ft)        *    0.30  * Cum Volume (acre-ft)  *    1.41  *   10.97  *    2.94  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *    0.92  *    9.15  *    2.75  *
**********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -5200

INPUT
Description:
Station Elevation Data    num=     345
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*********************************************************************************
```

```
    -4001979.638-396.7231979.925 -396.521979.939-396.4931979.941-395.956    1980
 -395.4651980.037-395.1471980.062-395.0041980.091-394.9531980.101-384.435    1980
 -381.706    1980 -376.92    1980-371.4741979.783-367.5071979.645-366.0541979.604
 -361.9521979.509-358.4021979.422 -357.921979.407-356.443 1979.35-356.034 1979.33
 -355.349 1979.31-355.054  1979.3-354.7871979.294 -354.361979.287-353.8781979.281
 -353.4631979.277-353.1911979.276-353.0321979.278-352.7021979.295-351.6971979.317
 -351.2361979.318-350.0471979.315-349.3951979.317-348.8271979.322-347.8691979.335
 -345.9591979.353-345.7051979.349-345.1791979.339-344.7651979.333-344.1721979.323
  -342.551979.289-341.7661979.272-339.8051979.217-339.543 1979.21-338.2841979.161
 -336.9041979.093-335.322    1979 -323.991978.058-323.306    1978-323.262    1978
 -320.301    1978 -313.481978.471-312.7371978.516-312.6511978.521 -312.641978.522
 -312.5571978.524-312.3271978.531 -311.721978.544-311.5361978.547-311.0131978.551
 -310.3891978.502-308.1411978.247-306.313 1978.07-305.436    1978-300.346    1978
 -298.441    1978-297.017    1978 -291.42    1978-285.666    1978-282.4941977.689
 -281.6081977.583 -276.18    1977-274.879 1976.76-274.1621976.667 -273.561976.612
 -273.0371976.576-271.7821976.509 -270.711976.442 -269.661976.402-269.4321976.384
  -269.281976.364-269.0071976.305-268.9081976.291-268.8211976.289-268.5431976.292
 -268.3161976.298-267.4441976.348-266.4241976.395-265.5441976.439-264.5021976.517
 -263.122 1976.61-262.1421976.697-261.4861976.782-260.137    1977-257.961 1977.29
 -257.5061977.342-256.4571977.448-255.5961977.535-254.7531977.642-253.1861977.809
 -252.887 1977.84-251.384    1978-249.207    1978-248.305    1978-247.291    1978
 -246.8381977.952-244.5661977.752-242.7331977.561-242.4231977.509 -241.811977.344
 -241.7711977.319-241.7011977.303-241.2181977.247-240.349 1977.24-240.3461977.278
 -240.2231977.312-239.8131977.372 -239.651977.411-238.9681977.738-237.701    1978
 -235.1461978.063-234.7081978.073-231.2491978.153-224.0521978.297-217.6871978.455
 -216.1881978.503-215.6071978.514-215.1751978.504-215.1421978.496-214.7771978.479
 -213.8351978.475-213.0831978.467-212.3921978.455-211.5321978.416-211.111 1978.39
 -206.9671978.162-205.7381978.075-204.676    1978-204.3691977.911-203.6221977.833
 -202.8951977.716-202.6211977.691-202.4291977.701-202.0181977.746-200.8181977.937
 -200.509    1978-197.2291978.272-190.539    1979-189.979    1979-187.594    1979
 -184.548    1979-182.623    1979-181.852    1979-179.101    1979-177.021    1979
 -176.916    1979-174.463    1979-174.427    1979-174.072    1979-173.925    1979
 -173.627    1979-170.089    1979 -169.48    1979-169.4451978.999-169.4421978.999
 -169.4321978.998-169.4191978.998-169.2981978.993-143.377    1978-143.223 1977.98
 -143.218 1977.98-142.9541977.954-142.0921977.857-139.8711977.608-139.2921977.552
 -137.6111977.389 -135.01 1977.13-133.813    1977-132.1281976.683  -129.91976.189
 -128.988    1976-127.6841975.743-124.791    1975-122.9621974.413-121.653    1974
 -120.8171973.708-119.002    1973-114.5471972.579-114.3181972.548-112.9871972.426
 -112.2461972.361-110.4751972.399-110.3541972.412 -110.031972.416  -109.61972.417
 -109.1881972.422 -108.871972.436-108.4061972.488-107.1591972.681-106.017    1973
 -105.2291973.642-104.931    1974 -104.391974.444 -103.87    1975-103.0791975.254
 -100.899    1976 -98.9621976.707 -98.064    1977  -95.561977.923 -95.346    1978
  -95.084    1978 -91.324    1978 -89.5871977.812 -87.1941977.607 -85.4351977.589
   -85.29  1977.6 -84.7361977.615 -84.6141977.626 -84.5661977.656   -84.21977.687
  -81.1981977.797 -80.7241977.837 -79.2941977.867 -77.2721977.922 -75.602    1978
   -73.48 1978.13 -73.4511978.129 -71.034    1978 -69.2421977.419 -67.701    1977
  -66.091 1976.42 -64.807    1976 -64.263 1975.57 -63.475    1975 -62.7721974.485
  -62.313    1974 -61.1871973.029 -61.157    1973 -61.1351972.979 -60.167    1972
  -59.1381971.783 -58.1231971.716 -57.3551971.657 -56.4661971.573 -52.8291971.182
  -51.013    1971 -49.283    1971 -48.133    1971 -47.2351971.463 -46.162    1972
  -45.0361972.598 -44.287    1973 -43.0191973.644 -42.347    1974 -41.0131974.687
  -40.464    1975 -39.0491975.726 -38.487    1976 -36.6931976.953 -36.608    1977
  -36.0131977.161 -32.783    1978 -28.7061978.282 -28.1071978.312 -27.4191978.336
  -27.0581978.343  -26.611978.349   -24.21978.373  -23.361978.378 -22.7141978.378
  -22.2231978.373 -21.8211978.365 -20.9341978.337 -14.7081978.125 -14.6131978.121
  -13.4081978.067 -11.378    1978  -6.103    1978  -4.804    1978  -4.768    1978
    -3.46    1978  -2.029    1978   -.761    1978    -.51    1978    -.26    1978
       0    1978    .019    1978  15.283    1978  16.001    1978  16.992    1978
   17.631    1978  18.563    1978  19.509    1978  21.148    1978  22.788    1978
   23.953    1978  31.777    1978  31.842    1978  31.941    1978  37.2661978.361
   45.212    1979  45.513    1979  45.967    1979  46.457    1979  46.554    1979
   47.267    1979  47.791    1979  48.379    1979  48.845    1979  49.035    1979
   49.149    1979  49.546    1979  49.719    1979  76.579    1979  77.312    1979
   79.182    1979  79.351    1979  82.739    1979  83.0381979.151  83.5851979.181
    86.34 1979.28  87.0791979.315  91.0841979.278  91.933    1979 100.804    1979
  102.496    1979 103.731    1979 108.981    1979 113.712    1979 113.957    1979
  115.271978.917 118.312 1978.94 120.8511978.953 122.0881978.948 122.2411978.931
  125.2971978.919 126.1941978.938 127.3051978.954 128.194    1979 130.979    1979
  137.299    1979  137.36    1979 137.652    1979 139.466    1979     140    1979

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
          -400     140             100     100     100             .1       .3
Left Levee      Station=  -73.48      Elevation= 1978.13
Right Levee     Station=   45.21      Elevation=    1979

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1976.83  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.49  * Wt. n-Val.            *          *    0.025 *          *
* W.S. Elev (ft)         * 1975.35  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1975.35  * Flow Area (sq ft)     *          *   72.19  *          *
* E.G. Slope (ft/ft)     *0.007141  * Area (sq ft)          *          *   72.19  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   24.16  * Top Width (ft)       *          *   24.16  *          *
* Vel Total (ft/s)       *    9.78  * Avg. Vel. (ft/s)     *          *    9.78  *          *
* Max Chl Dpth (ft)      *    4.35  * Hydr. Depth (ft)     *          *    2.99  *          *
* Conv. Total (cfs)      *  8354.6  * Conv. (cfs)          *          *  8354.6  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   26.57  *          *
* Min Ch El (ft)         * 1971.00  * Shear (lb/sq ft)     *          *    1.21  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *   11.85  *          *
* Frctn Loss (ft)        *    0.72  * Cum Volume (acre-ft)  *    1.41  *   10.87  *    2.94  *
* C & E Loss (ft)        *    0.08  * Cum SA (acres)        *    0.92  *    9.11  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
```

program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -5300

INPUT
Description:
Station Elevation Data num= 410

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001979.164	-399.9851979.164	-398.2461979.079	-396.625	1979	-391.5621978.474				
-390.8581978.358	-390.4581978.308	-389.9711978.248	-389.731978.199	-387.54	1978				
-386.641977.954	-378.3011977.917	-377.7731977.983	-377.483	1978	-375.3171978.028				
-374.4371978.039	-373.128 1978.05	-372.8591978.052	-372.6321978.052	-372.5961978.052					
-369.168	1978	-360.3811977.817	-359.81977.807	-356.0251977.736	-353.6471977.702				
-352.1951977.691	-350.5651977.687	-350.1641977.688	-345.8481977.643	-342.8581977.612					
-342.4881977.604	-342.0781977.592	-341.3591977.564	-341.3121977.562	-336.3091977.343					
-336.1371977.335	-333.971977.232	-329.915 1977.04	-329.179	1977	-326.7491976.846				
-326.0091976.794	-319.4191976.348	-317.8621976.243	-314.054	1976	-313.168	1976			
-311.672	1976	-311.352	1976	-311.161	1976	-303.6531976.515	-301.6511976.593		
-301.551976.597	-301.0911976.621	-298.608 1976.92	-297.695	1977	-296.993	1977			
-296.141	1977	-295.88	1977	-295.5781976.873	-293.286	1976	-286.256	1976	
-285.517	1976	-282.994	1976.2	-280.5311976.336	-280.4711976.347	-278.2441976.409			
-276.1781976.399	-274.9791976.385	-274.2441976.373	-273.1271976.354	-272.2371976.245					
-272.071976.222	-271.351976.179	-271.1461976.145	-271.1411976.112	-270.8041976.076					
-269.6921976.005	-269.597	1976	-255.486	1976	-253.851	1976	-251.867	1976	
-251.803	1976	-250.0251976.216	-249.898 1976.23	-248.789 1976.36	-246.4921976.585				
-245.6811976.664	-245.2061976.713	-242.424	1977	-239.894	1977	-238.204	1977		
-235.0941976.633	-232.6551976.315	-230.266	1976	-229.0321975.752	-228.6131975.622				
-228.4771975.579	-227.871975.537	-227.4571975.517	-225.5441975.545	-225.3281975.575					
-225.0321975.593	-224.7221975.645	-224.495 1975.66	-223.9721975.674	-223.0631975.687					
-221.0151975.711	-220.4151975.724	-218.5691975.823	-217.636 1975.86	-215.9521975.912					
-215.4821975.942	-215.027	1976	-210.0741976.457	-204.16	1977	-202.5631977.065			
-198.6431977.186	-197.4671977.207	-194.8011977.247	-194.2681977.257	-194.133 1977.26					
-192.303 1977.25	-185.9791977.216	-185.8911977.208	-185.4961977.201	-184.7311977.194					
-184.2181977.192	-183.602 1977.19	-182.8091977.192	-182.1551977.193	-181.9921977.194					
-181.8511977.195	-180.5131977.205	-180.4891977.203	-180.4651977.202	-179.8811977.162					
-179.8791977.161	-179.877 1977.16	-179.8531977.149	-179.7941977.148	-179.741977.147					
-179.1341977.137	-179.0491977.137	-178.9651977.136	-178.091977.129	-177.0221977.127					
-174.9831977.123	-174.4541977.122	-174.0161977.117	-173.207 1977.11	-172.9211977.104					
-172.4031977.095	-169.9531977.066	-169.2361977.058	-168.5971977.043	-168.4821977.041					
-167.6161977.009	-167.4241977.002	-167.38	1977	-164.063	1977	-163.251	1977		
-162.086	1977	-160.522	1977	-159.199	1977	-157.64	1977	-157.049	1977
-156.966	1977	-156.052	1977	-139.9081976.337	-139.431976.338	-138.6361976.329			
-137.871976.313	-137.3561976.296	-137.0631976.281	-133.6741976.325	-133.636 1976.35					
-133.2631976.407	-132.9031976.461	-131.7931976.374	-131.4851976.408	-131.0061976.427					
-127.1091976.152	-127.078 1976.15	-126.7651976.151	-126.1111976.117	-126.1021976.116					
-125.9681976.109	-125.771976.114	-123.5861976.161	-123.2881976.133	-122.9341976.134					
-121.8891976.137	-120.5671976.113	-120.2071976.106	-118.0471976.014	-117.798	1976				
-115.5331975.761	-114.7531975.665	-112.7631975.408	-110.381	1975	-109.1181974.726				
-108.084 1974.56	-105.896	1974	-102.996 1973.32	-101.892	1973	-100.945 1972.68			
-98.969	1972	-96.0141971.044	-95.886	1971	-91.651970.542	-90.9281970.464			
-90.1921970.293	-84.6441970.344	-82.3061970.661	-80.8771970.824	-80.2571970.885					
-79.088	1971	-79.0681971.009	-76.818	1972	-76.5221972.155	-74.302	1973		
-73.4591973.354	-72.8121973.654	-72.21	1974	-71.2571974.421	-70.051974.955				
-69.948	1975	-68.9191975.431	-67.587	1976	-61.4141976.908	-59.4131976.965			
-57.241976.981	-57.1931976.985	-57.1681976.986	-57.1541976.987	-57.1461976.987					
-56.4661976.974	-51.3761976.909	-50.241976.946	-49.4021976.958	-49.3531976.962					
-49.3021976.965	-49.2871976.966	-49.2351976.969	-49.2051976.971	-49.1271976.974					
-49.0941976.976	-49.0741976.977	-49.0371976.982	-49.0241976.983	-49.011976.985					
-48.9821976.982	-48.9681976.982	-48.9361976.982	-48.8811976.982	-48.7151976.984					
-48.7041976.984	-48.6891976.984	-48.6771976.983	-48.6511976.982	-48.571976.978					
-48.511976.976	-48.4221976.974	-48.2141976.967	-45.2861976.966	-42.5441976.981					
-40.818	1977	-39.643	1977	-39.584	1977	-38.999	1977	-35.715	1977
-32.874	1977	-32.459	1977	-32.35	1977	-32.23	1977	-30.8051976.794	
-30.3271976.725	-25.49	1976	-24.585	1976	-22.09	1976	-20.624	1976	
-18.5221976.068	-13.617 1976.26	-7.4211976.475	-6.191976.532	-5.6221976.564					
-2.8311976.591	-2.6741976.587	-2.1691976.586	-.1551976.588	01976.587					
.7411976.584	1.2241976.573	1.391976.557	1.6581976.481	1.8451976.475					
5.4481976.497	6.631976.513	13.3011976.688	13.6551976.698	17.4241976.783					
17.732 1976.79	18.4651976.816	18.7471976.829	19.6381976.879	19.7771976.884					
20.282 1976.9	20.4381976.905	20.4981976.909	20.5531976.916	20.5861976.917					
20.631976.919	20.68 1976.92	20.7361976.921	20.8531976.922	20.9611976.922					
21.0621976.919	21.1291976.919	21.2411976.919	21.4941976.921	21.6471976.921					
21.79 1976.92	21.851976.919	21.991976.915	22.1321976.913	22.274 1976.91					
22.4211976.909	24.061976.931	27.0961976.958	28.753 1976.96	28.9551976.966					
29.853	1977	30.476	1977	30.74	1977	37.724	1977	37.953	1977
40.678	1977	43.276	1977	44.946	1977	47.064	1977	47.732	1977
52.867 1977.14	53.7481977.098	54.416	1977	55.788	1977	59.041	1977		
60.964	1977	61.344	1977	62.283	1977	62.307	1977	62.337	1977
64.2381977.181	64.2471977.182	68.688	1978	69.7071978.102	70.0621978.137				
70.239 1978.23	70.2771978.241	71.9071978.194	72.112 1978.16	73.1131978.128					
73.9041978.092	75.8041978.044	78.8931978.041	79.3451978.043	83.3211978.055					
84.4341978.066	84.6441978.068	85.3221978.085	85.6091978.106	85.8651978.175					
86.2661978.209	86.877 1978.23	87.7131978.246	89.8941978.295	91.5441978.324					
93.4181978.346	96.0741978.368	97.2241978.379	97.5941978.389	103.9741978.469					
109.1221978.339	110.7371978.295	112.6671978.235	118.241	1978	119.922	1978			
127.172	1978	131.579	1978	132.972	1978	133.3771977.886	134.8691977.459		
135.1771977.339	135.3141977.246	135.4981977.214	135.6151977.204	135.781 1977.2					
135.9751977.197	136.4811977.193	136.721977.193	137.4511977.202	137.6761977.205					

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 137.8191977.209 137.9181977.216 138.2411977.283 138.4591977.308 138.8231977.335
 139.127 1977.35 139.2741977.353 139.3881977.351 139.4881977.339     1401977.331

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 1975.15  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.22  * Wt. n-Val.            *          *    0.025 *          *
* W.S. Elev (ft)         * 1973.93  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1973.93  * Flow Area (sq ft)     *          *   79.74  *          *
* E.G. Slope (ft/ft)     *0.007231  * Area (sq ft)          *          *   79.74  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   33.25  * Top Width (ft)        *          *   33.25  *          *
* Vel Total (ft/s)       *    8.85  * Avg. Vel. (ft/s)      *          *    8.85  *          *
* Max Chl Dpth (ft)      *    3.63  * Hydr. Depth (ft)      *          *    2.40  *          *
* Conv. Total (cfs)      *  8302.2  * Conv. (cfs)           *          *  8302.2  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   34.39  *          *
* Min Ch El (ft)         * 1970.29  * Shear (lb/sq ft)     *          *    1.05  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *         *    9.27  *          *
* Frctn Loss (ft)        *    0.73  * Cum Volume (acre-ft)  *    1.41  *   10.69  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.92  *    9.05  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -5400

INPUT
Description:
Station Elevation Data    num=     416
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -400    1977-397.681    1977-390.113    1977  -388.7    1977 -387.48    1977
-385.117    1977-384.7921976.854-382.883    1976-381.3811975.805-379.8661975.547
-379.0961975.453-379.0051975.397-378.8591975.389-378.6371975.384-378.3941975.384
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 -75.644    1974 -72.826    1974 -66.9061974.125 -66.0431974.144  -65.59 1974.16
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  -40.009    1975 -39.791    1975  -39.431975.054 -39.319 1975.07 -29.656 1975.81
  -29.3111975.809 -28.6171975.813 -28.3331975.816 -28.197 1975.82 -28.0711975.839
  -27.9121975.853 -27.8451975.855 -27.7551975.855 -27.6421975.854 -27.3591975.852
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   11.0591975.185  11.8051975.277  13.8831975.529  18.375    1976  19.338    1976
   20.644    1976  29.558    1976  30.6911975.864  31.9671975.755  32.2021975.748
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    39.621975.214  40.7581975.349  41.2191975.383  42.7631975.481   44.191975.564
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   52.637 1976.01  53.3311976.016    53.41976.017  54.9251976.003  55.038    1976
   57.1871975.875  60.4611975.757   62.741975.724  65.7291975.658  66.5891975.653
   67.0961975.658  67.5711975.671  68.5811975.722  71.3971975.913  72.475    1976
   75.0411976.174  76.8861976.298  78.4451976.417  80.5861976.618  81.2761976.661
    81.471976.686  82.3911976.734   82.911976.756  83.9081976.792  84.5491976.813
   84.9591976.823  87.0861976.871  87.3571976.878  87.4431976.883  87.454 1976.89
   87.6531976.896  87.8241976.901  87.8661976.903  87.8791976.908  87.9121976.911
   88.8221976.911  88.8671976.899   88.951976.893  89.542 1976.86  89.9911976.842
   91.0891976.873  92.9731976.928  93.7761976.883  95.958    1977  98.2781977.018
   99.2481977.021  99.9141977.008 100.132    1977 103.4651976.589 104.4661976.507
  105.5881976.465 107.0941976.442 107.5561976.426 108.315    1976 108.915    1976
  110.645    1976 121.637    1976 123.202    1976 129.044    1976  134.72    1976
  136.2381976.125 138.1491976.248 138.8241976.292 139.337 1976.33 139.6761976.356
      1401976.387

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
          -400     140              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1974.07  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.35  * Wt. n-Val.             *          *    0.025  *          *
* W.S. Elev (ft)         * 1972.72  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1972.72  * Flow Area (sq ft)      *          *   75.82  *          *
* E.G. Slope (ft/ft)     *0.007303  * Area (sq ft)           *          *   75.82  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   28.46  * Top Width (ft)         *          *   28.46  *          *
* Vel Total (ft/s)       *    9.31  * Avg. Vel. (ft/s)       *          *    9.31  *          *
* Max Chl Dpth (ft)      *    3.59  * Hydr. Depth (ft)       *          *    2.66  *          *
* Conv. Total (cfs)      *  8261.2  * Conv. (cfs)            *          *  8261.2  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *          *   30.55  *          *
* Min Ch El (ft)         * 1969.13  * Shear (lb/sq ft)       *          *    1.13  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   10.54  *          *
* Frctn Loss (ft)        *    0.73  * Cum Volume (acre-ft)   *    1.41  *   10.51  *    2.94  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)         *    0.92  *    8.98  *    2.75  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5500

INPUT
Description:
Station Elevation Data    num=     409
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
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  -11.56    1973  -7.557    1973  -3.909 1973.21       01973.429   4.5671973.684
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   9.2071973.883  22.106 1973.89  24.702 1973.93  27.449    1974  27.7931974.026
  28.6731974.094  30.8261974.288  35.8411974.731  38.814    1975  40.152    1975
  41.437    1975  42.307    1975  43.064    1975  45.5291974.032  45.628    1974
   45.66    1974  45.726    1974  46.218    1974  47.221    1974  49.4111974.337
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   63.291975.098  64.6761975.108   66.961975.117  68.8991975.106  69.9661975.106
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  90.971    1975  95.0731974.388  95.4881974.347  96.8151974.283  97.3881974.267
  97.5481974.267  97.6851974.275  98.0721974.319   98.91  1974.4  99.5171974.493
 101.7911974.931 102.239    1975 104.632    1975 108.457    1975 109.718    1975
 111.4711974.891 112.8471974.843 114.109 1974.84  117.231974.912 117.293 1974.91
 118.1631974.892 118.2871974.893 118.7741974.916 118.8431974.916 123.3021974.672
 123.5031974.696 123.5411974.711 126.8981974.758 127.9191974.721 128.6251974.697
 129.1361974.684 134.7171974.514 137.1931974.439     1401974.378

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1972.47  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.19  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 1971.28  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1971.28  * Flow Area (sq ft)    *          *   80.65  *          *
* E.G. Slope (ft/ft)     *0.007354  * Area (sq ft)         *          *   80.65  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   34.48  * Top Width (ft)       *          *   34.48  *          *
* Vel Total (ft/s)       *    8.75  * Avg. Vel. (ft/s)     *          *    8.75  *          *
* Max Chl Dpth (ft)      *    3.25  * Hydr. Depth (ft)     *          *    2.34  *          *
* Conv. Total (cfs)      *  8232.7  * Conv. (cfs)          *          *  8232.7  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   35.83  *          *
* Min Ch El (ft)         * 1968.03  * Shear (lb/sq ft)     *          *    1.03  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    9.05  *          *
* Frctn Loss (ft)        *    0.72  * Cum Volume (acre-ft)  *    1.41  *   10.34  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *    8.90  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION
```

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -5600

INPUT
Description:
Station Elevation Data num= 440

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001972.511	-396.7821972.342	-395.681972.289	-394.3741972.237	-393.821972.219					
-392.7171972.189	-392.471 1972.18	-389.186	1972	-388.1751971.884	-387.3951971.713				
-387.2341971.606	-387.0621971.576	-386.7211971.551	-386.4261971.536	-386.0381971.525					
-385.5571971.522	-384.6371971.529	-384.2771971.539	-384.231971.573	-384.01	1971.6				
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4.356 1972.54	4.8381972.543	5.2031972.543	5.641972.539	5.9611972.528					
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15.3421972.337	15.3831972.345	15.5781972.342	15.7421972.335	16.083	1972.3				
16.5761972.274	17.4821972.245	18.6661972.213	19.0481972.197	19.2541972.191					
19.41972.177	20.1751972.198	20.2311972.203	20.4791972.218	20.6381972.237					
20.7311972.278	20.9291972.297	22.0261972.378	22.2781972.387	22.7751972.394					
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47.425 1972.59	47.8721972.584	48.1381972.571	48.6341972.506	49.4271972.451					
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52.5541972.495	52.8451972.528	53.6291972.697	54.2241972.786	55.8261972.972					
55.8271972.973	56.023	1973	57.636	1973	67.932	1973	71.67	1973	
76.945	1973	77.119	1973	77.224	1973	77.283	1973	82.326	1973
83.1921972.743	84.0181972.645	85.9131972.457	86.8551972.341	87.0821972.303					
87.7911972.267	87.9051972.265	88.1371972.265	88.5151972.268	88.9731972.273					
89.411972.279	89.7381972.285	90.3561972.301	90.7761972.309	911972.316					
92.95	1972.4	100.3821972.622	101.771972.669	103.4741972.738	108.518	1973			
113.74	1973	114.335	1973	119.437	1973	129.486	1973	131.17	1973
132.626	1973	135.54	1973	138.748	1973	139.413	1973	140	1973

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

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**********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140            29.37   29.37   29.37            .1       .3
Left Levee      Station= -156.99      Elevation= 1971.65
Right Levee     Station= -113.29      Elevation= 1971.79

CROSS SECTION OUTPUT  Profile #PF 1
**************************************************************************************************
* E.G. Elev (ft)         * 1971.37  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.12  * Wt. n-Val.            *          *    0.025 *          *
* W.S. Elev (ft)         * 1970.25  * Reach Len. (ft)       *   29.37  *   29.37  *   29.37  *
* Crit W.S. (ft)         * 1970.25  * Flow Area (sq ft)     *          *   83.04  *          *
* E.G. Slope (ft/ft)     *0.007145  * Area (sq ft)          *          *   83.04  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   36.73  * Top Width (ft)        *          *   36.73  *          *
* Vel Total (ft/s)       *    8.50  * Avg. Vel. (ft/s)      *          *    8.50  *          *
* Max Chl Dpth (ft)      *    3.18  * Hydr. Depth (ft)      *          *    2.26  *          *
* Conv. Total (cfs)      *  8352.5  * Conv. (cfs)           *          *  8352.5  *          *
* Length Wtd. (ft)       *   29.37  * Wetted Per. (ft)      *          *   37.72  *          *
* Min Ch El (ft)         * 1967.07  * Shear (lb/sq ft)      *          *    0.98  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    8.35  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *    1.41  *   10.15  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.92  *    8.82  *    2.75  *
**************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -5629.37

INPUT
Description:
Station Elevation Data    num=     405
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*********************************************************************************
    -400  1972.4-398.858 1972.33-398.3121972.301-397.6721972.272-397.5621972.266
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-393.0171972.376-392.5071972.349-391.9361972.337-390.9531972.339 -389.971972.352
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-382.2011972.288-380.4421972.218-377.5091972.085 -375.86    1972 -373.331971.709
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  34.268 1971.75  36.403 1971.72  36.8221971.717    37.71971.692  38.2021971.651
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  43.947 1971.55  46.0841971.675  48.5991971.867  49.767    1972  51.3511972.148
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 119.6461972.569 120.2231972.573 120.3591972.554 120.7061972.552 121.7191972.554
 125.683 1972.57 128.9561972.584 129.8051972.587 130.3161972.586 130.6181972.583
 130.8661972.573 132.9491972.439 135.0161972.337 139.2071972.131     1401972.086

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             70.63   70.63   70.63             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)          * 1970.29  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.18  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 1969.11  * Reach Len. (ft)       *   70.63  *   70.63  *   70.63  *
* Crit W.S. (ft)          * 1969.11  * Flow Area (sq ft)     *          *   81.05  *          *
* E.G. Slope (ft/ft)      *0.007280  * Area (sq ft)          *          *   81.05  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   34.76  * Top Width (ft)        *          *   34.76  *          *
* Vel Total (ft/s)        *    8.71  * Avg. Vel. (ft/s)      *          *    8.71  *          *
* Max Chl Dpth (ft)       *    3.11  * Hydr. Depth (ft)      *          *    2.33  *          *
* Conv. Total (cfs)       *  8274.7  * Conv. (cfs)           *          *  8274.7  *          *
* Length Wtd. (ft)        *   70.63  * Wetted Per. (ft)      *          *   36.00  *          *
* Min Ch El (ft)          * 1966.00  * Shear (lb/sq ft)      *          *    1.02  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    8.91  *          *
* Frctn Loss (ft)         *    0.41  * Cum Volume (acre-ft)  *    1.41  *   10.09  *    2.94  *
* C & E Loss (ft)         *    0.16  * Cum SA (acres)        *    0.92  *    8.80  *    2.75  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -5700

INPUT
Description:
Station Elevation Data    num=     358
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -400 1970.76-398.0881970.717-394.2851970.603-391.1791970.514-380.0421970.229
-373.9461970.048-373.6321970.038-373.3151970.031-373.1551970.028-373.0631970.027
-372.9451970.026-372.8431970.022-372.223    1970-370.9361969.946 -369.131969.838
-368.9081969.829-368.6241969.824-368.2731969.827-360.286    1970-359.8181970.011
-358.9861970.048-358.3751970.085-357.4181970.089-357.3811970.089-357.0791970.091
 -348.411970.126-348.3311970.124-346.795 1970.08-346.6371970.076-346.473 1970.07
-346.4111970.067-344.8461970.011-344.829 1970.01-344.822 1970.01-344.604    1970
-337.6351969.378-336.0161969.244-334.8181969.151-333.452    1969-332.763    1969
-331.788    1969-329.994    1969-328.498    1969-327.778    1969-327.469    1969
-325.086    1969-319.603    1969-318.461    1969-317.022    1969-316.246    1969
-315.245    1969-314.7031969.045 -314.631969.051-314.5291969.061-313.2021969.192
-311.8571969.338-310.9881969.433-310.6841969.459-310.4371969.468-309.7311969.431
-308.6431969.357-307.6421969.455-307.2961969.441-306.8721969.461 -306.641969.466
-301.004    1970-300.936    1970-299.886    1970-296.853    1970-296.628    1970
-296.154    1970-296.1141969.996-295.8891969.948-282.9791969.434-282.1381969.467
-281.6981969.518-281.2051969.551-280.6481969.631-280.4781969.646-279.6411969.671
-279.0231969.688-278.4621969.711-278.0791969.741 -277.591969.811  -276.61969.895
-276.028    1970-274.638    1970-273.955    1970-271.345    1970-269.638    1970
-269.321    1970-269.103    1970-268.8121969.994-268.8111969.994-268.2241969.974
 -267.981969.957-262.3421969.692-261.2261969.681-260.0191969.672-258.7911969.669
-257.5851969.675-256.4641969.687-255.5261969.702-254.443 1969.73-253.7511969.758
-253.572 1969.77-253.4151969.773-234.746    1969-234.0471969.023-233.9621969.025
```

```
-233.216 1969.05-232.7581969.049-232.5791969.055-232.1011969.069-231.7051969.081
 -231.251969.098-231.0911969.105-230.5321969.135-229.1981969.214-228.688 1969.25
 -228.52 1969.31-227.9081969.359-224.6851969.489-223.4671969.544-223.1091969.574
-222.2951969.642-220.6411969.734-217.293    1970-217.179    1970-216.923    1970
-215.012    1970-214.197    1970-214.178    1970-213.788    1970-212.844    1970
-211.839    1970-211.494    1970-210.229    1970-193.475    1970-188.772    1970
-183.383    1970 -181.17    1970-174.032    1970-171.6141969.569-167.545    1969
-166.7861968.694-165.068    1968-164.8151967.903 -163.771967.433-162.619    1967
-160.3721966.078-160.196    1966-142.2051965.182-136.704    1965-132.414    1965
-128.885    1965-127.8891965.869-127.758    1966-127.5231966.269-127.3931966.382
-127.0991966.529-127.0411966.535-126.7231966.569-126.4081966.694-126.2591966.711
-126.1111966.711-124.9821966.652-124.6871966.683-123.9681966.758-123.945 1966.76
-123.7851966.777-122.681    1967-121.9811967.103-121.6191967.156 -120.521967.252
-117.6321967.506-117.0281967.532-116.1911967.567-115.5211967.609-112.3131967.915
-111.419    1968 -110.121968.646-109.212    1969-106.1591969.247-104.5761969.362
-104.4511969.371-103.6821969.403-103.6221969.405-101.9931969.467-101.2911969.497
-100.8341969.523-100.2031969.519 -99.4651969.518 -98.2451969.529 -96.6691969.551
 -94.9471969.587 -93.2781969.637 -91.6991969.697   -86.61969.928 -84.935    1970
 -81.008    1970 -75.538    1970 -73.9231969.852 -73.8971969.853 -73.1591969.765
 -73.1551969.764 -72.3141969.628 -72.1281969.584 -67.0711969.355 -65.3841969.369
 -63.9151969.381 -62.6071969.396 -61.698 1969.41 -61.2731969.422 -60.8851969.438
 -58.6461969.504 -58.1241969.522 -57.3391969.562 -55.2031969.683   -53.61969.757
 -48.4241969.974 -47.699    1970 -46.5051970.043 -43.8721970.124 -43.1081970.162
 -41.1891970.255 -39.6811970.374 -39.5391970.438 -39.0331970.469 -38.7231970.488
 -38.5981970.485 -38.5311970.484 -38.1951970.472 -38.0291970.466 -37.6751970.445
 -37.5061970.435 -37.1471970.405 -36.9741970.391 -32.3051970.155 -31.815 1970.13
 -31.4261970.104 -30.0561970.009 -29.9551970.002 -29.932    1970 -29.819    1970
 -24.478  1969.9  -23.08 1969.95 -21.251    1970 -20.9271970.014 -20.6841970.024
 -20.3151970.037 -15.9821970.183  -8.4451970.462  -1.9431970.715   -.9051970.755
   -.2221970.776   -.0351970.782       01970.783    .3721970.793   2.0261970.841
   2.5681970.859   3.4491970.892   3.6671970.902   3.9191970.912   4.1871970.925
    4.221970.927   4.2631970.927   4.3161970.927   4.4491970.926   4.7011970.922
   4.9021970.915   5.0741970.912   5.1351970.908   5.2221970.895   5.2911970.891
   5.7261970.889    5.831970.886   5.9111970.882   6.0131970.873   6.0551970.867
   6.1251970.862   6.6731970.888   6.7671970.886   7.126 1970.88   7.2311970.878
   7.3351970.874   7.7291970.854   8.1071970.846   8.4641970.836   8.603 1970.83
   8.6631970.828   9.118  1970.8   9.1831970.796  10.2341970.731  16.8031970.226
  17.3891970.181  18.0021970.135  19.794    1970  23.989    1970  29.351    1970
  30.3171969.989  30.909    1970  34.1851970.197  47.375    1971  50.756    1971
  54.221    1971  65.091    1971  67.043    1971  67.3751970.988  71.1261970.812
  72.5711970.755  73.0311970.725  77.0181970.588  78.6121970.582   79.521970.583
  80.4091970.589  81.1121970.599   82.121970.622  82.8691970.645  83.4861970.681
  83.7221970.722  84.1311970.754   86.061970.834  86.9631970.885   87.371970.979
  87.475    1971   87.971971.017  88.1061971.022  88.7871971.039  90.5231971.084
  92.3071971.129  92.4631971.131  92.5361971.131  92.6451971.132   93.781971.137
  97.4021971.172 103.7921971.242 104.9591971.258 105.6021971.273 105.7781971.286
 106.3631971.322 106.5531971.337 112.5651971.407 112.8991971.411 113.7731971.421
 113.8761971.422 114.2731971.426 116.5711971.453 117.8971971.417 118.1271971.411
 118.6211971.397  121.951971.306 125.9511971.201 132.1121971.038 133.322    1971
 133.6841970.785 138.6411970.598     1401970.636

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035 -181.17    .025 -84.935    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -181.17 -84.935            45.97   45.97   45.97            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1968.78  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.64  * Wt. n-Val.           *          *    0.025 *          *
* W.S. Elev (ft)         * 1968.14  * Reach Len. (ft)      *   45.97  *   45.97  *   45.97  *
* Crit W.S. (ft)         * 1967.80  * Flow Area (sq ft)    *          *  109.99  *          *
* E.G. Slope (ft/ft)     *0.004676  * Area (sq ft)         *          *  109.99  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   54.26  * Top Width (ft)       *          *   54.26  *          *
* Vel Total (ft/s)       *    6.42  * Avg. Vel. (ft/s)     *          *    6.42  *          *
* Max Chl Dpth (ft)      *    3.14  * Hydr. Depth (ft)     *          *    2.03  *          *
* Conv. Total (cfs)      * 10324.1  * Conv. (cfs)          *          * 10324.1  *          *
* Length Wtd. (ft)       *   45.97  * Wetted Per. (ft)     *          *   55.42  *          *
* Min Ch El (ft)         * 1965.00  * Shear (lb/sq ft)     *          *    0.58  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    3.72  *          *
* Frctn Loss (ft)        *    0.26  * Cum Volume (acre-ft)  *    1.41  *    9.94  *    2.94  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)        *    0.92  *    8.73  *    2.75  *
************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5745.97

INPUT
Description:
Station Elevation Data    num=     433
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -400    1969-395.781    1969-395.3071969.035 -395.211969.035-395.1261969.035
 -394.751969.052-391.6911969.196-391.0451969.219-390.5041969.238-390.387 1969.24
-390.1721969.245-389.2711969.241-388.7811969.239-385.4191969.195-383.6581969.154
-382.3571969.098-381.4861969.033-381.3681969.021-381.167    1969-380.8371968.975
-380.1041968.954-377.6561968.897-375.6261968.857-373.7531968.805-373.4561968.795
-372.9081968.809-370.5421968.859-369.0531968.901-367.9371968.949-366.7431968.988
-366.504    1969-365.3651969.044-364.8411969.072-363.2751969.156-362.047 1969.21
-359.4171969.369-358.702 1969.39-358.0061969.403-356.9821969.414-355.598 1969.42
-348.6641969.427-347.9291969.431-347.5051969.439-346.1281969.523-345.6191969.554
-345.5181969.563-343.5971969.635-342.3681969.672-342.1241969.676 -341.811969.677
-341.4221969.675-341.0121969.669-340.4181969.659-340.1971969.652  -339.9 1969.64
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-339.5061969.631-337.8711969.597-337.0331969.575-335.0431969.496-334.6481969.483
-333.4671969.444-326.431 1969.17-325.7241969.142-324.0381969.075-321.853    1969
-319.0431968.438 -317.36    1968-309.707    1968-306.581    1968-305.8881968.068
 -305.861968.071-304.5751968.217-303.7921968.287 -303.481968.325-303.1921968.341
-302.7231968.354 -302.161968.362-301.6051968.361-301.1291968.347 -300.461968.299
-300.025 1968.23-298.4321968.109-297.664 1968.05-296.621    1968-296.479    1968
-296.116    1968-296.103    1968-296.101    1968  -296.1    1968-296.0941968.001
-292.3011968.386-291.274 1968.48-289.4181968.671-288.8091968.709-288.3911968.734
 -286.931968.802-285.4851968.844-284.8991968.819-282.553    1969-282.351    1969
-281.7311968.957-280.4821968.928-278.0321968.841-277.4071968.828-274.166 1968.77
-272.3591968.725-271.595 1968.72-269.4581968.645-269.036 1968.63-267.9451968.584
-267.2131968.556-266.9971968.542-266.8681968.513-266.5811968.501-265.9671968.491
-264.2731968.473-264.0991968.468-263.5981968.472-263.5231968.475-263.0311968.534
-262.792 1968.54-262.6361968.539-262.2461968.538-261.0161968.538-260.7941968.538
-258.7631968.516-257.8681968.501-257.3511968.489-256.8531968.462 -256.42 1968.45
-255.3191968.425-254.7691968.405-253.8331968.379-253.6961968.403-253.6151968.426
-253.3211968.449-251.3931968.533-250.3031968.591-244.3121968.911-244.0021968.912
-242.217    1969-242.208    1969-240.8341969.017-240.8161969.017 -240.13 1969.01
 -240.111969.009 -239.96    1969-238.4921968.907-237.2291968.866-232.9281968.826
-232.2691968.815-231.9421968.799-228.7241968.704-228.211  1968.7-227.2341968.707
-223.0681968.756-220.6391968.788-218.3291968.829 -215.781968.885-213.5471968.943
-211.653    1969-209.5961969.261-209.3121969.335 -205.961969.455-204.4151969.466
-200.4231969.515-199.5191969.526-198.7341969.538 -197.591969.554-197.1121969.558
-196.6521969.557-195.3951969.544-195.2641969.543-193.1781969.528-192.5811969.523
-191.0181969.496-190.7061969.489-187.658 1969.37-184.8881969.296-181.7141969.172
-176.266    1969-175.9411968.863-173.917    1968-173.5991967.875-171.571    1967
-171.523 1966.98-171.4611966.954-169.479    1966-168.2491965.435-167.047    1965
-164.9411964.929-156.6121964.674-155.5721964.647-154.3391964.623-152.6811964.598
-142.5041964.677-142.3211964.689-141.0051964.862-139.424    1965-138.5331965.555
-137.759    1966-136.8141966.564-136.081    1967-135.1191967.595-134.303    1968
-129.782    1968-126.622    1968-121.877    1968  -121.7    1968-119.7231967.845
-109.842    1967-109.7491966.927 -96.0251966.836 -93.4681966.956 -92.664    1967
 -92.2441967.219 -90.908    1968 -90.1861968.376 -89.109    1969  -87.67 1969.06
 -87.0521969.085 -86.772 1969.09 -86.7191969.091 -86.6181969.089 -86.4961969.086
 -86.4641969.086 -86.4581969.086 -86.0091969.059 -85.6621969.039 -85.3431969.031
 -84.933 1969.02  -83.76    1969 -83.4841968.982 -83.4521968.986 -83.4321968.991
 -83.4251968.993  -83.421968.995 -83.4171968.996 -83.4111968.996 -83.4061968.996
 -83.4041968.996 -83.3991968.996 -83.3931968.996 -83.3821968.996 -83.3771968.996
 -83.3721968.995 -83.3411968.994 -83.2971968.992 -83.2191968.988 -83.0521968.979
 -82.9861968.977 -75.2781968.774  -74.621968.729 -74.3551968.719 -72.383 1968.55
  -71.981968.507 -69.9741968.434 -69.1431968.414 -69.0571968.412  -67.551968.183
 -66.345    1968 -66.286    1968 -66.152    1968 -65.245    1968  -63.911968.104
 -63.7171968.113 -63.6271968.115 -47.442    1969  -47.28    1969 -46.698    1969
 -45.7351969.041 -43.032 1969.17 -42.4951969.195 -41.6221969.237 -39.0971969.345
 -38.529 1969.37 -36.8431969.429 -35.876 1969.46 -35.1921969.474 -34.782 1969.48
 -33.9681969.483 -33.4531969.481 -33.4271969.456 -33.1271969.381 -31.938  1969.3
  -31.761969.301 -31.5271969.303 -29.6391969.408 -27.3721969.519 -27.0291969.533
 -26.1831969.575 -25.5091969.604 -24.6571969.634  -24.171969.648 -23.9161969.654
 -23.189 1969.67 -22.6421969.686 -22.0591969.707  -21.87 1969.71 -21.6461969.711
 -20.8121969.709 -19.5061969.703 -18.9231969.699 -18.2121969.694 -17.839 1969.69
 -16.6191969.664 -16.183 1969.65 -15.7621969.628 -14.927  1969.6 -13.9371969.572
 -13.1661969.555 -12.2131969.536  -11.77 1969.53  -10.541969.523  -8.045  1969.5
  -7.5941969.499   -6.051969.476  -5.5751969.469  -4.3871969.457  -3.8071969.442
  -2.9351969.411  -2.5771969.404   -.9511969.401   -.5861969.397   -.3281969.391
    -.091969.378   -.0171969.372       01969.372    .1291969.367    .3991969.364
   1.428 1969.36   1.6881969.358    1.891969.355   2.3581969.341   2.8661969.336
   3.0751969.333    3.381969.309   6.1151969.281   7.5381969.307   7.8021969.313
   8.4751969.338   9.3251969.365  10.3661969.393  11.3671969.419  14.5151969.511
  19.5521969.654  19.8931969.662  20.1191969.673  21.0891969.707  28.559    1970
  28.9111970.029  31.3431970.235  31.8851970.259  34.302 1970.33  35.3311970.381
  44.476 1970.37   44.811970.264  45.2621970.221  45.4541970.214  45.4891970.214
  45.7621970.238  46.2291970.323  46.396 1970.34  46.6391970.351  49.4421970.404
  50.594 1970.43  52.2811970.489  52.5061970.502  52.6641970.485  53.5041970.428
  54.3111970.391  54.8271970.378  55.5231970.371  56.3771970.376  57.278 1970.39
  59.537 1970.44  60.2661970.447  61.1141970.445   62.021970.435  62.8671970.423
  64.0591970.399   65.281970.365  69.5621970.209  71.752 1970.14  76.222    1970
   77.331969.906  79.5251969.743  80.407  1969.7   84.621969.549   85.361969.516
  85.5651969.515  85.9421969.537   88.071969.723  90.352    1970  93.629 1970.19
  98.5331970.385 101.6631970.539 103.3611970.634 104.4391970.688 106.7711970.797
   108.41970.867 108.7811970.886 108.8541970.887 109.0071970.884 109.3781970.874
  109.441970.863 109.5081970.833 109.5611970.831 109.6551970.828   109.91970.814
 110.2551970.788 110.4691970.761 110.7991970.696  111.291970.732 116.296    1970
 121.3451969.875 127.1981969.907 127.3411969.944 127.703 1969.98 128.124    1970
 129.503 1970.03 129.5871970.032 129.6081970.032 129.6911970.034 130.4641970.048
  132.781970.092  133.511970.104 133.7461970.108 135.0261970.129 138.6051970.188
 139.3281970.203 139.5811970.208     1401970.217

Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
    -400    .035 -197.59    .025 -87.052    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -197.59 -87.052            54.03   54.03   54.03             .1       .3
Right Levee     Station=-134.303      Elevation=    1968

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1968.47  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.12  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1967.35  * Reach Len. (ft)       *   54.03  *   54.03  *   54.03  *
* Crit W.S. (ft)         * 1967.35  * Flow Area (sq ft)     *          *   83.28  *          *
* E.G. Slope (ft/ft)     *0.007155  * Area (sq ft)          *          *   83.28  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   36.86  * Top Width (ft)        *          *   36.86  *          *
* Vel Total (ft/s)       *    8.48  * Avg. Vel. (ft/s)      *          *    8.48  *          *
* Max Chl Dpth (ft)      *    2.75  * Hydr. Depth (ft)      *          *    2.26  *          *
* Conv. Total (cfs)      *  8346.5  * Conv. (cfs)           *          *  8346.5  *          *
* Length Wtd. (ft)       *   54.03  * Wetted Per. (ft)      *          *   38.04  *          *
* Min Ch El (ft)         * 1964.60  * Shear (lb/sq ft)      *          *    0.98  *          *
```

```
* Alpha                 *    1.00  * Stream Power (lb/ft s) *          *    8.29  *          *
* Frctn Loss (ft)       *    0.39  * Cum Volume (acre-ft)   *    1.41  *    9.84  *    2.94  *
* C & E Loss (ft)       *    0.02  * Cum SA (acres)         *    0.92  *    8.68  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -5800

INPUT
Description:
Station Elevation Data    num=     499
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -400    1969-397.198    1969-395.643    1969-394.825    1969-393.383    1969
 -385.171968.707 -382.441968.574 -381.811968.546-381.229 1968.52-380.329 1968.48
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   64.816    1969  69.572    1969  69.824    1969  69.845    1969   69.86    1969
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    93.361968.949  93.5841968.977   94.22    1969  96.383    1969  96.643    1969
    98.74    1969  99.055    1969  99.593    1969 100.019    1969 100.3651969.016
  101.7391969.081 101.7951969.082 102.4441969.093 102.5631969.095 105.146    1969
  108.0431969.269 111.147 1969.37 111.2451969.373 111.531 1969.38 112.537 1969.42
  113.1451969.448 113.6211969.483 113.8131969.509 114.714 1969.58 115.267 1969.65
  115.4951969.666 115.6921969.673 115.8451969.678 116.1241969.681 116.3421969.684
  117.4551969.684 118.1851969.683  118.631969.677 119.0951969.659 120.4721969.587
  120.8391969.573 121.5031969.562 122.7341969.571 123.5211969.583

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-202.342    .025 -80.777    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -202.342 -80.777            62.57   62.57   62.57            .1       .3
Right Levee     Station=  -137.1      Elevation=    1968

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         • 1967.95  * Element               *  Left OB *  Channel * Right OB •
* Vel Head (ft)          *    1.06  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1966.89  • Reach Len. (ft)       •   62.57  •   62.57  *   62.57  *
* Crit W.S. (ft)         • 1966.89  * Flow Area (sq ft)     *          *   85.37  *          *
* E.G. Slope (ft/ft)     *0.007343  * Area (sq ft)          *          *   85.37  •          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   40.38  * Top Width (ft)       *          *   40.38  *          *
* Vel Total (ft/s)       *    8.27  • Avg. Vel. (ft/s)     *          *    8.27  *          *
* Max Chl Dpth (ft)      *    2.78  * Hydr. Depth (ft)     *          *    2.11  *          *
* Conv. Total (cfs)      *  8239.1  * Conv. (cfs)          *          *  8239.1  •          *
* Length Wtd. (ft)       *   62.57  * Wetted Per. (ft)     *          *   41.26  *          *
* Min Ch El (ft)         * 1964.11  * Shear (lb/sq ft)     *          •    0.95  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) •          •    7.84  *          *
* Frctn Loss (ft)        *    0.43  • Cum Volume (acre-ft)  *    1.41  *    9.73  *    2.94  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.92  *    8.63  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -5862.57

INPUT
Description:
Station Elevation Data    num=     452
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**************************************************************************************
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  95.0431968.132  95.0591968.133  96.8861968.149 103.5621968.222 103.6191968.223
 104.727 1968.23 105.5351968.225 115.4131968.064 115.8671968.058 119.777    1968
 123.223 1967.97   123.3 1967.97 128.457 1967.93 132.8031967.905 136.529    1968
 138.009    1968     140    1968

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-223.397    .025-137.036    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -223.397-137.036             37.43   37.43   37.43          .1       .3
Right Levee     Station= -137.04      Elevation= 1967.59

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1966.90  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.98  * Wt. n-Val.            *   0.035  *   0.025  *          *
* W.S. Elev (ft)         * 1965.92  * Reach Len. (ft)       *   37.43  *   37.43  *   37.43  *
* Crit W.S. (ft)         * 1965.86  * Flow Area (sq ft)     *    0.81  *   88.70  *          *
* E.G. Slope (ft/ft)     *0.006490  * Area (sq ft)          *    0.81  *   88.70  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *    0.67  *  705.33  *          *
* Top Width (ft)         *   46.86  * Top Width (ft)        *    6.67  *   40.19  *          *
* Vel Total (ft/s)       *    7.89  * Avg. Vel. (ft/s)      *    0.83  *    7.95  *          *
* Max Chl Dpth (ft)      *    2.92  * Hydr. Depth (ft)      *    0.12  *    2.21  *          *
* Conv. Total (cfs)      *  8763.4  * Conv. (cfs)           *     8.3  *  8755.0  *          *
* Length Wtd. (ft)       *   37.43  * Wetted Per. (ft)      *    6.76  *   41.45  *          *
* Min Ch El (ft)         * 1963.00  * Shear (lb/sq ft)      *    0.05  *    0.87  *          *
* Alpha                  *    1.02  * Stream Power (lb/ft s) *    0.04  *    6.89  *          *
* Frctn Loss (ft)        *    0.26  * Cum Volume (acre-ft)  *    1.41  *    9.61  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.92  *    8.57  *    2.75  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION
```

```
RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -5900

INPUT
Description:
Station Elevation Data    num=     396
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************
    -4001967.398-399.9191967.394-398.8021967.347-397.7811967.311-397.3911967.296
-396.0241967.253  -395.71967.252-395.2741967.236-395.1441967.231-394.7091967.207
-394.3421967.174 -394.221967.167 -394.061967.161-393.8661967.159-393.6351967.161
-393.3931967.167 -393.051967.178-392.8461967.187-392.432  1967.2-392.2261967.208
-391.9921967.225-391.8451967.233-390.9211967.265-390.6461967.279-390.239 1967.31
-389.5041967.379-387.5341967.619-386.7391967.695-386.5361967.711-383.5371967.946
-383.4831967.949-382.771    1968-378.077    1968-375.532    1968-370.4041967.253
 -368.77    1967-360.2631966.736-359.3481966.717-358.6311966.707-353.4641966.666
-352.6931966.653-352.218 1966.64-348.028 1966.65-346.2341966.701-346.1491966.709
-346.0431966.712-345.3261966.721-344.4121966.746 -343.831966.774-343.6411966.806
-342.6481966.914-341.412    1967-334.6641967.687-333.4641967.817-332.838 1967.87
-332.2361967.935-332.016 1967.94-331.7351967.947-331.619 1967.96 -331.581967.963
-331.5241967.964-331.4381967.965-330.1661967.931 -329.931967.931-329.2621967.904
-328.8771967.889-328.4451967.887-328.1741967.883-328.0421967.881-327.7261967.872
-327.484 1967.86-327.4661967.859-327.2971967.848-326.8781967.824-325.8591967.758
 -324.421967.681-323.8671967.648-320.8351967.471-318.8431967.378-318.0941967.354
-315.7681967.254-315.699 1967.25-314.6681967.199-313.8741967.159-311.223    1967
 -304.131966.309-301.8771966.082-301.7611966.076-301.426 1966.06-301.2641966.042
-300.7441966.061-295.128 1966.26-293.1441966.214-293.0151966.211-292.1321966.191
-282.366    1966-282.2171965.991-279.8671965.892-278.0021965.863 -276.371965.877
-273.824 1965.94-273.387    1966 -273.29    1966-271.786    1966-269.187    1966
-268.967    1966-268.795    1966-267.501    1966-266.364    1966-248.367    1966
-248.034    1966-247.192    1966-247.175    1966-247.162    1966-247.033    1966
  -246.91965.938-244.526    1965-244.1561964.926-243.5651964.739-243.3131964.497
-242.7591964.436-242.5981964.397-242.4581964.386-242.1371964.375-241.9751964.373
-241.8481964.375-241.6741964.386-241.0831964.465-240.0791964.676-239.9771964.728
-239.3651964.888-239.135    1965 -238.821965.293-237.985    1966-235.7341966.143
-235.0461966.175-234.6911966.182-234.3971966.174-233.9851966.134 -233.451966.058
-232.504    1966-231.865    1966-231.138    1966-228.155    1966-227.341    1966
-226.427    1966-225.559    1966-223.0131966.475-222.0891966.592-220.7421966.804
-219.9261966.854-219.827 1966.86-219.4641966.909-219.2361966.936-218.478 1966.94
 -218.17 1966.97-218.1611966.971-217.481 1966.96-217.0281966.937-213.957    1967
 -193.381966.461-193.3671966.511-193.0261966.601-192.621 1966.54-192.1631966.472
-189.312    1966-188.6891965.692-187.167    1965-186.3071964.581-185.038    1964
-183.7791963.399-182.905    1963-182.6751962.927-181.7981962.778 -180.381962.741
 -180.111962.838-179.8581962.866-179.2371962.886-178.137  1962.9-171.2761962.959
-168.271 1962.99-167.424    1963-164.1551963.227-150.754    1964-150.287 1964.23
-148.854    1965-148.5841965.134-148.1031965.404-147.107    1966-144.3391966.538
-142.6911966.949-142.455    1967-141.694    1967 -140.89    1967-140.335    1967
 -139.76    1967-139.042    1967-129.273    1967-127.228    1967-122.4551966.491
-119.379 1966.17-117.827    1966-117.0551965.839-115.8171965.722-115.053 1965.71
-113.0751965.691-112.5111965.672-111.5941965.587-103.8581965.666-103.0471965.711
 -99.531    1966 -94.204    1966  -88.42    1966 -81.252    1966 -78.4271965.618
 -77.8821965.545 -77.2571965.418 -74.963 1965.31 -74.5761965.296 -74.4271965.293
 -74.3141965.294 -74.1681965.317 -73.7561965.343 -73.1451965.398 -72.9291965.424
 -72.3381965.493  -71.891965.491 -67.438    1966 -65.042    1966 -64.064    1966
 -58.9451965.549 -51.497    1965  -48.85    1965 -48.496    1965 -48.462    1965
 -46.7931965.313 -42.5381965.953 -42.236    1966 -40.0671966.078 -39.9331966.081
 -36.4611966.244 -36.4261966.245  -36.011966.249 -35.2121966.247 -35.0371966.243
 -24.2451966.486 -18.3971966.653 -15.2931966.747 -11.8491966.862  -9.7571966.921
  -8.4841966.959  -7.9051966.975   -7.571966.983  -7.4271966.986  -7.4211966.986
  -7.4021966.985  -7.3891966.985  -7.3741966.986  -7.3451966.986  -7.3271966.987
  -7.3161966.988   -7.291966.991  -7.278 1966.99  -7.2641966.989  -7.2281966.987
  -7.1141966.981  -6.688    1967  -6.667    1967  -6.661    1967  -6.659    1967
  -5.1021967.013  -5.0971967.013  -4.5031967.013  -4.5011967.013  -4.2491967.001
  -4.2481967.001  -4.048    1967  -2.159 1966.95   -.5031966.883   -.4561966.882
       01966.856   4.3741966.608   6.0221966.551   7.3471966.405    8.261966.354
   8.5331966.344   8.8331966.343   9.2851966.346   11.21966.368   11.77 1966.38
  12.2821966.399  13.4891966.496  13.7991966.585  13.8941966.641  16.255    1967
  16.439    1967  16.812    1967  19.2211966.794  19.9921966.775  21.1681966.816
  21.3261966.826   23.321966.958  23.3611966.958   23.551966.975  23.837    1967
  25.316    1967  33.924    1967  36.391    1967  36.627    1967  37.604    1967
  40.751    1967  42.6341966.936  44.7141966.873  46.166 1966.84  47.0221966.836
  47.1221966.837  54.2631966.921  54.3021966.921  56.8571966.942  56.8821966.943
  57.7261966.939  57.7291966.939  58.4281966.923  58.6971966.882  66.032 1966.66
  69.1531966.707  71.7021966.752  73.6171966.795  75.0741966.836  76.2921966.875
  78.5131966.957  79.568    1967  81.2331967.117  84.5111967.314  85.6021967.346
  86.6221967.368  88.2721967.395  88.4741967.399  88.521  1967.4   88.56  1967.4
  89.5471967.414  89.8571967.418  90.0761967.422  90.5111967.429  90.9021967.435
  91.0221967.438  91.1471967.441   91.331967.446  91.5111967.453  91.6761967.458
   91.971967.469  92.0931967.472  92.1921967.475    92.41967.481   92.481967.481
  92.5191967.482  92.6711967.483  92.8041967.483   93.051967.482  94.5971967.474
  95.797 1967.47  97.7881967.471  98.4271967.468  99.0111967.462  99.8661967.452
 102.7631967.408 103.936  1967.4 104.8591967.394 106.8211967.374 108.9781967.353
 109.444 1967.35  112.741967.334 117.8981967.286 118.6121967.286 119.1271967.281
 121.0111967.265 122.4211967.254  123.611967.248 126.6811967.326 126.7241967.334
 126.9741967.344 127.5251967.357 128.3051967.371 129.1571967.383  130.051967.392
 130.809  1967.4 131.1961967.408  131.691967.425 132.0951967.452 132.6491967.477
 133.9391967.518 135.2861967.552 135.8911967.571 135.9861967.584 139.4891967.664
     1401967.661

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
    -400    .035-213.957    .025-142.455    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right    Coeff Contr.   Expan.
      -213.957-142.455              100     100     100          .1       .3
Left Levee      Station= -213.96       Elevation=    1967
Right Levee     Station= -142.46       Elevation=    1967
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1966.65	Element	Left OB	Channel	Right OB	
Vel Head (ft)	1.05	Wt. n-Val.		0.025		
W.S. Elev (ft)	1965.60	Reach Len. (ft)	100.00	100.00	100.00	
Crit W.S. (ft)	1965.60	Flow Area (sq ft)		85.93		
E.G. Slope (ft/ft)	0.007299	Area (sq ft)		85.93		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	40.70	Top Width (ft)		40.70		
Vel Total (ft/s)	8.22	Avg. Vel. (ft/s)		8.22		
Max Chl Dpth (ft)	2.86	Hydr. Depth (ft)		2.11		
Conv. Total (cfs)	8263.5	Conv. (cfs)		8263.5		
Length Wtd. (ft)	100.00	Wetted Per. (ft)		41.76		
Min Ch El (ft)	1962.74	Shear (lb/sq ft)		0.94		
Alpha	1.00	Stream Power (lb/ft s)		7.70		
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	1.41	9.53	2.94	
C & E Loss (ft)	0.05	Cum SA (acres)	0.91	8.54	2.75	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -6000

INPUT
Description:
Station Elevation Data num= 442

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001966.282	-399.6311966.296	-398.6881966.335	-396.9451966.371	-395.9621966.393					
-395.2151966.413	-392.5141966.467	-390.893 1966.51	-388.7921966.555	-388.2491966.565					
-387.8961966.569	-387.7251966.571	-387.7111966.571	-387.0771966.576	-387.0671966.576					
-387.0451966.576	-386.9111966.577	-386.9061966.577	-386.7881966.577	-386.4271966.578					
-386.3631966.579	-386.0871966.578	-386.0721966.578	-385.6831966.577	-385.0811966.573					
-384.6221966.568	-382.7271966.528	-381.2321966.481	-380.9051966.465	-380.1321966.348					
-379.641966.297	-379.3851966.284	-376.7521966.216	-375.7181966.177	-375.5721966.179					
-375.3891966.181	-374.5091966.161	-374.221966.161	-372.7071966.141	-372.6071966.139					
-372.1741966.137	-370.6211966.127	-368.9741966.129	-368.547 1966.13	-368.2231966.121					
-367.7621966.113	-366.6431966.095	-365.7631966.103	-364.4731966.113	-363.5331966.125					
-362.6111966.138	-359.8781966.185	-359.477 1966.2	-359.4371966.209	-355.0161966.357					
-354.5871966.376	-354.5161966.385	-351.6841966.457	-346.707 1966.36	-345.6791966.337					
-345.5571966.333	-343.5951966.283	-342.2451966.236	-340.1941966.177	-338.7631966.124					
-335.135	1966	-330.5021965.341	-328.646	1965	-325.2761964.409	-324.4191964.306			
-324.2261964.268	-323.8431964.228	-323.681964.221	-323.3891964.213	-321.731 1964.18					
-320.591964.203	-320.281964.207	-320.1271964.206	-319.3181964.246	-318.7661964.277					
-317.2881964.362	-316.9121964.373	-314.836 1964.4	-313.8421964.415	-313.611964.419					
-313.587 1964.42	-312.8851964.436	-312.8621964.437	-312.6281964.448	-312.61964.452					
-312.3261964.491	-312.2671964.496	-311.6561964.544	-311.6411964.545	-311.515 1964.55					
-311.4631964.551	-311.0141964.557	-310.9481964.557	-310.5421964.558	-310.4791964.557					
-310.2731964.555	-310.0581964.549	-308.4621964.482	-307.706 1964.46	-302.3721964.355					
-302.191964.353	-301.827 1964.35	-300.5121964.338	-298.0631964.316	-297.5241964.323					
-297.2981964.334	-297.061 1964.35	-296.2851964.379	-295.9981964.395	-295.9611964.445					
-295.8171964.464	-291.5931964.497	-290.6591964.485	-290.21964.477	-289.0751964.453					
-287.7871964.433	-287.0951964.426	-286.3491964.422	-285.6491964.426	-281.6681964.339					
-281.6131964.328	-281.3891964.319	-279.2551964.274	-278.3561964.255	-275.6171964.187					
-274.4981964.157	-269.786	1964	-268.4681963.748	-267.0211963.393	-266.6621963.252				
-266.632 1963.25	-265.751963.333	-265.2111963.386	-264.631963.423	-264.0871963.442					
-263.0031963.469	-262.421963.495	-261.5311963.561	-260.105 1963.64	-259.2791963.674					
-257.6691963.885	-257.4441963.909	-256.6071963.998	-256.6041963.998	-256.6011963.999					
-256.575	1964	-255.282 1964.06	-253.6831964.126	-253.6321964.128	-252.8561964.179				
-252.0361964.232	-251.868 1964.23	-249.6351964.388	-249.5941964.387	-249.2611964.376					
-248.7131964.368	-245.6531964.388	-244.3571964.449	-242.5041964.559	-241.9831964.579					
-241.3251964.593	-239.2161964.619	-237.5141964.611	-233.364 1964.66	-232.7851964.668					
-232.581964.674	-232.561964.684	-230.8851964.691	-230.0921964.659	-229.7681964.645					
-227.5721964.561	-223.1041964.391	-222.2261964.379	-221.8881964.375	-219.1971964.251					
-218.5891964.239	-217.2981964.169	-216.2751964.113	-214.186	1964	-212.9931963.553				
-211.494	1963	-209.7581962.374	-208.667	1962	-206.1251961.896	-205.7811961.875			
-205.6931961.827	-205.1021961.816	-204.3341961.807	-203.1341961.802	-202.568 1961.8					
-201.9541961.794	-201.7351961.783	-200.9451961.739	-198.9651961.724	-198.4751961.743					
-196.8851961.736	-194.6071961.719	-192.0891961.711	-189.5061961.724	-186.9381961.754					
-184.6381961.789	-182.9721961.818	-181.9211961.841	-181.2751961.864	-179.5391961.981					
-179.191	1962	-161.3141962.956	-160.8031962.983	-160.523	1963	-160.4841963.043			
-160.052	1964	-159.796 1964.49	-159.591	1965	-155.455	1965	-154.107	1965	
-153.329	1965	-149.499	1965	-142.871	1965	-142.138	1965	-140.795	1965
-140.664	1965	-139.966	1965	-131.2141965.218	-130.2171965.224	-129.8941965.225			
-129.7181965.228	-129.1291965.238	-128.919 1965.24	-128.441965.246	-128.1391965.247					
-127.6491965.248	-119.9161965.224	-118.5061965.219	-117.2441965.208	-116.0811965.184					
-115.6511965.178	-115.4151965.174	-115.0621965.171	-114.4841965.165	-113.7731965.161					
-110.5911965.142	-108.9081965.132	-108.4241965.126	-108.022 1965.12	-107.9691965.119					
-107.3781965.105	-106.7831965.081	-104.828	1965	-102.5121964.349	-101.461	1964			
-97.827	1964	-89.001	1964	-88.151 1964.05	-87.7221964.072	-87.4261964.049			
-86.544	1964	-86.4471963.995	-84.8551963.846	-83.9851963.798	-82.841963.763				
-81.6341963.738	-79.5711963.705	-78.898 1963.69	-78.6861963.677	-77.7951963.536					
-77.161963.512	-76.3081963.468	-70.1011963.508	-70.0011963.523	-68.7271963.589					
-68.325 1963.62	-65.507 1963.78	-61.031	1964	-57.4541964.117	-55.6471964.185				
-54.0831964.254	-52.721964.331	-52.4751964.342	-52.2861964.351	-52.0451964.348					
-50.4681964.325	-49.7511964.314	-49.4821964.271	-49.3671964.253	-48.8131964.223					
-48.557 1964.21	-47.405	1964	-47.0231963.883	-45.635	1964	-44.007	1964		

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  -42.979    1964  -41.24    1964 -39.007    1964 -35.714    1964 -30.5541964.452
  -29.3961964.553 -26.5031964.826 -24.666    1965 -24.424    1965 -18.164    1965
  -17.7161964.971 -17.697 1964.97 -12.1161964.625 -11.1981964.545 -10.9331964.502
   -10.431964.473  -7.6341964.403  -5.2391964.395  -2.8421964.396  -1.8861964.393
   -1.6061964.395   -.8651964.405       01964.422    .0981964.424    2.011964.468
    3.4121964.506   4.4251964.531   7.6371964.594  17.349    1965  19.278    1965
   20.857    1965  22.809    1965  23.226    1965  24.944    1965  26.872    1965
   26.9661965.012  27.1611965.036  27.7351965.319    29.81965.361  31.052 1965.38
   32.3161965.394  33.4941965.401  33.6371965.401  34.5431965.399  34.9761965.395
   35.521 1965.39  36.4971965.376  36.7491965.372  39.3631965.329   47.141965.219
   47.5621965.213  48.1691965.205  51.4111965.165  52.581 1965.14  52.923 1965.13
   52.9741965.127  55.4081965.102  55.6811965.116  55.7671965.124  55.9571965.134
   56.1131965.138  56.4661965.141  64.579 1965.04  64.9341965.035  65.0781965.036
   66.4991965.028  66.5831965.028  66.8271965.029  66.8451965.029  68.8581965.031
   68.9391965.031  68.9771965.031  68.9891965.029  68.9891965.025    69.11965.022
   69.1671965.023  69.2451965.023  69.6321965.038  69.6421965.042   69.691965.046
   69.751 1965.05  69.8461965.054  69.9811965.067  70.037 1965.07  70.4691965.075
   73.081 1965.11  75.6031965.163  76.7151965.186  76.9041965.195  80.0481965.279
   80.098 1965.28  80.9811965.314  83.1871965.387  83.725  1965.4  84.8311965.451
    85.131965.451  85.252 1965.45  85.7041965.486  85.9491965.534  86.2281965.567
   86.4541965.581  87.4071965.622  90.3311965.749  91.0371965.771  91.1731965.774
   91.2641965.774  91.3921965.771  91.5661965.765  92.0041965.746  93.4931965.664
   93.9881965.644  96.1591965.569   96.741965.558  97.658 1965.53  98.2051965.502
   99.0581965.433  99.8391965.388 100.1891965.356 100.3551965.334 103.6631965.324
  103.7681965.332  104.03 1965.34 104.5571965.349 105.4111965.356 106.4071965.361
  107.2651965.362 107.7621965.356 108.1311965.339 108.7251965.324 108.992  1965.3
   109.191965.293 109.472 1965.29 109.7471965.285 109.9641965.282 110.2541965.283
  110.6321965.288 111.0461965.298 111.4161965.309 111.9691965.333 112.4951965.348
  113.4381965.367 116.5721965.426 130.5921965.749  135.561965.873 137.062 1965.91
  138.6441965.943     1401965.983

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035 -232.58    .025-159.591    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -232.58-159.591              100     100     100            .1       .3
Left Levee      Station= -232.58      Elevation= 1964.67
Right Levee     Station= -159.59      Elevation=    1965

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1964.78  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.87  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 1963.92  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1963.92  * Flow Area (sq ft)    *          *   94.50  *          *
* E.G. Slope (ft/ft)     *0.007649  * Area (sq ft)         *          *   94.50  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   53.87  * Top Width (ft)       *          *   53.87  *          *
* Vel Total (ft/s)       *    7.47  * Avg. Vel. (ft/s)     *          *    7.47  *          *
* Max Chl Dpth (ft)      *    2.20  * Hydr. Depth (ft)     *          *    1.75  *          *
* Conv. Total (cfs)      *  8072.6  * Conv. (cfs)          *          *  8072.6  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   54.84  *          *
* Min Ch El (ft)         * 1961.71  * Shear (lb/sq ft)     *          *    0.82  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    6.15  *          *
* Frctn Loss (ft)        *    0.79  * Cum Volume (acre-ft)  *    1.41  *    9.32  *    2.94  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *    0.91  *    8.43  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -6100

INPUT
Description:
Station Elevation Data    num=     398
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001964.261-396.3041964.246-391.4711964.235-390.8931964.228-390.403 1964.22
-389.6871964.203-389.3591964.199-388.974  1964.2-387.6731964.216 -386.771964.225
 -384.421964.255-383.819 1964.26 -379.391964.265-378.1991964.266-377.6331964.268
-371.4571964.295-370.7841964.295 -370.02 1964.29-367.6831964.304 -364.261964.325
-363.3591964.318-358.4861964.348-355.9421964.364 -353.171964.339-348.2781964.354
 -345.421964.362-344.8021964.363 -343.891964.364-343.6641964.364-342.2871964.363
  -340.71964.358-340.4721964.361-339.5611964.385-339.5521964.385-338.387 1964.38
-337.6441964.378-337.4671964.377-336.9231964.374-336.6771964.373-336.122 1964.37
-335.6381964.368-335.2181964.366-334.9411964.364-334.1121964.359-333.7051964.357
-332.9481964.352-332.0321964.344-331.8311964.343-331.7081964.342-331.4171964.339
-330.5661964.328-329.6861964.309  -325.91964.211-324.335 1964.17-316.804    1964
-316.1661963.665-314.606    1963-313.4441962.399 -312.51    1962-311.9051961.785
-311.4231961.675 -311.091961.635-310.6211961.614-309.9561961.617-308.1611961.662
-305.462  1961.7-305.1071961.721-302.666    1962-296.9871962.295-295.7551962.344
 -295.051962.372-294.5731962.389-291.516  1962.5-290.9021962.526-290.8351962.529
 -290.081962.569-287.4231962.741-286.186 1962.68-286.0741962.635-285.1681962.531
-284.662 1962.49-280.764 1962.43-279.2621962.396-278.3271962.359 -276.851962.257
-275.158 1962.18-274.4191962.154-270.505    1962-269.4471961.923-268.8011961.829
-265.2681961.444-264.2281961.283-263.9421961.238-263.3421961.157-263.1811961.153
```

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-262.9451961.153-262.014    1961-262.0031960.999-261.9361960.991-260.8251960.862
-260.5321960.828-260.174  1960.8-259.1091960.692-258.5841960.639-258.2851960.608
-258.2341960.603-258.2091960.601-256.5691960.434-254.385    1960 -253.361959.976
-251.8391959.955-249.8851959.944-246.9051959.948-242.0131959.978-239.298    1960
-234.4551960.054-234.1671960.037-234.1371960.035-234.1191960.034-234.0971960.034
-233.7891960.035-233.1641960.037-232.6791960.039-232.603 1960.04-232.578 1960.04
-232.0031960.061-231.7691960.068-229.9441960.125-229.6961960.133-222.1381960.387
-216.2631960.585-207.8091960.803-204.232    1961-203.974  1961.2-203.416    1962
-200.121 1962.84-197.9911962.952 -197.191962.953-197.0841962.967 -195.24    1963
-188.322 1963.07 -188.131963.067-187.6161963.076-187.0841963.086-186.8461963.094
-186.4831963.106-186.1311963.096 -184.771963.163-183.1221963.221-177.7911963.378
-177.6051963.375-173.882  1963.3-173.567 1963.29-173.3581963.279-172.7581963.262
-172.571 1963.26-170.9231963.257-168.2041963.247-167.7191963.248-165.1411963.257
-162.2981963.286-150.2491963.405-149.6541963.409 -149.43 1963.41-148.4791963.411
-148.2351963.412-144.498 1963.41-144.2921963.409-144.1021963.409-140.6991963.407
-136.3071963.427-135.0881963.427-131.5851963.426-131.2311963.426-129.502 1963.43
-128.1931963.437-127.9171963.438-126.738 1963.45-123.5431963.496-123.4161963.497
-123.3971963.497-123.1981963.498-123.1151963.498-123.0171963.498-123.0151963.498
    -1231963.498-122.8421963.497-122.7911963.496-122.6951963.495-122.6811963.495
-122.5291963.492-122.4831963.492-121.5151963.473-121.369 1963.47-119.7351963.438
-119.5341963.434-117.8651963.406-117.512  1963.4-117.4541963.399-117.1231963.393
-117.1031963.393-113.7781963.336-113.6421963.336-113.4541963.334-113.4311963.334
-113.3721963.334-113.1731963.333-112.0561963.302-111.7661963.294-111.1411963.276
-109.2691963.236-108.6641963.223-107.8531963.206-106.7191963.191-106.4521963.188
-105.6541963.178-105.5741963.177-105.5471963.176  -105.2 1963.17-104.726 1963.16
-103.109 1963.12-102.7661963.021-102.643    1963-102.4621962.994 -96.8371962.838
 -85.6791962.542 -84.0921962.509 -81.9171962.471 -74.7441962.352 -71.6211962.457
  -71.481962.494 -71.1381962.526 -70.6631962.546 -68.469    1962  -68.311961.943
 -66.3031961.816 -62.5791961.853 -61.3411961.927 -61.2141961.964 -60.6941961.992
 -60.446    1962 -59.2981962.057 -59.2381962.058 -59.1451962.062 -51.5531962.376
 -51.1261962.374 -50.7051962.367 -49.7951962.419 -49.2241962.458 -47.8031962.523
 -47.3241962.562 -46.2851962.606 -45.6761962.637 -45.4061962.647 -43.9421962.678
 -42.4021962.725  -42.271962.734 -41.8611962.748 -41.7971962.748 -41.178 1962.75
 -40.1291962.757 -40.1191962.757  -39.741962.758 -39.4311962.755 -39.1921962.751
 -38.7341962.739 -37.9731962.713 -37.6281962.704 -34.2121962.632 -32.1791962.587
 -31.9011962.576 -30.6581962.509 -28.6081962.376 -27.9331962.366 -27.4181962.354
 -27.0471962.343  -26.271962.313 -25.9081962.306 -24.383 1962.29 -24.0431962.285
 -23.7091962.276 -20.2651962.275 -18.9011962.427  -18.871962.473 -18.8621962.476
 -18.3641962.692 -18.3341962.687 -17.373 1962.89 -16.937    1963 -16.0061963.058
  -15.751963.074  -15.711963.074 -14.0441963.207 -13.4491963.237  -8.217 1963.45
  -8.1791963.451  -7.7221963.459  -7.6151963.459  -6.909 1963.46  -6.6851963.458
  -5.689 1963.45  -1.9611963.402  -1.2471963.392   -1.051963.383    -.651963.372
   -.305 1963.37   -.2581963.376       01963.375   9.2131963.333  10.5611963.265
  12.341963.161   14.31    1963  19.996    1963   22.89    1963  23.0281963.011
  23.051963.011  24.1141963.093  26.5721963.284  26.6641963.293  27.7241963.396
 28.3881963.461  28.9861963.505  30.1391963.557  30.7431963.587  30.8911963.603
 31.1151963.647  31.8311963.607  31.8811963.587  32.1761963.556  32.8781963.517
 33.2211963.511  33.9121963.513  35.0041963.525  36.1811963.542  36.4711963.467
 36.7141963.419  41.0141963.354  44.2811963.414  47.0521963.459   48.13 1963.48
 48.8471963.498  49.1021963.507  49.3351963.514  50.4871963.529  51.9021963.545
 52.7861963.559  56.5991963.592  57.1051963.603  63.689 1963.65  63.9771963.652
 64.6211963.669  65.1671963.681  66.1931963.697  70.6871963.757  73.7911963.794
 74.3761963.799  74.5551963.799  74.6611963.798  74.7221963.797  75.1591963.778
 76.2551963.723  76.4361963.715  79.2251963.731  80.9441963.732  81.7051963.723
 81.942 1963.71  82.6771963.624   83.811963.515  84.264 1963.45  84.362  1963.4
 84.4461963.398  84.6021963.399  86.5871963.434  88.3731963.476   89.141963.506
 90.7461963.554  92.5041963.634  94.7891963.795  96.6621963.867  97.1731963.898
 97.7961963.961  97.873    1964  98.421    1964  99.465    1964 113.538    1964
119.927    1964  126.21    1964  126.391964.001 126.3921964.001 126.423    1964
126.871    1964 127.541    1964 128.096    1964  131.33    1964 132.549    1964
132.612    1964   139.5    1964     1401964.002

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             100     100     100            .1       .3
Left Levee      Station= -287.42      Elevation= 1962.74

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1962.73  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.68  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 1962.05  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1962.05  * Flow Area (sq ft)    *          *  106.95  *          *
* E.G. Slope (ft/ft)     *0.008192  * Area (sq ft)         *          *  106.95  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   78.00  * Top Width (ft)       *          *   78.00  *          *
* Vel Total (ft/s)       *    6.60  * Avg. Vel. (ft/s)     *          *    6.60  *          *
* Max Chl Dpth (ft)      *    2.11  * Hydr. Depth (ft)     *          *    1.37  *          *
* Conv. Total (cfs)      *  7800.4  * Conv. (cfs)          *          *  7800.4  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   78.68  *          *
* Min Ch El (ft)         * 1959.94  * Shear (lb/sq ft)     *          *    0.70  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    4.59  *          *
* Frctn Loss (ft)        *    0.89  * Cum Volume (acre-ft)  *    1.41  *    9.09  *    2.94  *
* C & E Loss (ft)        *    0.08  * Cum SA (acres)        *    0.91  *    8.28  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
```

water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -6200

INPUT
Description:
Station Elevation Data num= 433

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001961.765	-395.1361961.755	-391.3681961.758	-387.9221961.781	-385.2111961.835					
-383.0331961.917	-381.315	1962	-373.4391962.194	-371.7431962.223	-368.4381962.305				
-366.1281962.355	-357.4351962.521	-354.7451962.552	-352.6481962.592	-351.446	1962.61				
-349.3431962.637	-349.0131962.642	-348.2811962.655	-348.0611962.659	-346.0871962.696					
-346.0721962.697	-346.0361962.699	-345.2821962.703	-344.3291962.709	-343.2751962.715					
-343.2471962.712	-343.241962.712	-343.1311962.709	-342.0151962.696	-341.261962.677					
-340.751962.666	-340.2071962.646	-339.7321962.635	-336.3651962.565	-335.9971962.569					
-334.781962.581	-332.7861962.527	-331.4631962.531	-328.8931962.447	-328.7391962.442					
-326.9621962.378	-325.191962.375	-324.5111962.381	-323.911962.392	-322.8811962.411					
-321.5571962.354	-321.5551962.354	-321.3581962.355	-321.3181962.353	-318.5191962.249					
-317.3491962.179	-317.291962.175	-316.0231962.082	-315.182	1962	-314.8241961.901				
-311.518	1961	-306.761960.126	-306.3551960.121	-305.6131960.111	-304.9241960.102				
-304.6321960.098	-302.302	1960.1	-301.7181960.008	-301.666	1960	-301.4961960.012			
-299.8911960.127	-297.2341960.164	-296.144	1960.18	-295.6391960.245	-295.3331960.284				
-294.4591960.324	-290.5571960.935	-290.5071960.944	-290.18	1961	-289.9761961.052				
-289.9351961.069	-289.181961.101	-282.858	1961.22	-282.8431961.218	-282.7651961.209				
-281.917	1961	-280.7961960.223	-280.596	1960	-280.158	1959.59	-279.689	1959	
-278.0551958.821	-277.8341958.797	-277.4481958.724	-276.7711958.636	-276.1431958.498					
-275.7341958.442	-275.0911958.398	-274.147	1958.37	-272.9011958.351	-271.358	1958.34			
-269.5721958.332	-267.7651958.329	-266.161958.333	-264.8871958.346	-263.771958.366					
-261.0431958.426	-257.731958.495	-255.981958.533	-247.965	1958.75	-246.6031958.791				
-239.426	1959	-238.9781959.452	-238.59	1960	-235.0991960.819	-233.2421960.999			
-233.229	1961	-221.4471961.381	-218.081961.483	-216.4091961.529	-213.9141961.587				
-205.197	1962	-204.44	1962	-203.239	1962	-201.3411961.554	-200.3811961.514		
-197.3651961.413	-187.7241961.151	-186.6671961.109	-185.2761961.042	-184.9621961.026					
-184.7391961.019	-184.172	1961	-182.3051960.966	-176.7511960.883	-174.241960.852				
-172.4921960.836	-166.7111960.821	-165.9531960.826	-165.091960.841	-164.4411960.864					
-161.8221960.969	-161.358	1961	-153.9271961.332	-150.7871961.463	-142.351961.814				
-139.4831961.934	-137.891	1962	-136.798	1962	-136.682	1962	-136.327	1962	
-131.5841961.202	-131.025	1961.1	-130.8281961.057	-130.784	1961.05	-130.6721961.038			
-130.6161961.033	-130.5251961.027	-130.4051961.031	-130.391961.038	-130.346	1961.05				
-130.011961.111	-129.9491961.117	-129.088	1961.24	-127.5761961.523	-127.3991961.503				
-127.091961.589	-127.0291961.625	-126.991961.648	-124.7911961.711	-124.6931961.714					
-124.1741961.729	-123.3361961.753	-123.2261961.748	-123.1521961.744	-122.811961.727					
-122.6831961.724	-116.9871961.465	-115.435	1961.41	-114.6371961.378	-114.0671961.339				
-113.4261961.306	-112.9561961.287	-112.5991961.278	-112.2121961.265	-111.6341961.254					
-111.4191961.249	-111.1361961.234	-111.0051961.225	-110.8941961.227	-110.3161961.253					
-108.9461961.295	-107.645	1961.32	-105.6421961.415	-105.5981961.424	-105.1771961.442				
-103.065	1961.51	-101.9421961.539	-100.661961.559	-100	1961.58	-97.7391961.673			
-97.2461961.689	-95.3791961.742	-94.8051961.757	-90.5951961.709	-90.4051961.664					
-90.1471961.632	-89.8821961.613	-89.5241961.602	-88.3891961.615	-87.9921961.619					
-87.6551961.614	-87.2731961.627	-86.8461961.651	-86.5271961.675	-85.9221961.704					
-85.8221961.716	-85.7381961.732	-85.6021961.744	-85.503	1961.76	-85.3551961.772				
-85.2931961.772	-85.053	1961.77	-84.8171961.765	-84.561961.753	-84.3211961.739				
-84.2041961.726	-83.441961.643	-83.0651961.615	-82.7211961.597	-82.2531961.579					
-81.6821961.566	-81.0751961.564	-80.545	1961.57	-80.1821961.581	-80.0281961.593				
-73.9981961.395	-70.5721961.245	-67.5951961.128	-66.9061961.101	-66.7081961.092					
-66.4741961.077	-66.3691961.071	-66.36	1961.07	-66.1061961.062	-66.0681961.065				
-65.961961.069	-65.8751961.075	-65.8131961.085	-65.8061961.087	-65.7631961.089					
-65.648	1961.09	-65.4441961.089	-65.0081961.063	-63.94	1961	-62.6491960.938			
-61.0221960.843	-59.8851960.675	-59.649	1960.66	-59.4171960.652	-59.0441960.649				
-58.5031960.652	-57.91960.661	-57.3841960.674	-56.6831960.703	-55.9831960.715					
-54.7431960.722	-54.1881960.722	-48.3221960.721	-44.1231960.747	-43.7711960.752					
-43.1791960.761	-38.8391960.714	-37.5131960.759	-35.9931960.798	-33.5961960.844					
-30.7811960.888	-29.9761960.901	-29.7031960.907	-29.3271960.911	-29.2381960.913					
-29.1121960.918	-28.7211960.937	-28.647	1960.94	-27.1751960.925	-27.1581960.921				
-27.1361960.921	-26.6541960.918	-25.8771960.899	-23.8281960.859	-23.0881960.838					
-22.936	1960.82	-16.0331960.869	-14.6461960.959	-13.939	1960.99	-13.608	1961		
-13.0421961.016	-12.9641961.019	-10.4161961.065	-9.6411961.079	-9.0261961.097					
-8.9111961.101	-7.9191961.156	-7.6171961.173	-7.2321961.185	-7.1081961.189					
-6.5221961.193	-6.3331961.194	-6.2881961.194	-5.3891961.187	-5.191961.185					
-3.0531961.152	-.2881961.109	01961.106	2.041961.084	2.1381961.083					
3.191961.064	4.2531961.024	5.106	1961	5.895	1961	11.382	1961		
20.5771961.225	21.0621961.236	24.371	1961.31	26.5351961.359	30.2751961.447				
33.212	1961.52	34.634	1961.55	36.0451961.577	36.5591961.589	37.0251961.602			
37.8261961.619	37.9621961.621	40.5121961.653	43.2451961.667	43.6421961.669					
44.6771961.676	45.8541961.688	46.2171961.691	48.591	1961.71	49.2081961.718				
49.5471961.725	50.06	1961.74	51.0951961.763	51.6131961.779	52.0311961.786				
52.7571961.801	53.8481961.818	54.0891961.821	54.3841961.823	54.5231961.824					
54.5241961.824	54.7521961.825	54.9131961.825	55.0921961.826	55.1321961.826					
55.4441961.826	55.6331961.826	55.8441961.825	56.7591961.825	56.9191961.824					
57.1141961.822	57.61961.809	58.1581961.789	58.3911961.778	58.681961.769					
61.291961.712	61.9931961.695	62.478	1961.68	63.5151961.643	66.9061961.472				
68.0181961.494	68.1071961.495	69.221961.507	69.6771961.488	70.641961.483					
70.8671961.479	71.6021961.461	72.7051961.413	73.7421961.362	75.8221961.397					
76.3961961.408	82.8781961.687	84.1971961.734	84.481961.741	85.6671961.766					
85.9331961.779	86.5431961.818	87.1921961.852	88.1321961.843	88.2471961.851					
88.2981961.859	88.311961.887	88.3781961.896	88.4381961.902	88.6771961.917					
88.7421961.923	88.781961.928	88.8091961.929	88.8591961.929	88.9721961.928					
89.0081961.928	89.1591961.926	89.3191961.925	89.624	1961.92	89.7721961.916				
89.9151961.914	90.5321961.895	90.7651961.889	90.9411961.887	91.111961.887					
91.256	1961.88	91.2831961.878	92.6841961.862	94.3311961.853	96.2851961.863				
97.0241961.872	102.5391961.938	103.055	1961.92	106.2541961.961	106.3231961.959				
106.361961.958	110.0021961.981	110.041	1961.98	110.1041961.978	111.7321961.969				
111.7481961.968	112.9931961.938	115.6591961.809	117.964	1961.72	120.3081961.611				
125.66	1961.57	132.8921961.839	133.832	1962	134.189	1962	134.77	1962	
135.8571961.885	135.8911961.881	1401961.912							

```
Manning's n Values          num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             100     100     100            .1       .3
Left Levee      Station= -282.86      Elevation= 1961.22

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1961.56  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.42  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1961.14  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1961.14  * Flow Area (sq ft)     *          *  136.50  *          *
* E.G. Slope (ft/ft)     *0.009815  * Area (sq ft)          *          *  136.50  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  164.30  * Top Width (ft)        *          *  164.30  *          *
* Vel Total (ft/s)       *    5.17  * Avg. Vel. (ft/s)      *          *    5.17  *          *
* Max Chl Dpth (ft)      *    2.81  * Hydr. Depth (ft)      *          *    0.83  *          *
* Conv. Total (cfs)      *  7126.3  * Conv. (cfs)           *          *  7126.3  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  165.81  *          *
* Min Ch El (ft)         * 1958.33  * Shear (lb/sq ft)     *          *    0.50  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *         *    2.61  *          *
* Frctn Loss (ft)        *    0.92  * Cum Volume (acre-ft)  *    1.41  *    8.81  *    2.94  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.91  *    8.00  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -6300

INPUT
Description:
Station Elevation Data    num=     409
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
    -4001959.798 -399.151959.784-398.529 1959.77-398.5051959.759-396.3491959.779
-395.6561959.796-384.972    1960-383.2251960.048-378.9321960.173-377.4981960.215
-377.4491960.216-377.4431960.217-375.9161960.268-373.1441960.374-371.3331960.452
-369.8681960.505  -368.91960.549-368.3961960.562 -367.651960.573-367.3261960.575
-366.6331960.579-365.5681960.581-365.4731960.582-365.3411960.581-364.333 1960.58
-363.3391960.575-360.9391960.489-360.8011960.474-360.0741960.447-359.7941960.424
-359.301 1960.37-358.9071960.349  -357.61960.308-355.4511960.225-353.0651960.119
-352.0121960.086-351.9491960.083-351.5281960.075-350.3111960.051-350.0621960.038
-350.0291960.037-349.9891960.036-349.3421960.037-348.8051960.038-348.5651960.038
-348.3871960.042-347.6961960.057-346.9451960.088-346.3841960.111 -346.161960.131
-345.9581960.176-345.0921960.276-336.0031960.432-335.5141960.415-333.3971960.339
-332.7791960.319-328.345    1960-327.506    1960-327.429    1960-326.726    1960
 -326.06    1960-325.662    1960-324.628    1960-324.085    1960-323.297    1960
-322.775    1960-322.488    1960-313.859    1960-311.5041959.232-310.9421959.233
-297.1941959.252-291.635    1959-289.9681958.087-289.795    1958-289.312 1957.73
-288.2221957.204-287.836    1957-287.6211956.975-286.7651956.907-286.2061956.876
-285.5171956.862-284.6051956.873-283.1571956.903-280.7821956.941 -277.291956.977
-274.688    1957-268.2091957.181-267.3471957.205-256.941    1958-256.5911958.171
-256.3051958.311-256.1031958.365-256.0951958.367 -255.381958.445-254.7771958.538
-253.6651958.667-244.6961958.534 -243.831958.426-241.4341958.127-239.508    1958
-233.7911957.905 -231.741957.875-216.326 1957.91-216.182    1958-215.681 1958.27
-214.127    1959 -213.911959.103 -213.411959.314-211.247    1960-210.8241960.014
-210.8181960.014-210.8171960.014-209.7621960.023-209.6821960.023-209.6621960.023
-207.5891960.017-207.3831960.013-206.536    1960-206.3181959.992  -206.31959.995
-206.2961959.995-206.2891959.996-206.2861959.996-206.2791959.995-205.7241959.966
-205.6981959.966-205.6821959.968-205.653 1959.97-205.6351959.971-205.613 1959.97
-205.5421959.964 -205.491959.961-205.3741959.956-204.975 1959.93-189.431    1959
-188.5851958.962-187.9411958.916-187.8161958.886-186.6481958.751-185.4871958.735
-180.8191958.685-179.4971958.679-179.0261958.682-178.4931958.694-176.4351958.764
-173.6421958.898 -171.861958.966-170.894 1958.99-170.436    1959-169.4741959.062
-168.1071959.195-167.3921959.226-166.0711959.275-165.7961959.297-165.5231959.389
-165.4541959.506-160.8381959.554-160.0641959.562-159.9441959.553-159.2311959.502
-158.2531959.443-156.9321959.362-150.121    1959-145.127    1959-144.951    1959
-144.842    1959-144.6631959.025-144.6011959.029-144.4881959.034-139.9931959.492
-139.2591959.507-136.1851959.571-134.3031959.623-132.3411959.692-129.8591959.792
-125.088    1960-123.4211960.177-123.4131960.177-123.3551960.175-123.3541960.174
-123.3431960.173-123.1711960.145-122.288    1960 -121.281959.743-121.1741959.744
-119.6831959.476-119.6041959.462-118.6411959.283-118.3761959.254-116.9351959.231
-116.8731959.253-116.6181959.278-115.9361959.323-113.7811959.428-112.2321959.491
-110.6561959.537-110.0121959.556 -109.941959.558-108.7621959.597-101.6151959.838
 -100.861959.869 -97.303    1960  -96.731960.018 -96.7181960.018 -96.0081960.029
 -96.0011960.029 -95.9911960.029 -95.1941960.025 -95.1851960.025  -94.361960.011
 -94.3421960.011 -93.828    1960 -92.764 1959.77 -89.211    1959 -88.4321958.963
 -87.3691958.873 -86.1211958.728 -85.1391958.679 -84.6021958.621 -84.3431958.656
 -84.0661958.671 -83.5541958.683 -81.9481958.707  -77.281958.856 -74.263 1958.99
 -73.947    1959 -67.7411959.184 -66.1831959.231 -59.3381959.426 -49.0261959.437
  -48.831959.423 -48.5991959.425 -47.9291959.448 -47.1171959.467 -45.7751959.496
 -44.8021959.511 -43.6721959.544 -41.993 1959.56 -41.0771959.568 -39.5111959.616
 -37.4021959.628 -36.4691959.634 -35.8521959.656 -35.1271959.677  -32.761959.682
```

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  -32.481959.693  -32.221959.707 -31.7031959.742 -31.5861959.754 -31.3311959.788
   -31.21959.796 -31.0421959.801 -30.8371959.809 -30.6591959.818 -30.4051959.829
 -30.2821959.832 -29.9251959.838 -27.773 1959.82 -27.7071959.815 -27.4381959.784
 -27.2691959.785 -26.6041959.797 -26.3441959.802 -25.783 1959.81 -25.5921959.814
 -25.3331959.817 -24.4981959.828 -24.2861959.831 -24.1821959.835 -24.0661959.844
 -23.9981959.846 -23.8261959.846 -23.5181959.844 -23.1451959.841 -22.8141959.839
 -22.6181959.836 -22.5351959.834 -22.4761959.826 -22.423 1959.81 -22.2371959.796
 -22.0561959.777  -21.681959.752 -21.6541959.747 -21.5591959.743 -20.865 1959.74
 -19.5271959.733 -19.2471959.729 -11.6341959.646 -11.3971959.646 -11.1161959.639
  -11.091959.639 -10.5131959.595 -10.4371959.578  -5.0171959.442  -4.1141959.459
  -3.6291959.465  -3.1891959.465   -2.851959.459  -2.6411959.448  -2.5731959.437
       01959.432   1.9571959.428   3.5271959.465   3.9781959.481   4.4151959.512
   4.7131959.521   5.0961959.528   5.8911959.537   6.761 1959.55   8.5831959.589
   9.3681959.603  11.9951959.631  17.6121959.709  20.1251959.749   21.371959.774
  26.0691959.883  28.7671959.935  28.8911959.938   29.441959.946    30.81959.965
  30.9981959.969  31.1641959.972   31.361959.976  31.4131959.977  31.5691959.979
  31.644 1959.98  31.7341959.981  31.842 1959.98  31.8521959.979  31.8851959.978
  32.0461959.975  32.1191959.973   32.351959.964  32.7931959.967  32.8451959.965
  33.6821959.948  42.7191959.969  42.7541959.969  43.9131959.952  45.8071959.907
  45.935 1959.91  46.4051959.924  46.4581959.925  46.5261959.925  46.6271959.924
  47.4791959.918  48.9711959.887   50.261959.852  51.1131959.821  51.3511959.804
   51.361959.645  55.6131959.549  58.8681959.604   58.981959.611  59.4721959.611
  60.7781959.599  62.0141959.581  65.1651959.543  67.3591959.512   69.011959.495
  75.8461959.617  75.9041959.628  76.3241959.663  76.6631959.713  76.9741959.738
  78.4331959.934  79.952    1960  80.205    1960  80.799    1960  81.593    1960
  84.456    1960  86.281    1960  93.553    1960  93.6551960.019  93.8031960.052
  93.8311960.058  93.837 1960.06  93.839 1960.06  95.9751960.575   97.511960.998
  97.519    1961  99.655    1961   99.74    1961  99.856    1961 101.2341960.625
 102.727 1960.19  103.16    1960 103.4561960.011 103.6741960.013 103.6771960.013
 103.7821960.009 103.7971960.008 103.8731960.012 105.8021960.189 114.624    1961
  115.321960.923 116.1121960.922 117.4761960.892 118.9031960.844 119.9061960.794
 120.9541960.757 122.0631960.707 123.7341960.603 126.8951960.372 131.636    1960
 132.481 1959.96 133.1621959.903 138.2841959.783     1401959.787

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             100     100     100             .1       .3
Right Levee     Station= -211.25      Elevation=    1960

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1959.82  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.67  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 1959.15  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1959.15  * Flow Area (sq ft)      *          *  107.40  *          *
* E.G. Slope (ft/ft)     *0.008555  * Area (sq ft)           *          *  107.40  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   81.18  * Top Width (ft)        *          *   81.18  *          *
* Vel Total (ft/s)       *    6.57  * Avg. Vel. (ft/s)      *          *    6.57  *          *
* Max Chl Dpth (ft)      *    2.29  * Hydr. Depth (ft)      *          *    1.32  *          *
* Conv. Total (cfs)      *  7633.0  * Conv. (cfs)           *          *  7633.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   82.13  *          *
* Min Ch El (ft)         * 1956.86  * Shear (lb/sq ft)      *          *    0.70  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.59  *          *
* Frctn Loss (ft)        *    0.83  * Cum Volume (acre-ft)  *    1.41  *    8.53  *    2.94  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.91  *    7.72  *    2.75  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -6400

INPUT
Description:
Station Elevation Data    num=     411
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**********************************************************************************************
    -4001958.249-397.7151958.216-397.5991958.215-396.6811958.207-394.7111958.189
-393.9051958.172-393.5921958.164-393.4311958.161-392.7041958.152 -392.581958.148
-392.4631958.145-392.3511958.144-392.1811958.144-391.9671958.145-391.7291958.146
-390.7871958.159-390.2971958.165-388.5351958.167-387.9851958.168 -387.861958.168
-385.018 1958.19-383.2781958.183-371.7151958.269-370.065 1958.26-368.321 1958.27
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-346.3251958.383-342.3131958.407-337.9781958.434-335.7091958.441-332.6311958.469
-332.0011958.474-331.9931958.475-331.0881958.485-325.5591958.547-323.2791958.561
-321.4681958.551-319.8911958.524-318.5121958.492-317.459 1958.47-316.773 1958.46
 -316.181958.456-316.0331958.462-313.0821958.497-312.6581958.506-312.4811958.513
-312.4711958.529  -310.81958.524-306.9051958.513-306.834 1958.51-306.7971958.508
-306.3771958.492-306.1231958.486-306.0451958.484-305.1971958.462-304.3361958.435
-304.0991958.428-300.906 1958.33-300.3211958.317-300.1821958.314-297.2991958.249
-297.1881958.247-297.1451958.246 -296.331958.225-296.1931958.221-296.1381958.219
-294.9871958.181-294.9571958.173-294.946 1958.17-294.6371958.089-294.6311958.089
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 -294.6251958.088-294.4381958.064-294.4181958.063-294.3911958.062-293.341 1958.03
  -293.181958.015-293.028    1958-292.983    1958-292.111    1958 -292.02    1958
 -285.0821957.397-283.065 1957.23-282.2381957.171-281.4131957.122-281.2021957.106
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 -268.8971955.594-268.8581955.583-268.0141955.565-264.4451955.412-263.9221955.397
 -263.3121955.393-262.2631955.399-258.2141955.434-255.8151955.458-253.8281955.483
 -250.3871955.527-248.6951955.516-242.977  1955.6-241.7561955.631-239.724  1955.7
 -239.192 1955.72-235.6211955.856-235.0191955.856-232.163    1956-221.2381956.828
 -220.7191956.875-220.6091956.893-219.9151956.911-219.8731956.903-219.7931956.895
 -219.5631956.876-219.4411956.859-219.3141956.832-219.1071956.799-218.746 1956.85
 -217.687    1957-217.0251957.164-214.4991957.729-214.3851957.754-213.237    1958
 -210.306    1958-208.465    1958-207.992    1958  -207.5 1957.96-204.9421957.767
 -201.8261957.557-198.0951957.322-194.863    1957-185.7251956.763-183.2631956.704
 -180.5831956.643 -173.731956.501-170.2621956.433-162.7881956.293-161.3861956.264
 -160.4881956.241-159.8831956.224-159.3711956.213-158.8251956.209-158.2831956.209
 -157.8371956.213 -157.571956.219-157.3551956.232-157.043 1956.24-156.8931956.249
 -155.7181956.395-155.3131956.443 -151.661956.883  -151.61956.883-151.291 1956.92
 -150.627    1957-148.5481957.853 -148.01    1958-145.4491958.052-144.4461958.063
 -143.3361958.079-142.5151958.087-141.5691958.086-141.2491958.079-140.784 1958.06
 -138.8561958.009-138.639    1958 -136.681957.851-136.6371957.848-134.7721957.734
 -131.9111957.522-129.6611957.405-129.2611957.364-128.979  1957.3-122.5621957.306
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  -95.496 1958.17  -94.021958.111 -93.738  1958.1 -93.4461958.072  -93.131958.061
  -91.751958.048 -90.0461958.024 -88.938    1958 -87.7381957.968 -87.7311957.968
 -84.9641957.861 -82.266 1957.77 -80.5241957.699 -78.7321957.616 -77.328 1957.54
 -77.0121957.539 -73.3561957.578  -70.29 1957.62 -69.2971957.641  -68.631957.662
  -68.221957.683 -67.401 1957.76 -66.0781957.922 -65.303    1958 -56.818 1958.74
 -56.4051958.749 -55.992 1958.74 -54.7471958.842 -54.1421958.898 -54.0841958.901
 -54.0041958.903 -53.8511958.905 -53.3781958.912 -53.1821958.915 -53.0661958.915
 -53.0091958.914 -52.9581958.912 -51.8771958.903 -51.6841958.901 -51.3761958.895
 -49.7921958.867  -49.351958.857 -49.0371958.848 -48.2871958.821 -47.5241958.796
 -47.2711958.791 -46.5051958.778 -43.746 1958.69 -42.8061958.667 -41.9971958.645
 -40.9791958.602 -40.1641958.571 -38.844 1958.53 -31.8591958.332 -30.5531958.298
 -29.8891958.283 -29.3881958.276 -27.4031958.256 -26.9931958.249  -26.781958.251
 -26.5211958.244 -26.5081958.243 -26.2851958.257 -16.0761958.326 -15.1771958.313
  -13.691958.303 -12.2011958.274 -11.7021958.264  -9.4081958.261  -8.4381958.256
  -7.5551958.252  -4.6751958.234  -1.8431958.216  -1.5011958.209    -.442 1958.18
    -.196 1958.17    -.0531958.165       01958.164    .2751958.156    .548 1958.15
     .891958.145   1.5781958.135   2.0131958.119   2.1331958.117   2.2061958.116
   2.2681958.113   2.2961958.112   2.3631958.112   2.5911958.115   2.6791958.117
   2.944 1958.12   3.0321958.121    3.171958.123   3.6931958.127   3.8421958.129
   3.9131958.131   3.9941958.137   4.0531958.138   4.2071958.138   4.4761958.137
   4.7841958.135   5.0361958.134    5.171958.132   5.2121958.131    6.021958.122
   6.4071958.134   6.6071958.136   7.3721958.144   7.811 1958.15   8.4631958.156
   8.5191958.157   8.9631958.174   9.868  1958.2  10.2531958.211  12.9021958.202
  13.0021958.204  15.043 1958.21  16.0941958.213  16.7891958.218  19.0161958.235
  20.6081958.252  21.2091958.258  22.4131958.277   22.911958.293  23.0561958.308
  23.7681958.457  29.6351958.404  29.8051958.391  30.6961958.343  32.381 1958.15
  32.8221958.121  35.949    1958  44.165    1958  47.291    1958  49.484    1958
  50.6131958.068  52.3421958.166  53.117 1958.21  57.092 1958.42  59.5521958.609
  59.9871958.637  60.3441958.651  60.8371958.664  61.3661958.674   61.83 1958.68
  62.169 1958.68  62.4181958.675  62.986 1958.65  65.464 1958.46  66.3581958.407
  66.6791958.418  71.949 1958.18  72.1451958.179  72.3561958.174  73.828 1958.14
  74.1681958.123   74.341958.118  74.8971958.113  75.0751958.116  75.2871958.125
  75.6931958.152   75.881958.159   76.261958.173  77.1351958.244  77.7681958.305
  78.6891958.404  81.2371958.698  83.864    1959  85.1161959.032  85.1761959.033
  85.2261959.033  86.297 1959.05   86.661959.052  87.4771959.058  87.705 1959.06
   88.371959.062  89.1721959.064   91.331959.064  91.4351959.064  93.5711959.053
  99.3331959.012 100.535    1959  101.831958.982 101.968 1958.98 103.0181958.956
 104.9051958.903 106.849 1958.84  108.171958.814 109.1361958.807  110.331958.812
  115.121958.888 115.1841958.889 116.5261958.901 116.6991958.899 117.773  1958.9
 118.5621958.893 120.0061958.887  123.111958.836  125.041958.799 125.646 1958.78
 127.0581958.697  128.091958.657 128.5941958.629 129.6541958.527  130.041958.506
 130.4121958.497 131.4921958.476 131.8231958.463 132.341 1958.43  139.071958.384
     1401958.455

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140              100     100     100             .1       .3
Right Levee     Station= -213.24      Elevation=    1958

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1958.20  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.73  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1957.47  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1957.47  * Flow Area (sq ft)     *          *  103.09  *          *
* E.G. Slope (ft/ft)     *0.008035  * Area (sq ft)          *          *  103.09  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   70.30  * Top Width (ft)        *          *   70.30  *          *
* Vel Total (ft/s)       *    6.85  * Avg. Vel. (ft/s)      *          *    6.85  *          *
* Max Chl Dpth (ft)      *    2.08  * Hydr. Depth (ft)      *          *    1.47  *          *
* Conv. Total (cfs)      *  7876.1  * Conv. (cfs)           *          *  7876.1  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   70.74  *          *
* Min Ch El (ft)         * 1955.39  * Shear (lb/sq ft)      *          *    0.73  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.01  *          *
* Frctn Loss (ft)        *    0.72  * Cum Volume (acre-ft)  *    1.41  *    8.29  *    2.94  *
* C & E Loss (ft)        *    0.12  * Cum SA (acres)        *    0.91  *    7.54  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
```

depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -6500

INPUT
Description:
Station Elevation Data num= 358

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001956.535	-399.4531956.524	-399.311	1956.52	-398.971956.511	-398.7251956.504				
-398.1371956.487	-395.4081956.423	-391.7051956.337	-387.291956.223	-384.1231956.142					
-381.4681956.069	-379.6171956.019	-379.2941956.008	-379.052	1956	-378.7961955.966				
-378.7511955.927	-367.211955.577	-363.8151955.624	-360.4261955.679	-358.0461955.726					
-356.5241955.978	-356.468	1956	-356.152	1956	-354.649	1956	-354.1471956.058		
-3541956.074	-353.0971956.091	-351.5911956.119	-351.0931956.128	-349.4351956.155					
-348.1071956.177	-347.5741956.185	-345.51956.219	-345.1211956.225	-344.84	1956.23				
-344.1421956.243	-344.0631956.244	-343.9941956.246	-343.8691956.255	-343.8561956.257					
-343.8441956.257	-342.3151956.309	-341.5341956.336	-340.9421956.298	-340.8861956.294					
-340.668	1956.28	-340.3081956.267	-340.1811956.263	-337.9291956.234	-336.5221956.216				
-334.8011956.185	-333.7071956.156	-331.4981956.079	-331.4061956.077	-329.7861956.049					
-324.931	1956	-323.554	1956	-322.868	1956	-315.971956.164	-315.2231956.183		
-311.9131956.265	-310.8631956.296	-310.2891956.317	-309.5871956.353	-309.2941956.384					
-305.6041956.507	-302.9381956.545	-301.936	1956.56	-300.4481956.583	-298.4491956.617				
-296.5561956.653	-296.2061956.662	-296.1411956.666	-295.9681956.677	-295.8971956.681					
-295.0631956.705	-291.7311956.713	-290.9631956.714	-290.4761956.713	-289.6021956.705					
-286.8031956.683	-285.4571956.672	-284.8591956.667	-284.7791956.665	-284.6111956.644					
-284.2351956.622	-283.61956.599	-283.4281956.582	-282.9771956.515	-282.7711956.502					
-282.5781956.496	-281.9261956.511	-281.8651956.512	-280.7271956.527	-280.41956.524					
-279.7271956.531	-277.431956.557	-276.921956.558	-276.5841956.562	-276.3231956.571					
-276.2471956.591	-276.1841956.667	-276.1081956.669	-276.0361956.678	-275.6091956.715					
-274.8861956.721	-272.6941956.738	-272.1971956.744	-271.2371956.759	-271.0081956.763					
-270.9711956.762	-270.3441956.677	-270.0081956.617	-268.9951956.479	-267.19	1956.21				
-266.897	1956.22	-266.715	1956.23	-266.4231956.261	-265.721	1956	-264.321955.353		
-262.903	1955	-261.1081954.866	-260.9251954.852	-250.3521954.061	-249.225	1954			
-247.7721953.976	-244.841953.937	-235.1361953.822	-229.662	1953.87	-227.446	1954			
-227.1161954.585	-226.957	1955	-226.4481955.915	-226.417	1956	-225.754	1956		
-225.27	1956	-223.111	1956	-205.5761955.626	-201.6741955.555	-200.1581955.526			
-187.9871955.262	-180.9431955.101	-176.521	1955	-173.7031954.808	-173.5781954.805				
-170.891954.578	-170.804	1954.57	-170.6431954.541	-170.5611954.467	-169.6551954.344				
-169.4791954.309	-168.9971954.275	-168.7091954.257	-168.5191954.248	-167.4631954.168					
-165.9011954.138	-165.4211954.142	-164.8161954.149	-164.751954.148	-164.7481954.144					
-164.6791954.141	-164.458	1954.14	-163.3631954.143	-163.2261954.144	-162.9731954.149				
-162.3371954.164	-161.8541954.177	-160.1661954.231	-159.8151954.245	-159.3421954.271					
-157.5481954.342	-155.821954.403	-155.6251954.808	-155.4211954.839	-155.0181954.845					
-154.7581954.842	-154.5931954.867	-153.731	1955	-153.175	1955	-153.084	1955		
-153.015	1955	-137.175	1955	-135.489	1955	-133.895	1955	-133.182	1955
-131.5661955.211	-128.6381955.712	-127.608	1955.88	-126.87	1956	-124.6511956.373			
-124.341956.418	-124.2271956.413	-121.5621956.788	-121.4081956.784	-120.826	1956.74				
-120.181956.698	-118.5061956.596	-117.5361956.537	-117.1881956.524	-116.3941956.495					
-115.5581956.423	-114.0841956.419	-113.995	1956.41	-113.5831956.366	-110.8451956.389				
-110.6111956.391	-110.5041956.389	-109.2351956.373	-107.8551956.334	-106.61	1956.29				
-105.3431956.215	-103.768	1956.17	-103.7231956.167	-103.2481956.135	-103.1341956.126				
-101.8741956.083	-101.6511956.083	-101.249	1956.08	-100.5251956.074	-100.2971956.072				
-100.2271956.071	-99.8471956.088	-99.6711956.144	-99.5191956.144	-79.6151956.146					
-76.09	1956	-71.654	1956	-70.346	1956	-67.188	1956	-63.938	1956
-63.1691955.962	-62.4061955.934	-61.3851955.912	-60.8921955.907	-60.529	1955.91				
-60.2851955.918	-60.0511955.936	-59.878	1956	-57.7911956.401	-56.7	1956.4			
-54.3881956.664	-51.3021956.622	-46.7791956.559	-44.0151956.663	-43.1491956.689					
-42.5241956.704	-40.4421956.734	-40.2071956.741	-40.0321956.752	-39.8471956.761					
-39.7281956.769	-39.6691956.781	-37.6111956.761	-37.5661956.755	-37.3371956.742					
-37.1741956.735	-35.8761956.701	-35.234	1956.68	-34.5931956.651	-34.0071956.621				
-30.7471956.475	-28.891	1956.45	-18.674	1956	-17.6351955.957	-17.2721955.945			
-16.7581955.978	-15.999	1956	-4.824	1956.22	-3.4661956.246	-2.5461956.268			
01956.314	5.1721956.409	6.2751956.429	8.3031956.473	8.671956.481					
8.9451956.485	9.481956.493	10.1211956.499	10.511956.502	11.7121956.507					
13.0721956.503	14.5411956.494	21.1041956.443	21.6291956.439	22.1941956.437					
33.9831956.362	34.942	1956.35	35.9231956.323	36.0931956.318	36.2651956.311				
39.0921956.255	40.486	1956.23	41.5391956.215	42.6121956.269	42.8651956.365				
43.1361956.392	45.0441956.548	46.4931956.643	47.7781956.744	50.616	1957				
50.6851957.003	50.6911957.003	51.192	1957	51.336	1957	59.17	1957		
61.634	1957	62.782	1957	69.943	1957	71.085	1957	72.575	1957
73.083	1957	75.029	1957	76.675	1957	79.442	1957	80.632	1957
81.645	1957	83.552	1957	85.042	1957	85.593	1957	90.9021957.078	
94.343	1957	94.3561956.999	95.5761956.942	96.8091956.867	97.3461956.821				
97.7471956.805	98.373	1956.8	99.2961956.812	101.9351956.877	106.39	1957			
110.992	1957.1	111.3921957.109	111.4541957.098	111.5521957.092	111.6611957.088				
111.8191957.086	112.1271957.083	112.2831957.083	112.4881957.082	112.7171957.083					
112.9341957.084	113.1111957.085	113.2461957.087	113.4161957.089	114.0871957.102					
114.721957.118	115.1081957.126	115.9351957.147	116.6341957.162	117.5381957.186					
117.8531957.193	118.5651957.208	119.072	1957.22	119.7651957.235	120.6921957.251				
121.831957.264	124.7631957.285	1401957.573							

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-400	.035	-400	.025	140	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-400	140	100	100	100	.1	.3

Left Levee Station= -272.69 Elevation= 1956.74
Right Levee Station= -226.42 Elevation= 1956

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1956.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.025	
W.S. Elev (ft)	1956.01	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1956.01	Flow Area (sq ft)		153.04	
E.G. Slope (ft/ft)	0.006418	Area (sq ft)		153.04	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	158.58	Top Width (ft)		158.58	
Vel Total (ft/s)	4.61	Avg. Vel. (ft/s)		4.61	
Max Chl Dpth (ft)	2.19	Hydr. Depth (ft)		0.97	
Conv. Total (cfs)	8812.5	Conv. (cfs)		8812.5	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		160.50	
Min Ch El (ft)	1953.82	Shear (lb/sq ft)		0.38	
Alpha	1.00	Stream Power (lb/ft s)		1.76	
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	1.41	8.00	2.94
C & E Loss (ft)	0.02	Cum SA (acres)	0.91	7.28	2.75

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -6600

INPUT
Description:
Station Elevation Data num= 410

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001954.116	-397.422	1954	-389.94	1954	-386.732	1954	-385.551	1954	
-382.824	1954.08	-369.581954.473		-363.1331954.657		-360.9891954.714		-359.2181954.764	
-358.2571954.787		-358.1741954.789		-356.5821954.825		-356.2661954.833		-356.2241954.834	
-354.4391954.887		-354.1941954.895		-353.8311954.908		-353.782	1954.91	-353.751954.912	
-353.7451954.913		-353.6611954.917		-353.6491954.918		-353.4591954.925		-353.4331954.926	
-353.349	1954.93	-353.338	1954.93	-353.2691954.932		-353.261954.933		-353.1931954.936	
-353.1841954.936		-353.1041954.938		-353.032	1954.94	-353.031	1954.94	-353.011954.941	
-352.953	1954.94	-352.952	1954.94	-352.944	1954.94	-352.933	1954.94	-352.8721954.939	
-352.8471954.938		-352.8011954.935		-352.6971954.933		-352.484	1954.93	-351.9431954.923	
-351.7451954.902		-351.695	1954.9	-351.5271954.899		-350.4681954.899		-350.2191954.899	
-349.9411954.897		-347.0621954.866		-346.9341954.866		-341.5111954.797		-341.3421954.795	
-340.769	1954.8	-340.31954.802		-339.3071954.803		-333.5281954.747		-329.7551954.725	
-327.4161954.725		-325.1231954.738		-320.0951954.738		-320.0681954.738		-319.5261954.737	
-319.5241954.737		-316.6131954.738		-315.5731954.723		-3151954.715		-312.4151954.672	
-311.2771954.663		-308.9441954.653		-300.7051954.627		-300.5441954.627		-300.3741954.628	
-297.553	1954.63	-297.0471954.631		-293.281954.614		-291.1531954.595		-290.2661954.576	
-289.1351954.497		-288.6791954.475		-288.0151954.456		-287.4811954.445		-285.5051954.473	
-285.2141954.481		-285.1041954.489		-285.041954.514		-284.7111954.525		-284.5681954.531	
-284.4031954.553		-284.111954.563		-283.495	1954.57	-278.9131954.646		-278.3271954.657	
-276.84	1954.67	-272.263	1954.68	-268.8311954.703		-267.1481954.721		-266.2331954.725	
-265.1171954.733		-261.7481954.752		-261.6251954.757		-261.2581954.791		-261.1621954.794	
-260.4351954.809		-260.36	1954.81	-260.3071954.809		-259.9861954.792		-259.5131954.764	
-259.2171954.746		-258.0551954.667		-257.1951954.589		-255.5161954.446		-253.1371954.225	
-252.905	1954.23	-250.794	1954	-250.4431953.643		-249.675	1953	-244.7841952.725	
-244.271952.701		-243.2561952.667		-241.5361952.626		-239.1021952.581		-236.3551952.538	
-234.5741952.533		-230.9531952.482		-229.1781952.458		-226.849	1952.43	-224.6471952.412	
-222.4711952.402		-220.3961952.398		-215.3271952.397		-214.8451952.408		-214.591	1952.41
-214.4091952.415		-214.2261952.426		-211.952	1952.51	-204.2241952.784		-203.3021952.814	
-203.2791952.799		-203.0981952.798		-202.131952.816		-201.8151952.836		-201.4051952.859	
-201.341952.915		-200.9511952.931		-200.5921952.932		-200.1411952.936		-198.371	1953
-198.251	1953	-198.205	1953	-197.622	1953	-197.139	1953	-195.874	1953
-195.317	1953	-194.045	1953	-193.273	1953	-191.603	1953	-184.42	1953
-181.927	1953	-181.158	1953	-180.161	1953	-179.889	1953	-177.853	1953
-177.692	1953	-174.705	1953	-173.245	1953	-173.0581952.986		-172.636	1953
-168.7631953.148		-168.4381953.161		-165.5931953.234		-165.2391953.243		-163.8291953.255	
-162.9421953.263		-161.4381953.265		-158.781	1953.27	-152.9311953.794		-152.2771953.815	
-151.7461953.847		-150.322	1954	-150.1291954.017		-150.1181954.018		-150.1161954.018	
-148.5871954.064		-148.5171954.066		-148.4971954.067		-145.8481954.121		-145.6721954.125	
-145.6141954.126		-144.3971954.139		-144.3421954.139		-144.322	1954.14	-143.7151954.136	
-143.4161954.134		-143.4061954.134		-143.3981954.134		-143.3861954.134		-143.381954.134	
-143.3741954.134		-142.6491954.111		-140.557	1954	-136.688	1954	-136.495	1954
-111.366	1954	-111.297	1954	-111.289	1954	-110.793	1954	-110.269	1954
-109.271	1954	-107.995	1954	-102.8	1954	-99.9971954.872		-99.54	1955
-99.4921955.011		-98.952	1955.02	-85.8071955.227		-83.6711955.223		-74.4971955.204	
-74.3241955.202		-73.6431955.198		-73.5041955.196		-72.961	1955.19	-72.7651955.186	
-71.9841955.171		-71.7671955.163		-70.8051955.131		-70.2861955.105		-68.18	1955
-66.2261954.906		-62.0931954.705		-58.6581954.522		-58.0311954.489		-51.8921954.526	
-51.71954.553		-51.5791954.592		-51.2931954.627		-51.0741954.637		-50.7051954.646	
-50.1421954.647		-47.5121954.627		-46.7361954.619		-46.0511954.619		-45.6931954.612	
-45.2491954.608		-37.7271954.499		-36.018	1954.47	-35.2	1954.45	-32.5341954.421	
-31.7361954.401		-31.0671954.384		-30.3851954.364		-29.8041954.352		-29.5561954.346	
-27.9941954.293		-27.7261954.281		-27.4431954.264		-27.1931954.255		-26.336	1954.23
-25.9511954.261		-25.9281954.274		-25.871954.277		-25.724	1954.28	-25.25	1954.28
-24.591954.278		-24.463	1954.28	-24.1321954.276		-23.2771954.279		-23.1661954.279	
-21.961954.272		-21.8921954.271		-21.0221954.233		-20.5521954.228		-20.2311954.221	
-19.8451954.209		-19.6561954.205		-19.2951954.201		-18.9551954.197		-18.8511954.193	
-18.6051954.174		-18.561954.174		-18.391954.173		-18.0281954.174		-17.8651954.175	
-17.7671954.176		-17.4321954.189		-17.0091954.202		-16.9141954.206		-16.7151954.219	
-16.359	1954.23	-15.6471954.246		-15.2611954.254		-12.5881954.309		-12.2181954.311	
-10.1961954.339		-8.9361954.358		-6.131	1954.4	-4.0491954.432		-2.7061954.448	

```
   -.9361954.484   -.3331954.484   -.0871954.484       01954.482     .251954.475
    11.911954.521  27.6251954.854  34.335    1955  35.2161955.107   35.521955.143
    35.711955.196  35.7631955.211  36.133 1955.24  36.257 1955.25  36.7071955.274
   36.8621955.283  36.8781955.284  37.2441955.296   37.37  1955.3  37.391  1955.3
   38.0311955.314   38.241955.319  38.301 1955.32  39.2891955.336  39.539 1955.34
    39.711955.343  40.9781955.357  41.0851955.359   41.471955.363  41.5791955.364
   42.9921955.374   43.451955.377  44.7271955.379  45.308 1955.38  45.573 1955.38
   47.6931955.375  49.6051955.363  51.1041955.348  52.905 1955.32  53.6171955.306
   53.777 1955.31  55.4521955.368  55.9231955.388  56.1331955.405  56.236 1955.45
   58.3551955.485  60.9621955.428  61.7851955.399  62.9041955.365  66.3391955.237
   68.289 1955.15  70.7411955.062  72.8221955.002  72.8581955.001   72.902    1955
   77.8481954.908  79.8121954.861   81.781954.824  93.2521954.891  93.2521954.908
   93.6011954.922  94.3991954.934  95.7681954.944 103.3071954.964  104.291954.969
  105.1441954.981 105.938    1955 108.0151955.112 110.6711955.286 113.0191955.439
  114.1451955.512 114.3591955.527 119.3061955.867 121.143    1956 121.879 1956.02
  121.9181956.021 122.316 1956.04 122.3461956.041 122.5811956.052 122.6031956.054
  123.0071956.064 123.0551956.065 123.4851956.076 123.5461956.078 123.7071956.083
  123.7311956.084 124.3061956.103 124.4171956.107 124.9941956.137 125.1431956.144
  126.4051956.176 126.8251956.186 127.8511956.217 128.2611956.229 128.8921956.241
   129.161956.247 129.4671956.249 129.597 1956.25 129.8191956.247 129.9081956.245
   130.421956.213  131.44 1956.15 132.3381956.112 133.6181956.082 134.7821956.048
  135.981    1956 136.5771955.971 136.6241955.969 137.0481955.962     1401955.863

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
**************************************************
    -400     .035    -400     .025     140     .035

Bank Sta: Left    Right    Lengths: Left Channel    Right     Coeff Contr.    Expan.
          -400      140              100      100      100             .1       .3
Right Levee     Station= -145.85      Elevation= 1954.12

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 1954.60  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.50  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 1954.10  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 1954.10  * Flow Area (sq ft)      *          *  124.67  *          *
* E.G. Slope (ft/ft)      *0.008915  * Area (sq ft)           *          *  124.67  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *  122.51  * Top Width (ft)         *          *  122.51  *          *
* Vel Total (ft/s)        *    5.66  * Avg. Vel. (ft/s)       *          *    5.66  *          *
* Max Chl Dpth (ft)       *    1.70  * Hydr. Depth (ft)       *          *    1.02  *          *
* Conv. Total (cfs)       *  7477.2  * Conv. (cfs)            *          *  7477.2  *          *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)       *          *  122.99  *          *
* Min Ch El (ft)          * 1952.40  * Shear (lb/sq ft)       *          *    0.56  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    3.19  *          *
* Frctn Loss (ft)         *    0.90  * Cum Volume (acre-ft)   *    1.41  *    7.68  *    2.94  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *    0.91  *    6.96  *    2.75  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -6700

INPUT
Description:
Station Elevation Data    num=     313
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************
    -4001952.421-399.7641952.417 -398.481952.398 -394.571952.324-392.103 1952.28
-390.7311952.259-390.3461952.252-388.9041952.232 -388.351952.228-388.0921952.228
-387.904 1952.23-387.7131952.236-387.5891952.255 -387.33 1952.27 -387.281952.279
-386.9341952.295 -384.821952.387-383.9241952.367-382.654 1952.35-381.2981952.348
-380.3251952.339-379.1371952.356-375.6231952.324 -374.14 1952.31-372.7231952.337
-371.6911952.327-371.2411952.322-370.4591952.313-369.0251952.284 -367.951952.272
-366.3641952.262-364.2551952.255-360.4041952.246-359.6411952.242-359.5361952.237
-359.1421952.231-358.6071952.234-357.2741952.258-357.2311952.263 -356.941952.271
 -352.241952.356-351.1661952.374-349.7921952.393-347.7631952.447-347.5851952.457
-346.8441952.475-342.6981952.566-338.9971952.651-334.0911952.752-328.8661952.867
-323.298    1953-321.149    1953-316.274    1953-314.705    1953-314.093    1953
-312.138    1953-308.4791952.923 -308.471952.923-307.401 1952.89-306.5431952.855
 -296.881952.672-294.307 1952.67 -290.691952.674-285.9351952.695-279.6741952.746
-272.1471952.822-264.6281952.904-256.4051952.999 -256.33    1953-256.292    1953
-241.707    1953-240.001    1953-239.394    1953-238.324    1953 -235.76    1953
-233.5571952.702-231.8721952.497-228.156    1952 -214.311951.274-210.7741951.168
-209.6641951.115 -208.91 1951.08-207.845 1951.04 -207.681951.035-207.5531951.031
-207.4181951.029-207.0991951.024-207.0451951.024-206.8511951.021-206.6961951.018
-206.5941951.016-206.5481951.014-206.3991951.012-206.3861951.012-206.3511951.012
-206.3431951.012-206.3221951.012-206.3171951.014-206.3071951.015-206.2541951.017
-206.2321951.017 -206.221951.018 -205.231951.021-205.0831951.021-205.0751951.021
 -205.07 1951.02-204.887 1951.02-204.8391951.021-204.8051951.021-204.6961951.022
-204.6461951.023-204.6181951.023-204.5991951.023-204.5831951.023-204.5081951.024
-204.2971951.027-204.2081951.028-203.7161951.036-202.0941951.061-200.8671951.076
-200.6231951.079-200.531 1951.08-199.9081951.083-198.5721951.106-196.9671951.135
-196.3861951.144-195.9751951.151-195.0681951.167-149.928    1952 -149.261952.039
-149.1231952.042-148.7731952.051-140.8971952.414-135.5631952.506-131.0211952.584
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-130.5771952.588-128.9191952.598-121.5831952.748-119.0011952.806-115.7371952.887
-110.505    1953-108.3661953.042-108.1221953.047-106.5031953.084-106.3431953.087
-105.808 1953.11-105.7461953.112-105.5331953.142-105.5011953.147-103.1251953.264
-102.386  1953.3-102.1731953.317-102.1011953.323-102.0521953.339-102.0351953.345
-101.8241953.355-101.7451953.359-101.7021953.365-101.6861953.367 -98.8991953.407
 -97.9671953.421 -97.6591953.426 -96.5321953.404 -96.1621953.396 -95.3261953.374
 -94.0421953.315 -93.4821953.274 -92.9811953.262 -91.3851953.234 -90.2331953.206
  -88.221953.174 -87.235 1953.15 -84.6511953.063 -83.5971953.036 -81.819    1953
 -80.6721952.977  -80.621952.976  -77.961952.916   -77.91952.914 -74.258 1952.78
 -68.7961952.648 -66.9561952.611 -65.448 1952.57 -65.1551952.548 -64.8211952.535
 -63.8991952.522 -61.5861952.497 -60.9141952.491 -59.9931952.487 -58.8031952.486
  -54.83  1952.5 -54.4451952.498 -53.3921952.458 -49.2181952.438 -48.3581952.437
 -48.1421952.439 -46.8381952.489 -46.171 1952.54 -45.8661952.581 -44.6131952.649
 -41.9711952.748 -33.579    1953 -21.5921953.325 -17.4051953.438 -16.3441953.454
 -11.492 1953.57  -8.2831953.639  -6.2361953.677  -5.0521953.686  -4.2811953.687
  -4.2391953.676       01953.733  19.816    1954  36.2121953.571  36.7921953.595
  37.9261953.633  39.901 1953.51  41.576 1953.36  41.7351953.365  41.9621953.373
  43.2341953.222  43.6451953.223  44.2051953.165  44.6991953.114  45.5271953.055
  45.7051953.042  45.9061953.037  46.6231953.017  46.6561953.012  46.6661953.009
  46.7081953.007  46.7161953.007  46.7221953.008  46.7291953.008  46.7381953.007
  46.8421953.011  47.5331953.034  47.5721953.032  47.5851953.031   47.831953.024
  47.8561953.024  47.8651953.023  47.9011953.022  47.942 1953.02  47.952 1953.02
  48.1281953.018  48.167 1953.02  48.2241953.024  48.2761953.026  48.3721953.032
  48.3891953.033  48.5571953.037  48.7111953.041   48.861953.046  48.968 1953.05
  49.1181953.057   49.241953.063  49.5891953.077  49.7621953.086  50.2031953.109
  50.6261953.129  50.6651953.131  54.6311953.274  57.3961953.403  60.7521953.559
  64.8491953.733   70.36    1954  76.291    1954   86.46    1954  87.201    1954
  95.264    1954  95.431    1954   95.7    1954 102.946    1954  104.971953.972
 107.2391953.961 108.0871953.965 109.265 1953.99 109.633    1954  111.461954.042
  111.941954.053   112.71954.081 112.8221954.085 113.5441954.139 113.7361954.154
 114.1291954.173 114.2471954.179 115.0571954.201 118.9611954.307 122.0011954.281
 122.055 1954.28 122.9591954.272 124.0361954.274  125.281954.257 126.0091954.247
 128.3121954.162 128.6491954.161 128.8181954.157 131.6361954.156 131.8621954.165
 133.3821954.206 134.3491954.231 134.6721954.241  134.891954.246 136.3371954.272
 136.6331954.278 136.8541954.285 137.0721954.297 137.2021954.311 137.368 1954.32
 137.7211954.334  139.19 1954.38     1401954.403

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             100     100     100             .1       .3
Left Levee      Station= -241.71      Elevation=    1953
Right Levee     Station=   -98.9      Elevation= 1953.41

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1953.37  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.52  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1952.85  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1952.85  * Flow Area (sq ft)     *          *  121.57  *          *
* E.G. Slope (ft/ft)     *0.009123  * Area (sq ft)          *          *  121.57  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  117.40  * Top Width (ft)        *          *  117.40  *          *
* Vel Total (ft/s)       *    5.81  * Avg. Vel. (ft/s)      *          *    5.81  *          *
* Max Chl Dpth (ft)      *    1.84  * Hydr. Depth (ft)      *          *    1.04  *          *
* Conv. Total (cfs)      *  7391.4  * Conv. (cfs)           *          *  7391.4  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  117.50  *          *
* Min Ch El (ft)         * 1951.01  * Shear (lb/sq ft)      *          *    0.59  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.42  *          *
* Frctn Loss (ft)        *    0.91  * Cum Volume (acre-ft)  *    1.41  *    7.40  *    2.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.91  *    6.68  *    2.75  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -6800

INPUT
Description:
Station Elevation Data    num=     369
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -400    1951-398.604    1951 -397.45    1951-395.315    1951-392.066    1951
-390.682    1951-390.459    1951-389.8091950.889-389.2811950.865-384.9741950.754
-374.3361950.787-372.4521950.798-370.8111950.813-369.421 1950.83-368.2851950.847
-366.6861950.875-363.3551950.948-360.513    1951-360.0091951.025-359.7431951.038
-358.6931951.096-356.6061951.252-356.4671951.266-353.2411951.231-350.8611951.212
-348.6661951.203-347.4361951.203-347.1031951.203-346.8711951.201-346.0441951.196
-345.3761951.196-344.5891951.197 -344.221951.199-343.8981951.201 -343.741951.198
-343.6381951.191-343.2921951.148-343.255 1951.14-342.398 1951.12-342.1121951.122
-342.0081951.122-341.898 1951.12-341.834 1951.12-341.5491951.121-341.311 1951.12
-341.0211951.117-340.362 1951.11-340.276 1951.11-340.0611951.111-340.0061951.111
 -339.921951.112-338.541 1951.14-337.7431951.155-337.2761951.163-337.0081951.166
-336.3691951.171-336.1381951.173-335.9121951.177-335.0171951.186-331.2441951.222
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 -330.341951.231-329.7541951.241-329.1351951.257-324.1021951.399 -321.41 1951.47
-316.254  1951.6-314.5991951.645-313.2451951.697-312.0861951.785-311.2311951.823
-308.8221951.904-305.713    1952-305.051    1952 -303.56    1952-301.773    1952
-299.037    1952-298.084    1952 -296.76    1952-294.783    1952-294.296    1952
-293.313    1952-289.134    1952-288.402    1952-288.126    1952-287.671    1952
-287.404    1952-286.298 1951.93 -286.291951.929-284.8241951.798-284.0181951.745
-282.2441951.677-281.4671951.642-280.378 1951.56-279.7431951.534-278.8581951.524
-277.0431951.522-276.6031951.515-252.163    1952-250.752    1952-250.532    1952
-250.494    1952-250.441    1952-249.105    1952-248.826    1952-247.174    1952
-245.978    1952-243.959    1952-243.417    1952-234.996    1952-234.177    1952
  -232.5    1952-230.572    1952 -229.03    1952-227.732    1952-223.4631951.387
-222.2991951.201-222.0921951.171-220.915    1951-215.6671950.308-213.399    1950
-212.843    1950-210.307    1950-207.5411950.508 -204.99    1951-197.363    1951
-196.842    1951-191.3771950.652-183.0781950.135-182.5791950.095-181.394    1950
-178.088    1950 -167.81    1950-166.136    1950-165.835    1950-165.782    1950
-164.3311950.042-162.077 1950.11 -152.231950.406-151.2211950.436-150.2651950.472
-143.2271950.766-142.6691950.783-142.273 1950.79-141.5011950.799-139.4151950.826
-137.1161950.855-136.6881950.857-136.0991950.856-135.153 1950.85 -132.41    1951
-112.6251951.554-109.743 1951.63-104.9411951.756-104.314 1951.77-102.1521951.811
-101.3271951.817  -100.61951.822-100.3551951.823-100.1671951.827 -98.1911951.862
 -97.9611951.864 -97.7571951.868 -95.3491951.886  -95.291951.886 -89.9671951.832
 -89.8081951.825 -87.6871951.815 -87.4981951.806 -84.7391951.693  -82.491951.632
  -81.711951.601 -79.851 1951.53 -77.9071951.448 -75.2141951.361 -74.0861951.317
 -73.3191951.272 -68.3011951.373 -67.4531951.493 -67.1021951.563 -67.0551951.577
 -65.604    1952 -52.2231952.605 -48.2311952.773 -45.258 1952.89 -43.8491952.953
 -43.3521952.975 -43.0941952.986 -43.0281952.989 -43.0191952.989 -43.0071952.989
 -42.9921952.989 -42.9811952.989 -42.9541952.988 -42.9391952.988  -42.931952.987
 -42.8991952.982  -42.891952.981 -42.8791952.981 -42.8641952.981 -42.7751952.983
 -42.7451952.983 -42.7211952.983   -42.71952.982 -42.6241952.978   -42.61952.977
 -42.5931952.977 -42.0241952.953 -40.0191952.809 -38.7531952.731 -38.6281952.738
 -38.2921952.769 -38.1971952.783   -37.11952.845 -36.2061952.842 -35.807 1952.84
 -35.802 1952.84 -35.6441952.838  -35.511952.836 -35.5021952.836 -35.1221952.826
 -34.5241952.816 -33.9981952.806 -33.8271952.804 -33.7961952.806 -32.3661952.813
 -27.0871952.683 -22.0951952.555 -16.3471952.429  -1.058    1952  -1.0081951.925
   -.142    1952       0    1952     .885    1952   1.216    1952   2.4721952.087
  2.6831952.101    2.781952.104   5.1671952.311   6.0691952.373   6.5881952.408
  9.5161952.569  11.5681952.649  11.669 1952.65   13.041952.668   13.711952.678
 14.0131952.682  15.2341952.705  15.6151952.712  16.139 1952.72  16.2551952.722
 16.4231952.723  16.4551952.723  16.5821952.722  16.6051952.722  16.8161952.715
 17.4681952.665  17.7571952.637  18.5771952.509  19.0991952.392  19.5031952.336
 21.7051952.034  21.913    1952  23.5221951.812  24.887 1951.72  25.1211951.713
  25.391951.719  26.5091951.794  28.4951951.991   28.62    1952  35.4121952.328
 36.6941952.386  37.363 1952.42  38.4431952.473  39.2091952.503  44.5651952.784
  44.611952.785  45.1811952.791  46.3131952.845  46.6691952.866  46.7871952.873
 47.3081952.885  47.5121952.893  47.6821952.902  47.6951952.903  47.8281952.907
 47.8471952.908  47.9211952.913  47.9481952.916  48.2911952.925  48.3251952.926
 48.6191952.919  48.7111952.916  48.8211952.913  49.0031952.907  49.1851952.903
 49.5451952.895  49.7941952.887  49.8761952.884     501952.876  50.1361952.866
 50.2451952.848  50.324 1952.84  51.1171952.804  52.3811952.735  57.8381952.341
 58.372 1952.32  62.178    1952  64.2791951.652  65.229  1951.5  65.8491951.416
 67.9511951.401  68.319 1951.44  68.5481951.451  70.0051951.463  70.586 1951.47
 71.0221951.482  72.111 1951.55  72.7441951.604  72.9541951.633  73.9071951.734
 75.987    1952  81.7691952.185  86.6811952.327  88.7741952.388   92.831952.488
 93.5211952.496  94.084  1952.5  94.6851952.501  95.1841952.498  95.4831952.491
 95.9361952.452  98.0151952.331  98.9131952.284 100.4061952.204 104.358    1952
105.0351951.867 106.3631951.699 106.4531951.693 106.7691951.713 109.1251951.893
110.641    1952 113.7151952.466 113.9211952.465 115.687 1952.75 116.0511952.791
116.5861952.834 116.7241952.842 116.8091952.844 116.9011952.843 117.2071952.832
117.6941952.819 118.7231952.802 119.4481952.795 119.8291952.789 120.1221952.783
 120.631952.779 121.0091952.773 121.499 1952.77 122.5741952.728 122.774 1952.72
128.832 1952.52   129.11952.505 129.7461952.434  129.821952.431  130.091952.433
 136.041952.508 136.7071952.518 137.3031952.531     1401952.613

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     140    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     140             100     100     100             .1       .3
Left Levee      Station=    -235      Elevation=    1952
Right Levee     Station=  -95.35      Elevation= 1951.89

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 1952.23  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.52  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1951.71  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1951.71  * Flow Area (sq ft)     *          *  122.19  *          *
* E.G. Slope (ft/ft)     *0.009141  * Area (sq ft)          *          *  122.19  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  118.92  * Top Width (ft)        *          *  118.92  *          *
* Vel Total (ft/s)       *    5.78  * Avg. Vel. (ft/s)      *          *    5.78  *          *
* Max Chl Dpth (ft)      *    1.71  * Hydr. Depth (ft)      *          *    1.03  *          *
* Conv. Total (cfs)      *  7384.1  * Conv. (cfs)           *          *  7384.1  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  119.19  *          *
* Min Ch El (ft)         * 1950.00  * Shear (lb/sq ft)     *          *    0.59  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.38  *          *
* Frctn Loss (ft)        *    0.95  * Cum Volume (acre-ft)  *    1.41  *    7.12  *    2.94  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *    0.91  *    6.41  *    2.75  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
```

water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -6900

INPUT
Description:
Station Elevation Data num= 299

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001949.436	-399.6141949.438	-399.4941949.439	-398.5921949.444	-395.6161949.457					
-395.591949.457	-395.3171949.458	-394.4961949.463	-387.622 1949.48	-385.0831949.483					
-383.7831949.478	-383.4951949.468	-379.1651949.517	-378.9391949.522	-376.5251949.554					
-375.5821949.567	-373.9551949.598	-373.0951949.613	-371.771949.631	-369.8481949.654					
-358.421949.766	-347.96	1950-346.155	1950-343.058	1950-343.032	1950				
-334.37	1950-334.299	1950-332.357	1950 -332.34	1950-332.041	1950				
-329.61950.054	-317.6821950.315	-304.0541950.624	-287.244 1950.98	-286.9071950.985					
-286.71950.988	-286.5581950.989	-286.444 1950.99	-286.2551950.991	-286.1821950.992					
-286.1331950.992	-285.615	1951-283.369	1951 -283.32	1951-281.285	1951				
-279.491	1951-277.608	1951-274.276	1951-274.139	1951-272.431	1951				
-272.217	1951-268.148	1951-260.9321950.799	-259.3641950.747	-259.2571950.743					
-254.44	1950-252.978	1950-251.891	1950-240.907	1950-237.514	1950				
-229.24	1950-229.174	1950-227.652	1950-227.013	1950-223.615	1950				
-220.442	1950-218.492	1950 -216.88	1950-214.809	1950-177.7161949.343					
-177.6481949.345	-177.3931949.351	-176.2451949.263	-176.1221949.263	-175.8361949.264					
-174.558 1949.18	-174.0911949.175	-173.4041949.136	-173.2581949.128	-172.9321949.113					
-172.2181949.082	-172.1411949.079	-171.7011949.068	-171.029 1949.05	-170.7271949.037					
-170.3031949.036	-169.671949.035	-169.57 1949.03	-169.0371949.037	-168.5211949.044					
-168.1691949.056	-167.021949.096	-166.451949.148	-166.3111949.194	-165.9141949.205					
-164.9431949.211	-163.751949.204	-162.7091949.199	-161.7071949.189	-159.4751949.168					
-158.6311949.153	-158.3051949.147	-157.5431949.126	-157.4351949.123	-153.867	1949				
-153.2071948.946	-152.1991948.907	-149.9661948.833	-149.5611948.807	-149.1191948.798					
-148.8681948.796	-148.6861948.797	-147.212 1948.85	-146.1161948.909	-145.5931948.969					
-145.101	1949-143.6161949.193	-143.5451949.264	-142.8321949.355	-140.8961949.279					
-140.6021949.218	-140.2871949.181	-137.43	1949-130.283	1949-124.456	1949				
-118.048	1949-112.919	1949-112.558	1949-112.113	1949-111.767	1949				
-110.751	1949-110.2491949.163	-108.8791949.536	-107.5781949.845	-106.822	1950				
-106.657	1950-106.297	1950-105.292	1950-104.714	1950-103.282	1950				
-98.4221949.882	-96.8551949.822	-96.0191949.765	-95.4551949.664	-94.9971949.638					
-94.461949.631	-94.11949.639	-92.0861949.708	-85.393	1950 -72.7551950.765					
-70.4471950.903	-69.9371950.936	-68.337	1951 -67.4381951.021	-55.9941951.248					
-55.7541951.246	-49.586 1951.36	-48.256 1951.38	-47.6611951.396	-47.5791951.426					
-47.3661951.436	-46.7341951.448	-46.4731951.449	-46.2511951.446	-46.028 1951.44					
-45.2851951.409	-44.9961951.399	-44.9161951.397	-42.5451951.349	-39.7841951.294					
-38.0911951.256	-38.0811951.256	-33.9221951.154	-31.9791951.103	-28.137	1951				
-24.6771950.681	-24.4431950.659	-22.7041950.472	-22.4541950.454	-21.225 1950.38					
-19.0871950.278	-18.7781950.258	-18.6461950.244	-18.4261950.227	-18.1531950.212					
-17.9331950.191	-17.7961950.187	-17.1071950.178	-17.0021950.177	-16.9131950.177					
-16.8621950.179	-16.4421950.227	-15.5481950.336	-15.0331950.378	-14.4781950.408					
-13.8341950.462	-13.2391950.498	-12.561950.545	-11.1211950.662	-9.491950.764					
-5.5531950.977	-5.167	1951 -4.2841951.104	-3.4731951.158	-2.289 1951.21					
-.0461951.288	01951.291	.8161951.327	1.182 1951.36	1.7691951.458					
2.041951.483	2.6481951.513	3.2411951.529	3.561951.531	3.851951.528					
4.0861951.519	4.271951.506	4.4881951.482	4.7081951.324	5.7451951.164					
6.807	1951 25.0651950.495	33.651950.258	39.8171950.127	39.8451950.129					
39.851 1950.13	42.049 1950.02	42.456	1950 46.201	1950 48.352	1950				
49.346	1950 49.833	1950 50.958	1950 53.0771950.097	53.261950.105					
53.423 1950.11	54.4641950.165	60.51950.488	60.9151950.482	61.1371950.463					
61.198 1950.44	64.203 1950.44	66.3231950.543	76.727	1951 77.4731951.393					
77.9451951.495	84.7161951.548	85.6021951.555	86.0161951.532	86.056 1951.53					
86.6451951.508	86.651951.508	86.6811951.507	88.941951.439	90.1221951.396					
92.8221951.017	92.942	1951 94.066	1951 94.674	1951 98.909	1951				
113.326 1950.1	114.7011950.058	115.0091950.049	115.1191950.041	115.2381950.032					
115.2761950.029	115.3331950.026	115.4061950.024	115.4751950.021	115.526 1950.02					
115.5581950.019	115.5771950.019	115.6281950.019	115.6991950.018	115.7561950.017					
115.7991950.016	115.8121950.016	115.8161950.016	116.0211950.012	116.0661950.014					
116.0871950.015	116.0961950.016	116.1131950.018	116.2411950.026	117.381950.022					
117.3971950.022	118.6651950.035	119.6271950.058	119.661950.059	120.5141950.106					
121.8761950.181	121.9211950.183	128.831950.548	131.141 1950.64	131.1941950.642					
131.658 1950.67	137.151	1951 139.7511951.428	1401951.461						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-400	.035	-272.431	.025	-46.734	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-272.431	-46.734	100	100	100 .1	.3

Left Levee Station= -272.43 Elevation= 1951
Right Levee Station= -46.73 Elevation= 1951.4

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1950.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.		0.025	
W.S. Elev (ft)	1950.34	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1950.34	Flow Area (sq ft)		139.66	
E.G. Slope (ft/ft)	0.009938	Area (sq ft)		139.66	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	176.95	Top Width (ft)		176.95	
Vel Total (ft/s)	5.06	Avg. Vel. (ft/s)		5.06	
Max Chl Dpth (ft)	1.55	Hydr. Depth (ft)		0.79	
Conv. Total (cfs)	7081.9	Conv. (cfs)		7081.9	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		177.24	
Min Ch El (ft)	1948.80	Shear (lb/sq ft)		0.49	
Alpha	1.00	Stream Power (lb/ft s)		2.47	
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	1.41	6.82	2.94

```
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.91  *    6.07  *    2.75  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -7000

INPUT
Description:
Station Elevation Data    num=     315
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001948.317-399.0831948.296-397.6461948.275-395.5661948.274-395.2121948.272
-392.9791948.267-390.8131948.261-389.0011948.258-387.7481948.261 -387.151948.276
-386.9761948.299-386.9061948.324-386.6251948.343-386.1431948.353-385.5881948.356
-384.6231948.356 -383.681948.352-382.7031948.338-382.4891948.326 -382.271948.318
-381.1961948.299-380.7941948.287-378.8861948.333-378.7261948.346-378.0811948.377
-377.8081948.418-377.5051948.433-374.5031948.527-372.7421948.571-368.3241948.675
-364.3021948.778-358.931 1948.94-357.245    1949-355.9451949.058-354.543 1949.12
-351.3421949.251-351.2131949.255-347.4581949.355-346.9431949.364-342.6421949.438
-341.2471949.457-338.1911949.498-335.2941949.532-334.9791949.535-333.2871949.552
-332.5621949.555 -330.141949.502-328.5471949.474 -327.921949.467-327.6671949.472
-327.3991949.476-326.8991949.472-326.5861949.466-326.3771949.457-325.3961949.447
-325.1291949.442-324.9261949.433 -324.851949.418-323.3971949.354-321.3231949.383
-320.9461949.388-320.5231949.391-319.4631949.371  -318.91949.364-318.2921949.362
-317.6521949.371 -316.961949.387-311.5891949.544 -309.831949.603-299.123    1950
-296.091    1950-294.6251950.052-293.9571950.076-293.577 1950.09-291.7491950.098
-291.314  1950.1-290.6771950.103-289.9631950.106-288.7071950.112-288.0131950.115
-286.826 1950.12-286.0891950.124-284.8331950.128-283.9551950.132-283.5981950.133
-283.3081950.134-283.0681950.135-281.203 1950.14-280.8871950.141-280.5991950.142
-280.4681950.142-280.3031950.143-280.1971950.143-280.0331950.143 -279.951950.144
-279.7881950.144-279.5811950.144-278.9091950.144-278.7681950.145-278.6871950.145
-278.6071950.145-278.5951950.145-278.5261950.145-278.5181950.145-278.4671950.145
-278.4581950.144-278.4021950.144-278.3921950.144-278.3221950.144 -278.291950.144
-278.0461950.143-277.6381950.142-277.5951950.142-277.5471950.142-277.4111950.141
-277.3521950.141 -277.28 1950.14-277.0191950.139-276.7131950.137-276.009 1950.13
-275.6841950.127-275.2631950.123-273.5261950.107-272.6161950.098-271.5671950.089
 -270.961950.083-270.0131950.075-269.1371950.067-265.8221950.037-265.5651950.034
-265.3721950.032-264.9721950.028-262.551    1950-260.482 1949.93-257.6511949.805
-241.8371949.117-239.156    1949-198.7861948.439-181.2561948.197-176.2551948.127
-167.829    1948 -165.641947.953-152.8361947.683-151.624 1947.66-150.811 1947.65
-150.254 1947.64-148.6051947.619-145.8331947.588 -145.131947.577-137.4651947.641
-137.3431947.664-137.0031947.682-136.1981947.708-134.6541947.744-132.1321947.776
-129.9191947.685-129.1081947.654-128.8281947.655-126.2141947.665-125.6321947.645
-122.1211947.608-122.1191947.608-122.1161947.608-122.1081947.608-121.5131947.595
-118.462 1947.54-115.1011947.506 -111.881947.438-111.2441947.421-111.1011947.413
-110.7341947.365-110.4751947.316-107.3691947.296-105.7481947.416-103.0191947.737
-100.957    1948   -90.91948.732  -87.96    1949 -85.8061949.035 -75.8891949.189
  -73.951949.219 -68.7691949.296 -67.5491949.311 -64.6351949.333 -63.1711949.342
 -61.8241949.343 -61.486 1949.34 -60.7331949.333 -57.8941949.277 -55.2811949.236
 -51.9211949.199 -48.4381949.182 -47.9991949.184 -45.6351949.196 -44.0491949.221
 -43.6821949.227 -42.3251949.253 -41.2351949.265 -40.2181949.266 -38.4551949.266
 -36.9361949.266 -36.2091949.262 -36.0011949.262 -35.4281949.252 -35.306 1949.25
 -34.6131949.222  -34.481949.217 -33.9831949.191 -33.8831949.186 -33.1351949.157
 -32.9961949.152 -31.9241949.073  -31.711949.058 -30.618    1949 -30.5171948.989
 -19.0621948.869 -15.099    1949 -12.757    1949 -12.004    1949   -11.8    1949
  -11.64    1949   -9.541949.082  -8.6471949.109    -7.41949.133  -7.3991949.133
  -5.5231949.153  -5.4981949.153  -2.9111949.168  -2.8371949.169   -.0911949.179
       0 1949.18    .301 1949.18   3.8181949.187   4.8811949.185    7.861949.179
   8.5141949.177   9.5171949.172    9.661 1949.17   9.8791949.166  10.0721949.154
  10.3691949.137  10.5781949.127  10.9561949.111  11.9691949.085   13.571949.044
  13.9841949.031   14.95    1949   15.3771948.993   18.011948.942  18.9111948.952
  19.009    1949  19.098    1949   19.98    1949  22.964    1949   26.75    1949
   37.03    1949  37.2831948.997  38.4741948.987  42.8911948.978  43.641    1949
  43.754    1949  45.512    1949   51.856    1949  52.6311949.005  53.8941949.008
  54.6471949.003  54.722    1949   56.326    1949  58.555    1949  60.193    1949
  60.543    1949  60.929    1949   61.674    1949  69.0951949.207  71.4261949.165
  72.4641949.153   72.541949.153  78.0191949.147  82.4291949.122  82.4781949.122
  82.7931949.121  83.261 1949.12  91.8241949.098  91.9631949.097  92.0671949.095
  92.7251949.096  95.0371949.101   98.28 1949.12  99.5111949.127    99.61949.123
 100.8441949.083 101.2861949.082 103.5541949.105 103.6651949.108 115.224 1949.85
 115.2791949.857 116.545    1950 117.715    1950 118.952    1950 120.3821949.653
 120.7721949.526 121.2471949.425 123.256    1949 124.8751948.909 124.9511948.905
 127.0151948.809 129.089 1948.74 129.2231948.745 132.031 1948.67 132.1341948.667
 134.0451948.642 136.6381948.732 138.9971948.799 139.6881948.829     1401948.835

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
    -400    .035-280.468    .025 116.545    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -280.468 116.545               100     100     100             .1       .3
Left Levee      Station= -280.47      Elevation= 1950.14
Right Levee     Station=  -68.77      Elevation=  1949.3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
```

* E.G. Elev (ft)	• 1949.44	* Element	* Left OB *	Channel *	Right OB *	
* Vel Head (ft)	• 0.43	* Wt. n-Val.	*	0.025 *	*	
* W.S. Elev (ft)	* 1949.01	* Reach Len. (ft)	* 100.00	• 100.00 *	100.00 *	
* Crit W.S. (ft)	* 1949.01	* Flow Area (sq ft)	*	133.66 *	*	
• E.G. Slope (ft/ft)	*0.009375	* Area (sq ft)	*	133.66 •	*	
* Q Total (cfs)	• 706.00	* Flow (cfs)	*	706.00 *	*	
• Top Width (ft)	* 151.91	• Top Width (ft)	*	151.91 *	*	
• Vel Total (ft/s)	* 5.28	* Avg. Vel. (ft/s)	*	5.28 •	*	
• Max Chl Dpth (ft)	* 1.71	* Hydr. Depth (ft)	*	0.88 •	*	
• Conv. Total (cfs)	* 7291.4	* Conv. (cfs)	*	7291.4 *	*	
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	152.01 *	*	
* Min Ch El (ft)	• 1947.30	* Shear (lb/sq ft)	*	0.51 *	*	
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	2.72 *	*	
* Frctn Loss (ft)	• 0.42	• Cum Volume (acre-ft)	* 1.41	* 6.50 *	2.94 *	
* C & E Loss (ft)	• 0.11	* Cum SA (acres)	* 0.91	* 5.69 *	2.75 *	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -7100

INPUT
Description:
Station Elevation Data num= 352

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001947.613	-399.5611947.627	-398.7261947.652	-397.661 1947.68	-396.4181947.707					
-394.9661947.734	-393.1161947.764	-387.5761947.828	-384.038 1947.88	-371.171947.973					
-368.217	1948	-362.9051948.039	-362.551948.041	-361.8291948.046	-361.6911948.046				
-361.571948.047	-361.5081948.047	-361.3751948.049	-361.2621948.051	-361.0831948.054					
-360.743 1948.06	-360.5951948.063	-360.4861948.065	-350.2021948.161	-349.8291948.167					
-341.9481948.247	-341.161948.257	-335.7851948.317	-330.2091948.385	-328.9251948.399					
-327.7671948.403	-325.9811948.397	-319.421948.365	-313.8361948.332	-313.0391948.345					
-309.2241948.312	-308.4261948.323	-307.4731948.322	-306.6491948.329	-305.941948.333					
-305.1141948.337	-296.4271948.422	-295.221948.427	-294.5441948.424	-293.2651948.408					
-292.3741948.391	-290.0481948.321	-289.133 1948.29	-288.5111948.253	-288.1321948.221					
-287.9031948.214	-286.931948.216	-286.4831948.216	-286.1031948.214	-285.8121948.211					
-285.0881948.215	-284.751948.209	-283.3211948.232	-282.6951948.216	-281.9941948.195					
-281.5281948.182	-281.441948.177	-281.4041948.174	-281.2431948.172	-281.0631948.171					
-280.751948.171	-280.221948.174	-277.5281948.199	-276.677 1948.21	-276.5521948.216					
-265.0971948.321	-264.171948.302	-263.3531948.296	-258.5121948.282	-256.8861948.274					
-256.1631948.265	-255.6091948.256	-255.0491948.259	-254.2971948.254	-244.3461948.057					
-244.2821948.057	-241.035	1948	-233.6921947.903	-226.9681947.828	-226.7251947.828				
-225.6951947.842	-225.5931947.843	-225.531947.842	-225.433 1947.84	-224.8651947.822					
-224.7861947.801	-224.6181947.793	-224.31947.788	-214.1831947.677	-206.5371947.602					
-205.9461947.598	-204.8591947.594	-202.5921947.573	-202.2151947.569	-197.9171947.478					
-186.4521947.194	-185.0621947.175	-184.1351947.159	-178.813	1947	-168.3271946.723				
-165.511946.668	-155.5931946.458	-151.5581946.366	-148.8541946.306	-146.6081946.254					
-138.7471946.054	-138.2141946.041	-136.433	1946	-134.9791945.953	-131.7281945.875				
-130.5181945.906	-129.885	1946	-127.1741946.754	-125.655	1947	-123.461947.365			
-123.2691947.367	-122.5971947.493	-120.9311947.419	-118.2151947.646	-117.8871947.667					
-117.3911947.687	-116.5611947.711	-114.7181947.689	-113.45 1947.69	-112.3581947.684					
-112.0981947.697	-110.31947.661	-109.5831947.711	-101.2621947.627	-97.7461947.754					
-97.391947.759	-96.224 1947.77	-93.3941947.796	-85.51	1948	-54.6351947.289				
-51.3411947.253	-46.1621947.193	-45.521947.185	-44.9641947.175	-43.3011947.134					
-42.9271947.126	-42.6281947.117	-42.4441947.111	-42.4111947.108	-41.8221947.096					
-41.6861947.097	-40.981947.101	-40.6811947.101	-40.4431947.098	-40.2711947.095					
-39.9651947.088	-39.8331947.085	-39.7561947.085	-39.641947.085	-39.4661947.087					
-39.241 1947.09	-38.9781947.095	-37.821947.075	-37.3111947.086	-35.2841947.087					
-34.948 1947.09	-28.02 1947.15	-27.395 1947.15	-26.9951947.163	-26.8061947.223					
-25.9111947.282	-25.4631947.345	-25.2741947.395	-20.9461947.404	-20.671947.375					
-20.0671947.351	-17.9721947.287	-17.711947.271	-17.5081947.202	-17.2181947.175					
-16.8781947.159	-14.964 1947.12	-12.7171947.064	-10.786	1947	-10.304	1947			
-8.114	1947	-7.017	1947	-3.559	1947	-2.115	1947	-1.1141947.315	
0 1947.52	.5081947.613	2.881947.789	3.081947.805	3.2261947.812					
3.4471947.818	5.1811947.857	5.4971947.864	6.0091947.872	6.2161947.875					
6.2711947.876	6.3011947.875	6.3281947.866	6.41947.862	7.1121947.835					
7.3971947.823	7.6581947.808	8.193 1947.77	8.31947.766	8.431947.764					
10.3881947.729	11.2711947.705	11.8251947.708	13.2621947.736	13.599 1947.74					
13.931947.741	14.2641947.739	14.6081947.733	15.5971947.706	16.3591947.688					
20.3881947.575	21.8391947.529	23.682 1947.46	35.618	1947	38.3051946.789				
38.9951946.728	40.7051946.613	41.5381946.569	42.8961946.507	43.2491946.509					
43.5991946.516	45.9081946.552	46.2571946.561	46.6361946.584	47.5151946.623					
48.0441946.654	49.4061946.791	49.7971946.846	50.1621946.985	50.336	1947				
50.7931947.027	51.6361947.063	54.3281947.133	54.6431947.135	55.0151947.132					
58.991947.041	60.096	1947	63.1481946.829	64.07	1946.8	66.5411946.743			
66.7661946.732	66.7811946.717	67.0981946.667	67.5641946.685	68.2791946.694					
69.2251946.689	70.2011946.674	72.733 1946.62	75.51946.528	75.5761946.527					
75.7121946.534	76.5531946.593	78.5771946.708	79.0971946.748	80.3781946.883					
80.7481946.984	80.891	1947	81.791947.097	82.1911947.129	84.8751947.285				
86.8781947.365	87.1131947.376	87.4951947.385	87.6981947.388	87.9851947.386					
88.4181947.375	91.2961947.329	91.6941947.321	92.2761947.293	92.9341947.243					
93.571947.217	96.0051947.032	96.526	1947	97.1411946.938	98.91946.813				
99.3311946.764	106.6861946.802	107.013 1946.82	108.854 1946.87	110.1421946.897					
115.181946.991	115.639	1947	119.5041947.103	125.8661947.287	126.7441947.324				
127.2411947.368	133.0421947.328	134.8811947.106	135.575	1947	136.487	1946.9			

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 140.2071946.626 141.3231946.495 141.6521946.416  141.871946.396 142.1291946.388
 142.5351946.383 143.0891946.381 144.5861946.381 145.4021946.383 146.1221946.387
 146.6661946.395 147.0511946.404 150.3861946.531 151.3481946.572 159.5821946.873
 161.3211946.944 163.108    1947 166.8991947.243  170.261947.438 178.802    1948
 184.845    1948 186.625    1948 187.711    1948 189.3751947.874 190.6061947.741
 194.3351947.493 195.1941947.455 195.9981947.444 196.8451947.453 198.7771947.491
 199.733 1947.52 200.5781947.575 201.3521947.678 202.5251947.862 203.701    1948
 211.5181948.215 220.3181948.448 224.4181948.558 226.6811948.611 241.158    1949
 244.8841949.177  245.16 1949.21 245.4081949.223 246.2291949.244 247.3081949.263
 248.2251949.264 251.6661949.258 252.478 1949.25 256.2941949.153 258.0941949.126
 259.8081949.131     2601949.138

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-296.427    .025  -85.51    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -296.427  -85.51             100     100     100            .1       .3
Left Levee      Station= -296.43      Elevation= 1948.42
Right Levee     Station=   -85.7      Elevation=    1948

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1948.07  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.             *          *   0.025  *   0.035  *
* W.S. Elev (ft)         * 1948.00  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1948.00  * Flow Area (sq ft)      *          *  121.63  *  228.03  *
* E.G. Slope (ft/ft)     *0.002409  * Area (sq ft)           *          *  121.63  *  228.03  *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  300.90  *  405.10  *
* Top Width (ft)         *  444.75  * Top Width (ft)         *          *  155.53  *  289.22  *
* Vel Total (ft/s)       *    2.02  * Avg. Vel. (ft/s)       *          *    2.47  *    1.78  *
* Max Chl Dpth (ft)      *    2.13  * Hydr. Depth (ft)       *          *    0.78  *    0.79  *
* Conv. Total (cfs)      * 14384.4  * Conv. (cfs)            *          *  6130.6  *  8253.7  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *          *  155.76  *  289.67  *
* Min Ch El (ft)         * 1945.88  * Shear (lb/sq ft)       *          *    0.12  *    0.12  *
* Alpha                  *    1.08  * Stream Power (lb/ft s) *          *    0.29  *    0.21  *
* Frctn Loss (ft)        *    0.42  * Cum Volume (acre-ft)   *    1.41  *    6.21  *    2.68  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)         *    0.91  *    5.34  *    2.42  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -7200

INPUT
Description:
Station Elevation Data    num=     371
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001946.157-399.7911946.154-397.3471946.138-395.046 1946.11-394.6731946.106
-394.2481946.103-392.5481946.089-392.4541946.091-391.0061946.088-390.2671946.087
-390.0861946.088-389.5851946.098-388.9781946.108 -388.391946.118-387.7051946.124
-387.3051946.132-385.3471946.166 -383.771946.193 -382.681946.209-382.2581946.211
-382.1071946.198-381.9111946.194-381.7911946.196-381.6031946.201  -380.1 1946.26
-378.3241946.348-372.676 1946.59-364.3591946.994-364.221    1947-364.076    1947
-364.027    1947-363.187    1947-363.127    1947-362.2371946.968-353.2661946.645
-352.2591946.609-351.6391946.592-349.446 1946.53-349.1081946.526-348.9111946.524
-348.6211946.528-348.1161946.536-347.7591946.533-347.5211946.531-345.822  1946.5
-341.7871946.361-340.9511946.364-340.7661946.362-339.6461946.352-338.238 1946.34
 -337.541946.347-333.7091946.387-331.0631946.346 -329.691946.359 -322.291946.433
-322.2461946.433-322.2361946.433-321.7241946.421-320.6961946.426-318.8181946.419
-317.4261946.381-314.6351946.331 -314.281946.327-313.8051946.325-311.8041946.327
-305.058 1946.29-304.6381946.288-302.2651946.268-301.9111946.265-301.2151946.263
-301.003 1946.26-300.8561946.259-299.2011946.233-298.6821946.227-298.3281946.225
-297.9241946.225-296.2071946.233-295.694 1946.23-295.1371946.228-293.8661946.239
-293.6041946.237-293.4011946.235-291.4071946.217-290.6981946.213-289.3061946.209
-289.1521946.208-289.0321946.206-288.8021946.205-288.6391946.203 -288.391946.203
-287.8951946.206-287.0811946.212-285.6151946.257-285.5251946.266-285.2871946.277
-284.9511946.288-284.6591946.294-284.5241946.297-282.4591946.319-281.6711946.331
-279.1081946.366-270.2551946.485  -267.11946.534-262.5861946.592-254.8991946.717
-252.0971946.746-250.4641946.774-249.3271946.781-249.1971946.781-247.9451946.805
-247.0371946.827-246.6861946.837 -246.031946.855-245.9741946.856-245.6651946.864
-245.4191946.869-245.1931946.872-244.9511946.874-244.2561946.876-242.767 1946.88
-242.5581946.881-242.4531946.881-242.4211946.881-242.3891946.881-242.0981946.881
-242.0951946.881-242.0941946.881-242.0711946.881-241.6581946.879-241.0061946.875
-240.9291946.874-239.0431946.862-238.799 1946.86-238.6711946.858-238.4221946.852
-238.0841946.844-237.8311946.834 -237.611946.829-237.2081946.823-236.994 1946.82
 -236.281946.811-236.0381946.807-235.8591946.803-235.5091946.797-235.2931946.795
-234.0671946.749-233.8961946.734-233.8381946.733-233.2941946.731-232.0951946.707
-231.4551946.699-230.3791946.674 -228.59 1946.62-224.2981946.607-223.0981946.602
-221.7431946.596-219.3811946.558-217.4531946.532-209.7051946.427-207.3141946.399
-206.0911946.392-205.8051946.399-201.0221946.329-200.1161946.287 -198.751946.239
-190.745    1946-190.2681945.954-190.2351945.951-184.2871945.374-181.863    1945
-179.1711944.921-176.8851944.841-175.944 1944.82-173.2281944.771-172.5131944.768
-163.5581944.772-162.6321944.775-161.6961944.791-160.8481944.797-159.468  1944.8
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-157.2841944.799-156.7221944.798-149.6731944.784-149.4331944.785-145.2571944.767
-144.8831944.765-141.3031944.733-139.442 1944.69-138.8491944.647-138.8431944.613
-135.9141944.589-135.3111944.599-134.8591944.611 -134.371944.634-133.7621944.676
-132.3811944.807-131.6971944.851-130.9191944.873-130.7691944.875-129.9511944.878
-128.251 1944.87-126.4791944.868 -109.06    1945-109.054    1945-109.053    1945
-107.7431945.029-107.698 1945.03-107.4441945.033-107.4021945.033-107.3861945.033
-105.9211945.059-104.4611945.112 -103.161945.156  -99.151945.281 -93.6851945.449
 -86.4461945.682 -84.247 1945.75 -82.6451945.797  -81.551945.826 -80.8631945.842
 -80.4941945.848  -80.121945.845 -79.9861945.847 -79.2211945.863  -78.861945.872
 -75.801    1946 -72.748 1946.65 -70.829    1947 -70.365    1947 -69.947    1947
 -67.475    1947 -64.294    1947 -63.1881946.851 -62.4961946.762 -60.7771946.681
 -58.8211946.553 -57.1711946.428 -51.497    1946 -50.8911945.978 -44.7751945.742
  -34.651945.332 -28.4851945.068 -26.945    1945 -26.4191944.914 -26.0041944.886
 -24.5881944.817  -24.411944.823 -22.8561944.898 -22.143 1944.99 -22.042    1945
 -14.5611945.311 -12.4351945.399  -7.9051945.221  -7.7531945.213   -7.631945.217
  -7.5481945.202   -7.461945.199  -7.2941945.203  -7.009 1945.22  -5.6971945.306
  -5.1131945.338  -4.5731945.361  -3.9261945.398  -3.6221945.404  -3.5451945.406
   -.2081945.635       01945.647      .11945.653    .1291945.655   1.3671945.706
   1.8081945.727   3.5191945.828  11.3871945.574  11.6931945.544  13.3591945.424
  14.3121945.423   14.831945.414  14.8321945.414  19.6931945.027  19.7241945.025
  20.042    1945  20.435    1945  24.195    1945  24.6581945.027   25.621945.074
  27.555 1945.17  29.2721945.274  29.4521945.296  41.7371945.517  42.1171945.513
  46.1061945.498   46.541945.493  46.8951945.483  47.3741945.456  47.6161945.429
  48.0211945.395   48.711945.358  49.5051945.333  53.3631945.242  55.1461945.192
  57.0171945.131  58.751 1945.08  61.413    1945   62.741944.961  63.9771944.903
  64.7151944.851  65.5721944.744  65.703 1944.74  66.2391944.745  68.8521944.836
  69.0431944.849  72.578 1944.89  74.5031944.923  75.4241944.954  76.4631944.984
  77.326    1945  80.8141945.078  80.923 1945.08  84.2411945.149  90.8321945.265
  91.6121945.279  92.6711945.302  93.0051945.309  96.1611945.375 100.4421945.441
  102.161945.468 108.0051945.562 109.9621945.599 110.8991945.622 111.2231945.637
 111.3321945.649 111.4961945.658 112.0191945.674 112.4521945.683 112.5841945.686
 112.7941945.689 112.9261945.687 113.0071945.681 114.059 1945.57 114.4381945.542
 114.7011945.533 115.2491945.522 116.366 1945.53 116.7921945.533   118.71945.503
 120.2261945.493 120.4131945.492 121.0721945.486 121.2851945.485  121.74 1945.49
 122.0611945.514 122.3721945.521 122.8081945.528 123.1411945.533 123.5221945.553
 123.7081945.557 124.0041945.552 124.3621945.541 124.8991945.519 126.1361945.427
 126.7321945.392 130.6871945.234 133.5941945.097 134.009 1945.09 134.1981945.082
  136.23    1945 137.3451944.971 137.8391944.951 138.958 1944.89 139.284 1944.86
     140 1944.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-364.359    .025 -70.829    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -364.359 -70.829              100     100     100             .1       .3
Left Levee      Station= -245.19      Elevation= 1946.87
Right Levee     Station=  -70.83      Elevation=    1947

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1946.65  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.50  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1946.14  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1946.14  * Flow Area (sq ft)     *          *  123.82  *          *
* E.G. Slope (ft/ft)     *0.008878  * Area (sq ft)          *          *  123.82  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  120.39  * Top Width (ft)        *          *  120.39  *          *
* Vel Total (ft/s)       *    5.70  * Avg. Vel. (ft/s)      *          *    5.70  *          *
* Max Chl Dpth (ft)      *    1.55  * Hydr. Depth (ft)      *          *    1.03  *          *
* Conv. Total (cfs)      *  7493.0  * Conv. (cfs)           *          *  7493.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  120.53  *          *
* Min Ch El (ft)         * 1944.59  * Shear (lb/sq ft)      *          *    0.57  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.25  *          *
* Frctn Loss (ft)        *    0.67  * Cum Volume (acre-ft)  *    1.41  *    5.93  *    2.41  *
* C & E Loss (ft)        *    0.11  * Cum SA (acres)        *    0.91  *    5.02  *    2.09  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -7300

INPUT
Description:
Station Elevation Data    num=     491
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
    -4001944.208-398.0421944.185-393.3971944.202-392.8791944.201-391.3891944.198
-391.0421944.198-390.9371944.197-390.7841944.197-388.4241944.215-388.1961944.212
-387.6471944.208-385.2261944.243-383.796 1944.23-382.769 1944.22 -381.021944.203
-380.3351944.199-377.7781944.193-377.0381944.191-375.3971944.189-375.1751944.188
-374.9991944.187-374.9151944.185-374.902 1944.18 -374.86 1944.18-374.5921944.183
-374.2081944.189-373.9531944.195-373.7551944.198-371.9841944.222-369.6241944.256
-369.5591944.293-369.2921944.301  -368.31944.319-363.6731944.394-356.843  1944.5
-353.8231944.545-351.5851944.575-350.3281944.589-348.3161944.625-347.8091944.639
-341.2521944.767-338.1081944.838-330.502    1945-328.604    1945-327.969    1945
-325.612    1945-323.4061944.878-323.3481944.878-321.7731944.783-321.7461944.781
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-320.2581944.708-318.6821944.646 -318.571944.631-315.2651944.572-313.7831944.593
 -312.211944.606-311.6331944.614 -311.16 1944.63 -309.991944.644-302.8271944.735
-301.6921944.772-300.9521944.795-299.5221944.801-298.8571944.819-296.2921944.817
-295.8311944.817-293.9631944.859-293.3361944.854-292.6351944.848-291.5751944.835
-290.5811944.808-290.2811944.787-290.1681944.762-285.254 1944.74-283.7761944.764
-282.7251944.786 -281.481944.822-280.8471944.837-280.2671944.845  -277.81944.881
-277.4761944.887-267.621    1945-266.9261945.009-266.8931945.009-264.8891945.024
-263.6021945.024-263.5441945.024-263.5071945.024-261.5771945.001-261.508    1945
-253.0081944.804-252.6931944.804-250.9751944.845-250.1921944.879-248.219    1945
-247.4841945.037-246.3791945.074-245.5191945.091 -244.421945.105-243.7321945.106
-243.2281945.108-242.4141945.097 -242.091945.093-241.0941945.055-240.295    1945
-236.011    1945-234.5971944.971 -234.03    1945 -233.32    1945-232.554    1945
-229.718    1945-223.556    1945-221.807    1945-220.414    1945-219.847    1945
 -217.47    1945-217.132    1945-217.0111945.006-214.3231945.149-212.5751945.153
-211.9781945.157-206.8441945.185-205.7631945.188-204.9311945.191-203.8421945.191
-203.2661945.191-203.1971945.191-202.2231945.188-201.9381945.187-201.7221945.185
-201.0121945.179-200.7941945.175-200.0791945.162-197.7531945.091-194.746    1945
-191.0381944.421-188.373    1944-180.2291943.199 -178.34    1943-177.9281942.972
-173.7911942.795-170.298    1943-168.157    1943-167.3361943.325-165.635    1944
-161.749    1944-160.517    1944-160.2911943.952-159.9451943.909-158.199 1943.82
-157.4921943.755-157.2861943.718-157.0151943.692 -155.631943.641-155.3551943.621
-155.0931943.611 -154.931943.616 -152.331943.764-151.5161943.826  -150.41943.894
-148.9861943.992-148.884    1944-148.744    1944-148.704    1944-148.647    1944
  -147.8    1944-145.464    1944 -134.97    1944-130.883    1944-128.7351943.945
-121.7341943.774-118.2731943.678-111.7521943.855 -111.071943.849  -110.21943.826
-109.5131943.817-108.9991943.814 -100.591943.473 -98.4951943.386 -97.2691943.325
 -97.1471943.314 -97.1291943.305 -95.2411943.275 -95.0821943.278  -94.651943.276
 -94.5971943.276 -94.2021943.277 -93.9251943.281 -93.3791943.299 -91.6221943.367
 -91.3831943.366 -90.8911943.359 -90.6451943.352  -87.821943.308 -87.3241943.319
 -86.6621943.339 -86.2041943.357 -85.2981943.415 -84.8741943.435 -83.413 1943.49
 -82.1251943.549 -82.0021943.553 -79.9841943.621 -79.6121943.624 -78.4121943.657
 -77.7921943.667 -77.4741943.669 -75.3351943.675 -73.6211943.715 -72.9451943.727
  -69.761943.784 -69.3141943.802 -68.9481943.842 -68.9311943.843 -68.1131943.877
 -67.9821943.878 -66.6981943.922 -64.177    1944 -63.7631944.008 -63.5851944.012
 -63.2241944.019 -61.9311944.045  -61.821944.048 -61.3721944.057 -60.6531944.075
  -60.621944.076 -60.5991944.077 -60.4251944.081  -60.311944.084 -59.6251944.106
 -59.6041944.106 -59.5681944.107  -59.441944.111 -59.2091944.119 -59.1741944.119
 -59.101 1944.12 -58.8591944.123 -58.8551944.123 -58.8411944.124  -58.841944.124
 -58.8371944.124  -58.811944.123 -58.6971944.122 -58.395 1944.12 -53.2121944.017
 -52.335    1944   -51.51943.927 -51.4271943.921 -51.2791943.892 -46.9031943.852
 -45.725 1943.89 -42.5021943.968 -40.999    1944 -38.613    1944 -37.285    1944
 -28.924    1944 -27.296    1944 -26.956    1944 -26.372 1943.99  -25.99    1944
 -25.768    1944 -25.544    1944 -15.999    1944 -15.764    1944 -15.522    1944
  -4.5921943.407  -2.2291943.287   -1.861943.265  -1.8251943.251  -1.7451943.238
  -1.3391943.214  -1.1131943.192   -.9651943.184   -.0011943.144       01943.144
    .9471943.136    .9721943.156   1.0061943.158   1.0881943.157   1.4941943.147
   1.7991943.139   1.8791943.135   1.9151943.132   1.9631943.124   2.0491943.119
   2.2151943.113   2.3361943.111   2.418 1943.11   2.451 1943.11   2.5111943.113
   2.6171943.123   2.6691943.141   3.112  1943.2   3.3121943.218   4.1161943.337
   4.4281943.393   6.5271943.861   7.217    1944   9.3321944.137  11.8341944.346
  12.8941944.418  13.007 1944.42  13.7611944.397  14.4021944.365  14.7931944.298
  15.3071944.266  16.6621944.201  17.1661944.154  17.4731944.141  17.7171944.138
  18.4491944.131  19.112 1944.13  19.3161944.129  19.9231944.137  22.5441944.035
  23.446    1944  24.662    1944  25.169    1944  28.747    1944  40.156    1944
  41.278    1944    41.6    1944  41.8291943.991  41.9511943.987  42.9491943.957
  44.5051943.923   46.741943.878  48.5921943.856  49.2071943.847  49.908 1943.83
  50.7991943.809  52.0921943.766  52.7941943.731  57.8951943.573  59.3441943.553
  59.9831943.547  67.0011943.506  68.3691943.484  71.6261943.444  71.9321943.438
  73.1541943.405  73.5841943.384  74.0571943.371  74.5221943.352  75.5381943.324
  75.8531943.318  76.0841943.316  76.3611943.317  76.8591943.324   77.121943.332
  77.5231943.339  77.8971943.343  80.5371943.356  81.118 1943.36  81.3981943.365
  81.917 1943.38  82.3871943.399  86.3621943.468  86.9161943.484  87.4691943.507
  88.1491943.547  89.1241943.571  90.866  1943.6  93.1331943.633  93.8471943.643
   94.111943.646  94.3861943.649  94.6011943.652  95.8711943.664  99.6751943.663
   99.681943.659 100.7851943.638 101.1451943.634 101.6271943.642 101.8131943.643
 102.1161943.654 103.0411943.675 103.6251943.693 103.779  1943.7 104.089 1943.71
 104.4921943.718 105.0971943.727 105.7571943.734 106.3221943.738 106.7081943.737
 106.9681943.732 107.1721943.727 107.6351943.718 108.4581943.701 109.4591943.675
 110.0061943.654 110.6471943.645 112.0021943.627  112.32 1943.62 115.068 1943.56
 115.6911943.557 118.009  1943.5 118.2021943.495 119.515 1943.47 120.005 1943.29
 120.578 1943.29 122.1741943.296  122.641943.299 122.8391943.305 123.1191943.321
 123.3411943.326 123.725 1943.33 124.9281943.329 125.501 1943.33 125.9291943.336
 126.4691943.353 126.7961943.361 127.2041943.364 127.8311943.372 128.7011943.388
 129.3421943.407 129.5111943.406 136.8591943.703 144.866    1944 144.9041944.001
 146.0931944.044 148.1551944.093 149.4411944.105 152.1641944.113  154.55    1944
 154.877    1944 155.658    1944 156.966    1944 157.517    1944 159.775    1944
 164.529    1944 165.968    1944 172.5151944.392 173.1181944.403 173.9331944.441
 179.4311944.714 180.4951944.736 183.4581944.786 189.7481944.937 190.5411944.967
 192.7241944.987 193.269 1944.98 193.4041944.962 193.5591944.928 194.1281944.926
 195.0841944.937 197.9231944.993 198.207    1945 199.8151945.079 200.4461945.116
 202.6721945.243 203.739  1945.3  205.691945.419 207.9531945.568 209.3251945.663
 209.7781945.702 209.8721945.716 210.3491945.779 210.7521945.794  211.081945.803
 211.2791945.804 212.8121945.769 213.4461945.778 214.7761945.764 215.1421945.757
  215.881945.732 216.6451945.717  218.031945.685 220.8811945.586 221.8351945.574
 226.5481945.574 226.8631945.574 228.4071945.589 228.8731945.596 229.4081945.608
 230.9151945.616 231.4271945.633 231.8091945.652 240.7661945.674 241.0421945.656
 241.9431945.621 242.6271945.607 243.1821945.612 246.2811945.664 247.7371945.695
 249.0161945.736  253.681945.913 255.783    1946 256.4571946.073 256.9531946.189
     2601946.238

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-206.844    .025  12.894    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -206.844  12.894              100     100     100            .1       .3
Left Levee      Station= -206.84      Elevation= 1945.19
Right Levee     Station=   12.89      Elevation= 1944.42
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1944.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.		0.025	0.035
W.S. Elev (ft)	1944.42	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1944.42	Flow Area (sq ft)		138.22	105.74
E.G. Slope (ft/ft)	0.005270	Area (sq ft)		138.22	105.74
Q Total (cfs)	706.00	Flow (cfs)		459.44	246.56
Top Width (ft)	364.52	Top Width (ft)		203.93	160.59
Vel Total (ft/s)	2.89	Avg. Vel. (ft/s)		3.32	2.33
Max Chl Dpth (ft)	1.63	Hydr. Depth (ft)		0.68	0.66
Conv. Total (cfs)	9725.0	Conv. (cfs)		6328.6	3396.4
Length Wtd. (ft)	100.00	Wetted Per. (ft)		204.43	160.69
Min Ch El (ft)	1942.80	Shear (lb/sq ft)		0.22	0.22
Alpha	1.09	Stream Power (lb/ft s)		0.74	0.50
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	1.41	5.63	2.29
C & E Loss (ft)	0.02	Cum SA (acres)	0.91	4.65	1.91

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -7400

INPUT
Description:
Station Elevation Data num= 423

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001942.557	-399.7431942.555	-398.4281942.542	-397.6791942.536	-396.7011942.535					
-395.389 1942.54	-392.2161942.557	-390.1111942.568	-388.5981942.574	-386.5311942.581					
-384.4931942.583	-383.0661942.585	-377.2391942.576	-377.0431942.573	-375.5971942.571					
-368.9711942.555	-368.3891942.552	-365.7821942.507	-362.8691942.466	-361.44 1942.46					
-358.6671942.428	-357.1891942.408	-352.4811942.325	-347.891 1942.3	-347.0761942.295					
-345.1951942.269	-341.6731942.212	-341.2571942.207	-340.6921942.198	-340.3661942.196					
-340.0231942.196	-339.4231942.198	-339.0571942.201	-336.8731942.233	-333.4751942.111					
-331.8671942.072	-331.7021942.074	-330.7411942.063	-330.6941942.063	-330.6611942.063					
-329.758 1942.07	-329.485 1942.06	-329.41942.056	-329.3661942.052	-329.2941942.046					
-329.2831942.044	-329.1961942.035	-329.1811942.031	-329.176 1942.03	-329.172 1942.03					
-329.0881942.034	-329.0571942.035	-328.9291942.038	-328.878 1942.04	-328.821942.042					
-328.791942.044	-328.7511942.048	-328.7011942.051	-328.5661942.061	-328.4461942.067					
-328.361942.071	-328.1591942.077	-327.9851942.081	-326.5461942.115	-326.262 1942.12					
-323.5091942.207	-323.019 1942.21	-321.0941942.275	-320.4831942.275	-318.1721942.361					
-317.759 1942.38	-317.1121942.432	-316.6141942.485	-316.1361942.511	-315.5771942.532					
-315.406 1942.54	-314.8261942.549	-314.2671942.553	-313.4931942.557	-310.4021942.563					
-309.5661942.567	-308.8361942.576	-307.549 1942.57	-305.1031942.555	-303.6861942.555					
-301.9551942.563	-295.1871942.618	-291.821942.667	-291.8041942.675	-290.3711942.704					
-274.7611942.991	-274.7271942.992	-274.2	1943	-272.736	1943	-271.84	1943		
-266.346	1943	-265.709	1943	-265.481	1943	-261.6771943.146	-251.3181943.265		
-248.8581943.298	-246.8411943.334	-245.9521943.347	-244.9731943.357	-244.019 1943.36					
-243.1731943.357	-242.4561943.347	-241.8981943.334	-240.4161943.277	-239.6861943.227					
-238.6321943.207	-231.8631943.115	-231.1571943.119	-230.2121943.123	-221.3471943.188					
-218.7651943.201	-217.193 1943.2	-216.41943.191	-216.0521943.179	-212.225	1943				
-211.165 1942.71	-208.232	1942	-203.6511941.614	-202.6521941.611	-199.8931941.617				
-199.451941.613	-199.0411941.602	-197.2721941.523	-196.4151941.489	-185.6	1941				
-185.571940.978	-185.4361940.974	-184.8391940.973	-184.6671940.976	-184.511	1941				
-183.4941941.254	-179.554	1942	-166.1321942.602	-161.671942.648	-161.6191942.645				
-160.7181942.686	-159.1911942.729	-158.7981942.754	-155.8041942.814	-154.9751942.864					
-151.907	1943	-150.7281942.938	-144.246	1943	-139.8781943.012	-137.4981943.014			
-136.2251943.009	-135.259	1943	-133.1431942.907	-132.8531942.895	-131.034 1942.8				
-129.8361942.754	-129.2771942.724	-127.431942.607	-123.7131942.385	-121.0471942.239					
-119.5571942.163	-118.4151942.093	-117.81 1942.08	-117.3641942.051	-117.0781942.031					
-117.0321942.028	-116.9791942.024	-116.9191942.022	-116.876 1942.02	-116.8621942.019					
-116.8061942.017	-116.7791942.016	-116.7721942.016	-116.7261942.015	-116.5641942.014					
-116.5471942.014	-116.5381942.014	-116.5281942.013	-116.5241942.013	-116.481942.015					
-116.481942.016	-116.4741942.016	-116.4441942.018	-116.3651942.022	-116.0781942.032					
-115.797 1942.04	-114.9181942.064	-112.7451942.149	-99.4851942.142	-99.2371942.125					
-99.0131942.133	-98.9381942.133	-98.4231942.142	-98.3471942.139	-97.367 1942.16					
-97.0821942.168	-96.1761942.188	-93.8691942.271	-88.5311942.394	-83.9371942.547					
-81.7511942.609	-81.041942.633	-78.9081942.667	-77.6761942.709	-76.8711942.714					
-73.577 1942.81	-72.9371942.827	-72.5891942.838	-71.4621942.878	-71.346 1942.88					
-71.1461942.882	-71.0241942.883	-70.9061942.883	-70.7151942.881	-70.6151942.881					
-70.5031942.883	-69.8881942.902	-69.0831942.884	-69.0291942.877	-68.7161942.854					
-68.629 1942.85	-68.0231942.836	-67.6391942.825	-67.29 1942.81	-67.1791942.803					
-66.9951942.778	-66.8681942.771	-66.6031942.761	-65.091942.721	-64.19 1942.69					
-63.4961942.682	-61.7371942.617	-60.4841942.563	-58.7971942.482	-49.808	1942				
-47.8121941.831	-46.9521941.696	-36.4141941.686	-35.1881941.785	-35.1271941.819					
-34.9011941.818	-34.2541941.804	-33.7981941.783	-33.7891941.779	-28.7391941.665					
-27.3181941.718	-25.5761941.767	-20.6021941.928	-19.3241941.967	-19.21	1942				
-18.548	1942	-18.3261942.012	-17.8961942.018	-16.1991942.017	-16.105	1942			
-15.131	1942	-14.808	1942	-14.099	1942	-13.901	1942	-1.2141941.931	
01941.954	2.365	1942	2.963	1942	5.526	1942	11.5231942.173		
12.5951942.199	13.4731942.213	16.8211942.226	18.0581942.236	18.2431942.235					
18.5351942.237	18.723 1942.24	18.9571942.251	19.2071942.258	20.2991942.277					
24.791942.385	26.04 1942.42	27.4971942.468	29.3331942.518	31.115 1942.57					
32.9221942.638	35.1371942.717	38.0851942.813	38.7631942.832	40.221942.887					
40.7731942.906	41.0011942.913	41.5111942.925	41.5681942.926	41.791942.923					

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   42.5031942.916  42.7091942.912  42.8631942.909  43.5271942.889  43.6071942.885
   43.674 1942.88  43.7321942.874  43.8881942.865  44.2091942.865  45.1311942.824
   47.6311942.693  48.5551942.636  51.8341942.408   53.151942.336  58.288    1942
    70.72    1942  70.725    1942  71.0431942.026  72.9011942.104  74.286    1942
   74.7271941.949  76.2481941.721   80.05 1941.83  80.1331941.875  80.3421941.925
    80.45    1942  90.469    1942  93.724    1942   98.171941.852 100.605 1941.78
  105.9561941.633 108.2731941.574 115.0921941.417 115.5271941.405 115.7751941.394
  116.1471941.364 116.4131941.323 116.5981941.315 116.9371941.311 117.9861941.306
  119.6481941.292 120.005 1941.29 120.578 1941.29 122.1741941.296  122.641941.299
  122.8391941.305 123.1191941.321 123.3411941.326 123.725 1941.33 124.9281941.329
  125.501 1941.33 125.9291941.336 126.4691941.353 126.7961941.361 127.2041941.364
  127.8311941.372 128.7011941.388 129.3421941.407 129.5111941.406 136.8591941.703
  144.866    1942 144.9041942.001 146.0931942.044 148.1551942.093 149.4411942.105
  152.1641942.113  154.55    1942 154.877    1942 155.658    1942 156.966    1942
  157.517    1942 159.775    1942 164.529    1942 165.968    1942 172.5151942.392
  173.1181942.403 173.9331942.441 179.4311942.714 180.4951942.736 183.4581942.786
  189.7481942.937 190.5411942.967 192.7241942.987 193.269 1942.98 193.4041942.962
  193.5591942.928 194.1281942.926 195.0841942.937 197.9231942.993 198.207    1943
  199.8151943.079 200.4461943.116 202.6721943.243 203.739  1943.3  205.691943.419
  207.9531943.568 209.3251943.663 209.7781943.702 209.8721943.716 210.3491943.779
  210.7521943.794  211.081943.803 211.2791943.804 212.8121943.769 213.4461943.778
  214.7761943.764 215.1421943.757  215.881943.732 216.6451943.717  218.031943.685
  220.8811943.586 221.8351943.574 226.5481943.574 226.8631943.574 228.4071943.589
  228.8731943.596 229.4081943.608 230.9151943.616 231.4271943.633 231.8091943.652
  240.7661943.674 241.0421943.656 241.9431943.621 242.6271943.607 243.1821943.612
  246.2811943.664 247.7371943.695 249.0161943.736  253.681943.913 255.783    1944
  256.4571944.073 256.9531944.189     2601944.238

 Manning's n Values        num=       3
      Sta   n Val     Sta   n Val     Sta   n Val
 ***********************************************
     -400    .035-246.841    .025  41.511    .035

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -246.841  41.511            28.56   28.56   28.56             .1       .3
 Left Levee      Station= -246.84      Elevation= 1943.33
 Right Levee     Station= -151.91      Elevation=    1943

 CROSS SECTION OUTPUT  Profile #PF 1
 ********************************************************************************************
 * E.G. Elev (ft)         * 1943.08  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.07  * Wt. n-Val.           *          *   0.025  *   0.035  *
 * W.S. Elev (ft)         * 1943.01  * Reach Len. (ft)      *   28.56  *   28.56  *   28.56  *
 * Crit W.S. (ft)         * 1943.01  * Flow Area (sq ft)    *          *  194.11  *  148.50  *
 * E.G. Slope (ft/ft)     *0.001984  * Area (sq ft)         *          *  194.11  *  148.50  *
 * Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  435.41  *  270.59  *
 * Top Width (ft)         *  405.33  * Top Width (ft)       *          *  248.48  *  156.85  *
 * Vel Total (ft/s)       *    2.06  * Avg. Vel. (ft/s)     *          *    2.24  *    1.82  *
 * Max Chl Dpth (ft)      *    2.03  * Hydr. Depth (ft)     *          *    0.78  *    0.95  *
 * Conv. Total (cfs)      * 15850.1  * Conv. (cfs)          *          *  9775.2  *  6074.9  *
 * Length Wtd. (ft)       *   28.56  * Wetted Per. (ft)     *          *  248.90  *  157.01  *
 * Min Ch El (ft)         * 1940.97  * Shear (lb/sq ft)     *          *    0.10  *    0.12  *
 * Alpha                  *    1.03  * Stream Power (lb/ft s) *        *    0.22  *    0.21  *
 * Frctn Loss (ft)        *    0.01  * Cum Volume (acre-ft)  *    1.41  *    5.24  *    2.00  *
 * C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.91  *    4.13  *    1.54  *
 ********************************************************************************************

 Warning: The energy equation could not be balanced within the specified number of iterations.  The
          program selected the water surface that had the least amount of error between computed and
          assumed values.
 Warning: Divided flow computed for this cross-section.
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
          0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical
          depth, the calculated water surface came back below critical depth.  This indicates that there
          is not a valid subcritical answer.  The program defaulted to critical depth.
 Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
          water surface was used.

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                RS: -7428.56

 INPUT
 Description:
 Station Elevation Data    num=     484
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ***************************************************************************
    -10401943.174-1032.38 1943.01-1032.271943.009-1032.01    1943-1021.361942.482
  -1017.51942.312-1016.79 1942.27-1016.081942.216-1015.05 1942.15 -1014.3 1942.11
 -1013.761942.096-1013.271942.105-1013.141942.114-1012.991942.119-1010.341942.152
 -1005.091942.192-999.1471942.184-996.4611942.144-995.9261942.141-986.903    1942
 -986.1351942.029-986.0591942.031-977.6761942.353-976.1231942.377-975.0341942.389
 -972.8691942.432-972.4131942.444-970.5741942.467-967.3961942.499-966.8091942.522
 -966.3891942.532-962.4861942.576-961.821 1942.57 -961.461942.562-958.8141942.464
 -945.452    1942 -940.871941.862-917.614    1941 -914.941940.929-913.7271940.991
 -913.279    1941-897.876    1941-896.3131941.008-894.754    1941-892.804 1940.99
 -886.8051940.901-879.877 1940.73-879.0761940.723-878.3321940.731-875.4331940.817
 -874.4661940.832-869.2321940.818-869.0551940.819 -860.421940.682-859.938 1940.69
 -859.1951940.699-858.0181940.702-854.516 1940.71-852.1771940.676  -847.3  1940.6
 -843.2741940.532-840.1731940.454-833.4441940.329-828.274 1940.23-827.6861940.231
 -826.7681940.211-826.2521940.219-824.6851940.259-822.6871940.261-821.2751940.232
 -818.3391940.163-817.0771940.143-807.205    1940-804.6321939.937-804.3271939.915
 -803.9141939.903 -802.421939.884-802.1681939.876 -800.131939.693 -799.571939.724
  -799.181939.738-796.8791939.788-796.3441939.811-795.3611939.883 -793.061940.062
 -792.106 1940.14-790.6811940.165-787.9531940.168 -782.761940.182-780.4831940.192
 -772.2521940.246-771.9731940.246-771.7641940.238-769.9981940.182-768.8611940.141
 -767.326 1940.05  -766.7    1940-766.2771939.983-764.6511939.912-764.0111939.871
```

```
-762.4821939.821-759.022  1939.7-758.6591939.725-758.1341939.734-755.1191939.766
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-719.117 1940.36-718.2231940.362-715.036  1940.4-713.059 1940.42-711.3231940.429
-699.1911940.448-694.5841940.464-693.8551940.457-688.3241940.385-688.0851940.376
-687.6931940.369-686.8271940.359-675.9221940.342-675.8781940.345-675.3811940.352
-660.6491940.482-643.2831940.663-639.8341940.693-636.9771940.722-626.4011940.827
-623.376 1940.86-618.3671940.897-617.1361940.904-600.438    1941 -598.231941.017
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-563.4641941.279-562.9041941.288 -557.321941.411-556.8831941.416-556.5971941.417
-555.9571941.412-555.0791941.399-552.1281941.377 -541.941941.316-541.0941941.315
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-521.1481941.492-506.9451941.685-503.9221941.715-500.3871941.803-500.162 1941.82
-490.765    1942-490.508    1942-489.8441941.981-489.1781941.955-488.3291941.898
-488.2061941.879-486.1881941.807-484.217 1941.79 -481.291941.753-478.079 1941.72
-475.083 1941.71-468.9111941.777-468.5161941.776-467.898 1941.77-466.9481941.753
-463.883 1941.77-461.6681941.716-458.7981941.633-453.3991941.541-447.9821941.419
-446.5521941.399-445.5671941.398-444.1191941.406-443.8571941.408-441.6731941.398
-435.9211941.459 -434.811941.487-433.1121941.511-432.3141941.536-431.9391941.552
-431.7691941.567-427.8021941.624 -427.421941.627-420.2471941.763-419.9211941.769
-405.6571941.982-405.4171941.989-405.375 1941.99-405.3561941.991-405.3481941.991
-405.3391941.991-405.3281941.991-405.3171941.991-405.265 1941.99-400.9441942.024
-400.9141942.024-400.8581942.023-400.8271942.023-400.7851942.023 -400.731942.023
-400.5951942.024-395.9581942.048 -395.831942.049-391.2151942.064-386.6631942.068
-386.4981942.068-372.8721942.042 -358.071942.007-356.768    1942-356.762    1942
-351.7431941.832-348.1641941.738-345.4771941.685-344.3971941.658-338.4611941.479
 -337.851941.468-337.4251941.465-336.9331941.467 -336.381941.475-335.309  1941.5
-334.4381941.524-332.5711941.627-332.256 1941.69-331.6981941.733-330.8551941.776
-330.5581941.793-330.3121941.794-327.8041941.837-326.3071941.847-320.0991941.865
-318.2091941.877-316.1161941.905-313.1061941.964-311.487    1942-298.5831942.233
-294.8221942.292-287.8161942.374-286.685 1942.38-280.3531942.391-279.2821942.388
-276.4681942.365-273.7371942.413-264.7471942.544  -262.81942.603-261.765 1942.63
-260.7611942.645-259.6111942.667-257.149 1942.72-255.049 1942.82 -254.921942.825
-254.8291942.827-254.6971942.828-254.5051942.828-254.3191942.827-253.7151942.807
-253.5361942.798-253.484 1942.79-253.3121942.779-252.7461942.751-252.5571942.736
-252.3981942.717-252.304  1942.7-252.2051942.692-251.5161942.665-250.6051942.623
-249.8291942.633-249.3481942.616-248.6431942.599-247.7031942.589-246.7041942.579
-245.6981942.555-244.8331942.527-243.3921942.527-240.9841942.438-239.0591942.446
-234.3151942.482-233.2681942.483-232.4171942.474-231.7291942.458-226.4211942.281
-217.464    1942-215.2561941.408-213.805    1941-211.0821940.887-210.1821940.858
-209.0451940.827-207.1961940.811-205.9681940.784-203.6361940.754-202.5041940.735
 -201.411940.729-199.5941940.727-194.205 1940.73-193.5051940.729-193.1951940.723
-193.0761940.694-192.9321940.685-192.8371940.613-192.7531940.611-192.3781940.611
 -192.271940.612-191.459 1940.74-189.2081940.848-188.445 1940.86-188.1081940.877
-187.7211940.934-186.8761940.991-186.805    1941-186.2121941.126-183.3861941.624
-181.305    1942-175.0741942.179-169.8571942.322-167.0211942.391-164.5571942.456
-162.8871942.508-159.4911942.607-157.0731942.665-156.5391942.674-149.183    1943
-133.9751942.195-133.8581942.195-131.368    1942-130.684 1941.96-128.9151941.878
-128.663 1941.85-128.5071941.763  -128.31941.746-127.3121941.717 -126.351941.704
-124.6151941.684-124.3481941.676-124.3281941.655-123.9481941.641 -123.721941.636
-123.4441941.635-123.1261941.639-122.5211941.659-122.1311941.676-121.4181941.693
-120.477 1941.71-119.4291941.733-116.7121941.777-115.9081941.794-115.776  1941.8
 -114.741941.807-113.1361941.812-104.741    1942-104.454    1942-103.553    1942
-102.572    1942-102.114    1942 -96.9421941.689  -94.851941.665 -93.9871941.648
 -93.5051941.634 -92.7291941.584 -91.8891941.543 -91.1191941.516 -90.8211941.511
 -90.5971941.513 -90.3071941.533 -90.0761941.583 -89.3951941.621   -89.31941.641
 -89.266 1941.69 -86.7981941.991 -86.708    1942  -83.561942.085 -81.7161942.141
 -75.7451942.351 -75.1311942.363  -74.071942.375 -73.424 1942.38   -72.8 1942.38
 -71.7861942.369 -71.2591942.369 -70.6651942.379 -67.4081942.481 -63.1391942.383
 -62.8551942.349 -61.1981942.226 -60.7381942.206 -57.5261942.131 -55.488 1942.07
 -53.748    1942 -53.3561941.984 -50.844 1941.87 -46.561 1941.65 -45.6131941.611
  -44.341941.568 -40.428 1941.46 -39.0911941.414 -37.5691941.358 -36.9851941.331
 -36.5561941.305 -35.4471941.211 -35.2291941.177 -32.5531941.174 -32.2421941.199
 -32.2261941.208 -32.1691941.208 -32.0051941.204 -31.8891941.199 -31.8871941.198
 -30.6051941.169 -30.2441941.182 -29.8021941.195 -28.5391941.236 -28.2151941.246
 -28.0131941.304 -26.6211941.408 -25.4651941.483 -23.9781941.569 -23.915 1941.57
 -15.383    1942 -14.915    1942 -14.124    1942 -13.736    1942 -12.2751941.925
  -8.3321941.672   -6.431941.563  -5.7021941.528  -4.5371941.483  -2.9211941.411
  -1.5991941.345  -1.583 1941.34   -.4381941.301       01941.301    .0921941.301
    .5721941.297   4.6681941.275   7.6031941.332   7.877 1941.34   8.555    1942
   8.734    1942   8.765    1942   9.118    1942   9.521    1942   9.993    1942
  23.5841941.465  25.0571941.713  27.314    1942  27.8651942.019  30.242 1942.09
  35.545 1942.22  36.1451942.226   38.451942.199  45.8661942.123   48.011942.089
  49.6151942.053   51.34    1942  58.8471941.755  72.9831941.042  73.1171941.036
  73.878    1941   75.371940.959  76.1691940.942  76.9541940.935  77.2381940.937
  77.5471940.949  77.894    1941  83.2041941.792  85.056    1942  97.448    1942
  98.763    1942  99.434    1942  99.855    1942 101.328    1942  112.971941.538
 124.898    1941  127.991940.921 129.9331940.855 131.5421940.817

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
   -1040    .035-255.049    .025-149.183    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -255.049-149.183            74.44   74.44   74.44            .1       .3
Left Levee      Station= -255.05      Elevation= 1942.82
Right Levee     Station= -149.18      Elevation=    1943

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1942.83  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.00  * Wt. n-Val.           *   0.035  *   0.025  *          *
* W.S. Elev (ft)         * 1942.82  * Reach Len. (ft)      *   74.44  *   74.44  *   74.44  *
* Crit W.S. (ft)         * 1942.82  * Flow Area (sq ft)    * 1195.80  *   93.59  *          *
* E.G. Slope (ft/ft)     *0.000093  * Area (sq ft)         * 1195.80  *   93.59  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *  655.04  *   50.96  *          *
* Top Width (ft)         *  874.13  * Top Width (ft)       *  773.26  *  100.87  *          *
* Vel Total (ft/s)       *    0.55  * Avg. Vel. (ft/s)     *    0.55  *    0.54  *          *
* Max Chl Dpth (ft)      *    3.13  * Hydr. Depth (ft)     *    1.55  *    0.93  *          *
* Conv. Total (cfs)      * 73161.0  * Conv. (cfs)          * 67880.0  *  5280.9  *          *
```

```
* Length Wtd. (ft)       *   74.44  * Wetted Per. (ft)       *  773.44  *  101.18  *          *
* Min Ch El (ft)         * 1940.61  * Shear (lb/sq ft)       *    0.01  *    0.01  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *    0.00  *    0.00  *          *
* Frctn Loss (ft)        *    0.01  * Cum Volume (acre-ft)   *    1.02  *    5.15  *    1.95  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.66  *    4.02  *    1.49  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -7500

INPUT
Description:
Station Elevation Data    num=     462
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
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-386.5711942.025 -381.27    1942-372.2241941.936-370.9391941.909-370.2491941.892
-356.4711941.752-353.2621941.666 -352.291941.649-351.5191941.634-351.071 1941.63
-347.6391941.502-345.3621941.432-343.7371941.393-343.1031941.374-341.9541941.324
-341.3761941.311-340.5851941.289-339.798 1941.26-339.4741941.253-339.2511941.251
-338.9941941.251-338.7071941.255-338.1591941.266-337.7191941.277  -337.11941.298
-336.9711941.304-336.7941941.327-336.6411941.359 -336.37 1941.38-335.9661941.399
-335.8251941.407 -335.171941.408-334.6761941.417-333.397 1941.43-332.8941941.433
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-297.8471941.904-297.6341941.903-297.4561941.902-295.4541941.921-295.4131941.921
-293.8821941.924-285.0381941.894-284.2551941.913-282.7771941.899  -279.51941.843
-277.9981941.826-276.2341941.821-274.1961941.835-267.003 1941.92-265.9951941.936
-263.708    1942-263.2331942.029-257.6691942.266-257.1511942.284-256.7871942.292
-256.2521942.294-255.465 1942.29  -254.71942.282-252.1741942.189-251.4121942.151
-251.1891942.114-250.4521942.065-249.229    1942-242.3941941.795-218.714    1941
-218.4841940.955 -218.391940.958-218.3431940.959-218.0031940.958-217.9541940.957
-217.9071940.956-217.8641940.955-208.2341940.471-206.2681940.363-205.1081940.309
-203.5981940.243-203.3421940.235-203.0221940.225-202.5061940.219-202.1671940.211
-201.5331940.201-201.2291940.195-200.9381940.193-200.4591940.191-199.0761940.188
  -198.91940.187-198.8231940.186-198.7931940.178-198.7571940.176-198.7331940.157
-198.7131940.157-198.6191940.156-198.5931940.157-198.3921940.189-197.8411940.215
-197.6561940.217-197.5751940.221-197.4821940.235-197.2791940.249-197.1591940.265
-196.3131940.336-195.3721940.442 -193.321940.681-191.0781940.899-190.9861940.897
 -189.82    1941-188.5411941.062-188.0471941.062-176.7841941.468-175.0691941.474
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-163.4191941.733-162.9721941.738-162.1331941.745-161.0131941.749-160.541 1941.75
-160.2261941.749 -160.041941.748-159.8331941.745 -159.711941.745 -159.571941.748
-159.4911941.754-159.4281941.766-158.857 1941.78-158.3541941.791-158.0721941.795
-157.9241941.796-156.8721941.791-156.5891941.788-156.0421941.778 -155.711941.774
-155.3081941.774-154.8421941.775-154.3121941.775-153.704 1941.77-153.0771941.763
-152.5361941.755-152.1881941.749-152.0071941.744-151.7441941.733 -151.121941.711
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-136.9921941.191 -133.341941.031-132.492    1941-132.276    1941-131.575    1941
-131.241    1941-130.9891941.014-130.9551941.011-130.932 1941.01-130.9051941.008
-130.8991941.008-130.8821941.006-130.8771941.006-130.8671941.005-130.8651941.005
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-121.7441941.185-120.0841941.199-119.0541941.206-116.975 1941.21-115.7211941.217
-114.163 1941.23-112.6071941.246 -111.381941.263-110.6811941.278-110.3691941.291
-110.2411941.301-109.8241941.322-108.3491941.361-107.374 1941.38-106.5641941.389
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-104.928 1941.28-104.4141941.257-103.8011941.238-103.2181941.229-102.3981941.223
-101.351 1941.22 -100.26 1941.22 -99.3481941.223  -98.781941.229 -98.5091941.237
 -98.4691941.254  -90.681941.333 -87.9321941.295 -85.7261941.268 -82.0081941.229
 -79.7011941.203  -75.481941.139 -74.1521941.122 -72.0511941.101 -64.2641941.042
 -61.3161941.013 -60.481    1941 -60.0311940.983 -52.2431940.886 -46.663    1941
 -44.8761941.194 -42.8941941.301 -41.4691941.347 -40.7371941.357 -40.3451941.352
 -40.0131941.336  -39.73 1941.31 -38.5391941.158 -36.519    1941 -34.8461940.921
   -31.81940.853 -30.4981940.831 -29.0891940.816 -27.6321940.814  -26.25 1940.82
 -24.4061940.841 -21.2791940.936 -19.7371940.962 -19.028 1940.96 -19.019 1940.96
 -18.5291940.943 -18.4681940.944 -18.3891940.944 -17.4351940.939 -15.1951940.871
 -12.9911940.797  -9.8491940.668  -8.7411940.635  -8.1181940.613   -5.761940.493
  -4.8611940.455  -4.3021940.382  -2.4151940.405  -2.3141940.414  -1.6341940.429
  -1.4331940.431  -1.0711940.432       01940.432     .2911940.432   1.0051940.454
   1.2181940.464   2.1981940.482   3.1441940.492   3.7741940.494   4.4121940.493
   4.9781940.486   5.4251940.477   5.9591940.464   6.494 1940.44   6.6821940.438
   6.9361940.439   7.4791940.446   7.7781940.453    7.791940.464   8.1441940.485
   8.9461940.513   9.7611940.536   10.331940.545  16.6761940.617  19.2611940.636
  19.9551940.646  20.5651940.659  21.9511940.696  27.1711940.813   31.811940.968
  31.8871940.967  32.929    1941  33.681    1941  34.981    1941  40.7961940.831
  41.0261940.827  46.3831940.683  46.6041940.682  46.8371940.685  47.7721940.688
  48.3971940.686  48.7831940.688  75.549    1940  76.711    1940  85.554    1940
  85.729    1940  85.769    1940  86.153    1940  86.946    1940  88.473    1940
  90.385    1940  93.015    1940  97.052    1940 105.2661939.913 107.691    1940
```

```
 108.9851940.049  111.821940.177 112.3861940.192 115.9761940.253 116.5291940.269
 118.8451940.389 120.539 1940.44  121.881940.467  122.14 1940.47 122.4711940.468
 122.7131940.464 125.0651940.346 125.4641940.315 125.9211940.295 127.0841940.261
 133.2191940.125 137.1591940.015 137.869    1940 141.2571939.943 144.1711939.859
 146.4791939.764 147.387 1939.69  147.831939.668 148.1531939.661 148.5991939.659
 149.1871939.662 149.8161939.668 150.6671939.683 150.9991939.698 153.3511939.777
 154.2311939.827 154.8361939.851  158.261939.918 159.0241939.943 160.111    1940
 161.085    1940 162.305    1940 163.238    1940 164.7891939.946 169.6541939.806
 171.3591939.791 172.1371939.779 172.8211939.763 173.4111939.742 174.2731939.709
 174.619  1939.7 175.4371939.673 177.5071939.587 178.5551939.538 178.8561939.513
 186.7281939.382 186.8911939.399 187.0631939.403 187.2881939.399 187.7171939.382
 188.4721939.328 188.7081939.309  188.811939.286  188.881939.279 189.0491939.273
 189.1371939.272 189.2061939.273 189.3231939.282 189.3431939.301 189.4111939.317
 189.5921939.331  189.911939.346 190.0031939.374 190.1871939.388 190.4311939.412
  190.68 1939.42 191.1431939.427 194.5291939.452 195.3011939.466 196.6891939.513
 196.8061939.514 200.3271939.613 200.7141939.616 201.9811939.686 202.4841939.705
 203.0181939.717 203.5211939.724 204.143 1939.73 204.2941939.733 204.9191939.723
 205.328  1939.7 211.3091939.794 217.041    1940 220.3881940.623 221.919    1941
 228.8381941.724 229.7961941.821 230.3041941.869 230.5921941.889 230.7851941.893
 231.1551941.889 231.3311941.894 233.082    1942 241.7361942.334 249.1671942.607
 251.8861942.701 252.7271942.722 253.4131942.755 256.3061942.928 256.5911942.944
 257.624    1943     260    1943

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-257.669    .025-157.924    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -257.669-157.924              100     100     100             .1       .3
Left Levee      Station=  -254.7      Elevation= 1942.28
Right Levee     Station= -157.92      Elevation=  1941.8

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1941.83  * Element               *  Left OB *  Channel * Right OB *
• Vel Head (ft)          •    0.03  * Wt. n-Val.           *          *   0.025  •   0.035  *
* W.S. Elev (ft)         * 1941.81  * Reach Len. (ft)       •  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1941.81  * Flow Area (sq ft)     *          •   57.56  *  483.65  *
* E.G. Slope (ft/ft)     *0.000714  * Area (sq ft)          *          *   57.56  *  483.65  *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   70.49  *  635.51  *
* Top Width (ft)         *  472.48  * Top Width (ft)        *          *   84.89  •  387.59  *
* Vel Total (ft/s)       *    1.30  * Avg. Vel. (ft/s)      *          *    1.22  *    1.31  *
* Max Chl Dpth (ft)      *    2.54  * Hydr. Depth (ft)      *          *    0.68  *    1.25  *
* Conv. Total (cfs)      * 26422.7  * Conv. (cfs)           *          *  2638.0  * 23784.6  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   84.99  *  387.94  *
* Min Ch El (ft)         * 1940.16  * Shear (lb/sq ft)      *          *    0.03  *    0.06  *
• Alpha                  *    1.00  * Stream Power (lb/ft s) *         *    0.04  *    0.07  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)  *          *    5.02  *    1.54  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    3.86  *    1.16  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -7600

INPUT
Description:
Station Elevation Data    num=     408
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001942.027-395.9381942.017-395.8921942.017-391.896    1942-391.0781941.995
-391.0681941.995-391.0641941.995-391.0631941.995-391.0381941.996-391.0261941.996
-391.0211941.996-391.0141941.996 -391.011941.996-391.0071941.996-390.9891941.996
-390.9841941.996-390.9831941.995-390.9721941.995-390.9661941.995-390.9571941.995
-390.9431941.994-385.6111941.947-385.4611941.945-385.2321941.942-385.1561941.942
-385.011 1941.94-384.7861941.937-384.5531941.932-383.7211941.913-368.3771941.706
-360.2731941.496-359.7641941.481-351.4791941.334-341.245    1941-340.9031940.992
-339.4081940.967-338.4311940.957-337.3671940.953-335.3771940.956-331.9391940.994
-331.296    1941-322.1611941.094-320.5751941.101-317.5411941.103-317.1231941.108
-306.7251941.091-306.4061941.095-306.1181941.096-301.0651941.079-297.5371941.057
-295.4031941.035 -293.551941.006-293.5361941.006-293.0011941.003-292.9961941.003
 -292.971941.003 -285.69 1941.13-285.4831941.127-285.0421941.116-284.8461941.113
-284.6221941.111-284.3691941.111-283.5321941.117-283.4211941.118-283.0521941.127
-280.8711941.171-280.5361941.177-277.3251941.233 -277.091941.236-274.0671941.293
-273.0291941.317-272.2831941.338-268.7321941.463 -267.321941.504-266.4861941.521
-263.1921941.566-262.7281941.568 -262.481941.565-261.7581941.514-261.5231941.489
-261.3871941.422-260.9461941.397-260.4871941.385-259.8951941.376-259.2391941.372
  -258.61941.375-258.3131941.374-257.7441941.383-257.3751941.378-256.907 1941.39
-256.3491941.415-255.5911941.482-255.041 1941.51-253.9161941.552-253.6141941.568
-253.4261941.606-253.2571941.622-250.3161941.633-249.9751941.619-249.4321941.608
 -248.061941.583 -246.75 1941.55-246.1641941.541-245.3521941.531-244.3861941.524
-243.3771941.522-242.4831941.525-241.8551941.529-233.078 1941.36-232.3511941.341
-228.7751941.282-226.4851941.239 -220.731941.119-218.2411941.061 -215.84    1941
-214.7841940.707-212.022    1940-211.1011939.793-210.1991939.825-207.7891939.542
-206.1771939.377-206.0171939.342-205.9391939.333-205.7971939.331-205.5471939.329
-205.2271939.329-204.3241939.332-203.8611939.332-201.2371939.318 -201.021939.315
-200.9571939.311-200.8071939.309-200.5051939.306 -199.171939.297-198.4541939.293
-198.1661939.294-197.7061939.307-195.2131939.388-191.4791939.504-187.7841939.626
-177.575    1940-176.0431940.155 -175.781940.152-175.6281940.148-175.5631940.143
```

```
-175.5171940.136-175.4621940.135-175.333 1940.14-175.1581940.152-174.9971940.168
-174.7431940.184-173.328 1940.25-170.9921940.352-166.4751940.583-164.6291940.643
-163.4481940.707-162.537 1940.75-161.5241940.805-160.9831940.803-160.5811940.831
 -160.291940.856 -159.981940.874-159.8141940.881-159.7011940.884-158.3611940.899
-158.212  1940.9-158.0221940.899 -157.891940.899-157.7161940.902-157.5421940.906
-157.5011940.908-157.4481940.912-157.2871940.918-157.1991940.922-157.0521940.928
-156.9021940.932 -156.831940.933-156.7541940.934-156.6461940.934-156.5831940.934
-156.5181940.934-156.4541940.933-156.346 1940.93-156.1981940.926-156.0981940.923
-155.9381940.916-155.8921940.914-155.7871940.911-155.721 1940.91-155.662 1940.91
-155.6161940.911-155.5821940.913-155.0451940.914-154.8051940.905-154.4721940.895
-154.1711940.884 -153.921940.876-152.7451940.842-146.0821940.747-144.2361940.695
-143.5311940.674-141.6071940.633-141.1541940.622-137.5531940.531-136.2131940.504
-135.1181940.495-133.985 1940.49-132.6161940.477-131.9431940.466-130.3871940.436
-129.0131940.402-128.0271940.396-127.0331940.368-126.501 1940.35-126.263 1940.34
-125.9971940.319 -125.491940.287 -125.281940.263-124.9231940.236 -124.711940.226
-120.8781940.233-119.8641940.295-119.1841940.321 -119.051940.325 -118.611940.335
 -118.411940.337-117.202 1940.34-116.0061940.354-115.058 1940.38-113.7621940.435
-113.2181940.452-112.7311940.463-111.9911940.475-111.6731940.482-111.197 1940.48
-110.6521940.471-107.0731940.361-105.7991940.328-104.6651940.306-103.7881940.297
-103.2111940.297-102.9191940.305-102.6581940.325-102.4131940.331-102.0241940.333
-101.4811940.329-100.792 1940.32-100.0581940.307  -99.421940.292 -98.5651940.259
 -97.9631940.242 -96.9861940.226 -96.8411940.224 -93.0471940.177 -91.5471940.152
 -85.8141940.036 -84.157    1940 -80.4271939.939 -79.2991939.916 -78.8281939.903
 -72.8661939.927 -72.8491939.952 -71.6331939.999  -71.62    1940 -71.2651940.031
 -70.8041940.054 -70.008 1940.07 -65.8791940.125 -65.0981940.141 -64.1961940.189
 -63.7891940.194 -63.0571940.193 -59.2161940.182 -57.9711940.174 -54.446 1940.14
 -46.2351940.049 -41.526    1940 -35.5171939.858 -30.5741939.734 -27.1451939.642
 -25.7071939.599 -25.4151939.596 -23.6411939.609 -22.7151939.599 -21.5431939.567
 -17.963 1939.44 -15.5881939.364 -10.2131939.214  -2.784    1939   -2.55    1939
  -2.254    1939       0    1939     .76    1939   3.603    1939   5.436    1939
   8.7511938.945  10.343    1939  13.3111939.428  15.7611939.721   16.071939.723
  17.1811939.712  17.3751939.715  17.7931939.746  18.0661939.755  18.3941939.757
  18.7861939.747  19.2281939.729  19.9591939.693  20.7531939.643  21.3411939.617
   27.051939.394  32.0821939.165  35.862    1939  40.408    1939  41.172    1939
  41.3561939.006  42.7231939.063  44.0221939.112  45.5891939.195  46.5411939.236
  48.9391939.281  54.3291939.406  55.5161939.427  56.7471939.438  57.5781939.441
  60.0721939.423  61.1231939.408  62.6281939.381  73.2531939.172  77.8371939.086
  77.8921939.085  79.484 1939.06  81.1081939.042  81.3281939.037  83.0831939.027
  86.402    1939  88.6791938.981  88.9241938.976  98.1341938.923 100.9791938.898
 102.2671938.876 111.4571938.728  114.211938.677 120.3641938.545 124.1041938.467
 125.2871938.437 126.4641938.401 128.1031938.358 129.7491938.318 133.7571938.226
 134.6321938.202 136.278 1938.17 136.6231938.155 136.7291938.146 136.767 1938.14
 136.8441938.136 136.9661938.133 137.2861938.131 137.4841938.129 137.7111938.123
 137.9431938.113 138.2651938.096 138.5811938.076 139.2181938.074 139.2641938.075
  139.381938.076  139.531938.075 139.6631938.074 139.7441938.072 139.7821938.071
 141.6541938.086  141.661938.088 141.7341938.095 141.7881938.099 141.842  1938.1
 142.2641938.101 142.824 1938.11 143.7321938.111 145.3271938.081 148.022    1938
 148.0371937.999 148.0661937.997 148.0871937.996 148.2031937.989  148.411938.783
  149.021940.032  149.311942.328 149.546  1940.7  149.611940.281  149.61 1940.28
 149.6111940.271 149.613 1940.26 149.6531939.985 149.6531939.984 149.6531939.983
 149.6541939.979 149.6541939.978 149.6571939.957 149.6591939.944  149.66 1939.94
 149.6611939.938 149.6661939.904 149.6661939.898 149.6681939.883 149.672 1939.85
 149.6721939.847  149.681939.787 149.6811939.781

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-253.257    .025-157.199    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -253.257-157.199              100     100     100            .1       .3
Left Levee      Station= -250.32      Elevation= 1941.63
Right Levee     Station=  -157.2      Elevation= 1940.92

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1940.96  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.            *          *    0.025  *   0.035  *
* W.S. Elev (ft)         * 1940.93  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1940.93  * Flow Area (sq ft)     *          *   56.83  *  426.67  *
* E.G. Slope (ft/ft)     *0.000747  * Area (sq ft)          *          *   56.83  *  426.67  *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   90.47  *  615.53  *
* Top Width (ft)         *  364.07  * Top Width (ft)        *          *   58.38  *  305.69  *
* Vel Total (ft/s)       *    1.46  * Avg. Vel. (ft/s)      *          *    1.59  *    1.44  *
* Max Chl Dpth (ft)      *    2.94  * Hydr. Depth (ft)      *          *    0.97  *    1.40  *
* Conv. Total (cfs)      * 25826.0  * Conv. (cfs)           *          * 3309.5  * 22516.5  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   58.59  *  310.16  *
* Min Ch El (ft)         * 1939.29  * Shear (lb/sq ft)      *          *    0.05  *    0.06  *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.07  *    0.09  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)  *          *    4.89  *    0.49  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    3.70  *    0.36  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -7700
```

```
INPUT
Description:
Station Elevation Data    num=     366
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001942.027-395.958    1942-395.5751941.997-395.5691941.997-390.8711941.941
 -390.741941.941 -390.691941.942-390.6741941.942-390.3461941.944-390.1811941.946
-390.1171941.947-390.0181941.951 -389.951941.952-389.9081941.953-389.6381941.948
-389.568 1941.94-389.5381941.937-389.362 1941.93-389.2781941.927-389.1271941.923
-388.8791941.918 -383.091941.837-382.5371941.827-381.6421941.813-381.3321941.809
-380.7171941.798-379.7081941.779-378.5811941.753-373.7041941.631-360.4361941.378
-347.421    1941-342.0631940.855-334.8631940.658-333.7791940.636 -333.081940.626
-332.328 1940.62-330.9451940.615-328.6251940.628-322.9041940.646-321.8041940.643
-319.6921940.633-318.3651940.744-318.2711940.764 -314.771940.862-312.9711940.912
-310.2751940.968-309.019    1941-308.901    1941-308.864    1941-308.707    1941
-298.153    1941-297.7281940.903-297.6571940.801-297.448  1940.7 -296.451940.647
-296.4221940.624-295.3111940.478 -293.451940.461-292.4561940.449-291.7091940.437
-291.4841940.435-287.7511940.461  -286.51940.476  -285.11940.495-284.5631940.506
-284.1581940.518-281.2821940.632 -279.291940.695-277.8911940.726-277.594 1940.73
-270.9711940.822-270.8071940.825-269.4761940.854-269.1041940.864-268.7661940.876
-268.4091940.885-268.306 1940.89-268.1871940.893-267.8821940.899 -267.761940.902
-267.7081940.903-267.6961940.902-267.692  1940.9-267.5931940.886-267.3971940.848
-267.3651940.844-267.2791940.842-267.0241940.839-266.155 1940.84-265.588 1940.84
-265.0461940.823-263.4741940.686-263.108 1940.64-262.9131940.563-262.515 1940.54
-262.1361940.529 -261.67 1940.52-261.1591940.514-260.6341940.513-260.1221940.517
 -259.661940.522-258.9551940.538-257.219  1940.6-255.9191940.634-252.852  1940.7
 -251.481940.736-248.0511940.859-245.7361940.934-244.208    1941 -240.17    1941
-236.383    1941 -235.91    1941-235.888    1941-233.8051940.932-205.3931940.196
-201.1911940.085-197.769    1940-197.0861939.718-195.253    1939-194.5551938.946
-193.0491938.853 -190.811938.742-186.9591938.567-184.9131938.474-184.8241938.472
-182.0061938.483-181.3821938.489-180.938 1938.49-178.3831938.488-172.7191938.479
-172.235 1938.48-171.9471938.483-171.7911938.487-171.3731938.517-169.5861938.593
-166.0921938.698-165.6691938.768-165.3381938.788-161.8431938.943-160.293    1939
-154.613 1939.17-153.6041939.189-145.4421939.432-132.5461939.061-132.4541939.064
-132.3621939.065-130.992    1939-130.446    1939-128.487    1939-127.516    1939
-126.733    1939-125.236    1939 -124.57    1939-122.866    1939-120.936    1939
-120.491    1939 -119.26    1939 -118.48    1939-114.981    1939-114.149    1939
-113.045    1939-110.971    1939-107.507    1939-102.6361939.209-101.4341939.251
-100.8751939.256 -99.1541939.263 -98.3051939.284 -97.6431939.326 -96.7841939.356
 -95.854 1939.37 -93.4611939.378  -91.681939.394 -91.2831939.385 -90.3741939.341
 -89.5631939.256 -87.904    1939 -84.888    1939 -81.001    1939 -80.707 1939.03
 -80.0481939.053 -79.4961939.056 -78.5171939.055 -76.2811939.044 -75.5891939.036
 -75.1931939.026 -74.707    1939  -72.19    1939  -71.23    1939 -70.865    1939
 -69.933    1939 -68.959    1939 -67.391    1939 -66.228    1939 -65.298    1939
 -63.988    1939 -63.669    1939 -58.189    1939  -51.44    1939 -48.649    1939
 -47.439    1939   -46.7    1939 -44.829    1939 -44.686    1939 -44.288    1939
 -42.587    1939 -36.8391938.858 -29.441 1938.67 -24.6671938.545  -5.264    1938
  -3.432 1937.83  -3.1241937.825   -2.891937.829       01937.628   4.2461937.331
   6.1111937.358   9.2081937.425  15.0811937.352  15.1611937.346  15.7791937.344
  16.251937.347  17.751937.356  18.4681937.349  19.7081937.316  21.0381937.277
  27.127    1937  30.639    1937  35.326    1937   38.661937.307   41.751937.579
  42.414 1937.62  43.927 1937.77  44.0621937.787  45.4091937.838  45.4921937.827
  45.581 1937.81  45.7171937.801  45.9831937.793  46.3231937.788   46.821937.791
  47.3491937.787  47.593 1937.79  47.6561937.785  47.6861937.792  47.7851937.798
  47.9391937.793  48.3471937.766  49.5751937.722   57.23    1937  57.778    1937
  60.007    1937  60.2011938.902  60.4291941.126  60.6371943.022    61.11939.383
   61.121939.227  61.4031937.019  63.122 1937.01  63.969    1937   66.71 1937.26
  67.1941937.269   68.171937.299  68.9631937.329  69.2591937.347  69.869  1937.4
  70.3891937.418  72.2781937.439  77.0541937.698  78.1551937.757  78.3121937.772
   80.381937.712  80.6341937.701  80.8711937.685  81.0311937.659  81.291 1937.65
  83.6551937.639  84.156 1937.63  85.9541937.638  87.1091937.623   88.031937.617
   88.55 1937.62  91.1821937.679  91.6361937.677  91.6771937.678  91.8421937.679
  92.9751937.692  93.1761937.699  93.4991937.687  93.7771937.711  94.0921937.679
  95.5431937.488  105.441937.526 108.0521937.593 120.0111937.963 121.025    1938
 121.395    1938 122.051    1938 123.2191937.845 128.1191937.155 129.192    1937
 131.8951936.775 140.971    1936 141.2761935.981 141.5991935.946  142.211935.932
  145.291935.892 146.5771935.976 146.698    1936 147.292    1936 147.445    1936
 147.4581935.972 147.8111935.898 148.4181935.899 150.3781935.857 151.0361935.854
 151.8981935.864 155.2841935.929 158.636    1936  176.26 1936.27 183.8311936.392
 189.2261936.479 191.7551936.515 194.159 1936.54  196.461936.551 198.7691936.545
  206.891936.447 214.2961936.351 215.2231936.353 224.1681936.219 224.7341936.213
  234.991936.123 235.3981936.117 236.2931936.103 237.2321936.086 237.6811936.079
 238.1161936.074 238.543 1936.07  238.931936.067 239.5951936.064 239.6221936.064
 239.6251936.081  239.651936.113 239.7051936.128 239.7961936.136 239.921 1936.14
 240.0741936.141 240.226 1936.14 240.3471936.138 240.4241936.136 240.5151936.136
 240.7051936.143 242.6561936.248 243.4341936.294 243.9581936.329 244.9571936.404
 246.7141936.518 247.529 1936.56 251.878    1937  252.87    1937 253.087    1937
 253.583    1937 255.276    1937 255.859    1937 256.354    1937 259.0791937.032
     2601937.043

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    -400    .035    -400    .025  60.637    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400  60.637              100     100     100            .1       .3
Right Levee     Station=   60.64       Elevation= 1943.02

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1939.78  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.08  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1939.70  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1938.91  * Flow Area (sq ft)     *          *  304.82  *          *
* E.G. Slope (ft/ft)     *0.001229  * Area (sq ft)          *          *  304.82  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  257.31  * Top Width (ft)        *          *  257.31  *          *
* Vel Total (ft/s)       *    2.32  * Avg. Vel. (ft/s)      *          *    2.32  *          *
```

* Max Chl Dpth (ft)	* 3.84	* Hydr. Depth (ft)	*	* 1.18	*	*	*
* Conv. Total (cfs)	* 20139.3	* Conv. (cfs)	*	* 20139.3	*	*	*
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	* 260.08	*	*	*
* Min Ch El (ft)	* 1937.00	* Shear (lb/sq ft)	*	* 0.09	*	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 0.21	*	*	*
* Frctn Loss (ft)	* 0.25	* Cum Volume (acre-ft)	*	* 4.47	*	0.00	*
* C & E Loss (ft)	* 0.11	* Cum SA (acres)	*	* 3.33	*	0.01	*

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -7800

INPUT
Description:
Station Elevation Data num= 365

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-4001942.027	-397.464	1942	-395.066	1941.966	-394.991	1941.965	-390.019	1941.881	
-389.723	1941.879	-389.611	1941.879	-389.571	1941.881	-388.782	1941.88	-388.362	1941.882
-388.193	1941.884	-387.928	1941.89	-387.743	1941.891	-387.626	1941.893	-386.847	1941.877
-386.638	1941.857	-386.547	1941.851	-385.996	1941.828	-385.722	1941.819	-385.216	1941.807
-384.335	1941.787	-377.829	1941.668	-376.297	1941.636	-373.577	1941.581	-372.556	1941.562
-370.398	1941.518	-366.405	1941.43	-361.141	1941.303	-349.219	1941	-339.866	1940.715
-338.666	1940.689	-325.131	1940.306	-322.049	1940.218	-321.624	1940.208	-321.355	1940.204
-321.07	1940.2	-320.556	1940.196	-319.725	1940.195	-317.827	1940.191	-317.485	1940.188
-316.846	1940.181	-316.457	1940.211	-316.43	1940.216	-315.447	1940.237	-314.965	1940.247
-314.268	1940.256	-313.935	1940.262	-311.328	1940.331	-303.462	1940	-302.116	1939.987
-291.031	1939.887	-289.313	1939.874	-287.719	1939.86	-285.409	1939.849	-282.785	1939.845
-282.009	1939.848	-281.531	1939.852	-276.918	1939.916	-275.315	1939.953	-273.88	1940
-273.52	1940.01	-270.737	1940.071	-269.911	1940.102	-268.941	1940.125	-266.417	1940.16
-265.378	1940.178	-264.931	1940.182	-264.825	1940.177	-264.793	1940.161	-263.938	1940.031
-263.777	1940	-257.107	1939.732	-256.589	1939.713	-255.981	1939.702	-254.537	1939.684
-251.793	1939.666	-249.584	1939.659	-248.577	1939.661	-246.216	1939.673	-241.838	1939.675
-241.539	1939.674	-241.269	1939.677	-240.957	1939.685	-240.869	1939.691	-240.105	1939.703
-235.623	1939.563	-235.416	1939.548	-234.768	1939.542	-233.551	1939.516	-233.021	1939.51
-232.518	1939.514	-231.239	1939.536	-230.346	1939.543	-228.539	1939.543	-228.364	1939.539
-226.847	1939.528	-223.591	1939.517	-222.472	1939.516	-221.319	1939.521	-215.205	1939.511
-212.336	1939.548	-211.858	1939.55	-211.576	1939.553	-208.994	1939.533	-205.863	1939.592
-198.989	1939.544	-194.451	1939.583	-193.572	1939.593	-192.916	1939.609	-192.651	1939.613
-192.444	1939.612	-191.323	1939.599	-190.516	1939.594	-189.885	1939.597	-189.099	1939.61
-186.776	1939.68	-186.074	1939.69	-185.219	1939.692	-184.032	1939.688	-182.398	1939.68
-180.507	1939.668	-178.664	1939.651	-177.161	1939.63	-175.991	1939.608	-174.369	1939.571
-173.508	1939.555	-172.941	1939.542	-172.566	1939.531	-167.827	1939.394	-165.881	1939.346
-160.031	1939.194	-158.241	1939.153	-154.775	1939	-154.197	1939	-154.14	1939
-153.145	1939	-152.318	1939	-150.075	1939	-149.719	1939	-148.996	1939
-147.583	1938.866	-144.113	1938.501	-143.396	1938.442	-142.376	1938.372	-139.777	1938.212
-133.904	1938	-132.034	1937.805	-130.616	1937.67	-128.844	1937.436	-128.601	1937.399
-120.693	1937.276	-120.379	1937.292	-119.353	1937.317	-117.691	1937.391	-116.658	1937.467
-116.031	1937.501	-115.11	1937.572	-113.912	1937.629	-111.287	1937.71	-110.291	1937.687
-107.446	1937.767	-106.539	1937.82	-104.857	1937.946	-104.707	1937.944	-104.634	1937.942
-104.481	1937.932	-103.972	1938	-99.206	1938.176	-98.405	1938.17	-97.829	1938.169
-93.759	1938.299	-93.293	1938.294	-88.837	1938.443	-87.948	1938.46	-86.169	1938.432
-84.527	1938.475	-83.782	1938.459	-82.635	1938.482	-78.317	1938.55	-77.004	1938.575
-76.271	1938.584	-74.921	1938.596	-74.683	1938.597	-74.502	1938.599	-74.241	1938.597
-71.851	1938.577	-64.176	1938.518	-56.923	1938.464	-54.688	1938.451	-53.478	1938.439
-53.007	1938.432	-52.469	1938.416	-52.251	1938.405	-50.723	1938.375	-29.642	1938.001
-29.638	1938.001	-29.634	1938.001	-29.6	1938	-3.963	1937.222	-.555	1937.16
01937.149	3.093	1937.088	7.027	1937	10.3	1936.76	10.351	1936.757	
10.694	1936.727	10.723	1936.725	10.782	1936.721	10.855	1936.717	11.004	1936.705
12.34	1936.6	12.59	1936.581	12.901	1936.558	14.623	1936.43	16.803	1936.267
18.681	1936.125	18.698	1936.257	18.737	1936.527	18.741	1936.561	18.746	1936.598
18.766	1936.741	18.781	1936.845	18.795	1936.949	19.366	1941.019	19.551	1936.805
19.691	1936.01	19.749	1936	19.906	1935.966	20.379	1935.862	21.533	1935.605
21.636	1935.579	24.251	1935	27.241	1934.658	27.447	1934.653	27.599	1934.656
27.797	1934.682	28.086	1934.96	28.251	1935	30.536	1935.886	32.09	1935.992
32.288	1936	34.868	1936	35.018	1936	36.212	1936.069	38.265	1936.088
40.489	1936.067	41.806	1936	42.619	1935.975	44.483	1935.853	44.854	1935.85
45.247	1935.871	47.084	1936	47.951	1936.178	51.394	1937	53.031	1937.358
55.48	1938	58.365	1938.659	59.943	1939	63.286	1939.689	65.048	1940
76.292	1940	76.82	1940	80.651	1939.05	80.854	1939	84.777	1938.024
84.877	1938	84.981	1937.978	88.966	1937	89.102	1936.972	90.484	1936.683
93.352	1936.088	93.728	1936	94.045	1935.93	98.589	1935	102.094	1934.282
103.396	1934	105.776	1934	105.936	1934	106.513	1934	120.371	1934
120.84	1934	123.005	1933.724	123.385	1933.716	124.302	1933.676	126.308	1933.601
126.815	1933.588	127.781	1933.573	128.815	1933.559	129.491	1933.539	130.612	1933.515
130.918	1933.509	131.205	1933.507	131.479	1933.511	135.076	1933.614	135.381	1933.626
135.625	1933.628	135.904	1933.643	136.759	1933.718	137.171	1933.75	137.317	1933.755
137.4	1933.75	137.481	1933.692	137.573	1933.667	137.818	1933.65	138.267	1933.648
138.661	1933.544	139.087	1933.505	139.951	1933.479	141.381	1933.469	143.214	1933.473
145.204	1933.487	147.154	1933.509	149.276	1933.541	152.004	1933.591	161.904	1933.788
162.526	1933.797	172.556	1934	182.452	1934.496	184.751	1934.615	184.976	1934.632
185.027	1934.669	185.106	1934.805	185.135	1934.816	185.185	1934.818	185.423	1934.81
185.761	1934.793	185.871	1934.785	185.981	1934.765	186.593	1934.619	186.998	1934.584
188.116	1934.52	190.838	1934.388	191.953	1934.356	199.267	1934	205.611	1933.815
206.231	1933.799	206.773	1933.79	212.711	1933.733	216.026	1933.715	219.083	1933.728
221.738	1933.788	224.251	1933.892	226.23	1934	229.886	1934.187	229.978	1934.19
231.16	1934	231.678	1933.973	231.907	1933.975	232.83	1934	233.901	1934.033
236.18	1934.09	236.387	1934.089	238.593	1934.158	243.768	1934.347	247.005	1934.467
247.551	1934.484	248.591	1934.497	251.042	1934.524	252.613	1934.537	254.027	1934.541
255.135	1934.534	255.977	1934.518	257.043	1934.488	258.166	1934.475	2601934.432	

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035  19.366    .025  65.048    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.366  65.048            93.64   93.64   93.64            .1       .3
Left Levee      Station=  19.366      Elevation= 1941.02
Right Levee     Station=   65.05      Elevation=    1940

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1939.42  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.14  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1938.28  * Reach Len. (ft)      *   93.64  *   93.64  *   93.64  *
* Crit W.S. (ft)         * 1938.28  * Flow Area (sq ft)    *          *   82.44  *          *
* E.G. Slope (ft/ft)     *0.007921  * Area (sq ft)         *          *   82.44  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   37.24  * Top Width (ft)       *          *   37.24  *          *
* Vel Total (ft/s)       *    8.56  * Avg. Vel. (ft/s)     *          *    8.56  *          *
* Max Chl Dpth (ft)      *    4.81  * Hydr. Depth (ft)     *          *    2.21  *          *
* Conv. Total (cfs)      *  7932.5  * Conv. (cfs)          *          *  7932.5  *          *
* Length Wtd. (ft)       *   93.64  * Wetted Per. (ft)     *          *   40.02  *          *
* Min Ch El (ft)         * 1934.65  * Shear (lb/sq ft)     *          *    1.02  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    8.72  *          *
* Frctn Loss (ft)        *    0.72  * Cum Volume (acre-ft)  *          *    4.03  *    0.00  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *          *    3.00  *    0.01  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -7893.64

INPUT
Description:
Station Elevation Data    num=     378
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001942.027-398.039    1942-394.0941941.927  -393.91941.923 -388.34 1941.81
-387.7731941.802-387.5521941.801-387.4761941.803-385.8291941.792-384.8831941.789
-384.486 1941.79-383.8441941.797-383.3831941.797-383.0841941.798-380.9671941.755
-380.3541941.711-380.0811941.696-378.3471941.635-377.4261941.608-375.6121941.561
-372.0461941.478-365.9851941.349-361.0481941.234-350.657    1941-336.2171940.545
-331.7181940.406 -329.121940.329-327.6531940.288-326.7071940.265-324.4081940.215
-323.7761940.203-321.7471940.169-321.0861940.162-318.1491940.089-315.788 1940.02
 -315.28    1940-313.2351939.964-307.4991939.853-302.2491939.745-298.2071939.678
-291.978 1939.58-287.3441939.511-285.3231939.483-273.1071939.327-268.6861939.273
-268.0561939.266-267.4831939.259-266.6741939.252-265.7811939.247-265.5231939.247
-265.3641939.247-263.8841939.259-263.3891939.267-262.8711939.279-262.1111939.292
-261.862  1939.3-261.5241939.307 -260.531939.315-260.0661939.321-259.202  1939.3
-259.0211939.301-258.0541939.288-256.7011939.274 -254.381939.237-240.541    1939
 -239.99 1938.99-239.0181938.961-234.9271938.691-234.4911938.678-233.8991938.674
-233.2421938.676-232.2921938.684-231.8591938.692-229.4831938.704-222.0791938.766
-221.561    1939-219.055    1939-217.174    1939-216.934    1939 -214.38    1939
-212.018    1939-207.943    1939-206.664    1939-204.1321938.907-202.6651938.932
-197.459    1939-196.042    1939-195.603    1939-194.357    1939-193.179    1939
-192.5911938.993-192.5151938.994-192.4591938.995-192.4451938.995-192.4351938.995
-192.4251938.995-192.4141938.995-192.4041938.994-192.3881938.994-192.3631938.994
-192.3231938.993-192.2021938.992-192.1891938.992-192.1821938.992-192.1491938.991
-192.131 1938.99-192.122 1938.99-192.0971938.988-192.0881938.987-192.0731938.986
 -192.041938.985-191.9761938.983-189.7131938.941-189.4011938.932 -189.02 1938.92
-186.746 1938.86-186.1721938.845-184.4081938.781-183.2751938.727-181.9021938.643
 -181.031938.484-180.5231938.454-177.3071938.343-175.8441938.267-175.5641938.262
-175.374 1938.26-174.5191938.256-173.7821938.254-172.5581938.259-172.2411938.258
-172.0991938.259-171.0861938.279-168.581 1938.29-168.0551938.293-167.8791938.306
-167.7221938.309  -167.51938.307-166.2431938.288-165.517 1938.28-165.0371938.279
-164.4791938.286-162.0051938.364-160.9321938.378-160.0341938.356-158.9491938.352
-148.2721938.142-147.6671938.132-147.0121938.118-144.7731938.082-143.3181938.068
-142.977 1938.06 -140.931938.059-139.1011938.036 -137.29    1938-135.577 1937.98
-126.065 1937.84-122.8341937.785 -121.361937.754-120.7961937.736-120.2281937.723
-119.0611937.708-117.5751937.694-116.2071937.684-115.2541937.681-114.2381937.683
-113.5991937.684-110.886 1937.72 -110.71 1937.74-110.3161937.761-108.323 1937.82
-103.2951937.994-103.047    1938-102.769    1938-101.802    1938-100.4791937.956
 -94.7691937.735 -93.9531937.719 -92.5541937.697 -90.6171937.679 -89.4811937.665
 -88.282 1937.64 -87.1341937.602 -86.034 1937.55 -82.9351937.373  -76.75    1937
 -74.0971936.626 -73.412 1936.49 -72.3981936.318 -70.516    1936 -67.8511935.891
 -65.9561935.824  -57.081935.705 -56.702 1935.71 -47.427 1935.71 -46.2871935.707
 -45.7451935.712 -45.1741935.726 -43.8241935.738 -41.4221935.737 -38.3811935.727
 -37.8651935.733  -30.67    1936 -30.4381936.018 -29.611    1936 -29.182    1936
  -28.63    1936 -22.617    1936 -21.104    1936 -19.086    1936 -14.775    1936
 -12.049    1936  -8.071    1936  -2.0321935.579       01935.444   6.705    1935
   7.1341934.878   7.3521934.817   7.3891934.782   7.671936.373   8.0081940.113
   8.4611935.018   8.5091934.504   9.1651934.256   9.3151934.238   9.928    1934
  12.6021933.437  14.399    1933  17.6981932.333  19.257    1932  20.0251931.951
  22.911 1931.81  24.9381931.691  25.8611931.655  26.1891931.651   28.511931.658
  29.9391931.657  33.7221931.647   34.921931.647  36.103 1931.66  36.9271931.677
  38.213 1931.73  39.3381931.787  40.0081931.834  40.6921931.873  42.8591931.951
```

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   43.78    1932  44.4421932.087  45.4191932.218  50.3541932.894  51.194    1933
  52.4511933.217  56.789    1934  60.7761934.785  61.851    1935  62.7861935.184
  65.1731935.644  66.8871935.951  67.166    1936  67.5721936.074  72.738    1937
  75.5351937.514  78.292    1938  81.3221938.309  81.8371938.363  81.9371938.375
  82.3081938.397  83.3111938.422  87.8271938.811  88.6021938.871  88.952  1938.9
  89.127 1938.92  89.143 1938.92  89.1711938.919  89.1911938.918  89.2221938.906
   89.26  1938.9  89.3321938.895   89.831938.871  90.4821938.846  90.7321938.834
  90.9751938.818  91.4241938.776  91.7371938.739  94.2211938.414  94.7431938.403
  95.319 1938.37  97.602    1938  99.7591937.207 100.377    1937 102.4381936.276
  103.25    1936   105.91935.175 106.483    1935 108.8151934.312 109.882    1934
 112.6011933.198 113.272    1933 115.4411932.377 116.851    1932 130.2021931.689
 133.1671931.624 137.9911931.513 143.7081931.389 148.471 1931.29 149.9281931.261
 154.4851931.177 154.816 1931.17 154.9841931.165 155.1641931.157 155.5991931.142
 155.8841931.129  155.981931.126  156.121931.123  156.821931.131  156.841931.137
 157.1831931.177 157.4931931.204 157.6281931.207   157.81931.205 161.6191931.148
 161.8091931.144 162.0341931.137 162.2451931.124 162.3981931.108 162.5671931.078
 162.5991931.075 162.6261931.075 163.0711931.079 164.5391931.092 164.6971931.094
 164.999  1931.1 166.5131931.127 174.5231931.168 177.7041931.238 180.9891931.269
 187.4261931.356 191.4571931.471 193.986 1931.49 195.2661931.536 196.3051931.583
 199.9821931.806 200.7661931.823 201.3651931.857 202.2091931.844 202.8691931.862
 203.9771931.916 205.444    1932 205.5311932.054 207.2681932.103 207.8111932.107
 208.3321932.098 209.4831932.068 210.8421932.053  211.441932.033 211.814    1932
  212.711931.957 213.6781931.928 231.5481931.215 232.2711931.187  234.891931.124
 235.5221931.107 236.2071931.088 236.4261931.083  236.641931.082 237.4171931.082
 237.6881931.083 237.9341931.087 238.1631931.095 238.3931931.108 239.0671931.154
 247.446    1931 249.0131930.985 250.3381930.967 250.4741930.967 250.794    1931
 251.901    1931 252.091    1931     2601931.234

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035   8.008    .025  88.602    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
        8.008  88.602             6.34    6.34    6.34             .1        .3
Left Levee      Station=    8.008      Elevation= 1940.11
Right Levee     Station=     88.6      Elevation= 1938.87

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 1935.20  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.92  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 1934.27  * Reach Len. (ft)       *    6.34  *    6.34  *    6.34  *
* Crit W.S. (ft)          * 1934.27  * Flow Area (sq ft)     *          *   91.60  *          *
* E.G. Slope (ft/ft)      *0.007407  * Area (sq ft)          *          *   91.60  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   49.06  * Top Width (ft)        *          *   49.06  *          *
* Vel Total (ft/s)        *    7.71  * Avg. Vel. (ft/s)      *          *    7.71  *          *
* Max Chl Dpth (ft)       *    3.31  * Hydr. Depth (ft)      *          *    1.87  *          *
* Conv. Total (cfs)       *  8203.2  * Conv. (cfs)           *          *  8203.2  *          *
* Length Wtd. (ft)        *    6.34  * Wetted Per. (ft)      *          *   49.52  *          *
* Min Ch El (ft)          * 1931.65  * Shear (lb/sq ft)      *          *    0.86  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    6.59  *          *
* Frctn Loss (ft)         *    0.05  * Cum Volume (acre-ft)  *          *    3.84  *    0.00  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)        *          *    2.90  *    0.01  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -7900

INPUT
Description:
Station Elevation Data    num=     365
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001941.929-399.7121941.922-393.1861941.809-387.9531941.712-387.1861941.698
-382.9811941.612-381.8281941.598-381.3761941.595-381.2221941.598-377.8671941.576
 -375.941941.571-375.1321941.572-373.8251941.587-372.8861941.587-372.2771941.589
-367.9641941.502-366.7171941.411-366.1611941.381 -362.631941.256-360.7531941.201
-357.0581941.107-352.488    1941 -348.211940.872-344.3161940.765-341.8041940.704
  -335.7 1940.57-334.024 1940.54-328.6361940.448-326.8811940.431-324.8851940.381
 -323.281940.334-322.0871940.286-321.5721940.263-321.1691940.256 -320.461940.231
 -320.131940.224-318.8771940.192-318.6581940.185-309.0891940.006 -308.83    1940
-307.9851939.982-290.7391939.584-288.4011939.537-286.5321939.503-284.8331939.474
-281.6421939.418-279.153 1939.37-276.8761939.323-275.1231939.294 -272.421939.252
 -270.411939.222-269.533 1939.21-264.2341939.142-262.3161939.118-262.0431939.115
-261.7941939.112-261.4431939.109-261.0561939.107-260.9441939.107-260.8751939.107
-260.2331939.112-260.0181939.116-259.7941939.121-259.4641939.127-259.356 1939.13
-259.2091939.133-258.7781939.137-258.5771939.139-257.4821939.113-257.4141939.113
-256.1871939.096-254.472 1939.08-251.5281939.032-249.652    1939-238.4711938.791
-237.6941938.768-234.4231938.552-234.0751938.542-233.6021938.539-233.077 1938.54
-232.3171938.547-231.9711938.553-230.0721938.563-224.1531938.613-223.294    1939
-221.836    1939-220.742    1939-220.304    1939-218.796    1939-217.401    1939
-214.995    1939-211.528    1939-204.6631938.747-203.4541938.768-197.892 1938.84
 -197.281938.842-195.8141938.855-195.1231938.851-194.8921938.854-193.2261938.836
-191.3011938.851-189.8731938.862-189.5211938.863-189.2871938.864-189.0261938.864
 -188.761938.862-188.4841938.857-188.099 1938.85-187.4631938.841-186.459 1938.83
-183.3881938.801-183.0621938.798-182.8921938.793 -182.071938.766-181.5961938.747
```

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-181.3791938.735-180.7591938.692-180.5161938.667-180.1421938.651-179.3081938.621
-177.697 1938.57-176.3861938.545-173.971 1938.47-171.0271938.384-170.0791938.359
-167.443 1938.29-166.8391938.268 -166.451938.249 -165.98 1938.22-165.6811938.166
-165.5071938.156-164.4051938.117-163.9041938.092-163.808 1938.09-163.7431938.089
 -163.451938.088-163.1971938.087-162.7781938.089-162.6691938.089 -162.621938.089
-162.2731938.096-161.4141938.099-161.2341938.101-161.1741938.105 -161.121938.106
-161.0441938.105-160.6131938.099-160.3641938.096  -160.21938.096-160.0091938.098
 -159.161938.125-158.793 1938.13-157.5361938.099-157.2361938.097-152.279    1938
 -142.971937.907-140.5651937.887-139.154 1937.88-137.2351937.879-135.5381937.867
 -132.561937.832 -124.481937.714-121.7361937.667-120.484 1937.64-120.0051937.625
-119.5221937.614-118.5311937.602-117.268 1937.59-116.1071937.581-115.2971937.578
-114.434 1937.58-113.8911937.581-111.5871937.611-111.4371937.628-111.1021937.647
 -109.411937.697-105.1381937.844  -104.61937.857-104.0911937.856  -99.86    1938
 -98.692    1938 -96.0541937.581 -95.5031937.559  -94.381937.522 -91.2611937.401
  -89.421937.366 -86.2621937.317 -81.8911937.276 -79.3261937.243 -76.6191937.188
 -74.0291937.101 -71.876    1937  -71.391936.928 -65.902    1936 -57.366 1935.65
 -55.9841935.601  -49.511935.514 -49.2341935.518 -42.4691935.518 -41.6371935.515
 -41.242 1935.52 -40.826 1935.53 -39.8411935.538 -38.0891935.538 -35.871 1935.53
 -35.4951935.535 -30.0091935.738 -29.4331935.718 -29.1091935.711 -23.861    1936
  -20.85    1936 -20.281    1936 -19.523    1936 -12.208    1936 -10.734    1936
  -7.312    1936  -7.107    1936  -6.6861935.956  -6.3281935.929  -4.5231935.779
       0 1935.39   4.535    1935   5.4811934.831   7.3571934.486   7.5321935.926
   7.5651936.262   7.6211936.825   7.8311938.014   8.0131940.034   8.2581937.283
   8.3351936.458   8.3411936.386   8.3851935.882   8.3991935.716   8.4751934.756
   8.5131934.326   8.666 1934.29   8.901 1934.25   9.3641934.205  10.006    1934
   11.071933.755  14.307    1933  18.8061932.116  19.395    1932  20.3321931.921
  21.9991931.775  22.862 1931.72  25.0461931.613   26.581931.523  27.2791931.496
  27.5261931.492  29.2831931.498  30.3641931.498  33.2281931.489  34.134 1931.49
  35.0291931.499  35.6521931.512  36.6261931.553  37.4771931.596  37.9851931.631
  38.5021931.661  40.1421931.719  40.9691931.764  44.202    1932  44.9951932.109
  52.042    1933  55.8371933.655  58.892    1934  62.1341934.579  64.465    1935
  66.9411935.444  70.119    1936  74.7521936.843  75.629    1937  76.9241937.238
  80.629    1938  85.4181938.413  87.8261938.598  88.9171938.689  89.4611938.751
  89.5091938.752  89.5981938.749   89.661938.744  89.7561938.708  89.874 1938.69
  90.0961938.674  91.6471938.599  93.672 1938.52   94.451938.484  95.2071938.433
  96.6011938.302  97.5761938.189  99.017    1938  99.8251937.717 101.845    1937
 102.8411936.645 104.652    1936  106.811935.301 107.709    1935 109.209 1934.51
 110.953    1934 111.7271933.772 114.336    1933 116.4781932.384 117.742    1932
 158.5541931.045 160.529    1931 160.5581930.991 164.6571930.961 172.7891930.985
 176.125    1931 176.2951931.002 185.091 1931.12 186.4491931.159 190.471 1931.19
 190.9661931.207 191.3681931.226  192.791931.312 195.5691931.371 195.8391931.386
 196.219 1931.38 196.5171931.388 197.0161931.413 199.068 1931.53 201.9721931.626
 204.8141931.731 206.578  1931.8 207.1791931.809 208.1561931.855 208.6161931.885
 208.8171931.904 208.9931931.927 209.0441931.931 209.0831931.933 209.5881931.946
 209.6281931.947 209.6591931.948 209.6861931.947 209.8181931.945  209.891931.942
 209.9681931.936 210.0551931.925 210.3181931.878   210.51931.852 210.787 1931.83
 211.3881931.804 211.9931931.785 213.3041931.728 214.4421931.705 220.1161931.487
  220.831931.453 230.1291931.135 230.643 1931.11 234.422    1931 239.0411930.946
 249.9151930.841 251.0471930.826 251.1631930.826 252.868    1931 257.463    1931
  258.09    1931 258.1311930.983 258.3561930.967 258.7821930.962     2601930.977

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035   8.013    .025  89.461    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          8.013  89.461             100     100     100            .1       .3
Left Levee      Station=   8.013      Elevation= 1940.03
Right Levee     Station=   89.46      Elevation= 1938.75

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1935.10  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.91  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 1934.19  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1934.19  * Flow Area (sq ft)     *          *   92.36  *          *
* E.G. Slope (ft/ft)     *0.007485  * Area (sq ft)          *          *   92.36  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   50.54  * Top Width (ft)       *          *   50.54  *          *
* Vel Total (ft/s)       *    7.64  * Avg. Vel. (ft/s)     *          *    7.64  *          *
* Max Chl Dpth (ft)      *    3.36  * Hydr. Depth (ft)     *          *    1.83  *          *
* Conv. Total (cfs)      *  8160.3  * Conv. (cfs)          *          *  8160.3  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   50.97  *          *
* Min Ch El (ft)         * 1931.49  * Shear (lb/sq ft)     *          *    0.85  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    6.47  *          *
* Frctn Loss (ft)        *    0.78  * Cum Volume (acre-ft)  *          *    3.83  *    0.00  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *          *    2.90  *    0.01  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -8000

INPUT
Description:
Station Elevation Data    num=     280
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
```

```
*****************************************************************************
    -400  1940.8-398.2731940.771-396.4711940.745-387.5881940.593-376.7061940.411
-364.039 1940.19-363.0641940.172-360.663 1940.13 -357.511940.075-353.383    1940
-304.5051939.096-303.3131939.074-299.635    1939-272.7541938.289-271.7381938.261
-270.4291938.219-269.9111938.206-269.3861938.196-268.8511938.192-268.327 1938.19
-265.8041938.192-265.306 1938.19-264.4141938.183-263.1361938.171-261.8681938.153
-260.9681938.134-257.2171938.199-255.5111938.217-253.6681938.226-250.0651938.226
 -246.37 1938.22-244.5711938.207 -242.461938.185-236.9591938.143-236.4221938.138
-234.1391938.115-231.0421938.074-226.335    1938-215.7141937.643-199.0021937.241
-188.965    1937-174.6971936.663-169.8221936.538-157.5351936.232-155.5241936.183
 -155.06 1936.17-153.3721936.132-147.366    1936-146.1371935.931-141.6291935.778
-140.3211935.685-139.9311935.676-139.5611935.675-139.0231935.677-136.1041935.728
-132.7581935.773-132.2651935.787 -131.591935.866 -131.311935.877-130.7841935.885
-129.8971935.889-128.5431935.886-124.3921935.862-116.4491935.806-111.8451935.778
-110.0691935.772-108.692 1935.77-107.7111935.774-101.0211935.851 -97.4321935.884
 -97.1411935.884  -94.811935.887 -94.3911935.885 -90.4271935.881 -89.9431935.881
 -89.9391935.881 -89.9341935.881 -89.9311935.881 -89.402 1935.88 -88.7921935.875
  -87.691935.871 -84.7911935.863 -83.5411935.848 -82.545 1935.84 -82.1931935.837
 -81.7941935.828 -81.3891935.792 -80.8381935.765 -79.8421935.733 -76.9411935.657
  -75.781935.622 -75.3991935.614 -75.0561935.611  -74.521935.615 -73.6531935.625
 -70.746 1935.65 -68.8531935.673 -65.1581935.735 -59.6981935.814 -59.6371935.815
 -58.4141935.826 -58.2531935.827 -58.063 1935.83 -57.7361935.832 -57.1441935.832
 -56.8621935.831 -56.6531935.828 -56.332 1935.82 -56.1431935.817  -55.681935.814
 -54.6691935.811 -54.046 1935.81 -52.3251935.807 -49.9451935.775 -46.082 1935.73
 -44.5111935.724 -44.4411935.724 -44.3651935.723 -42.6931935.711 -40.9431935.689
 -40.4551935.681 -39.203 1935.66 -37.1451935.622 -36.4361935.609  -30.871935.525
 -30.0681935.513 -28.7371935.499  -28.671935.498 -27.957 1935.49 -27.1941935.477
 -27.1311935.475 -26.2811935.454 -26.172 1935.45 -15.3521935.105 -13.6411935.045
 -12.337    1935  -9.0311934.233  -8.113    1934  -4.474    1934  -2.797    1934
  -2.5171934.172  -2.2391934.342  -1.3571934.528  -1.255 1934.56   -.9891934.586
   -.8951934.613    -.691934.613   -.2551934.597       01934.582   1.0651934.522
   1.6731934.475    2.161934.425   2.7011934.344   2.9331934.309   4.781    1934
   9.4341933.167  10.407    1933  10.5281932.971  13.846    1932  14.6831931.695
  16.383    1931  17.8391930.444  18.931    1930  19.8031929.634  21.315    1929
  24.9861928.246  27.647    1928  30.1521927.951  31.6211927.927  32.7381927.914
  33.9091927.909  35.3921927.907  36.9731927.907  38.3271927.908  39.2021927.911
  39.6761927.919  39.9091927.934  40.118    1928  41.6711928.876  41.947    1929
  42.9411929.145   45.36    1930  45.477    1930   48.12    1930  49.1741930.517
  49.6411930.628  49.7811930.661  50.8181930.908  51.204    1931  63.0221931.291
  66.8991931.386  67.0171931.382  67.872 1931.39  68.3961931.395   71.631931.434
   78.851931.521  79.5941931.544  81.3261931.598  83.6781931.626  94.684    1932
  96.4011932.441  98.669    1933 100.4571933.484 102.921    1934 104.9991934.422
 107.994    1935 109.9881935.356 110.3461935.364 110.6681935.337 113.275 1935.67
 113.591 1935.74 114.0611935.817 114.2441935.842 114.3621935.865  114.411935.874
 114.4141935.901 114.4591935.912 114.476 1935.92 114.5231935.927 114.5951935.932
 114.6111935.932 114.7981935.927 114.8551935.925 114.908 1935.92 115.0951935.912
 115.1461935.911 115.213 1935.91 115.4891935.904 115.5431935.901  115.771935.881
 115.8271935.876 116.1181935.853 116.3381935.831 116.9891935.763 118.9241935.607
 119.2261935.582  121.161935.416 126.318    1935 128.2841934.385 129.499    1934
 132.6481933.009 132.679    1933 132.7371932.987 137.631    1932 139.5471931.608
  142.57    1931 145.3361930.487 146.6941930.366 151.512    1930 160.2321929.868
 162.2791929.843 163.2011929.843 163.389 1929.86 163.5511929.999 163.658    1930
 164.8681930.029 166.6661930.025 167.926    1930 168.9681929.993 171.7411929.963
 174.2651929.921 176.3481929.876 177.9331929.833 179.0431929.797   180.41929.747
 182.6621929.681 185.4191929.591 186.638 1929.56 187.6341929.547 188.4411929.547
 189.0521929.553 189.6491929.564  189.751929.562 190.0661929.451 190.4281929.416
 191.2081929.399 192.6121929.406 194.5711929.431 198.8981929.493     2001929.507

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025 114.414    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400 114.414              100     100     100             .1       .3
Right Levee     Station=  114.41      Elevation=    1935

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)          * 1932.33  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.77  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)          * 1931.56  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 1931.56  * Flow Area (sq ft)     *          *  100.39  *          *
* E.G. Slope (ft/ft)      *0.008044  * Area (sq ft)          *          *  100.39  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   65.06  * Top Width (ft)       *          *   65.06  *          *
* Vel Total (ft/s)        *    7.03  * Avg. Vel. (ft/s)     *          *    7.03  *          *
* Max Chl Dpth (ft)       *    3.65  * Hydr. Depth (ft)     *          *    1.54  *          *
* Conv. Total (cfs)       *  7871.7  * Conv. (cfs)          *          *  7871.7  *          *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)     *          *   66.26  *          *
* Min Ch El (ft)          * 1927.91  * Shear (lb/sq ft)     *          *    0.76  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    5.35  *          *
* Frctn Loss (ft)         *    0.83  * Cum Volume (acre-ft)  *          *    3.61  *    0.00  *
* C & E Loss (ft)         *    0.06  * Cum SA (acres)        *          *    2.76  *    0.01  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -8100
```

```
INPUT
Description:
Station Elevation Data    num=     239
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001939.943-378.0831939.391-372.1151939.238-370.3811939.193 -365.321939.073
-365.0981939.068-362.036    1939-358.8351938.922 -352.791938.784-346.0431938.638
-340.4091938.522-336.3141938.441-333.4871938.391-331.561 1938.36-330.3391938.344
-329.689 1938.34 -328.791938.338-328.0121938.328-327.8121938.324-327.0721938.312
  -324.21938.232-323.7961938.224-323.4551938.217-320.3821938.136-319.5781938.118
-319.1351938.108-318.782  1938.1-318.5451938.095-318.174 1938.09 -317.871938.086
-316.7121938.056 -316.09 1938.04  -315.91938.036-314.3021938.006-314.2641938.005
 -314.191938.005-313.795    1938-312.5351937.988-305.9691937.953-302.7031937.919
-289.4961937.745-282.7791937.649-278.0751937.577-276.6181937.575-275.2271937.571
-273.5461937.562-270.4991937.515-268.954 1937.51-266.629 1937.47-266.019 1937.46
-264.9551937.444-262.0491937.408-257.6771937.403-253.9651937.398-252.5551937.395
-250.9611937.392-250.0171937.392-249.306 1937.39-248.7661937.385 -236.011937.244
 -232.46 1937.21-221.3071937.077-221.0481937.074-220.4821937.068-215.319    1937
-214.3551936.979-214.1811936.975 -214.151936.976-214.0111936.977-213.9511936.979
-213.9281936.979-213.9111936.979-213.8871936.979-213.8551936.978-213.8131936.977
-213.6491936.973-213.6251936.972-213.5541936.971-213.516 1936.97 -213.481936.969
-213.3051936.964-212.0141936.933-200.688 1936.69-196.2611936.577-190.5831936.433
 -184.21 1936.28-184.0171936.275-180.3921936.189 -178.221936.135 -176.231936.097
-171.104    1936-170.9881935.998-163.6741935.895-163.222 1935.89-157.496 1935.82
-156.7431935.807-147.6671935.712-145.9571935.685-141.0891935.617-130.9061935.498
-129.7751935.478-129.5551935.465-121.5161935.514-121.3621935.532-120.8741935.552
-120.6421935.558-120.2231935.567-117.9681935.518-117.4221935.524-116.7021935.514
-116.6151935.513-116.3851935.508-116.1351935.503-113.5841935.441-111.7661935.397
-111.3741935.395-111.0241935.389-110.5861935.376  -95.781935.022 -95.7531935.021
 -95.5761935.016 -94.916    1935 -88.5461934.933 -88.2591934.931 -88.113 1934.93
 -88.0591934.932 -87.2391934.936 -86.2831934.919 -86.0791934.915  -85.86 1934.91
 -85.0481934.896 -83.6051934.869 -79.0681934.797 -45.869    1934  -43.63    1934
 -43.168    1934 -42.801    1934 -41.551    1934 -35.3171934.148 -34.7841934.149
 -34.5381934.158 -16.7721934.092  -16.631934.068 -16.2221934.051 -14.424    1934
 -14.402    1934 -14.401    1934  -6.4181933.611       01933.273   5.192    1933
  10.1111932.223  11.523    1932  12.383 1931.72  14.501    1931  15.7421930.583
   17.47    1930  18.3471929.692   20.39    1929  21.4141928.656  23.343    1928
  27.8031927.779  30.557 1927.53  31.3481927.499  33.1821927.456  35.2551927.416
  35.8971927.405  36.385  1927.4  36.8961927.397  37.5441927.396  38.2351927.396
  38.8261927.397  39.2091927.398  39.4161927.401  39.5181927.408  39.6621927.454
  39.6651927.471  40.1721927.704  40.824 1927.83  41.809 1927.93  42.113    1928
   43.381928.477  44.771    1929  45.7221929.154  51.053    1930  55.115    1930
  56.733    1930  58.217    1930   87.661930.445  88.301 1930.43  90.1431930.436
  96.5561930.541  98.7151930.576 103.6411930.611 106.4731930.623 107.4351930.643
 112.6151930.753 114.5711930.758 115.3271930.778 123.0751930.979 123.2461930.979
 123.278 1930.98 123.841    1931 126.2221931.492 128.646    1932 132.7131932.832
 133.471    1933 135.0731933.306 138.519    1934 141.5391934.574 144.202    1935
 144.8971935.054 144.9361935.054 145.124 1935.05 145.5481935.039 146.947    1935
 152.6161934.403 156.041    1934 157.3671933.669 160.263    1933 161.884 1932.65
 164.992    1932 168.0171931.386 169.814    1931 172.5691930.439 174.847    1930
 175.6041929.883  175.771929.857 180.6891929.096 181.224    1929 181.7041928.988
 186.7321928.881 190.6841928.808 193.4811928.764 195.1211928.743 195.9631928.738
 196.5281928.746 196.8921928.745 197.7771928.729     2001928.678

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    -400    .035    -400    .025 144.202    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400 144.202              100     100     100             .1       .3
Right Levee     Station=   144.2      Elevation=    1935

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1931.40  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.56  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1930.83  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1930.83  * Flow Area (sq ft)     *          *  117.27  *          *
* E.G. Slope (ft/ft)     *0.008660  * Area (sq ft)          *          *  117.27  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  102.43  * Top Width (ft)        *          *  102.43  *          *
* Vel Total (ft/s)       *    6.02  * Avg. Vel. (ft/s)      *          *    6.02  *          *
* Max Chl Dpth (ft)      *    3.44  * Hydr. Depth (ft)      *          *    1.14  *          *
* Conv. Total (cfs)      *  7586.5  * Conv. (cfs)           *          *  7586.5  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *  103.28  *          *
* Min Ch El (ft)         * 1927.40  * Shear (lb/sq ft)      *          *    0.61  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.70  *          *
* Frctn Loss (ft)        *    0.77  * Cum Volume (acre-ft)  *          *    3.36  *    0.00  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)        *          *    2.57  *    0.01  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -8200

INPUT
Description:
```

```
 Station Elevation Data    num=     263
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ********************************************************************************
     -400    1939-399.784    1939-398.716    1939-396.196    1939-394.498    1939
-391.4331938.848-389.3331938.751-386.8071938.663-385.2251938.602-384.0861938.538
-383.1931938.445-382.7441938.427-382.2381938.412  -381.51938.393-380.986 1938.36
-380.9771938.346-380.488 1938.31-379.5881938.292-378.1171938.269-377.599 1938.26
-376.8131938.243-376.113 1938.23-375.0751938.214-373.8731938.198 -373.761938.196
-371.2061938.166-369.2411938.172-368.6531938.174-368.5151938.173-368.041 1938.17
-364.8661938.111-363.3731938.083-363.2751938.082-359.078    1938-351.6161937.835
-339.5211937.569-338.5911937.551-338.2611937.554-337.6671937.551-336.1591937.542
-335.418 1937.53-331.731 1937.52-330.0361937.519-329.5331937.524-328.9771937.522
-327.9191937.509-315.3291937.278-314.2791937.257-312.4771937.219 -301.19    1937
 -297.471936.918-296.861 1936.91-296.5731936.906 -295.831936.893-295.5711936.887
-285.8671936.687-283.2371936.643-280.6241936.597-275.9381936.503-275.0551936.485
-272.8261936.439-252.487    1936-248.7941935.925-248.2231935.917 -241.931935.812
-239.7091935.774-238.4261935.758-233.035 1935.69-227.7251935.633-225.6321935.628
-223.522 1935.63-221.1611935.618-220.0131935.601 -217.85 1935.57-206.3381935.352
-202.8531935.304 -202.371935.295-196.9611935.192-191.3941935.091-186.741    1935
-185.1181934.962-179.9591934.821-173.7191934.626-171.9991934.565-170.6721934.585
-170.2141934.601-165.2491934.691-162.459 1934.75-162.452 1934.75-161.8621934.758
-161.7241934.754-161.2971934.753-161.1261934.753-161.0251934.753-160.6431934.746
-160.2141934.736-159.4491934.718-159.0571934.711-155.2961934.681-155.1881934.681
-152.2171934.547-145.401 1934.19-141.573    1934-138.4241933.842-136.4461933.755
-133.9041933.681-129.5741933.563-127.8661933.523-126.6941933.502-125.8941933.495
-124.9631933.497-118.635 1933.57-116.7731933.606-115.844 1933.63 -115.021933.665
-113.6821933.698-112.6881933.719-111.2761933.728-109.8241933.731 -109.411933.738
 -109.111933.757-107.1771933.962-106.878    1934-100.6411934.419-100.222 1934.44
 -98.6461934.519 -96.8341934.591 -95.6171934.628 -92.9941934.662  -90.621934.141
 -90.4231934.005 -90.4211934.005 -90.4171934.005 -90.388    1934  -90.26    1934
 -86.784    1934 -82.717    1934 -81.671    1934 -78.6991933.836 -76.1061933.711
 -72.1421933.498 -71.7581933.477 -70.0981933.376 -69.9271933.344 -66.5961933.191
 -65.9051933.176 -65.5431933.165 -65.1161933.148 -63.992  1933.1 -63.7111933.087
 -62.5271933.054  -60.63    1933 -59.4621932.986 -56.9661932.963 -53.7081932.939
 -45.6921932.894 -42.1741932.882 -39.5591932.881 -39.3571932.882  -35.88 1932.89
 -35.4931932.886 -33.8521932.885 -30.2251932.871 -29.5991932.877 -25.5491932.925
  -23.721932.939 -23.6921932.939 -23.6541932.941 -23.5041932.949 -23.4771932.952
 -23.4151932.956 -23.3691932.965 -23.268 1932.96 -23.2561932.958 -23.2111932.957
 -23.1761932.956 -23.0851932.951 -23.0121932.945 -22.9781932.941 -22.9381932.938
 -22.8021932.933 -22.7351932.929  -22.651932.925 -22.5321932.922 -22.5051932.922
 -21.1481932.923 -20.986 1932.92 -19.829 1932.91 -18.9171932.896 -16.3521932.851
 -16.0531932.844 -15.7621932.834 -13.6451932.747 -11.5111932.698   -8.311932.603
       01932.231    5.15    1932   9.4371931.427  10.5381931.288  12.812    1931
  13.6061930.722  14.983 1930.24    15.6    1930  15.9711929.843  16.527 1929.62
  18.067    1929  19.4181928.448  20.2481928.109  20.514    1928   20.851927.884
  21.6051927.724  25.7011927.117  26.935    1927  28.7011926.997  31.008    1927
  32.412    1927  35.5941926.926  37.4171926.892  38.953 1926.88  39.9931926.901
  40.6641926.946  41.0851926.994  41.131    1927   41.351927.075  44.351    1928
  45.1181928.127   50.07    1929  90.1591929.532  94.2251929.565 103.6371929.622
 107.8551929.651 111.6351929.683 118.5051929.743 121.5031929.765 123.8291929.777
 126.5431929.772 128.2751929.775 131.1441929.793 134.721 1929.82 142.3471929.883
 154.8771929.996 155.309    1930 155.389 1930.02 156.9541930.403 159.435    1931
 161.8861931.597 163.691    1932 166.7331932.739 167.885    1933 171.0831933.785
 171.972    1934 173.193    1934 184.108    1934 184.2441933.966 187.676    1933
 189.2331932.595 191.319    1932 192.6881931.632 194.971    1931 198.7611930.016
 198.822    1930  198.86 1929.99     2001929.684

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 ***********************************************
    -400    .035-162.459    .025 171.972    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -162.459 171.972              100     100     100             .1       .3
Right Levee     Station=  171.97      Elevation=    1934

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 1930.49  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.38  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1930.11  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1930.01  * Flow Area (sq ft)     *          *  142.52  *          *
* E.G. Slope (ft/ft)     *0.006862  * Area (sq ft)          *          *  142.52  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *  140.46  * Top Width (ft)       *          *  140.46  *          *
* Vel Total (ft/s)       *    4.95  * Avg. Vel. (ft/s)     *          *    4.95  *          *
* Max Chl Dpth (ft)      *    3.23  * Hydr. Depth (ft)     *          *    1.01  *          *
* Conv. Total (cfs)      *  8523.0  * Conv. (cfs)          *          *  8523.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *  141.22  *          *
* Min Ch El (ft)         * 1926.88  * Shear (lb/sq ft)     *          *    0.43  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.14  *          *
* Frctn Loss (ft)        *    0.51  * Cum Volume (acre-ft)  *          *    3.06  *    0.00  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    2.29  *    0.01  *
*********************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -8300

INPUT
Description:
Station Elevation Data    num=     281
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ********************************************************************************
    -4001937.667-398.1931937.659-394.4081937.656-391.5921937.662-389.2291937.675
```

```
-389.1441937.676-388.5841937.677-387.3481937.663-386.3131937.659-385.4311937.652
-384.9171937.651-383.727 1937.66-383.438 1937.66-382.9451937.652-378.561 1937.57
-376.9221937.541-376.7021937.539-372.1581937.503-371.6171937.494-368.7261937.467
-362.9891937.433-355.6431937.386-353.2321937.366-353.1951937.365-351.874 1937.35
-350.4321937.326-348.0211937.285-347.0721937.266-345.7951937.234-338.111    1937
-328.1811936.672 -319.911936.408-317.1321936.313-315.7451936.262 -312.281936.183
 -311.281936.159-310.7851936.146-310.6281936.142-310.537 1936.14-310.0521936.137
-308.3281936.124-305.5881936.219-305.5461936.226-305.5351936.228-305.5261936.228
-305.4641936.232 -305.141936.216-304.6431936.224-304.4611936.228-304.1231936.236
 -303.49 1936.22-303.2621936.222-299.473 1936.17-299.2721936.168-299.1271936.166
-298.9161936.165-298.4961936.158-290.1651936.167-289.9921936.161-287.1631936.198
-286.9391936.241-286.862 1936.25-286.7321936.262-286.2621936.301-283.1251936.339
-282.5781936.345 -282.431936.356-281.2221936.393-279.4061936.465-278.3931936.491
-278.2091936.491-278.119 1936.49-277.7611936.478-277.0851936.455-275.666 1936.39
-275.346 1936.37-275.1811936.337-274.3991936.251-272.7411936.108-272.6751936.103
-271.061    1936-269.8921935.966 -269.72 1935.96-266.6151935.852-265.7241935.824
-262.8291935.714-261.2141935.652-258.3941935.561-255.2761935.465-253.4081935.412
-250.9891935.345-249.5461935.308-248.0481935.285-241.308 1935.12-241.1111935.116
-240.8041935.107-236.901    1935-213.5721934.699-213.1381934.693 -204.841934.583
-203.0881934.552-199.1681934.496 -197.651934.471-196.2751934.437-195.8881934.429
-193.345 1934.39-192.4851934.377-191.9591934.371 -191.671934.369-190.6451934.377
-190.3151934.375-189.4261934.375  -188.51934.372-188.0561934.369-185.7391934.353
 -184.091934.319-180.6191934.288-180.2211934.286-176.5341934.293-176.1551934.296
-176.0741934.297-175.6721934.304-174.7021934.275-174.5481934.275-174.5021934.275
-173.6571934.265-172.9491934.261-172.5031934.257-171.9671934.276-171.3791934.344
    -1711934.368-170.3851934.381-169.3991934.381-167.942 1934.37-164.6521934.336
 -163.59 1934.33-162.9591934.332-161.444 1934.35-160.8951934.367-159.5611934.458
 -159.281934.457-159.0561934.455 -159.011934.455-158.3991934.449-157.4531934.438
-156.9091934.431-155.8671934.419-155.0491934.409-154.4621934.401-154.1611934.397
 -152.481934.376-151.2341934.268-150.1661934.159-149.7681934.131-148.8551934.089
-147.0241934.024-146.7681934.017-146.219    1934-138.0511933.537 -133.911933.312
-132.0381933.216-131.6691933.199-131.1121933.174-131.0541933.171  -129.51933.097
-129.1781933.089-125.619    1933-124.1891932.989-122.949 1932.99 -122.46    1933
-122.2181933.012-122.0921933.018-120.8291933.143-119.2031933.224-115.5161933.335
-114.1661933.388-114.117 1933.41 -104.18  1933.3 -96.9331933.221 -84.817    1933
 -80.0931932.801   -79.81932.794 -79.2451932.785 -75.1851932.703 -74.9531932.702
 -74.7911932.704 -74.6161932.715 -74.506 1932.73 -74.2581932.731 -73.5981932.719
 -72.2151932.686 -64.9831932.495 -63.1281932.449 -61.4781932.409 -58.6231932.339
 -56.551  1932.3 -53.1061932.243 -48.3771932.158 -42.8931932.034 -41.836    1932
 -13.2581931.375  -5.6051931.203  -2.5911931.137   -.8991931.102       01931.085
    .6551931.073    .8771931.069    .9211931.067    1.291931.059   1.5951931.053
   3.3871931.044   3.3881931.045   4.296    1931   6.6981930.754  12.079  1930.2
  14.149    1930  14.5781929.827  16.642    1929  17.5421928.632  19.066    1928
  20.2841927.505  21.522    1927  24.7681926.808  25.3731926.768   30.231926.465
  30.9361926.427  31.387 1926.41  32.0291926.397   32.88 1926.39  33.7871926.389
  35.2091926.391  36.4761926.361  37.1871926.348  37.7861926.343  38.1921926.352
  38.4531926.369  38.6171926.388    38.91926.423  38.992 1926.44  40.6731926.659
  40.9911926.727  42.942    1927  44.5591927.846   44.87    1928  49.4141928.711
  51.602    1929  52.985    1929  54.537    1929  54.5551928.636  55.3221928.561
   56.851928.537  59.3491928.545  63.1681928.581  74.3351928.695  79.9831928.734
  84.4841928.831  85.4421928.851  85.5831928.853  85.7711928.856  91.1891928.864
  91.2281928.864  91.5021928.869   97.271928.865  97.3081928.865 110.185 1928.84
 115.6071928.835 119.9321928.846 125.3721928.886 135.7521928.983 137.562    1929
 168.8121929.991 169.112    1930 175.6311930.368  176.531930.419 185.932    1931
 190.7241931.971 190.876    1932 190.9451932.014 191.6591932.159 195.851    1933
     200 1933.56

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035    -400    .025     200    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
          -400     200              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1929.95  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.27  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1929.68  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  170.28  *          *
* E.G. Slope (ft/ft)     *0.003943  * Area (sq ft)         *          *  170.28  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *  144.16  * Top Width (ft)       *          *  144.16  *          *
* Vel Total (ft/s)       *    4.15  * Avg. Vel. (ft/s)     *          *    4.15  *          *
* Max Chl Dpth (ft)      *    3.34  * Hydr. Depth (ft)     *          *    1.18  *          *
* Conv. Total (cfs)      * 11243.0  * Conv. (cfs)         *          * 11243.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *  145.43  *          *
* Min Ch El (ft)         * 1926.34  * Shear (lb/sq ft)     *          *    0.29  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    1.20  *          *
* Frctn Loss (ft)        *    0.26  * Cum Volume (acre-ft)  *          *    2.70  *    0.00  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    1.96  *    0.01  *
*************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -8400

INPUT
Description:
Station Elevation Data    num=     197
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001937.376-394.2031937.297-375.7251937.056 -371.17    1937-367.9211936.968
-365.4221936.951 -364.211936.951-360.947    1937-360.587    1937-360.559    1937
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```
-360.486    1937-358.425    1937-356.492    1937-355.844    1937 -354.97    1937
-353.995    1937-353.693    1937-352.4291936.974-352.315 1936.97-351.7961936.948
-351.4491936.936-349.4781936.871 -347.541936.783-345.8111936.699-344.065 1936.61
-338.6011936.333-337.2861936.264-332.253    1936-330.784 1935.96 -329.621935.921
-328.724 1935.89-320.9661935.635-304.552    1935-297.4921934.842 -293.041934.912
-292.6351934.936-291.6531934.936 -289.181934.914-288.154 1934.91-287.951 1934.98
-287.5161934.991-286.2391934.995-284.4981934.985-284.4641934.983-284.4261934.983
-284.4111934.982-284.4041934.982-284.3971934.981-282.4331934.951-272.1851934.687
-270.264 1934.67-269.0271934.658 -268.911934.651-268.8671934.646-268.2241934.636
-267.9391934.624-267.4981934.604-267.2111934.596-266.389 1934.58  -264.71934.552
-259.4541934.473-244.7921934.349 -242.371934.318-238.7431934.272-238.0891934.268
-226.1611934.182 -217.131934.123-216.9091934.122-216.2391934.109-213.6661934.036
-212.2291934.001-212.173    1934-209.9651933.937-187.5011933.303-180.9021933.118
-180.8361933.117 -176.67    1933-170.822    1933 -166.76    1933 -166.48    1933
-163.862    1933-160.5121933.022-159.8821933.022-156.7251933.022-154.591    1933
-152.3031932.978-152.1221932.977 -147.871932.889-146.7591932.884-145.1471932.881
-144.2951932.878-143.9281932.878-143.7891932.877 -143.661932.875-143.2751932.865
-141.632 1932.83-140.4961932.805 -138.571932.765-134.997  1932.7-125.6161932.532
-120.4031932.433-117.8441932.382 -113.671932.295-113.2741932.284-111.9021932.237
-111.8311932.236-111.1561932.245-110.5441932.249-110.091 1932.25-109.8511932.248
-108.717 1932.24-107.8881932.237-107.0621932.239  -105.41932.261-104.4131932.261
-104.0791932.255-100.0111932.181 -99.0831932.169 -93.7271932.105 -93.2451932.096
 -91.0271932.083 -86.963 1932.06 -84.0031932.074 -82.6361932.081 -82.4591932.086
   -80.71932.135 -74.353    1932 -72.218    1932 -70.259    1932 -65.048    1932
  -59.05    1932 -58.932    1932 -58.8651931.998 -58.8531931.998 -54.1821931.836
 -51.216 1931.79 -47.6031931.687 -46.4411931.654 -36.0841931.521 -28.1361931.424
 -26.4881931.398 -19.6011931.276  -8.3691931.081  -3.851    1931       01930.701
    .9571930.626   9.263    1930  10.9791929.577  13.738    1929  15.0541928.525
  16.583    1928  17.4571927.695  19.397    1927  19.4041926.998  21.0591926.488
  22.042 1926.34  24.1021926.129  25.437    1926  28.6941925.956  30.4171925.919
  31.9081925.883   33.321925.856  34.7861925.842  36.2541925.838  37.599 1925.84
  38.6971925.844  39.5281925.849  40.1011925.854  40.5891925.863  42.071    1926
   44.041926.831   44.38    1927  45.7961927.629  46.4221927.821  46.7731927.898
  46.9891927.907  47.3931927.857  47.9721927.901   48.58    1928  50.9141928.019
  51.3041928.022  51.6421928.025  52.0711928.028  52.2411928.029  53.837 1928.04
  54.4081928.045  55.067 1928.05  55.9691928.057 148.2471928.829 168.644    1929
 169.038 1929.02 187.291    1930 188.5511930.255  192.01    1931 193.9141931.397
 196.683    1932     2001932.235

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035    -400    .025     200    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -400     200              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1929.65  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.15  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 1929.50  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  225.33  *          *
* E.G. Slope (ft/ft)     *0.001872  * Area (sq ft)         *          *  225.33  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *  166.64  * Top Width (ft)       *          *  166.64  *          *
* Vel Total (ft/s)       *    3.13  * Avg. Vel. (ft/s)     *          *    3.13  *          *
* Max Chl Dpth (ft)      *    3.66  * Hydr. Depth (ft)     *          *    1.35  *          *
* Conv. Total (cfs)      * 16317.4  * Conv. (cfs)          *          * 16317.4  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *  167.56  *          *
* Min Ch El (ft)         * 1925.84  * Shear (lb/sq ft)     *          *    0.16  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    0.49  *          *
* Frctn Loss (ft)        *    0.31  * Cum Volume (acre-ft)  *          *    2.25  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *          *    1.61  *    0.01  *
*************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -8500

INPUT
Description:
Station Elevation Data    num=     265
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -4001937.172-394.781    1937-385.1151936.645-384.3031936.615-381.398 1936.53
-375.0831936.338-363.598    1936-360.7531935.756-360.3581935.709-358.7581935.538
 -357.791935.443-353.265    1935-351.4091934.742 -346.65    1934-341.6031933.492
-341.0621933.445-340.7531933.429-338.8051933.508-338.316 1933.46 -338.041933.433
-337.6281933.421-336.8021933.279-336.5891933.246-335.605    1933 -333.261932.467
-332.6991932.327-331.294    1932-330.6041931.943-330.3581931.922-329.6461931.868
-325.7311931.653-325.5771931.646-324.5311931.603-323.3851931.554-320.9861931.481
-319.7831931.448-317.6471931.398-317.0941931.395-316.4311931.409-315.783 1931.41
-306.4591931.334-303.3261931.309-302.9071931.306-302.8851931.306 -301.881931.308
-298.3261931.302 -297.881931.297 -297.731931.295-296.5181931.283-295.405 1931.25
-295.2911931.246-291.8751931.079-289.797    1931-288.951    1931-288.847    1931
-286.938    1931-284.159    1931-284.099    1931-281.967    1931-280.207    1931
-280.134    1931-273.584    1931-271.6471931.015-270.067    1931-270.043    1931
-270.037    1931 -268.78    1931 -268.15    1931 -267.37    1931-266.792    1931
-264.476    1931-264.355    1931-263.252    1931-262.006    1931-261.252    1931
 -258.85    1931-257.124    1931-251.898    1931-250.883    1931-249.055    1931
-247.978    1931-246.7481930.936-245.5811930.893-245.0311930.877-242.5311930.805
-240.3221930.712-238.9081930.683-237.8631930.649-237.4571930.645-236.026    1931
-226.804    1931-226.603    1931-225.862    1931-220.952    1931 -219.79    1931
-216.915    1931 -215.211931.036 -215.121931.037-215.0221931.038-214.8931931.041
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-214.8681931.041-210.7351931.143-208.2791931.213-208.1981931.216-208.1791931.216
-205.2711931.259-203.3921931.307-203.1761931.313-201.4051931.363 -199.29 1931.41
-198.1821931.445-196.8991931.497-196.4191931.526 -196.161931.562-191.7591931.694
-190.0861931.679-189.6951931.679-189.4221931.683-186.3071931.714-182.9821931.709
-180.4091931.679-179.2121931.639-177.0351931.621-175.8031931.639-161.471    1932
-160.352    1932-159.159    1932-155.125    1932-152.335    1932-149.757    1932
-149.711    1932-146.7791932.169-146.5611932.186-146.0811932.224-144.4091932.423
-144.175 1932.46-142.4251932.501-134.8711932.676-133.5931932.628-133.1991932.613
-132.3281932.571-131.0221932.528-129.8491932.489-126.171    1932-126.023    1932
-121.071    1932-118.783    1932-117.297    1932-116.343    1932-114.617    1932
-112.402    1932-109.787    1932-109.664    1932 -109.35    1932-109.197    1932
-105.581 1931.89 -99.5821931.695 -97.8681931.634 -94.7421931.492 -94.5581931.476
 -90.9341931.394 -87.4321931.343 -86.7741931.337 -85.115 1931.33 -84.4491931.324
 -83.9531931.317 -83.8311931.315 -79.1141931.137 -78.5831931.124 -78.0931931.116
 -77.8591931.112 -77.707 1931.11 -77.519 1931.11  -75.33    1931 -74.412    1931
 -71.904    1931 -70.027    1931 -67.103    1931 -66.3521931.079 -66.1951931.095
 -65.2431931.179 -60.9461931.105 -60.626  1931.1 -57.509    1931 -57.4191930.999
 -54.1421930.955 -52.8341930.935 -42.9811930.784 -41.6581930.759  -41.051930.755
 -40.7251930.756 -40.1371930.749 -39.1941930.732 -37.9051930.703 -31.7321930.549
  -9.5791930.023  -8.598    1930       01929.556   9.3241929.075  10.047 1929.04
  10.679    1929  10.8961928.925   14.77    1928  15.3191927.814  17.653    1927
  18.7211926.633  19.1631926.526  20.516    1926  24.471 1925.72  26.8181925.527
   27.351925.497  27.9031925.482  28.696 1925.47  30.5581925.445   31.361925.428
  32.0541925.411  32.7111925.398  33.3931925.392  34.076 1925.39  34.7021925.391
  35.2131925.393    35.61925.395  35.8671925.397  36.0941925.402  37.1741925.502
  37.4461925.521   39.111925.667  39.3671925.695  39.8141925.719  43.121    1926
   44.781926.562  45.818    1927  47.9981927.487  49.0531927.713  49.7171927.841
  50.416    1928  53.5321928.037  64.963 1928.17  76.0811928.289  96.9531928.508
 144.444    1929 146.5181929.427 149.233    1930 150.2011930.193 153.794    1931
 157.9641931.855 158.676    1932 159.422    1932 165.151    1932 166.207 1931.87
 173.934    1931 175.8781930.586  179.08    1930 179.1831929.983 181.534 1929.59
 182.249 1929.57 182.2781929.569 183.7791929.569 184.4751929.561 185.1811929.542
 185.9171929.511 187.5151929.418 194.108    1929 199.8921928.343     2001928.333

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-134.871    .025 165.151    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
     -134.871 165.151              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1929.32  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.37  * Wt. n-Val.            *          *   0.025  *   0.035  *
* W.S. Elev (ft)         * 1928.95  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  143.60  *    1.70  *
* E.G. Slope (ft/ft)     *0.005939  * Area (sq ft)          *          *  143.60  *    1.70  *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  703.64  *    2.36  *
* Top Width (ft)         *  134.46  * Top Width (ft)       *          *  128.99  *    5.47  *
* Vel Total (ft/s)       *    4.86  * Avg. Vel. (ft/s)     *          *    4.90  *    1.39  *
* Max Chl Dpth (ft)      *    3.56  * Hydr. Depth (ft)     *          *    1.11  *    0.31  *
* Conv. Total (cfs)      *  9161.4  * Conv. (cfs)          *          *  9130.7  *    30.7  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *  129.79  *    6.12  *
* Min Ch El (ft)         * 1925.39  * Shear (lb/sq ft)     *          *    0.41  *    0.10  *
* Alpha                  *    1.01  * Stream Power (lb/ft s) *        *    2.01  *    0.14  *
* Frctn Loss (ft)        *    0.44  * Cum Volume (acre-ft)  *          *    1.82  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *          *    1.27  *    0.01  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -8600

INPUT
Description:
Station Elevation Data    num=     339
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
*********************************************************************************
    -4001937.521-397.054 1937.48-374.284    1937-347.2331936.034-346.282    1936
-344.4151935.884-332.1051935.117-329.911    1935-315.9851934.084 -314.54    1934
-309.6691933.656 -309.391933.636-308.2411933.565 -307.831933.534-307.0841933.447
-301.7711933.573-301.6621933.586-299.4191933.712-297.2781933.819-296.6081933.843
-296.1971933.846-295.2431933.857-295.0451933.857-294.8371933.854-291.2691933.926
-289.8491933.973-289.291    1934-287.5351934.133-287.1481934.167-286.6751934.215
-285.0151934.396-282.5531934.641-282.2821934.668-280.8691934.818-280.8411934.821
-280.8371934.821-280.5951934.842-280.1331934.804-279.9381934.788-279.1231934.763
-278.1711934.674-276.3531934.538-276.2891934.533-275.8591934.511-274.9241934.462
-272.874 1934.27-272.5311934.266-271.7391934.286-270.146 1934.14-270.0871934.134
-270.0321934.133-269.9021934.128-267.659    1934-266.8981933.958-266.0811933.912
-265.3991933.944-264.971    1934-264.0181934.117-263.8951934.137-262.5771934.349
-261.7221934.522-258.531    1935-254.6381935.315-253.4951935.362-252.7091935.415
-251.5771935.535-251.2031935.574-250.7121935.604-249.6131935.709-249.1971935.749
 -248.311935.781-247.9121935.796-246.5181935.939-246.017    1936-244.4921936.129
  -244.41936.137-243.6971936.224-243.3221936.264-241.5931936.476-241.1061936.536
-240.7251936.555-240.4971936.548-239.962 1936.51-239.1341936.552-238.4491936.612
-235.9481936.891-235.1681936.984-235.034    1937-234.5261937.052-233.5431937.168
-233.0891937.221-230.9521937.323 -228.991937.416  -228.31937.375-226.7281937.371
-225.684 1937.36 -225.471937.357-225.1021937.353-224.2521937.313-223.8471937.294
-223.6121937.288-223.5781937.288-219.345    1937 -218.251936.896-216.6821936.765
-212.972    1936-212.6711935.929-211.3311935.612-209.6351935.209-208.758    1935
-208.3921934.913-208.0261934.827-206.8891934.492-205.457    1934-204.7511933.813
-203.1561933.317-202.137    1933-200.7761932.628-200.5711932.572-198.519    1932
-198.4931931.993-198.4811931.989-196.0611931.313-195.5991931.191-194.875    1931
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-193.9081930.742-191.6471930.139-191.156    1930 -189.911929.966-183.1551929.773
-178.3541929.628-177.2151929.597-175.7271929.566-175.0121929.555-173.9541929.547
-173.5571929.541-173.2221929.529-172.6341929.501-172.3161929.491-169.2161929.435
-167.632 1929.41-166.7961929.401-166.4911929.401-166.3991929.409-166.0511929.506
-164.7891929.742-164.294 1929.93-164.2841929.931-163.479    1930 -162.171930.245
 -161.051930.459-157.252    1931-156.9871931.029-156.8921931.029-156.8481931.035
-153.7331931.463-152.7531931.454 -151.851931.534-151.4121931.518-150.945  1931.5
-149.7831931.564-147.9621931.613-147.4921931.618-146.5741931.604-145.2591931.573
-145.0951931.569-143.6141931.521-143.5421931.518 -142.351931.465-141.3771931.407
-141.1421931.393-138.4991931.192 -136.461931.016-136.276    1931-135.9871930.918
-134.2781930.432-133.038    1930-132.4481929.784  -130.1    1929-128.5681928.497
-127.229    1928-119.175    1928-114.739    1928 -112.511928.372 -109.16    1929
-106.3281929.231-104.871 1929.34-104.5381929.365-102.4121929.508-101.2821929.573
 -99.6931929.644 -99.4191929.641 -99.0621929.662 -97.8431929.557 -97.7421929.549
 -97.0681929.504 -96.8291929.501  -96.321929.501 -95.7531929.494 -95.3511929.481
 -95.3471929.471 -92.7131929.548 -92.0011929.595  -90.041929.704 -89.0581929.766
 -88.3011929.805 -86.1011929.893 -84.2761929.954 -82.1191929.999 -82.012    1930
 -79.966    1930 -79.1141929.978 -76.2141929.866 -75.7191929.844 -74.8721929.799
 -68.8081929.491 -65.5971929.316 -62.6111929.176 -58.889    1929 -52.423    1929
 -51.339    1929 -50.987    1929 -50.7491929.018 -50.5321929.029 -49.6771929.076
  -49.321929.087 -47.5891929.142 -47.2311929.136 -46.1881929.202 -45.9881929.197
 -45.7681929.191 -45.0651929.243 -44.8511929.233 -44.775 1929.23 -44.1521929.282
 -44.0111929.307 -43.9011929.326 -42.0011929.453 -41.0491929.467 -40.5431929.479
  -40.351929.484 -39.7341929.506 -38.731 1929.56 -38.6121929.572 -38.5841929.574
  -38.471929.601 -38.0611929.633 -38.0331929.639 -38.0261929.641 -33.2141929.723
 -32.8271929.722 -32.4891929.723 -31.7771929.728 -31.5461929.731 -31.5311929.733
 -25.4011929.731 -25.2611929.729 -24.7861929.721 -23.8221929.707 -23.487  1929.7
 -23.0731929.685 -22.7311929.676 -20.7231929.629 -14.4711929.503  -5.639 1929.32
   -.1751929.207       01929.203   9.981    1929  12.9461928.246   13.89    1928
  14.211927.891  16.792    1927  17.5921926.714  19.713    1926  21.3121925.566
  25.297    1925   26.791924.971  29.5111924.933   32.241924.922  34.9131924.947
  37.5391924.999  37.593    1925   37.771925.035  40.3941925.605  43.849    1926
  45.8531926.974  45.918    1927  46.2511927.047  46.3151927.041  49.939  1927.4
  49.9671927.394  50.2761927.321  50.5331927.228  50.7561927.208  51.1171927.194
  51.6291927.184  52.2281927.176  52.8551927.171  53.4761927.169  54.1021927.169
  54.7511927.171  55.4321927.176   56.091927.182  56.6331927.188  56.9711927.192
   57.141927.196  57.3821927.204  57.6171927.209  59.1531927.235  71.3821927.445
  79.9561927.594  94.252 1927.85 100.8721927.962  103.12    1928 111.6911928.352
 126.504    1929 129.5971929.823 130.242    1930 131.9131930.478  134.07    1931
 139.0381931.834 140.108    1932 140.494    1932 141.597    1932 145.013    1932
  146.151931.907 154.1561931.216 156.0951931.049 156.636    1931 156.9271930.942
 161.712    1930 166.1431929.092 166.601    1929 167.1841928.885 171.537    1928
 174.1581927.601 176.7181927.223 178.225    1927     2001926.637

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
    -400    .035-230.952    .025 140.108    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -230.952 140.108              100     100     100             .1       .3
Left Levee      Station=  -33.21      Elevation= 1929.72
Right Levee     Station=  140.11      Elevation=    1932

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 1928.87  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.31  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1928.56  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1928.10  * Flow Area (sq ft)    *          *  157.48  *          *
* E.G. Slope (ft/ft)     *0.003337  * Area (sq ft)         *          *  157.48  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *  104.66  * Top Width (ft)       *          *  104.66  *          *
* Vel Total (ft/s)       *    4.48  * Avg. Vel. (ft/s)     *          *    4.48  *          *
* Max Chl Dpth (ft)      *    3.64  * Hydr. Depth (ft)     *          *    1.50  *          *
* Conv. Total (cfs)      * 12221.2  * Conv. (cfs)          *          * 12221.2  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *  105.55  *          *
* Min Ch El (ft)         * 1924.92  * Shear (lb/sq ft)     *          *    0.31  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    1.39  *          *
* Frctn Loss (ft)        *    0.51  * Cum Volume (acre-ft)  *          *    1.48  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    1.00  *          *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -8700

INPUT
Description:
Station Elevation Data    num=     332
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001936.554-390.1111936.536-386.2991936.448-384.2661936.402-376.985 1936.24
-373.0911936.153-372.5931936.145-370.7391936.115-365.959    1936-359.1881935.761
-353.6681935.571 -353.561935.568-347.3131935.353-340.6891935.126-337.184    1935
-318.1521934.104-315.942    1934-315.3861933.966-300.757    1933-295.0791932.854
-294.5561932.841-291.501 1932.77-289.5621932.719-280.4431932.708 -280.121932.716
-279.0431932.714-276.0611932.692-274.0871932.672-272.8981932.652-268.4851932.739
-268.3811932.754-267.9521932.774-266.5341932.821-266.2691932.815 -265.931932.811
-265.5811932.809-265.2471932.803-264.8981932.785 -264.451932.742  -263.8 1932.66
-262.9091932.527-262.4341932.578-261.8231932.434-261.5481932.328-261.3581932.218
-261.2191932.214-260.6861932.124-260.3951932.091-260.319 1932.09-259.994 1932.08
-259.159 1932.12-255.9691932.296-255.3771932.335 -253.651932.475-252.1021932.624
```

```
 -251.1861932.718-249.405    1933-245.8351933.602-243.5431933.989-243.478    1934
  -242.811934.109-241.6131934.314-239.7871934.594-239.7741934.596-237.317    1935
 -232.0361935.834-231.9081935.845-231.842 1935.85-231.6831935.859-230.9681935.907
 -229.573    1936-222.523    1936-222.102    1936-222.058    1936-221.757 1935.89
 -219.202    1935-219.0281934.942-216.002    1934-214.9041933.681-213.156 1933.15
  -212.941933.106  -212.6    1933-211.5431932.641  -210.91932.395-209.866    1932
 -209.5621931.937-209.385  1931.9-208.517 1931.72-208.3311931.682-208.1741931.649
 -207.3831931.485-205.993    1931-197.1161930.498-188.299    1930-187.802    1930
 -187.618 1929.95-187.2491929.908-187.1011929.828-172.1641929.652-168.2751929.871
 -166.371 1929.96-165.651    1930-163.974    1930 -159.89    1930-158.6261929.668
 -158.2621929.597 -157.851929.555-157.2541929.527-155.7481929.494-154.2461929.298
 -152.4381929.258-151.9921929.248-151.1181929.236  -148.71929.203-147.1381929.163
 -144.608 1929.07-143.8531929.038-142.965    1929-142.8561928.976-135.325 1928.84
 -134.4471928.867-132.8371928.937-131.9021928.962-131.6871928.964-127.4791928.998
 -127.4661928.997-127.4571928.997-120.6181928.814-119.8081928.792-118.3681928.746
 -116.8641928.688-114.7811928.584-112.7391928.531-110.9011928.483-109.815 1928.45
 -109.2791928.434-108.9391928.424-108.349 1928.42-107.3971928.405-106.8051928.387
 -106.3021928.371 -106.251928.369-105.6531928.346-105.5391928.342-104.1221928.288
  -97.308    1928 -92.0331927.378 -91.8231927.359 -88.7831927.085 -88.571 1927.06
   -88.521927.052 -88.5111927.039 -88.4631927.026 -88.426 1927.02 -88.4181927.018
  -88.4021927.016 -88.1041927.011 -88.0931927.012 -88.0831927.013 -88.0561927.014
  -88.0381927.014 -88.0261927.015 -88.0121927.016 -87.9791927.021  -87.961927.023
  -87.438    1927 -87.273    1927 -87.104    1927 -84.589    1927 -84.332    1927
  -79.603    1927 -78.919    1927 -77.923    1927 -74.834    1927 -73.128    1927
  -68.741    1927 -68.134    1927 -66.929 1927.07 -66.8841927.073 -66.691  1927.1
  -65.3481927.231   -61.41927.909 -60.873    1928 -59.264 1928.31   -56.21928.813
  -55.002    1929 -51.5621929.138 -51.1361929.171 -51.0941929.186 -51.0691929.194
  -45.633    1929 -45.608    1929  -45.57    1929 -45.4131928.963 -44.4191928.771
   -43.711928.674 -43.2951928.656  -42.811928.675 -41.3651928.801 -41.0311928.819
  -40.6151928.867 -40.5741928.868 -40.4821928.879 -40.4541928.885 -40.2581928.841
  -37.7621928.481 -37.0571928.428 -36.312 1928.41 -35.535 1928.41 -34.8421928.415
  -34.3911928.413  -34.171928.406 -34.1051928.388 -31.4911928.393 -28.769 1928.48
  -26.6361928.542  -24.231928.587 -23.1151928.615 -19.3921928.719 -17.0111928.782
    -9.271928.951  -7.386    1929  -2.578    1929       0    1929   1.979    1929
   10.064    1929  10.753    1929  11.468    1929  11.471    1929  14.849    1928
   16.7341927.203  17.227    1927  17.7951926.764  19.465    1926  20.485 1925.55
   21.6331925.073 21.6541925.062  21.813    1925  28.5261924.415  29.1381924.372
   29.4641924.361 30.8281924.334  31.7651924.321  32.7041924.317  33.6241924.326
   34.5281924.344 35.9091924.378  36.284 1924.39  36.9911924.434  37.9011924.509
   38.3851924.553  43.156    1925  43.4291925.138  45.232    1926  49.4471926.821
   49.659    1927  49.694    1927  49.888    1927  50.319    1927  54.1491927.056
   57.221  1927.1  66.2981927.121  72.5911927.135  75.3261927.173  79.4531927.231
   81.1761927.257  83.9951927.302  86.0991927.331  89.3861927.377 105.1941927.642
  107.3771927.675 107.8041927.681 108.9421927.691 109.5431927.685  110.891927.653
  111.9531927.637 113.322 1927.63 114.762 1927.63 116.5351927.668 116.9171927.678
  125.7131927.901  126.071927.902 126.1451927.904 129.775    1928 131.3191928.314
   134.31    1929 136.7241929.519  139.03    1930 141.2461930.505 143.541    1931
  144.8741931.267 146.6071931.588  146.731931.721 146.9551931.782 146.984 1931.83
  147.0281931.846  147.041931.845 147.1831931.838 147.3321931.833 147.3631931.832
  147.6641931.825 148.098 1931.82 148.9961931.811 149.2511931.808  149.371931.806
  149.4581931.801 150.0841931.742 150.4321931.711 151.3321931.642 151.6091931.615
  152.632 1931.53 153.5491931.454 159.787    1931  161.141930.657 163.549    1930
  163.7261929.955 164.2361929.825  167.31    1929 167.6761928.906 171.197    1928
  173.226 1927.41 174.967    1927 178.9291926.662 179.579 1926.64 181.7141926.568
  183.1221926.514 183.4471926.501  186.33 1926.36 187.0911926.317 192.725    1926
  197.231    1926     200    1926

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-222.523    .025 146.955    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -222.523 146.955            74.45   74.45   74.45             .1       .3
Left Levee      Station=   10.06      Elevation=    1929
Right Levee     Station=  146.96      Elevation= 1931.78

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1928.33  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.56  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1927.77  * Reach Len. (ft)       *   74.45  *   74.45  *   74.45  *
* Crit W.S. (ft)         * 1927.77  * Flow Area (sq ft)     *          *  117.28  *          *
* E.G. Slope (ft/ft)     *0.008967  * Area (sq ft)          *          *  117.28  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  105.02  * Top Width (ft)        *          *  105.02  *          *
* Vel Total (ft/s)       *    6.02  * Avg. Vel. (ft/s)      *          *    6.02  *          *
* Max Chl Dpth (ft)      *    3.45  * Hydr. Depth (ft)      *          *    1.12  *          *
* Conv. Total (cfs)      *  7455.7  * Conv. (cfs)           *          *  7455.7  *          *
* Length Wtd. (ft)       *   74.45  * Wetted Per. (ft)      *          *  106.03  *          *
* Min Ch El (ft)         * 1924.32  * Shear (lb/sq ft)      *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.73  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)  *          *    1.16  *          *
* C & E Loss (ft)        *    0.07  * Cum SA (acres)        *          *    0.76  *          *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION
```

```
RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -8774.45

INPUT
Description:
Station Elevation Data    num=     270
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -4001937.263-395.1841937.175-393.708 1937.15 -392.021937.102-391.9191937.099
 -391.881937.098-389.033    1937-388.0761936.979-381.5721936.866-379.9281936.799
-378.8971936.756-375.4161936.654-371.603 1936.52-360.081    1936-360.0631935.999
-360.0021935.996-359.9441935.994-344.0421935.291-337.993    1935-325.6391934.327
-320.102    1934-317.9561933.852-317.407 1933.82-316.7991933.789 -316.571933.777
-310.5241933.421-300.689    1933-295.9271932.779-293.3911932.662-293.1211932.639
-292.7691932.617-292.7641932.617-291.8971932.579-290.9271932.541-290.9221932.541
-288.4011932.412-287.2581932.345-281.564    1932-264.108 1931.18-263.4191931.131
-262.8131931.102-262.332  1931.1-262.2791931.104-262.2721931.104-262.078 1931.09
-261.4591931.046-261.038    1931 -260.76    1931-257.112    1931-256.479    1931
-256.238    1931-250.153    1931-249.618    1931-238.303    1931-237.048    1931
-236.551    1931 -235.411931.131-232.9571931.413-232.6681931.397-232.5281931.361
 -230.191931.433-228.875 1931.54 -224.55    1932-221.385 1932.27-219.7871932.411
 -219.661932.422-217.7231932.685 -217.04 1932.77-215.514    1933-214.1671933.188
-213.2281933.301-211.9911933.431-209.9091933.693-208.5281933.797-208.0921933.829
-204.476    1934-202.249    1934-200.558    1934-198.465    1934-195.126    1934
-195.023    1934-194.6641933.892-193.6861933.791-186.034    1933-185.1171932.959
-183.573 1932.86-182.6871932.778-182.2981932.714-173.627    1933-163.9021932.809
-163.492 1932.82 -162.411932.819-161.5941932.802-159.8971932.746-159.3611932.734
-159.1361932.746-159.0811932.778-158.7481932.872-157.7511932.975-157.4941932.987
-157.484    1933-148.123    1933-143.764    1933-142.337    1933-141.8451932.891
-140.6641932.873-139.4981932.856-138.1071932.828-136.8631932.784-136.0521932.727
-135.1591932.798-134.8031932.822-133.3631932.844-132.8691932.836-131.3341932.831
-131.0441932.828-129.7121932.816-128.848 1932.82-128.6421932.824-127.3351932.852
-127.106 1932.85-126.7431932.855-126.3461932.851-126.1041932.849-125.9741932.848
-124.9551932.846-124.1041932.808-123.3921932.798-122.737 1932.76-122.5441932.748
-119.4971932.847-114.798    1933-112.3251932.901-112.1121932.893-110.1461932.814
-109.3761932.809-109.0981932.832-108.3991932.817-108.224 1932.81-107.6381932.754
-107.3241932.768-107.073 1932.76-106.7961932.751-106.5821932.745-106.0691932.699
-105.0811932.612-104.3031932.517-103.5941932.407-102.5491932.245-101.157    1932
 -99.7221931.452 -99.5921931.416 -98.097    1931 -96.5851930.574 -96.3811930.552
 -95.445 1930.37 -95.1981930.377 -94.2231930.401 -93.2841930.462 -92.9741930.483
 -92.6171930.429 -92.1291930.479 -91.975 1930.52 -91.8231930.562 -85.6471930.152
 -83.347    1930  -73.171930.402 -72.2951930.396 -72.2731930.396  -71.021930.409
  -70.661930.409 -70.1391930.411 -69.896 1930.41 -68.9951930.408 -68.1471930.403
 -67.682  1930.4 -67.635  1930.4 -67.5151930.399 -66.2891930.386 -66.1941930.385
 -65.8961930.381  -64.971930.368 -64.8011930.365 -64.0991930.353 -63.405 1930.34
 -63.1921930.331 -62.222 1930.29 -61.4171930.256 -60.747 1930.23 -55.859 1930.04
 -55.3631930.021 -55.2191930.002 -55.201    1930 -55.167    1930 -54.811    1930
 -54.1941929.982 -36.7691929.464 -25.346    1929 -11.887    1929  -4.585    1929
       0    1929     1.8    1929    8.711    1929  12.2851928.225  13.052    1928
  14.5341927.416   15.53    1927  15.9811926.806   17.91    1926   18.581925.724
  20.378    1925  23.395 1924.54  27.9191924.098  28.961    1924  29.163    1924
  35.221    1924  41.8161924.809  43.556    1925  44.8391925.542  45.946    1926
  79.2031926.456  87.0931926.563 119.842    1927 120.0891927.017 123.978 1927.31
 133.121    1928 135.0171928.405 137.917    1929 142.0741929.864 142.2411929.897
 142.758    1930 145.5741930.569 146.9311930.843 147.3981930.935 147.483 1930.96
 147.525 1930.97 147.5731930.976 147.5861930.977 147.5891930.977 147.5971930.975
 147.6771930.972  147.691930.971 147.7161930.968  147.891930.955 147.9331930.953
 148.016 1930.95  148.131930.944 149.2181930.873  150.961930.754 151.6321930.717
 161.707    1930 161.7141929.998 163.7431929.416  165.22    1929  167.021928.493
 168.706    1928  171.521927.192  172.23    1927 172.8361926.849 175.941    1926
 183.5311925.528  185.581925.475 187.5021925.363 189.1831925.266 191.9291925.239
 192.2211925.226 193.8051925.156 196.1381925.148  197.311925.145     2001925.142

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    -400    .035-202.249    .025 147.525    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -202.249 147.525           25.55   25.55   25.55            .1       .3
Right Levee     Station=  147.52      Elevation= 1930.97

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 1927.78  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.32  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1927.46  * Reach Len. (ft)      *   25.55  *   25.55  *   25.55  *
* Crit W.S. (ft)         * 1927.11  * Flow Area (sq ft)    *          *  156.37  *          *
* E.G. Slope (ft/ft)     *0.003715  * Area (sq ft)         *          *  156.37  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *  111.55  * Top Width (ft)       *          *  111.55  *          *
* Vel Total (ft/s)       *    4.51  * Avg. Vel. (ft/s)     *          *    4.51  *          *
* Max Chl Dpth (ft)      *    3.46  * Hydr. Depth (ft)     *          *    1.40  *          *
* Conv. Total (cfs)      * 11583.5  * Conv. (cfs)          *          * 11583.5  *          *
* Length Wtd. (ft)       *   25.55  * Wetted Per. (ft)     *          *  112.39  *          *
* Min Ch El (ft)         * 1924.00  * Shear (lb/sq ft)     *          *    0.32  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.46  *          *
* Frctn Loss (ft)        *    0.14  * Cum Volume (acre-ft)  *          *    0.93  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    0.57  *          *
**********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
```

```
REACH: 1                  RS: -8800

INPUT
Description:
Station Elevation Data    num=     219
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
    -400 1939.35-398.724 1939.46-392.185    1940-390.805    1940-381.289    1940
 -377.49    1940-376.914    1940-375.411    1940-369.5681939.755 -361.021939.384
-357.4381939.223-357.2831939.218-350.646    1939-345.9771938.622-342.3551938.332
-338.316    1938-332.6921937.559-326.037    1937-322.3191936.693-320.5751936.542
-318.351 1936.35-316.3181936.187-313.997    1936-312.9151935.931-299.146    1935
-294.2651934.693-283.445    1934-281.429 1933.86-280.8571933.826-280.439  1933.8
-279.2171933.722-278.0731933.676-277.3591933.624-274.9691933.415-273.4841933.303
-273.0391933.273-272.8631933.262-269.732    1933-269.2041932.944-268.9711932.918
-263.6751932.381-262.7041932.298-259.999    1932-253.306    1932-250.693    1932
-248.775    1932-248.6371932.068 -248.591932.203-247.9611932.465-247.487 1932.53
-247.3311932.685-245.749 1932.72-245.3661932.679-245.2151932.634-245.1881932.608
-245.1371932.557-245.0461932.535-244.2561932.441 -243.481932.206-243.0831932.148
-242.1121932.072-240.802    1932-240.2281931.958-240.0911931.954-239.2321931.908
-236.2551931.747-235.3421931.709-234.7121931.708-233.9771931.753-233.6581931.751
-233.5911931.751-231.213    1932-225.0331932.678 -224.321932.756-221.991    1933
-221.6661933.033-220.3331933.167-220.0581933.181-219.6091933.238-218.969 1933.32
-218.8071933.308-217.5921933.487-217.2121933.551-217.0251933.621-216.844 1933.69
-216.6911933.725-211.3731933.853 -210.161933.834-209.0031933.814-207.7891933.792
-206.3841933.771 -204.641933.741-204.1851933.731-203.1161933.712-201.1681933.676
-182.9961933.109-181.229    1933 -178.841932.971-178.8091932.971-177.0731932.974
-177.0141932.973-176.9681932.974    -175    1933 -168.19    1933-165.926    1933
-163.229    1933-162.633    1933-157.8581932.879-157.2661932.856-155.0391932.789
 -153.911932.749-153.1291932.716 -151.97 1932.66-150.5861932.605-149.0511932.539
-135.406    1932-131.8931931.924-128.4561931.842 -99.3661931.023 -98.8081931.008
 -98.559    1931 -65.5261930.013 -65.2921930.007 -65.011    1930 -50.2351929.662
 -24.425    1929 -20.498    1929       0    1929    .882    1929   4.554    1929
   7.957    1929   9.8061928.454  10.998 1928.09  11.313    1928  11.7541927.804
  13.557    1927  15.761926.045  15.8521926.006  15.865    1926  17.8491925.192
  18.331    1925  22.8881924.313   24.56    1924  31.746    1924  35.004    1924
  36.2631924.187  42.511    1925  44.3391925.912   44.57    1926  44.919    1926
  45.513    1926  45.888    1926  45.981    1926  51.6421926.072  69.1061926.294
  76.0051926.392 119.568    1927 127.9851927.624 133.343    1928 134.8451928.305
 138.0411928.933 138.1681928.958 138.3761928.999  138.38    1929 143.0911929.941
 143.1181929.946 143.386    1930  143.58 1930.04 145.4771930.416 145.8341930.487
 146.3921930.598 146.4891930.617  146.86 1930.73 146.9551930.759 146.991 1930.77
 147.1691930.812 147.2151930.823 147.2361930.828 147.4361930.852 147.4891930.858
 147.5151930.861 147.5661930.865 147.5791930.865 147.5861930.866 147.6011930.865
 147.6071930.865 147.6491930.858 148.1051930.839  148.181930.833 148.3271930.817
  149.29 1930.75 149.526 1930.74 149.9731930.721 150.573 1930.69 153.8031930.487
 155.7741930.363 161.187    1930 161.5961929.887 164.747    1929 164.9021928.957
  168.23    1928 170.6111927.327  171.77    1927 172.6941926.723 175.343    1926
  176.051925.938 176.5331925.896 177.4491925.851 178.3321925.815 185.6581925.371
  187.941925.328 188.5111925.295 190.1971925.199 192.5721925.189 192.8511925.188
 194.2281925.129 196.1541925.131 197.5381925.133     2001925.142

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -400    .035-211.373    .025 147.236    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -211.373 147.236              100     100     100            .1       .3
Right Levee     Station=  147.24      Elevation= 1930.83

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1927.61  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.57  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 1927.04  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1927.04  * Flow Area (sq ft)    *          *  116.66  *          *
* E.G. Slope (ft/ft)     *0.009292  * Area (sq ft)         *          *  116.66  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *  106.66  * Top Width (ft)       *          *  106.66  *          *
* Vel Total (ft/s)       *    6.05  * Avg. Vel. (ft/s)     *          *    6.05  *          *
* Max Chl Dpth (ft)      *    3.04  * Hydr. Depth (ft)     *          *    1.09  *          *
* Conv. Total (cfs)      *  7324.1  * Conv. (cfs)          *          *  7324.1  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *  107.45  *          *
* Min Ch El (ft)         * 1924.00  * Shear (lb/sq ft)     *          *    0.63  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.81  *          *
* Frctn Loss (ft)        *    0.84  * Cum Volume (acre-ft) *          *    0.85  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)       *          *    0.51  *          *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -8900

INPUT
Description:
Station Elevation Data    num=     326
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
**************************************************************************
    -4001936.506-397.4311936.477-394.0351936.436-392.3551936.415-390.0351936.384
-386.7071936.338-381.3741936.016-381.102    1936-377.892    1936 -377.11    1936
-375.376    1936-375.321    1936-375.272    1936-375.2181935.996-369.3361935.876
-367.4811935.879-365.4741935.876-361.1621935.886-360.6061935.896-359.6741935.896
-357.5441935.882-354.1751935.852-353.0911935.849-351.2721935.852-341.1231935.893
-341.0761935.893-340.0261935.888-339.9031935.886-339.4371935.866-339.4011935.864
-339.3711935.863-339.1841935.863-335.9321935.873-335.8571935.872-335.7241935.872
-335.5481935.871 -335.341935.868-335.0881935.861-334.7381935.849-334.7351935.849
-334.2151935.833-334.0081935.834-331.1911935.835  -330.51935.817-327.7981935.807
 -327.491935.805-325.4721935.786-324.5751935.765-323.4911935.747-322.5021935.731
-320.4891935.689-318.4341935.643-317.5771935.629-317.0031935.613-315.6071935.577
  -315.61935.576-313.6121935.556-312.6391935.542-311.0811935.514-306.4491935.421
-306.0221935.412-303.764 1935.36-300.6231935.276-300.3451935.269-298.6691935.217
-294.3141935.083-293.7651935.068-291.821    1935-290.2951934.954-284.6971934.855
 -270.621934.603-236.917    1934-232.0061933.135-231.219    1933-230.4891932.851
 -226.95    1932-225.247 1931.52-223.551    1931-222.1881930.599-220.238    1930
-217.075 1929.06-216.889    1929-216.5241928.882-213.803    1928 -211.811927.341
-210.723    1927-209.5351926.621-207.578    1926-205.9081925.437-204.567    1925
-202.7381924.368-201.614    1924-198.8321923.199-197.777    1923 -197.561922.986
-187.3081922.355-185.3161922.237 -184.841922.212-184.6071922.204-184.2631922.226
-184.0271922.224-182.229    1922-172.7921921.381-171.9691921.332 -171.41 1921.31
-170.5731921.296-170.2321921.288-169.9421921.286-169.6621921.303-168.7681921.466
-166.264    1922-165.0141922.082-163.5711922.154-162.263  1922.2-157.8781922.309
-157.0581922.307-156.2251922.278-155.6651922.244-154.5271922.175-153.6281922.126
-153.4431922.116-151.4111922.631-149.952    1923-147.4061923.631-145.973    1924
-145.6381924.085-142.052    1925-139.5121925.649 -138.05    1926-135.1871926.733
 -134.15    1927-133.4781927.166-130.051    1928-129.0431928.257 -125.78    1929
-125.6921929.016-125.6531929.017-125.6231929.017-125.6021929.017-125.5781929.019
-121.0021929.415-115.5221929.402-111.1391929.545 -107.431929.552-104.4551929.603
-103.5891929.614-103.5351929.614-102.1951929.648-101.2221929.672 -99.6391929.689
  -95.761929.715 -94.3741929.696 -92.9631929.659 -91.4331929.681  -91.381929.682
 -87.1921929.563 -86.3791929.566 -84.0891929.574 -83.3291929.562   -82.41929.547
 -79.9731929.534  -79.851929.534 -79.3321929.534 -78.4731929.533 -77.4531929.533
 -73.6851929.497 -70.548 1929.48 -70.162 1929.47 -68.4091929.472 -66.7361929.494
 -59.348 1929.56 -46.6081929.674 -46.1021929.698 -43.8261929.806 -42.693 1929.83
 -42.038 1929.86 -40.2411929.941 -39.922 1929.95 -39.8721929.952 -38.7711929.986
 -38.7261929.987  -38.691929.988  -38.681929.989 -38.1071929.992 -38.1011929.992
 -38.0941929.993 -38.0871929.994 -38.0851929.995 -38.0811929.995 -38.0761929.995
 -38.0691929.995 -38.0561929.996 -38.0481929.996 -38.0391929.996 -38.0331929.996
 -38.0091929.996 -38.0061929.996 -38.0031929.996 -37.9951929.997 -37.9941929.997
 -37.9931929.997 -37.9921929.997 -37.9911929.997 -37.9891929.997 -37.9741929.996
 -37.9711929.996 -37.9561929.996 -37.9461929.995 -37.9331929.995 -37.9151929.994
 -37.8971929.993 -37.8661929.991 -37.8191929.989 -37.6581929.981 -24.5651929.314
 -18.395    1929  -18.251928.931 -16.164    1928 -14.2751927.003 -14.268    1927
 -14.2661926.999 -14.0651926.901 -12.2131926.008 -12.196    1926 -12.1931925.999
 -12.174 1925.99 -10.119    1925  -8.106 1924.03  -8.042    1924  -2.171 1923.72
       01923.743  14.2591923.891  14.626    1924  15.6251924.319  17.982    1925
  18.8721925.295  19.2281925.413  21.157    1926  23.804    1926   25.46    1926
  25.598    1926  26.932    1926  27.753    1926  28.246    1926  31.689    1926
  42.022    1926  47.956    1926  49.603    1926  52.5641925.921  52.8171925.915
  59.028    1926  63.1581926.045  65.6841926.073  65.9111926.076  66.194 1926.08
  66.5191926.085   67.121926.092  67.4131926.096  67.5521926.098  71.6331926.173
   90.941926.534 105.1211926.769 107.8111926.813 109.2971926.836 110.1991926.852
 116.262    1927 117.3611927.159 118.3821927.335 122.557    1928 123.0641928.087
 128.905    1929 131.0941929.344 135.286    1930 135.9771930.142 136.1191930.171
 136.1371930.175 137.3991930.313 137.6831930.344 137.7211930.349 138.0271930.368
 138.1031930.373 138.1131930.374 138.2051930.371 138.228 1930.37 138.231 1930.37
 138.458 1930.34 140.8761930.273 141.2581930.252 142.0011930.187 145.678    1930
 146.5141929.913 146.9151929.872 147.4721929.786  148.36 1929.65 149.4541929.541
 150.6571929.421 151.5051929.314 152.954    1929 156.1111928.254 157.213    1928
 159.7341927.414 161.838    1927 165.9311926.393 169.036    1926  170.911925.833
 170.9871925.826 171.3491925.791 173.8931925.575 176.7841925.329  177.85 1925.26
 178.2951925.231 178.914 1925.21 180.6461925.152 181.6291925.085 186.256    1925
 186.4551924.999 189.2681924.993 190.569    1925 191.7561925.013 191.8281925.009
 191.9481925.011   194.41925.056 194.7711925.045  195.541925.058 197.8871925.099
     2001925.142

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
    -400    .035-236.917    .025 137.683    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -236.917 137.683              100     100     100             .1       .3
Right Levee     Station=  -40.24      Elevation= 1929.94

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 1924.89  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.84  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 1924.05  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1924.05  * Flow Area (sq ft)      *          *   95.79  *          *
* E.G. Slope (ft/ft)     *0.007603  * Area (sq ft)           *          *   95.79  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   55.96  * Top Width (ft)         *          *   55.96  *          *
* Vel Total (ft/s)       *    7.37  * Avg. Vel. (ft/s)       *          *    7.37  *          *
* Max Chl Dpth (ft)      *    2.76  * Hydr. Depth (ft)       *          *    1.71  *          *
* Conv. Total (cfs)      *  8096.8  * Conv. (cfs)            *          *  8096.8  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *          *   56.48  *          *
* Min Ch El (ft)         * 1921.29  * Shear (lb/sq ft)       *          *    0.81  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.93  *          *
* Frctn Loss (ft)        *    0.75  * Cum Volume (acre-ft)   *          *    0.61  *          *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *          *    0.32  *          *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
```

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -9000

INPUT
Description:
Station Elevation Data num= 284

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-387.478	1926	-343.575	1925.566	-343.107	1925.61	-342.979	1925.689	-342.588	1925.747
-341.119	1925.81	-337.921	925.866	-333.269	1925.913	-327.884	1925.948	-327.835	1925.948
-322.627	1925.969	-322.513	1925.967	-318.324	1925.966	-318.293	1925.965	-318.197	1925.963
-318.064	1925.961	-317.935	1925.96	-317.804	1925.958	-317.493	1925.952	-314.481	1925.907
-313.104	1925.823	-312.904	1925.73	-307.431	925.537	-302.836	1925.62	-299.503	1925.672
-298.984	1925.677	-296.033	1925.707	-295.261	1925.698	-292.453	1925.692	-291.484	1925.694
-289.321	1925.661	-288.804	1925.653	-287.658	1925.662	-284.735	1925.611	-284.311	1925.604
-283.147	1925.615	-282.665	1925.62	-282.391	1925.622	-277.953	1925.563	-277.491	1925.569
-273.276	1925.519	-273.124	1925.518	-269.598	1925.479	-265.404	1925.435	-264.219	1925.419
-263.421	1925.404	-262.912	1925.388	-262.605	1925.374	-262.447	1925.361	-251.311	925.349
-245.889	1925.493	-240.805	1925.621	-238.321	1925.679	-235.437	1925.739	-231.591	1925.806
-226.052	1925.889	-218.322	1926	-210.814	1926	-205.4	1926	-196.049	1926
-195.959	1926	-195.077	1926	-193.564	1926	-186.993	1926	-178.301	1926
-177.759	1926	-177.352	1926	-176.314	1926.375	-175.875	1926.517	-174.376	1927
-170.811	1927.684	-170.169	1927.807	-169.731	1927.911	-169.36	1928	-168.947	1928.007
-168.914	1928.008	-166.953	1928.036	-166.812	1928.038	-166.798	1928.038	-164.773	1928.06
-164.683	1928.06	-158.747	1928.11	-158.624	1928.111	-155.405	1928.142	-155.337	1928.142
-154.102	1928.151	-154.059	1928.151	-153.354	1928.153	-153.263	1928.153	-151.921	928.155
-151.572	1928.153	-147.587	1928.13	-146.191	928.131	-139.665	1928.136	-139.277	1928.135
-138.089	1928.133	-137.636	1928.129	-136.605	1928.12	-136.101	1928.111	-135.139	1928.092
-133.929	1928.057	-132.344	1928.011	-132.024	1928	-130.811	1927.903	-130.781	1927.901
-130.599	1927.857	-124.709	1928	-123.405	1928	-119.406	1928.092	-118.972	1928.099
-110.057	1928.309	-103.427	1928.485	-100.219	1928.576	-98.781	1928.617	-96.178	1928.695
-95.411	1928.714	-94.86	1928.721	-94.446	1928.714	-94.11	1928.697	-93.431	1928.648
-91.794	1928.577	-90.67	1928.514	-89.528	1928.431	-88.616	1928.349	-85.942	1928.109
-84.731	1928	-83.226	1927.199	-82.898	1927	-82.675	1926.864	-80.954	1926
-79.126	1925.042	-79.044	1925	-77.024	1924.006	-77.012	1924	-771	923.995
-75.472	1923.411	-74.411	1923.006	-74.394	1923	-74.365	1922.989	-71.732	1922
-70.283	1921.435	-69.11	1921	-67.054	1920.187	-66.562	1920	-66.257	1919.882
-65.605	1919.619	-63.938	1919	-61.593	1918.054	-61.445	1918	-61.263	1917.929
-60.489	1917.633	-58.836	1917	-57.651	1916.557	-56.757	1916.246	-56.152	1916
-55.246	1915.953	-55.197	1915.951	-54.174	1915.946	-52.626	1915.935	-48.526	1915.92
-48.263	1915.916	-47.887	1915.899	-43.602	1915.774	-42.278	1915.747	-41.167	1915.74
-40.236	1915.745	-39.479	1915.751	-38.925	1915.752	-38.229	1915.744	-37.723	1915.743
-37.519	1915.747	-37.248	1915.756	-36.104	1915.801	-35.825	1915.806	-33.439	1915.804
-32.749	1915.812	-31.938	1915.851	-30.431	1915.965	-30.025	1916	-29.888	1916.048
-27.042	1917	-24.816	1917.824	-24.302	1918	-23.641	1918.242	-21.607	1919
-20.71	1919.32	-18.879	1920	-17.072	1920.692	-16.226	1921	-14.825	1921.501
-13.574	1922	-12.029	1922.553	-10.8	1923	-9.691	1923.314	-9.229	1923.315
-8.683	1923.384	-8.375	1923.39	-7.817	1923.359	-6.849	1923.294	-5.941	1923.193
-4.618	1923.002	-4.608	1923	-4.568	1922.991	-4.406	1922.957	0	1922.026
.125	1922	.382	1921.947	1.263	1921.846	2.841	1921.751	4.658	1921.676
6.398	1921.63	7.987	1921.614	9.443	1921.619	10.711	1921.638	11.691	1921.665
12.83	1921.71	13.036	1921.706	13.07	1921.689	17.888	1921.932	18.946	1922
21.135	1922.82	21.587	1922.989	21.616	1923	21.963	1923.129	21.984	1923.137
24.311	1924	36.652	1924.745	39.782	1924.866	43.243	1924.984	43.73	1925
61.64	1925.26	63.117	1925.282	65.311	1925.323	67.016	1925.35	68.162	1925.366
68.951	1925.379	69.485	1925.392	78.266	1925.656	79.977	1925.708	89.596	1926
92.448	1926.496	95.314	1927	100.015	1927.811	101.085	1928	103.083	1928.352
104.888	1928.645	107.201	1929	107.507	1929.016	116.355	1929.305	116.504	1929.3
120.242	1929.13	123.331	1929	126.084	1928.704	131.803	1928	132.927	1927.86
133.919	1927.731	139.004	1927	140.546	1926.777	144.156	1926.22	144.789	1926.129
145.626	1926.021	145.785	1926	147.333	1925.931	153.853	1925.671	159.486	1925.517
165.277	1925.391	170.022	1925.139	170.267	1925.126	170.279	1925.125	170.563	1925.113
173.192	1925	173.569	1924.995	175.054	1924.969	179.718	1924.831	180.362	1924.821
181.903	1924.812	183.798	1924.819	187.636	1924.841	189.872	1924.865	191.998	1924.904
194.302	1924.965	195.402	1925	197.645	1925.066	200	1925.142		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-387.478	.035	-96.178	.025	116.355	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-96.178 116.355 89.63 89.63 89.63 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1919.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.		0.025	
W.S. Elev (ft)	1918.45	Reach Len. (ft)	89.63	89.63	89.63
Crit W.S. (ft)	1918.45	Flow Area (sq ft)		84.45	
E.G. Slope (ft/ft)	0.007391	Area (sq ft)		84.45	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	39.47	Top Width (ft)		39.47	
Vel Total (ft/s)	8.36	Avg. Vel. (ft/s)		8.36	
Max Chl Dpth (ft)	2.70	Hydr. Depth (ft)		2.14	
Conv. Total (cfs)	8212.3	Conv. (cfs)		8212.3	
Length Wtd. (ft)	89.63	Wetted Per. (ft)		40.35	
Min Ch El (ft)	1915.74	Shear (lb/sq ft)		0.97	
Alpha	1.00	Stream Power (lb/ft s)		8.07	
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)		0.40	
C & E Loss (ft)	0.07	Cum SA (acres)		0.21	

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

 Warning: The energy equation could not be balanced within the specified number of iterations.  The
          program used critical depth for the water surface and continued on with the calculations.
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
          section.  This may indicate the need for additional cross sections.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical
          depth, the calculated water surface came back below critical depth.  This indicates that there
          is not a valid subcritical answer.  The program defaulted to critical depth.

 CROSS SECTION


 RIVER: EQUESTRIAN DB OF
 REACH: 1                 RS: -9089.63

 INPUT
 Description:
 Station Elevation Data    num=     227
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 **********************************************************************************
 -328.148    1927-326.582    1927-305.189    1927-269.221    1927-265.437    1927
  -264.46    1927-263.336    1927-261.588    1927-246.6031926.633-243.9141926.583
 -239.619  1926.5-222.1281926.131-216.053    1926-185.592    1926-180.751    1926
 -176.649    1926-132.041    1926-117.0221925.686-113.8471925.617-112.6281925.583
 -109.5621925.456-108.1431925.406-107.6271925.397-103.9471925.428-103.9381925.447
  -103.711925.456 -103.261925.466-102.5071925.507-100.7091925.585 -99.9841925.596
  -99.0981925.585 -98.095 1925.55 -96.4791925.478  -95.981925.461 -95.6181925.455
  -95.3371925.455 -95.1021925.458 -94.6531925.471  -93.981925.503 -92.3771925.609
  -90.8141925.707 -88.5651925.825 -85.7831925.931 -85.7361925.932  -83.21    1926
  -77.6441926.187 -71.4821926.406 -69.3051926.474 -67.4271926.518 -67.3361926.519
  -65.8181926.537 -64.451 1926.53 -63.2461926.488 -62.0351926.408 -60.7081926.282
  -59.2351926.108 -58.511    1926 -56.4431925.608 -53.959    1925 -51.9571924.197
  -51.476    1924 -50.041 1923.41 -49.143 1923.06 -48.995    1923 -48.7041922.865
  -46.706    1922 -44.654 1921.01 -44.633    1921 -44.5751920.973 -42.459    1920
   -40.91 1919.27 -40.319    1919 -38.4751918.112  -38.24    1918 -38.136 1917.95
  -36.113    1917  -35.771916.839 -33.973    1916 -33.4391915.751 -32.4841915.297
  -31.887    1915 -31.8051914.959 -31.7681914.948 -31.715 1914.94 -31.6271914.935
  -31.5081914.932 -31.3551914.929 -31.1481914.924 -30.4581914.903  -29.181914.864
  -28.4441914.844 -25.6251914.715 -19.398 1914.43 -17.0971914.328 -15.6681914.271
  -14.7561914.242 -14.0611914.227 -12.8711914.207 -12.3321914.199 -11.8081914.196
  -11.2711914.198 -10.7391914.203  -9.9671914.214  -9.7681914.221  -9.591 1914.24
   -7.9561914.509   -7.581914.564  -4.539    1915  -3.6551915.266  -2.6991915.434
        01915.778    .1661915.799   2.032    1916   3.7061916.095   3.8571916.096
     3.9581916.099   6.7161916.204   7.391916.215   7.4461916.216   8.293 1916.22
     9.0141916.217   9.7681916.217  10.1791916.224  10.6181916.236  11.0881916.256
    11.6151916.291  12.2861916.346  13.2651916.434  16.4521916.532  17.5721916.589
    18.4181916.666  19.415    1917  19.8681917.258  21.226    1918   21.951918.403
    23.089    1919  23.9851919.464  24.972    1920  25.7171920.411  26.843    1921
    28.2041921.693  28.3281921.779  28.794    1922  31.6711922.975  31.802    1923
    34.3851923.995  34.683    1924   36.151924.028  37.9541924.028  39.1911924.098
    39.9381924.214  39.9681924.218   40.27    1924  47.268    1924  47.9171923.929
    49.167    1924  50.8471924.169  51.5131924.248  52.0491924.311  53.2021924.392
    56.1911924.602  61.869    1925  65.5791925.796  65.6961925.821  66.484    1926
     68.241926.368  70.0931926.791  71.011    1927  74.947 1927.91   75.35    1928
    82.926    1928  85.692    1928  88.127    1928  90.662    1928  93.8981927.546
    97.578    1927 102.4261926.332 104.781    1926 104.8331925.995 105.6191925.915
   106.369 1925.83 106.4151925.825 108.105 1925.67 109.3381925.557 109.7811925.526
    113.29 1925.41   116.21925.259 120.215    1925 120.9271924.982 121.0021924.981
   124.8231924.862 126.4131924.821 127.8651924.792 130.2811924.752 131.4031924.746
   132.7521924.755 134.5391924.786 138.5921924.875  139.98  1924.9 141.0011924.902
   141.9561924.902 142.2691924.902 143.3891924.896 144.9251924.869 151.3641924.731
   153.4741924.695 154.2271924.688 157.5181924.692 163.265  1924.7 164.385  1924.7
   165.614  1924.7 167.7261924.712  169.071924.705 172.7271924.684 174.7051924.681
   175.6961924.675 179.0511924.614 179.5471924.611 180.7671924.617 182.3371924.639
   185.7781924.692 187.9641924.735 190.1811924.793 192.7531924.877 196.038    1925
   196.5731925.018     2001925.142

 Manning's n Values        num=       3
      Sta   n Val     Sta   n Val     Sta   n Val
 ***********************************************
 -328.148    .035 -65.818    .025  82.926    .035

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -65.818  82.926             10.37   10.37   10.37            .1       .3

 CROSS SECTION OUTPUT  Profile #PF 1
 **********************************************************************************************
 * E.G. Elev (ft)         * 1917.90  * Element               *  Left OB *  Channel * Right OB *
 * Vel Head (ft)          *    0.87  * Wt. n-Val.            *          *    0.025 *          *
 * W.S. Elev (ft)         * 1917.04  * Reach Len. (ft)       *   10.37  *    10.37 *   10.37  *
 * Crit W.S. (ft)         * 1917.04  * Flow Area (sq ft)     *          *    94.52 *          *
 * E.G. Slope (ft/ft)     *0.007932  * Area (sq ft)          *          *    94.52 *          *
 * Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   706.00 *          *
 * Top Width (ft)         *   55.67  * Top Width (ft)        *          *    55.67 *          *
 * Vel Total (ft/s)       *    7.47  * Avg. Vel. (ft/s)      *          *     7.47 *          *
 * Max Chl Dpth (ft)      *    2.84  * Hydr. Depth (ft)      *          *     1.70 *          *
 * Conv. Total (cfs)      *  7927.3  * Conv. (cfs)           *          *  7927.3  *          *
 * Length Wtd. (ft)       *   10.37  * Wetted Per. (ft)      *          *    56.39 *          *
 * Min Ch El (ft)         * 1914.20  * Shear (lb/sq ft)      *          *     0.83 *          *
 * Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     6.20 *          *
 * Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)  *          *     0.21 *          *
 * C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *     0.12 *          *
 **********************************************************************************************

 Warning: The energy equation could not be balanced within the specified number of iterations.  The
          program selected the water surface that had the least amount of error between computed and
          assumed values.
 Warning: During the standard step iterations, when the assumed water surface was set equal to critical
          depth, the calculated water surface came back below critical depth.  This indicates that there
```

is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -9100

INPUT
Description:
Station Elevation Data num= 246

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-328.095	1926.96	-327.358	1927	-327.045	1927	-326.593	1927	-326.089	1927
-325.54	1927	-324.93	1927	-324.324	1927	-324.234	1927	-316.341	1927
-272.912	1927	-266.604	1927	-266.444	1927	-266.26	1927	-265.821	1927
-265.348	1927	-260.113	1926.908	-252.595	1926.732	-241.313	1926.47	-231.952	1926.252
-220.764	1926	-220.356	1926	-210.812	1926	-204.237	1926	-179.281	1926
-165.328	1926	-135.14	1926	-111.275	1925.501	-108.955	1925.451	-108.065	1925.426
-105.825	1925.333	-104.788	1925.297	-104.412	1925.29	-101.723	1925.312	-101.717	1925.326
-101.551	1925.333	-101.221	1925.34	-100.671	1925.37	-99.358	1925.427	-98.828	1925.436
-98.181	1925.427	-97.449	1925.402	-96.268	1925.349	-95.904	1925.337	-95.639	1925.332
-95.434	1925.332	-95.263	1925.334	-94.935	1925.344	-94.443	1925.368	-93.271	1925.445
-92.131	1925.516	-90.487	1925.602	-88.455	1925.68	-88.238	1925.686	-83.541	1925.812
-83.159	1925.81	-77.048	1926	-75.944	1926.039	-72.424	1926.15	-69.389	1926.22
-69.241	1926.222	-66.788	1926.252	-64.578	1926.24	-62.631	1926.173	-60.672	1926.042
-60.224	1926	-54.861	1925.176	-54.322	1925.088	-54.091	1925.044	-53.912	1925
-53.768	1924.942	-51.472	1924	-50.399	1923.559	-49.108	1923	-48.255	1922.604
-46.86	1922	-45.722	1921.451	-44.782	1921	-42.791	1920.067	-42.655	1920
-42.489	1919.919	-40.542	1919	-39.923	1918.71	-38.431	1918	-37.047	1917.334
-36.336	1917	-35.194	1916.465	-34.272	1916	-34.081	1915.904	-32.26	1915
-31.811	1914.776	-31.609	1914.713	-31.321	1914.672	-30.839	1914.643	-30.185	1914.627
-29.345	1914.611	-28.209	1914.582	-27.633	1914.565	-24.431	1914.468	-17.939	1914.27
-17.428	1914.255	-16.874	1914.239	-13.392	1914.143	-11.856	1914.073	-11.466	1914.056
-11.223	1914.046	-11.068	1914.041	-10.951	1914.039	-10.749	1914.035	-10.657	1914.034
-10.568	1914.033	-10.477	1914.034	-10.387	1914.035	-10.256	1914.036	-10.222	1914.038
-10.192	1914.041	-9.914	1914.086	-9.213	1914.187	-9.071	1914.208	-8.144	1914.138
-7.351	1914.257	-7.095	1914.271	-6.358	1914.31	-4.339	1914.593	-4.106	1914.626
-3.241	1914.746	-1.008	1915	-.064	1915.065	0	1915.069	3.199	1915.247
3.446	1915.252	3.729	1915.253	5.276	1915.294	6.323	1915.336	8.518	1915.464
16.218	1915.987	16.406	1916	16.423	1916.011	17.158	1916.506	18.632	1917
20.346	1917.976	20.39	1918	21.955	1918.872	22.2	1919	22.392	1919.1
24.05	1920	25.302	1920.691	25.894	1921	27.527	1921.832	27.944	1922
28.614	1922.625	29.454	1922.643	30.396	1923	30.513	1923.332	30.662	1924
30.731	1924.383	31.112	1924.75	31.838	1925	32.084	1925.039	32.131	1925.047
33.343	1925.013	33.475	1925	35.211	1924.852	41.441	1924	47.23	1924
48.347	1924	49.982	1924.174	55.758	1925	58.604	1925.844	59.286	1926
62.482	1926.656	62.537	1926.668	64.161	1927	66.513	1927.449	66.685	1927.482
68.621	1927.851	69.171	1927.978	69.267	1928	71.421	1928	71.593	1928
73.727	1928	75.179	1927.8	77.744	1927.645	79.462	1927.512	80.595	1927.437
83.291	1927.255	85.031	1927.169	86.743	1927	90.259	1926.557	94.346	1926
94.798	1925.947	98.611	1925.502	103.579	1925	104.011	1924.969	104.349	1924.968
106.349	1924.927	108.093	1924.849	111.334	1924.648	111.822	1924.635	114.966	1924.599
119.155	1924.608	120.543	1924.581	123.771	1924.594	124.431	1924.597	125.873	1924.561
128.061	1924.493	128.971	1924.47	129.803	1924.453	131.186	1924.431	131.828	1924.427
132.601	1924.432	133.624	1924.45	135.945	1924.501	136.739	1924.515	141.686	1924.528
142.244	1924.527	143.755	1924.525	149.155	1924.5	150.012	1924.485	153.603	1924.408
154.779	1924.388	155.2	1924.383	157.035	1924.386	160.239	1924.39	164.327	1924.391
165.013	1924.391	166.679	1924.4	169.307	1924.415	172.219	1924.399	173.371	1924.396
173.948	1924.393	175.902	1924.358	176.191	1924.356	176.901	1924.36	177.815	1924.372
179.819	1924.403	181.092	1924.428	182.383	1924.462	183.881	1924.511	186.043	1924.592
195.975	1924.989	196.012	1924.99	196.059	1924.99	196.224	1925	199.163	1925.119
200	1925.162								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-328.095	.035	-66.788	.025	69.267	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-66.788	69.267	92.13	92.13	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1917.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.		0.025	
W.S. Elev (ft)	1916.63	Reach Len. (ft)	92.13	92.13	92.13
Crit W.S. (ft)	1916.63	Flow Area (sq ft)		93.00	
E.G. Slope (ft/ft)	0.007866	Area (sq ft)		93.00	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	53.08	Top Width (ft)		53.08	
Vel Total (ft/s)	7.59	Avg. Vel. (ft/s)		7.59	
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)		1.75	
Conv. Total (cfs)	7960.1	Conv. (cfs)		7960.1	
Length Wtd. (ft)	92.13	Wetted Per. (ft)		53.82	
Min Ch El (ft)	1914.03	Shear (lb/sq ft)		0.85	
Alpha	1.00	Stream Power (lb/ft s)		6.44	
Frctn Loss (ft)	0.71	Cum Volume (acre-ft)		0.19	
C & E Loss (ft)	0.01	Cum SA (acres)		0.10	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

```
RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -9192.13

INPUT
Description:
Station Elevation Data    num=     204
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-327.6181926.436-322.7211926.702-322.4211926.778-320.6071926.854-316.7851926.927
-310.6921926.991-309.273    1927-299.847    1927-299.673    1927-297.135    1927
-290.269    1927-285.639    1927-284.878    1927-261.6011926.609-237.0221926.172
-227.365    1926-226.895    1926-226.096    1926 -210.95    1926-202.948    1926
-187.428    1926-167.246    1926-163.638    1926-146.299    1926-146.105    1926
 -144.71    1926-142.049  1925.9-138.0081925.769-130.939 1925.58-127.7351925.484
-127.4131925.475-125.1471925.361-117.949    1925-116.9771924.885-109.523    1924
-102.9651923.494 -99.5181923.315 -97.8221923.201 -96.4191923.165 -94.8431923.124
 -93.5611923.057  -93.311923.045  -93.261923.043 -93.2171923.043 -93.1651923.043
 -93.0641923.044 -93.0171923.044   -92.41923.052 -92.2471923.054 -92.1081923.058
 -91.9331923.063 -90.0891923.079 -89.3641923.085 -89.0151923.097 -85.7751923.173
 -81.3561923.343 -78.1211923.454 -77.5111923.475 -77.105 1923.49 -74.3751923.589
  -70.511923.734 -68.2921923.776 -65.6091923.877 -65.0851923.895 -64.7021923.903
 -64.4061923.902 -64.1281923.894 -63.3061923.861 -63.0431923.848 -62.7191923.825
 -58.9211923.504  -57.191923.428 -55.6011923.319 -54.6851923.242 -53.125    1923
 -52.1751922.699 -50.202    1922 -48.6931921.391 -47.858    1921  -47.531920.837
 -45.741    1920 -45.2481919.758 -43.634    1919 -42.824 1918.61 -41.529    1918
 -40.2141917.391 -39.425    1917 -37.861 1916.26 -37.328    1916 -36.7381915.725
 -35.234    1915 -33.677 1914.25  -33.17    1914 -29.7381913.113 -29.581    1913
 -28.7511912.966 -25.3031912.877 -22.4161912.835 -18.0751912.799 -13.5551912.777
 -11.169 1912.77  -8.7031912.778  -6.3071912.808  -3.865 1912.86       01912.969
   1.115    1913   1.4791913.016   3.9581913.172   5.4931913.328   7.449    1914
   9.2111914.945   9.319    1915   9.4191915.054  11.096    1916  12.0041916.481
   12.85    1917  14.0041917.703  14.512    1918  15.6311918.695  16.099    1919
  16.5361919.295  17.579    1920  19.0921920.994  19.102    1921  19.1931921.031
  19.2441921.063  19.3621921.118  21.542    1922   21.821922.325  22.212    1923
  22.3051923.072   22.421923.085  22.763 1923.11  23.099 1923.14  23.8861923.252
  24.2511923.287  24.9261923.351  26.3241923.347  27.3561923.343  27.6571923.371
  30.8211923.394  32.3071923.463   32.941923.532  33.3271923.592  33.906 1923.68
  34.1181923.697  34.3281923.733  35.829    1924  37.0191924.252  40.868    1925
  45.3221925.899  45.787    1926  45.867    1926  48.187    1926  52.1591925.176
  52.993    1925  53.4121924.915  57.633    1924  61.1781923.287  62.495    1923
  62.612 1922.92  63.1341922.793  63.171  1922.7   63.831922.642  65.7311922.569
  66.8891922.544   67.431922.517  67.8011922.507   68.24  1922.5  70.3871922.514
  70.7391922.549  71.1361922.564  72.2471922.596  74.3751922.693  81.262    1923
 101.7891923.393 104.4681923.422 130.2781923.703 135.4031923.779 139.4521923.837
 139.9771923.844 140.6331923.851  141.461923.859 142.2821923.866 142.6141923.869
 142.9081923.871 143.4781923.874  144.041923.876 144.5311923.877 146.2511923.881
 146.4821923.882 153.1281923.946 159.704    1924 160.7081924.008 160.7821924.008
   168.81924.058 168.9171924.059 176.5221924.099 186.6551924.143 189.3211924.158
 191.3191924.183 193.0911924.224 194.5311924.272     2001924.277

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-327.618    .035-146.299    .025  48.187    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
      -146.299  48.187             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 1916.09  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.99  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 1915.09  * Reach Len. (ft)       *          *          *          *
* Crit W.S. (ft)         * 1915.09  * Flow Area (sq ft)     *          *   88.28  *          *
* E.G. Slope (ft/ft)     *0.007529  * Area (sq ft)          *          *   88.28  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   44.91  * Top Width (ft)        *          *   44.91  *          *
* Vel Total (ft/s)       *    8.00  * Avg. Vel. (ft/s)      *          *    8.00  *          *
* Max Chl Dpth (ft)      *    2.32  * Hydr. Depth (ft)      *          *    1.97  *          *
* Conv. Total (cfs)      *  8136.5  * Conv. (cfs)           *          *  8136.5  *          *
* Length Wtd. (ft)       *          * Wetted Per. (ft)      *          *   45.72  *          *
* Min Ch El (ft)         * 1912.77  * Shear (lb/sq ft)      *          *    0.91  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    7.26  *          *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)  *          *          *          *
* C & E Loss (ft)        *          * Cum SA (acres)        *          *          *          *
*************************************************************************************************

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
         is below critical depth). Water surface set to critical depth.

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

SUMMARY OF MANNING'S N VALUES

River:EQUESTRIAN DB OF
*****************************************************************
*     Reach      *   River Sta.   *   n1    *   n2    *   n3    *
*****************************************************************
*1              *    -1500       *     .035*     .025*     .035*
*1              *    -1525       *     .035*     .025*     .035*
*1              *    -1550       *     .035*     .025*     .035*
*1              *    -1575       *     .035*     .025*     .035*
*1              *    -1600       *     .035*     .025*     .035*
*1              *    -1625       *     .035*     .025*     .035*
*1              *    -1650       *     .035*     .025*     .035*
*1              *    -1675       *     .035*     .025*     .035*
*1              *    -1700       *     .035*     .025*     .035*
*1              *    -1725       *     .035*     .025*     .035*
```

```
*1          *    -1750      *     .035*     .025*     .035*
*1          *    -1775      *     .035*     .025*     .035*
*1          *    -1800      *     .035*     .025*     .035*
*1          *    -1825      *     .035*     .025*     .035*
*1          *    -1850      *     .035*     .025*     .035*
*1          *    -1875      *     .035*     .025*     .035*
*1          *    -1900      *     .035*     .025*     .035*
*1          *    -1925      *     .035*     .025*     .035*
*1          *    -1950      *     .035*     .025*     .035*
*1          *    -1975      *     .035*     .025*     .035*
*1          *    -2000      *     .035*     .025*     .035*
*1          *    -2025      *     .035*     .025*     .035*
*1          *    -2050      *     .035*     .025*     .035*
*1          *    -2075      *     .035*     .025*     .035*
*1          *    -2100      *     .035*     .025*     .035*
*1          *    -2125      *     .035*     .025*     .035*
*1          *    -2150      *     .035*     .025*     .035*
*1          *    -2175      *     .035*     .025*     .035*
*1          *    -2200      *     .035*     .025*     .035*
*1          *    -2225      *     .035*     .025*     .035*
*1          *    -2250      *     .035*     .025*     .035*
*1          *    -2275      *     .035*     .025*     .035*
*1          *    -2300      *     .035*     .025*     .035*
*1          *    -2325      *     .035*     .025*     .035*
*1          *    -2350      *     .035*     .025*     .035*
*1          *    -2375      *     .035*     .025*     .035*
*1          *    -2400      *     .035*     .025*     .035*
*1          *    -2425      *     .035*     .025*     .035*
*1          *    -2450      *     .035*     .025*     .035*
*1          *    -2475      *     .035*     .025*     .035*
*1          *    -2500      *     .035*     .025*     .035*
*1          *    -2525      *     .035*     .025*     .035*
*1          *    -2550      *     .035*     .025*     .035*
*1          *    -2575      *     .035*     .025*     .035*
*1          *    -2600      *     .035*     .025*     .035*
*1          *    -2625      *     .035*     .025*     .035*
*1          *    -2650      *     .035*     .025*     .035*
*1          *    -2675      *     .035*     .025*     .035*
*1          *    -2700      *     .035*     .025*     .035*
*1          *    -2730      *     .035*     .025*     .035*
*1          *    -2750      *     .035*     .025*     .035*
*1          *    -2775      *     .035*     .025*     .035*
*1          *    -2790.28   *     .035*     .025*     .035*
*1          *    -2791.78   *     .035*     .025*     .035*
*1          *    -2800      *     .035*     .025*     .035*
*1          *    -2804.37   *     .035*     .025*     .035*
*1          *    -2900      *     .035*     .025*     .035*
*1          *    -2950.26   *     .035*     .025*     .035*
*1          *    -3000      *     .035*     .025*     .035*
*1          *    -3100      *     .035*     .025*     .035*
*1          *    -3200      *     .035*     .025*     .035*
*1          *    -3300      *     .035*     .025*     .035*
*1          *    -3305.97   *     .035*     .025*     .035*
*1          *    -3391.11   *     .035*     .025*     .035*
*1          *    -3400      *     .035*     .025*     .035*
*1          *    -3500      *     .035*     .025*     .035*
*1          *    -3600      *     .035*     .025*     .035*
*1          *    -3700      *     .035*     .025*     .035*
*1          *    -3789.96   *     .035*     .025*     .035*
*1          *    -3800      *     .035*     .025*     .035*
*1          *    -3868.66   *     .035*     .025*     .035*
*1          *    -3900      *     .035*     .025*     .035*
*1          *    -4000      *     .035*     .025*     .035*
*1          *    -4100      *     .035*     .025*     .035*
*1          *    -4146.01   *     .035*     .025*     .035*
*1          *    -4200      *     .035*     .025*     .035*
*1          *    -4300      *     .035*     .025*     .035*
*1          *    -4399.05   *     .035*     .025*     .035*
*1          *    -4400      *     .035*     .025*     .035*
*1          *    -4423.9    *     .035*     .025*     .035*
*1          *    -4500      *     .035*     .025*     .035*
*1          *    -4528.19   *     .035*     .025*     .035*
*1          *    -4563.86   *     .035*     .025*     .035*
*1          *    -4596.68   *     .035*     .025*     .035*
*1          *    -4600      *     .035*     .025*     .035*
*1          *    -4607.48   *     .035*     .013*     .035*
*1          *    -4608.44   *Culvert  *       *         *
*1          *    -4834.44   *     .035*     .013*     .035*
*1          *    -4895.41   *     .035*     .025*     .035*
*1          *    -4900      *     .035*     .025*     .035*
*1          *    -4925.31   *     .035*     .025*     .035*
*1          *    -5000      *     .035*     .025*     .035*
*1          *    -5071.59   *     .035*     .025*     .035*
*1          *    -5100      *     .035*     .025*     .035*
*1          *    -5144.1    *     .035*     .025*     .035*
*1          *    -5200      *     .035*     .025*     .035*
*1          *    -5300      *     .035*     .025*     .035*
*1          *    -5400      *     .035*     .025*     .035*
*1          *    -5500      *     .035*     .025*     .035*
*1          *    -5600      *     .035*     .025*     .035*
*1          *    -5629.37   *     .035*     .025*     .035*
*1          *    -5700      *     .035*     .025*     .035*
*1          *    -5745.97   *     .035*     .025*     .035*
*1          *    -5800      *     .035*     .025*     .035*
*1          *    -5862.57   *     .035*     .025*     .035*
*1          *    -5900      *     .035*     .025*     .035*
*1          *    -6000      *     .035*     .025*     .035*
*1          *    -6100      *     .035*     .025*     .035*
*1          *    -6200      *     .035*     .025*     .035*
*1          *    -6300      *     .035*     .025*     .035*
```

*1	*	-6400	*	.035*	.025*	.035*
*1	*	-6500	*	.035*	.025*	.035*
*1	*	-6600	*	.035*	.025*	.035*
*1	*	-6700	*	.035*	.025*	.035*
*1	*	-6800	*	.035*	.025*	.035*
*1	*	-6900	*	.035*	.025*	.035*
*1	*	-7000	*	.035*	.025*	.035*
*1	*	-7100	*	.035*	.025*	.035*
*1	*	-7200	*	.035*	.025*	.035*
*1	*	-7300	*	.035*	.025*	.035*
*1	*	-7400	*	.035*	.025*	.035*
*1	*	-7428.56	*	.035*	.025*	.035*
*1	*	-7500	*	.035*	.025*	.035*
*1	*	-7600	*	.035*	.025*	.035*
*1	*	-7700	*	.035*	.025*	.035*
*1	*	-7800	*	.035*	.025*	.035*
*1	*	-7893.64	*	.035*	.025*	.035*
*1	*	-7900	*	.035*	.025*	.035*
*1	*	-8000	*	.035*	.025*	.035*
*1	*	-8100	*	.035*	.025*	.035*
*1	*	-8200	*	.035*	.025*	.035*
*1	*	-8300	*	.035*	.025*	.035*
*1	*	-8400	*	.035*	.025*	.035*
*1	*	-8500	*	.035*	.025*	.035*
*1	*	-8600	*	.035*	.025*	.035*
*1	*	-8700	*	.035*	.025*	.035*
*1	*	-8774.45	*	.035*	.025*	.035*
*1	*	-8800	*	.035*	.025*	.035*
*1	*	-8900	*	.035*	.025*	.035*
*1	*	-9000	*	.035*	.025*	.035*
*1	*	-9089.63	*	.035*	.025*	.035*
*1	*	-9100	*	.035*	.025*	.035*
*1	*	-9192.13	*	.035*	.025*	.035*

SUMMARY OF REACH LENGTHS

River: EQUESTRIAN DB OF

Reach	River Sta.	Left	Channel	Right
*1	-1500	25*	25*	25*
*1	-1525	25*	25*	*
*1	-1550	25*	25*	25*
*1	-1575	25*	25*	25*
*1	-1600	25*	25*	25*
*1	-1625	25*	25*	25*
*1	-1650	25*	25*	25*
*1	-1675	25*	25*	25*
*1	-1700	25*	25*	25*
*1	-1725	25*	25*	25*
*1	-1750	25*	25*	25*
*1	-1775	25*	25*	25*
*1	-1800	25*	25*	25*
*1	-1825	25*	25*	25*
*1	-1850	25*	25*	25*
*1	-1875	25*	25*	25*
*1	-1900	25*	25*	25*
*1	-1925	25*	25*	25*
*1	-1950	25*	25*	25*
*1	-1975	25*	25*	25*
*1	-2000	25*	25*	25*
*1	-2025	25*	25*	25*
*1	-2050	25*	25*	25*
*1	-2075	25*	25*	25*
*1	-2100	25*	25*	25*
*1	-2125	25*	25*	25*
*1	-2150	25*	25*	25*
*1	-2175	25*	25*	25*
*1	-2200	25*	25*	25*
*1	-2225	25*	25*	25*
*1	-2250	25*	25*	25*
*1	-2275	25*	25*	25*
*1	-2300	25*	25*	25*
*1	-2325	25*	25*	25*
*1	-2350	25*	25*	25*
*1	-2375	25*	25*	25*
*1	-2400	25*	25*	25*
*1	-2425	25*	25*	25*
*1	-2450	25*	25*	25*
*1	-2475	25*	25*	25*
*1	-2500	25*	25*	25*
*1	-2525	25*	25*	25*
*1	-2550	25*	25*	25*
*1	-2575	25*	25*	25*
*1	-2600	25*	25*	25*
*1	-2625	25*	25*	25*
*1	-2650	25*	25*	25*
*1	-2675	25*	25*	25*
*1	-2700	30*	30*	30*
*1	-2730	20*	20*	30*
*1	-2750	25*	25*	25*
*1	-2775	15.28*	15.28*	15.28*
*1	-2790.28	1.5*	1.5*	1.5*
*1	-2791.78	8.22*	8.22*	8.22*
*1	-2800	4.37*	4.37*	4.37*
*1	-2804.37	95.63*	95.63*	95.63*
*1	-2900	50.262*	50.262*	50.262*

*1	*	-2950.26	* 49.74*	49.74*	49.74*
*1	*	-3000	* 100*	100*	100*
*1	*	-3100	* 100*	100*	100*
*1	*	-3200	* 100*	100*	100*
*1	*	-3300	* 5.97*	5.97*	5.97*
*1	*	-3305.97	* 85.14*	85.14*	85.14*
*1	*	-3391.11	* 8.89*	8.89*	8.89*
*1	*	-3400	* 100*	100*	100*
*1	*	-3500	* 100*	100*	100*
*1	*	-3600	* 100*	100*	100*
*1	*	-3700	* 89.64*	89.64*	89.64*
*1	*	-3789.96	* 10.04*	10.04*	10.04*
*1	*	-3800	* 68.66*	68.66*	68.66*
*1	*	-3868.66	* 21.34*	21.34*	21.34*
*1	*	-3900	* 100*	100*	100*
*1	*	-4000	* 100*	100*	100*
*1	*	-4100	* 46.01*	46.01*	46.01*
*1	*	-4146.01	* 53.99*	53.99*	53.99*
*1	*	-4200	* 100*	100*	100*
*1	*	-4300	* 99.05*	99.05*	99.05*
*1	*	-4399.05	* .95*	.95*	.95*
*1	*	-4400	* 23.9*	23.9*	23.9*
*1	*	-4423.9	* 76.1*	76.1*	76.1*
*1	*	-4500	* 28.19*	28.19*	28.19*
*1	*	-4528.19	* 35.67*	35.67*	35.67*
*1	*	-4563.86	* 32.82*	32.82*	32.82*
*1	*	-4596.68	* 3.32*	3.32*	3.32*
*1	*	-4600	* 7.44*	7.44*	7.44*
*1	*	-4607.48	* 227*	227*	227*
*1	*	-4608.44	*Culvert *	*	*
*1	*	-4834.44	* 60.97*	60.97*	60.97*
*1	*	-4895.41	* 4.59*	4.59*	4.59*
*1	*	-4900	* 25.31*	25.31*	25.31*
*1	*	-4925.31	* 74.69*	74.69*	74.69*
*1	*	-5000	* 71.59*	71.59*	71.59*
*1	*	-5071.59	* 28.41*	28.41*	28.41*
*1	*	-5100	* 44.1*	44.4*	44.1*
*1	*	-5144.1	* 55.9*	55.9*	55.9*
*1	*	-5200	* 100*	100*	100*
*1	*	-5300	* 100*	100*	100*
*1	*	-5400	* 100*	100*	100*
*1	*	-5500	* 100*	100*	100*
*1	*	-5600	* 29.37*	29.37*	29.37*
*1	*	-5629.37	* 70.63*	70.63*	70.63*
*1	*	-5700	* 45.97*	45.97*	45.97*
*1	*	-5745.97	* 54.03*	54.03*	54.03*
*1	*	-5800	* 62.57*	62.57*	62.57*
*1	*	-5862.57	* 37.43*	37.43*	37.43*
*1	*	-5900	* 100*	100*	100*
*1	*	-6000	* 100*	100*	100*
*1	*	-6100	* 100*	100*	100*
*1	*	-6200	* 100*	100*	100*
*1	*	-6300	* 100*	100*	100*
*1	*	-6400	* 100*	100*	100*
*1	*	-6500	* 100*	100*	100*
*1	*	-6600	* 100*	100*	100*
*1	*	-6700	* 100*	100*	100*
*1	*	-6800	* 100*	100*	100*
*1	*	-6900	* 100*	100*	100*
*1	*	-7000	* 100*	100*	100*
*1	*	-7100	* 100*	100*	100*
*1	*	-7200	* 100*	100*	100*
*1	*	-7300	* 100*	100*	100*
*1	*	-7400	* 28.56*	28.56*	28.56*
*1	*	-7428.56	* 74.44*	74.44*	74.44*
*1	*	-7500	* 100*	100*	100*
*1	*	-7600	* 100*	100*	100*
*1	*	-7700	* 100*	100*	100*
*1	*	-7800	* 93.64*	93.64*	93.64*
*1	*	-7893.64	* 6.34*	6.34*	6.34*
*1	*	-7900	* 100*	100*	100*
*1	*	-8000	* 100*	100*	100*
*1	*	-8100	* 100*	100*	100*
*1	*	-8200	* 100*	100*	100*
*1	*	-8300	* 100*	100*	100*
*1	*	-8400	* 100*	100*	100*
*1	*	-8500	* 100*	100*	100*
*1	*	-8600	* 100*	100*	100*
*1	*	-8700	* 74.45*	74.45*	74.45*
*1	*	-8774.45	* 25.55*	25.55*	25.55*
*1	*	-8800	* 100*	100*	100*
*1	*	-8900	* 100*	100*	100*
*1	*	-9000	* 89.63*	89.63*	89.63*
*1	*	-9089.63	* 10.37*	10.37*	10.37*
*1	*	-9100	* 92.13*	92.13*	92.13*
*1	*	-9192.13	* *	*	*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: EQUESTRIAN DB OF

Reach	River Sta.	Contr.	Expan.
*1	-1500	.1*	.3*
*1	-1525	.1*	.3*
*1	-1550	.1*	.3*
*1	-1575	.1*	.3*

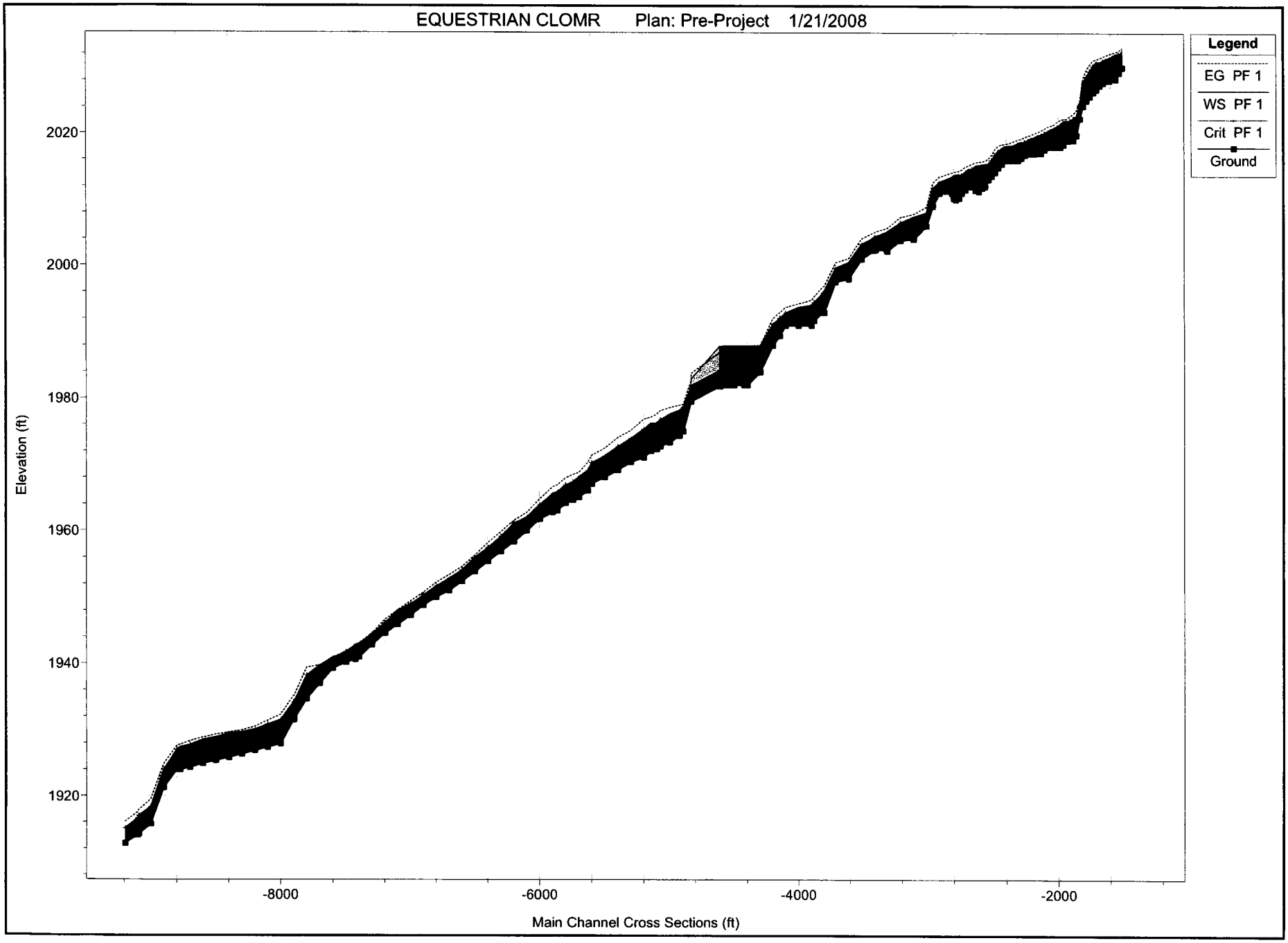
```
*1              *    -1600   *        .1*       .3*
*1              *    -1625   *        .1*       .3*
*1              *    -1650   *        .1*       .3*
*1              *    -1675   *        .1*       .3*
*1              *    -1700   *        .1*       .3*
*1              *    -1725   *        .1*       .3*
*1              *    -1750   *        .1*       .3*
*1              *    -1775   *        .1*       .3*
*1              *    -1800   *        .1*       .3*
*1              *    -1825   *        .1*       .3*
*1              *    -1850   *        .1*       .3*
*1              *    -1875   *        .1*       .3*
*1              *    -1900   *        .1*       .3*
*1              *    -1925   *        .1*       .3*
*1              *    -1950   *        .1*       .3*
*1              *    -1975   *        .1*       .3*
*1              *    -2000   *        .1*       .3*
*1              *    -2025   *        .1*       .3*
*1              *    -2050   *        .1*       .3*
*1              *    -2075   *        .1*       .3*
*1              *    -2100   *        .1*       .3*
*1              *    -2125   *        .1*       .3*
*1              *    -2150   *        .1*       .3*
*1              *    -2175   *        .1*       .3*
*1              *    -2200   *        .1*       .3*
*1              *    -2225   *        .1*       .3*
*1              *    -2250   *        .1*       .3*
*1              *    -2275   *        .1*       .3*
*1              *    -2300   *        .1*       .3*
*1              *    -2325   *        .1*       .3*
*1              *    -2350   *        .1*       .3*
*1              *    -2375   *        .1*       .3*
*1              *    -2400   *        .1*       .3*
*1              *    -2425   *        .1*       .3*
*1              *    -2450   *        .1*       .3*
*1              *    -2475   *        .1*       .3*
*1              *    -2500   *        .1*       .3*
*1              *    -2525   *        .1*       .3*
*1              *    -2550   *        .1*       .3*
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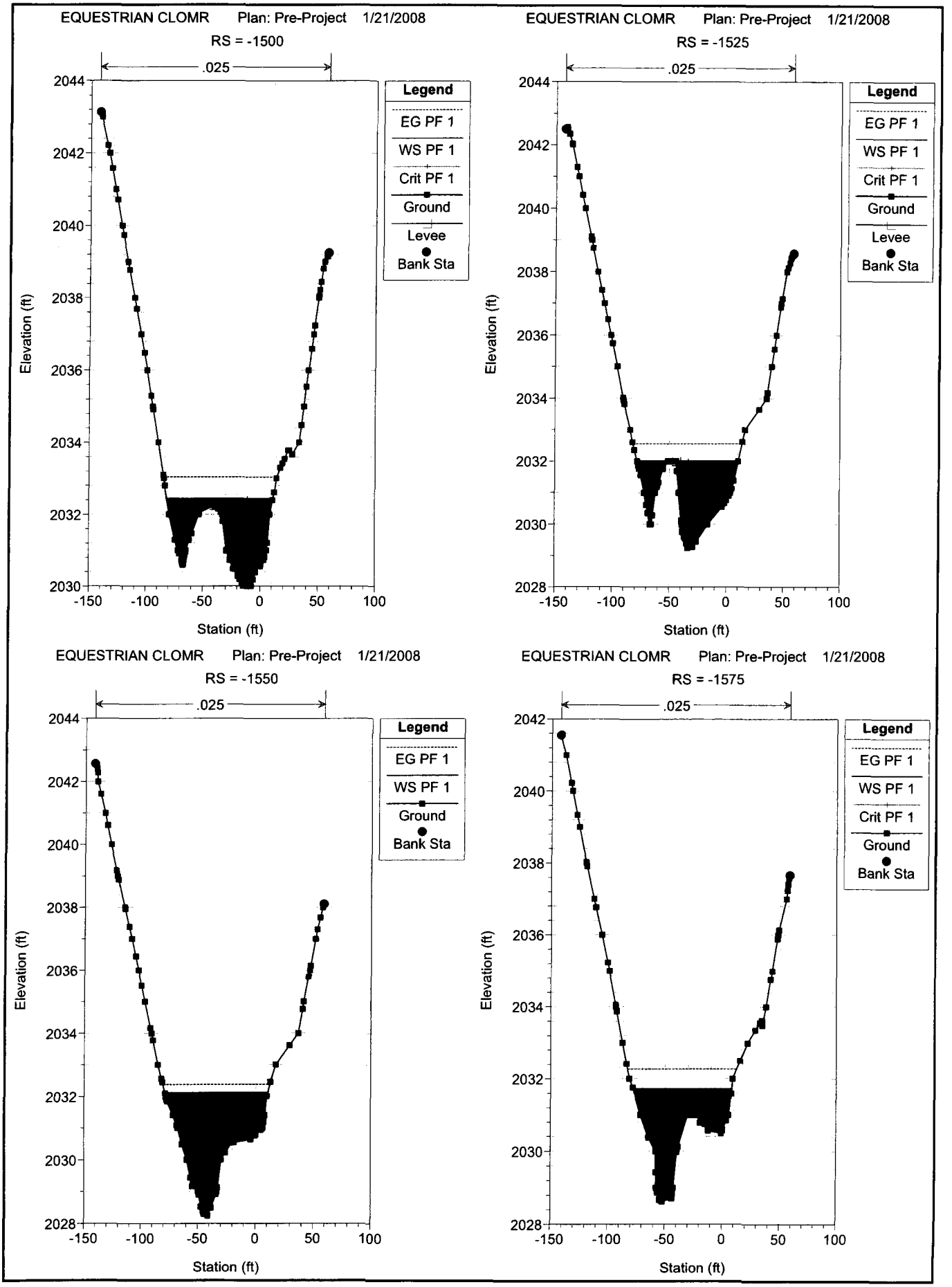
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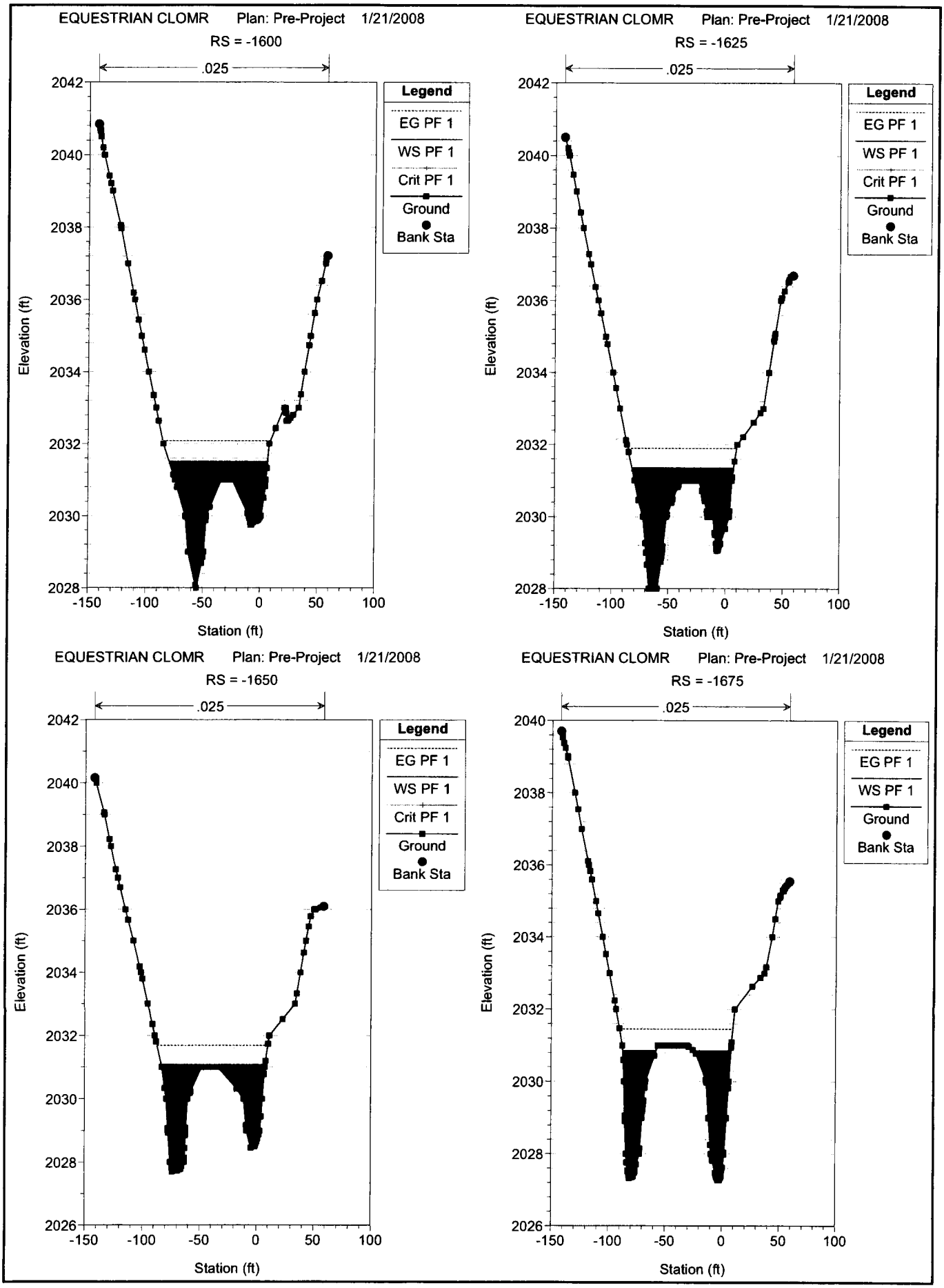
Profile Output Table - CHECKRAS

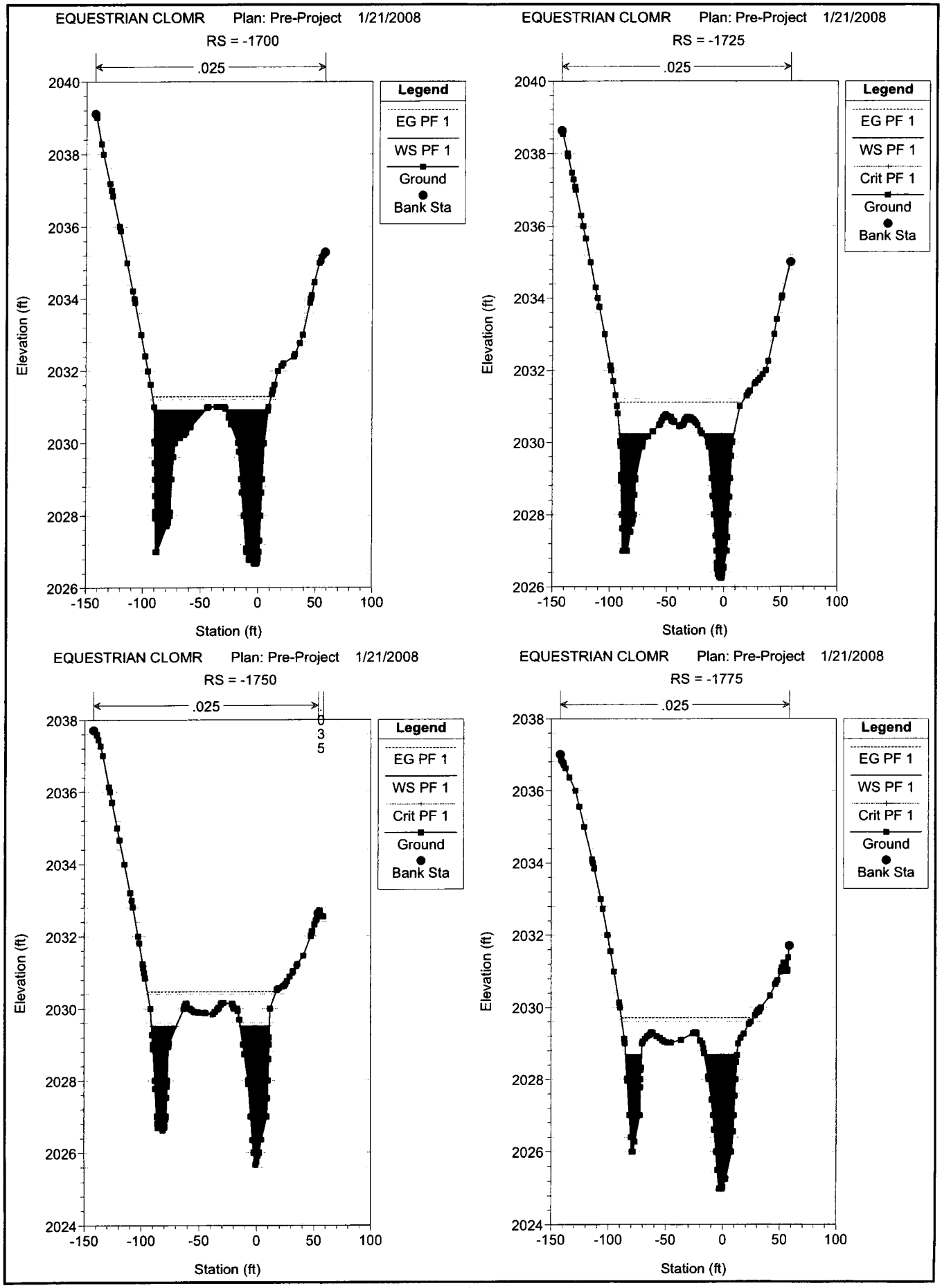
Reach	River Sta	Profile	Froude # Chl	Top Wdth Act (ft)	Conv. Total (cfs)	Prof Delta WS (ft)	Left Sta Eff (ft)	Enc Sta L (ft)	Center Station (ft)	Enc Sta R (ft)	Rght Sta Eff (ft)	Min Ch El (ft)	Left Stagn (ft)	Right Stagn (ft)
1	-1500	PF 1	0.99	92.38	7669.3		-81.39		-41.96		10.98	2030.00		
1	-1525	PF 1	0.90	88.62	8520.3		-78.36		-41.96		10.26	2029.24		
1	-1550	PF 1	0.53	89.53	15544.1		-79.16		-41.96		10.37	2028.25		
1	-1575	PF 1	0.88	86.24	8754.5		-78.27		-41.98		7.97	2028.63		
1	-1600	PF 1	0.94	86.24	8217.6		-79.52		-42.01		6.71	2028.00		
1	-1625	PF 1	0.90	89.18	8509.3		-82.07		-42.04		7.12	2028.00		
1	-1650	PF 1	1.00	90.74	7535.1		-83.38		-42.06		7.36	2027.69		
1	-1675	PF 1	0.81	62.11	9808.2		-87.25		-42.03		7.74	2027.27		
1	-1700	PF 1	0.64	80.87	12148.4		-90.04		-41.99		8.61	2026.68		
1	-1725	PF 1	1.01	54.77	7671.5		-91.11		-42.00		8.76	2026.25		
1	-1750	PF 1	1.00	46.57	7841.1		-90.84		-44.36		11.18	2025.67		
1	-1775	PF 1	1.01	42.52	7917.5		-85.12		-42.04		12.27	2025.00		
1	-1800	PF 1	1.02	93.81	7407.7		-85.22		-42.03		12.29	2024.22		
1	-1825	PF 1	1.01	85.39	7550.7		-77.54		-42.02		7.85	2022.29		
1	-1850	PF 1	1.02	52.77	7914.6		-78.55		-42.96		-21.07	2019.79		
1	-1875	PF 1	1.02	78.60	7491.0		-77.66		-42.02		0.94	2019.00		
1	-1900	PF 1	1.00	69.32	7742.9		-75.80		-42.05		-6.48	2019.00		
1	-1925	PF 1	0.54	85.12	15147.2		-76.91		-42.09		8.21	2018.98		
1	-1950	PF 1	0.52	84.75	15652.6		-76.33		-42.11		8.42	2018.37		
1	-1975	PF 1	1.02	77.29	7558.1		-70.07		-42.11		7.22	2018.00		
1	-2000	PF 1	1.02	76.75	7562.9		-69.82		-42.11		6.93	2018.00		
1	-2025	PF 1	0.79	77.83	10009.7		-71.02		-42.09		6.81	2018.00		
1	-2050	PF 1	0.85	79.16	9289.9		-73.89		-42.07		5.27	2018.48		
1	-2075	PF 1	1.00	77.43	7758.9		-73.21		-42.05		4.22	2018.00		
1	-2100	PF 1	1.00	74.94	7758.1		-75.05		-42.03		-0.11	2017.57		
1	-2125	PF 1	1.00	76.90	7720.4		-73.52		-42.01		3.39	2017.06		
1	-2150	PF 1	0.77	83.07	10333.1		-75.97		-42.01		7.10	2017.15		
1	-2175	PF 1	1.00	84.55	7669.7		-76.13		-42.02		8.42	2017.00		
1	-2200	PF 1	0.77	86.93	10260.1		-77.88		-42.02		9.05	2017.00		
1	-2225	PF 1	0.94	85.70	8197.7		-77.47		-42.05		8.23	2017.00		
1	-2250	PF 1	1.01	81.02	7618.0		-75.84		-42.06		5.18	2016.82		
1	-2275	PF 1	0.77	84.78	10305.5		-77.45		-42.01		7.33	2016.34		
1	-2300	PF 1	0.79	86.73	9983.5		-78.91		-41.97		7.82	2016.00		
1	-2325	PF 1	1.00	84.76	7679.8		-77.48		-41.94		7.28	2016.00		
1	-2350	PF 1	0.81	89.00	9596.6		-79.77		-41.92		9.23	2016.00		
1	-2375	PF 1	0.69	89.50	11438.3		-78.50		-41.91		11.00	2016.00		
1	-2400	PF 1	0.59	91.45	13676.4		-79.12		-43.40		12.33	2015.94		
1	-2425	PF 1	0.72	65.50	11304.9		-52.95		-44.82		12.54	2015.43		
1	-2450	PF 1	1.01	55.33	7915.8		-40.72		-4.14		14.61	2014.88		
1	-2475	PF 1	1.01	54.31	7978.8		-44.33		-11.91		9.98	2014.14		
1	-2500	PF 1	1.01	65.75	7831.2		-57.83		-33.47		7.92	2013.58		
1	-2525	PF 1	1.01	59.25	7887.5		-49.99		-42.08		9.26	2013.04		
1	-2550	PF 1	0.69	62.14	11855.1		-51.56		-11.10		10.58	2012.00		
1	-2575	PF 1	0.67	60.46	12200.1		-49.37		-41.87		11.09	2011.77		
1	-2600	PF 1	0.71	62.43	11379.5		-46.65		-45.97		15.78	2011.26		
1	-2625	PF 1	0.65	68.25	12543.1		-40.44		-7.66		27.81	2011.44		
1	-2650	PF 1	1.01	61.48	7873.2		-35.88		-6.84		25.60	2012.00		
1	-2675	PF 1	0.72	67.62	11323.3		-33.28		-10.30		34.34	2012.00		
1	-2700	PF 1	1.01	65.98	7747.5		-29.32		-3.61		36.66	2011.49		
1	-2730	PF 1	0.97	60.87	8180.0		-30.21		-9.00		30.67	2011.00		
1	-2750	PF 1	0.71	60.16	11633.2		-31.39		-15.79		28.77	2010.23		
1	-2775	PF 1	0.63	60.26	13209.9		-30.91		-41.50		29.35	2010.00		
1	-2790.28	PF 1	0.75	60.86	10927.9		-28.87		-28.95		31.99	2011.00		
1	-2791.78	PF 1	0.69	61.22	11920.5		-28.89		-66.66		32.33	2010.20		
1	-2800	PF 1	0.81	60.47	10039.5		-26.76		-3.16		33.71	2011.00		
1	-2804.37	PF 1	0.83	60.71	9829.4		-26.10		-8.95		34.61	2011.00		
1	-2900	PF 1	1.01	68.74	7807.7		-23.41		-21.65		45.33	2011.00		
1	-2950.26	PF 1	1.01	58.57	7802.7		-19.41		17.83		39.16	2009.00		
1	-3000	PF 1	1.01	54.57	7981.1		-18.66		12.05		35.90	2006.00		
1	-3100	PF 1	0.60	64.35	14047.2		-21.90		14.53		42.45	2004.00		
1	-3200	PF 1	1.01	61.02	7884.6		-17.15		17.34		43.87	2003.84		
1	-3300	PF 1	0.74	63.95	10996.5		-19.40		15.08		44.55	2002.22		
1	-3305.97	PF 1	0.74	64.14	11016.7		-20.61		14.49		43.53	2002.29		
1	-3391.11	PF 1	1.00	67.47	7859.4		-16.29		20.70		51.18	2002.47		
1	-3400	PF 1	1.01	67.55	7813.9		-14.20		22.52		53.35	2002.33		
1	-3500	PF 1	1.01	61.56	7893.9		-1.84		29.25		59.72	2001.00		
1	-3600	PF 1	0.75	60.21	10895.2		-9.55		21.48		50.65	1998.00		
1	-3700	PF 1	1.01	62.72	7832.6		-23.50		9.13		39.22	1997.61		
1	-3789.96	PF 1	0.83	50.72	9919.3		-16.68		9.70		34.04	1993.00		
1	-3800	PF 1	1.01	50.25	7961.5		-15.08		10.24		35.17	1993.00		
1	-3868.66	PF 1	1.01	54.85	7949.2		-29.33		3.58		25.52	1991.78		
1	-3900	PF 1	0.88	54.13	9302.9		-32.85		2.19		21.28	1991.00		
1	-4000	PF 1	0.72	60.75	11488.2		-33.32		-0.54		27.43	1991.00		
1	-4100	PF 1	1.01	61.67	7912.0		-31.53		3.74		30.14	1991.00		
1	-4146.01	PF 1	1.00	56.35	8021.4		-29.41		3.99		26.95	1989.45		
1	-4200	PF 1	1.00	57.29	7950.6		-27.82		6.93		29.48	1988.01		
1	-4300	PF 1	0.29	103.09	30101.2		-22.65		36.69		80.44	1983.97		
1	-4399.05	PF 1	0.15	128.84	62352.0		-15.75		43.11		113.09	1982.00		
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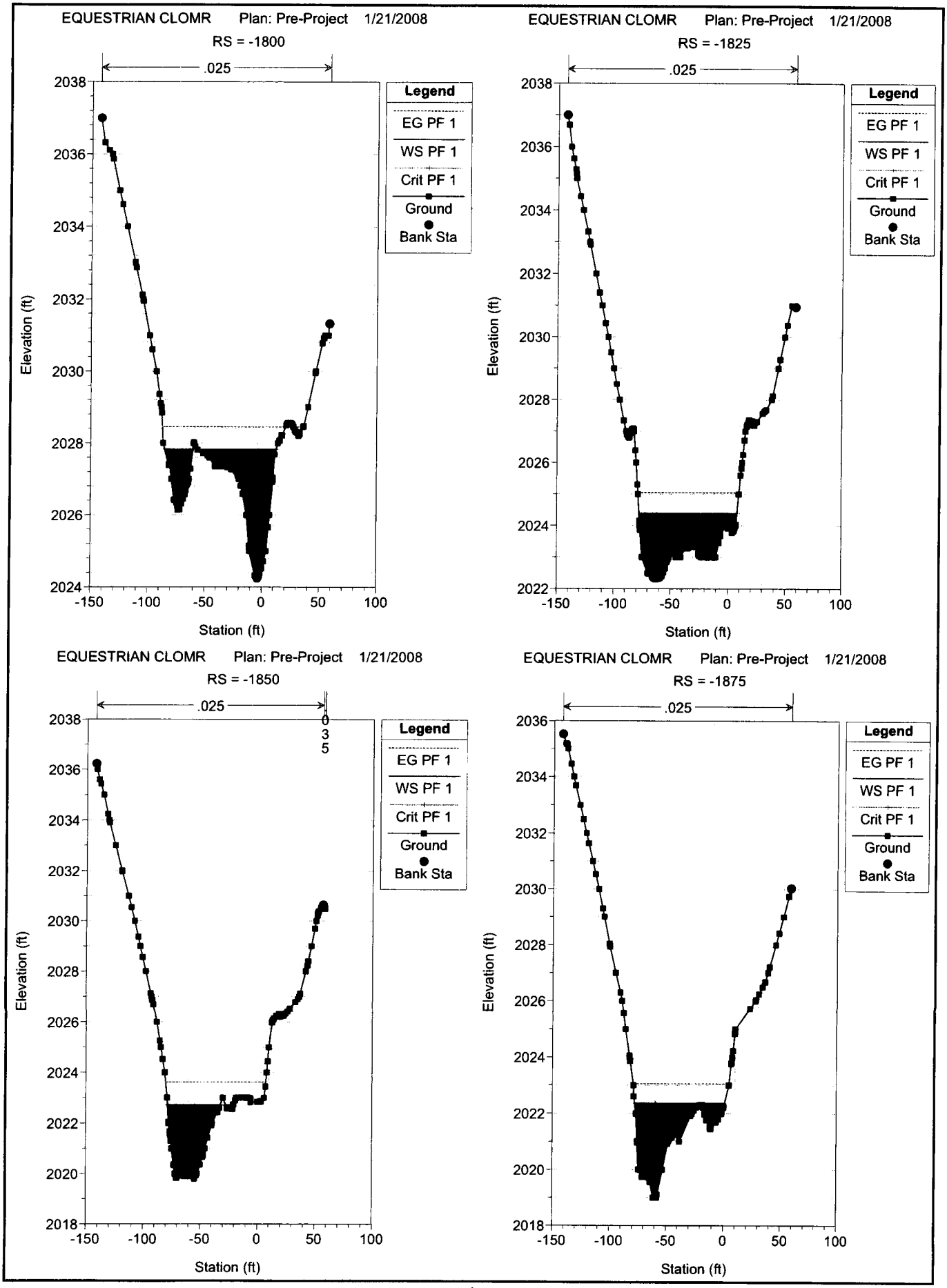
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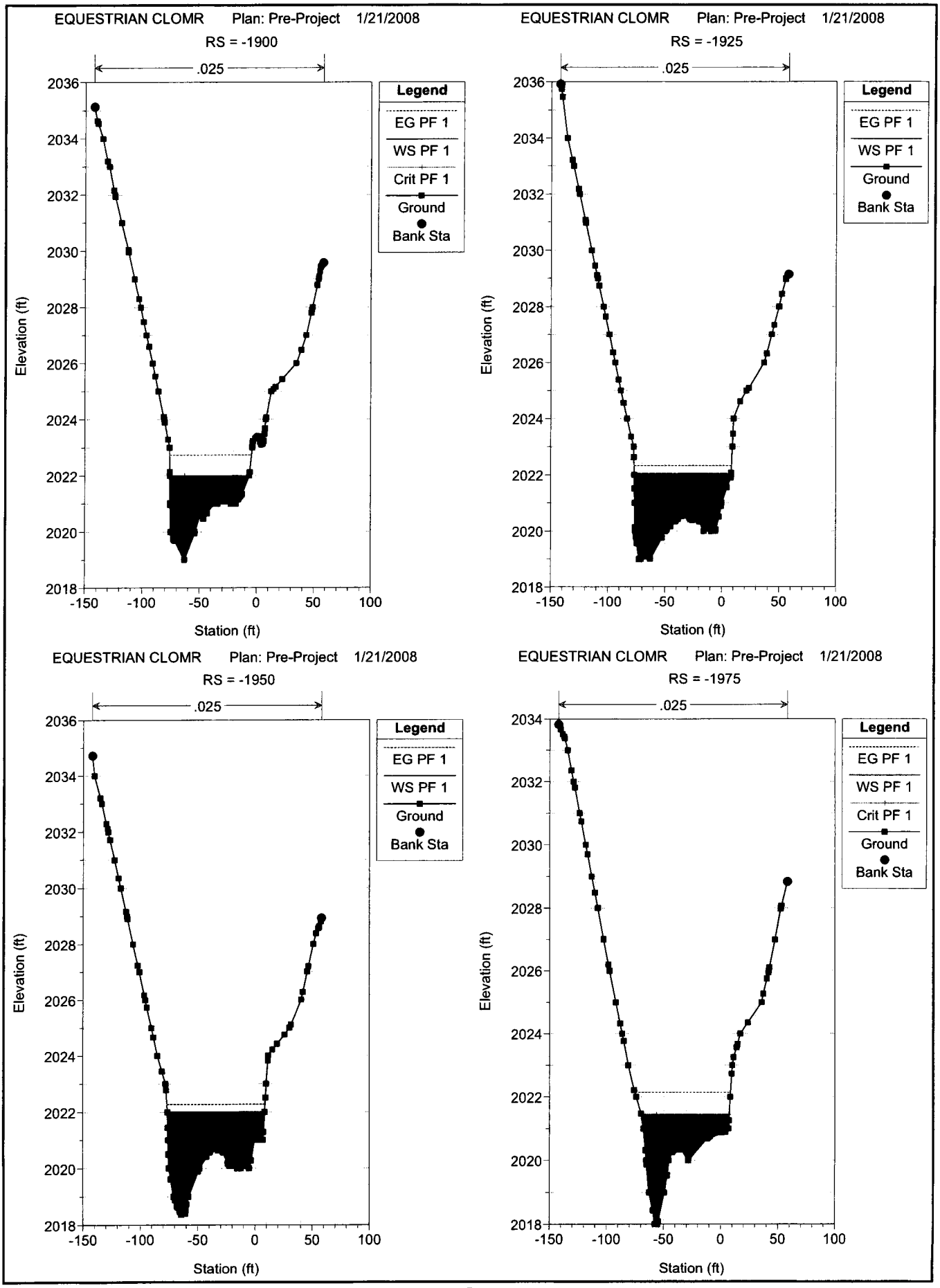

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
2020
2000
1980
1960
1940
1920
Elevation (ft)
-8000
-6000
-4000
-2000
Main Channel Cross Sections (ft)

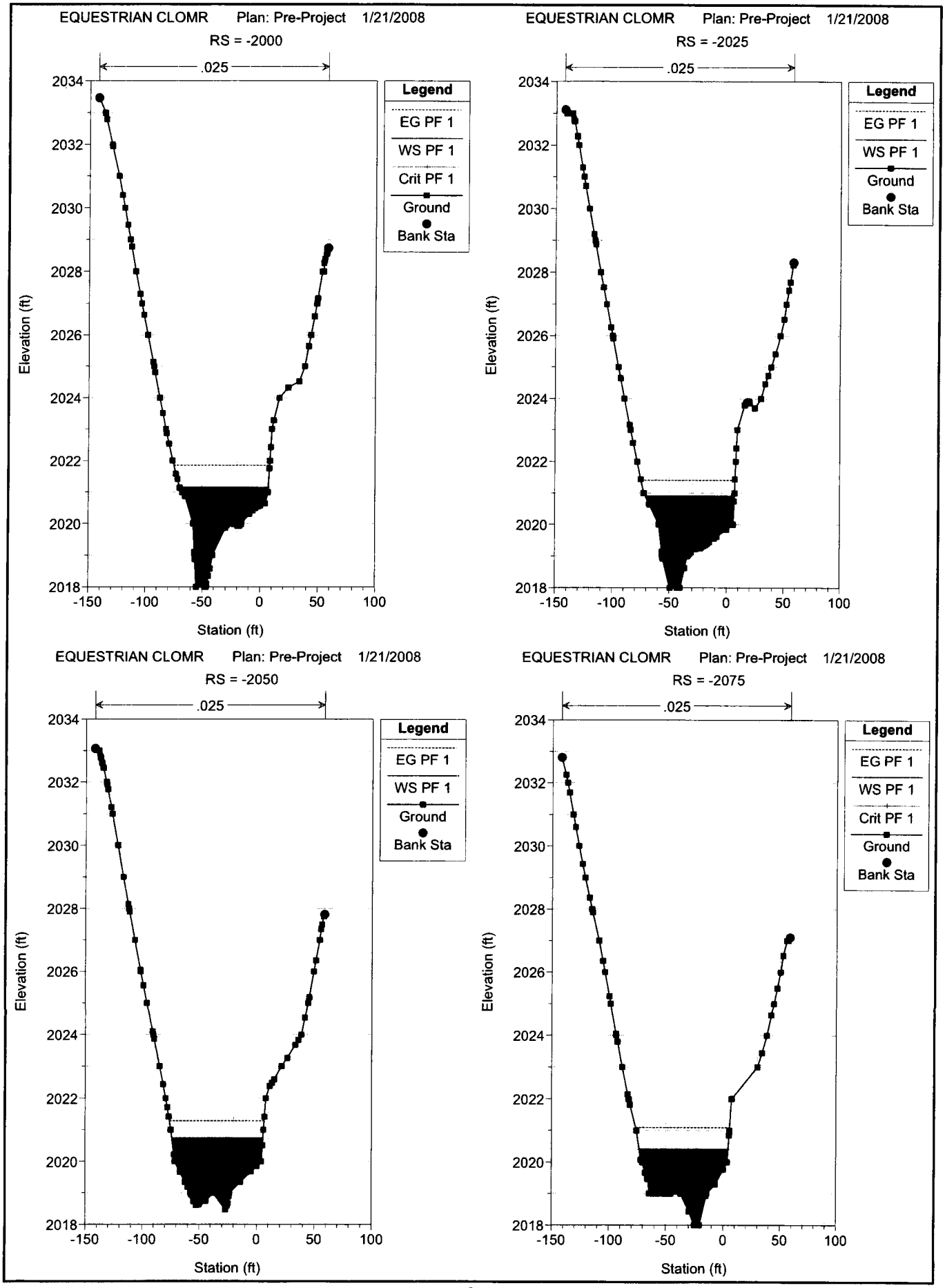

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RS = -1500
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1525
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1550
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1575
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

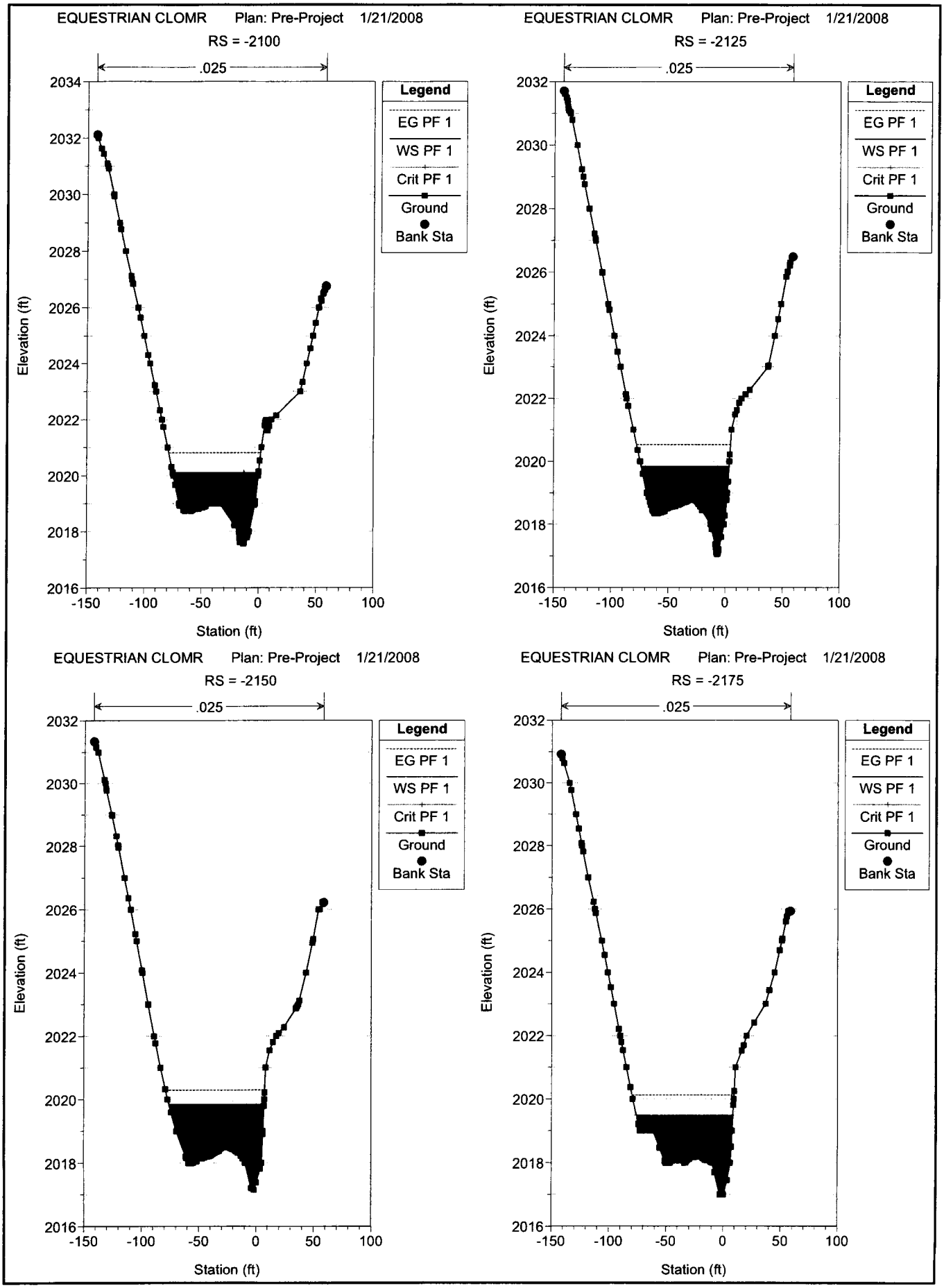

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Legend
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WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1625
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1650
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

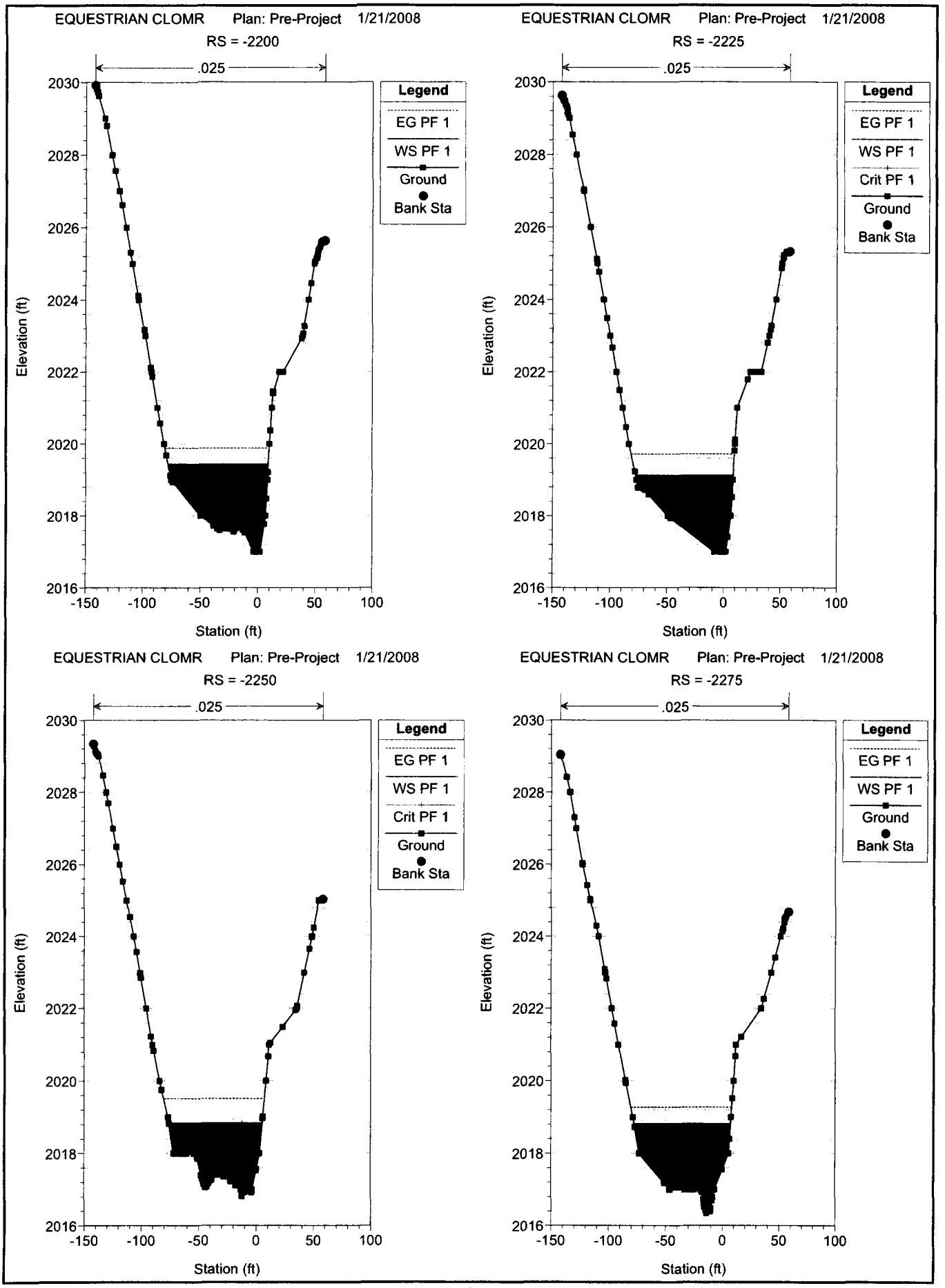

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.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1725
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1750
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1775
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

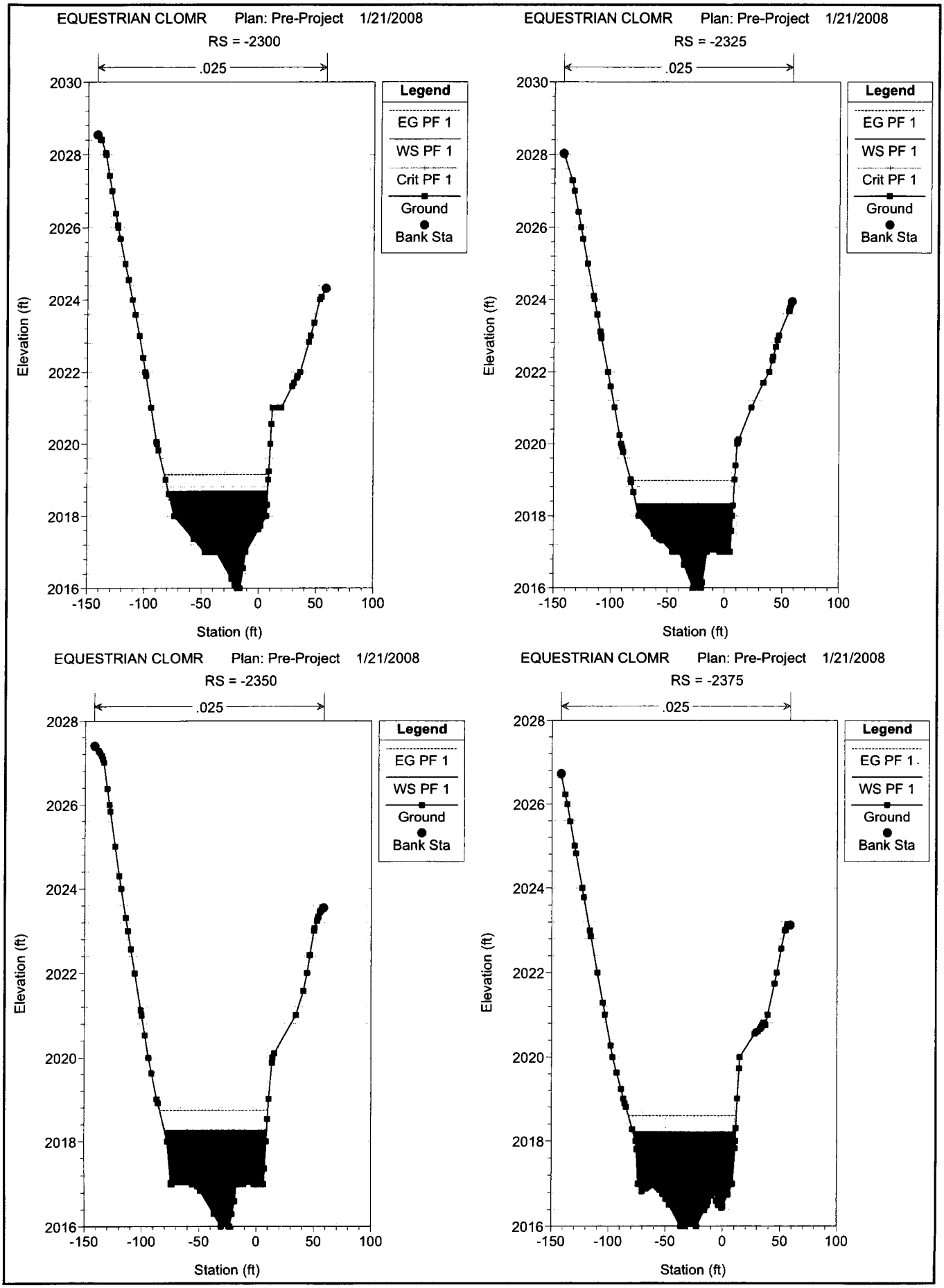

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RS = -1800
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Legend
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WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1825
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1850
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1875
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

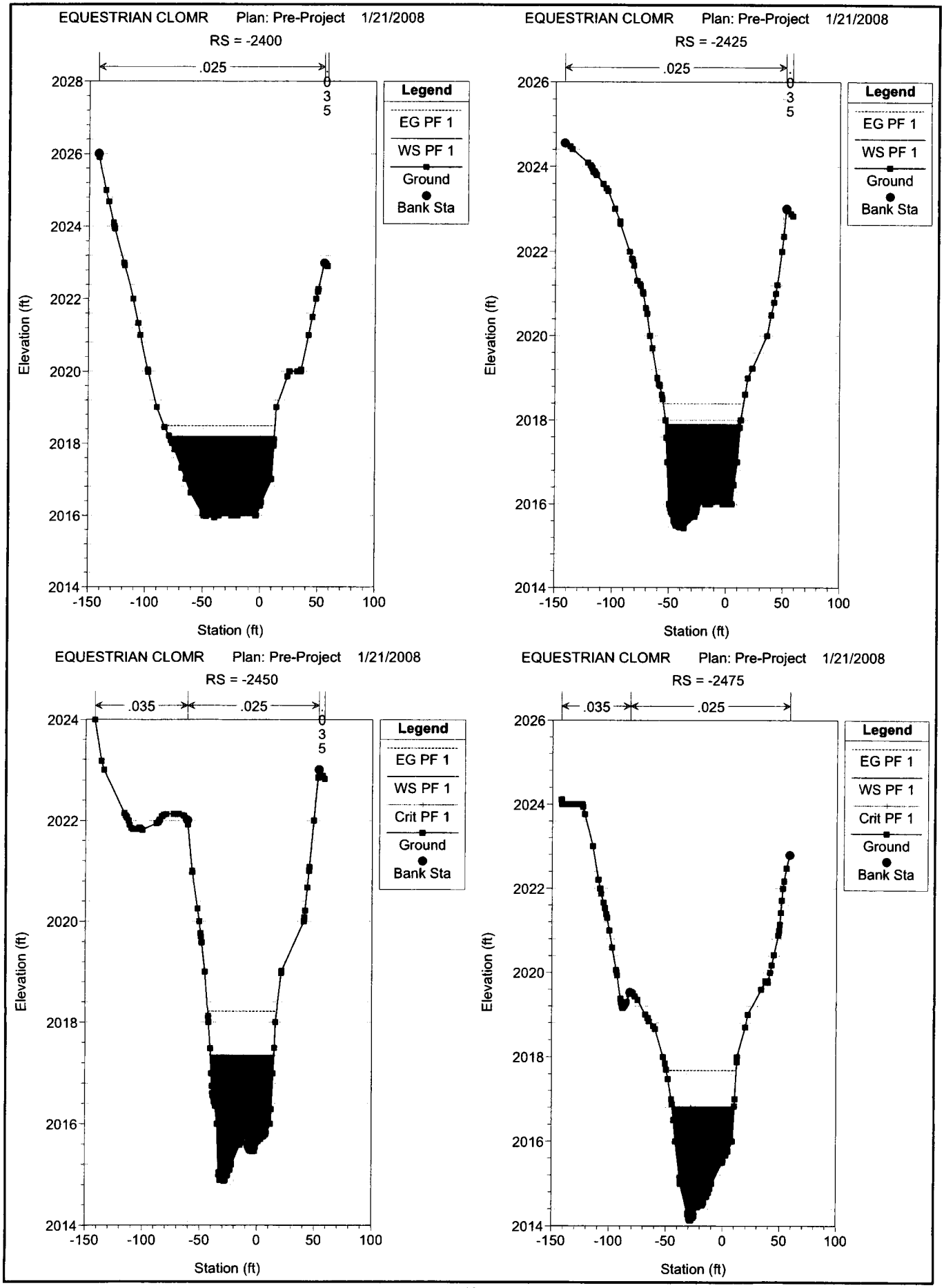

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1900
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1925
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1950
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -1975
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

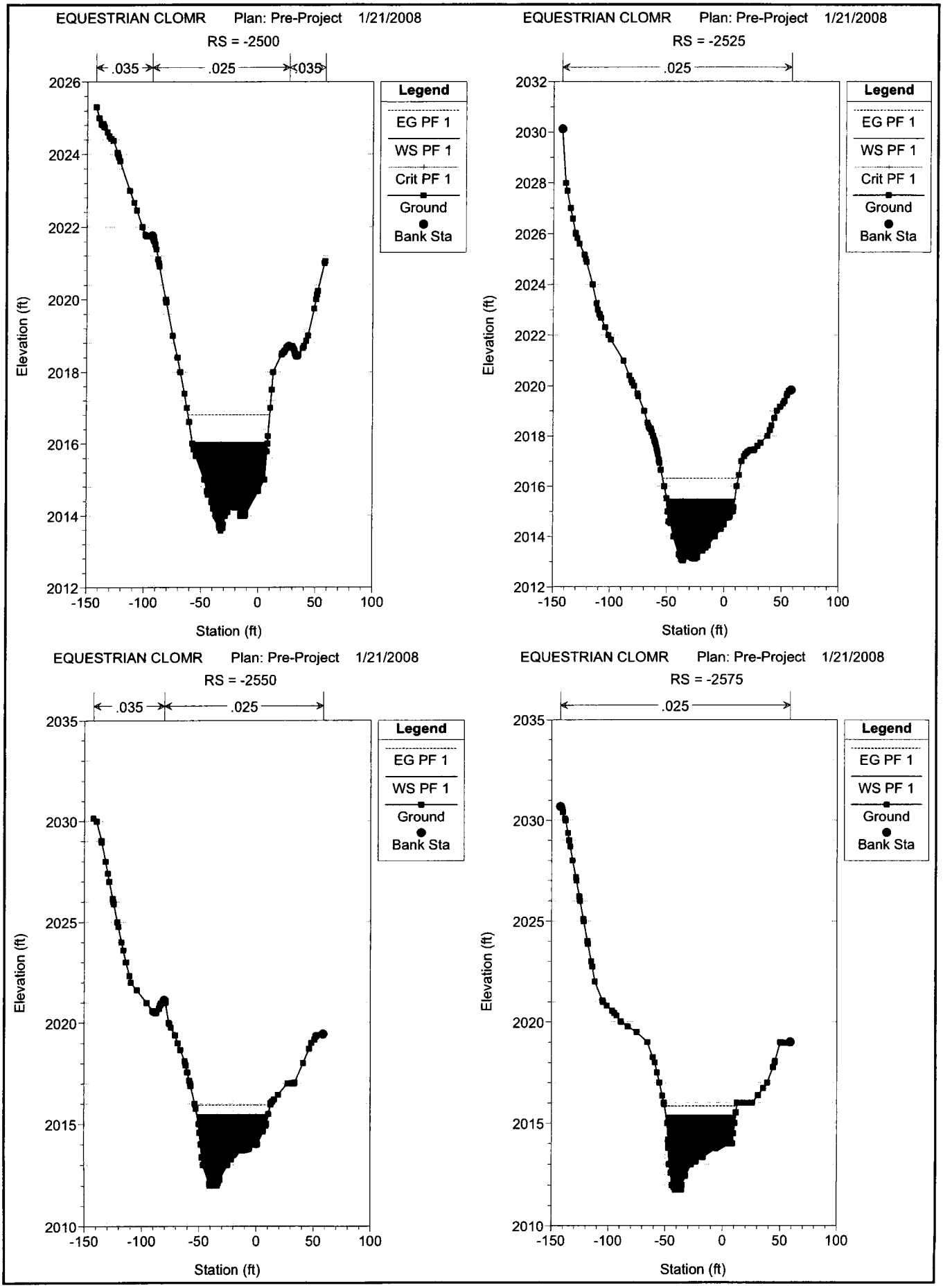

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2000
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2025
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2050
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2075
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

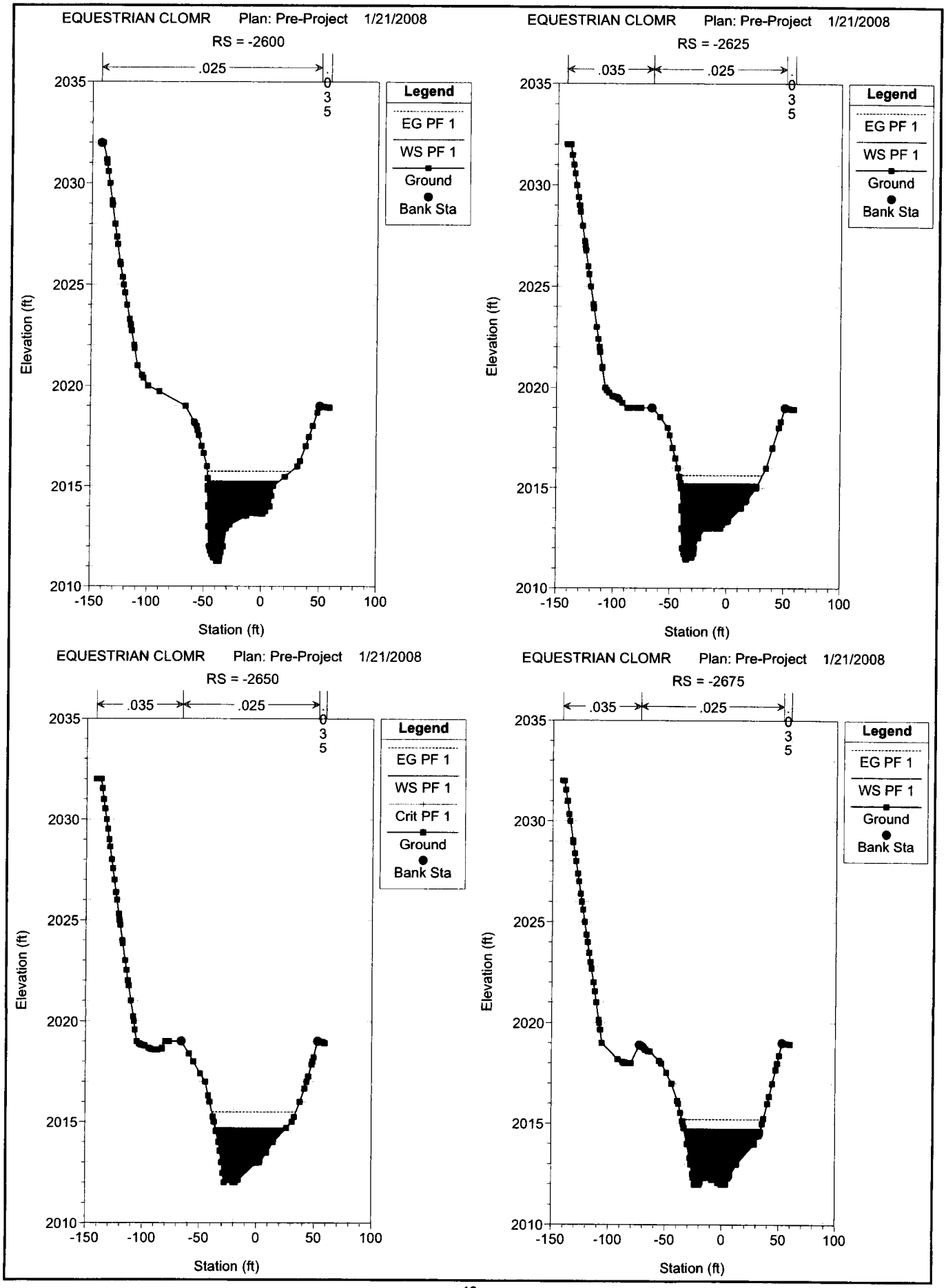

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2100
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2125
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2150
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2175
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

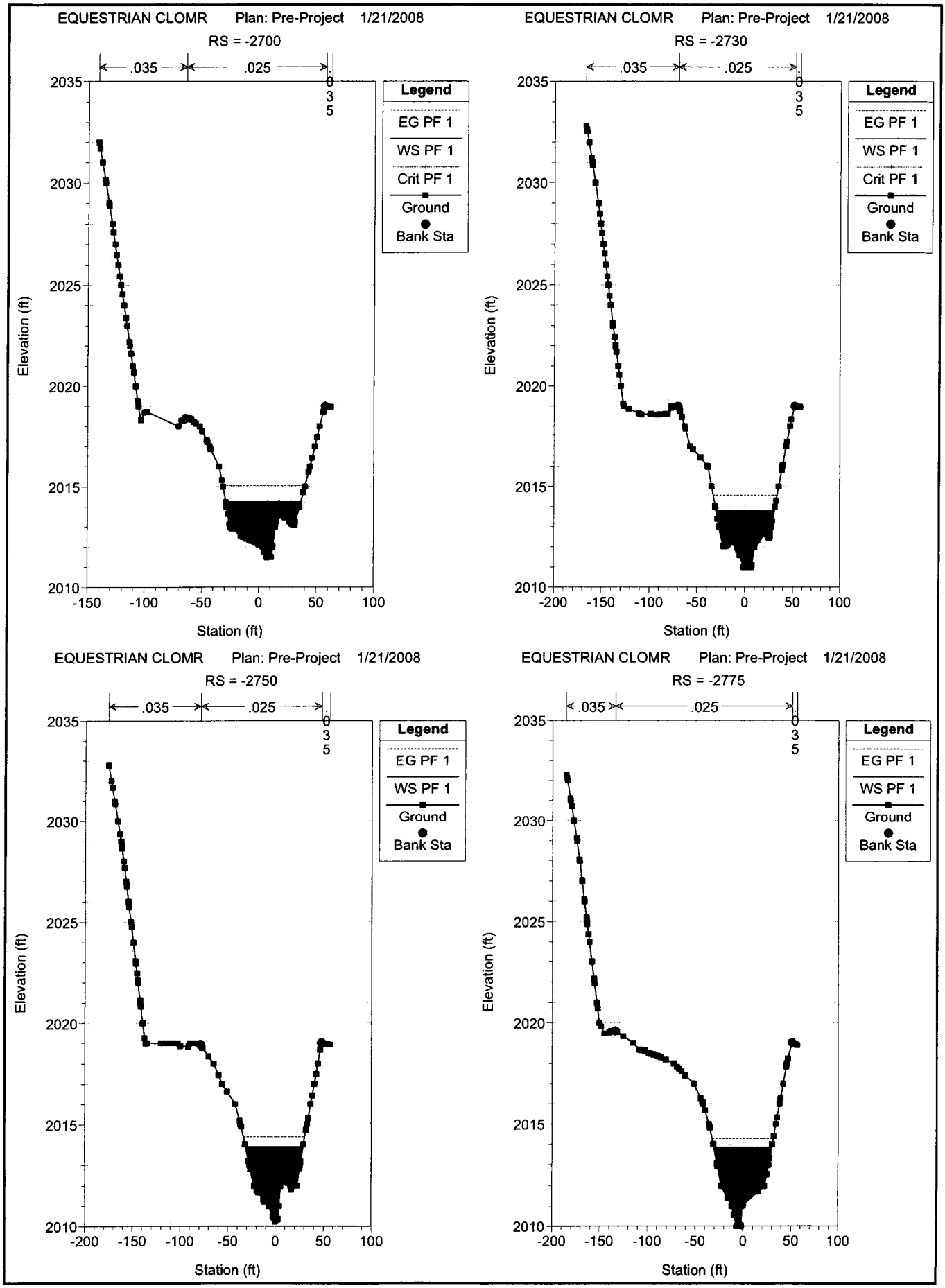

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2200
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2225
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2250
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2275
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

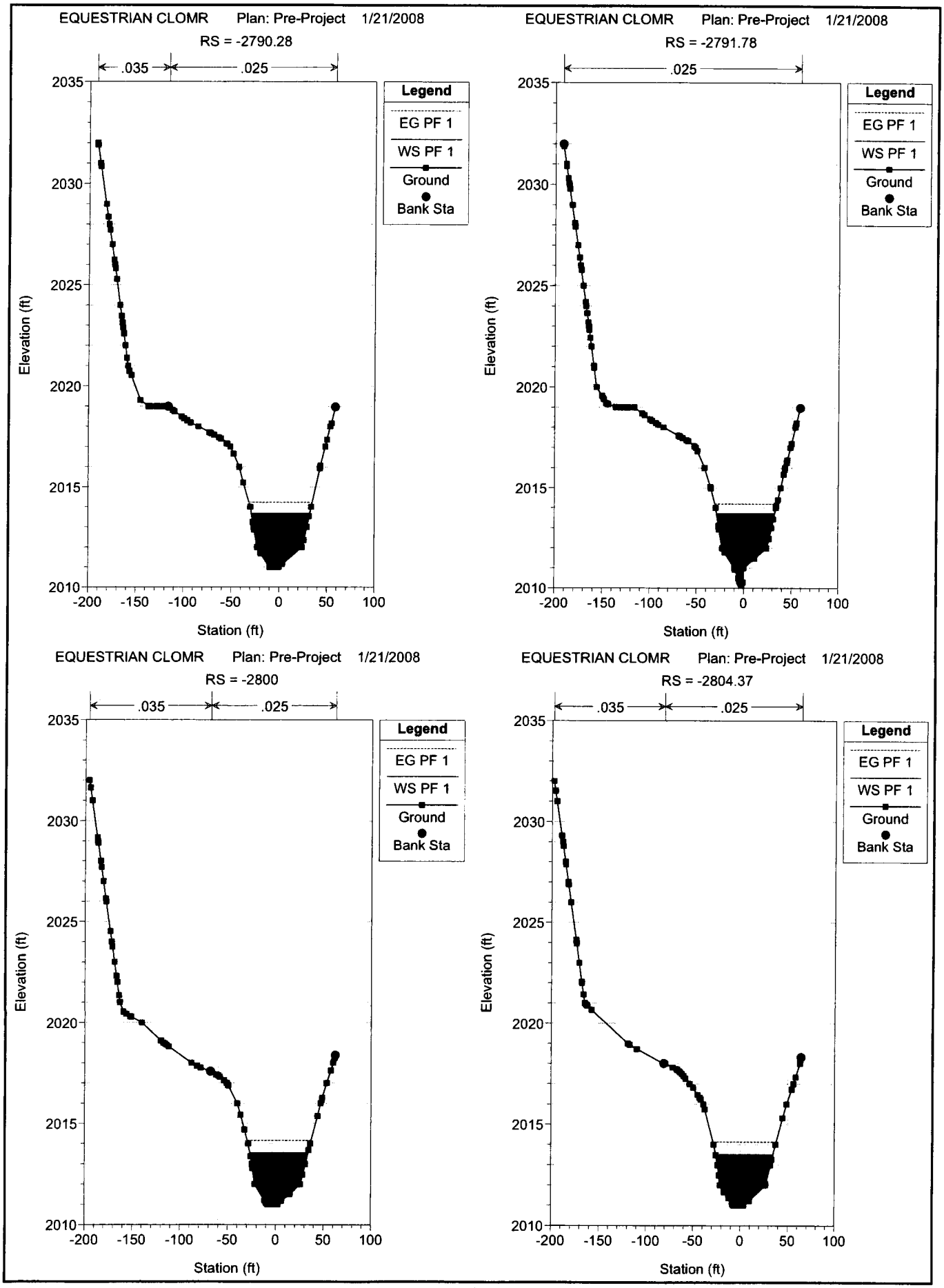

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2300
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2325
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2350
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2375
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

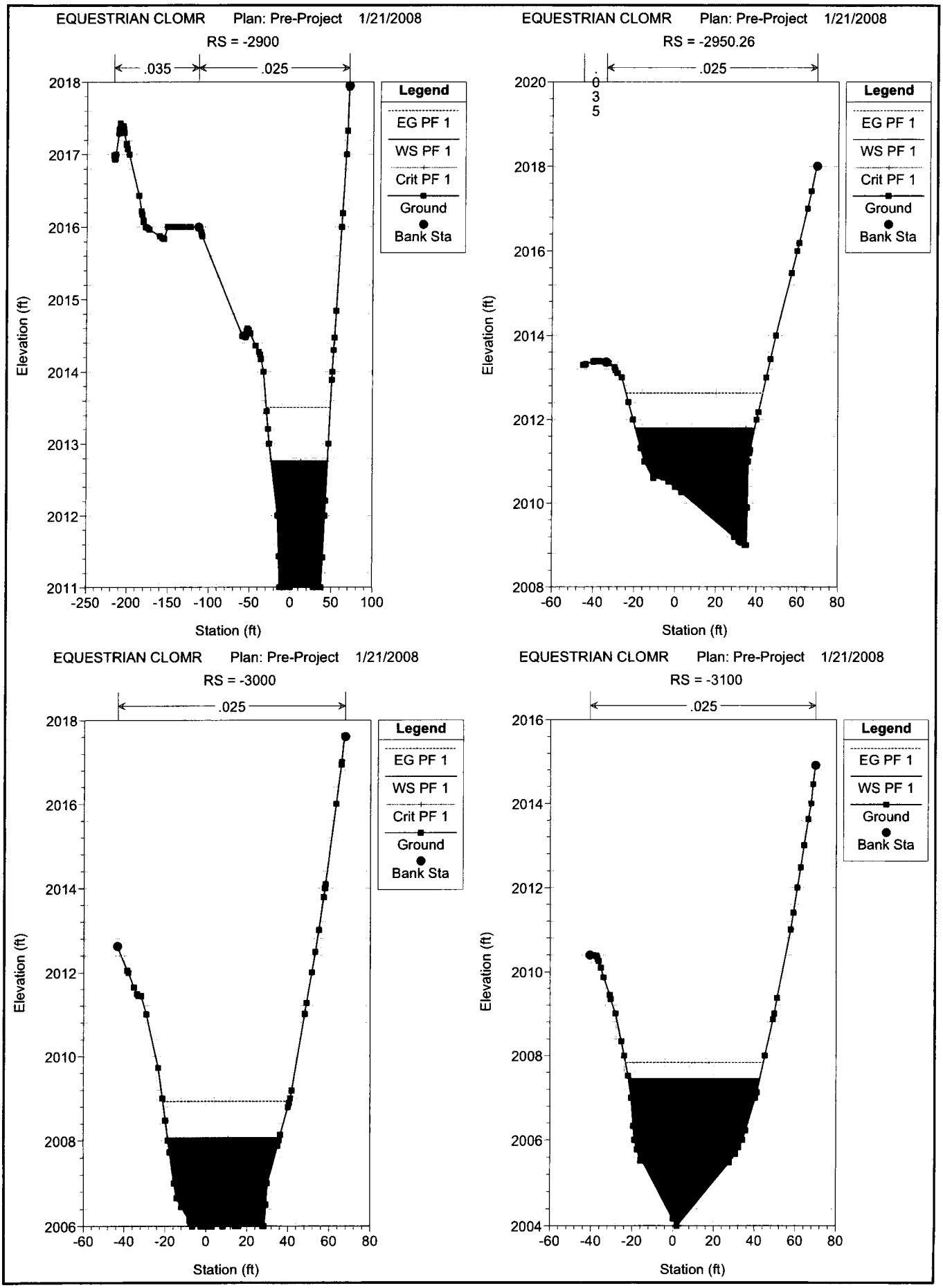

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2400
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2425
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2450
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2475
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

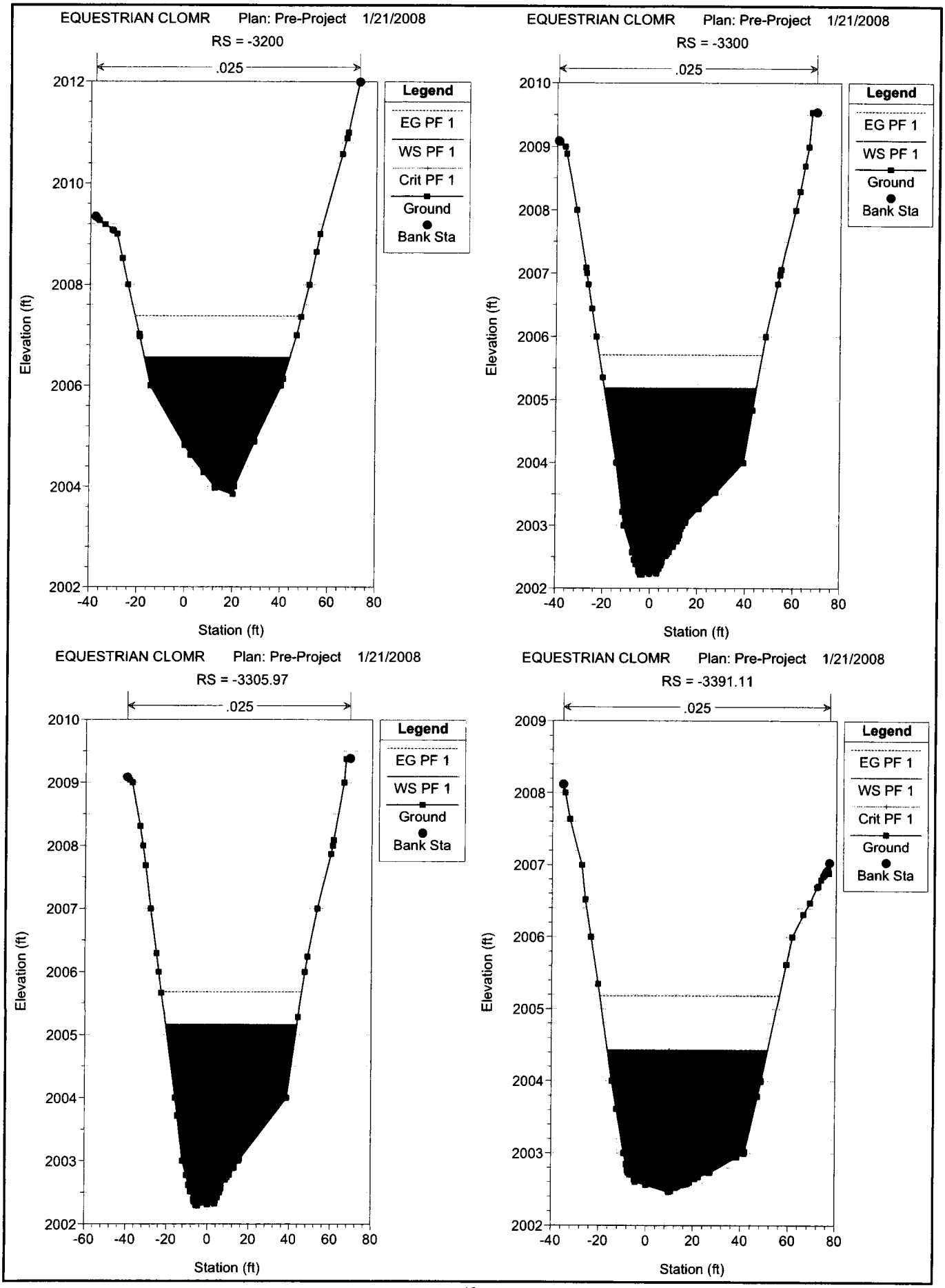

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2500
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2525
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2550
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2575
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

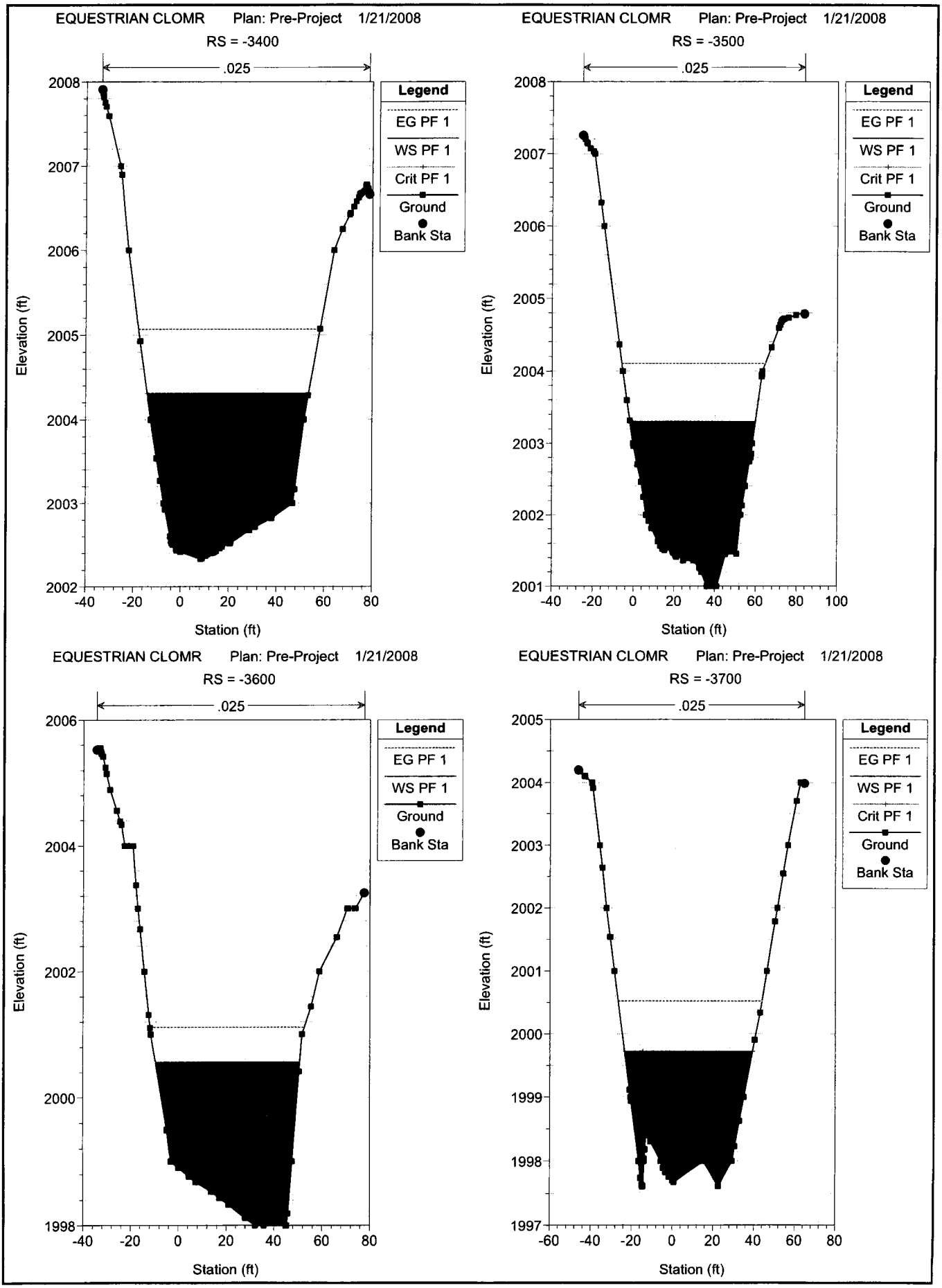

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2600
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
2035
2030
2025
2020
2015
2010
-150
-100
-50
0
50
100
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2625
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2650
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2675

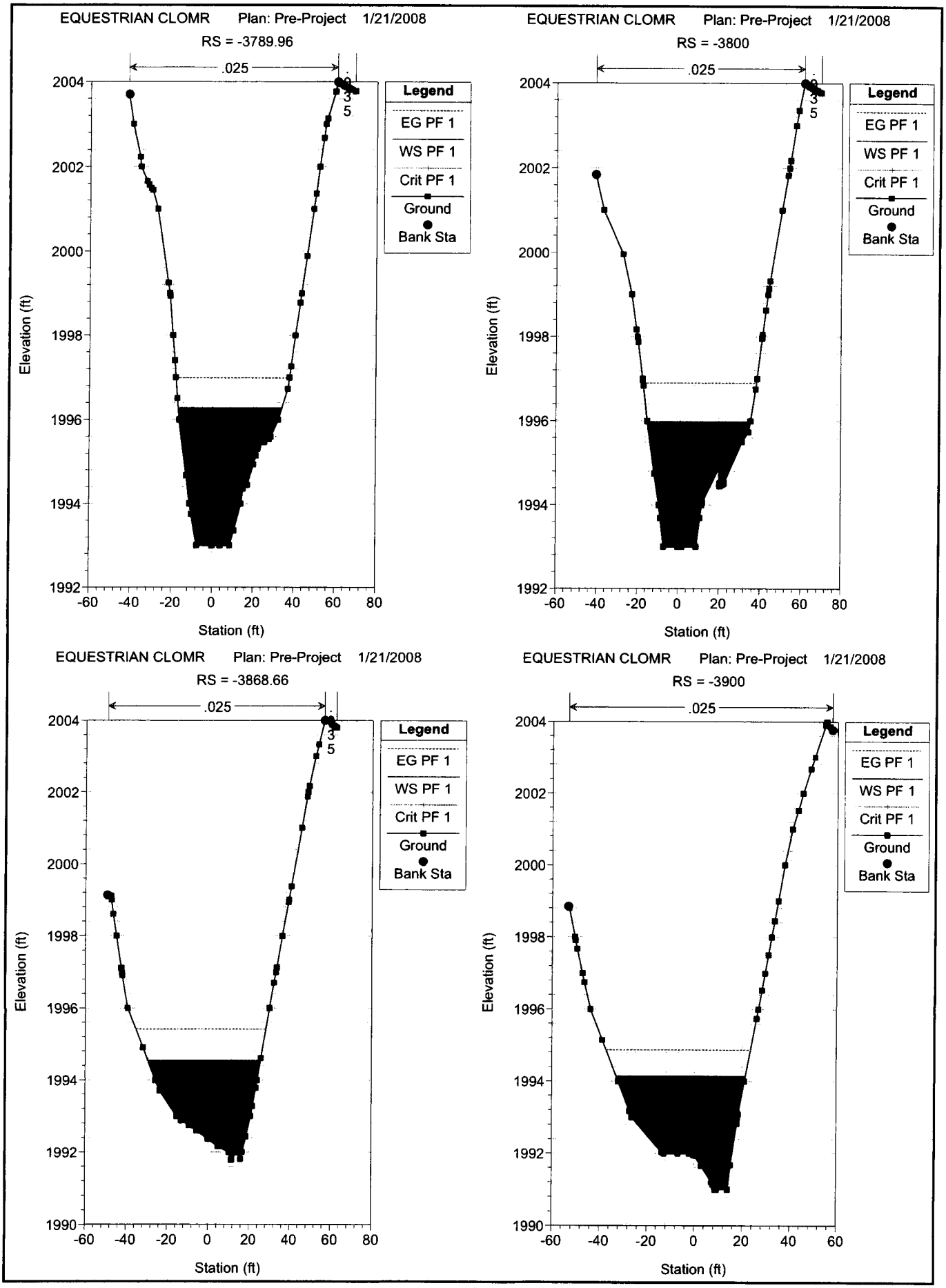

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2700
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2730
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2750
.035
.025
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2775
.035
.025
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

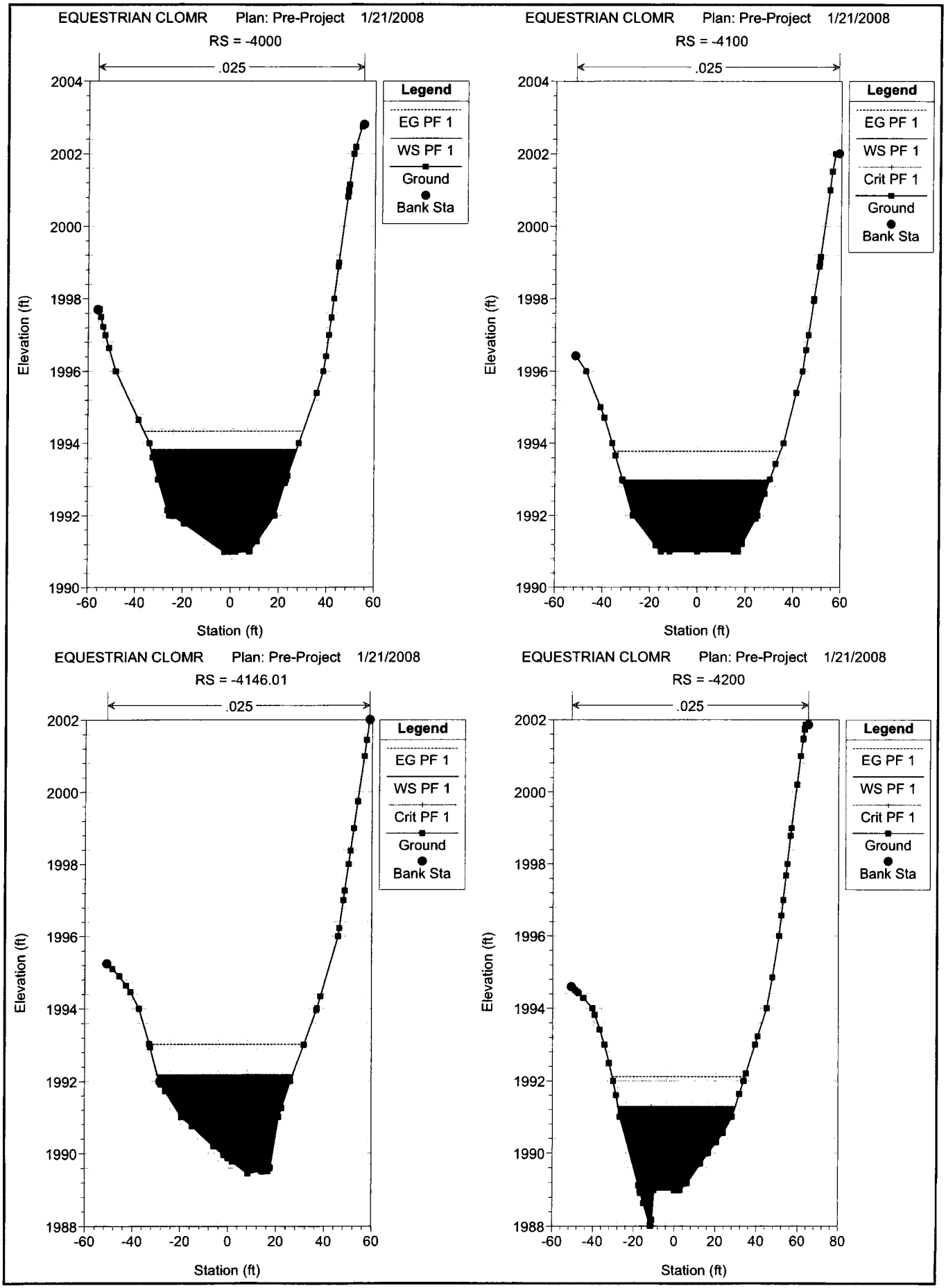

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2790.28
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2791.78
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2800
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2804.37
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

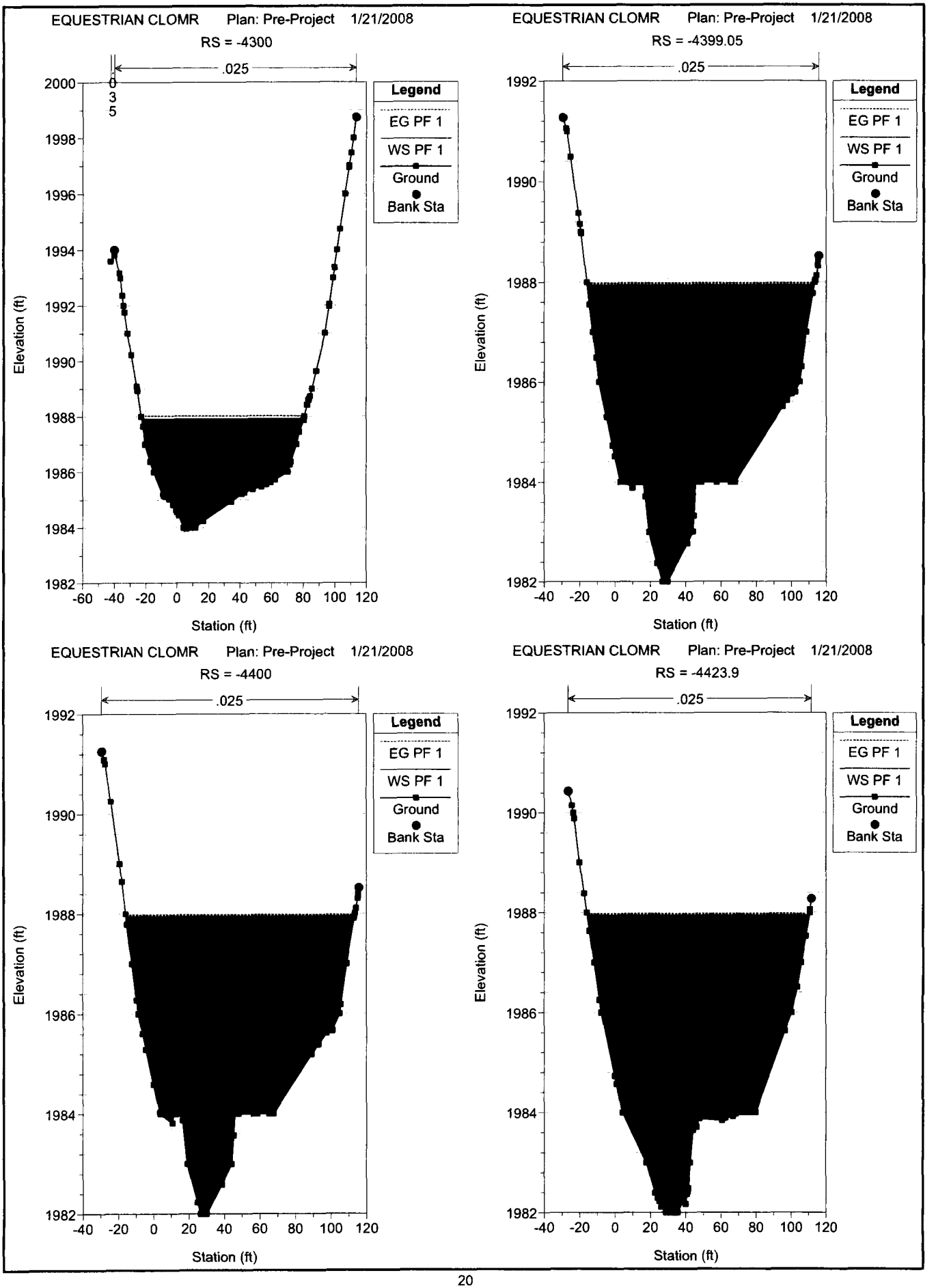

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2900
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -2950.26
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3000
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3100
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

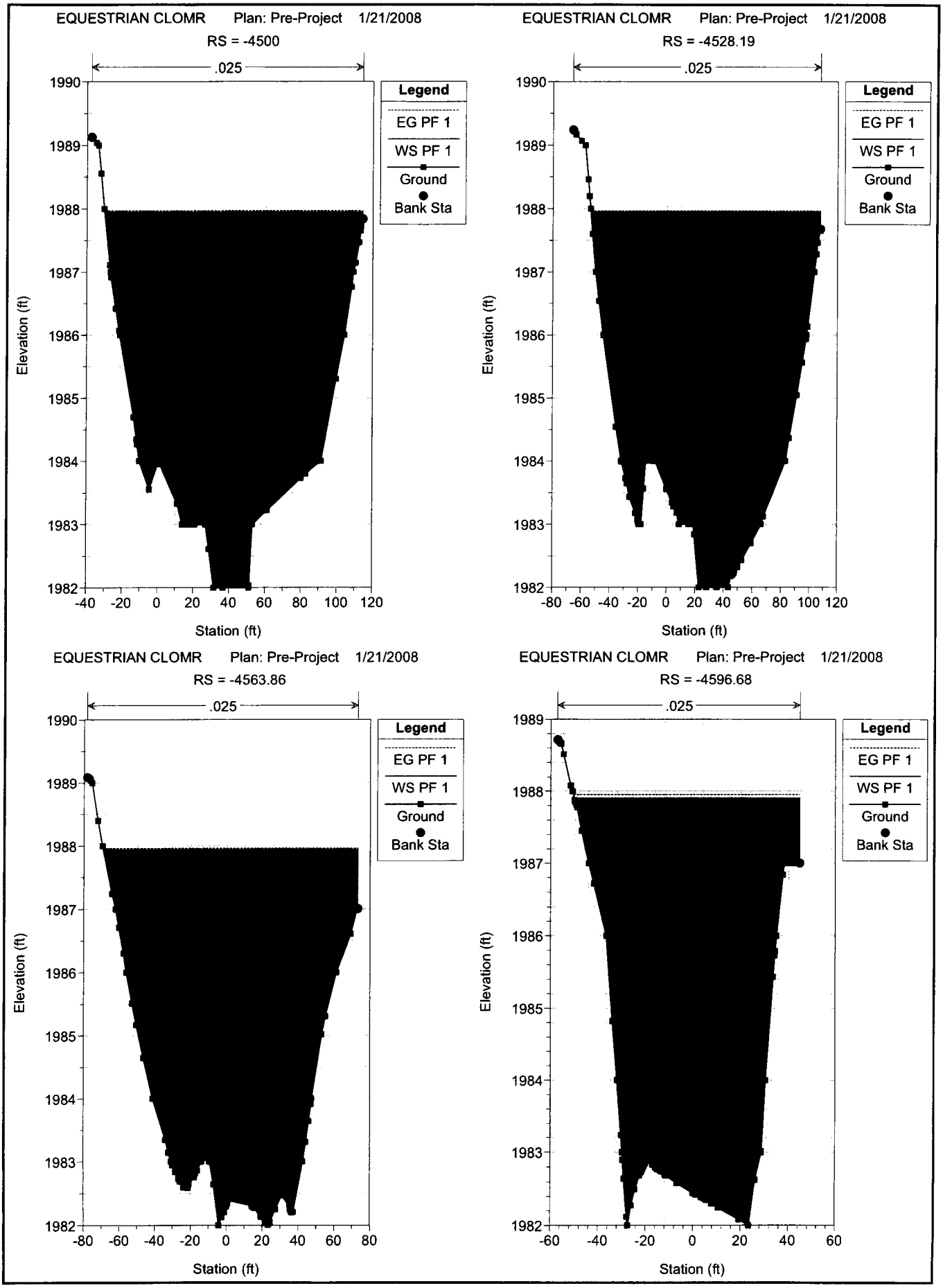

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3200
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3300
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3305.97
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3391.11
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

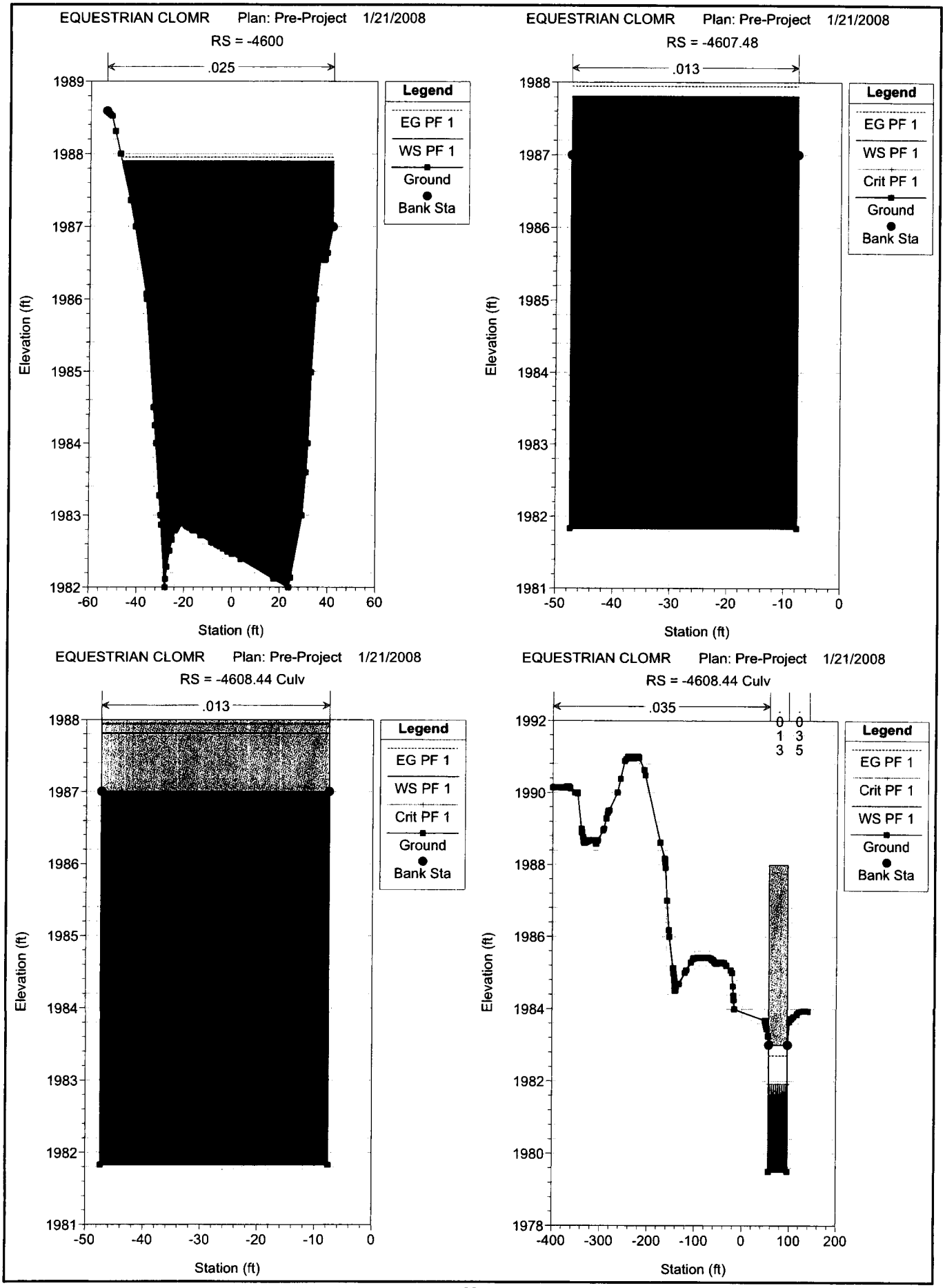

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3400
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3500
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3600
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3700
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

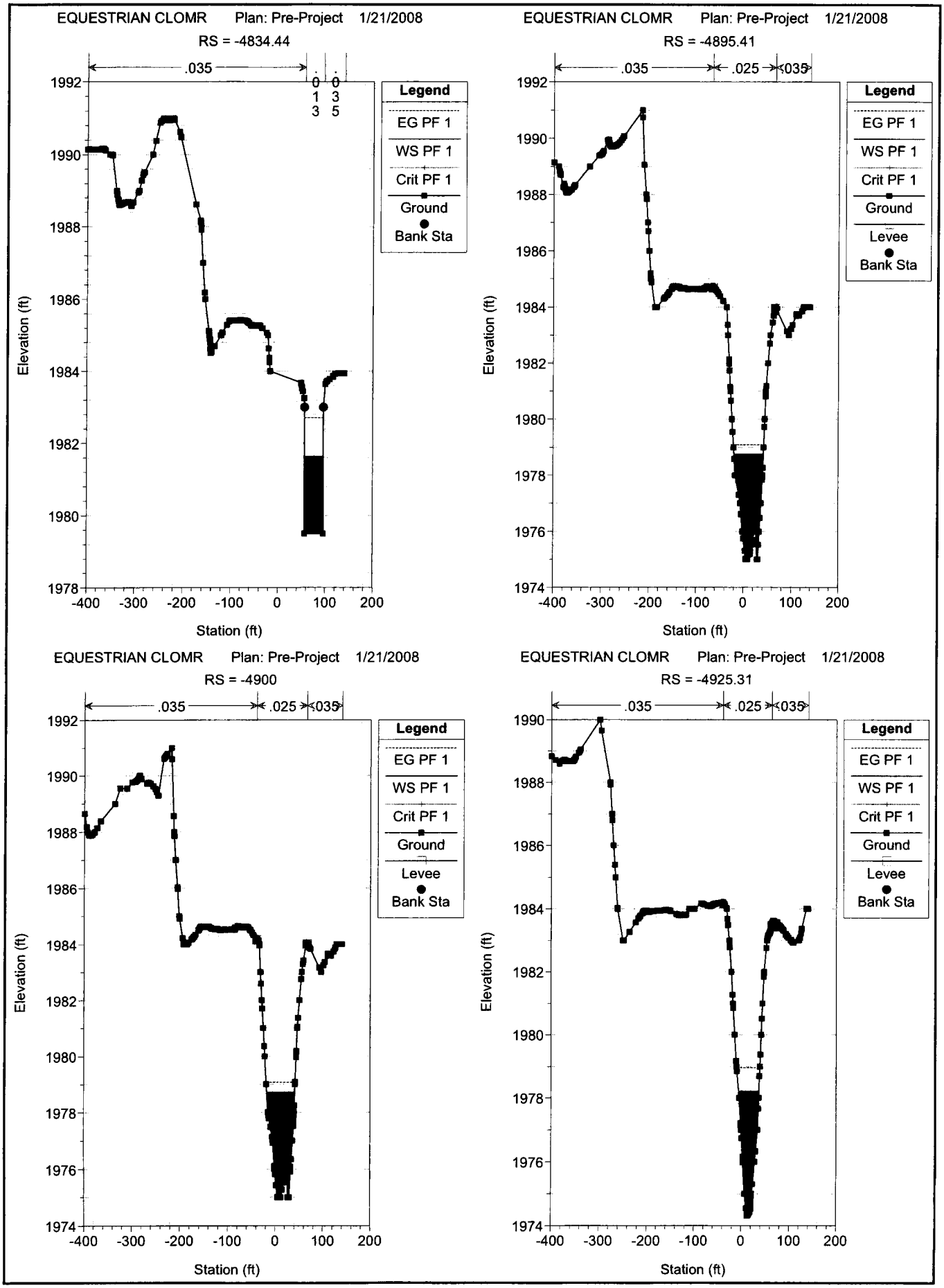

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3789.96
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3800
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3868.66
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -3900
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

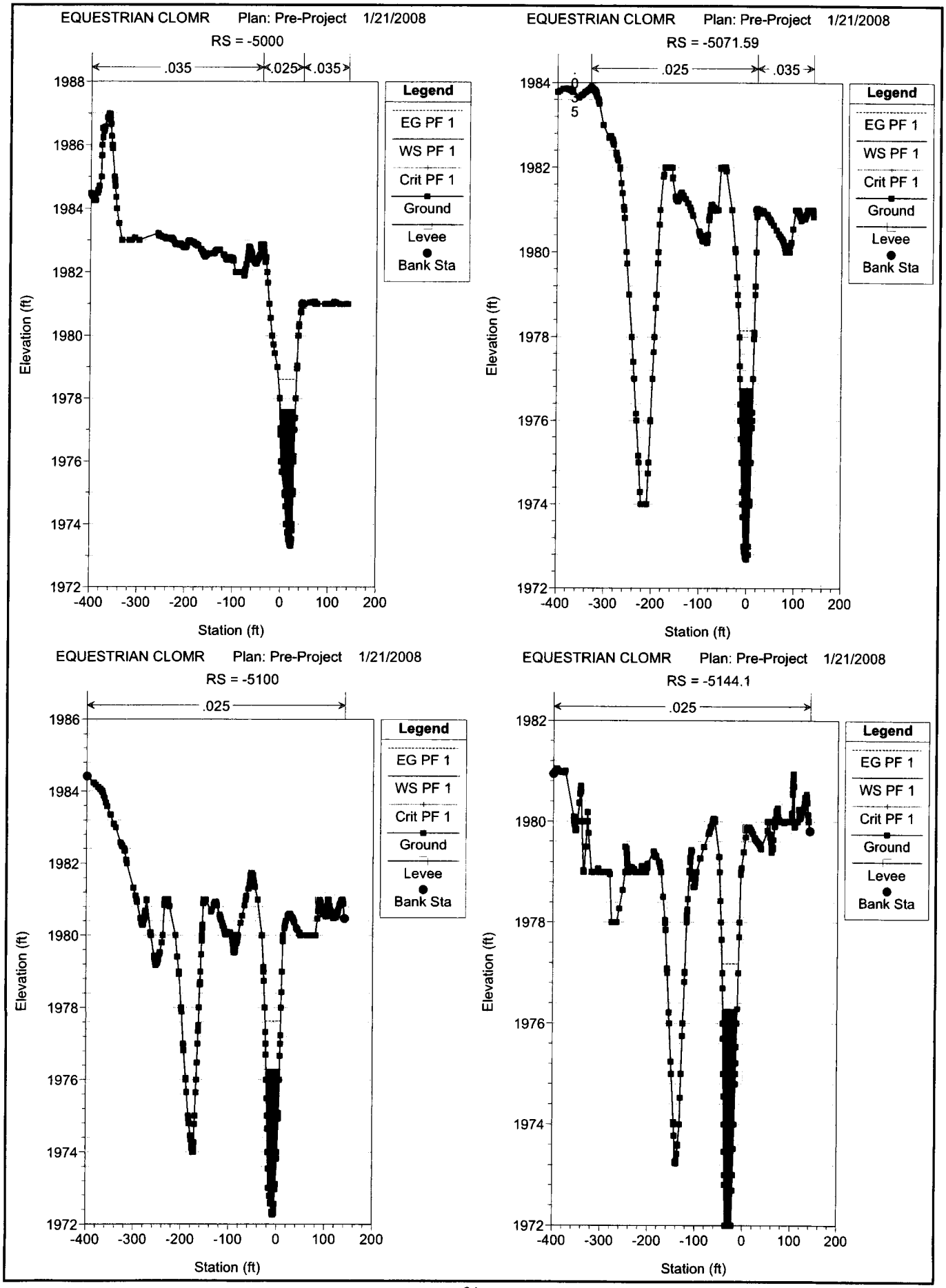

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4000
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4100
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4146.01
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4200
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

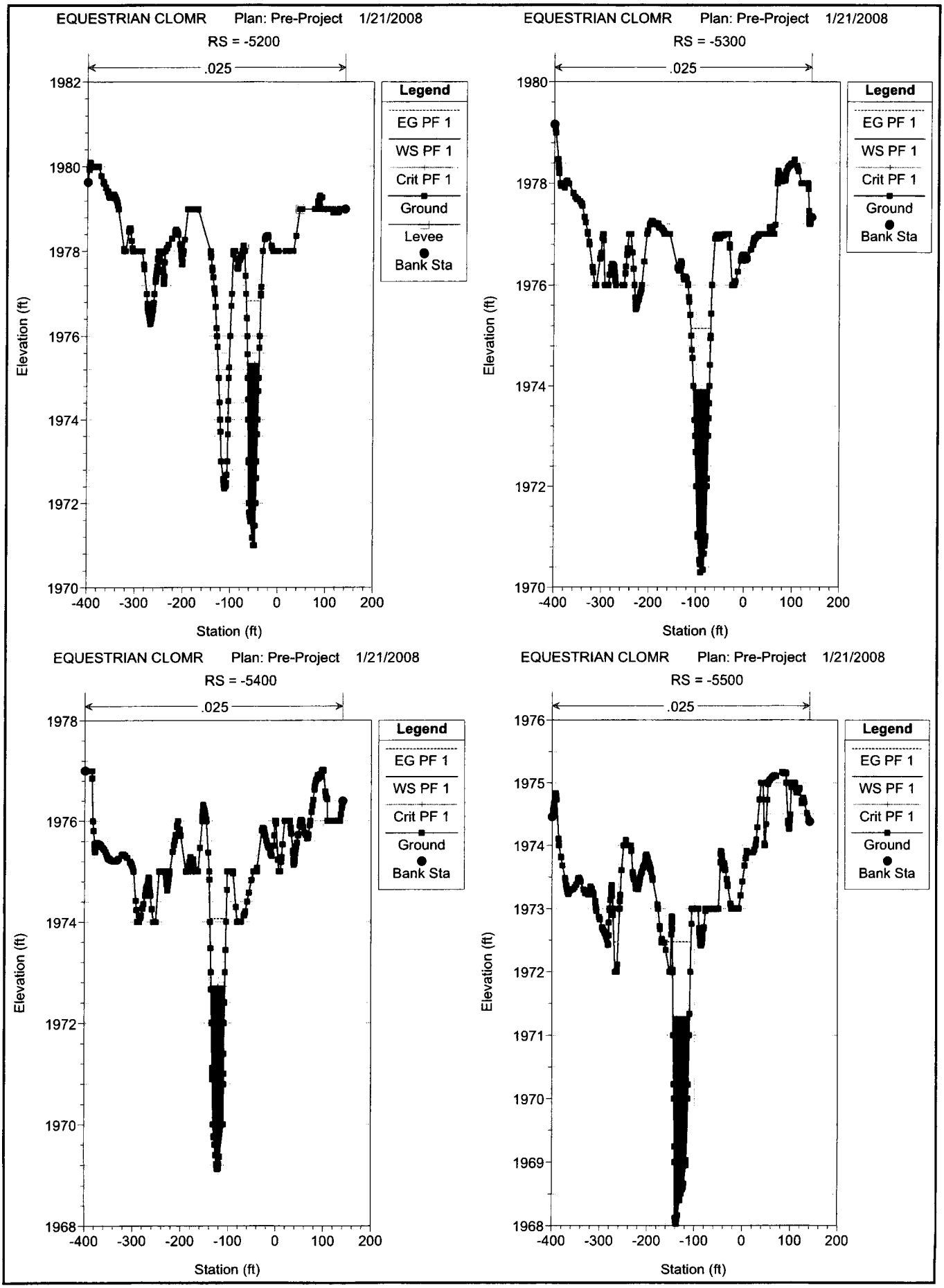

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4300
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4399.05
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4400
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4423.9
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

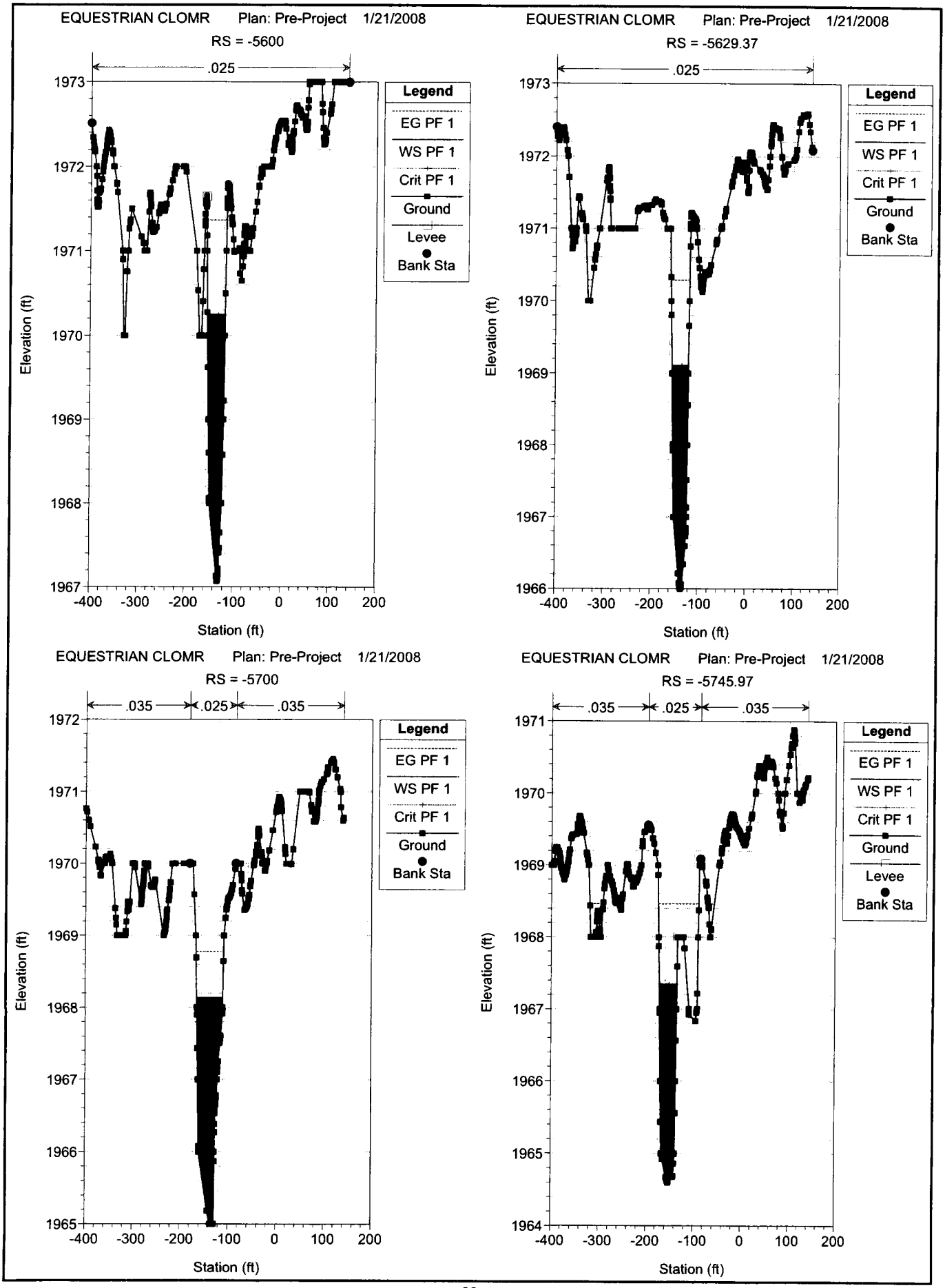

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4500
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4528.19
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4563.86
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4596.68
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

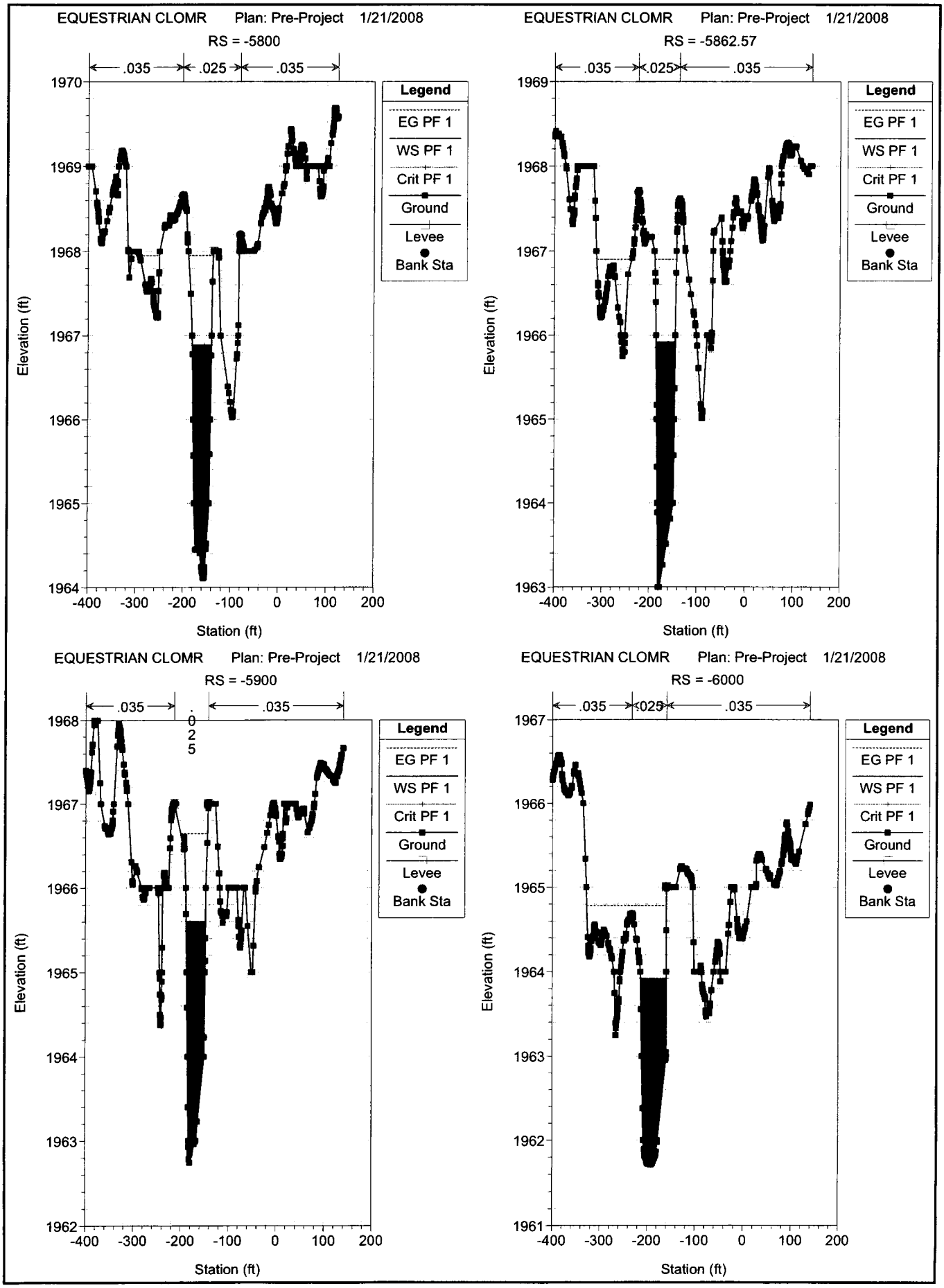

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4600
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4607.48
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4608.44 Culv
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4608.44 Culv
.035
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

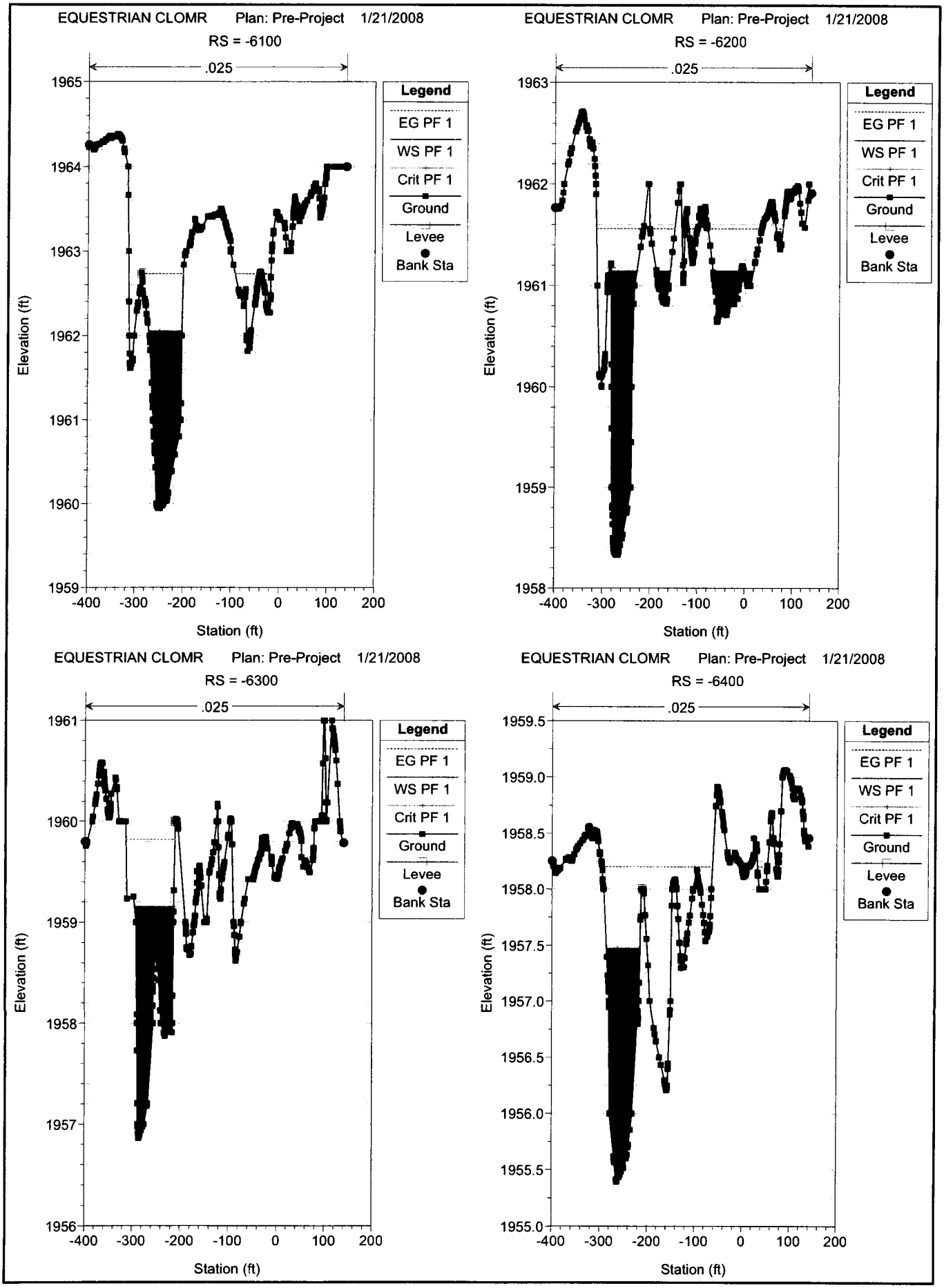

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4834.44
.035
.013
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4895.41
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4900
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -4925.31
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

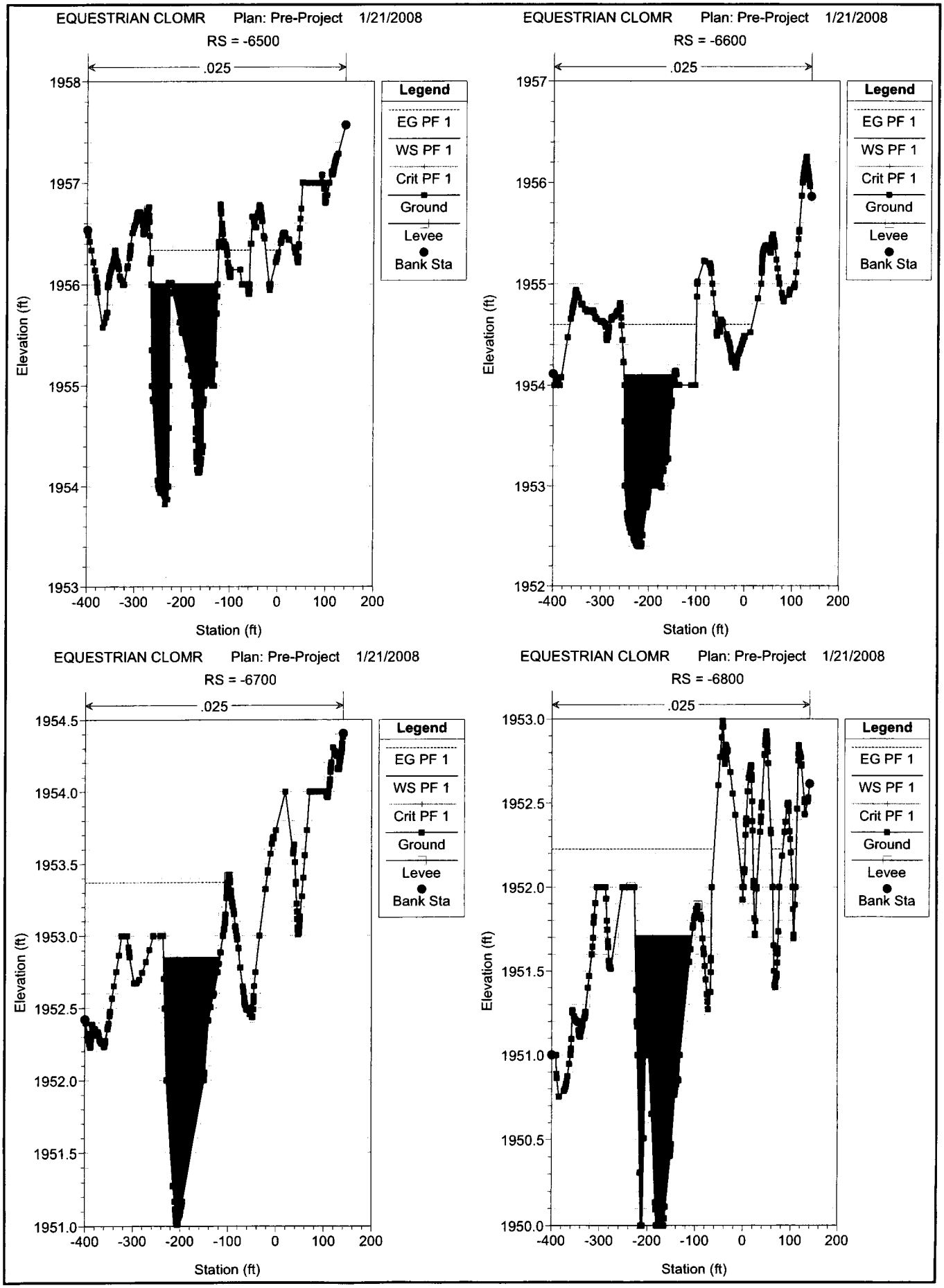

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5000
.035
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5071.59
.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5100
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5144.1
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EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

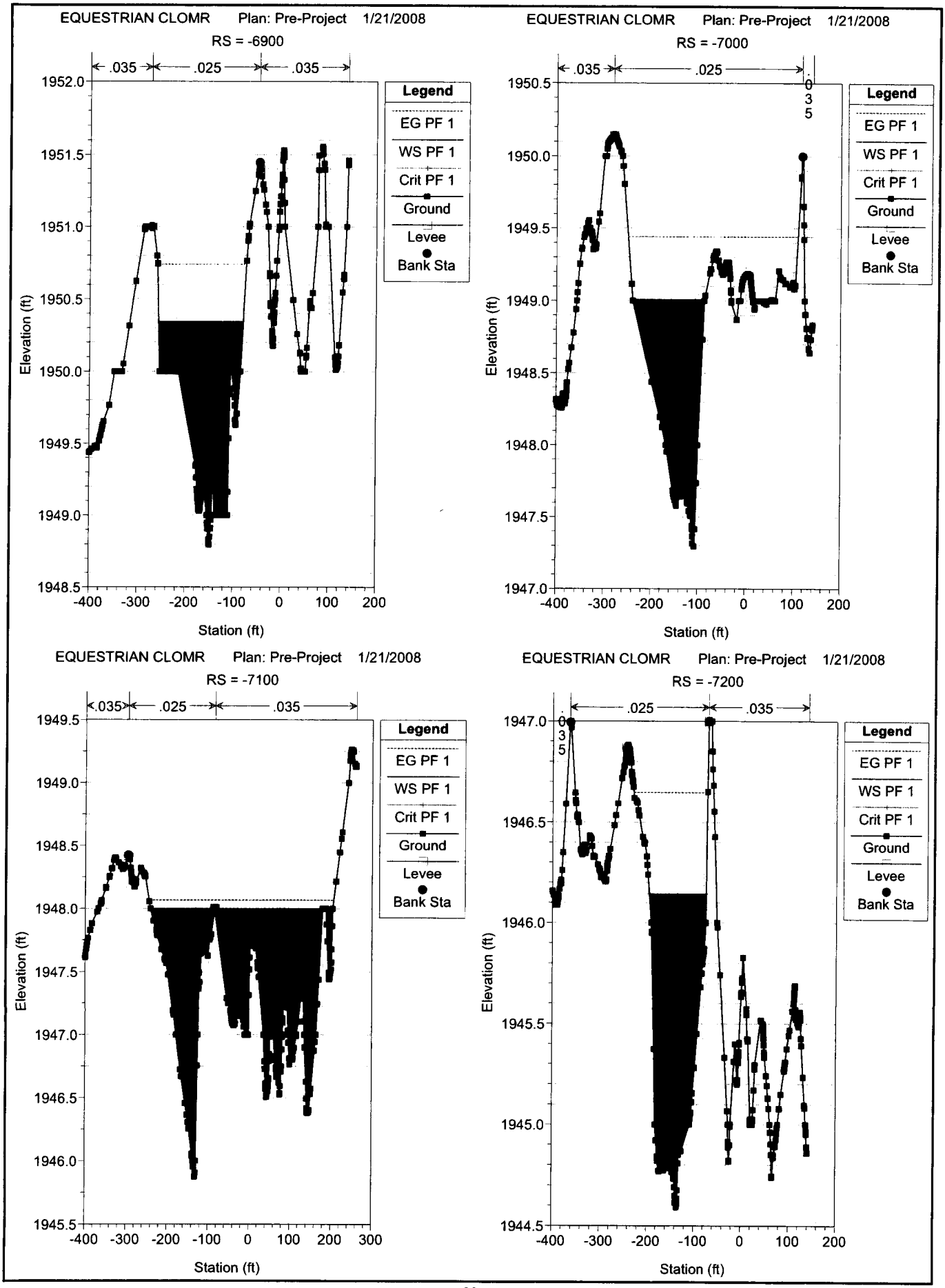

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5200
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Legend
EG PF 1
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Crit PF 1
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Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5300
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Legend
EG PF 1
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Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5400
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Legend
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Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Bank Sta
Elevation (ft)
Station (ft)

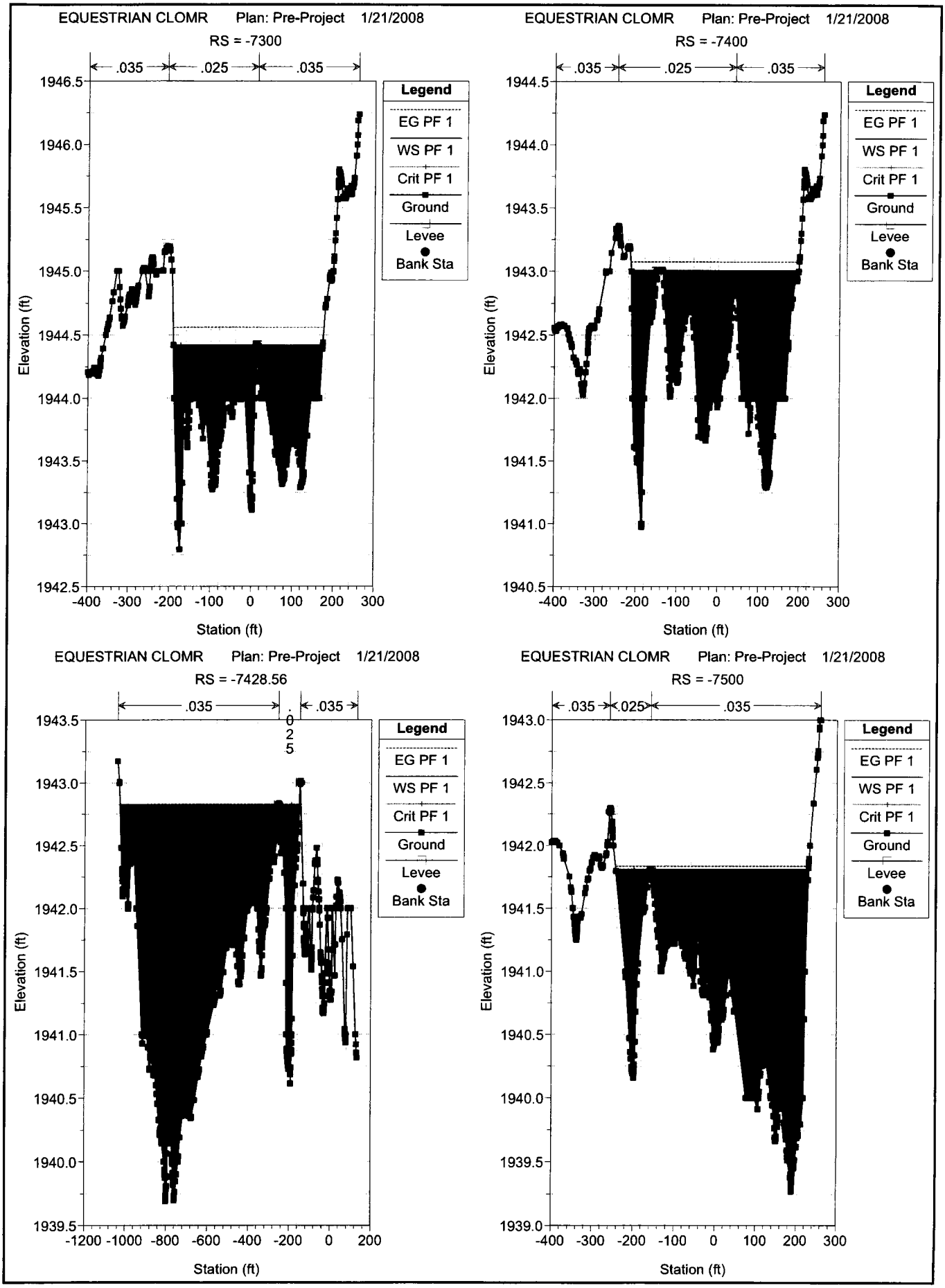

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Crit PF 1
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Bank Sta
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Station (ft)
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RS = -5629.37
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WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5700
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.025
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
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RS = -5745.97
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Station (ft)

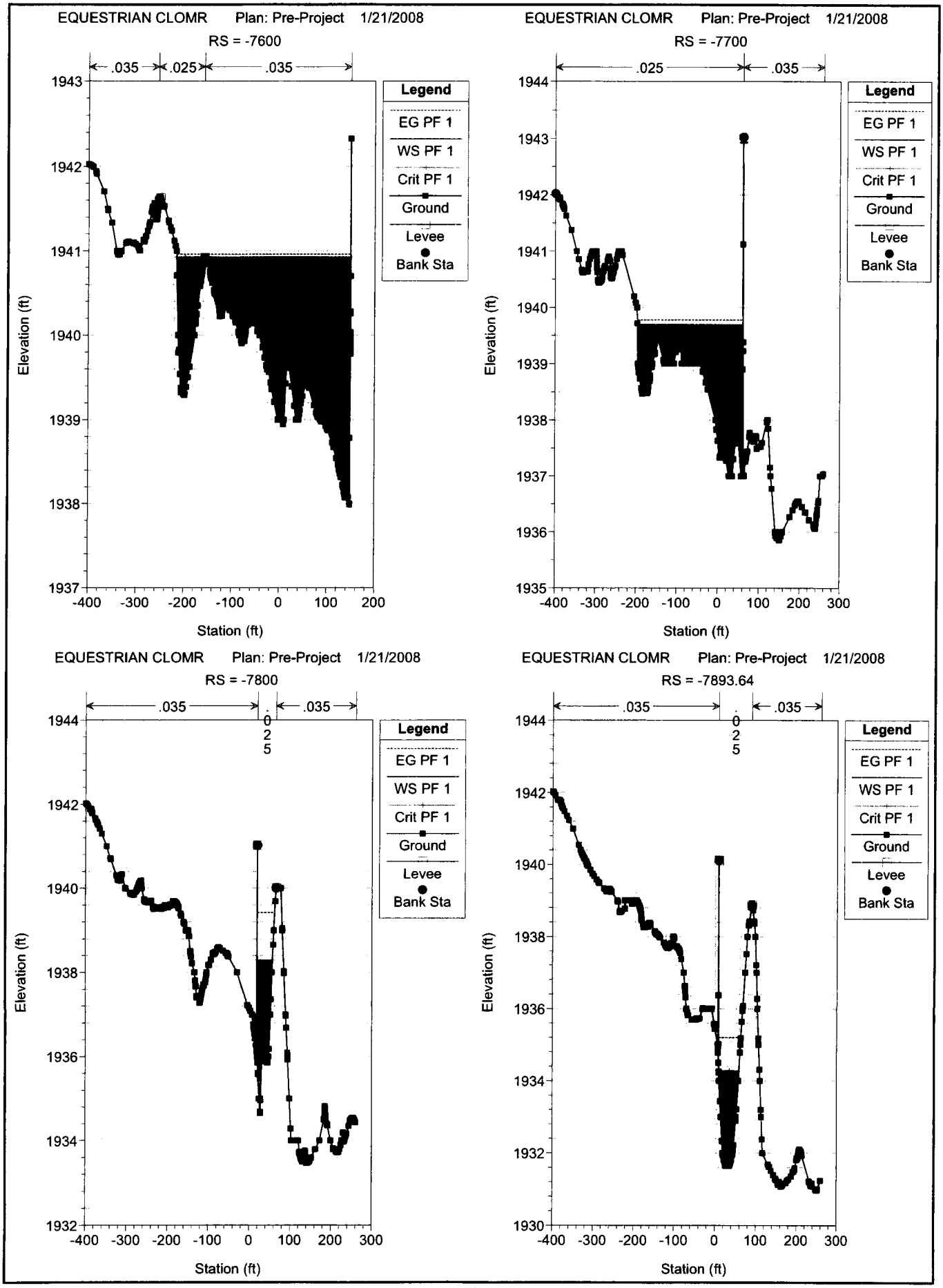

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Crit PF 1
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Bank Sta
Elevation (ft)
Station (ft)
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RS = -5862.57
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Crit PF 1
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Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -5900
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.025
.035
Legend
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WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Station (ft)

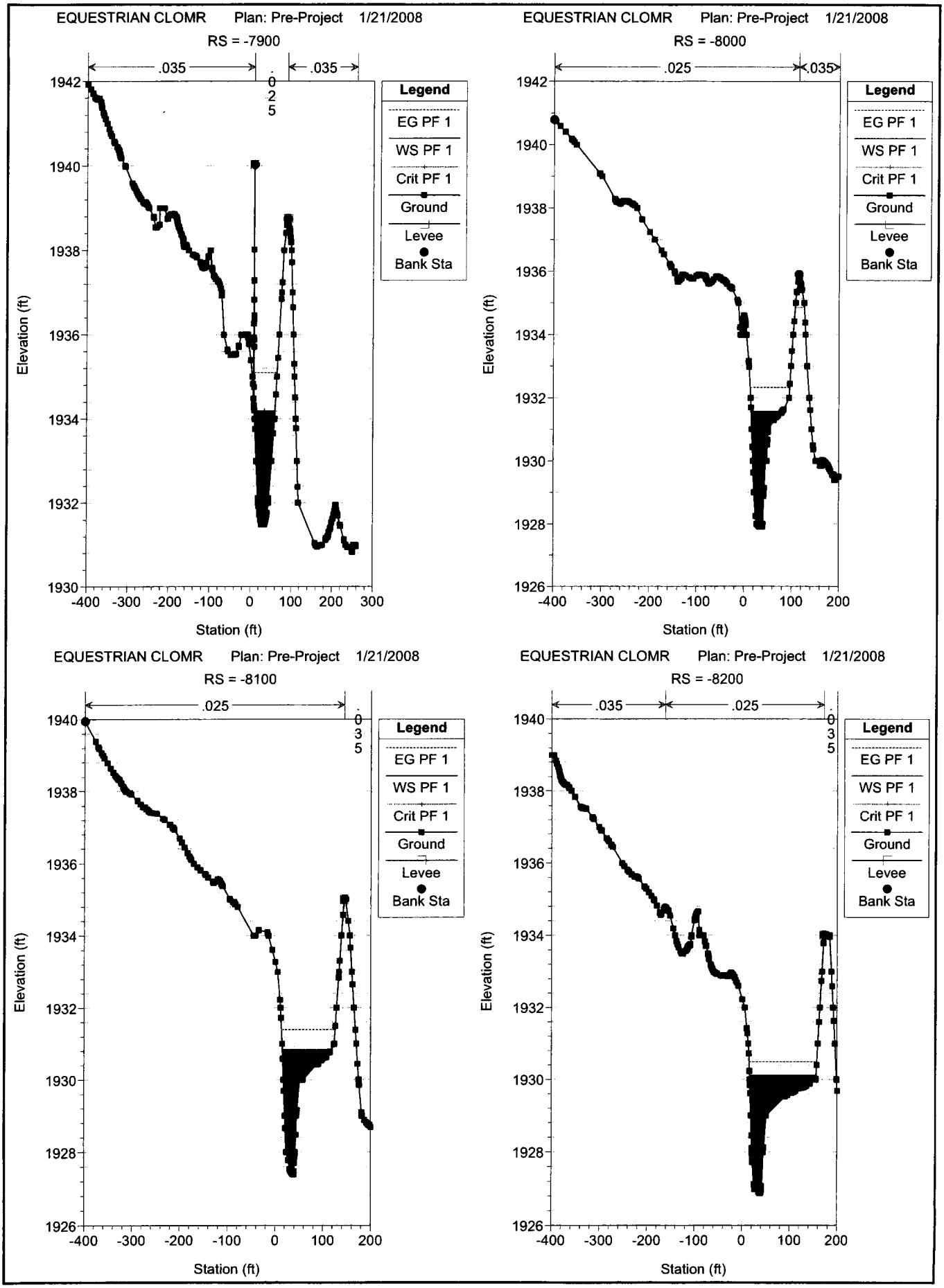

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Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -6200
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -6300
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

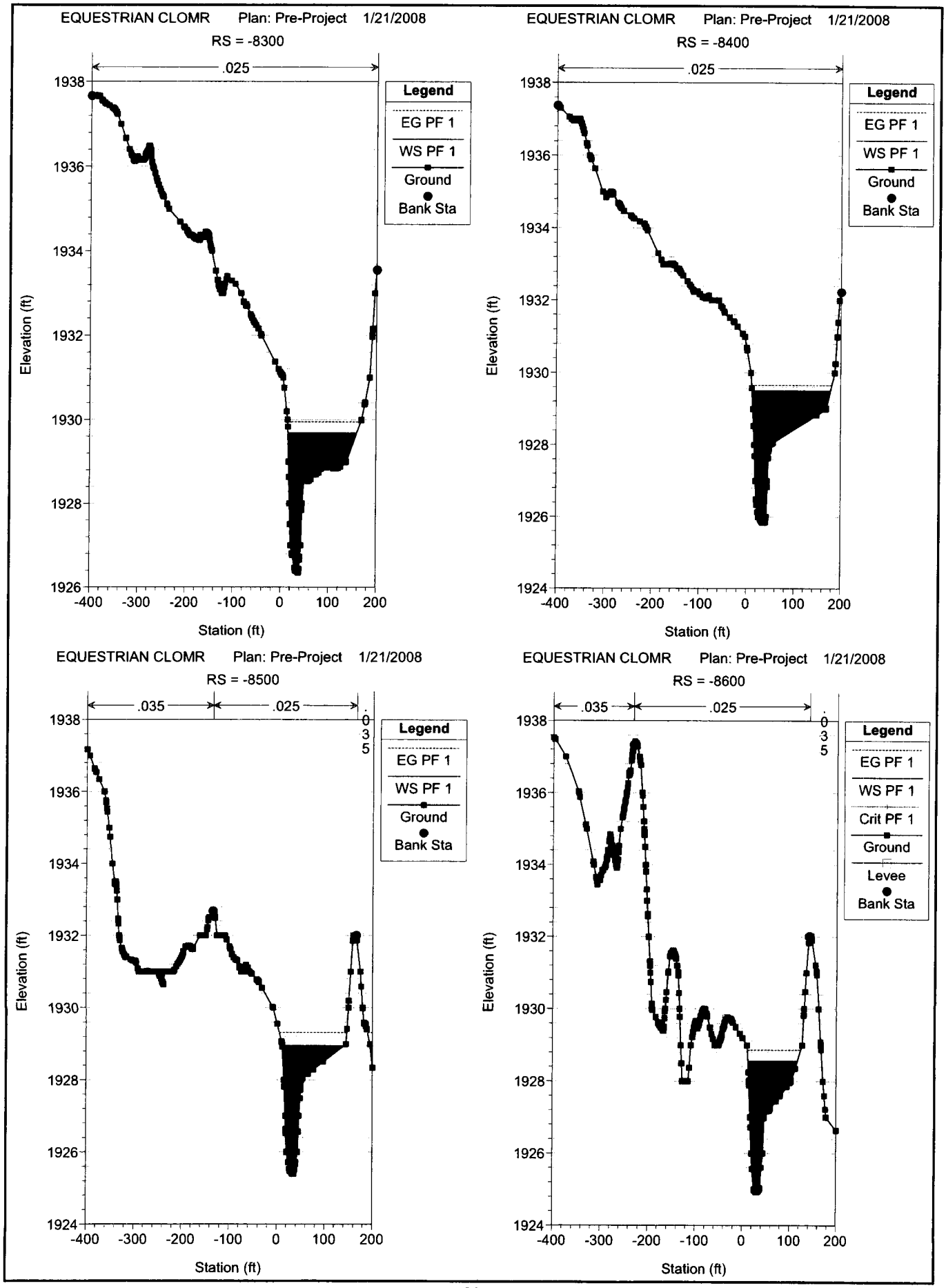

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
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RS = -6600
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Legend
EG PF 1
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Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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EG PF 1
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Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Crit PF 1
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Levee
Bank Sta
Elevation (ft)
Station (ft)

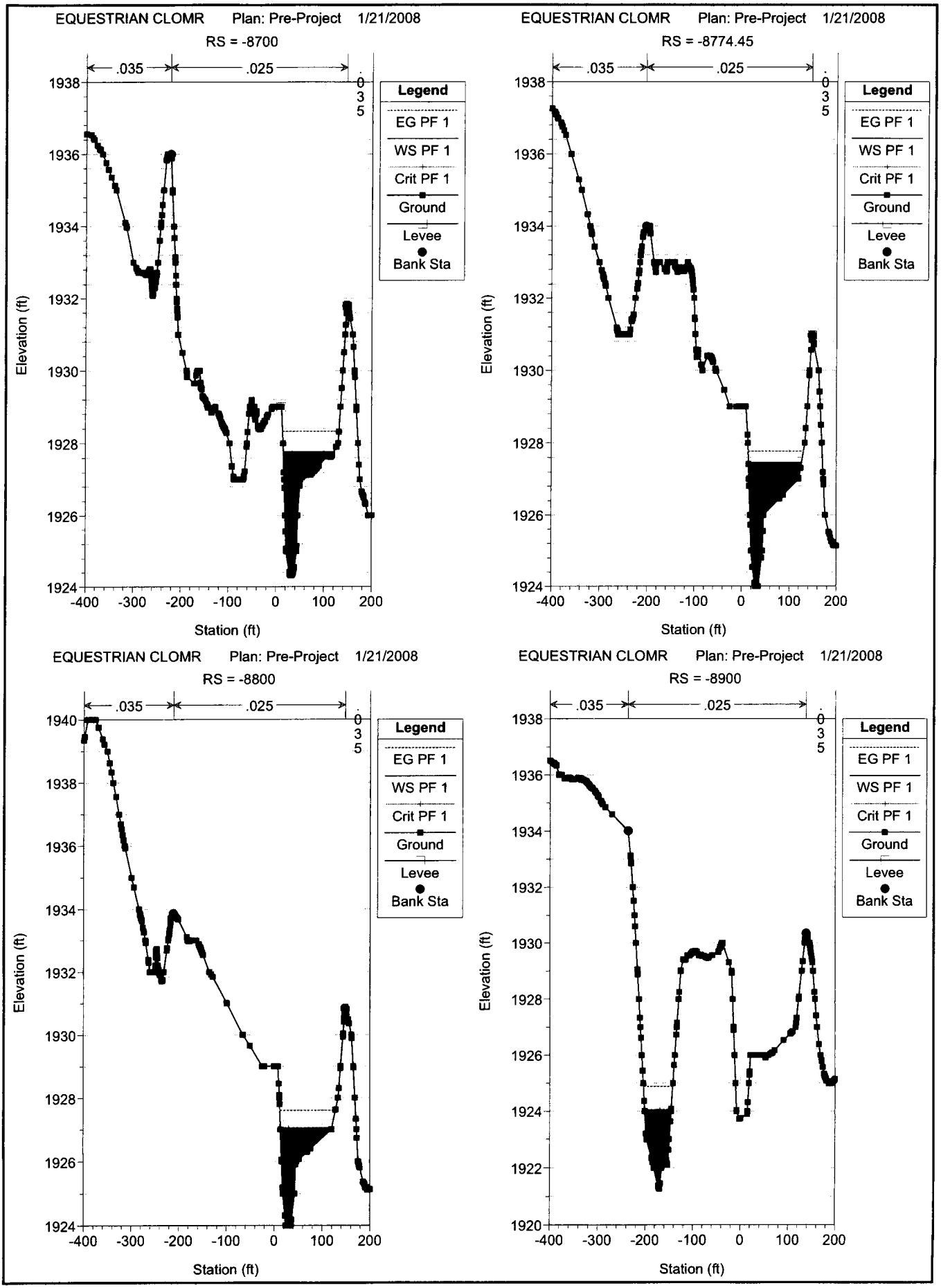

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Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
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.025
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WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -7100
.035
.025
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

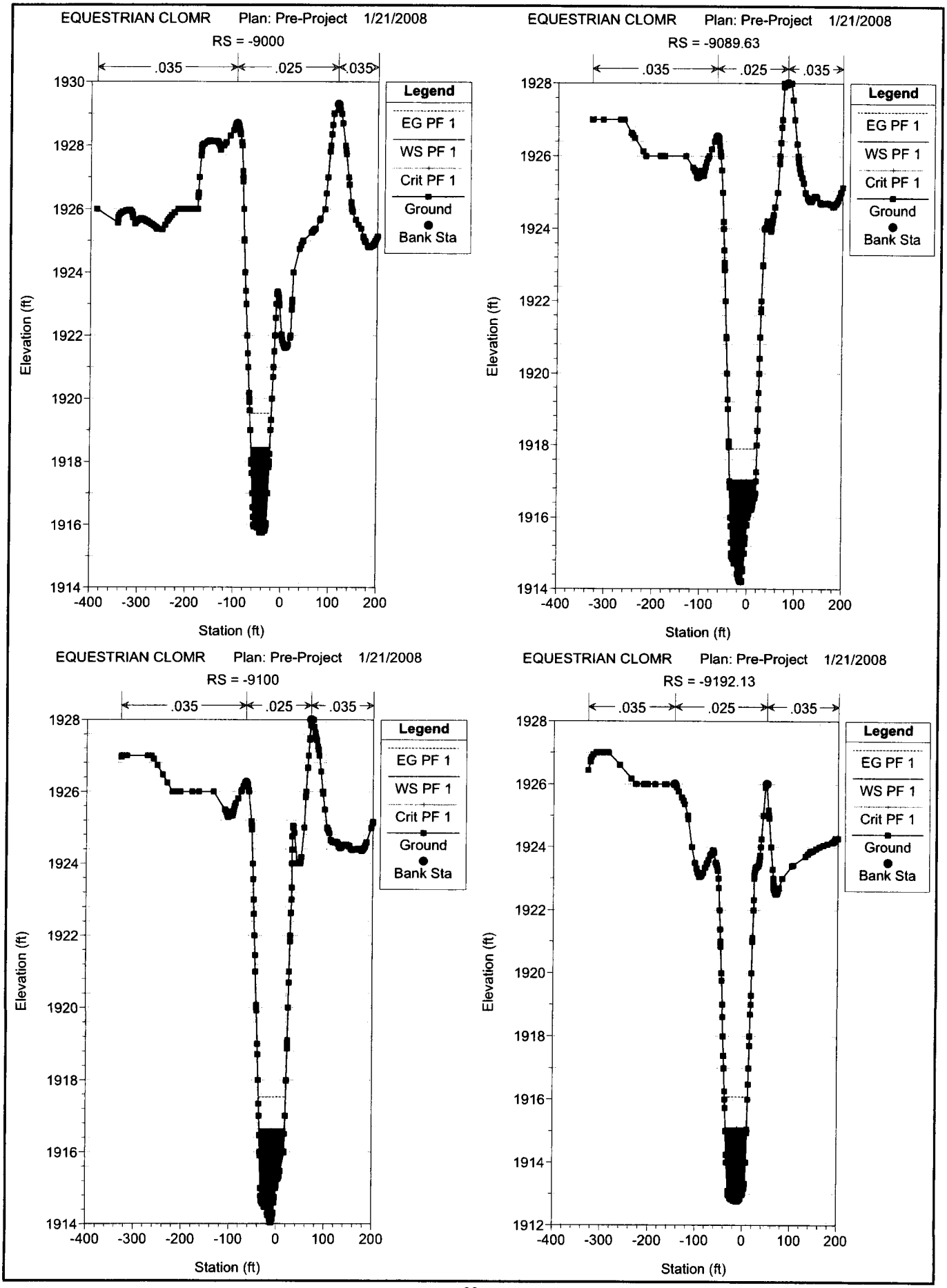

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Levee
Bank Sta
Elevation (ft)
Station (ft)
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RS = -7400
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Legend
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WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
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RS = -7428.56
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -7500
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.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -7600
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.025
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -7700
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -7893.64
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -7900
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Legend
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WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -8000
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WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -8100
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -8200
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Legend
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WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -8300
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Elevation (ft)
Station (ft)
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Station (ft)
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Elevation (ft)
Station (ft)
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Crit PF 1
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Elevation (ft)
Station (ft)

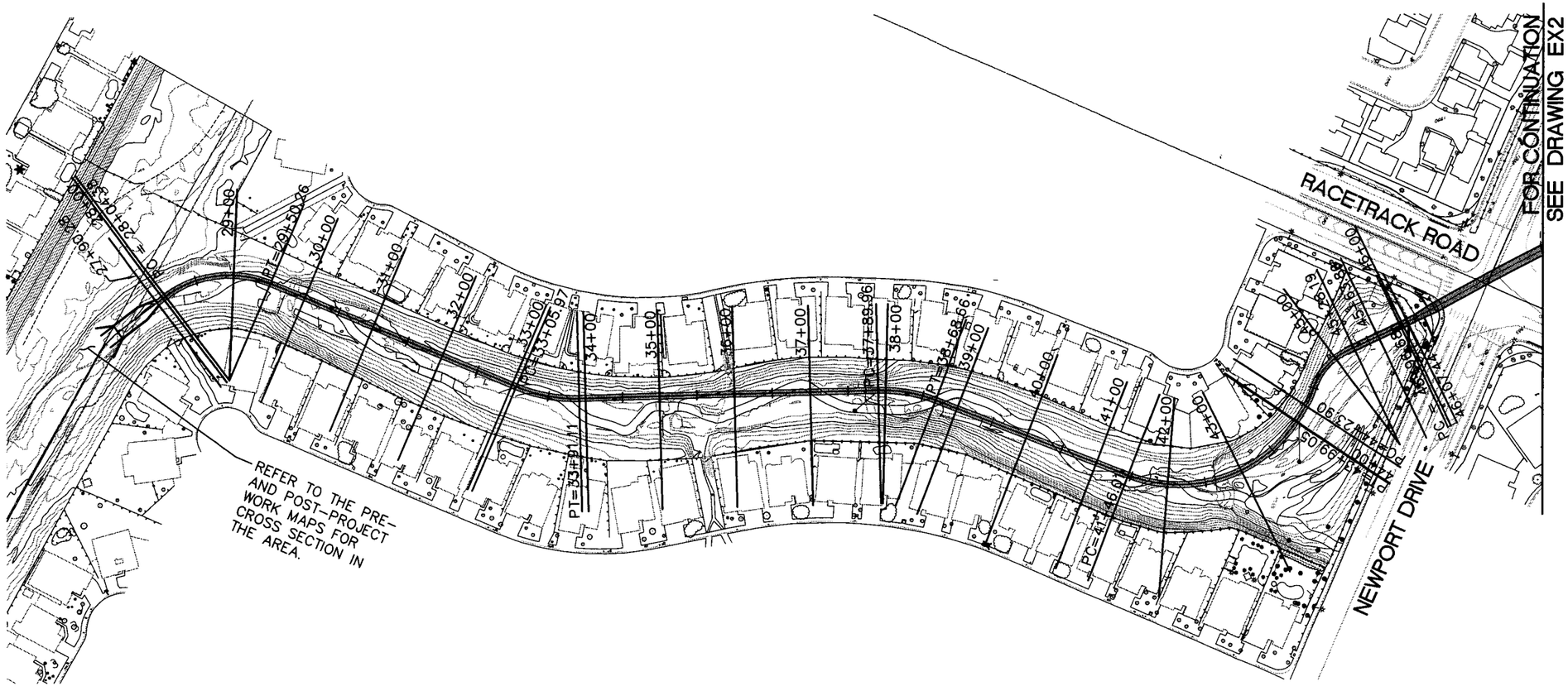

EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
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Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
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RS = -8774.45
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RS = -8900


EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -9000
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Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
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RS = -9089.63
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RS = -9100
EQUESTRIAN CLOMR Plan: Pre-Project 1/21/2008
RS = -9192.13

LEGEND

PROPOSED CONCRETE BOX FACILITY

STA _____ CROSS SECTION



NORTH

Revisions

No.	DESCRIPTION	BY	DATE	APPROVAL

80 0 40 80 160 320

GRAPHIC SCALE 1"=80'

Avoid cutting underground utility lines. It's costly.

Call before you Dig

IT'S THE LAW
1-800-227-2600
UNDERGROUND SERVICE (USA)

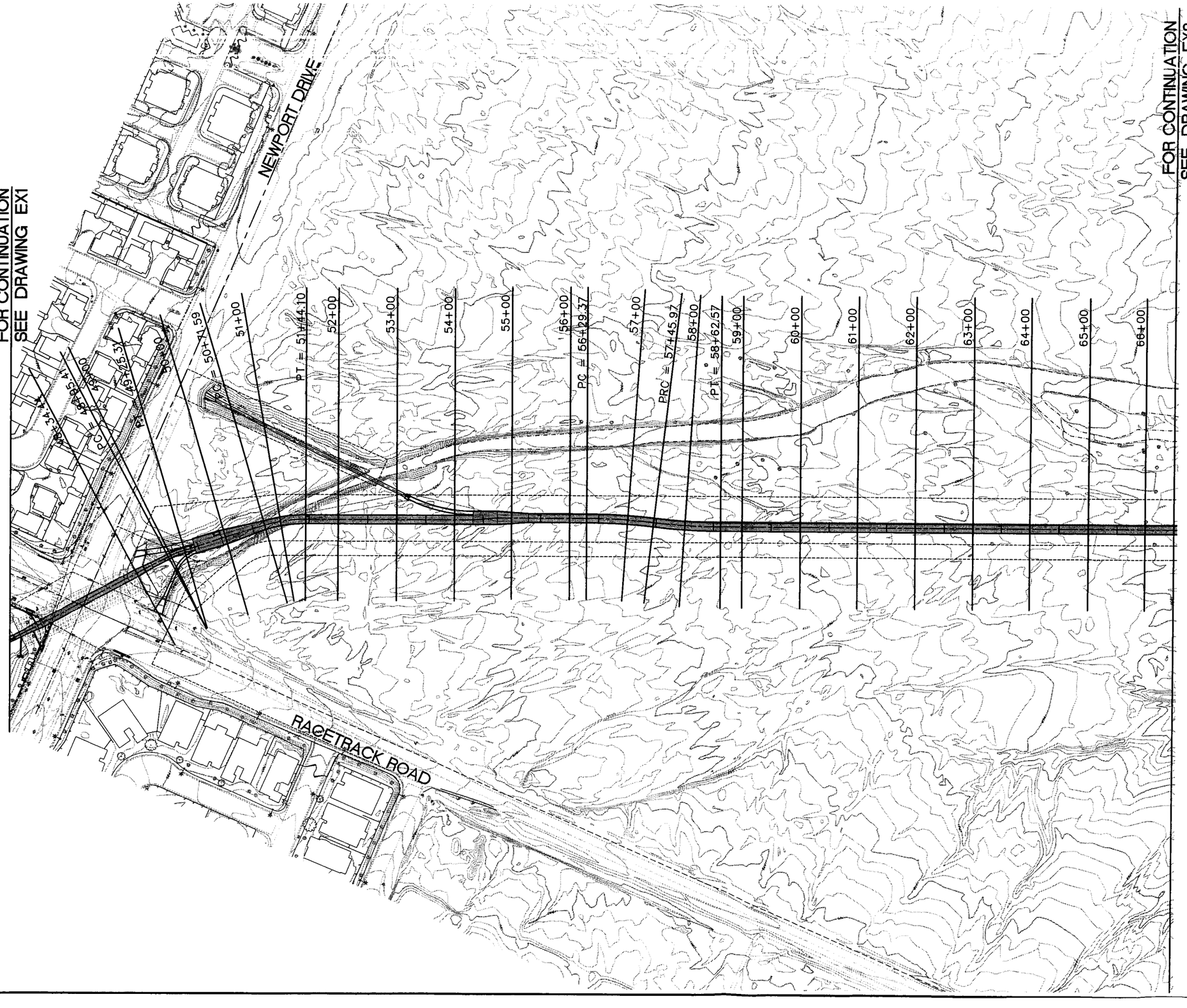
City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
PRE-PROJECT HEC-RAS CROSS-SECTION EXHIBIT

SCALE :	DATE : AUG. 2007	DRAWING No. EX1
HORIZONTAL : 1"=80'	DRAWN : DKP	SHEET No. -
VERTICAL : NA	CHECKED : JNG	COH DRAWING No.

2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148
PH. (702) 873-7550
FAX (702) 362-2597
WEB SITE WWW.VTNNV.COM

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LEGEND

PROPOSED CONCRETE BOX FACILITY

STA _____ CROSS SECTION

NORTH

Revisions				
No.	DESCRIPTION	BY	DATE	APPROVAL

80 0 40 80 160 320

GRAPHIC SCALE 1"=80'

Avoid cutting underground utility lines. It's costly.

Call before you Dig

IT'S THE LAW
1-800-227-2600
UNDERGROUND SERVICE (USA)

City of Henderson, Nevada
Department of Public Works
Engineering Services Division

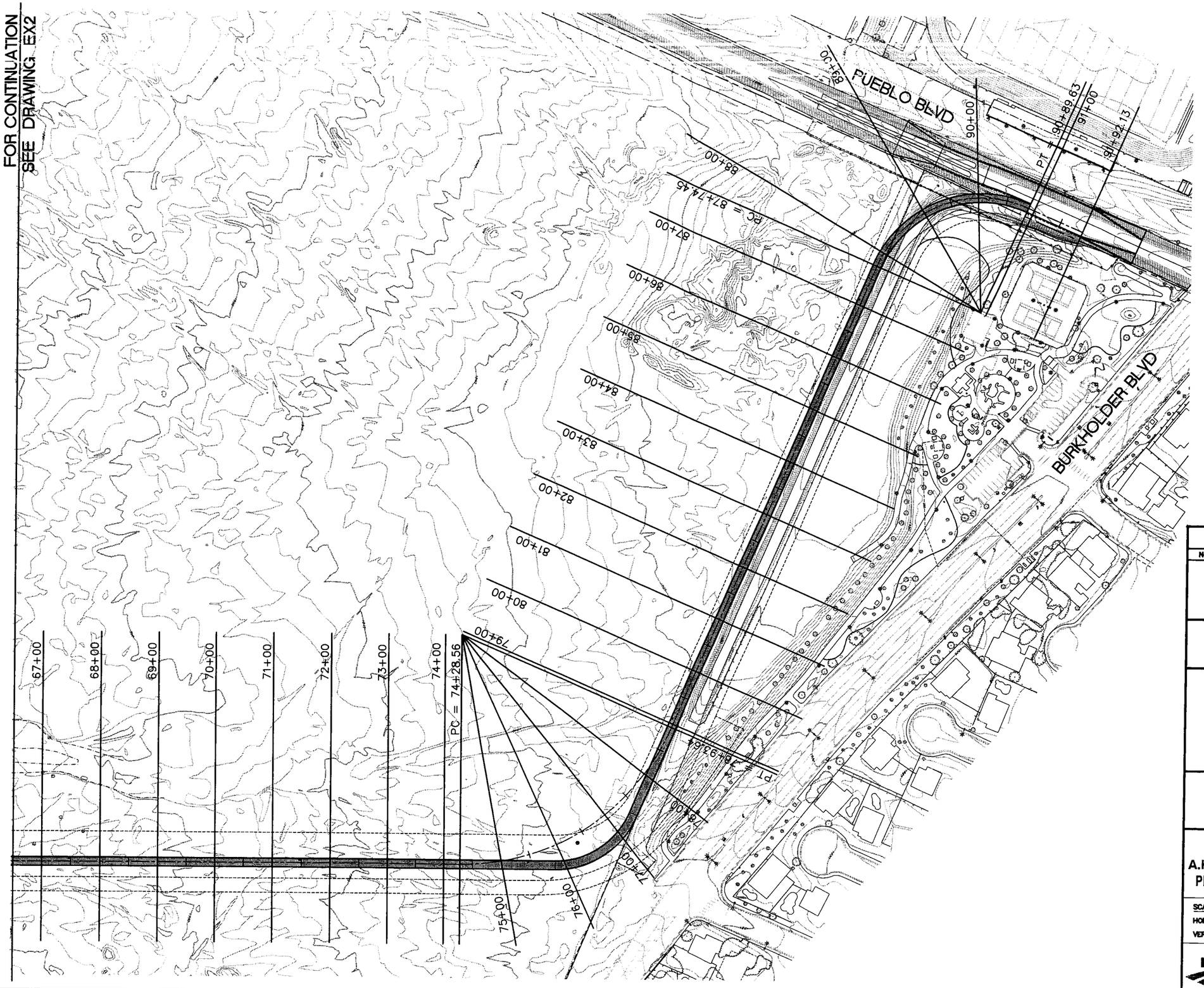
HERITAGE PARK OUTFALL CHANNEL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
PRE-PROJECT HEC-RAS CROSS-SECTION EXHIBIT

SCALE :	DATE : AUG. 2007	DRAWING No. EX2
HORIZONTAL : 1"=80'	DRAWN : DKP	SHEET No. -
VERTICAL : NA	CHECKED : JNG	COH DRAWING No.

VTN
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148
PH. (702) 873-7550
FAX (702) 362-2597
WEB SITE WWW.VTNNV.COM

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FOR CONTINUATION
SEE DRAWING EX2



LEGEND

PROPOSED CONCRETE BOX FACILITY

STA _____ CROSS SECTION

Revisions				
No.	DESCRIPTION	BY	DATE	APPROVAL

80 0 40 80 160 320
GRAPHIC SCALE 1"=80'

Avoid cutting underground utility lines. It's costly.

Call before you Dig

IT'S THE LAW
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UNDERGROUND SERVICE (USA)

City of Henderson, Nevada
Department of Public Works
Engineering Services Division

HERITAGE PARK OUTFALL
A.K.A. EQUESTRIAN D.B. OUTFALL CHANNEL
PRE-PROJECT HEC-RAS CROSS-SECTION EXHIBIT

SCALE :	DATE : AUG. 2007	DRAWING No. EX3
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VERTICAL : NA	CHECKED : JNG	COH DRAWING No.

VTN
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148
PH. (702) 873-7550
FAX (702) 362-2597
WEB SITE WWW.VTNNV.COM

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HERITAGE PARK OUTFALL CHANNEL CLOMR
PRE-PROJECT CONDITIONS: CHECK-RAS OUTPUT

CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.prj
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Selected profiles: PF 1
Date: 1/21/2008
Time: 1:35:47 PM

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		-----	0.025	-----		
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		-----	0.025	-----		
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		-----	0.025	-----		
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		-----	0.025	-----		
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		-----	0.025	-----		
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		-----	0.025	-----		
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		-----	0.025	-----		
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		-----	0.025	-----		
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		-----	0.025	-----		
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		-----	0.025	-----		
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-2425		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
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-2500		0.035	0.025	0.035	0.1	0.3
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-2550		0.035	0.025	0.035	0.1	0.3
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		-----	0.025	-----		

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	-----	0.025	-----		
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-2650	0.035	0.025	0.035	0.1	0.3
-2675	0.035	0.025	0.035	0.1	0.3
-2700	0.035	0.025	0.035	0.1	0.3
-2730	0.035	0.025	0.035	0.1	0.3
-2750	0.035	0.025	0.035	0.1	0.3
-2775	0.035	0.025	0.035	0.1	0.3
-2790.28	0.035	0.025	0.035	0.1	0.3
-2791.78	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2800	0.035	0.025	0.035	0.1	0.3
-2804.37	0.035	0.025	0.035	0.1	0.3
-2900	0.035	0.025	0.035	0.1	0.3
-2950.26	0.035	0.025	0.035	0.1	0.3
-3000	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3100	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3305.97	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3391.11	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-3400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3500	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3700	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3789.96	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3800	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3868.66	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-3900	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4000	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-4100	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4146.01	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4300	0.035	0.025	0.035	0.1	0.3
-4399.05	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4423.9	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4500	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4528.19	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-4563.86	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4596.68	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-4607.48	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-4608.44Culvert-Up	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-4608.44Culvert-Dn	0.035	0.013	0.035	0.1	0.3
-4834.44	0.035	0.013	0.035	0.1	0.3
-4895.41	0.035	0.025	0.035	0.1	0.3
-4900	0.035	0.025	0.035	0.1	0.3
-4925.31	0.035	0.025	0.035	0.1	0.3
-5000	0.035	0.025	0.035	0.1	0.3
-5071.59	0.035	0.025	0.035	0.1	0.3
-5100	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5144.1	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5500	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-5600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5629.37	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-5700	0.035	0.025	0.035	0.1	0.3
-5745.97	0.035	0.025	0.035	0.1	0.3
-5800	0.035	0.025	0.035	0.1	0.3
-5862.57	0.035	0.025	0.035	0.1	0.3

-5900	0.035	0.025	0.035	0.1	0.3
-6000	0.035	0.025	0.035	0.1	0.3
-6100	-----	0.025	0.035	0.1	0.3
	-----	0.035	-----		
-6200	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6500	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6700	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6800	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-6900	0.035	0.025	0.035	0.1	0.3
-7000	0.035	0.025	0.035	0.1	0.3
-7100	0.035	0.025	0.035	0.1	0.3
-7200	0.035	0.025	0.035	0.1	0.3
-7300	0.035	0.025	0.035	0.1	0.3
-7400	0.035	0.025	0.035	0.1	0.3
-7428.56	0.035	0.025	0.035	0.1	0.3
-7500	0.035	0.025	0.035	0.1	0.3
-7600	0.035	0.025	0.035	0.1	0.3
-7700	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-7800	0.035	0.025	0.035	0.1	0.3
-7893.64	0.035	0.025	0.035	0.1	0.3
-7900	0.035	0.025	0.035	0.1	0.3
-8000	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-8100	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-8200	0.035	0.025	0.035	0.1	0.3
-8300	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-8400	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-8500	0.035	0.025	0.035	0.1	0.3
-8600	0.035	0.025	0.035	0.1	0.3
-8700	0.035	0.025	0.035	0.1	0.3
-8774.45	0.035	0.025	0.035	0.1	0.3
-8800	0.035	0.025	0.035	0.1	0.3
-8900	0.035	0.025	0.035	0.1	0.3
-9000	0.035	0.025	0.035	0.1	0.3
-9089.63	0.035	0.025	0.035	0.1	0.3
-9100	0.035	0.025	0.035	0.1	0.3
-9192.13	0.035	0.025	0.035	0.1	0.3

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.035	0.035
Right Overbank n Value:	0.035	0.035
Channel n Value:	0.013	0.035
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

RS: -2450
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2475
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2500
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2550
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2625
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2650
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a

concrete lined channel.

RS: -2675
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2700
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2730
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2750
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2775
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2790.28
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2800
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2804.37
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2950.26
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -4300
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -4608.44
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -4834.44
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -4895.41
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -4900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -4925.31
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -5000
NT RC 03 Channel n value is equal to or less than 0.025

The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5071.59
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5700
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5745.97
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5800
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5862.57
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -5900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -6000
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -6900
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7000
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7100
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7200
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7300
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7400
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7428.56
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7500
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: -7600
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

```
 RS:       -7800
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -7893.64
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -7900
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -8200
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -8500
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -8600
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -8700
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -8774.45
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -8800
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -8900
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -9000
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -9089.63
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 RS:       -9100
 NT RC 03 Channel n value is equal to or less than 0.025
          The n value of the channel is usually larger than 0.025.
          The n value should be reevaluated it if is not representing a
          concrete lined channel.

 TRANSITION LOSS COEFFICIENT CHECK
 ---------------------------------

 RS:      -4600
 NT TL 01 This is section 4
          Contraction and expansion loss coefficients are 0.1 and 0.3
          They should be equal to 0.3 and 0.5 respectively.

 RS:      -4607.48
 NT TL 01 This is section 3
          Contraction and expansion loss coefficients are 0.1 and 0.3
          They should be equal to 0.3 and 0.5 respectively.

 RS:      -4834.44
 NT TL 01 This is section 2
          Contraction and expansion loss coefficients are 0.1 and 0.3
          They should be equal to 0.3 and 0.5 respectively.

 ROUGHNESS COEFFICIENT AT STRUCTURES
 -----------------------------------

 RS:      -4834.44
```

```
NT RS 01 This is Section 2.
         Channel n value of 0.013 is less than the channel n value of 0.025
         at Section 1.

RS:     -4607.48
NT RS 01 This is Section 3.
         Channel n value of 0.013 is less than the channel n value of 0.025
         at Section 4.

---END---
```

CHECK-RAS Program, XS Check
Cross Section Location and Alignment Review

Project File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.prj
Plan File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.p01
Geometry File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.g08
Flow File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.f05
Report File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.xs
Selected profiles: PF 1
Date: 1/21/2008
Time: 1:36:46 PM

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code
EQUESTRIAN DB OF,1						
-1500	25	25	25	92.38	706	C
-1525	25	25	0	88.62	706	
-1550	25	25	25	89.53	706	
-1575	25	25	25	86.24	706	
-1600	25	25	25	86.24	706	
-1625	25	25	25	89.18	706	
-1650	25	25	25	90.74	706	C
-1675	25	25	25	62.11	706	D
-1700	25	25	25	80.87	706	D
-1725	25	25	25	54.77	706	D,C
-1750	25	25	25	46.57	706	D,C
-1775	25	25	25	42.52	706	D,C
-1800	25	25	25	93.81	706	D,C
-1825	25	25	25	85.39	706	C
-1850	25	25	25	52.77	706	D,C
-1875	25	25	25	78.6	706	C
-1900	25	25	25	69.32	706	C
-1925	25	25	25	85.12	706	
-1950	25	25	25	84.75	706	
-1975	25	25	25	77.29	706	C
-2000	25	25	25	76.75	706	C
-2025	25	25	25	77.83	706	
-2050	25	25	25	79.16	706	
-2075	25	25	25	77.43	706	C
-2100	25	25	25	74.94	706	C
-2125	25	25	25	76.9	706	C
-2150	25	25	25	83.07	706	
-2175	25	25	25	84.55	706	C
-2200	25	25	25	86.93	706	
-2225	25	25	25	85.7	706	
-2250	25	25	25	81.02	706	C
-2275	25	25	25	84.78	706	
-2300	25	25	25	86.73	706	
-2325	25	25	25	84.76	706	C
-2350	25	25	25	89	706	
-2375	25	25	25	89.5	706	
-2400	25	25	25	91.45	706	
-2425	25	25	25	65.5	706	
-2450	25	25	25	55.33	706	C
-2475	25	25	25	54.31	706	C
-2500	25	25	25	65.75	706	C
-2525	25	25	25	59.25	706	C
-2550	25	25	25	62.14	706	
-2575	25	25	25	60.46	706	
-2600	25	25	25	62.43	706	
-2625	25	25	25	68.25	706	
-2650	25	25	25	61.48	706	C
-2675	25	25	25	67.62	706	
-2700	30	30	30	65.98	706	C
-2730	20	20	30	60.87	706	
-2750	25	25	25	60.16	706	
-2775	15.28	15.28	15.28	60.26	706	
-2790.28	1.5	1.5	1.5	60.86	706	
-2791.78	8.22	8.22	8.22	61.22	706	
-2800	4.37	4.37	4.37	60.47	706	
-2804.37	95.63	95.63	95.63	60.71	706	
-2900	50.262	50.262	50.262	68.74	706	C
-2950.26	49.74	49.74	49.74	58.57	706	C
-3000	100	100	100	54.57	706	C
-3100	100	100	100	64.35	706	
-3200	100	100	100	61.02	706	C
-3300	5.97	5.97	5.97	63.95	706	
-3305.97	85.14	85.14	85.14	64.14	706	
-3391.11	8.89	8.89	8.89	67.47	706	C
-3400	100	100	100	67.55	706	C
-3500	100	100	100	61.56	706	C
-3600	100	100	100	60.21	706	
-3700	89.64	89.64	89.64	62.72	706	C
-3789.96	10.04	10.04	10.04	50.72	706	
-3800	68.66	68.66	68.66	50.25	706	C
-3868.66	21.34	21.34	21.34	54.85	706	C
-3900	100	100	100	54.13	706	
-4000	100	100	100	60.75	706	
-4100	46.01	46.01	46.01	61.67	706	C
-4146.01	53.99	53.99	53.99	56.35	706	C
-4200	100	100	100	57.29	706	C
-4300	99.05	99.05	99.05	103.09	706	
-4399.05	0.95	0.95	0.95	128.84	706	
-4400	23.9	23.9	23.9	128.72	706	
-4423.9	76.1	76.1	76.1	126.11	706	
-4500	28.19	28.19	28.19	144.27	706	E
-4528.19	35.67	35.67	35.67	161.01	706	E
-4563.86	32.82	32.82	32.82	142.15	706	E

-4596.68	3.32	3.32	3.32	94.8	706	E
-4600	7.44	7.44	7.44	88.39	706	E
-4607.48	227	227	227	39.75	706	E
-4608.44	Culvert #1-Up					
-4608.44	Culvert #1-Dn					
-4834.44	60.97	60.97	60.97	39.76	706	C
-4895.41	4.59	4.59	4.59	61.71	706	
-4900	25.31	25.31	25.31	58.68	706	
-4925.31	74.69	74.69	74.69	42.33	706	
-5000	71.59	71.59	71.59	32.17	706	
-5071.59	28.41	28.41	28.41	27.06	706	C
-5100	44.1	44.4	44.1	27.84	706	C
-5144.1	55.9	55.9	55.9	30.29	706	
-5200	100	100	100	24.16	706	C
-5300	100	100	100	33.25	706	C
-5400	100	100	100	28.46	706	C
-5500	100	100	100	34.48	706	C
-5600	29.37	29.37	29.37	36.73	706	C
-5629.37	70.63	70.63	70.63	34.76	706	C
-5700	45.97	45.97	45.97	54.26	706	
-5745.97	54.03	54.03	54.03	36.86	706	C
-5800	62.57	62.57	62.57	40.38	706	C
-5862.57	37.43	37.43	37.43	46.86	706	D
-5900	100	100	100	40.7	706	C
-6000	100	100	100	53.87	706	C
-6100	100	100	100	78	706	D,C
-6200	100	100	100	164.3	706	D,C
-6300	100	100	100	81.18	706	C
-6400	100	100	100	70.3	706	C
-6500	100	100	100	158.58	706	D,C
-6600	100	100	100	122.51	706	D,C
-6700	100	100	100	117.4	706	E,C
-6800	100	100	100	118.92	706	E,C
-6900	100	100	100	176.95	706	E,C
-7000	100	100	100	151.91	706	E,C
-7100	100	100	100	444.75	706	E,C
-7200	100	100	100	120.39	706	E,C
-7300	100	100	100	364.52	706	E,C
-7400	28.56	28.56	28.56	405.33	706	D,E,C
-7428.56	74.44	74.44	74.44	874.13	706	D,E,C
-7500	100	100	100	472.48	706	C
-7600	100	100	100	364.07	706	D,E,C
-7700	100	100	100	257.31	706	E
-7800	93.64	93.64	93.64	37.24	706	E,C
-7893.64	6.34	6.34	6.34	49.06	706	E,C
-7900	100	100	100	50.54	706	E,C
-8000	100	100	100	65.06	706	E,C
-8100	100	100	100	102.43	706	E,C
-8200	100	100	100	140.46	706	E
-8300	100	100	100	144.16	706	
-8400	100	100	100	166.64	706	
-8500	100	100	100	134.46	706	D,E
-8600	100	100	100	104.66	706	E
-8700	74.45	74.45	74.45	105.02	706	E,C
-8774.45	25.55	25.55	25.55	111.55	706	E
-8800	100	100	100	106.66	706	E,C
-8900	100	100	100	55.96	706	C
-9000	89.63	89.63	89.63	39.47	706	C
-9089.63	10.37	10.37	10.37	55.67	706	C
-9100	92.13	92.13	92.13	53.08	706	C
-9192.13	0	0	0	44.91	706	C

B=blocked obstruction
C=critial depth
D=divided flow
E=cross section extended
K=known water-surface

XS SC 05
XS SC 03
XS SC 01
XS SC 02
XS SC 04

DISTANCE CHECK

RS: -1525
XS DT 02 Right overbank distance is equal to zero.

SPACING CHECK

INEFFECTIVE FLOW CHECK

RS: -1500
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -1525
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -4895.41
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -4895.41

```
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -4900
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -4900
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -4925.31
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -4925.31
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5000
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5000
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5071.59
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5071.59
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5100
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5100
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5144.1
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5144.1
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5200
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5200
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5600
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5600
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5745.97
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5800
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5862.57
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -5900
```

XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -5900
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6000
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6000
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6100
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6200
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6300
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6400
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6500
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6500
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6600
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6700
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6700
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6800
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6800
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6900
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -6900
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -7000
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -7000
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -7100
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: -7100

```
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7200
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7200
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7300
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7300
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7400
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7400
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7428.56
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7428.56
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7500
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7500
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7600
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7600
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7700
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7800
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7800
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7893.64
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7893.64
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7900
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -7900
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8000
```

```
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8100
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8200
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8600
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8600
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8700
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8700
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8774.45
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8800
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -8900
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.


DISCHARGE CHECK
---------------

RS:     -7400
XS DC 05 There is no flow on the right overbank at the downstream
         cross section. There is no flow on the left overbank at this section.

RS:     -7428.56
XS DC 04 There is no flow on the left overbank at the downstream
         cross section. There is no flow on the right overbank at this section.

XS DC 02 Constant dicharge used for the EQUESTRIAN DB OF,1


LOCATION CHECK
--------------

RS:     -5700
XS LC 01 Lenchl Up/TopwdthAct Dn = 1.25
         MaxChlDpth Up/MaxChlDpth Dn = 1.14
         TopwdthAct Up/TopwdthAct Dn = 1.47
         This cross section is located too far upstream from the
         critical depth cross section.

RS:     -6200
XS LC 01 Lenchl Up/TopwdthAct Dn = 1.23
         MaxChlDpth Up/MaxChlDpth Dn = 1.23
         TopwdthAct Up/TopwdthAct Dn = 2.02
         This cross section is located too far upstream from the
         critical depth cross section.

RS:     -6300
XS LC 01 Lenchl Up/TopwdthAct Dn = 1.42
         MaxChlDpth Up/MaxChlDpth Dn = 1.10
         TopwdthAct Up/TopwdthAct Dn = 1.15
         This cross section is located too far upstream from the
         critical depth cross section.

RS:     -8800
XS LC 01 Lenchl Up/TopwdthAct Dn = 1.79
         MaxChlDpth Up/MaxChlDpth Dn = 1.10
         TopwdthAct Up/TopwdthAct Dn = 1.91
         This cross section is located too far upstream from the
         critical depth cross section.

RS:     -9100
XS LC 01 Lenchl Up/TopwdthAct Dn = 2.05
         MaxChlDpth Up/MaxChlDpth Dn = 1.12
         TopwdthAct Up/TopwdthAct Dn = 1.18
         This cross section is located too far upstream from the
```

```
         critical depth cross section.


BOUNDARY CONDITION CHECK
------------------------

XS BC 02 The name of the stream is EQUESTRIAN DB OF,1
         Normal S = 0.0137 is specified as the downstream boundary
         for profile PF 1

XS BC 02 The name of the stream is EQUESTRIAN DB OF,1
         Normal S = 0.0304 is specified as the upstream boundary
         for profile PF 1

XS BC 03 Maximum number of iterations is 0
         It should not be less than 20.


LATERAL WEIRS CHECK
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---END---
```

CHECK-RAS Program: Structure Check

Project File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.prj
Plan File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.p01
Geometry File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.g08
Flow File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.f05
Report File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.br
Selected profiles: PF 1
Date: 1/21/2008
Time: 1:37:34 PM

RS	MaxLoChord	MnTpRd	EGEL	WSEL	MinChEl	Structure
EQUESTRIAN DB OF,1						
-1500			2033.04	2032.44	2030	
-1525			2032.56	2032.01	2029.24	
-1550			2032.38	2032.12	2028.25	
-1575			2032.27	2031.73	2028.63	
-1600			2032.09	2031.5	2028	
-1625			2031.9	2031.35	2028	
-1650			2031.69	2031.07	2027.69	
-1675			2031.46	2030.86	2027.27	
-1700			2031.29	2030.91	2026.68	
-1725			2031.11	2030.24	2026.25	
-1750			2030.47	2029.51	2025.67	
-1775			2029.72	2028.68	2025	
-1800			2028.45	2027.83	2024.22	
-1825			2025.05	2024.39	2022.29	
-1850			2023.62	2022.72	2019.79	
-1875			2023.06	2022.36	2019	
-1900			2022.74	2021.99	2019	
-1925			2022.34	2022.05	2018.98	
-1950			2022.28	2022.01	2018.37	
-1975			2022.14	2021.44	2018	
-2000			2021.86	2021.15	2018	
-2025			2021.42	2020.91	2018	
-2050			2021.28	2020.74	2018.48	
-2075			2021.09	2020.41	2018	
-2100			2020.81	2020.11	2017.57	
-2125			2020.53	2019.84	2017.06	
-2150			2020.3	2019.84	2017.15	
-2175			2020.13	2019.48	2017	
-2200			2019.88	2019.43	2017	
-2225			2019.72	2019.13	2017	
-2250			2019.51	2018.84	2016.82	
-2275			2019.28	2018.82	2016.34	
-2300			2019.15	2018.68	2016	
-2325			2018.97	2018.33	2016	
-2350			2018.74	2018.26	2016	
-2375			2018.6	2018.21	2016	
-2400			2018.49	2018.19	2015.94	
-2425			2018.39	2017.9	2015.43	
-2450			2018.22	2017.35	2014.88	
-2475			2017.69	2016.81	2014.14	
-2500			2016.81	2016.03	2013.58	
-2525			2016.32	2015.48	2013.04	
-2550			2015.94	2015.45	2012	
-2575			2015.85	2015.37	2011.77	
-2600			2015.76	2015.26	2011.26	
-2625			2015.64	2015.23	2011.44	
-2650			2015.49	2014.68	2012	
-2675			2015.22	2014.74	2012	
-2700			2015.06	2014.28	2011.49	
-2730			2014.58	2013.8	2011	
-2750			2014.39	2013.88	2010.23	
-2775			2014.29	2013.85	2010	
-2790.28			2014.23	2013.67	2011	
-2791.78			2014.2	2013.71	2010.2	
-2800			2014.16	2013.54	2011	
-2804.37			2014.14	2013.51	2011	
-2900			2013.51	2012.76	2011	
-2950.26			2012.63	2011.79	2009	
-3000			2008.93	2008.06	2006	
-3100			2007.84	2007.45	2004	
-3200			2007.38	2006.56	2003.84	
-3300			2005.71	2005.19	2002.22	
-3305.97			2005.68	2005.16	2002.29	
-3391.11			2005.18	2004.43	2002.47	
-3400			2005.07	2004.31	2002.33	
-3500			2004.11	2003.3	2001	
-3600			2001.12	2000.56	1998	
-3700			2000.52	1999.72	1997.61	
-3789.96			1996.99	1996.28	1993	
-3800			1996.9	1995.97	1993	
-3868.66			1995.41	1994.54	1991.78	
-3900			1994.87	1994.14	1991	
-4000			1994.34	1993.82	1991	
-4100			1993.78	1992.98	1991	
-4146.01			1993.02	1992.17	1989.45	
-4200			1992.12	1991.28	1988.01	
-4300			1988.03	1987.92	1983.97	
-4399.05			1987.98	1987.94	1982	
-4400			1987.98	1987.94	1982	
-4423.9			1987.98	1987.94	1982	
-4500			1987.97	1987.94	1982	
-4528.19			1987.96	1987.95	1982	
-4563.86			1987.96	1987.94	1982	
-4596.68			1987.96	1987.9	1982	
-4600			1987.96	1987.9	1982	

-4607.48			1987.95	1987.81	1981.83	
-4608.44						
	1984.25	1988	0	1984.25	1981.83	Culvert #1-Up
-4608.44						
	1981.92	1979.5	0	1981.92	1979.5	Culvert #1-Dn
-4834.44			1982.71	1981.63	1979.5	
-4895.41			1979.09	1978.76	1975	
-4900			1979.08	1978.71	1975	
-4925.31			1978.97	1978.22	1974.32	
-5000			1978.6	1977.65	1973.32	
-5071.59			1978.15	1976.77	1972.69	
-5100			1977.63	1976.28	1972.26	
-5144.1			1977.19	1976.28	1972	
-5200			1976.83	1975.35	1971	
-5300			1975.15	1973.93	1970.29	
-5400			1974.07	1972.72	1969.13	
-5500			1972.47	1971.28	1968.03	
-5600			1971.37	1970.25	1967.07	
-5629.37			1970.29	1969.11	1966	
-5700			1968.78	1968.14	1965	
-5745.97			1968.47	1967.35	1964.6	
-5800			1967.95	1966.89	1964.11	
-5862.57			1966.9	1965.92	1963	
-5900			1966.65	1965.6	1962.74	
-6000			1964.78	1963.92	1961.71	
-6100			1962.73	1962.05	1959.94	
-6200			1961.56	1961.14	1958.33	
-6300			1959.82	1959.15	1956.86	
-6400			1958.2	1957.47	1955.39	
-6500			1956.34	1956.01	1953.82	
-6600			1954.6	1954.1	1952.4	
-6700			1953.37	1952.85	1951.01	
-6800			1952.23	1951.71	1950	
-6900			1950.74	1950.34	1948.8	
-7000			1949.44	1949.01	1947.3	
-7100			1948.07	1948	1945.88	
-7200			1946.65	1946.14	1944.59	
-7300			1944.56	1944.42	1942.8	
-7400			1943.08	1943.01	1940.97	
-7428.56			1942.83	1942.82	1940.61	
-7500			1941.83	1941.81	1940.16	
-7600			1940.96	1940.93	1939.29	
-7700			1939.78	1939.7	1937	
-7800			1939.42	1938.28	1934.65	
-7893.64			1935.2	1934.27	1931.65	
-7900			1935.1	1934.19	1931.49	
-8000			1932.33	1931.56	1927.91	
-8100			1931.4	1930.83	1927.4	
-8200			1930.49	1930.11	1926.88	
-8300			1929.95	1929.68	1926.34	
-8400			1929.65	1929.5	1925.84	
-8500			1929.32	1928.95	1925.39	
-8600			1928.87	1928.56	1924.92	
-8700			1928.33	1927.77	1924.32	
-8774.45			1927.78	1927.46	1924	
-8800			1927.61	1927.04	1924	
-8900			1924.89	1924.05	1921.29	
-9000			1919.53	1918.45	1915.74	
-9089.63			1917.9	1917.04	1914.2	
-9100			1917.53	1916.63	1914.03	
-9192.13			1916.09	1915.09	1912.77	

RIVER/REACH: EQUESTRIAN DB OF, 1
RIVER STATION: -4608.44
TYPE OF STRUCTURE: Culvert

Description:	
Distance from Upstream XS:	1
Deck/Roadway Width:	225
Weir Coefficient:	2.6
Maximum allowable submergence for weir flow:	0.95
Elevation at which weir flow begins:	0
Weir crest shape:	Broad Crested

Sec	River Station	Length Channel	WSEL	Surch.	EGEL	TopWidth Actual	
4	-4600	7.44	1987.9		1987.96	88.39	
3	-4607.48	227.00	1987.81		1987.95	39.75	
	-4608.44	226.00	1984.25		0	0	Culvert #1-Up
	-4608.44	0.00	1981.92		0	0	Culvert #1-Dn
2	-4834.44	60.97	1981.63		1982.71	39.76	
1	-4895.41	4.59	1978.76		1979.09	61.71	

Ineffective Flow, Section 3			Ineffective Flow, Section 2		
Sta L	Sta R	Elev	Sta L	Sta R	Elev

Opening Type	StagStaL	StagStaR	EncStaL	EncStaR	LIfStaS	RIfStaS
Culvert Group						U

CULVERT:
Culvert Name: Culvert #1

Shape:	Ellipse	Rise:	2.42	Span:	3.75	Barrels:	9

FHWA Chart #: # 29- Horizontal Ellipse; Con
FHWA Scale #: # 1 - Square edge with headwall
Solution Crit:Highest U.S. EG

UpstrmDist:	1	Length:	226	n-Value:	0.013		
EntLossCoef:	0.5	ExtLossCoef:	1	CulvInvElU	1981.83	CulvInvElD	1979.5
LCntStaU:	-45.19	RCntStaU:	-9.83	LCntStaD	58.38	RCntStaD	93.74

Culvert Depth Blocked: 0

Culv Area:	256.59	CulvQ:	706	MinTopRd:	1988.01

	LAbutSt	RAbutSt	LMnTpRd	RMnTpRd	MnTpRd	MxLoCd	
Culvert #1	-47.07	-7.96	1988	1988	1988	1984.25	U
	56.51	95.62	1979.5	1979.5	1979.5	1981.92	D

Name	Q Total.	Q Struc	Q Weir	Selected Method	Flow Type
Culvert #1	706	0		Highest U.S. EG	Pressure Flow

GEOMETRIC CHECK

RS: -4608.44
ST GD 03 The starting station of 56.18 from downstream road/weir data is greater than the starting station of -400 from downstream internal section.
The high chord elevation of 1988 for the starting road/weir station is greater than the ground elevation of 1979.5 for the same ground station.
The road/weir profile may need to be extended.

RS: -4608.44
ST GD 03 The end station of 95.94 from downstream road/weir data is less than the end station of 140 from downstream internal section.
The high chord elevation of 1988 for the end road/weir station is greater than the ground elevation of 1979.5 for the same ground station.
The road/weir profile may need to be extended.

TYPE OF FLOW CHECK

RS: -4608.44 This is Culvert #1
CV PF 01 Type of flow is pressure flow because,
1. EGEL 3 of 1987.95 is less than or equal to MinTopRd of 1988.01.
2. CulvWSIn of 1984.25 is greater than or equal to MxLoCdU of 1984.25.
3. CulvWSOut of 1981.92 is greater than or equal to MxLoCdD of 1981.92.

DISTANCE CHECK

RS: -4608.44 This is Culvert #1
ST DT 01 'Culvert Upstrm Dist' of 1 is less than the height of the culvert opening of 2.42 .
Section 3 should be placed at the foot of the road embankment or wing walls.
Distances at Sections 4 & 3, and 'Distance from Upstream XS' should be adjusted.

RS: -4608.44 This is Culvert #1
ST DT 02 The channel distance of 0 at Downstream Internal Section is less than the height of the culvert opening of 2.42
Section 2 should be placed at the foot of the road embankment or wing walls.
Distances at Sections 4, 3 & 2 should be adjusted.

RS: -4608.44 This is Culvert #1
ST DT 03 The channel distance at Downstream Internal Section is less than or equal to zero. The channel distance at Downstream Internal Section is computed by subtracting the summation of Culvert Upstrm Dist and Culvert Length from the channel length at Section 3.
Culvert Upstrm Dist is 1, Culvert length is 226, Channel length at section 3 is 227
Lengths at Sections 4, 3 & 2 and 'Culvert Upstream Dist' should be adjusted.

CULVERT COEFFICIENT CHECK

CULVERT CRITERIA CHECK

INEFFECTIVE FLOW CHECK

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RS:       -4834.44 This is section 2
ST GD 06  Pressure flow occurs at Culvert Group 1
          The EGEL at section 2 is greater than the lowest MxLoCdD of Culvert Group 1
          by more than 0.5
          The velocity head at Section 2 is more than 0.5 foot and more than
          the velocity head at Section 1.
          Section 2 should be recoded to represent the natural valley
          cross section.

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HERITAGE PARK OUTFALL CHANNEL CLOMR
POST-PROJECT CONDITIONS: HEC-RAS OUTPUT

CLOMR.prj, Plan: Post-Project (CLOMR.p02)

Water Surface Differentials between Mixed Flow Regime Analysis (Original CLOMR) and Subcritical Flow Regime (Revised CLOMR) per FEMA Review Comment

1/22/2008

	River Sta	Pre Project Original CLOMR	Pre Project Revised CLOMR	Δ WSE	Post Project Original CLOMR	Post Project Revised CLOMR	Δ WSE	Δ WSE Between Original Pre & Post Project	Δ WSE Between Revised Pre & Post Project
	ft	WSE	WSE		WSE	WSE			
	-1500	2031.91	2032.44	0.53	2031.91	2032.44	0.53	0.00	0.00
	-1525	2031.28	2032.01	0.73	2031.28	2031.90	0.62	0.00	-0.11
	-1550	2032.12	2032.12	0.00	2030.73	2031.99	1.26	-1.39	-0.13
	-1575	2031.73	2031.73	0.00	2031.49	2031.49	0.00	-0.24	-0.24
	-1600	2031.50	2031.50	0.00	2030.93	2031.13	0.20	-0.57	-0.37
	-1625	2031.35	2031.35	0.00	2030.85	2030.92	0.07	-0.50	-0.43
	-1650	2031.07	2031.07	0.00	2030.81	2030.81	0.00	-0.26	-0.26
	-1675	2030.86	2030.86	0.00	2030.80	2030.80	0.00	-0.06	-0.06
	-1700	2030.91	2030.91	0.00	2030.77	2030.77	0.00	-0.14	-0.14
	-1725	2030.24	2030.24	0.00	2030.32	2030.32	0.00	0.08	0.08
	-1750	2028.90	2029.51	0.61	2029.14	2029.50	0.36	0.24	-0.01
	-1775	2027.95	2028.68	0.73	2028.04	2028.69	0.65	0.09	0.01
	-1800	2026.99	2027.83	0.84	2027.01	2027.85	0.84	0.02	0.02
	-1825	2023.56	2024.39	0.83	2023.52	2024.33	0.81	-0.04	-0.06
	-1850	2021.48	2022.72	1.24	2021.50	2022.79	1.29	0.02	0.07
	-1875	2021.56	2022.36	0.80	2021.51	2022.33	0.82	-0.05	-0.03
	-1900	2021.55	2021.99	0.44	2021.33	2021.85	0.52	-0.22	-0.14
	-1925	2022.05	2022.05	0.00	2021.90	2021.90	0.00	-0.15	-0.15
	-1950	2022.01	2022.01	0.00	2021.90	2021.90	0.00	-0.11	-0.11
	-1975	2021.44	2021.44	0.00	2021.48	2021.48	0.00	0.04	0.04
	-2000	2021.02	2021.15	0.13	2021.17	2021.17	0.00	0.15	0.02
	-2025	2020.34	2020.91	0.57	2020.33	2020.64	0.31	-0.01	-0.27
	-2050	2020.74	2020.74	0.00	2020.37	2020.47	0.10	-0.37	-0.27
	-2075	2020.41	2020.41	0.00	2020.19	2020.23	0.04	-0.22	-0.18
	-2100	2019.97	2020.11	0.14	2020.16	2020.16	0.00	0.19	0.05
	-2125	2019.73	2019.84	0.11	2019.79	2019.79	0.00	0.06	-0.05
	-2150	2019.84	2019.84	0.00	2019.49	2019.62	0.13	-0.35	-0.22
	-2175	2019.48	2019.48	0.00	2019.52	2019.52	0.00	0.04	0.04
	-2200	2019.43	2019.43	0.00	2019.46	2019.46	0.00	0.03	0.03
	-2225	2019.13	2019.13	0.00	2019.06	2019.06	0.00	-0.07	-0.07
	-2250	2018.84	2018.84	0.00	2018.54	2018.76	0.22	-0.30	-0.08
	-2275	2018.82	2018.82	0.00	2018.78	2018.78	0.00	-0.04	-0.04
	-2300	2018.68	2018.68	0.00	2018.48	2018.48	0.00	-0.20	-0.20
	-2325	2018.33	2018.33	0.00	2018.41	2018.41	0.00	0.08	0.08
	-2350	2018.26	2018.26	0.00	2018.45	2018.45	0.00	0.19	0.19
	-2375	2018.21	2018.21	0.00	2018.40	2018.40	0.00	0.19	0.19
	-2400	2018.19	2018.19	0.00	2018.37	2018.37	0.00	0.18	0.18
	-2425	2017.90	2017.90	0.00	2017.97	2017.97	0.00	0.07	0.07
	-2450	2017.35	2017.35	0.00	2017.47	2017.47	0.00	0.12	0.12
	-2475	2016.42	2016.81	0.39	2016.91	2017.15	0.24	0.49	0.34
	-2500	2015.48	2016.03	0.55	2016.08	2016.53	0.45	0.60	0.50
	-2525	2015.04	2015.48	0.44	2016.51	2016.51	0.00	1.47	1.03
	-2550	2014.49	2015.45	0.96	2016.57	2016.57	0.00	2.08	1.12
	-2575	2015.37	2015.37	0.00	2016.58	2016.58	0.00	1.21	1.21
	-2600	2015.26	2015.26	0.00	2016.57	2016.57	0.00	1.31	1.31
	-2625	2015.23	2015.23	0.00	2016.55	2016.55	0.00	1.32	1.32
	-2650	2014.68	2014.68	0.00	2016.44	2016.44	0.00	1.76	1.76
	-2675	2014.74	2014.74	0.00	2016.33	2016.33	0.00	1.59	1.59
	-2683.75				2016.32	2016.32	0.00		
	-2692.09				2016.32	2016.32	0.00		
	-2700	2014.28	2014.28	0.00	2016.28	2016.28	0.00	2.00	2.00
Begin TS	**-2725**				**2014.81**	**2014.81**	**0.00**		
	-2726.48				2014.71	2014.79	0.08		
	-2730	2013.46	2013.80	0.34					
	-2737.5				2014.34	2014.68	0.34		
	-2750	2013.88	2013.88	0.00	2014.07	2014.54	0.47	0.19	0.66
	-2766.11				2013.77	2014.36	0.59		
	-2775	2013.85	2013.85	0.00	2012.15	2013.28	1.13	-1.70	-0.57
	-2782.5				2011.29	2012.65	1.36		
	-2790.28	2013.67	2013.67	0.00	2009.45	2011.27	1.82	-4.22	-2.40
Begin RCB	**-2790.29**				**2009.44**	**2011.27**	**1.83**		
	-2791.78	2013.71	2013.71	0.00					

Future Conditions Post-Project - FEMA Flow
HEC-RAS Summary

HEC-RAS Plan: POST River: EQUESTRIAN DB OF Reach: 1 Profile: PF 1													
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Hydr Depth	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)	(ft/s)	(sq ft)	(ft)	
1	-1500	PF 1	706	2030.00	2032.44	1.23	2032.44	2033.04	0.008411	6.22	113.49	92.41	0.99
1	-1525	PF 1	706	2029.24	2031.90	1.35	2031.83	2032.46	0.006927	6.01	117.57	87.13	0.91
1	-1550	PF 1	706	2028.25	2031.99	1.85		2032.28	0.002357	4.33	163.00	87.90	0.56
1	-1575	PF 1	706	2028.63	2031.49	1.30	2031.49	2032.15	0.008514	6.50	108.65	83.36	1.00
1	-1600	PF 1	706	2028.00	2031.13	1.32	2031.13	2031.80	0.008546	6.57	107.40	81.24	1.01
1	-1625	PF 1	706	2028.00	2030.92	1.32	2030.90	2031.55	0.008039	6.35	111.23	84.57	0.98
1	-1650	PF 1	706	2027.69	2030.81	1.36	2030.70	2031.34	0.006606	5.84	120.86	88.88	0.88
1	-1675	PF 1	706	2027.27	2030.80	1.54		2031.16	0.003887	4.84	145.83	94.74	0.69
1	-1700	PF 1	706	2026.68	2030.77	1.66		2031.06	0.002902	4.34	162.55	98.03	0.59
1	-1725	PF 1	706	2026.25	2030.32	1.13	2030.32	2030.91	0.009626	6.18	114.18	100.62	1.02
1	-1750	PF 1	706	2025.67	2029.50	1.92	2029.50	2030.47	0.008139	7.91	89.30	46.50	1.01
1	-1775	PF 1	706	2025.00	2028.69	2.03	2028.69	2029.72	0.007984	8.16	86.50	42.58	1.01
1	-1800	PF 1	706	2024.22	2027.85	1.20	2027.85	2028.45	0.008741	6.22	113.48	94.56	1.00
1	-1825	PF 1	706	2022.29	2024.33	1.28	2024.33	2024.99	0.008730	6.50	108.59	85.14	1.01
1	-1850	PF 1	706	2019.79	2022.79	1.32	2022.79	2023.47	0.008703	6.63	106.47	80.56	1.02
1	-1875	PF 1	706	2019.00	2022.33	1.36	2022.33	2023.01	0.008456	6.65	106.20	77.90	1.00
1	-1900	PF 1	706	2019.00	2021.85	1.50	2021.85	2022.60	0.008218	6.95	101.57	67.85	1.00
1	-1925	PF 1	706	2018.98	2021.90	1.81		2022.22	0.002784	4.60	153.34	84.58	0.60
1	-1950	PF 1	706	2018.37	2021.90	2.08		2022.15	0.001771	4.02	175.67	84.51	0.49
1	-1975	PF 1	706	2018.00	2021.48	1.51	2021.33	2022.04	0.006031	6.03	117.17	77.65	0.86
1	-2000	PF 1	706	2018.00	2021.17	1.38	2021.17	2021.86	0.008358	6.67	105.85	76.91	1.00
1	-2025	PF 1	706	2018.00	2020.64	1.40	2020.64	2021.36	0.008458	6.81	103.63	73.87	1.01
1	-2050	PF 1	706	2018.00	2020.47	1.39	2020.44	2021.14	0.007890	6.55	107.76	77.64	0.98
1	-2075	PF 1	706	2018.00	2020.23	1.37	2020.23	2020.93	0.008487	6.74	104.71	76.32	1.01
1	-2100	PF 1	706	2017.57	2020.16	1.63		2020.68	0.004925	5.74	122.90	75.40	0.79
1	-2125	PF 1	706	2017.06	2019.79	1.37	2019.79	2020.50	0.008611	6.75	104.55	76.51	1.02
1	-2150	PF 1	706	2017.15	2019.62	1.37	2019.56	2020.25	0.007692	6.37	110.82	81.16	0.96
1	-2175	PF 1	706	2017.00	2019.52	1.42	2019.36	2020.05	0.006097	5.84	120.82	84.84	0.86
1	-2200	PF 1	706	2017.00	2019.46	1.55		2019.89	0.004359	5.23	135.01	87.14	0.74
1	-2225	PF 1	706	2017.00	2019.06	1.28	2019.06	2019.71	0.008633	6.48	108.91	85.20	1.01
1	-2250	PF 1	706	2016.82	2018.76	1.37	2018.71	2019.39	0.007624	6.39	110.43	80.41	0.96
1	-2275	PF 1	706	2016.34	2018.78	1.63		2019.19	0.003898	5.13	137.72	84.44	0.71
1	-2300	PF 1	706	2016.00	2018.48	1.38	2018.37	2019.05	0.006678	6.01	117.38	84.84	0.90
1	-2325	PF 1	706	2016.00	2018.41	1.51		2018.87	0.004865	5.45	129.55	85.51	0.78
1	-2350	PF 1	706	2016.00	2018.45	1.80		2018.74	0.002397	4.29	164.40	91.17	0.56
1	-2375	PF 1	706	2016.00	2018.40	1.84		2018.67	0.002223	4.18	168.72	91.85	0.54
1	-2400	PF 1	706	2015.91	2018.37	1.87		2018.61	0.001966	3.99	177.09	94.73	0.51
1	-2425	PF 1	706	2016.00	2017.97	1.82		2018.51	0.004494	5.89	119.86	65.88	0.77
1	-2450	PF 1	706	2015.42	2017.47	1.70	2017.47	2018.33	0.007844	7.43	94.96	55.91	1.01
1	-2475	PF 1	706	2015.14	2017.15	1.68	2017.15	2018.00	0.007876	7.40	95.47	56.84	1.01
1	-2500	PF 1	706	2014.86	2016.53	1.47	2016.53	2017.28	0.008145	6.91	102.14	69.34	1.00
1	-2525	PF 1	706	2014.44	2016.51	1.78		2017.04	0.004572	5.87	120.34	67.46	0.77
1	-2550	PF 1	706	2014.00	2016.57	2.14		2016.90	0.002241	4.63	152.42	71.18	0.56
1	-2575	PF 1	706	2013.64	2016.58	2.38		2016.84	0.001530	4.09	172.63	72.64	0.47
1	-2600	PF 1	706	2013.26	2016.57	2.64		2016.79	0.001136	3.76	187.74	71.04	0.41
1	-2625	PF 1	706	2012.83	2016.55	2.75		2016.76	0.001026	3.65	193.23	70.23	0.39
1	-2650	PF 1	706	2012.39	2016.44	2.83		2016.72	0.001339	4.26	165.56	58.53	0.45
1	-2675	PF 1	706	2011.95	2016.33	2.94		2016.68	0.001588	4.74	148.87	50.60	0.49
1	-2683.75	PF 1	706	2011.82	2016.32	2.90		2016.67	0.001591	4.70	150.07	51.79	0.49
1	-2692.09	PF 1	706	2011.72	2016.32	2.89		2016.64	0.002611	4.57	154.61	53.55	0.47
1	-2700	PF 1	706	2011.62	2016.28	2.98		2016.62	0.002096	4.68	153.61	51.54	0.44
1	-2725	PF 1	706	2011.49	2014.81	3.23	2014.81	2016.44	0.002300	10.25	68.91	21.36	1.01
1	-2726.48	PF 1	706	2011.48	2014.79	3.23	2014.79	2016.42	0.002303	10.25	68.88	21.35	1.01
1	-2737.5	PF 1	706	2011.36	2014.68	3.23	2014.68	2016.30	0.002297	10.24	68.94	21.35	1.00
1	-2750	PF 1	706	2011.22	2014.54	3.23	2014.54	2016.17	0.002302	10.25	68.89	21.34	1.01
1	-2766.11	PF 1	706	2011.05	2014.36	3.23	2014.36	2016.00	0.002307	10.26	68.83	21.32	1.01
1	-2775	PF 1	706	2009.38	2013.28	3.79	2013.28	2015.20	0.002517	11.10	63.62	16.80	1.01
1	-2782.5	PF 1	706	2007.97	2012.65	4.49	2012.65	2014.91	0.002915	12.07	58.47	13.03	1.00
1	-2790.28	PF 1	706	2006.50	2011.27	4.76	2011.24	2013.64	0.003177	12.35	57.15	12.00	1.00
1	-2790.29	PF 1	706	2006.50	2011.27	4.77	2011.27	2013.63	0.003165	12.34	57.23	12.00	1.00
1	-3290.29	PF 1	706	1997.45	2002.22	4.77	2002.22	2004.58	0.003165	12.34	57.23	12.00	1.00

HEC-RAS Version 3.1.3 May 2005
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

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PROJECT DATA
Project Title: EQUESTRIAN CLOMR
Project File : CLOMR.prj
Run Date and Time: 1/21/2008 1:48:58 PM

Project in English units

Project Description:
1st Addendum to the Conditional Letter of Map Revision
Heritage Park Outfall
Channel


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PLAN DATA

Plan Title: Post-Project
Plan File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.p02

          Geometry Title: POST-PROJECT; PARK
          Geometry File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.g09

          Flow Title    : Neighborhood
          Flow File     : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.f05

Plan Summary Information:
Number of:  Cross Sections =   61    Multiple Openings  =    0
            Culverts       =    0    Inline Structures  =    0
            Bridges        =    0    Lateral Structures =    0

Computational Information
    Water surface calculation tolerance  =  0.01
    Critical depth calculation tolerance =  0.01
    Maximum number of iterations         =  20
    Maximum difference tolerance         =  0.3
    Flow tolerance factor                =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow


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FLOW DATA

Flow Title: Neighborhood
Flow File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.f05

Flow Data (cfs)
*************************************************************
* River           Reach           RS      *            PF 1 *
* EQUESTRIAN DB OF1               -1500   *             706 *
*************************************************************

Boundary Conditions
*****************************************************************************************************************
* River           Reach           Profile          *            Upstream                Downstream    *
*****************************************************************************************************************
* EQUESTRIAN DB OF1               PF 1             *        Normal S = 0.0304       Normal S = 0.0137 *
*****************************************************************************************************************

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GEOMETRY DATA

Geometry Title: POST-PROJECT; PARK
Geometry File : J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.g09

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -1500

INPUT
Description:
Station Elevation Data    num=     102
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     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.261    2043-140.481    2043-140.475    2043-135.1042042.208-133.566    2042
-131.2242041.581-127.893    2041-126.2152040.707-122.378    2040-120.855 2039.74
-116.536    2039-115.2462038.777-110.674    2038-108.8942037.693 -104.82    2037
-101.912 2036.48 -99.111    2036-95.61842035.294-94.1404    2035 -93.7072034.921
-89.0945    2034-84.68812033.095-84.2205    2033-83.24232032.795-79.1597    2032
-74.13042031.295-71.4223    2031-70.12782030.912-68.05442030.724-67.54942030.637
-67.10112030.599 -66.8892030.593 -66.7222030.597-66.5035 2030.62-66.18342030.731
-65.67212030.831-64.71282030.957-64.5355    2031-61.65622031.283-59.26782031.469
-53.2934    2032-53.12672032.009-53.0267 2032.05-39.90362032.246 -36.3082032.159
-34.08492032.071-32.9996    2032 -32.4372031.809 -29.309    2031 -29.2332030.994
-29.19712030.991-26.30872030.733-23.26452030.479-19.0713 2030.28-17.48582030.194
-15.66542030.073-14.6993    2030-12.7716    2030-9.76562    2030-7.76299    2030
-7.71138    2030-5.951742030.182-4.223712030.383-2.640642030.604 -2.24682030.645
-1.902772030.651-.5626772030.569       02030.557 .1478562030.554 .6291052030.615
3.1228952030.7324.0218322030.8095.530625    20316.2684612031.209 8.29692    2032
10.706172032.39512.191112032.60913.80411    203315.324082033.14916.839972033.145
16.919412033.14217.098132033.14917.77806 2033.1821.891942033.39633.43209    2034
35.482132034.48537.46578    203539.492592035.54441.45111    203643.923312036.594
45.55312    203746.454682037.23949.83693    203850.099752038.05650.811212038.228
51.96051 2038.4553.774492038.81554.98262    203956.810192039.15157.517462039.157
58.213942039.23858.34977 2039.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.261    .035-142.261    .02558.34977    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.26158.34977               25      25      25             .1       .3
Left Levee      Station=   -39.9      Elevation= 2032.25

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2033.04  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.60  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)         * 2032.44  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2032.44  * Flow Area (sq ft)    *          *  113.49  *          *
* E.G. Slope (ft/ft)     *0.008411  * Area (sq ft)         *          *  113.49  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   92.41  * Top Width (ft)       *          *   92.41  *          *
* Vel Total (ft/s)       *    6.22  * Avg. Vel. (ft/s)     *          *    6.22  *          *
* Max Chl Dpth (ft)      *    2.44  * Hydr. Depth (ft)     *          *    1.23  *          *
* Conv. Total (cfs)      *  7697.9  * Conv. (cfs)          *          *  7697.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   93.10  *          *
* Min Ch El (ft)         * 2030.00  * Shear (lb/sq ft)     *          *    0.64  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    3.98  *          *
* Frctn Loss (ft)        *    0.19  * Cum Volume (acre-ft)  *          *    4.34  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    2.33  *    0.00  *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -1525

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.2682042.739-142.2572042.739-140.8772042.609 -140.672042.565 -140.182042.508
-138.4412042.352-136.0812042.035-135.828    2042 -131.922041.303-130.192    2041
-129.094 2040.81-124.509    2040-119.4862039.115-118.823    2039-117.3562038.744
 -113.05    2038 -109.782037.423-107.337    2037-104.4682036.495-101.556    2036
-100.0952035.738-95.9636    2035-90.59542034.021-90.4834    2034-90.19082033.945
-89.47542033.825-84.4017    2033-82.45242032.609-80.83392032.358-78.2929    2032
-77.29262031.875-76.65292031.768-75.26332031.554-71.9249    2031-69.88522030.612
-68.58372030.352-66.7094    2030-66.0606    2030-65.5086    2030-64.62572030.283
-62.1973    2031-60.28042031.074-52.88182031.349-46.75942031.588-46.10792031.611
-45.40092031.633-45.17372031.636-45.06042031.635-44.0801 2031.46-41.7082    2031
-39.28942030.127 -38.949    2030-38.45352029.781 -38.3492029.763-38.23492029.757
-37.95972029.759-37.87532029.774-37.06812029.615-35.9814 2029.55-35.00932029.472
-34.78982029.435-34.68772029.384-33.78292029.256-33.64412029.249-33.59152029.239
-29.36472029.276-26.08912029.448-16.1598    2030-3.649712030.556-1.398832030.673
       02030.7622.2393232030.9043.711227    20314.592877 2031.126.4156132031.383
10.19792    203213.961862032.62116.08633    203328.442932033.65535.07403    2034
35.807822034.17439.27631    203541.515732035.55843.29516    203647.09778 2036.88
47.58003    203748.374022037.15552.40611    203853.60807 2038.1355.190842038.276
55.926252038.41456.542912038.45557.725882038.51758.13948 2038.5558.350222038.577

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.268    .035-142.268    .02558.35022    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.26858.35022               25      25                    .1       .3
Left Levee      Station=  -46.76      Elevation= 2031.59

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
```

E.G. Elev (ft)	2032.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.025	
W.S. Elev (ft)	2031.90	Reach Len. (ft)	25.00	25.00	0.00
Crit W.S. (ft)	2031.83	Flow Area (sq ft)		117.57	
E.G. Slope (ft/ft)	0.006927	Area (sq ft)		117.57	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	87.13	Top Width (ft)		87.13	
Vel Total (ft/s)	6.01	Avg. Vel. (ft/s)		6.01	
Max Chl Dpth (ft)	2.66	Hydr. Depth (ft)		1.35	
Conv. Total (cfs)	8482.7	Conv. (cfs)		8482.7	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		87.90	
Min Ch El (ft)	2029.24	Shear (lb/sq ft)		0.58	
Alpha	1.00	Stream Power (lb/ft s)		3.47	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)		4.27	0.00
C & E Loss (ft)	0.08	Cum SA (acres)		2.28	0.00

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1550

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.274	2042.254	-142.244	2042.255	-139.544	2042	-136.724	2041.609	-132.788	2041
-130.682	2040.615	-127.179	2040	-122.466	2039.178	-121.471	2039	-120.736	2038.886
-114.928	2038	-114.571	2037.946	-110.951	2037.383	-108.694	2037	-105.278	2036.45
-102.68	2036	-99.85222	2035.517	-96.8097	2035	-92.03772	2034.183	-91.0282	2034
-89.7979	2033.78	-85.4234	2033	-82.36152	2032.559	-81.45242	2032.449	-79.03392	2032.098
-78.3905	2032	-77.37562	2031.898	-76.74942	2031.845	-71.85162	2031.402	-68.36662	2031.082
-67.4322	2031	-63.7417	2030.48	-59.6808	2030	-56.38132	2029.439	-54.67532	2029.168
-54.2352	2029.272	-54.2092	2029.334	-53.98342	2029.478	-53.51852	2029.569	-52.90472	2029.583
-51.85882	2029.454	-51.37282	2029.403	-50.3982	2029.232	-50.22172	2029.194	-49.5825	2029
-49.17982	2028.906	-47.27332	2028.529	-45.75652	2028.405	-45.14262	2028.342	-44.88332	2028.308
-41.56342	2028.252	-38.68372	2028.502	-34.3191	2028.93	-33.7689	2029	-33.1132	2029.131
-30.1965	2030	-20.50682	2030.241	-16.28252	2030.361	-3.79112	2030.706	02	2030.818
1.945724	2030.875	6.108246	2031	7.002336	2031.187	7.914908	2031.49	9.598696	2032
12.57994	2032.451	17.20134	2033	29.07638	2033.616	36.65795	2034	40.34856	2034.757
41.42886	2035	45.27423	2035.794	46.3264	2036	47.05028	2036.146	51.49594	2037
52.80746	2037.303	55.35497	2037.674	57.3991	2038	57.901	2038.045	58.35067	2038.097

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.274	.035	-142.274	.02	558.35067	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.274	58.35067	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2032.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.		0.025	
W.S. Elev (ft)	2031.99	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		163.00	
E.G. Slope (ft/ft)	0.002357	Area (sq ft)		163.00	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	87.90	Top Width (ft)		87.90	
Vel Total (ft/s)	4.33	Avg. Vel. (ft/s)		4.33	
Max Chl Dpth (ft)	3.74	Hydr. Depth (ft)		1.85	
Conv. Total (cfs)	14542.5	Conv. (cfs)		14542.5	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		88.64	
Min Ch El (ft)	2028.25	Shear (lb/sq ft)		0.27	
Alpha	1.00	Stream Power (lb/ft s)		1.17	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)		4.19	0.00
C & E Loss (ft)	0.04	Cum SA (acres)		2.23	0.00

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1575

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.281	2041.539	-142.259	2041.54	-137.674	2041	-132.992	2040.223	-131.734	2040
-127.925	2039.339	-125.838	2039	-119.672	2038.027	-119.501	2038	-118.903	2037.909
-112.666	2037	-110.993	2036.76	-105.737	2036	-100.642	2035.238	-99.1234	2035
-93.51232	2034.051	-93.2414	2034	-92.54072	2033.878	-87.5038	2033	-84.04872	2032.414
-81.5103	2032	-78.56932	2031.759	-71.7086	2031	-64.68592	2030.374	-58.4924	2030
-58.07792	2029.429	-57.7772	2029	-56.71452	2028.874	-54.9742	2028.684	-54.8182	2028.675
-53.22142	2028.646	-52.43732	2028.628	-44.19542	2028.716	-43.74682	2028.828	-42.8585	2029
-40.14672	2029.982	-40.1052	2030	-38.84772	2030.028	-2.832472	2030.836	02	2030.844
3.239084	2030.853	3.296573	2030.853	5.270041	2031	7.613212	2031.592	8.698822	2032
15.16043	2032.502	21.74082	2033	28.43948	2033.362	32.42575	2033.562	33.98985	2033.619
34.52842	2033.601	34.67014	2033.492	37.94581	2034	44.87897	2034.774	309396	2035

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47.622542035.89348.20878    203648.66305 2036.0855.50229    203756.474442037.235
56.969652037.40357.727332037.58957.741992037.611 57.8686 2037.64 58.00632037.649
58.168252037.65158.313882037.652

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.281    .035-142.281    .02558.31388    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.28158.31388               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2032.15  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.66  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2031.49  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2031.49  * Flow Area (sq ft)     *          *  108.65  *          *
* E.G. Slope (ft/ft)     *0.008514  * Area (sq ft)          *          *  108.65  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   83.36  * Top Width (ft)        *          *   83.36  *          *
* Vel Total (ft/s)       *    6.50  * Avg. Vel. (ft/s)      *          *    6.50  *          *
* Max Chl Dpth (ft)      *    2.86  * Hydr. Depth (ft)      *          *    1.30  *          *
* Conv. Total (cfs)      *  7651.4  * Conv. (cfs)           *          *  7651.4  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   84.24  *          *
* Min Ch El (ft)         * 2028.63  * Shear (lb/sq ft)      *          *    0.69  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.45  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *          *    4.11  *    0.00  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    2.18  *    0.00  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1600

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
-142.2872040.847-141.4292040.755-141.2742040.721-140.8712040.678-140.6162040.639
-140.0662040.499-138.4492040.197-137.126    2040-132.9932039.419 -131.382039.207
-129.929    2039-122.9152038.058-122.7952038.043-122.513    2038-122.3352037.971
-116.308    2037-111.3942036.196-110.179    2036-106.7992035.447-104.027    2035
-101.5542034.612-97.6174    2034-93.49152033.349-91.0638    2033-88.83342032.639
-84.7211    2032-75.73352031.137-74.2416    2031-72.45752030.802-65.1648    2030
 -65.0822029.976-62.6426    2029-56.17652028.078-55.4664    2028-55.3938    2028
-51.00752028.686-49.9677 2028.86-49.2178    2029-47.42042029.873-47.0971    2030
-10.6174    2030-9.70563    2030-9.423312029.941-8.316742029.857-8.252752029.761
-8.174282029.742-7.864222029.741-7.42446 2029.75 -6.2231 2029.81-5.453862029.828
-3.193622029.851-2.076262029.867-1.166612029.893       02029.9471.155898    2030
 3.487622030.4994.7374452030.8175.216611    20316.1990522031.3168.104875    2032
17.835882032.37333.78006    203335.581152033.37238.76359    203442.66583 2034.74
43.94832    203547.25335 2035.6349.21566    203653.235232036.51956.64665    2037
56.947062037.07456.980072037.12457.26514 2037.1957.575192037.20957.939832037.215
58.267732037.216

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.287    .035-142.287    .02558.26773    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.28758.26773               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2031.80  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.67  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2031.13  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2031.13  * Flow Area (sq ft)     *          *  107.40  *          *
* E.G. Slope (ft/ft)     *0.008546  * Area (sq ft)          *          *  107.40  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   81.24  * Top Width (ft)        *          *   81.24  *          *
* Vel Total (ft/s)       *    6.57  * Avg. Vel. (ft/s)      *          *    6.57  *          *
* Max Chl Dpth (ft)      *    3.13  * Hydr. Depth (ft)      *          *    1.32  *          *
* Conv. Total (cfs)      *  7637.1  * Conv. (cfs)           *          *  7637.1  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   82.08  *          *
* Min Ch El (ft)         * 2028.00  * Shear (lb/sq ft)      *          *    0.70  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.59  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *          *    4.05  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    2.13  *    0.00  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
```

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1625

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.2942040.503	-139.4992040.202	-138.9942040.091	-138.137	2040	-134.8092039.464				
-131.888	2039	-128.2552038.431	-125.573	2038	-120.8742037.282	-119.033	2037		
-114.8482036.375	-112.312	2036	-109.862035.648	-105.484	2035	-104.1542034.791			
-98.9239	2034	-96.33542033.566	-92.8248	2033	-87.3252032.126	-86.5518	2032		
-85.11362031.794	-79.6584	2031	-76.24972030.465	-71.9631	2030	-69.92112029.263			
-69.2087	2029	-68.30752028.665	-66.5817	2028	-62.0481	2028	-59.4133	2028	
-56.2262 2028.75	-55.62062028.886	-55.1096	2029	-55.00192029.066	-54.83262029.091				
-54.75572029.112	-54.59512029.167	-51.6201	2030	-51.6061	2030	-51.2736	2030		
-24.4105	2030	-17.9357	2030	-17.111	2030	-15.419	2030	-9.725552029.301	
-9.406982029.269	-9.266782029.266	-7.900772029.251	-7.562029.152	-7.474572029.116					
-7.384372029.093	-7.35422029.075	-7.3294 2029.07	-7.24762029.063	-7.242872029.056					
-7.237072029.055	-7.214152029.055	-7.181642029.055	-7.09283 2029.06	-7.035972029.061					
-6.868882029.063	-6.786282029.064	-6.719042029.066	-6.466422029.078	-6.229422029.094					
-6.03248 2029.11	-5.032442029.212	-4.255162029.246	02029.6653.414118	2030					
3.7388662030.152	5.56635	20315.8844072031.0938.0012542031.53610.18128	2032						
15.392922032.21724.408252032.61830.458312032.88733.04204	203337.778942033.999								
37.78277	203437.823182034.009	42.04022034.88542.58107	203543.068632035.091						
47.79948	203648.57362 2036.0850.798322036.267	54.2813 2036.5154.839862036.556							
54.92939 2036.5855.858832036.66957.426452036.68557.758582036.69258.109152036.696									
58.221372036.695									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.294	.035	-142.294	.02558.22137	.035	

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.29458.22137		25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2031.55	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.63	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2030.92	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *
* Crit W.S. (ft)	* 2030.90	* Flow Area (sq ft)	*	* 111.23	* *
* E.G. Slope (ft/ft)	*0.008039	* Area (sq ft)	*	* 111.23	* *
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	* *
* Top Width (ft)	* 84.57	* Top Width (ft)	*	* 84.57	* *
* Vel Total (ft/s)	* 6.35	* Avg. Vel. (ft/s)	*	* 6.35	* *
* Max Chl Dpth (ft)	* 2.92	* Hydr. Depth (ft)	*	* 1.32	* *
* Conv. Total (cfs)	* 7874.1	* Conv. (cfs)	*	* 7874.1	* *
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 85.58	* *
* Min Ch El (ft)	* 2028.00	* Shear (lb/sq ft)	*	* 0.65	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.14	* *
* Frctn Loss (ft)	* 0.18	* Cum Volume (acre-ft)	*	* 3.99	* 0.00 *
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	*	* 2.08	* 0.00 *

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1650

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.32040.158	-140.828	2040	-134.062039.064	-133.669	2039	-129.288 2038.23			
-127.867	2038	-123.5582037.269	-121.857	2037	-119.7532036.698	-114.974	2036		
-112.5942035.663	-107.992	2035	-102.5792034.183	-101.357	2034	-100.0622033.794			
-95.2359	2033	-91.35782032.362	-89.1938	2032	-88.0532031.811	-82.9322	2031		
-80.45082030.337	-79.0147	2030	-77.6689 2029.08	-77.4936	2029	-77.34242028.938			
-75.631	2028	-74.34362027.831	-73.955 2027.69	-69.48322027.724	-69.33742027.732				
-68.95562027.742	-66.8884 2027.77	-66.33122027.781	-65.56772027.866	-63.4976	2028				
-63.31992028.133	-62.95042028.443	-62.57452028.854	-62.4065	2029	-62.27812029.093				
-60.6338	2030	-60.5023	2030	-56.3872	2030	-47.9807	2030	-26.3738	2030
-11.2919	2030	-9.2222029.178	-8.74169	2029	-4.942032028.451	-1.561242028.497			
-1.506142028.505	-.8811452028.546	02028.652 .0797832028.662	.9748772028.739						
2.0374132028.8692.844485	20293.770298 2029.455.015427	20306.5814552030.773							
7.091821	20317.8248322031.19810.054682031.74111.11249	203222.745312032.517							
33.68086	203335.172262033.32838.29308	203441.15609 2034.6342.94591	2035						
47.106612035.52349.864112035.85950.98348	203651.130522036.01455.80463 2036.06								
56.794912036.08157.840182036.09258.174792036.091									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.3	.035	-142.3	.02558.17479	.035	

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.358.17479		25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2031.34	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.53	* Wt. n-Val.	*	* 0.025	* *
* W.S. Elev (ft)	* 2030.81	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00 *

Crit W.S. (ft)	2030.70	Flow Area (sq ft)		120.86			
E.G. Slope (ft/ft)	0.006606	Area (sq ft)		120.86			
Q Total (cfs)	706.00	Flow (cfs)		706.00			
Top Width (ft)	88.88	Top Width (ft)		88.88			
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)		5.84			
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)		1.36			
Conv. Total (cfs)	8686.1	Conv. (cfs)		8686.1			
Length Wtd. (ft)	25.00	Wetted Per. (ft)		90.90			
Min Ch El (ft)	2027.69	Shear (lb/sq ft)		0.55			
Alpha	1.00	Stream Power (lb/ft s)		3.20			
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)		3.92		0.00	
C & E Loss (ft)	0.05	Cum SA (acres)		2.03		0.00	

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1675

INPUT
Description:
Station Elevation Data num= 113

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3072039.685	-142.1872039.687	-141.4042039.587	-141.129	2039.52	-140.0282039.362				
-138.505 2039.23	-136.632039.016	-136.463	2039	-136.3422038.972	-130.165	2038			
-127.3522037.545	-124.142	2037	-118.4052036.115	-117.627	2036	-116.478 2035.83			
-114.9632035.595	-111.263	2035	-109.2422034.661	-105.2	2034	-102.36 2033.53			
-99.2018	2033	-94.55712032.235	-93.1535	2032	-90.06372031.475	-87.5251	2031		
-86.73792030.597	-85.927	2030	-85.20162029.056	-85.157	2029	-85.10392028.909			
-84.0617	2028	-83.57372027.756	-82.60352027.536	-82.4922027.499	-81.66072027.391				
-81.47822027.324	-79.3779 2027.34	-79.30942027.344	-79.13012027.349	-78.15922027.362					
-77.89752027.367	-77.53892027.407	-76.45752027.477	-76.1532027.527	-75.13582027.702					
-72.3408	2028	-72.06292028.147	-70.3396	2029	-69.91162029.172	-69.70182029.225			
-69.02152029.368	-68.68152029.475	-67.72722029.826	-67.1791	2030	-25.3307	2030			
-16.2995	2030	-13.5709	2030	-13.52172029.975	-11.6603	2029	-9.972932028.252		
-9.44346	2028	-8.44358 2027.83	-8.280162027.821	-8.091852027.814	-5.7462027.467				
-5.23812027.407	-4.72943 2027.36	-4.045592027.315	-3.701632027.286	-3.458762027.276					
-3.11732027.272	-2.740192027.272	-2.41682027.274	-2.219462027.278	-2.120362027.283					
-2.002642027.295	-1.307512027.336	-.8785282027.366	-.6634432027.397	-.5613542027.443					
02027.556	.3592952027.628	1.6583652027.977	1.751907	20281.8227672028.037					
3.843728	20295.549385	2029.825.871013	20307.9442522030.9548.033332	2031					
8.3375322031.09111.15101	203226.130392032.63333.281412032.87436.71986	2033							
38.257872033.17343.44971	203445.979362034.50648.34933	2035	49.88352035.116						
49.924142035.11550.277842035.15852.34156	2035.3152.829862035.38553.387212035.423								
55.369222035.51856.403882035.561	56.5038 2035.5756.53687	2035.6157.081842035.639							
57.167352035.65357.318062035.666	58.22062035.706								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.307	.035	-142.307	.025	58.2206	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.307	58.2206	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2031.16	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.36	Wt. n-Val.		0.025		
W.S. Elev (ft)	2030.80	Reach Len. (ft)	25.00	25.00	25.00	
Crit W.S. (ft)		Flow Area (sq ft)		145.83		
E.G. Slope (ft/ft)	0.003887	Area (sq ft)		145.83		
Q Total (cfs)	706.00	Flow (cfs)		706.00		
Top Width (ft)	94.74	Top Width (ft)		94.74		
Vel Total (ft/s)	4.84	Avg. Vel. (ft/s)		4.84		
Max Chl Dpth (ft)	3.53	Hydr. Depth (ft)		1.54		
Conv. Total (cfs)	11324.2	Conv. (cfs)		11324.2		
Length Wtd. (ft)	25.00	Wetted Per. (ft)		97.65		
Min Ch El (ft)	2027.27	Shear (lb/sq ft)		0.36		
Alpha	1.00	Stream Power (lb/ft s)		1.75		
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)		3.84	0.00	
C & E Loss (ft)	0.02	Cum SA (acres)		1.98	0.00	

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1700

INPUT
Description:
Station Elevation Data num= 94

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3142039.103	-141.972039.107	-141.127	2039	-136.8252038.282	-135.103	2038			
-129.191 2037.19	-127.847	2037	-126.7922036.845	-120.8582036.021	-120.71	2036			
-119.9412035.885	-114.015	2035	-108.9852034.219	-107.653	2034	-107.0192033.895			
-101.61	2033	-98.0814 2032.41	-95.4715	2032	-93.29772031.624	-90.0633	2031		
-89.78532030.055	-89.6582	2030	-89.46582029.452	-89.2922	2029	-89.17652028.545			
-88.99282028.108	-88.9149	2028	-88.86212027.931	-88.5596	2027	-88.4673	2027		
-88.4334	2027	-87.6331	2027	-79.15642027.711	-77.942027.808	-77.72272027.822			
-77.61172027.833	-76.3519	2028	-76.22062028.092	-74.8813	2029	-73.30012029.617			
-72.0409	2030	-71.6108	2030	-30.0953	2030	-25.8896	2030	-17.4105	2030
-16.88152029.762	-14.846	2029	-14.06432028.635	-12.3696	2028	-10.1253 2027.09			
-9.91048	2027	-9.844242026.988	-7.773712026.795	-7.382982026.775	-3.578612026.687				
-3.12292026.681	-2.569262026.678	-2.021252026.678	-1.559592026.682	-1.19764 2026.69					
-.7809782026.707	-.1696822026.797	02026.829	.900079	20271.3211362027.303					

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2.258151    2028 3.111332028.6293.589581    20295.0851782029.9895.106314    2030
8.558848  2030.98.929314    203111.92212 2031.3512.760732031.45914.087942031.612
17.13408    203220.259472032.13921.774942032.20231.054232032.40332.041172032.466
36.210852032.77238.86683    203345.103492033.88645.90857    203446.52653  2034.1
48.835272034.45853.25048    203554.316372035.04454.533842035.06554.60581 2035.15
 55.79192035.214  55.9782035.24456.306012035.27358.270322035.359

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.314    .035-142.314    .02558.27032    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.31458.27032               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2031.06  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.29  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2030.77  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  162.55  *          *
* E.G. Slope (ft/ft)     *0.002902  * Area (sq ft)          *          *  162.55  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   98.03  * Top Width (ft)        *          *   98.03  *          *
* Vel Total (ft/s)       *    4.34  * Avg. Vel. (ft/s)      *          *    4.34  *          *
* Max Chl Dpth (ft)      *    4.09  * Hydr. Depth (ft)      *          *    1.66  *          *
* Conv. Total (cfs)      * 13105.4  * Conv. (cfs)           *          * 13105.4  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *  102.89  *          *
* Min Ch El (ft)         * 2026.68  * Shear (lb/sq ft)      *          *    0.29  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.24  *          *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)  *          *    3.75  *    0.00  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    1.93  *    0.00  *
*************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1725

INPUT
Description:
Station Elevation Data    num=     105
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -142.322038.626-141.9832038.629-141.3662038.531-137.392    2038-136.7752037.925
-133.4972037.467-132.0982037.284-130.7152037.082-130.173    2037-125.469 2036.29
-123.527    2036-121.1942035.656  -116.9    2035-112.5332034.301-110.575    2034
-109.1282033.759  -104.3    2033-99.38882032.133-98.6419    2032-96.89882031.696
-94.92852031.301-93.5322    2031-92.74952030.798-90.5347 2030.04-90.43892030.008
-90.42882030.004-90.4224    2030  -90.422029.997 -90.3542029.907-89.78442029.092
-89.6869    2029-89.6462 2028.94-88.9794    2028-88.6824 2027.61-88.2658    2027
-85.5615    2027-84.4889    2027-81.53412027.525-80.1889 2027.75-79.60952027.843
-78.6022    2028-78.02432028.547-77.25972028.969-77.2272 2028.99-77.1907    2029
-71.40562029.889 -70.842    2030 -70.137    2030-69.3802    2030-68.1738    2030
 -60.094    2030-59.0208    2030-29.6544    2030-28.9787    2030-28.0199    2030
-18.1637    2030-15.2908    2030-13.8714    2030-13.22422029.889-10.7884    2029
-9.623442028.512-8.52232    2028-7.166632027.413-6.28148    2027-6.115982026.659
-5.73493 2026.51-4.924222026.362-4.165282026.292-4.022062026.284 -2.62762026.252
-2.46056 2026.25-2.257632026.249-2.056762026.249-1.88754 2026.25-1.754882026.253
-1.602152026.259-1.378082026.292-.9041272026.382       0 2026.53 .1334272026.551
2.774007    20273.2357722027.3674.157831    20284.7877232028.4885.528466    2029
6.5579472029.6167.283088    20307.399833 2030.0313.81127    203119.783182031.291
21.289252031.36422.655312031.423 27.00572031.62727.81368 2031.6629.987292031.723
31.674472031.78634.029242031.88536.51522    203238.760272032.25444.01895    2033
46.191392033.41650.28986    203450.783632034.06358.01715    203558.320042035.013

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -142.32    .035 -142.32    .02558.32004    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.3258.32004               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2030.91  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.59  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2030.32  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2030.32  * Flow Area (sq ft)     *          *  114.18  *          *
* E.G. Slope (ft/ft)     *0.009626  * Area (sq ft)          *          *  114.18  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *  100.62  * Top Width (ft)        *          *  100.62  *          *
* Vel Total (ft/s)       *    6.18  * Avg. Vel. (ft/s)      *          *    6.18  *          *
* Max Chl Dpth (ft)      *    4.07  * Hydr. Depth (ft)      *          *    1.13  *          *
* Conv. Total (cfs)      *  7196.0  * Conv. (cfs)           *          *  7196.0  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *  104.57  *          *
* Min Ch El (ft)         * 2026.25  * Shear (lb/sq ft)      *          *    0.66  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.06  *          *
* Frctn Loss (ft)        *    0.22  * Cum Volume (acre-ft)  *          *    3.67  *    0.00  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *          *    1.87  *    0.00  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
```

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1750

INPUT
Description:
Station Elevation Data num= 117

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3272037.701	-142.3142037.701	-140.0482037.593	-139.6612037.568	-138.3632037.439					
-138.0162037.448	-136.1362037.273	-134.055	2037	-128.5812036.133	-127.703	2036			
-125.8852035.706	-121.383	2035	-119.2732034.667	-114.92	2034	-109.7382033.207			
-108.411	2033	-107.4872032.816	-102.657	2032	-101.7192031.811	-98.7723	2031.24		
-98.2408	2031.14	-97.4461	2031	-96.63922030.854	-91.8549	2030	-90.35412029.271		
-89.6299	2029	-89.41622028.882	-87.953	2028	-87.51582027.774	-86.2499	2027		
-85.77252026.806	-85.3889	2026.69	-81.20192026.624	-81.11682026.647	-79.88632026.707				
-79.49942026.737	-78.71032026.924	-78.2728	2027	-77.7804	2027.53	-77.43292027.831			
-77.2571	2028	-76.27722028.934	-76.2047	2029	-76.02652029.015	-75.77292029.035			
-62.9567	2030	-58.5598	2030	-57.6281	2030	-56.50732029.968	-54.54332029.917		
-53.67452029.908	-50.70062029.895	-45.31742029.886	-45.01372029.886	-38.89552029.786					
-37.98042029.842	-36.2092029.914	-34.17612029.976	-33.4802	2030	-25.5194	2030			
-21.2295	2030	-19.7537	2030	-18.3725	2030	-17.6728	2030	-16.9724	2030
-16.37422029.939	-14.9473	2029.69	-11.7631	2029	-10.46662028.731	-7.31478	2028		
-6.911142027.896	-4.89974	2027	-3.234592026.343	-2.46001	2026	-.805962025.672			
-.6378582025.683	02025.7581.3439192025.9172.311248	20264.2272852026.358							
8.916181	20279.4188112027.5079.841789	202810.430252028.59510.72442	2029						
10.870472029.198	11.671	203017.598692030.514	18.06482030.54618.391482030.557						
19.231852030.56419.649252030.57322.641052030.61223.806762030.63424.682242030.661									
25.297912030.68726.552672030.76928.750322030.89131.06146	203131.67757	2031.04							
34.64642031.17734.796782031.18535.53165	2031.2340.631012031.45847.15505	2032							
47.907632032.08648.12263	2032.1148.434822032.13850.295022032.31951.611682032.437								
52.349922032.473	53.60052032.63254.316352032.69454.710012032.714	54.98382032.699							
56.547682032.55858.223122032.546									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.327	.035	-142.327	.02558.22312	.035	

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.32758.22312		25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2030.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.		0.025	
W.S. Elev (ft)	2029.50	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2029.50	Flow Area (sq ft)		89.30	
E.G. Slope (ft/ft)	0.008139	Area (sq ft)		89.30	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	46.50	Top Width (ft)		46.50	
Vel Total (ft/s)	7.91	Avg. Vel. (ft/s)		7.91	
Max Chl Dpth (ft)	3.83	Hydr. Depth (ft)		1.92	
Conv. Total (cfs)	7825.6	Conv. (cfs)		7825.6	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		49.88	
Min Ch El (ft)	2025.67	Shear (lb/sq ft)		0.91	
Alpha	1.00	Stream Power (lb/ft s)		7.19	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)		3.62	0.00
C & E Loss (ft)	0.01	Cum SA (acres)		1.83	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1775

INPUT
Description:
Station Elevation Data num= 137

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.333	2037	-142.294	2037	-141.6242036.858	-140.8132036.814	-140.0092036.781			
-139.7322036.767	-139.482036.751	-138.954	2036.71	-137.6292036.621	-134.2232036.369				
-129.034	2036	-125.643	2035.56	-121.334	2035	-114.5542034.101	-113.789	2034	
-112.6362033.848	-106.792	2033	-105.1852032.736	-100.836	2032	-98.34512031.553			
-95.3548	2031	-90.68632030.135	-89.9611	2030	-86.26972029.128	-85.7658	2029		
-83.76742028.019	-83.73	2028	-83.65782027.961	-81.7801	2027	-80.512026.421			
-79.6355	2026	-79.3976	2026	-78.8659	2026	-77.13112026.273	-72.8035	2027	
-72.38292027.781	-72.1716	2028	-71.8752028.269	-71.63452028.332	-70.6494	2029			
-70.03032029.053	-68.2152029.126	-66.31342029.188	-64.4186	2029.22	-63.732029.245				
-63.00332029.288	-62.63852029.293	-62.11382029.288	-61.43922029.275	-57.96842029.193					
-55.32029.147	-52.8312029.082	-52.7555	2029.08	-51.12882029.048	-48.95062029.027				
-48.73592029.021	-48.6939	2029.02	-48.67542029.019	-48.61182029.019	-48.49682029.019				
-45.8788	2029.02	-45.74192029.018	-45.72142029.019	-45.68182029.021	-45.63632029.022				
-45.5952029.023	-45.47562029.028	-45.4149	2029.03	-36.70352029.094	-36.57182029.099				
-36.45452029.099	-26.47952029.279	-24.42742029.307	-23.6809	2029.3	-23.16472029.284				

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-19.95072029.078-18.0227    2029-17.14882028.865-16.50372028.731-12.90732028.083
-12.52962028.014-12.4636    2028-9.927052027.434-8.51522    2027-7.745892026.737
-5.94914    2026-3.378222025.158-2.98361    2025-2.03967    2025-.539061    2025
-.5299352025.001       02025.0462.5235632025.2627.412665    20268.858536 2026.56
9.451361    202710.315322027.54711.02176    202811.749862028.48712.250052028.678
13.31825    202915.565532029.15718.139412029.26422.692852029.53724.308362029.598
28.125942029.78129.538572029.85329.855242029.86930.473672029.90830.601232029.915
30.671942029.917 30.76622029.91830.935882029.91931.211182029.91731.501872029.915
31.629622029.91231.64713 2029.9131.660382029.89431.695042029.88432.456992029.952
32.475242029.95133.39433    203041.246112030.32145.895222030.64546.797422030.699
47.759342030.76150.72546    203151.507812031.09553.050772031.22653.540522031.237
54.168282031.20456.213572031.004 56.21772031.00456.230542031.00356.890382031.039
57.290212031.37758.250822031.697

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.333    .035-142.333    .02558.25082    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.33358.25082               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2029.72  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.03  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2028.69  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2028.69  * Flow Area (sq ft)     *          *   86.50  *          *
* E.G. Slope (ft/ft)     *0.007984  * Area (sq ft)          *          *   86.50  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   42.58  * Top Width (ft)        *          *   42.58  *          *
* Vel Total (ft/s)       *    8.16  * Avg. Vel. (ft/s)      *          *    8.16  *          *
* Max Chl Dpth (ft)      *    3.69  * Hydr. Depth (ft)      *          *    2.03  *          *
* Conv. Total (cfs)      *  7901.2  * Conv. (cfs)           *          *  7901.2  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   45.41  *          *
* Min Ch El (ft)         * 2025.00  * Shear (lb/sq ft)      *          *    0.95  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    7.75  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *          *    3.57  *    0.00  *
* C & E Loss (ft)        *    0.13  * Cum SA (acres)        *          *    1.80  *    0.00  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1800

INPUT
Description:
Station Elevation Data    num=     134
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -142.34    2037-142.319    2037-139.1162036.324-135.2462036.112-132.512    2036
-131.6032035.863-125.808    2035-123.0652034.614-118.762    2034-111.8332033.021
 -111.69    2033-111.6632032.996-110.8192032.877-105.5272032.121-104.702    2032
-104.4152031.947-98.7739    2031-96.40342030.607-92.6831    2030-89.93962029.358
-88.8683  2029.1-88.0569    2029-87.78182028.838-86.5772    2028-81.67312027.391
-81.39212027.382-80.87962027.451-80.72982027.445-79.1793    2027-76.77622026.414
-74.63882026.339-74.0383 2026.35-73.76852026.303-73.68662026.278-73.65942026.252
-73.42492026.143-72.00612026.145-70.26632026.313-68.63612026.452-67.33522026.574
 -66.6012026.683 -65.4972026.824-64.5289 2026.89 -64.4612026.891-64.45012026.888
-63.8492    2027-62.74012027.286  -59.83    2028-59.70792028.022-59.56542028.016
-59.2994    2028-58.44422027.907 -56.4192027.814-51.51722027.713-47.59542027.652
-46.08542027.597-41.21232027.355-36.06262027.357-35.74872027.353-35.1945 2027.36
-33.58572027.368-30.09672027.329-28.99082027.325-26.93482027.285-25.9977 2027.27
-23.79222027.265-22.6501 2027.22-21.11692027.102-20.0845    2027-18.4925 2026.81
-16.75132026.585-13.2843    2026-11.08442025.144-10.6582    2025 -5.71782024.324
-5.523922024.308-4.283342024.257-4.116682024.245-4.082242024.234-3.557772024.217
-3.428862024.222-3.261832024.231 -3.14562024.248-3.001822024.258-2.384012024.281
-2.036512024.297-1.753282024.318-1.207182024.385       02024.5241.6326162024.713
 3.77333    20255.718366 2025.666.619939    20269.2253082026.9289.399814    2027
9.4512432027.0259.5036982027.03910.984852027.68713.79264    202815.088152028.073
15.164162028.07615.322192028.07716.785432028.22517.524522028.21920.89036  2028.5
21.607492028.53722.372092028.56122.763672028.56623.719372028.56725.026952028.561
25.689942028.54826.303632028.52426.870112028.48927.366642028.45128.381282028.358
29.244292028.31530.454872028.30130.847432028.29331.35463 2028.28 31.44642028.272
31.670022028.231 31.80662028.21431.898082028.21232.051562028.21632.864852028.262
35.746512028.44836.081462028.45636.459652028.47640.10226    202946.295042029.959
46.58597    203046.712042030.01557.28383    203158.278512031.331

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -142.34    .035 -142.34    .02558.27851    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.3458.27851               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2028.45  * Element               *  Left OB *  Channel * Right OB *
```

```
* Vel Head (ft)          *    0.60  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 2027.85  * Reach Len. (ft)        *   25.00   *  25.00   *   25.00  *
* Crit W.S. (ft)         * 2027.85  * Flow Area (sq ft)      *          *  113.48  *          *
* E.G. Slope (ft/ft)     *0.008741  * Area (sq ft)           *          *  113.48  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   94.56  * Top Width (ft)         *          *   94.56  *          *
* Vel Total (ft/s)       *    6.22  * Avg. Vel. (ft/s)       *          *    6.22  *          *
* Max Chl Dpth (ft)      *    3.63  * Hydr. Depth (ft)       *          *    1.20  *          *
* Conv. Total (cfs)      *  7551.3  * Conv. (cfs)            *          *  7551.3  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   95.80  *          *
* Min Ch El (ft)         * 2024.22  * Shear (lb/sq ft)       *          *    0.65  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.02  *          *
* Frctn Loss (ft)        *    0.22  * Cum Volume (acre-ft)   *          *    3.51  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *          *    1.76  *    0.00  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -1825

INPUT
Description:
Station Elevation Data    num=     154
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*****************************************************************************
-142.346    2037-142.343    2037-140.8612036.687-138.736    2036-136.7172035.617
 -134.752035.282-134.215 2035.14-133.987    2035-130.5522034.434-127.978    2034
-123.8892033.319 -122.12    2033-121.6532032.914-116.571    2032-113.2842031.401
-110.912    2031-107.8942030.436-105.458    2030-102.9962029.508-100.249    2029
-97.87232028.501-95.0661    2028-91.43572027.342-89.2095    2027-88.40532026.899
-87.44142026.824 -86.7312026.806-86.2092 2026.83-85.27472026.954-84.8156    2027
-84.15172027.059-83.10792027.085-82.6917 2027.07-82.37862027.038-82.2057    2027
-81.10262026.396-80.3731    2026-79.15932025.308-78.5805    2025-77.13282024.154
-76.8628    2024-76.61772023.861-74.7197    2023-69.80062022.493-68.84162022.479
 -66.773 2022.47-65.86032022.395-65.39522022.363  -64.932022.343-64.21952022.324
 -63.122  2022.3-62.68362022.295-62.36882022.294-60.45142022.312 -59.5512022.328
-58.95832022.344 -57.7652022.385-57.18912022.409 -55.9352022.511-54.41712022.645
-53.08232022.848-52.3633 2022.93-52.23022022.935-52.06022022.944-51.3094    2023
-48.96742023.123-47.61552023.219-46.69492023.251-45.0553    2023  -43.272022.814
-43.16452022.786-42.59192022.745-41.80522022.807-40.9222    2023-36.90882023.286
-34.79362023.281-33.90112023.293-32.46462023.335-31.50962023.339-27.35042023.317
-26.2182 2023.32-25.54522023.103-25.31912023.078-24.7231 2023.05-24.64732023.049
 -24.5522023.047-24.43622023.051-23.21362023.007-22.9393    2023-22.05452022.991
-16.71352022.908-15.50942022.897-14.23672022.896-12.96622022.905-11.78432022.929
 -10.7532022.971-10.2854    2023-8.77567 2023.13-8.622672023.138-4.752882023.473
 -3.4325 2023.52-2.737162023.555-1.897852023.572       02023.659 .2134752023.669
1.9103522023.7293.6235672023.8156.774657    20246.8820862024.0319.499689    2025
10.93743  2025.611.778372025.82412.27904    202613.047092026.26214.299132026.718
15.01026    202716.104642027.15816.662172027.21817.619642027.28117.929332027.311
18.094092027.352 20.76412027.32220.777582027.27120.896662027.22321.540692027.219
 21.80062027.21321.945962027.20321.998172027.19222.655742027.18324.845032027.301
29.943272027.56531.23188 2027.6232.200422027.65633.128332027.67937.86465    2028
38.620252028.12143.56652    202945.086462029.28449.03102    203056.318642030.793
56.724492030.82857.091582030.85557.228582030.86857.417892030.89157.637362030.911
57.744162030.92357.754042030.92857.77359 2030.9357.847432030.93458.062812030.944
58.101352030.94558.138712030.94758.170432030.94758.304112030.956

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.346    .035-142.346    .02558.30411    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.34658.30411               25      25      25            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)          * 2024.99  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.66  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2024.33  * Reach Len. (ft)        *   25.00   *  25.00   *   25.00  *
* Crit W.S. (ft)          * 2024.33  * Flow Area (sq ft)      *          *  108.59  *          *
* E.G. Slope (ft/ft)      *0.008730  * Area (sq ft)           *          *  108.59  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   85.14  * Top Width (ft)         *          *   85.14  *          *
* Vel Total (ft/s)        *    6.50  * Avg. Vel. (ft/s)       *          *    6.50  *          *
* Max Chl Dpth (ft)       *    2.04  * Hydr. Depth (ft)       *          *    1.28  *          *
* Conv. Total (cfs)       *  7556.0  * Conv. (cfs)            *          *  7556.0  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   85.72  *          *
* Min Ch El (ft)          * 2022.29  * Shear (lb/sq ft)       *          *    0.69  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    4.49  *          *
* Frctn Loss (ft)         *    0.22  * Cum Volume (acre-ft)   *          *    3.44  *    0.00  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *          *    1.71  *    0.00  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
```

depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1850

INPUT
Description:
Station Elevation Data num= 138

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.353	2036.23	-142.329	2036.23	-141.618	2036	-139.4992	035.598	-138.242	035.433
-135.498	2035	-132.142	034.248	-130.892	2034	-130.3962	033.909	-125.169	2033
-119.4822	032.012	-119.415	2032	-119.3182	031.982	-113.45	2031	-110.9612	030.544
-107.825	2030	-104.7920	29.371	-103.02	2029	-100.9042	028.559	-98.0777	2028
-93.69822	027.129	-93.0442	2027	-92.32362	026.869	-91.42162	026.683	-88.4293	2026
-85.60632	025.258	-84.7138	2025	-83.08042	024.529	-81.0774	2024	-78.90692	023.003
-78.8985	2023	-77.71462	022.034	-77.6412	2022	-76.63872	021.665	-76.30762	021.547
-75.70282	021.307	-75.046	2021	-73.1633	2020.36	-72.0755	2020	-71.91592	019.975
-70.70122	019.824	-70.23812	019.821	-54.8486	2019.79	-53.30952	019.927	-52.4172	2020
-49.9952	020.367	-47.9942	020.661	-47.6592	020.697	-47.25682	020.721	-46.97932	020.751
-45.799	2021	-43.3824	2021.43	-40.0842	021.913	-39.75722	021.964	-39.62172	021.984
-39.4608	2022	-36.9147	2022	-32.93262	022.319	-32.4242	022.332	-31.12672	022.387
-30.62882	022.402	-29.99172	022.407	-29.15572	022.401	-28.19922	022.385	-26.50482	022.341
-25.21242	022.289	-25.0306	2022.29	-24.83182	022.243	-24.5555	2022.24	-23.2633	2022.22
-22.9722	022.217	-22.6641	2022.21	-22.35672	022.219	-22.07082	022.225	-21.82132	022.235
-21.60712	022.248	-21.1552	022.281	-20.55192	022.291	-20.1769	2022.3	-19.87262	022.315
-19.74542	022.338	-14.8294	2022.499	-14.51512	022.512	-11.86132	022.647	-11.1182	022.679
-10.58152	022.699	-10.3237	2022.721	-10.2549	2022.738	-10.03932	022.752	-9.433292	022.773
-7.254052	022.755	-7.17332	022.742	-6.74366	2022.7	-6.663042	022.689	-6.457632	022.678
-5.178962	022.588	-4.442942	022.551	-4.148792	022.546	-3.89132	022.547	-3.66582	022.551
-3.253332	022.567	-2.230012	022.625	0	2022.706	.0867692	022.7091	.608527	2022.77
3.216741	2022.854	5.779499	2023	6.962471	2023.441	8.0614	2024	8.817596	2024.448
9.6935	2025	12.5451	2025.981	2.60327	2026	12.72463	2026.005	15.11486	2026.102
17.58772	2026.192	2.083852	026.325	25.81406	2026.418	27.86436	2026.523	2.797472	026.784
34.83439	2026.905	36.32972	2027	36.95704	2027.118	41.87353	2028	43.04582	028.225
43.92643	2028.399	46.59165	2029	49.50491	2029.698	50.84414	2030	51.84092	030.115
51.95496	2030.166	52.18084	2030.191	53.03388	2030.238	55.52211	2030.354	55.96735	2030.367
56.39893	2030.385	56.76543	2030.391	58.30976	2030.488				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.353	.035	-142.353	.02	558.30976	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.353	58.30976	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2023.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.025	
W.S. Elev (ft)	2022.79	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2022.79	Flow Area (sq ft)		106.47	
E.G. Slope (ft/ft)	0.008703	Area (sq ft)		106.47	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	80.56	Top Width (ft)		80.56	
Vel Total (ft/s)	6.63	Avg. Vel. (ft/s)		6.63	
Max Chl Dpth (ft)	3.00	Hydr. Depth (ft)		1.32	
Conv. Total (cfs)	7567.9	Conv. (cfs)		7567.9	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		81.42	
Min Ch El (ft)	2019.79	Shear (lb/sq ft)		0.71	
Alpha	1.00	Stream Power (lb/ft s)		4.71	
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)		3.38	0.00
C & E Loss (ft)	0.00	Cum SA (acres)		1.66	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -1875

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.354	2035.522	-142.323	2035.523	-142.296	2035.523	-139.795	2035.18	-139.496	2035.166
-138.917	2035.158	-138.604	2035.143	-138.021	2035	-135.021	2034.456	-132.664	2034
-130.902	2033.684	-126.851	2033	-123.974	2032.483	-121.275	2032	-119.222	031.632
-115.584	2031	-112.943	2030.533	-109.967	2030	-106.586	2029.306	-105.082	2029
-100.448	2028.049	-100.207	2028	-99.89342	027.932	-94.8277	2027	-90.66042	026.298
-89.2088	2026	-88.52682	025.788	-85.7555	2025	-82.42932	024.057	-82.2489	2024
-81.78692	023.866	-78.6457	2023	-78.25342	022.899	-76.4992	2022	-76.05862	021.353
-75.4138	2021.02	-75.3897	2021	-75.347	2020.97	-74.2907	2020	-70.85132	019.736
-61.1132	2019	-58.5599	2019	-58.3408	2019	-57.77	2019.106	-53.1368	2020
-48.71212	020.935	-48.4145	2021	-47.85792	021.041	-47.204	2021.078	-44.62682	021.146
-41.65372	021.257	-38.3736	2021	-29.82322	021.866	-28.84452	021.913	-27.5114	2022
-25.59682	022.065	-17.5731	2022	-16.5938	2022	-16.37432	021.964	-14.77972	021.772

```
-14.58762021.773-11.91942021.517-11.61242021.483-11.17472021.453-11.10712021.469
-11.08252021.496-10.75132021.525-6.91009 2021.69-6.39531 2021.71-4.501992021.811
-1.64792    2022-1.578822022.008       02022.211 .3577282022.2574.752805    2023
 6.629512023.7646.9497462023.8027.629095    20248.2725932024.2269.7893882024.836
10.079822024.95910.17996    202522.827582025.73227.45249    202627.983712026.049
 30.43982026.24733.621232026.49335.796442026.676 38.3512    202739.838242027.216
45.26952    202848.077782028.419 51.9215    202956.691682029.75257.98821    2030
58.315412030.021

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.354    .035-142.354    .02558.31541    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.35458.31541               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2023.01  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.69  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2022.33  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2022.33  * Flow Area (sq ft)     *          *  106.20  *          *
* E.G. Slope (ft/ft)     *0.008456  * Area (sq ft)          *          *  106.20  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   77.90  * Top Width (ft)        *          *   77.90  *          *
* Vel Total (ft/s)       *    6.65  * Avg. Vel. (ft/s)      *          *    6.65  *          *
* Max Chl Dpth (ft)      *    3.33  * Hydr. Depth (ft)      *          *    1.36  *          *
* Conv. Total (cfs)      *  7677.5  * Conv. (cfs)           *          *  7677.5  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   79.18  *          *
* Min Ch El (ft)         * 2019.00  * Shear (lb/sq ft)      *          *    0.71  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.71  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)  *          *    3.32  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    1.62  *    0.00  *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -1900

INPUT
Description:
Station Elevation Data    num=     100
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.3422035.016-141.6532035.002-141.575    2035-139.789 2034.64-138.9912034.548
-134.811    2034-130.7172033.197-129.047    2033-125.1722032.169-124.255    2032
-123.8692031.933-118.305    2031-112.722 2030.05-112.5642030.024-112.429    2030
-112.2952029.975-106.919    2029-103.2072028.313-101.597    2028-98.972822027.492
-96.4613    2027-94.19272026.599-91.1489    2026-88.78442025.543-85.9297    2025
-81.15072024.087-80.7489    2024-80.31782023.894-77.40512023.286-76.0648    2023
-75.8261 2022.14-75.7991    2022-75.52272021.027-75.5183    2021-75.50082020.969
-75.0784    2020-72.77272019.764-72.43242019.739-71.8528 2019.71-71.34612019.692
-63.0884    2019-54.37982019.951-54.33932019.953-53.8642    2020-47.08932020.435
-45.30182020.562-39.87852020.423-38.49312020.427-38.10332020.426-38.06182020.419
-37.03142020.408-34.07692020.503 -33.3242020.536-32.94442020.557-32.92342020.572
-18.2448    2021-16.79242021.159-16.24952021.144 -15.5832021.194-14.07092021.269
-13.2103 2021.32-12.86712021.348-6.42397    2022-6.028472022.129-3.79311    2023
-3.682962023.158-3.314422023.222 -1.34252023.324       02023.374 .5750132023.396
1.2301692023.4041.5044622023.3842.8608612023.2013.8337742023.1054.3928722023.269
5.2782322023.1275.4019172023.1726.1149082023.2276.7789682023.4817.2783282023.677
7.921235    2024 8.338142024.06412.70669    2025 14.63522025.08316.387432025.165
22.270052025.43534.58223    202639.040732026.47943.33145    202747.722692027.804
48.245392027.90748.74528    202852.87693 2028.7953.99361    202954.374812029.072
  55.0222029.25855.813222029.426 56.16362029.46557.06989 2029.51 58.23942029.582

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.342    .035-142.342    .025 58.2394    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.342 58.2394               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2022.60  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.75  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2021.85  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2021.85  * Flow Area (sq ft)     *          *  101.57  *          *
* E.G. Slope (ft/ft)     *0.008218  * Area (sq ft)          *          *  101.57  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   67.85  * Top Width (ft)        *          *   67.85  *          *
* Vel Total (ft/s)       *    6.95  * Avg. Vel. (ft/s)      *          *    6.95  *          *
* Max Chl Dpth (ft)      *    2.85  * Hydr. Depth (ft)      *          *    1.50  *          *
* Conv. Total (cfs)      *  7788.1  * Conv. (cfs)           *          *  7788.1  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   69.33  *          *
* Min Ch El (ft)         * 2019.00  * Shear (lb/sq ft)      *          *    0.75  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.22  *          *
* Frctn Loss (ft)        *    0.11  * Cum Volume (acre-ft)  *          *    3.26  *    0.00  *
* C & E Loss (ft)        *    0.13  * Cum SA (acres)        *          *    1.58  *    0.00  *
```

```
*******************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -1925

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 -142.332035.054  -140.12035.016 -139.13    2035-138.0062034.645-135.993    2034
-131.6972033.214-130.545    2033-126.1742032.189 -125.18    2032-120.2112031.075
-119.818    2031-119.6892030.976-114.526    2030-111.6682029.462-109.8672029.113
-109.233    2029-107.9422028.744 -104.04    2028-102.2552027.653-98.8772    2027
 -95.7152026.367-93.7497    2026-90.75212025.396 -88.722    2025-86.4608 2024.56
-83.3346    2024-79.68942023.357-77.3052    2023-77.02412022.541-76.8767    2022
-76.58522021.391-76.4292    2021-76.08122020.137-75.9894    2020  -75.452019.859
 -75.2742019.793-75.23732019.767-74.59322019.556-72.7621    2019-72.57262018.981
-71.1134    2019-62.8437    2019-52.66572019.759-49.5726    2020-47.82672020.046
-43.19372020.159-36.4566 2020.34-33.40842020.416 -22.4732020.469-22.4441 2020.42
-21.95182020.401-17.91842020.315-17.4891 2020.27-15.7669    2020-9.23745    2020
 -7.8374    2020-7.55332    2020-7.34061    2020-6.02456    2020-5.78771    2020
-5.493192020.027-5.335542020.056-2.56035 2020.51-.6060432020.879-.127735    2021
       02021.0154.4880762021.5587.902814 2021.91 7.932062021.8967.9922842021.895
8.0471252021.9098.157803    20228.2336852022.0739.253572    20239.7799132023.462
10.24712    202415.359692024.54816.008542024.60921.45665    2025 23.56062025.092
36.79843    202639.001882026.32743.34631    202745.61799 2027.3549.84865    2028
52.161982028.45655.599492028.96855.80632    202958.159642029.146

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 -142.33    .035 -142.33    .02558.15964    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -142.3358.15964               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*******************************************************************************************
* E.G. Elev (ft)         * 2022.22  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.33  * Wt. n-Val.           *          *    0.025  *          *
* W.S. Elev (ft)         * 2021.90  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  153.34  *          *
* E.G. Slope (ft/ft)     *0.002784  * Area (sq ft)         *          *  153.34  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   84.58  * Top Width (ft)       *          *   84.58  *          *
* Vel Total (ft/s)       *    4.60  * Avg. Vel. (ft/s)     *          *    4.60  *          *
* Max Chl Dpth (ft)      *    2.91  * Hydr. Depth (ft)     *          *    1.81  *          *
* Conv. Total (cfs)      * 13380.3  * Conv. (cfs)          *          * 13380.3  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   86.21  *          *
* Min Ch El (ft)         * 2018.98  * Shear (lb/sq ft)     *          *    0.31  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.42  *          *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)  *          *    3.19  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *          *    1.53  *    0.00  *
*******************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -1950

INPUT
Description:
Station Elevation Data    num=      90
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
-142.3192034.716-142.2782034.718-142.2472034.717-140.382    2034-135.212  2033.2
-134.006    2033-129.8532032.285-128.7812032.118-128.144    2032 -126.642031.723
-122.622    2031-119.1262030.361-117.152    2030-112.6132029.167-111.691    2029
-111.1922028.906-106.261    2028-102.2122027.235 -100.92    2027 -96.5762026.176
-95.6492    2026-94.3431 2025.74-90.2731    2025-88.68162024.663-84.9651    2024
 -81.0962023.449-77.8634    2023 -77.3252022.625 -76.319    2022-75.97252021.442
-75.6107    2021-75.42252020.502 -74.986    2020-73.43132019.623-70.9961    2019
-69.8298 2018.89-68.18812018.677-67.65432018.632-66.10152018.548-65.83542018.528
-65.48642018.471-64.48582018.371-60.85162018.418-60.62932018.467-60.54862018.643
-59.98732018.742-58.2585    2019-49.71582019.899-48.4783    2020 -47.431    2020
-42.3377    2020-27.1786    2020-25.3206    2020-23.5774    2020-22.1476    2020
-20.1031    2020 -19.536    2020-19.3705    2020 -17.072    2020-16.4169    2020
-15.4986    2020-12.4413    2020-5.07057    2020       02020.4022.9580512020.637
7.059446    20217.3702862021.2828.404664    20229.1566572022.5069.749907    2023
11.205852023.82411.40346    202415.145092024.21619.148282024.41925.708922024.748
30.09716    202531.329712025.11240.21735    202641.715442026.275 45.6277    2027
46.670362027.19350.91859    202853.232272028.37255.186392028.55855.782092028.599
55.998942028.62256.462062028.71356.636372028.73157.626352028.76558.092112028.781

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
**********************************************
-142.319    .035-142.319    .02558.09211    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.31958.09211               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2022.15  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.25  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2021.90  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  175.67  *          *
* E.G. Slope (ft/ft)     *0.001771  * Area (sq ft)          *          *  175.67  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   84.51  * Top Width (ft)        *          *   84.51  *          *
* Vel Total (ft/s)       *    4.02  * Avg. Vel. (ft/s)      *          *    4.02  *          *
* Max Chl Dpth (ft)      *    3.52  * Hydr. Depth (ft)      *          *    2.08  *          *
* Conv. Total (cfs)      * 16777.9  * Conv. (cfs)           *          * 16777.9  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   86.24  *          *
* Min Ch El (ft)         * 2018.37  * Shear (lb/sq ft)      *          *    0.23  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    0.90  *          *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)  *          *    3.09  *    0.00  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    1.48  *    0.00  *
************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -1975

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.3072033.823-142.2872033.823-140.4892033.669-138.8282033.513-137.637 2033.44
-136.9732033.379-134.244    2033-131.0562032.356-129.126    2032-128.0822031.807
-123.838    2031 -122.412030.737 -118.52    2030-116.9132029.703-113.158    2029
-110.4372028.488-107.907    2028-102.8732027.018-102.776    2027-98.58012026.196
-97.5571    2026 -97.5192025.993 -92.114    2025-88.32632024.331-86.5166    2024
-85.18852023.769-81.1746    2023-76.10932022.215-74.2117    2022-70.25262021.476
 -68.027    2021-66.17872020.316-65.4241    2020-65.22922019.916-62.6968    2019
-59.50242018.442-57.8722    2018-56.8022    2018-55.3406    2018-54.89572018.091
-49.5438    2019-47.19852019.537-47.04892019.537-45.8876    2020  -42.52    2020
-42.3966    2020 -30.263    2020 -29.839    2020-28.5452    2020       02020.762
4.2954192020.877 4.452632020.8746.623309    20217.259596 2021.388.138368    2022
9.475868 2022.739.929945    202311.081262023.25213.761482023.56214.566582023.666
16.81291    202423.605882024.35835.60689    202537.102062025.272 40.20622025.749
41.449542025.94641.78279    202642.436252026.10847.30086    202752.178892027.975
 52.2814    202852.799512028.05553.956922028.28254.392562028.32754.835912028.343
58.085372028.455

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.307    .035-142.307    .02558.08537    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.30758.08537               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)         * 2022.04  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.56  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2021.48  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2021.33  * Flow Area (sq ft)     *          *  117.17  *          *
* E.G. Slope (ft/ft)     *0.006031  * Area (sq ft)          *          *  117.17  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   77.65  * Top Width (ft)        *          *   77.65  *          *
* Vel Total (ft/s)       *    6.03  * Avg. Vel. (ft/s)      *          *    6.03  *          *
* Max Chl Dpth (ft)      *    3.48  * Hydr. Depth (ft)      *          *    1.51  *          *
* Conv. Total (cfs)      *  9091.2  * Conv. (cfs)           *          *  9091.2  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   78.56  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)      *          *    0.56  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    3.38  *          *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)  *          *    3.01  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    1.44  *    0.00  *
************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -2000

INPUT
Description:
Station Elevation Data    num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.2952033.469-142.2362033.468 -136.832033.004-136.785    2033-136.6742032.982
 -135.492032.792-130.521    2032-130.1742031.939-124.291    2031-121.1182030.411
-119.068    2030-116.3452029.466-114.058    2029-112.9112028.773-109.072    2028
-105.2652027.292-103.711    2027-101.7392026.631-98.3498    2026-93.73642025.138
-92.9889    2025-91.93932024.804-87.6703    2024-82.36312023.046-82.1189    2023
-81.42122022.869-79.31032022.531-76.1065    2022-73.25212021.592-71.80042021.422
```

```
-69.73332021.135-67.6208    2021-65.03392020.871-57.8604    2020-56.62782019.099
-56.5199    2019-56.35632018.874 -55.022    2018-47.6472    2018-46.5153    2018
-46.05012018.099-44.6279 2018.35 -43.1712018.578-41.1827    2019 -30.3792019.869
-29.04312019.944-28.2975    2020 -27.7362020.013-27.0772 2020.02-26.55892020.001
-25.57992020.004 -24.698    2020-22.23522019.989-19.43782019.938-18.47372019.931
 -17.5592019.947-16.61822019.983-16.2897    2020-9.345542020.304-6.513662020.416
-4.032482020.494-1.657822020.547       02020.5724.2023892020.6386.671445    2021
8.0115262021.7618.388204    20229.1033222022.42910.05721    202311.479932023.284
  16.272    202424.012212024.32533.524812024.52338.32729    2025 41.6044 2025.64
43.52592    202646.635812026.58748.59024    202749.733272027.27254.35534    2028
55.044062028.02458.078632028.129

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
-142.295    .035-142.295    .02558.07863    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.29558.07863               25      25      25             .1      .3
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2021.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.		0.025	
W.S. Elev (ft)	2021.17	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2021.17	Flow Area (sq ft)		105.85	
E.G. Slope (ft/ft)	0.008358	Area (sq ft)		105.85	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	76.91	Top Width (ft)		76.91	
Vel Total (ft/s)	6.67	Avg. Vel. (ft/s)		6.67	
Max Chl Dpth (ft)	3.17	Hydr. Depth (ft)		1.38	
Conv. Total (cfs)	7722.6	Conv. (cfs)		7722.6	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		77.83	
Min Ch El (ft)	2018.00	Shear (lb/sq ft)		0.71	
Alpha	1.00	Stream Power (lb/ft s)		4.73	
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)		2.95	0.00
C & E Loss (ft)	0.00	Cum SA (acres)		1.39	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2025

INPUT
Description:

```
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.2842033.114-142.1842033.113-140.864    2033  -137.42032.562-136.4842032.494
-134.2072032.344-132.1232032.176-130.207    2032-126.8612031.293-125.504    2031
-124.1112030.719 -120.65    2030-116.5912029.197-115.516    2029-114.8592028.874
-110.541    2028-108.0852027.529-105.245    2027-101.4172026.264-100.045    2026
-99.56282025.914-94.7671    2025-92.89922024.651-89.5396    2024-84.84522023.164
-83.8673    2023-81.69932022.584-78.0974    2022-74.94522021.444-72.1843    2021
-67.28682020.635-58.9935    2020-56.40272019.141-56.0012    2019-55.72772018.939
 -55.6392018.924-49.1999    2018-42.8266    2018-40.3401    2018-36.50052018.622
-34.3783    2019-33.38962019.035-33.25212019.036 -32.0842019.081-30.83852019.121
-26.71482019.229-23.24872019.254-22.74042019.261-21.89862019.281-19.68552019.327
-18.42152019.355-16.82572019.395-14.96032019.445-10.7345 2019.56-8.326612019.621
      02019.8455.750599    20206.5762372020.7356.922939    20217.1685572021.192
 7.96012    20228.9443072022.7489.237174    202316.249432023.31829.93166    2024
 33.48492024.46736.278692024.72838.77658    202542.495152025.41646.86977    2026
 50.05182026.52151.88755    202753.550312027.35356.71707    202857.37181    2028
58.09884    2028

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
-142.284    .035-142.284    .02558.09884    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.28458.09884               25      25      25             .1      .3
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2021.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.		0.025	
W.S. Elev (ft)	2020.64	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2020.64	Flow Area (sq ft)		103.63	
E.G. Slope (ft/ft)	0.008458	Area (sq ft)		103.63	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	73.87	Top Width (ft)		73.87	
Vel Total (ft/s)	6.81	Avg. Vel. (ft/s)		6.81	
Max Chl Dpth (ft)	2.64	Hydr. Depth (ft)		1.40	
Conv. Total (cfs)	7676.7	Conv. (cfs)		7676.7	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		74.47	
Min Ch El (ft)	2018.00	Shear (lb/sq ft)		0.73	
Alpha	1.00	Stream Power (lb/ft s)		5.01	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)		2.89	0.00
C & E Loss (ft)	0.02	Cum SA (acres)		1.35	0.00

```
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2050

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.2722033.064-138.638    2033-137.8012032.831 -137.562032.809-137.1582032.764
-136.3312032.609-135.3482032.473-132.128    2032-131.621 2031.91-130.879 2031.77
-128.019 2031.21-127.031    2031-121.9982030.008-121.961    2030-121.9322029.994
-116.997    2029-112.7322028.141-111.982    2028-111.4742027.903-106.817    2027
 -101.772026.041-101.564    2026 -99.1572025.562 -96.028    2025 -91.0292024.111
-90.4256    2024-89.7114 2023.87-84.8313    2023-81.68322022.436-79.3977    2022
-76.62182021.419-74.8177    2021-72.04962020.217-71.2754    2020-66.67832019.664
-62.14432019.346-59.8309 2019.19-57.6054    2019-56.57022018.933-33.1381    2018
-24.27292018.888-23.6724    2019-14.29642019.344-5.000442019.679       0 2019.86
  3.8516    20204.773934 2020.51 5.84529    20216.6352112021.4127.744112    2022
11.084882022.38613.134882022.484 15.04472022.59321.28886    202326.174332023.259
33.099332023.67535.741152023.83138.34481    202441.525382024.54244.34405    2025
45.255742025.17949.11367    202650.97117 2026.3554.20389    202756.283322027.522
57.572862027.75958.127192027.803

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.272    .035-142.272    .02558.12719    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -142.27258.12719               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)          * 2021.14  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.67  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2020.47  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2020.44  * Flow Area (sq ft)     *          *  107.76  *          *
* E.G. Slope (ft/ft)      *0.007890  * Area (sq ft)          *          *  107.76  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   77.64  * Top Width (ft)       *          *   77.64  *          *
* Vel Total (ft/s)        *    6.55  * Avg. Vel. (ft/s)     *          *    6.55  *          *
* Max Chl Dpth (ft)       *    2.47  * Hydr. Depth (ft)     *          *    1.39  *          *
* Conv. Total (cfs)       *  7948.2  * Conv. (cfs)          *          *  7948.2  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)     *          *   77.96  *          *
* Min Ch El (ft)          * 2018.00  * Shear (lb/sq ft)     *          *    0.68  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    4.46  *          *
* Frctn Loss (ft)         *    0.20  * Cum Volume (acre-ft)  *          *    2.83  *    0.00  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)        *          *    1.31  *    0.00  *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2075

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
 -142.262032.806-142.2542032.806-138.2742032.247-136.836    2032-135.2252031.693
-131.807    2031-129.7922030.612-126.777    2030-123.6962029.434-121.176    2029
-117.3472028.363-115.092    2028-114.4842027.899-108.928    2027 -105.572026.354
-103.657    2026-99.8083 2025.24-98.5729    2025-93.79252024.057-93.5045    2024
 -92.4962023.802 -88.293    2023-83.49932022.151-82.5763    2022-81.35862021.821
 -75.765    2021-71.8192 2020.08-70.4232    2020 -67.9162019.662-66.01512019.486
-65.58682019.463-64.4294    2019-60.28042018.909-46.1539 2018.63 -42.7852018.528
-32.93222018.238-32.12532018.216-24.9925    2018 -23.037    2018 -22.004    2018
-20.7727    2018-14.98882018.925-14.4841    2019-7.067192019.297       02019.771
 3.40929    20205.118398 2020.855.413903    20217.1585742021.9997.160525    2022
7.1840762022.0017.2161562022.0037.4099922022.01129.99083    202333.890852023.446
38.32705    202442.075112024.65244.17972    202547.106952025.49549.96383    2026
53.554072026.55956.97376    202758.155542027.095

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
 -142.26    .035 -142.26    .02558.15554    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -142.2658.15554               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)          * 2020.93  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.71  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2020.23  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2020.23  * Flow Area (sq ft)     *          *  104.71  *          *
* E.G. Slope (ft/ft)      *0.008487  * Area (sq ft)          *          *  104.71  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   76.32  * Top Width (ft)       *          *   76.32  *          *
```

```
* Vel Total (ft/s)       *    6.74  * Avg. Vel. (ft/s)       *          *    6.74  *          *
* Max Chl Dpth (ft)      *    2.23  * Hydr. Depth (ft)       *          *    1.37  *          *
* Conv. Total (cfs)      *  7663.5  * Conv. (cfs)            *          *  7663.5  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   76.63  *          *
* Min Ch El (ft)         * 2018.00  * Shear (lb/sq ft)       *          *    0.72  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.88  *          *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)   *          *    2.77  *    0.00  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)         *          *    1.26  *    0.00  *
*****************************************************************************************
```

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2100

INPUT
Description:
Station Elevation Data num= 73

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.249 2032.12-142.222 2032.12-141.369    2032-138.541 2031.63-136.5732031.443
-133.5052031.096-132.775    2031-132.262 2030.92-127.466    2030-127.1372029.937
-122.324    2029 -121.142028.774-117.085    2028-112.1452027.123-111.478    2027
-110.6522026.847-107.1062026.213-105.875    2026-103.9762025.652-100.525    2025
-96.96722024.318-95.2575    2024-91.2183 2023.23-89.9847    2023-86.58132022.341
-84.7706    2022 -83.3792021.727-79.5349    2021-75.11462020.117-74.4189    2020
-72.80062019.672-69.4768    2019-59.24512018.796-42.24832018.478-17.0207    2018
-16.68672017.937-16.66672017.776-16.01122017.664-16.00492017.623 -13.0582017.573
-12.4696 2017.62-9.801762017.793-9.307572017.877-8.02552    2018-3.35264 2018.96
 -3.1123    2019-2.849762019.086-.398428    2020       02020.1461.0472492020.529
 2.56771    20214.4283952021.5355.2696412021.7377.3546812021.6157.8525572021.606
9.1966742021.75311.07221    202215.26649 2022.1536.20401    202338.155342023.338
 41.6977    202444.620222024.562  47.014    202549.378832025.46152.08158    2026
54.245532026.23555.494652026.49356.035022026.54256.859292026.63156.994532026.673
57.805412026.76257.894442026.76558.16491 2026.76
```

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
-142.249    .035-142.249    .02558.16491    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.24958.16491               25      25      25             .1       .3
```

CROSS SECTION OUTPUT Profile #PF 1

```
*****************************************************************************************
* E.G. Elev (ft)         * 2020.68  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.51  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2020.16  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  122.90  *          *
* E.G. Slope (ft/ft)     *0.004925  * Area (sq ft)          *          *  122.90  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   75.40  * Top Width (ft)        *          *   75.40  *          *
* Vel Total (ft/s)       *    5.74  * Avg. Vel. (ft/s)      *          *    5.74  *          *
* Max Chl Dpth (ft)      *    2.59  * Hydr. Depth (ft)      *          *    1.63  *          *
* Conv. Total (cfs)      * 10059.7  * Conv. (cfs)           *          * 10059.7  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   76.05  *          *
* Min Ch El (ft)         * 2017.57  * Shear (lb/sq ft)      *          *    0.50  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.85  *          *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)   *          *    2.70  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *          *    1.22  *    0.00  *
*****************************************************************************************
```

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2125

INPUT
Description:
Station Elevation Data num= 111

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
-142.2362031.699-141.4072031.615 -139.952031.494-139.0322031.401 -138.75 2031.34
-138.4622031.165-138.2122031.118-137.7422031.088-136.4932031.035-136.121    2031
-134.8972030.792-130.413    2030-126.379 2029.24-125.134    2029-123.856 2028.77
  -119.6    2028-115.1992027.223-114.269 2027.07-113.876    2027-108.2832026.005
-108.257    2026-108.2452025.998-108.1672025.983-102.837    2025-101.8652024.821
-97.3891    2024-94.64022023.494-91.9903    2023-87.24122022.132-86.4949    2022
-85.06772021.766-80.5431    2021-76.6426 2020.36-74.5226    2020-72.09962019.608
-68.6203    2019-67.08782018.875-67.05962018.878-66.98982018.883-66.81042018.889
-66.69342018.895-66.60012018.909-66.49732018.912-66.36012018.915-66.23082018.917
-66.19422018.919-66.19232018.921-66.1896 2018.93-66.18022018.934-66.12552018.936
-66.11922018.938-65.23262018.945-64.92432018.942-64.7805 2018.94-64.64512018.938
-64.47162018.935-64.15722018.931-63.37632018.919-62.71722018.907-61.7869 2018.89
 -59.4552018.849-55.61652018.778-12.5521    2018-11.65772017.849-11.62432017.846
-8.595732017.374-8.08368 2017.28-7.77433 2017.21-7.566462017.147-7.452622017.124
 -7.30332017.106-7.244592017.095-7.242562017.079-7.175912017.068-7.175272017.063
-6.875612017.058-6.815772017.063-6.544492017.081-6.494232017.089-6.159872017.121
-6.030722017.138-5.861422017.169-5.53555 2017.21-3.295812017.599-.867356    2018
      02018.2841.515174 2018.781.995361    20192.5956932019.3583.653104    2020
4.073206 2020.225.388734    20218.481772  2021.59.9164242021.63511.985672021.859
13.94001    202217.634922022.13321.234452022.27337.12452    202337.375912023.046
   42.73    202445.625762024.53248.24586    202552.667632025.85553.43669    2026
```

53.583472026.01355.358982026.20555.650292026.29557.396982026.48757.588742026.494
58.171362026.483

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.236	.035	-142.236	.02	558.17136	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left Channel	Channel	Right	Coeff Contr.	Expan.
-142.236	58.17136	25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2020.50	Element			
Vel Head (ft)	0.71	Wt. n-Val.		0.025	
W.S. Elev (ft)	2019.79	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2019.79	Flow Area (sq ft)		104.55	
E.G. Slope (ft/ft)	0.008611	Area (sq ft)		104.55	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	76.51	Top Width (ft)		76.51	
Vel Total (ft/s)	6.75	Avg. Vel. (ft/s)		6.75	
Max Chl Dpth (ft)	2.73	Hydr. Depth (ft)		1.37	
Conv. Total (cfs)	7608.3	Conv. (cfs)		7608.3	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		77.17	
Min Ch El (ft)	2017.06	Shear (lb/sq ft)		0.73	
Alpha	1.00	Stream Power (lb/ft s)		4.92	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)		2.63	0.00
C & E Loss (ft)	0.02	Cum SA (acres)		1.17	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2150

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.2232031.333	-140.3882031.149	-138.603	2031	-133.092030.117	-132.237	2030			
-131.6032029.836	-131.2782029.771	-126.504	2029	-126.4782028.996	-126.4652028.994				
-126.372028.977	-122.6042028.325	-121.0382028.037	-120.829	2028	-120.6012027.959				
-115.37	2027	-111.852026.364	-109.847	2026	-105.8122025.224	-104.629	2025		
-99.89962024.089	-99.4254	2024	-94.28992023.009	-94.2433	2023	-94.1885	2022.99		
-89.0178	2022	-87.8112021.774	-83.2685	2021	-79.15742020.321	-77.1929	2020		
-74.13562019.591	-69.4914	2019	-61.10382018.195	-60.83762018.175	-60.64562018.164				
-59.0162	2018	-57.4306	2018	-55.9971	2018	-55.3092018.023	-54.28272018.079		
-53.46352018.199	-52.5613	2018.23	-51.35812018.256	-50.22262018.271	-49.90232018.287				
-49.8849	2018.31	-49.86182018.387	-49.77892018.418	-49.29932018.442	-49.24342018.457				
-41.46332018.515	-38.758	2018.49	-37.49642018.475	-36.30812018.457	-34.78562018.431				
-32.02612018.391	-25.17352018.285	-19.38992018.185	-11.22562018.032	-9.36364	2018				
-4.151062017.205	-1.891562017.151	02017.3883.537841	2017.834.863621	2018					
5.9789512018.901	6.097659	20197.0438482019.7897.280115	20207.5551072020.214						
8.42141	202111.804972021.54114.809242021.80517.49164	202219.873932022.099							
24.354992022.27734.512782022.86335.081172022.89435.958752022.94736.83669	2023								
37.585212023.10943.35014	202448.642862024.93749.04051	202549.405642025.062							
51.333722025.44651.94209	2025.5555.05735	202656.988552026.21357.283042026.223							
58.177812026.207									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.223	.035	-142.223	.02	558.17781	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left Channel	Channel	Right	Coeff Contr.	Expan.
-142.22358.17781		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2020.25	Element			
Vel Head (ft)	0.63	Wt. n-Val.		0.025	
W.S. Elev (ft)	2019.62	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)	2019.56	Flow Area (sq ft)		110.82	
E.G. Slope (ft/ft)	0.007692	Area (sq ft)		110.82	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	81.16	Top Width (ft)		81.16	
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)		6.37	
Max Chl Dpth (ft)	2.47	Hydr. Depth (ft)		1.37	
Conv. Total (cfs)	8049.5	Conv. (cfs)		8049.5	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		82.03	
Min Ch El (ft)	2017.15	Shear (lb/sq ft)		0.65	
Alpha	1.00	Stream Power (lb/ft s)		4.13	
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)		2.57	0.00
C & E Loss (ft)	0.03	Cum SA (acres)		1.13	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2175

```
INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
 -142.212030.896-140.5182030.714-138.8922030.531-134.652    2030-133.2532029.767
-129.105    2029-126.6632028.547-124.2362028.083-123.834    2028-122.8082027.813
-118.483    2027-113.5912026.233-112.351    2026-111.585 2025.87-106.404    2025
-103.9782024.548-101.053    2024-98.53092023.527-95.7101    2023-91.45522022.216
-90.3077    2022-89.20642021.797-87.78962021.536-84.9139    2021 -81.3712020.368
-79.3439    2020-74.43752019.203-73.1087    2019-70.48842018.841-54.33912018.163
-50.4827    2018-49.3652    2018-48.7698    2018-46.4073    2018-34.0875    2018
-33.5023    2018-32.9584    2018-31.6344    2018-29.1933    2018 -17.6942018.085
-12.59172018.039-10.21222018.009-9.61119    2018-7.588082017.705-2.72204    2017
-1.70887    2017       0    2017 .487735    2017 3.545552017.4576.184544    2018
7.0442022018.4957.698636    20198.9247822019.8129.187682    20209.6280322020.248
10.63052    202116.152782021.52517.782822021.69720.32174    202226.869472022.412
36.75497    202340.101942023.43244.62345    202448.977392024.69750.83465    2025
51.19637 2025.0655.035112025.75855.908752025.85856.08141 2025.8756.192922025.875
56.84874 2025.8356.904292025.834 56.91822025.84757.014512025.86457.160582025.874
57.414262025.88757.559512025.90457.600782025.91257.840572025.91857.867892025.921
57.897432025.922 57.92482025.92358.011822025.92258.171272025.924 58.17332025.924
58.173482025.924

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
 -142.21    .035 -142.21    .02558.17348    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
       -142.2158.17348               25       25       25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)          * 2020.05  • Element                *  Left OB *  Channel * Right OB •
* Vel Head (ft)           *    0.53  * Wt. n-Val.             *          •   0.025  *          *
* W.S. Elev (ft)          * 2019.52  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
• Crit W.S. (ft)          * 2019.36  • Flow Area (sq ft)      *          *  120.82  •          *
* E.G. Slope (ft/ft)      *0.006097  * Area (sq ft)           *          *  120.82  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   84.84  * Top Width (ft)        *          •   84.84  *          *
* Vel Total (ft/s)        *    5.84  • Avg. Vel. (ft/s)      *          *    5.84  *          *
• Max Chl Dpth (ft)       *    2.52  • Hydr. Depth (ft)      *          *    1.42  *          *
• Conv. Total (cfs)       *  9041.5  * Conv. (cfs)           *          *  9041.5  *          *
* Length Wtd. (ft)        *   25.00  • Wetted Per. (ft)      *          *   85.52  *          *
* Min Ch El (ft)          * 2017.00  * Shear (lb/sq ft)      *          *    0.54  *          *
• Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    3.14  *          *
• Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)   •          *    2.51  *    0.00  *
• C & E Loss (ft)         *    0.03  * Cum SA (acres)         *          *    1.08  *    0.00  •
*****************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2200

INPUT
Description:
Station Elevation Data    num=      93
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.1962029.927-142.1672029.927-142.1432029.922-142.0182029.909-141.9322029.902
-141.8522029.898-141.7422029.896-141.7082029.895-141.608 2029.88-141.3962029.867
-141.2682029.855-141.2242029.835 -141.142029.821-140.4432029.771-139.947 2029.72
 -139.212029.621-133.578    2029  -132.32028.798-127.033    2028-124.3442027.562
-120.804    2027-118.5752026.616-114.919    2026-110.9532025.307-109.177    2025
-104.2192024.121-103.568    2024-98.89612023.164-98.0252    2023-93.26272022.121
-92.6172    2022-91.89382021.867-87.2605    2021-82.41362020.186-81.3374    2020
 -79.4412019.683-75.9064 2019.12-75.1972    2019-73.80242018.943-49.5969    2018
-36.42642017.684 -30.498 2017.55-19.2411 2017.51-18.92182017.539 -17.5682017.611
-17.08362017.664 -16.8252017.727-16.71352017.824-16.31082017.797-15.45262017.731
-14.76282017.685-12.81022017.571-10.94682017.497-3.72771    2017       0    2017
1.529489    20171.833045    20175.3938542017.7666.440764    20187.240929 2018.48
8.205366    2019 8.649742019.21410.08841    202010.821022020.37112.01488    2021
16.537962021.488  21.717    202237.714422022.93238.76264    202339.144622023.064
40.264032023.26944.11292    202446.362932024.45549.08379    202549.582362025.057
50.727832025.13651.467622025.16951.59425 2025.1651.868612025.18151.937312025.242
  52.4132025.32753.134492025.375 54.3875 2025.4455.104912025.52555.308782025.565
56.493182025.595 56.62812025.60856.774032025.616 56.90922025.61857.339022025.617
58.126592025.626 58.13662025.62658.137492025.626

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.196    .035-142.196    .02558.13749    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -142.19658.13749               25       25       25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
• E.G. Elev (ft)          * 2019.89  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           •    0.42  * Wt. n-Val.             *          •   0.025  *          *
* W.S. Elev (ft)          * 2019.46  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          • Flow Area (sq ft)      *          *  135.01  •          *
* E.G. Slope (ft/ft)      *0.004359  * Area (sq ft)           *          *  135.01  *          *
• Q Total (cfs)           *  706.00  • Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)          *   87.14  * Top Width (ft)        *          •   87.14  *          *
```

```
* Vel Total (ft/s)       *    5.23  * Avg. Vel. (ft/s)       *          *    5.23  *          *
* Max Chl Dpth (ft)      *    2.46  * Hydr. Depth (ft)       *          *    1.55  *          *
* Conv. Total (cfs)      * 10693.5  * Conv. (cfs)            *          * 10693.5  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   87.77  *          *
* Min Ch El (ft)         * 2017.00  * Shear (lb/sq ft)       *          *    0.42  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.19  *          *
* Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)   *          *    2.43  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *          *    1.03  *    0.00  *
*********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2225

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.1792029.629-142.029 2029.63-141.9092029.604-141.2672029.534-140.827  2029.5
-140.421 2029.48-139.858 2029.47-139.6862029.461-139.1732029.387 -138.092029.322
 -137.442029.258-137.2142029.159-136.7842029.086-135.579    2029 -132.832028.543
-129.206    2028-123.3492027.034-123.127    2027-123.0272026.984-117.024    2026
-111.6192025.116-110.957    2025-109.6412024.762-105.315    2024-102.5322023.487
-99.9016    2023 -98.005 2022.67-94.3582    2022-91.47162021.496-88.7663    2021
-85.72692020.467-83.1311    2020-78.18042019.241-76.7045    2019-75.47092018.782
-75.37692018.782-75.35172018.787-70.40152018.769 -69.4032018.732-66.11842018.605
-49.3702    2018-46.82282017.936-8.21179    2017-3.25209    2017       0    2017
1.989913    2017 3.686062017.4116.162466    20187.165674 2018.527.998346    2019
9.526755 2019.81 9.84046    202010.063492020.12511.69856    202124.790752021.615
32.89685    202238.508032022.80439.89475    202341.06355 2023.1741.831692023.278
46.18979    2024 50.79962024.86751.055912024.92551.40986    202552.650312025.147
53.016772025.21855.145772025.27255.388312025.29655.650622025.31155.893592025.314
56.666212025.31258.081912025.32858.093312025.328

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
-142.179    .035-142.179    .02558.09331    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.17958.09331               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*********************************************************************************************
* E.G. Elev (ft)         * 2019.71  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.65  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 2019.06  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2019.06  * Flow Area (sq ft)      *          *  108.91  *          *
* E.G. Slope (ft/ft)     *0.008633  * Area (sq ft)           *          *  108.91  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)         *   85.20  * Top Width (ft)         *          *   85.20  *          *
* Vel Total (ft/s)       *    6.48  * Avg. Vel. (ft/s)       *          *    6.48  *          *
* Max Chl Dpth (ft)      *    2.06  * Hydr. Depth (ft)       *          *    1.28  *          *
* Conv. Total (cfs)      *  7598.6  * Conv. (cfs)            *          *  7598.6  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)       *          *   85.64  *          *
* Min Ch El (ft)         * 2017.00  * Shear (lb/sq ft)       *          *    0.69  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.44  *          *
* Frctn Loss (ft)        *    0.20  * Cum Volume (acre-ft)   *          *    2.36  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *          *    0.98  *    0.00  *
*********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2250

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.1622029.331-141.8922029.332-141.6742029.286-140.5162029.159-139.7232029.097
 -138.992029.062-137.9752029.043-137.6642029.028 -137.47    2029-134.0092028.463
-130.995    2028-129.1532027.703-124.963    2027-121.8682026.493-118.875    2026
-115.9972025.521-112.759    2025 -110.042024.545-106.724    2024-101.5182023.063
-101.151    2023-100.394 2022.86-95.6329    2022-91.3665 2021.23-90.0544    2021
-89.08742020.837 -84.068    2020-82.28792019.756-76.6235    2019-75.77822018.823
-71.8111    2018-57.60362017.467-53.7391 2017.33-48.8478 2017.15-47.37142017.094
 -47.2522017.093 -45.2832017.086 -44.7382017.063-43.99682017.059-42.63392017.089
-41.33582017.173-39.30082017.247-38.62532017.285-38.52892017.323-27.98392017.356
-22.14572017.223-17.79762017.115-13.3806    2017-12.43782016.815-3.895332016.922
-3.847592016.959-3.58513    2017-.3172932017.525       02017.5781.633799 2017.85
2.883954    20183.130348 2018.095.621325    20195.676773 2019.028.472083    2020
10.363262020.68211.27952    202112.449022021.05222.987472021.48934.05772 2021.95
35.26942    202235.68512 2022.0641.70604    202346.137852023.65248.26303 2023.98
 48.3767    202449.835362024.23954.44552    202554.527212025.00554.877992025.009
```

```
 55.99342025.00756.23451 2025.0158.05527 2025.03

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
-142.162     .035-142.162     .02558.05527     .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
      -142.16258.05527               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2019.39  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *     0.63 * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2018.76  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         * 2018.71  * Flow Area (sq ft)     *          *  110.43  *          *
* E.G. Slope (ft/ft)     *0.007624  * Area (sq ft)          *          *  110.43  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   80.41  * Top Width (ft)       *          *   80.41  *          *
* Vel Total (ft/s)       *    6.39  * Avg. Vel. (ft/s)     *          *    6.39  *          *
* Max Chl Dpth (ft)      *    1.94  * Hydr. Depth (ft)     *          *    1.37  *          *
* Conv. Total (cfs)      *  8085.8  * Conv. (cfs)          *          *  8085.8  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   80.77  *          *
* Min Ch El (ft)         * 2016.82  * Shear (lb/sq ft)     *          *    0.65  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    4.16  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *          *    2.30  *    0.00  *
* C & E Loss (ft)        *    0.07  * Cum SA (acres)        *          *    0.94  *    0.00  *
*****************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2275

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.1452029.033-141.7542029.034-141.591    2029 -136.922028.419-133.766    2028
-129.9312027.304-128.366    2027-124.6162026.347-122.559    2026-116.0272025.042
-115.734    2025-110.7462024.293-108.775    2024-103.2952023.091-102.767    2023
-101.7692022.833-97.0763    2022 -94.5942021.581-91.1153    2021-85.17332020.026
-85.0169    2020-84.63772019.942 -78.562    2019-76.89462018.731-72.8774    2018
-51.01742017.178-46.2632    2017-45.16772016.963-45.13352016.963-40.66042016.827
-35.16152016.669-28.79272016.445-28.32112016.434-28.00582016.431-27.6561 2016.43
-27.06732016.435-26.46822016.452-25.21782016.472-24.67092016.485-24.45792016.499
-15.86762016.515-15.01212016.465-14.7546 2016.44 -14.2622016.343-10.66522016.388
-10.64512016.404-10.47072016.431-10.40092016.477-9.326662016.698-8.749032016.796
-6.90172    2017-6.89926    2017-6.885222017.001       02017.5545.559669    2018
6.4347362018.3997.717485    20198.7791472019.5169.930632    202011.458482020.686
12.15888    202116.94313 2021.2234.38989    202236.547122022.26442.94725    2023
46.311952023.41551.17529    202452.768442024.14652.768672024.146 53.41852024.221
54.447982024.39154.726072024.48954.85174  2024.555.532952024.527 56.22382024.563
58.097192024.67658.110332024.676

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
-142.145     .035-142.145     .02558.11033     .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
      -142.14558.11033               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2019.19  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *     0.41 * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)         * 2018.78  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  137.72  *          *
* E.G. Slope (ft/ft)     *0.003898  * Area (sq ft)          *          *  137.72  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   84.44  * Top Width (ft)       *          *   84.44  *          *
* Vel Total (ft/s)       *    5.13  * Avg. Vel. (ft/s)     *          *    5.13  *          *
* Max Chl Dpth (ft)      *    2.44  * Hydr. Depth (ft)     *          *    1.63  *          *
* Conv. Total (cfs)      * 11308.1  * Conv. (cfs)          *          * 11308.1  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   84.82  *          *
* Min Ch El (ft)         * 2016.34  * Shear (lb/sq ft)     *          *    0.40  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    2.03  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *          *    2.23  *    0.00  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *          *    0.89  *    0.00  *
*****************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2300

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-142.1232028.544-139.4942028.411-139.1122028.409-138.7952028.407-138.6092028.398
-134.8252028.042-134.438    2028-131.3742027.427-129.119    2027-125.6612026.383
-123.9042026.061-123.552    2026-121.6052025.694-117.273    2025-114.3342024.549
-110.787    2024-108.1632023.586-104.486    2023-101.3022022.393-99.2989    2022
-98.76572021.896-94.1826    2021 -89.438 2020.06-89.1216    2020-87.74362019.827
```

```
-81.3276    2019-78.36672018.613-73.6049    2018-56.75122017.366-46.9999    2017
-39.5098 2016.72-19.60622016.039-18.4562    2016-18.3611    2016-16.0372    2016
-13.34912016.551-11.2869    2017       02017.6241.8330752017.7256.644048    2018
7.1669232018.3048.365707    20198.8209592019.23410.10839    202016.439582020.738
19.67825    202128.84079  2021.630.302212021.699  32.8642021.84733.456142021.888
35.77612    202243.417112022.82444.82804    202347.937742023.36252.70544    2024
52.719872024.001 54.17922024.07858.136492024.31658.164232024.316

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.123    .035-142.123    .02558.16423    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.12358.16423              25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2019.05  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.56  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)          * 2018.48  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2018.37  * Flow Area (sq ft)    *          *  117.38  *          *
* E.G. Slope (ft/ft)      *0.006678  * Area (sq ft)         *          *  117.38  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   84.84  * Top Width (ft)       *          *   84.84  *          *
* Vel Total (ft/s)        *    6.01  * Avg. Vel. (ft/s)     *          *    6.01  *          *
* Max Chl Dpth (ft)       *    2.48  * Hydr. Depth (ft)     *          *    1.38  *          *
* Conv. Total (cfs)       *  8639.5  * Conv. (cfs)          *          *  8639.5  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)     *          *   85.17  *          *
* Min Ch El (ft)          * 2016.00  * Shear (lb/sq ft)     *          *    0.57  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    3.46  *          *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)  *          *    2.16  *    0.00  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)        *          *    0.84  *    0.00  *
************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2325

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************
-142.101 2028.03-141.502    2028-134.507 2027.29-134.3162027.289-134.1572027.285
-132.506    2027-129.1392026.426-126.691    2026-124.7982025.685 -120.67    2025
-115.3422024.112-114.656    2024-112.1662023.581-109.4052023.109-108.725    2023
-108.3252022.931 -102.65    2022-100.2212021.592-96.6496    2021-92.20432020.239
-90.7915    2020-90.27372019.933-89.74322019.871-88.92332019.768-82.4317    2019
 -81.8152018.923-79.80242018.654-75.1613    2018-62.00982017.493-59.74242017.422
-57.07742017.355-54.80822017.315-45.5867    2017-40.18862016.704-32.9564 2016.32
-26.8476    2016-21.4617    2016-20.0507    2016-19.10232016.079-17.64562016.107
 -17.4272016.115       0 2016.814.754237    20175.8534762017.5746.663273    2018
7.1957722018.2818.597715    20199.3175062019.395  10.628    202011.021762020.035
11.454892020.06712.187362020.12423.05029    2021 33.20192021.69738.34293    2022
41.110062022.32441.821642022.41744.11415 2022.6945.536672022.87246.77594    2023
55.517172023.67255.832282023.70156.379442023.76356.936632023.836 56.95652023.834
57.142722023.86457.229912023.88357.364312023.89757.601252023.91657.637242023.921
57.727412023.927 57.85882023.93857.927932023.94157.997192023.94358.057422023.947
58.08009 2023.9558.214182023.949

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.101    .035-142.101    .02558.21418    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.10158.21418              25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2018.87  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.46  * Wt. n-Val.           *          *   0.025  *          *
* W.S. Elev (ft)          * 2018.41  * Reach Len. (ft)      *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)    *          *  129.55  *          *
* E.G. Slope (ft/ft)      *0.004865  * Area (sq ft)         *          *  129.55  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   85.51  * Top Width (ft)       *          *   85.51  *          *
* Vel Total (ft/s)        *    5.45  * Avg. Vel. (ft/s)     *          *    5.45  *          *
* Max Chl Dpth (ft)       *    2.41  * Hydr. Depth (ft)     *          *    1.51  *          *
* Conv. Total (cfs)       * 10121.6  * Conv. (cfs)          *          * 10121.6  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)     *          *   85.96  *          *
* Min Ch El (ft)          * 2016.00  * Shear (lb/sq ft)     *          *    0.46  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    2.49  *          *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)  *          *    2.08  *    0.00  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)        *          *    0.79  *    0.00  *
************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2350

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
**********************************************************************************
-142.0792027.394-138.4242027.282-137.0442027.231-135.538 2027.16-134.5262027.084
-133.804    2027-130.6962026.382-128.781    2026-127.947 2025.84-123.625    2025
-119.9162024.297-118.146    2024-114.1842023.312-112.247    2023-111.4752022.875
-106.163    2022-100.8522021.121-100.117    2021-97.2987 2020.53-94.0683    2020
-91.24992019.623-86.7375    2019-85.80842018.906-77.2994    2018-74.53282017.032
-74.4384    2017-58.02482016.582 -54.4122016.493-45.61432016.643-45.21592016.625
-42.75162016.547-41.52322016.503-35.18752016.215-30.6741    2016-23.7481    2016
-23.2806    2016-13.97412016.305-4.160232016.614       02016.7676.293607    2017
7.0878652017.359 8.63777    2018 9.832032018.526 10.8732    201913.630412019.874
14.05392    202015.726742020.09934.37738    202140.824462021.57944.06134    2022
46.44358 2022.4249.92291    202350.508442023.061 52.66292023.23352.990122023.281
   53.812023.33355.004762023.43355.63327 2023.4656.26308 2023.4856.810672023.521
57.016882023.54858.236112023.534

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
**************************************************
-142.079    .035-142.079    .02558.23611    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.07958.23611               25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2018.74  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.29  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2018.45  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  164.40  *          *
* E.G. Slope (ft/ft)     *0.002397  * Area (sq ft)          *          *  164.40  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   91.17  * Top Width (ft)        *          *   91.17  *          *
* Vel Total (ft/s)       *    4.29  * Avg. Vel. (ft/s)      *          *    4.29  *          *
* Max Chl Dpth (ft)      *    2.45  * Hydr. Depth (ft)      *          *    1.80  *          *
* Conv. Total (cfs)      * 14419.6  * Conv. (cfs)           *          * 14419.6  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   91.70  *          *
* Min Ch El (ft)         * 2016.00  * Shear (lb/sq ft)      *          *    0.27  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.15  *          *
* Frctn Loss (ft)        *    0.06  * Cum Volume (acre-ft)  *          *    2.00  *    0.00  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    0.74  *    0.00  *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2375

INPUT
Description:
Station Elevation Data    num=      64
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.0732026.721-138.4392026.235-138.4382026.235 -136.58    2026-133.9482025.583
-130.125    2025-128.8632024.823-123.291    2024-121.7712023.779-116.598    2023
-115.6242022.859-109.917    2022-105.115 2021.29-103.268    2021-98.30512020.274
-96.5878    2020-93.06022019.628-89.15142019.233-87.0351    2019-85.86872018.886
-84.87292018.801-79.20572018.279-76.2258    2018-75.4553 2017.81 -73.972    2017
-49.65172016.357-36.4079    2016 -33.078    2016-22.7846    2016-10.60312016.376
-8.34116 2016.46-4.30034 2016.62-2.938852016.667-1.015892016.727       02016.733
 4.618792016.756 8.54834    2017 10.33582017.828 10.6386    201811.158432018.304
12.39488    201913.988712019.73314.48634    2020 27.5035 2020.5528.432052020.587
28.858272020.59829.697512020.60230.310312020.61431.982332020.663 33.12232020.702
33.704422020.72634.167922020.75235.170782020.81436.893262020.76736.901632020.758
38.82706    202144.720542021.74146.80458    202250.655282022.56753.97591    2023
54.528972023.01855.563932023.09455.953672023.14658.25804 2023.12

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
**************************************************
-142.073    .035-142.073    .02558.25804    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.07358.25804               25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2018.67  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.27  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2018.40  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  168.72  *          *
* E.G. Slope (ft/ft)     *0.002223  * Area (sq ft)          *          *  168.72  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   91.85  * Top Width (ft)        *          *   91.85  *          *
* Vel Total (ft/s)       *    4.18  * Avg. Vel. (ft/s)      *          *    4.18  *          *
* Max Chl Dpth (ft)      *    2.40  * Hydr. Depth (ft)      *          *    1.84  *          *
* Conv. Total (cfs)      * 14974.3  * Conv. (cfs)           *          * 14974.3  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   92.47  *          *
* Min Ch El (ft)         * 2016.00  * Shear (lb/sq ft)      *          *    0.25  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.06  *          *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)  *          *    1.90  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    0.69  *    0.00  *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                 RS: -2400
```

```
INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.0842026.006-142.042    2026-141.451 2025.91-135.421    2025-132.8812024.679
-128.7412024.098-128.019    2024-127.5242023.936-119.266    2023-118.7052022.929
-111.133    2022-106.7482021.331-104.782    2021-98.16472020.044-97.8353    2020
-97.71172019.983-90.0287    2019-83.40092018.448-79.39412018.208-77.69532018.089
-76.5634    2018-74.48032017.832-68.34432017.313-64.6888    2017-60.40372016.626
-49.84322016.059-49.13852016.012-48.6649    2016-46.86372015.984-39.54332015.938
-38.32432015.924-37.79242015.909-26.51262015.923-26.16782015.948-25.23562015.979
-24.4031    2016-23.4233    2016-19.5742    2016 -17.206    2016-11.9762    2016
-3.43844    2016-3.35587    2016       02016.2631.1299462016.3529.878996    2017
11.765722017.93611.92067    201812.161662018.10914.03082    201915.21123 2019.17
16.324982019.29717.892262019.21220.361652019.315 35.2036    202035.506192020.042
41.82622    202145.146932021.50248.30624    202250.35701 2022.2551.396852022.353
54.180912022.52854.367932022.54554.406742022.56255.541042022.72256.171872022.753
56.326292022.764 56.36172022.77256.444052022.78156.79499 2022.7957.14499 2022.81
57.279682022.81458.24014 2022.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-142.084    .035-142.084    .02558.24014    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -142.08458.24014               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)          * 2018.61  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.25  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2018.37  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *          *  177.09  *          *
* E.G. Slope (ft/ft)      *0.001966  * Area (sq ft)          *          *  177.09  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)          *   94.73  * Top Width (ft)       *          *   94.73  *          *
* Vel Total (ft/s)        *    3.99  * Avg. Vel. (ft/s)     *          *    3.99  *          *
* Max Chl Dpth (ft)       *    2.46  * Hydr. Depth (ft)     *          *    1.87  *          *
* Conv. Total (cfs)       * 15923.9  * Conv. (cfs)          *          * 15923.9  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)     *          *   95.17  *          *
* Min Ch El (ft)          * 2015.91  * Shear (lb/sq ft)     *          *    0.23  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    0.91  *          *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)  *          *    1.81  *    0.00  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)        *          *    0.63  *    0.00  *
**********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2425

INPUT
Description:
Station Elevation Data    num=     117
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-142.0962024.558-137.3682024.471-135.5292024.409-122.0262024.095-119.6982024.031
 -118.79    2024-118.2972023.965-118.2372023.963-117.5262023.884-117.2862023.884
-116.9082023.874-116.8042023.891-116.5632023.888-116.2212023.878-115.9492023.866
-115.1892023.832-114.3372023.797-108.3812023.592-105.6432023.491-104.0682023.426
-98.1024    2023-93.57252022.704-93.51682022.646-85.1533    2022-83.27412021.829
 -82.7162021.821 -82.3482021.794-81.30642021.671-78.43232021.305-76.0349 2021.23
-75.28342021.186-73.47352021.042-73.1631    2021-70.8467 2020.66-69.67212020.521
-67.0718    2020-64.86252019.704-60.6217 2019.01-60.57612019.003-60.5528    2019
 -58.9832018.855-58.32272018.834-58.1522 2018.82-56.56842018.604-55.67952018.499
-53.1221    2018-52.44372017.586-51.4205    2017-49.69482016.002-49.6909    2016
 -49.684    2016-48.3595    2016-46.9017    2016-45.5812    2016-43.6139    2016
-42.6424    2016-41.5981    2016-41.0816    2016-40.8308    2016 -40.464    2016
-38.1096    2016  -37.17    2016-33.8365    2016-33.2814    2016-33.0392    2016
-27.9028    2016-27.7457    2016-27.3212    2016-26.1861    2016-25.1747    2016
-20.3828    2016-19.7935    2016-19.1061    2016-18.7715    2016-17.6381    2016
-16.6012    2016-15.7715    2016-14.4362    2016-13.2088    2016-12.1042    2016
-10.4298    2016-10.0312    2016-9.11768    2016-7.28958    2016-7.16371    2016
-6.81167    2016-6.68261    2016-6.55663    2016-6.44115    2016-6.34238    2016
-5.99274    2016       0    2016  5.3158    2016 7.107042016.4549.967904    2017
12.275882017.81812.90054    201816.653782018.61718.94975    201922.960532019.229
35.88189    202039.337122020.495 41.84652020.78943.44988    202144.732462021.211
48.60596    202248.93256    202249.37354    202251.715232022.33153.232272022.407
53.603612022.43353.688782022.45153.886822022.47354.730782022.49455.572462022.542
55.896362022.55358.206122022.591

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-142.096    .035-142.096    .02558.20612    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
      -142.09658.20612               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)          * 2018.51  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.54  * Wt. n-Val.            *          *   0.025  *          *
* W.S. Elev (ft)          * 2017.97  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
```

* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	*	119.86	*		*
* E.G. Slope (ft/ft)	*0.004494	* Area (sq ft)	*	*	119.86	*		*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	*	706.00	*		*
* Top Width (ft)	* 65.88	* Top Width (ft)	*	*	65.88	*		*
* Vel Total (ft/s)	* 5.89	* Avg. Vel. (ft/s)	*	*	5.89	*		*
* Max Chl Dpth (ft)	* 1.97	* Hydr. Depth (ft)	*	*	1.82	*		*
* Conv. Total (cfs)	* 10531.5	* Conv. (cfs)	*	*	10531.5	*		*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	*	66.68	*		*
* Min Ch El (ft)	* 2016.00	* Shear (lb/sq ft)	*	*	0.50	*		*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	2.97	*		*
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	*	*	1.72	*	0.00	*
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	*	*	0.59	*	0.00	*

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2450

INPUT
Description:
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.14	2024	-136.32	2023.173	-133.983	2023	-116.171	2022.148	-115.088	2022.099
-114.516	2022.076	-114.137	2022.065	-113.855	2022.058	-112.576	2022	-111.737	2021.915
-110.303	2021.847	-108.918	2021.826	-105.734	2021.826	-103.045	2021.858	-101.763	2021.838
-100.532	2021.811	-87.9941	2021.948	-87.9397	2021.947	-87.892	2021.948	-86.463	2021.964
-85.7645	2022	-85.2772	2022.014	-83.4005	2022.083	-81.7044	2022.116	-79.5746	2022.128
-73.3091	2022.131	-70.562	2022.124	-68.8705	2022.13	-64.7637	2022.103	-64.3107	2022.094
-61.4442	2022.006	-61.2357	2022	-60.9327	2021.918	-57.165	2021	-57.0139	2020.976
-52.3092	2020.251	-50.7825	2020	-49.7013	2019.765	-49.3285	2019.704	-48.6521	2019.585
-45.7654	2019	-42.9201	8.123	-42.5573	2018	-41.0412	2017.488	-39.935	2017
-39.3867	2016.748	-38.9449	2016.598	-38.7182	2016.565	-38.4823	2016.595	-38.025	2016.536
-37.381	2016.44	-36.8752	2016.416	-36.4893	2016.353	-34.9704	2016	-33.3897	2015.416
-33.332	2015.416	-33.314	2015.416	-30.3163	2015.416	-27.8226	2015.416	-27.4153	2015.416
-27.1074	2015.416	-26.0863	2015.416	-25.7479	2015.416	-25.682	2015.416	-24.5936	2015.416
-24.5334	2015.416	-23.9254	2015.416	-23.8192	2015.416	-14.0127	2015.564	-9.70234	2015.639
-5.72932	2015.652	-5.24851	2015.655	-4.53876	2015.657	0	2015.655	.307582	2015.655
1.92335	2015.684	5.66511	2015.767	2.19214	2015.796	11.5921	2016	13.0481	2016.695
13.8009	2017	14.9524	2017.495	15.9483	2017	18.2079	2018.974	20.8899	2019
21.2034	2019.018	40.5196	2020	40.9119	2020.077	41.5586	2021.143	53.9922	2020.671
44.9090	2021	45.2243	2021.074	49.0909	2022	50.2926	8	2022.065	0.880942
51.0158	2022.135	1.329592	2022.165	52.6665	2022.198	53.9993	2022.275	54.5130	2022.292
58.1721	2022.352								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.14	.035	-64.7637	.025	58.1721	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-64.7637	58.1721	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2018.33	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.86	* Wt. n-Val.	*	* 0.025	*	*
* W.S. Elev (ft)	* 2017.47	* Reach Len. (ft)	* 25.00	* 25.00	* 25.00	*
* Crit W.S. (ft)	* 2017.47	* Flow Area (sq ft)	*	* 94.96	*	*
* E.G. Slope (ft/ft)	*0.007844	* Area (sq ft)	*	* 94.96	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	* 706.00	*	*
* Top Width (ft)	* 55.91	* Top Width (ft)	*	* 55.91	*	*
* Vel Total (ft/s)	* 7.43	* Avg. Vel. (ft/s)	*	* 7.43	*	*
* Max Chl Dpth (ft)	* 2.06	* Hydr. Depth (ft)	*	* 1.70	*	*
* Conv. Total (cfs)	* 7971.2	* Conv. (cfs)	*	* 7971.2	*	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	* 56.58	*	*
* Min Ch El (ft)	* 2015.42	* Shear (lb/sq ft)	*	* 0.82	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 6.11	*	*
* Frctn Loss (ft)	* 0.20	* Cum Volume (acre-ft)	*	* 1.66	* 0.00	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	* 0.55	* 0.00	*

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2475

INPUT
Description:
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.192	2024.111	-141.908	2024.109	-141.603	2024	-132.729	2023.564	-131.546	2023.533
-121.842	2023.221	-119.217	2023.117	-119.044	2023.111	-118.933	2023.11	-118.754	2023.115
-118.502	2023.112	-118.341	2023.11	-117.952	2023.117	-115.108	2023.026	-114.508	2023
-109.605	2022.208	-108.083	2022	-107.205	2021.875	-105.181	2021.658	-103.856	2021.526
-102.604	2021.385	-101.945	2021.3	-100.035	2021	-97.4418	2020.595	-93.9884	2020.063
-93.5585	2020	-93.1918	2019.93	-90.1688	2019.379	-89.569	2019.286	-89.0892	2019.228
-88.6642	2019.189	-88.317	2019.167	-88.0427	2019.159	-87.8151	2019.166	-87.5923	2019.183
-87.1431	2019.23	-86.8958	2019.206	-86.4876	2019.208	-86.0757	2019.238	-85.5265	2019.275

```
-84.73552019.295-82.58812019.489-81.96972019.523-81.22622019.532-80.41992019.525
 -79.3222019.503-77.51982019.434-75.22042019.349-68.1211    2019-66.37262018.926
-66.13452018.922-66.01282018.916-64.98282018.837-61.24812018.724-59.65522018.656
-52.5993    2018-50.82392017.843-49.85432017.707-48.24322017.485-45.2248    2017
-44.58352016.873-43.1608 2016.51-41.4768    2016  -37.682015.139-37.15562015.161
-35.21392015.161-29.83512015.161-29.52662015.161-27.99122015.161-16.15822015.221
-11.61532015.252-6.651282015.284       02015.3154.1144932015.3344.5413732015.547
5.449604    20167.523397    20168.298864    201610.02121 2016.8310.36211    2017
10.495242017.06812.38126    201819.603082018.70121.77287    201933.390452019.598
37.151042019.79639.121622019.794 39.13672019.77439.270992019.764 41.1539    2020
42.586112020.17944.575732020.42548.383352020.88549.17499    2021  49.7182021.145
50.534792021.42551.422572021.71552.30144    202252.427392022.00753.129722022.031
58.138072022.113

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.192    .035-81.2262    .02558.13807    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -81.226258.13807               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2018.00  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.85  * Wt. n-Val.             *          *    0.025  *          *
* W.S. Elev (ft)          * 2017.15  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2017.15  * Flow Area (sq ft)      *          *   95.47  *          *
* E.G. Slope (ft/ft)      *0.007876  * Area (sq ft)           *          *   95.47  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   56.84  * Top Width (ft)         *          *   56.84  *          *
* Vel Total (ft/s)        *    7.40  * Avg. Vel. (ft/s)       *          *    7.40  *          *
* Max Chl Dpth (ft)       *    2.01  * Hydr. Depth (ft)       *          *    1.68  *          *
* Conv. Total (cfs)       *  7955.1  * Conv. (cfs)            *          *  7955.1  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   57.51  *          *
* Min Ch El (ft)          * 2015.14  * Shear (lb/sq ft)       *          *    0.82  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    6.04  *          *
* Frctn Loss (ft)         *    0.20  * Cum Volume (acre-ft)   *          *    1.60  *    0.00  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)         *          *    0.52  *    0.00  *
************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2500

INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**************************************************************************************
-142.2152025.307-139.708    2025-137.8992024.825-137.4842024.836-137.1842024.828
-136.9612024.825-136.3342024.841-135.7222024.785-135.2332024.746-132.5662024.608
-131.0342024.496-129.4032024.427-127.3332024.373-123.8312024.046-123.7882024.043
-123.756 2024.04-123.505    2024-122.6482023.915-121.5772023.816-113.033    2023
-109.0112022.667 -106.622022.453-101.857    2022-99.40422021.793-98.78562021.763
-97.49432021.748-93.33762021.764-92.41342021.701-92.24242021.682-92.0736 2021.65
-91.47722021.614-90.60132021.524-89.56572021.384-88.02882021.103-87.3926    2021
-86.94382020.915-81.2587    2020-80.80182019.924-75.0488    2019-70.8649  2018.4
-68.5463    2018-64.69822017.403-62.6328    2017-60.5743 2016.61 -57.668    2016
-56.44172015.847-54.62432015.667-46.9941    2015-44.6836 2014.86-43.8027 2014.86
-40.7726 2014.86-39.1125 2014.86 -37.231 2014.86 -36.765 2014.86-35.7829 2014.86
-34.9688 2014.86-34.0664 2014.86-32.9587 2014.86-28.23072014.859-21.2379 2014.86
-16.7155 2014.86-13.91762014.861       0 2014.86   .8384 2014.865.1120342014.861
5.5887022015.0997.391978    20167.575482    2016 7.57577    2016 7.83668    2016
 8.34381 2016.21 10.2726    2017 11.89852017.65112.72288    201825.311892018.434
26.098532018.45628.020352018.48729.00475 2018.5130.929922018.57136.700632018.767
37.399182018.78938.827572018.83839.034122018.84439.37696 2018.8540.282982018.861
 40.79412018.86541.211052018.86441.639422018.85841.71581 2018.8643.26949    2019
46.002692019.35548.694422019.74450.35817    202051.13959 2020.13 51.82512020.232
57.58298    202158.10184 2021.05

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-142.215    .035-93.3376    .02558.10184    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -93.337658.10184               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
************************************************************************************************
* E.G. Elev (ft)          * 2017.28  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.74  * Wt. n-Val.             *          *    0.025  *          *
* W.S. Elev (ft)          * 2016.53  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          * 2016.53  * Flow Area (sq ft)      *          *  102.14  *          *
* E.G. Slope (ft/ft)      *0.008145  * Area (sq ft)           *          *  102.14  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   69.34  * Top Width (ft)         *          *   69.34  *          *
* Vel Total (ft/s)        *    6.91  * Avg. Vel. (ft/s)       *          *    6.91  *          *
* Max Chl Dpth (ft)       *    1.67  * Hydr. Depth (ft)       *          *    1.47  *          *
* Conv. Total (cfs)       *  7822.7  * Conv. (cfs)            *          *  7822.7  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   69.83  *          *
```

* Min Ch El (ft)	* 2014.86	* Shear (lb/sq ft)	*	*	0.74	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	5.14	*	*
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	*	*	1.55	* 0.00	*
* C & E Loss (ft)	* 0.06	* Cum SA (acres)	*	*	0.48	* 0.00	*

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2525

INPUT
Description:
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.304	2030	-142.108	2030	-142.096	2030	-141.8842029.851	-140.673		2029
-139.8362028.411	-139.251		2028	-138.0412027.687	-135.054		2027	-133.0562026.595	
-130.5662026.031	-130.391		2026	-129.0542025.835	-127.0542025.615	-122.6732025.173			
-121.627	2025	-120.8652024.892	-115.411		2024	-111.9062023.261	-110.891		2023
-109.4642022.845	-108.9532022.803	-107.8232022.684	-104.3832022.308	-101.475		2022			
-99.33422021.824	-88.1188		2021	-82.8222020.413	-81.29262020.235	-80.23882020.135			
-78.6848	2020	-75.65542019.698	-74.7768	2019.59	-69.7818		2019	-66.83722018.531	
-66.04552018.414	-65.422018.347	-64.8732018.303	-64.45612018.287	-63.95792018.286					
-63.24132018.164	-63.16082018.157	-61.9133		2018	-60.87242017.843	-60.52862017.787			
-59.77332017.682	-58.97712017.526	-58.2468	2017.39	-57.71682017.275	-56.90312017.072				
-56.6179	2017	-56.30122016.927	-55.09682016.651	-52.0955		2016	-50.06212015.521		
-49.0684	2015	-48.21972014.594	-46.35542014.552	-46.14972014.533	-39.30362014.478				
-32.12462014.471	-23.1212014.464	-19.56762014.461	-16.9504	2014.46	02014.444				
.8280942014.4445	.728322	2014.446.3848492014.7688.851912		20169.632398		2016			
9.633825	201611.03091		201612.795142016.44414.93004		201717.04608	2017.06			
24.972352017.553	26.2621	2017.5527.54153	2017.5427.750532017.54328.397452017.571						
30.234432017.66932.421322017.757	33.83992017.83137.55482		201839.505232018.235						
40.912452018.41743.476022018.72345.63113		2019	45.7672019.00948.361992019.168						
48.937732019.17451.039262019.29552.308862019.39554.401972019.622	54.58572019.664								
54.786922019.68356.020512019.75756.280582019.79756.364592019.805	56.48532019.811								
56.614852019.81856.776052019.81958.147422019.833									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.304	.035	-142.304	.02558.14742		.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-142.30458.14742		25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2017.04	* Element	*	Left OB *	Channel	* Right OB	*
* Vel Head (ft)	* 0.53	* Wt. n-Val.	*	*	0.025	*	*
* W.S. Elev (ft)	* 2016.51	* Reach Len. (ft)	*	25.00 *	25.00	* 25.00	*
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	*	120.34	*	*
* E.G. Slope (ft/ft)	*0.004572	* Area (sq ft)	*	*	120.34	*	*
* Q Total (cfs)	* 706.00	* Flow (cfs)	*	*	706.00	*	*
* Top Width (ft)	* 67.46	* Top Width (ft)	*	*	67.46	*	*
* Vel Total (ft/s)	* 5.87	* Avg. Vel. (ft/s)	*	*	5.87	*	*
* Max Chl Dpth (ft)	* 2.07	* Hydr. Depth (ft)	*	*	1.78	*	*
* Conv. Total (cfs)	* 10441.6	* Conv. (cfs)	*	*	10441.6	*	*
* Length Wtd. (ft)	* 25.00	* Wetted Per. (ft)	*	*	68.23	*	*
* Min Ch El (ft)	* 2014.44	* Shear (lb/sq ft)	*	*	0.50	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	2.95	*	*
* Frctn Loss (ft)	* 0.08	* Cum Volume (acre-ft)	*	*	1.48	* 0.00	*
* C & E Loss (ft)	* 0.06	* Cum SA (acres)	*	*	0.44	* 0.00	*

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2550

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.3192030.153	-139.5762030.009	-139.508		2030	-139.3962029.967	-135.386		2029	
-134.2042028.634	-131.776		2028	-129.6852027.403	-128.348		2027	-125.395	2026.15
-124.892	2026	-124.4472025.882	-121.354		2025	-120.432024.765	-117.709		2024
-116.0332023.594	-113.725		2023	-110.751	2022.33	-109.518		2022	-104.3442021.633
-95.7155	2021	-90.39372020.581	-89.9262	2020.55	-89.46182020.531	-88.19282020.497			
-87.69562020.489	-87.43992020.491	-85.00542020.697	-84.6912	2020.731	-84.02562020.876				
-83.14462020.967	-83.13232020.965	-82.2459		2021	-81.84432021.066	-80.54682021.122			
-80.43822021.138	-79.2754		2021	-79.2556		2021	-76.4154		2020
-75.66152019.942	-74.31282019.764	-70.69242019.389	-68.3458		2019	-66.10012018.663	-62.30292018.105		
-61.7592	2018	-61.34992017.899	-59.98062017.562	-58.22082017.149	-57.5637		2017		
-57.11382016.884	-53.2717		2016	-51.12462015.438	-49.8938		2015	-49.2752014.574	
-48.1692	2014	-45.64852014.095	-32.91932014.076	-25.04552014.066	-22.31572014.062				
-19.98322014.059	02014.028	.8704292014.026	6.344612014.0197.1800342014.436						
10.31134	201612.435262016.23917.889542016.83927.534632016.97728.916652017.036								
31.33561 2017.0131.577672016.99931.99533	201732.98962	201733.14506	2017						
33.512552017.03641.08717	201846.209972018.70548.35847	201950.898232019.153							
51.805472019.29152.09851 2019.3252.519592019.339	52.97152019.36453.043292019.365								
58.349652019.418									

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-142.319    .035-80.5468    .02558.34965    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -80.546858.34965               25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)          * 2016.90  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.33  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2016.57  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          *  152.42  *          *
* E.G. Slope (ft/ft)      *0.002241  * Area (sq ft)           *          *  152.42  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   71.18  * Top Width (ft)         *          *   71.18  *          *
* Vel Total (ft/s)        *    4.63  * Avg. Vel. (ft/s)       *          *    4.63  *          *
* Max Chl Dpth (ft)       *    2.57  * Hydr. Depth (ft)       *          *    2.14  *          *
* Conv. Total (cfs)       * 14912.1  * Conv. (cfs)           *          * 14912.1  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   72.17  *          *
* Min Ch El (ft)          * 2014.00  * Shear (lb/sq ft)      *          *    0.30  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    1.37  *          *
* Frctn Loss (ft)         *    0.05  * Cum Volume (acre-ft)   *          *    1.41  *    0.00  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)         *          *    0.41  *    0.00  *
*****************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2575

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************
 -142.292030.683-141.2642030.629-140.3712030.513-140.2392030.412-138.164 2030.09
-137.742    2030 -135.722029.368-134.515    2029-133.624 2028.69-131.514    2028
 -128.672027.165-128.176    2027-125.6722026.214-124.979    2026-122.0442025.096
-121.743    2025-118.5022024.011-118.467    2024-118.0192023.864-115.204    2023
-114.2762022.725-111.901    2022-105.3122021.072-104.739    2021 -101.612020.811
-96.6316 2020.55-94.80522020.441-92.99212020.315-89.21132020.023-89.10092020.016
 -88.874    2020-82.9335 2019.77-75.09962019.493-65.8421    2019-61.07932018.256
 -59.224    2018-57.32012017.505-55.2886    2017-52.76662016.359-51.2836    2016
-50.9965 2015.92-48.2811    2015-47.44412014.176-47.3076    2014-47.14282013.797
-43.48142013.706-40.32072013.701-33.78462013.693-23.12122013.678-18.16572013.672
 -4.10172013.653       02013.6476.7498592013.6398.7795022014.65311.47561    2016
17.225342016.53618.106292016.616 19.50672016.74330.263812016.95430.57745 2016.96
30.587272016.95730.692472016.92231.857472016.53631.999962016.48935.060162016.727
38.56611    201743.610492017.78245.02454    201845.416132018.069 58.2097    2019
58.551872019.003

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -142.29    .035 -142.29    .02558.55187    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -142.2958.55187               25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)          * 2016.84  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.26  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 2016.58  * Reach Len. (ft)        *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          *  172.63  *          *
* E.G. Slope (ft/ft)      *0.001530  * Area (sq ft)           *          *  172.63  *          *
* Q Total (cfs)           *  706.00  * Flow (cfs)             *          *  706.00  *          *
* Top Width (ft)          *   72.64  * Top Width (ft)         *          *   72.64  *          *
* Vel Total (ft/s)        *    4.09  * Avg. Vel. (ft/s)       *          *    4.09  *          *
* Max Chl Dpth (ft)       *    2.94  * Hydr. Depth (ft)       *          *    2.38  *          *
* Conv. Total (cfs)       * 18047.6  * Conv. (cfs)           *          * 18047.6  *          *
* Length Wtd. (ft)        *   25.00  * Wetted Per. (ft)       *          *   74.00  *          *
* Min Ch El (ft)          * 2013.64  * Shear (lb/sq ft)      *          *    0.22  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    0.91  *          *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)   *          *    1.31  *    0.00  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *          *    0.36  *    0.00  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2600

INPUT
Description:
Station Elevation Data    num=      90
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************
-141.867    2031-140.767    2031-140.206    2031-137.288    2031-136.944    2031
-135.9552030.582-134.481    2030 -132.442029.148-132.073    2029-131.9122028.932
 -129.57    2028-127.968 2027.36-127.135    2027    -1252026.131 -124.68    2026
-122.7612025.381-121.673    2025-120.3972024.605-118.509    2024-116.2192023.285
-115.4882023.047-115.344    2023-114.4782022.731-112.215    2022-111.7032021.851
-109.092    2021 -105.172020.524-103.7522020.388-99.4889    2020-89.60062019.721
```

```
-66.6489    2019-59.19812018.211-58.68812018.162-58.22162018.127-56.8783    2018
-55.8884 2017.78-54.78632017.527-52.2133    2017-50.4598 2016.65-47.3734    2016
-46.70442015.398-46.5572    2015-46.51872014.828-46.2312 2014.04-46.2061    2014
-46.20272013.992-38.49562013.314-37.11072013.312-33.75862013.308-20.69072013.293
-15.51582013.287-2.946212013.272       02013.2687.145345 2013.269.496994 2014.436
12.62789    201619.72193 2016.4919.941162016.50523.283442016.72627.323892016.805
32.948712016.91633.134952016.91933.728552016.93134.129312016.93934.489812016.946
34.546252016.92835.598872016.58435.796912016.61338.40538    201741.078142017.454
44.51415    201846.795772018.14449.461182018.26949.913552018.29850.411112018.342
51.56471 2018.4152.121222018.45952.588692018.54552.875792018.57353.283882018.599
53.967072018.62455.068282018.65656.771442018.97757.02939    201957.06604    2019
57.10827    201957.29088    201957.29179    2019 57.30892018.99757.309522018.995

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-141.867    .035-141.867    .02557.30952    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -141.86757.30952               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2016.79  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.22  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2016.57  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  187.74  *          *
* E.G. Slope (ft/ft)     *0.001136  * Area (sq ft)          *          *  187.74  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   71.04  * Top Width (ft)       *          *   71.04  *          *
* Vel Total (ft/s)       *    3.76  * Avg. Vel. (ft/s)     *          *    3.76  *          *
* Max Chl Dpth (ft)      *    3.31  * Hydr. Depth (ft)     *          *    2.64  *          *
* Conv. Total (cfs)      * 20942.2  * Conv. (cfs)          *          * 20942.2  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   73.02  *          *
* Min Ch El (ft)         * 2013.26  * Shear (lb/sq ft)     *          *    0.18  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    0.69  *          *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)  *          *    1.21  *    0.00  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    0.32  *    0.00  *
*************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2625

INPUT
Description:
Station Elevation Data    num=     108
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-140.857    2031-137.026    2031-135.998    2031-134.8632030.567-133.393    2030
-131.8532029.408-130.728    2029-129.9382028.698-128.136    2028-126.2022027.241
 -125.56    2027-125.0162026.794-123.066    2026-122.0342025.611-120.473    2025
 -118.242024.126-117.925    2024-117.6922023.912-115.272    2023-113.7182022.404
 -112.63    2022-110.0192021.011-109.988    2021-109.8912020.964-107.306    2020
-105.8072019.881-104.0352019.765-101.0452019.591-99.6385 2019.56 -97.5492019.546
 -96.7062019.518-95.79522019.468-94.75742019.401-92.27082019.249-87.8466    2019
-82.1689 2018.84-77.29072018.712-74.70462018.652-72.01432018.595-69.75122018.549
-68.27082018.523 -67.7152018.529-64.45812018.428-60.41562018.293-55.63252018.125
-53.16922018.082-52.2222    2018-50.50042017.627-49.38262017.365-47.5623    2017
-44.7572 2016.36-43.0557    2016-41.60922015.568-40.49142015.255-40.0707    2015
-39.73672014.071-39.7069    2014-39.67892013.919-39.3025    2013-39.28462012.952
-39.24272012.867-38.75482012.854-37.72372012.827-37.08542012.943-32.97892012.911
-26.38622012.903 -19.2812012.893-15.62392012.888-12.56922012.883-1.043672012.867
       02012.865 7.368412012.8558.6444012013.49313.65644    201616.823972016.166
19.004072016.274 21.3271 2016.3921.33863 2016.3928.189972016.73134.068452016.847
35.24893 2016.87 37.02752016.90538.382032016.93139.364382016.951 39.36492016.951
39.522242016.89939.56171 2016.9140.010112016.99740.018472016.998  40.029    2017
40.150522017.02245.51675    201845.57117    201846.10219    201846.573912018.086
47.150522018.14447.970122018.194 49.34222018.24551.55385 2018.3154.974412018.953
55.49247    201955.56608    201955.65091    201956.01764    201956.01947    2019
56.053842018.99356.055072018.99156.055082018.991

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-140.857    .035-53.1692    .02556.05508    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -53.169256.05508               25      25      25             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2016.76  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.21  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2016.55  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  193.23  *          *
* E.G. Slope (ft/ft)     *0.001026  * Area (sq ft)          *          *  193.23  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)           *          *  706.00  *          *
* Top Width (ft)         *   70.23  * Top Width (ft)       *          *   70.23  *          *
* Vel Total (ft/s)       *    3.65  * Avg. Vel. (ft/s)     *          *    3.65  *          *
* Max Chl Dpth (ft)      *    3.73  * Hydr. Depth (ft)     *          *    2.75  *          *
* Conv. Total (cfs)      * 22037.2  * Conv. (cfs)          *          * 22037.2  *          *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)     *          *   72.70  *          *
* Min Ch El (ft)         * 2012.83  * Shear (lb/sq ft)     *          *    0.17  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    0.62  *          *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)  *          *    1.10  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    0.28  *    0.00  *
*************************************************************************************************
```

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2650

INPUT
Description:
Station Elevation Data num= 127

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-139.847	2031	-136.846	2031	-135.811	2031	-135.071	2031	-133.8882030.539	
-132.616	2030	-131.4672029.513	-130.272	2029	-129.4142028.644	-127.915	2028		
-126.8022027.555	-125.473	2027	-123.9472026.372	-123.073	2026	-121.3442025.306			
-120.57	2025	-120.0042024.767	-118.111	2024	-117.7722023.861	-115.566	2023		
-114.42022.521	-112.982	2022	-112.3032021.754	-110.284	2021	-108.3962020.235			
-107.675	2020	-106.812019.577	-105.203	2019	-102.3322018.882	-100.952018.837			
-99.94662018.814	-99.10412018.803	-97.6069	2018.79	-96.86572018.775	-92.99912018.658				
-91.2612018.613	-89.58622018.583	-88.0063	2018.57	-85.57322018.565	-85.52872018.571				
-84.97392018.573	-83.14072018.767	-83.00322018.766	-82.84652018.766	-82.77312018.767					
-82.6962018.769	-82.24882018.774	-82.0742018.777	-81.98922018.786	-81.89282018.791					
-81.81652018.793	-81.70322018.793	-81.3782018.792	-80.88232018.788	-80.53172018.784					
-80.38362018.781	-80.25542018.778	-79.64742018.758	-79.22192018.746	-78.39762018.728					
-78.0049	2018.72	-77.86652018.715	-77.13082018.693	-76.84542018.682	-76.68042018.671				
-76.52082018.648	-76.27962018.639	-73.71722018.581	-72.9664	2018.56	-72.3027	2018.54			
-71.7443	2018.52	-69.52082018.422	-67.24762018.347	-61.36422018.181	-55.5423	2018			
-52.86732017.747	-52.1579	2017.68	-51.18352017.588	-44.54822017.583	-42.63572017.581				
-37.74672017.533	-36.4067	2017.52	-36.17942017.518	-35.78442017.514	-29.44082014.449				
-25.32642012.461	-21.67122012.454	-16.85172012.444	-12.00982012.434	-8.75732012.427					
02012.4061.1397522012.4047.2103252012.3918.6803612013.12614.42725	2016								
19.845882016.22922.986272016.35923.00042	2016.3632.246152016.74442.765532016.954								
43.357992016.96643.362052016.96743.753882017.09743.797182017.105	45.53092017.449								
47.23142017.79348.089132017.96848.24799	201848.404132018.035	48.49972018.055							
48.503072018.05548.506282018.05648.656922018.12748.732012018.11448.787082018.106									
48.787512018.10648.787942018.10548.793252018.10553.17739	2018.9353.95555	2019							
54.06612	201954.19353	2019	54.7444	201954.74715	201954.79877	2018.99			
54.800632018.98654.800652018.986									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-139.847	.035	-37.7467	.025	54.80065	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

	-37.746754.80065		25	25	25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.		0.025	
W.S. Elev (ft)	2016.44	Reach Len. (ft)	25.00	25.00	25.00
Crit W.S. (ft)		Flow Area (sq ft)		165.56	
E.G. Slope (ft/ft)	0.001339	Area (sq ft)		165.56	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	58.53	Top Width (ft)		58.53	
Vel Total (ft/s)	4.26	Avg. Vel. (ft/s)		4.26	
Max Chl Dpth (ft)	4.05	Hydr. Depth (ft)		2.83	
Conv. Total (cfs)	19293.5	Conv. (cfs)		19293.5	
Length Wtd. (ft)	25.00	Wetted Per. (ft)		60.30	
Min Ch El (ft)	2012.39	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.98	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)		1.00	0.00
C & E Loss (ft)	0.01	Cum SA (acres)		0.25	0.00

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2675

INPUT
Description:
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-138.837	2031	-137.985	2031	-137.365	2031	-135.7532030.345	-134.831	2030	
-132.4052029.054	-132.255	2029	-132.1112028.945	-129.557	2028	-128.182027.475			
-126.903	2027	-125.3112026.395	-124.298	2026	-123.2452025.607	-121.591	2025		
-119.9212024.364	-118.97	2024	-117.5422023.464	-116.272	2023	-114.762022.411			
-113.6	2022	-112.4452021.552	-111.165	2021	-108.7712020.149	-108.368	2020		
-107.4712019.659	-105.855	2019	-91.97962018.196	-87.7722	2018.07	-87.29892018.047			
-84.7022	2018	-83.6379	2018	-82.5666	2018	-82.1536	2018	-80.5699	2018
-80.4969	2018	-76.19982018.453	-75.87762018.451	-75.51032018.451	-75.33812018.453				
-75.15742018.459	-74.1092	2018.47	-73.69942018.477	-73.50062018.499	-73.27462018.511				
-73.09582018.514	-72.83022018.515	-72.06792018.511	-70.90592018.502	-70.08412018.493					
-69.7372018.487	-69.43652018.479	-68.01122018.432	-67.0142018.406	-65.08172018.362					
-64.16122018.344	-63.83692018.332	-62.1123	2018.28	-61.44332018.255	-61.0565	2018.23			
-60.68242018.175	-60.11712018.154	-54.11072018.017	-53.4811	2018	-50.0672017.622				
-46.68112017.246	-32.4212017.106	-30.91262017.087	-28.13192017.061	-23.77762014.954					
-17.67392012.012	-16.48832012.008	-14.4752012.002	-14.0036	2012	-9.38763	2012			
-4.930342011.978	02011.9641.8657392011.959	7.358182011.9459.2554372012.891							
15.50264	201615.50479	201620.253312016.18629.84615	2016.5630.781872016.597						
31.63441	2016.6333.419812016.70133.700372016.71235.392112016.77845.52856	2016.98							
46.455462016.99946.696672017.07948.407072017.64652.49049	201952.56615	2019							
52.736162018.99953.47116	201953.47483	201953.543712018.98753.546182018.982							
53.546212018.982									

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-138.837    .035-28.1319    .02553.54621    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -28.131953.54621             8.75    8.75    8.75             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2016.68  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.35  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2016.33  * Reach Len. (ft)       *    8.75  *    8.75  *    8.75  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  148.87  *          *
* E.G. Slope (ft/ft)     *0.001588  * Area (sq ft)          *          *  148.87  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   50.60  * Top Width (ft)        *          *   50.60  *          *
* Vel Total (ft/s)       *    4.74  * Avg. Vel. (ft/s)      *          *    4.74  *          *
* Max Chl Dpth (ft)      *    4.39  * Hydr. Depth (ft)      *          *    2.94  *          *
* Conv. Total (cfs)      * 17716.4  * Conv. (cfs)           *          * 17716.4  *          *
* Length Wtd. (ft)       *    8.75  * Wetted Per. (ft)      *          *   52.54  *          *
* Min Ch El (ft)         * 2011.95  * Shear (lb/sq ft)      *          *    0.28  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.33  *          *
* Frctn Loss (ft)        *    0.01  * Cum Volume (acre-ft)  *          *    0.91  *    0.00  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    0.21  *    0.00  *
*****************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2683.75

INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-138.483    2031-138.384    2031-138.312    2031-138.1242030.924-135.657    2030
-135.4132029.905 -132.92    2029-130.5042028.083-130.278    2028-130.1572027.954
-127.596    2027-127.3352026.901-124.855    2026-122.8732025.253-122.3322025.065
-122.148    2025-121.9952024.942-121.1762024.632-119.431    2024-118.3572023.596
-116.681    2023-114.4222022.159-113.973    2022-113.7032021.896-111.187    2021
-110.5852020.775-108.463    2020-107.643 2019.68-105.753    2019-104.0012018.346
-103.8472018.411-96.5001    2018 -93.323    2018-91.74072018.194-88.33532018.239
-86.76932018.252-77.0287    2018  -73.772018.343-73.38322018.341-72.94212018.341
-72.73542018.344-72.51852018.351-71.25992018.364-70.76772018.371-70.52912018.399
-70.25772018.413 -70.0432018.417-69.72412018.418-68.80882018.413-67.41362018.403
-66.42692018.392-66.01012018.384-65.64932018.375-63.93792018.318-62.74062018.286
-60.42042018.234-59.31522018.213-58.92582018.198-56.85512018.135-56.05182018.105
-55.58742018.075-55.13822018.009-54.8917    2018-51.79142017.708 -51.7912017.708
  -46.852017.268-45.22532017.094-35.91882017.048-26.2687    2017-20.92642014.365
-17.32542012.589-16.1324    2012-4.956622011.885  -3.5172011.863 -1.55012011.856
       02011.8517.9769712011.82314.843672015.00616.900732015.87319.652832015.968
22.072372016.05225.480642016.223 27.11112016.33630.397462016.45835.389632016.745
35.685192016.75736.284642016.78140.900622016.87241.29137 2016.8841.29599 2016.88
43.108392016.91544.249022016.93846.002092016.97347.017152016.99347.334532016.999
47.741152017.13452.926372018.854

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
-138.483    .035-26.2687    .02552.92637    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -26.268752.92637             8.33    8.33    8.33             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2016.67  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.34  * Wt. n-Val.            *          *    0.025  *          *
* W.S. Elev (ft)         * 2016.32  * Reach Len. (ft)       *    8.33  *    8.33  *    8.33  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  150.07  *          *
* E.G. Slope (ft/ft)     *0.001591  * Area (sq ft)          *          *  150.07  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   51.79  * Top Width (ft)        *          *   51.79  *          *
* Vel Total (ft/s)       *    4.70  * Avg. Vel. (ft/s)      *          *    4.70  *          *
* Max Chl Dpth (ft)      *    4.50  * Hydr. Depth (ft)      *          *    2.90  *          *
* Conv. Total (cfs)      * 17699.1  * Conv. (cfs)           *          * 17699.1  *          *
* Length Wtd. (ft)       *    8.33  * Wetted Per. (ft)      *          *   53.69  *          *
* Min Ch El (ft)         * 2011.82  * Shear (lb/sq ft)      *          *    0.28  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    1.31  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *          *    0.88  *    0.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    0.20  *    0.00  *
*****************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2692.09

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-139.9682031.319-139.4052031.214-138.732    2031 -135.922030.087-135.649    2030
-135.1512029.843-132.737    2029-131.4992028.632-129.693    2028-128.7042027.628
-127.139    2027-125.0772026.222-124.468    2026-123.7492025.726-121.916    2025
-119.9952024.278-119.236    2024-117.1952023.213-116.607    2023-114.0842022.052
```

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-113.939    2022 -113.64 2021.89-111.393    2021-110.2782020.569-108.804    2020
-107.4152019.391-106.433    2019-104.4132018.361-104.3142018.366-101.2692018.715
-99.98962018.728-99.39122018.731-71.9454    2018-70.42122018.165-69.93922018.162
-69.39042018.163-69.13352018.167 -68.8642018.176-67.30412018.194-66.69582018.205
-66.4011 2018.24-66.06642018.258-65.80172018.263-65.40892018.264-64.2837 2018.26
-62.57462018.248-61.37042018.235-60.86282018.226 -60.4242018.215 -58.3492018.146
-56.90372018.108-54.11822018.046-52.79822018.021-52.33422018.003-52.2304    2018
-50.61222017.803 -47.2862017.405-44.85552017.099-36.45582017.057-24.9785    2017
-18.11172013.578-14.87172011.988-10.25012011.902-2.494332011.751       02011.743
6.7869512011.7228.1985512011.7178.5483862011.8448.7708332011.92118.47936 2015.59
21.245272015.78924.371882015.95528.48022 2016.2529.371152016.28531.48636 2016.41
32.539562016.48535.153822016.67336.545022016.77339.134232016.82543.457492016.911
47.176722016.98547.483722016.99147.509032016.99247.545142016.99247.74867 2017.06
51.82698 2018.42

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-139.968    .035-24.9785    .03351.82698    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -24.978551.82698             7.92    7.92    7.92             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2016.64  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.32  * Wt. n-Val.            *          *    0.033  *          *
* W.S. Elev (ft)         * 2016.32  * Reach Len. (ft)       *    7.92  *     7.92  *    7.92  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *   154.61  *          *
* E.G. Slope (ft/ft)     *0.002611  * Area (sq ft)          *          *   154.61  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   706.00  *          *
* Top Width (ft)         *   53.55  * Top Width (ft)        *          *    53.55  *          *
* Vel Total (ft/s)       *    4.57  * Avg. Vel. (ft/s)      *          *     4.57  *          *
* Max Chl Dpth (ft)      *    4.60  * Hydr. Depth (ft)      *          *     2.89  *          *
* Conv. Total (cfs)      * 13816.5  * Conv. (cfs)           *          * 13816.5   *          *
* Length Wtd. (ft)       *    7.92  * Wetted Per. (ft)      *          *    55.30  *          *
* Min Ch El (ft)         * 2011.72  * Shear (lb/sq ft)      *          *     0.46  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     2.08  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *          *     0.85  *    0.00  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *     0.19  *    0.00  *
*************************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2700

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
-143.0042031.724-142.7732031.681-140.611    2031-139.9132030.775-137.481    2030
-135.2262029.294  -134.3    2029-133.8312028.842-133.4632028.725-131.176    2028
-129.574 2027.34-129.0012027.108 -128.74    2027-126.9922026.297-126.297    2026
-123.8982025.005-123.887    2025-123.8412024.981-121.266    2024-119.9472023.502
-118.625    2023-117.3692022.512 -116.03    2022-114.0242021.245-113.369    2021
-112.3772020.634-110.745    2020-110.1582019.776-108.152    2019-101.5292018.793
-96.26252018.629-94.70442018.604-91.58142018.559-91.08922018.548-87.72652018.471
-78.02992018.256-75.74392018.201-71.87342018.088-69.09742018.018-68.4395    2018
-68.42432018.002-68.0941    2018-67.9424    2018-67.4213    2018-67.20722018.001
-66.90432018.005-66.58672018.016-64.7527 2018.04-64.03922018.053 -63.6942018.095
-63.30212018.117-62.99242018.123-62.53322018.125  -61.222018.121-59.23182018.109
-57.83552018.095-57.24822018.085-56.74092018.072-54.5881    2018-52.27052017.769
-44.46622016.984-36.47272016.807-24.13032016.321-20.42232014.712 -13.1442011.767
-7.017232011.687-2.193142011.646-.439197 2011.64       02011.6395.9376172011.623
7.7195642011.6167.8169382011.61610.859722012.76714.408252014.05817.291682015.196
17.522992015.28718.06128  2015.518.06855  2015.518.163552015.507   59.64 2018.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
-143.004    .035-24.1303    .03318.16355    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -24.130318.16355              25      25      25             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2016.62  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.34  * Wt. n-Val.            *          *    0.033  *   0.035  *
* W.S. Elev (ft)         * 2016.28  * Reach Len. (ft)       *   25.00  *   25.00  *   25.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  149.99  *    3.62  *
* E.G. Slope (ft/ft)     *0.002096  * Area (sq ft)          *          *  149.99  *    3.62  *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  702.26  *    3.74  *
* Top Width (ft)         *   51.54  * Top Width (ft)        *          *   42.21  *    9.33  *
* Vel Total (ft/s)       *    4.60  * Avg. Vel. (ft/s)      *          *    4.68  *    1.03  *
* Max Chl Dpth (ft)      *    4.67  * Hydr. Depth (ft)      *          *    3.55  *    0.39  *
* Conv. Total (cfs)      * 15420.3  * Conv. (cfs)           *          * 15338.6  *    81.7  *
* Length Wtd. (ft)       *   25.00  * Wetted Per. (ft)      *          *   43.82  *    9.36  *
* Min Ch El (ft)         * 2011.62  * Shear (lb/sq ft)      *          *    0.45  *    0.05  *
* Alpha                  *    1.03  * Stream Power (lb/ft s) *          *    2.10  *    0.05  *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)  *          *    0.82  *    0.00  *
* C & E Loss (ft)        *    0.13  * Cum SA (acres)        *          *    0.18  *    0.00  *
*************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
```

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2725

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-10.90372015.497	-10.90182015.497	-10.80372015.499	-10.29222012.431	-10.16532011.551					
-10.137	2011.5	-10.1004	2011.5	-9.02265	2011.5	-5.263472011.499	-4.999042011.499		
-.1301722011.497	-.0109592011.497		02011.497	4.4224742011.495	5.2424472011.495				
6.5739952011.494	9.9621882011.493	10.310.115142011.493	10.559292014.159	10.781682015.495					
10.818082015.494	10.881892015.493								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-10.9037	.035	-10.9037	.01	310.88189	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-10.90371	0.88189	1.48	1.48	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	2014.81	Reach Len. (ft)	1.48	1.48	1.48
Crit W.S. (ft)	2014.81	Flow Area (sq ft)		68.91	
E.G. Slope (ft/ft)	*0.002300	Area (sq ft)		68.91	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	21.36	Top Width (ft)		21.36	
Vel Total (ft/s)	10.25	Avg. Vel. (ft/s)		10.25	
Max Chl Dpth (ft)	3.32	Hydr. Depth (ft)		3.23	
Conv. Total (cfs)	14719.8	Conv. (cfs)		14719.8	
Length Wtd. (ft)	1.48	Wetted Per. (ft)		26.97	
Min Ch El (ft)	2011.49	Shear (lb/sq ft)		0.37	
Alpha	1.00	Stream Power (lb/ft s)		3.76	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.76	
C & E Loss (ft)	0.00	Cum SA (acres)		0.17	

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2726.48

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-10.89092015.479	-10.856	2015.48	-10.79092015.481	-10.34422012.802	-10.1252011.483				
-6.781312011.482	-3.362812011.481	-.0816022011.481	-.0000012011.481		02011.481				
3.078876	2011.48	6.385262011.479	10.124992011.479	10.763052015.313	10.79091	2015.48			
10.79552	2015.48	10.891652015.478							

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-10.8909	.035	-10.8909	.01	310.89165	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-10.89091	0.89165	11.02	11.02	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	2014.79	Reach Len. (ft)	11.02	11.02	11.02
Crit W.S. (ft)	2014.79	Flow Area (sq ft)		68.88	
E.G. Slope (ft/ft)	*0.002303	Area (sq ft)		68.88	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	21.35	Top Width (ft)		21.35	
Vel Total (ft/s)	10.25	Avg. Vel. (ft/s)		10.25	
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)		3.23	
Conv. Total (cfs)	14711.6	Conv. (cfs)		14711.6	
Length Wtd. (ft)	11.02	Wetted Per. (ft)		26.96	
Min Ch El (ft)	2011.48	Shear (lb/sq ft)		0.37	
Alpha	1.00	Stream Power (lb/ft s)		3.76	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.75	
C & E Loss (ft)	0.00	Cum SA (acres)		0.17	

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2737.5

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-10.88632015.365	-10.82972015.363	-10.78632015.362	-10.48232013.526	-10.1252011.362					
-4.625762011.362	-.0000032011.361		02011.3616.207286	2011.3610.124992011.359					
10.61953	2014.3510.786352015.36110.812912015.36210.891652015.365								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-10.8863	.035	-10.8863	.01310.89165	.035	

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-10.886310.89165 12.5 12.5 12.5 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	2014.68	Reach Len. (ft)	12.50	12.50	12.50
Crit W.S. (ft)	2014.68	Flow Area (sq ft)		68.94	
E.G. Slope (ft/ft)	0.002297	Area (sq ft)		68.94	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	21.35	Top Width (ft)		21.35	
Vel Total (ft/s)	10.24	Avg. Vel. (ft/s)		10.24	
Max Chl Dpth (ft)	3.32	Hydr. Depth (ft)		3.23	
Conv. Total (cfs)	14731.2	Conv. (cfs)		14731.2	
Length Wtd. (ft)	12.50	Wetted Per. (ft)		26.97	
Min Ch El (ft)	2011.36	Shear (lb/sq ft)		0.37	
Alpha	1.00	Stream Power (lb/ft s)		3.75	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.74	
C & E Loss (ft)	0.00	Cum SA (acres)		0.16	

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: EQUESTRIAN DB OF
REACH: 1 RS: -2750

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-10.88122015.231	-10.8734 2015.23	-10.78122015.226	-10.14022011.319	-10.1252011.226					
-9.887922011.226	-.0000062011.225		02011.2252.1629512011.22510.124992011.224						
10.276382012.14510.781192015.22610.865522015.23110.891652015.233									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-10.8812	.035	-10.8812	.01310.89165	.035	

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-10.881210.89165 16.11 16.11 16.11 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2016.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	2014.54	Reach Len. (ft)	16.11	16.11	16.11
Crit W.S. (ft)	2014.54	Flow Area (sq ft)		68.89	
E.G. Slope (ft/ft)	0.002302	Area (sq ft)		68.89	
Q Total (cfs)	706.00	Flow (cfs)		706.00	
Top Width (ft)	21.34	Top Width (ft)		21.34	
Vel Total (ft/s)	10.25	Avg. Vel. (ft/s)		10.25	
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)		3.23	
Conv. Total (cfs)	14714.9	Conv. (cfs)		14714.9	
Length Wtd. (ft)	16.11	Wetted Per. (ft)		26.96	
Min Ch El (ft)	2011.22	Shear (lb/sq ft)		0.37	
Alpha	1.00	Stream Power (lb/ft s)		3.76	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)		0.72	
C & E Loss (ft)	0.00	Cum SA (acres)		0.15	

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

```
RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -2766.11

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-10.87452015.055-10.78452015.052-10.77452015.052-10.69612014.569 -10.125 2011.05
-5.13708 2011.05-5.12738 2011.05-5.12264 2011.05-5.11429 2011.05-.124749 2011.05
 -.00001 2011.05       0 2011.05  4.8648 2011.054.872742 2011.054.878096 2011.05
9.875138 2011.0510.12499 2011.0510.125392011.05210.774522015.05210.891222015.059
10.891652015.059

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-10.8745    .035-10.8745    .01310.89165    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -10.874510.89165             8.89    8.89    8.89             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2016.00  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.63  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 2014.36  * Reach Len. (ft)       *    8.89  *     8.89  *    8.89  *
* Crit W.S. (ft)         * 2014.36  * Flow Area (sq ft)     *          *    68.83  *          *
* E.G. Slope (ft/ft)     *0.002307  * Area (sq ft)          *          *    68.83  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   706.00  *          *
* Top Width (ft)         *   21.32  * Top Width (ft)        *          *    21.32  *          *
* Vel Total (ft/s)       *   10.26  * Avg. Vel. (ft/s)      *          *    10.26  *          *
* Max Chl Dpth (ft)      *    3.31  * Hydr. Depth (ft)      *          *     3.23  *          *
* Conv. Total (cfs)      * 14697.5  * Conv. (cfs)           *          * 14697.5  *          *
* Length Wtd. (ft)       *    8.89  * Wetted Per. (ft)      *          *    26.96  *          *
* Min Ch El (ft)         * 2011.05  * Shear (lb/sq ft)      *          *     0.37  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     3.77  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *          *     0.69  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *     0.15  *          *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                    RS: -2775

INPUT
Description:
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-8.666952014.504-8.583942014.505-8.563782014.506-7.991652010.176 -7.87262009.377
 -6.35062009.377-.0000072009.377       02009.3776.4569542009.3777.8725922009.377
7.9999272010.2468.5637762014.506

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-8.66695    .035-8.66695    .0138.563776    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -8.666958.563776              7.5     7.5     7.5             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2015.20  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.91  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 2013.28  * Reach Len. (ft)       *    7.50  *     7.50  *    7.50  *
* Crit W.S. (ft)         * 2013.28  * Flow Area (sq ft)     *          *    63.62  *          *
* E.G. Slope (ft/ft)     *0.002517  * Area (sq ft)          *          *    63.62  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *   706.00  *          *
* Top Width (ft)         *   16.80  * Top Width (ft)        *          *    16.80  *          *
* Vel Total (ft/s)       *   11.10  * Avg. Vel. (ft/s)      *          *    11.10  *          *
* Max Chl Dpth (ft)      *    3.91  * Hydr. Depth (ft)      *          *     3.79  *          *
* Conv. Total (cfs)      * 14073.6  * Conv. (cfs)           *          * 14073.6  *          *
* Length Wtd. (ft)       *    7.50  * Wetted Per. (ft)      *          *    23.63  *          *
* Min Ch El (ft)         * 2009.38  * Shear (lb/sq ft)      *          *     0.42  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     4.69  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *          *     0.68  *          *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *          *     0.14  *          *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program selected the water surface that had the least amount of error between computed and
         assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION
```

```
RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2782.5

INPUT
Description:
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
-6.766082014.036-6.728612014.037-6.662922014.038 -6.4146 2011.72-5.971742007.965
-1.647682007.965-.0000042007.965       02007.9651.6787242007.9655.9717352007.965
 6.476832012.3036.6629192014.038

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
-6.76608    .035-6.76608    .0136.662919    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -6.766086.662919             7.78    7.78    7.78             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2014.91  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.26  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 2012.65  * Reach Len. (ft)       *    7.78  *    7.78  *    7.78  *
* Crit W.S. (ft)         * 2012.65  * Flow Area (sq ft)     *          *   58.47  *          *
* E.G. Slope (ft/ft)     *0.002915  * Area (sq ft)          *          *   58.47  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   13.03  * Top Width (ft)        *          *   13.03  *          *
* Vel Total (ft/s)       *   12.07  * Avg. Vel. (ft/s)      *          *   12.07  *          *
* Max Chl Dpth (ft)      *    4.68  * Hydr. Depth (ft)      *          *    4.49  *          *
* Conv. Total (cfs)      * 13075.3  * Conv. (cfs)           *          * 13075.3  *          *
* Length Wtd. (ft)       *    7.78  * Wetted Per. (ft)      *          *   21.37  *          *
* Min Ch El (ft)         * 2007.97  * Shear (lb/sq ft)      *          *    0.50  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.01  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)  *          *    0.67  *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    0.14  *          *
**********************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2790.28

INPUT
Description:
Station Elevation Data    num=       4
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
***************************************************************
      -62013.552      -62006.503       62006.503       62013.552

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
      -6    .035      -6    .013       6    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
           -6       6             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
**********************************************************************************************
* E.G. Elev (ft)         * 2013.64  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.37  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 2011.27  * Reach Len. (ft)       *    0.00  *    0.01  *    0.00  *
* Crit W.S. (ft)         * 2011.24  * Flow Area (sq ft)     *          *   57.15  *          *
* E.G. Slope (ft/ft)     *0.003177  * Area (sq ft)          *          *   57.15  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          *  706.00  *          *
* Top Width (ft)         *   12.00  * Top Width (ft)        *          *   12.00  *          *
* Vel Total (ft/s)       *   12.35  * Avg. Vel. (ft/s)      *          *   12.35  *          *
* Max Chl Dpth (ft)      *    4.76  * Hydr. Depth (ft)      *          *    4.76  *          *
* Conv. Total (cfs)      * 12525.4  * Conv. (cfs)           *          * 12525.4  *          *
* Length Wtd. (ft)       *    0.01  * Wetted Per. (ft)      *          *   21.53  *          *
* Min Ch El (ft)         * 2006.50  * Shear (lb/sq ft)      *          *    0.53  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.51  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *          *    0.66  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    0.14  *          *
**********************************************************************************************

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                  RS: -2790.29

INPUT
Description:
Station Elevation Data    num=       4
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
***************************************************************
      -6  2012.5      -6  2006.5       6  2006.5       6  2012.5
```

```
Manning's n Values          num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
      -6    .013      -6    .013       6    .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
           -6       6             .1       .3
Cross Section Lid
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
*********************************************
      -6  2013.5  2012.5       6  2013.5  2012.5

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2013.63  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.36  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 2011.27  * Reach Len. (ft)       *    0.00  *  500.00  *    0.00  *
* Crit W.S. (ft)         * 2011.27  * Flow Area (sq ft)     *          *   57.23  *          *
* E.G. Slope (ft/ft)     *0.003165  * Area (sq ft)          *          *   57.23  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          * 706.00  *          *
* Top Width (ft)         *   12.00  * Top Width (ft)        *          *   12.00  *          *
* Vel Total (ft/s)       *   12.34  * Avg. Vel. (ft/s)      *          *   12.34  *          *
* Max Chl Dpth (ft)      *    4.77  * Hydr. Depth (ft)      *          *    4.77  *          *
* Conv. Total (cfs)      * 12548.8  * Conv. (cfs)          *          * 12548.8  *          *
* Length Wtd. (ft)       *  500.00  * Wetted Per. (ft)      *          *   21.54  *          *
* Min Ch El (ft)         * 2006.50  * Shear (lb/sq ft)     *          *    0.53  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.48  *          *
* Frctn Loss (ft)        *    1.58  * Cum Volume (acre-ft)  *          *    0.66  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    0.14  *          *
*************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.

CROSS SECTION


RIVER: EQUESTRIAN DB OF
REACH: 1                RS: -3290.29

INPUT
Description:
Station Elevation Data    num=       4
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*****************************************************************
      -6 2003.45       -6 1997.45        6 1997.45        6 2003.45

Manning's n Values          num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
      -6    .013      -6    .013       6    .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
           -6       6             .1       .3
Cross Section Lid
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
*********************************************
      -6 2004.45 2003.45       6 2004.45 2003.45

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2004.58  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.36  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 2002.22  * Reach Len. (ft)       *          *           *          *
* Crit W.S. (ft)         * 2002.22  * Flow Area (sq ft)     *          *   57.23  *          *
* E.G. Slope (ft/ft)     *0.003165  * Area (sq ft)          *          *   57.23  *          *
* Q Total (cfs)          *  706.00  * Flow (cfs)            *          * 706.00  *          *
* Top Width (ft)         *   12.00  * Top Width (ft)        *          *   12.00  *          *
* Vel Total (ft/s)       *   12.34  * Avg. Vel. (ft/s)      *          *   12.34  *          *
* Max Chl Dpth (ft)      *    4.77  * Hydr. Depth (ft)      *          *    4.77  *          *
* Conv. Total (cfs)      * 12548.8  * Conv. (cfs)          *          * 12548.8  *          *
* Length Wtd. (ft)       *          * Wetted Per. (ft)      *          *   21.54  *          *
* Min Ch El (ft)         * 1997.45  * Shear (lb/sq ft)     *          *    0.53  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.48  *          *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)  *          *           *          *
* C & E Loss (ft)        *          * Cum SA (acres)        *          *           *          *
*************************************************************************************************

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
         is below critical depth). Water surface set to critical depth.

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

SUMMARY OF MANNING'S N VALUES

River:EQUESTRIAN DB OF
*************************************************************
*     Reach      *   River Sta.   *   n1    *   n2    *   n3    *
*************************************************************
*1              *    -1500       *     .035*     .025*     .035*
```

*1	*	-1525	*	.035*	.025*	.035*
*1	*	-1550	*	.035*	.025*	.035*
*1	*	-1575	*	.035*	.025*	.035*
*1	*	-1600	*	.035*	.025*	.035*
*1	*	-1625	*	.035*	.025*	.035*
*1	*	-1650	*	.035*	.025*	.035*
*1	*	-1675	*	.035*	.025*	.035*
*1	*	-1700	*	.035*	.025*	.035*
*1	*	-1725	*	.035*	.025*	.035*
*1	*	-1750	*	.035*	.025*	.035*
*1	*	-1775	*	.035*	.025*	.035*
*1	*	-1800	*	.035*	.025*	.035*
*1	*	-1825	*	.035*	.025*	.035*
*1	*	-1850	*	.035*	.025*	.035*
*1	*	-1875	*	.035*	.025*	.035*
*1	*	-1900	*	.035*	.025*	.035*
*1	*	-1925	*	.035*	.025*	.035*
*1	*	-1950	*	.035*	.025*	.035*
*1	*	-1975	*	.035*	.025*	.035*
*1	*	-2000	*	.035*	.025*	.035*
*1	*	-2025	*	.035*	.025*	.035*
*1	*	-2050	*	.035*	.025*	.035*
*1	*	-2075	*	.035*	.025*	.035*
*1	*	-2100	*	.035*	.025*	.035*
*1	*	-2125	*	.035*	.025*	.035*
*1	*	-2150	*	.035*	.025*	.035*
*1	*	-2175	*	.035*	.025*	.035*
*1	*	-2200	*	.035*	.025*	.035*
*1	*	-2225	*	.035*	.025*	.035*
*1	*	-2250	*	.035*	.025*	.035*
*1	*	-2275	*	.035*	.025*	.035*
*1	*	-2300	*	.035*	.025*	.035*
*1	*	-2325	*	.035*	.025*	.035*
*1	*	-2350	*	.035*	.025*	.035*
*1	*	-2375	*	.035*	.025*	.035*
*1	*	-2400	*	.035*	.025*	.035*
*1	*	-2425	*	.035*	.025*	.035*
*1	*	-2450	*	.035*	.025*	.035*
*1	*	-2475	*	.035*	.025*	.035*
*1	*	-2500	*	.035*	.025*	.035*
*1	*	-2525	*	.035*	.025*	.035*
*1	*	-2550	*	.035*	.025*	.035*
*1	*	-2575	*	.035*	.025*	.035*
*1	*	-2600	*	.035*	.025*	.035*
*1	*	-2625	*	.035*	.025*	.035*
*1	*	-2650	*	.035*	.025*	.035*
*1	*	-2675	*	.035*	.025*	.035*
*1	*	-2683.75	*	.035*	.025*	.035*
*1	*	-2692.09	*	.035*	.033*	.035*
*1	*	-2700	*	.035*	.033*	.035*
*1	*	-2725	*	.035*	.013*	.035*
*1	*	-2726.48	*	.035*	.013*	.035*
*1	*	-2737.5	*	.035*	.013*	.035*
*1	*	-2750	*	.035*	.013*	.035*
*1	*	-2766.11	*	.035*	.013*	.035*
*1	*	-2775	*	.035*	.013*	.035*
*1	*	-2782.5	*	.035*	.013*	.035*
*1	*	-2790.28	*	.035*	.013*	.035*
*1	*	-2790.29	*	.013*	.013*	.013*
*1	*	-3290.29	*	.013*	.013*	.013*

SUMMARY OF REACH LENGTHS

River: EQUESTRIAN DB OF

• Reach	* River Sta.	* Left	* Channel	• Right •
*1	* -1500	* 25*	25*	25*
*1	* -1525	* 25*	25*	*
*1	* -1550	* 25*	25*	25*
*1	* -1575	* 25*	25*	25*
*1	* -1600	* 25*	25*	25*
*1	* -1625	* 25*	25*	25*
*1	* -1650	* 25*	25*	25*
*1	* -1675	* 25*	25*	25*
*1	* -1700	* 25*	25*	25*
*1	* -1725	* 25*	25*	25*
*1	* -1750	* 25*	25*	25*
*1	* -1775	* 25*	25*	25*
*1	* -1800	* 25*	25*	25*
*1	* -1825	* 25*	25*	25*
*1	* -1850	* 25*	25*	25*
*1	* -1875	* 25*	25*	25*
*1	* -1900	* 25*	25*	25*
*1	* -1925	* 25*	25*	25*
*1	* -1950	* 25*	25*	25*
*1	* -1975	* 25*	25*	25*
*1	* -2000	* 25*	25*	25*
*1	* -2025	* 25*	25*	25*
*1	* -2050	* 25*	25*	25*
*1	* -2075	* 25*	25*	25*
*1	* -2100	* 25*	25*	25*
*1	* -2125	* 25*	25*	25*
*1	* -2150	* 25*	25*	25*
*1	* -2175	* 25*	25*	25*
*1	* -2200	* 25*	25*	25*
*1	* -2225	* 25*	25*	25*

*1	*	-2250	* 25*	25*	25*
*1	*	-2275	* 25*	25*	25*
*1	*	-2300	* 25*	25*	25*
*1	*	-2325	* 25*	25*	25*
*1	*	-2350	* 25*	25*	25*
*1	*	-2375	* 25*	25*	25*
*1	*	-2400	* 25*	25*	25*
*1	*	-2425	* 25*	25*	25*
*1	*	-2450	* 25*	25*	25*
*1	*	-2475	* 25*	25*	25*
*1	*	-2500	* 25*	25*	25*
*1	*	-2525	* 25*	25*	25*
*1	*	-2550	* 25*	25*	25*
*1	*	-2575	* 25*	25*	25*
*1	*	-2600	* 25*	25*	25*
*1	*	-2625	* 25*	25*	25*
*1	*	-2650	* 25*	25*	25*
*1	*	-2675	* 8.75*	8.75*	8.75*
*1	*	-2683.75	* 8.33*	8.33*	8.33*
*1	*	-2692.09	* 7.92*	7.92*	7.92*
*1	*	-2700	* 25*	25*	25*
*1	*	-2725	* 1.48*	1.48*	1.48*
*1	*	-2726.48	* 11.02*	11.02*	11.02*
*1	*	-2737.5	* 12.5*	12.5*	12.5*
*1	*	-2750	* 16.11*	16.11*	16.11*
*1	*	-2766.11	* 8.89*	8.89*	8.89*
*1	*	-2775	* 7.5*	7.5*	7.5*
*1	*	-2782.5	* 7.78*	7.78*	7.78*
*1	*	-2790.28	* *	.01*	*
*1	*	-2790.29	* *	500*	*
*1	*	-3290.29	* *	*	*

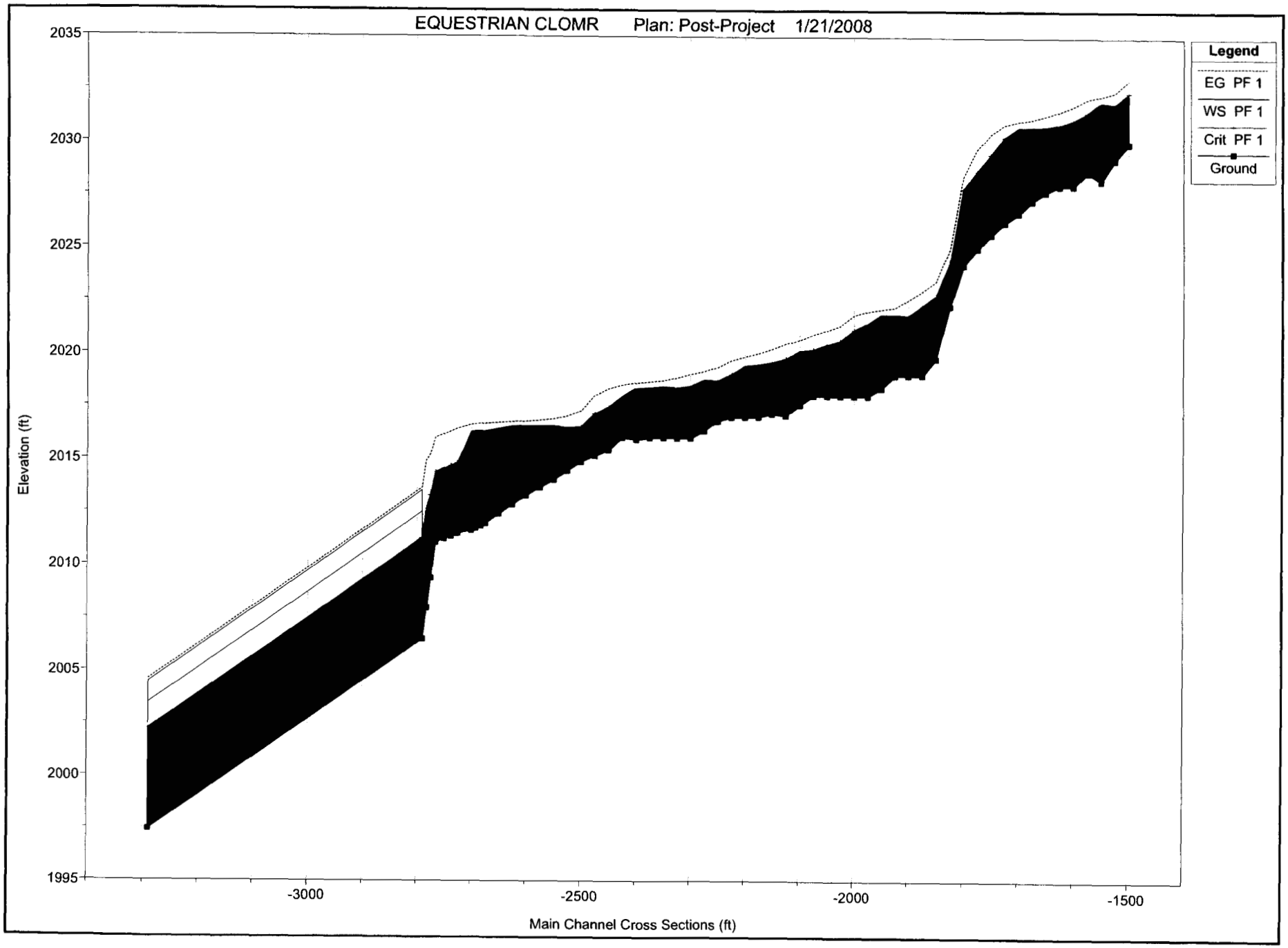
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: EQUESTRIAN DB OF

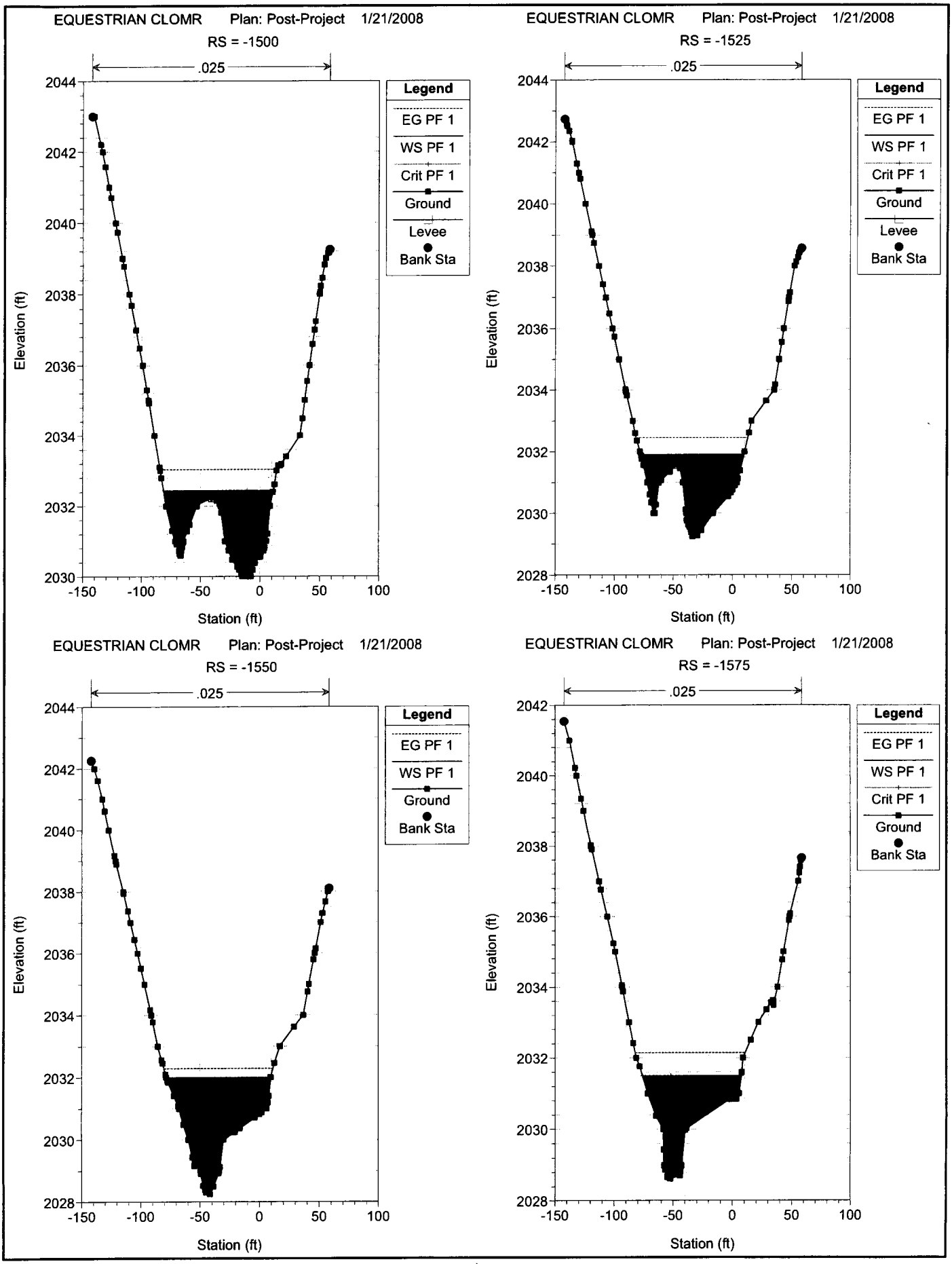
Reach	River Sta.	Contr.	Expan.
*1	* -1500 *	.1*	.3*
*1	* -1525 *	.1*	.3*
*1	* -1550 *	.1*	.3*
*1	* -1575 *	.1*	.3*
*1	* -1600 *	.1*	.3*
*1	* -1625 *	.1*	.3*
*1	* -1650 *	.1*	.3*
*1	* -1675 *	.1*	.3*
*1	* -1700 *	.1*	.3*
*1	* -1725 *	.1*	.3*
*1	* -1750 *	.1*	.3*
*1	* -1775 *	.1*	.3*
*1	* -1800 *	.1*	.3*
*1	* -1825 *	.1*	.3*
*1	* -1850 *	.1*	.3*
*1	* -1875 *	.1*	.3*
*1	* -1900 *	.1*	.3*
*1	* -1925 *	.1*	.3*
*1	* -1950 *	.1*	.3*
*1	* -1975 *	.1*	.3*
*1	* -2000 *	.1*	.3*
*1	* -2025 *	.1*	.3*
*1	* -2050 *	.1*	.3*
*1	* -2075 *	.1*	.3*
*1	* -2100 *	.1*	.3*
*1	* -2125 *	.1*	.3*
*1	* -2150 *	.1*	.3*
*1	* -2175 *	.1*	.3*
*1	* -2200 *	.1*	.3*
*1	* -2225 *	.1*	.3*
*1	* -2250 *	.1*	.3*
*1	* -2275 *	.1*	.3*
*1	* -2300 *	.1*	.3*
*1	* -2325 *	.1*	.3*
*1	* -2350 *	.1*	.3*
*1	* -2375 *	.1*	.3*
*1	* -2400 *	.1*	.3*
*1	* -2425 *	.1*	.3*
*1	* -2450 *	.1*	.3*
*1	* -2475 *	.1*	.3*
*1	* -2500 *	.1*	.3*
*1	* -2525 *	.1*	.3*
*1	* -2550 *	.1*	.3*
*1	* -2575 *	.1*	.3*
*1	* -2600 *	.1*	.3*
*1	* -2625 *	.1*	.3*
*1	* -2650 *	.1*	.3*
*1	* -2675 *	.1*	.3*
*1	* -2683.75*	.1*	.3*
*1	* -2692.09*	.1*	.3*
*1	* -2700 *	.1*	.3*
*1	* -2725 *	.1*	.3*
*1	* -2726.48*	.1*	.3*
*1	* -2737.5 *	.1*	.3*
*1	* -2750 *	.1*	.3*
*1	* -2766.11*	.1*	.3*
*1	* -2775 *	.1*	.3*
*1	* -2782.5 *	.1*	.3*
*1	* -2790.28*	.1*	.3*

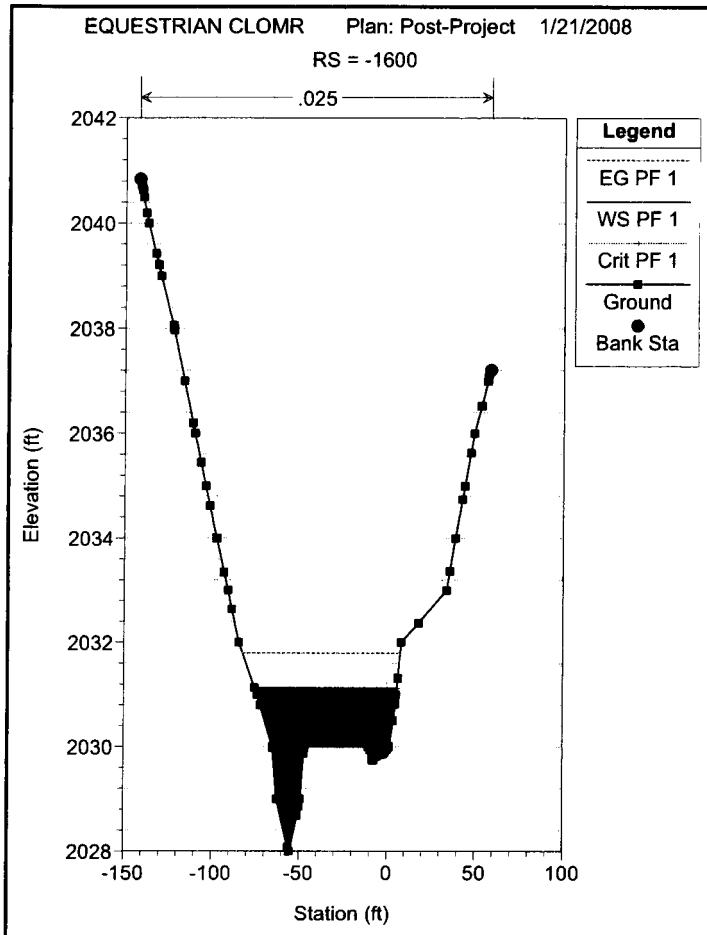
```
*1              *    -2790.29*       .1*       .3*
*1              *    -3290.29*       .1*       .3*
*****************************************************
```

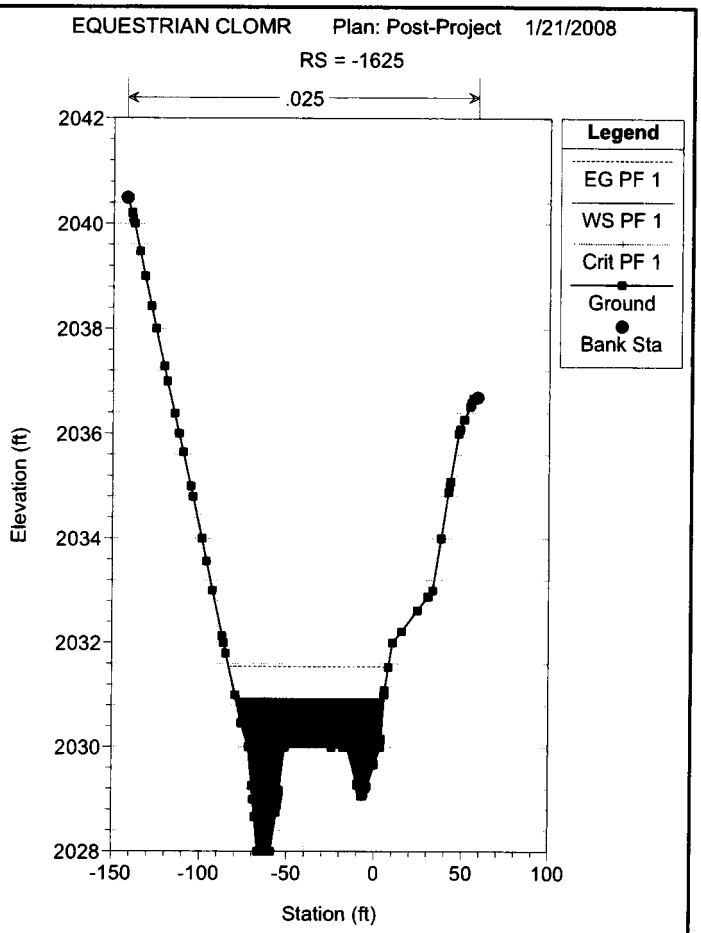
Profile Output Table - CHECKRAS

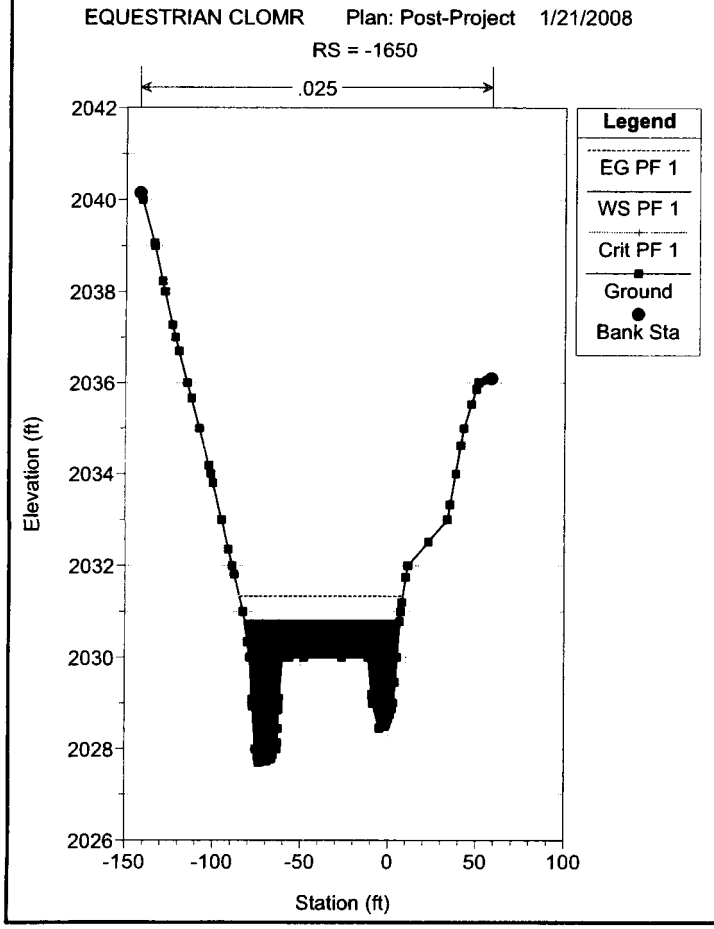
Reach	River Sta	Profile	Froude # Chl	Top Wdth Act (ft)	Conv. Total (cfs)	Prof Delta WS (ft)	Left Sta Eff (ft)	Enc Sta L (ft)	Center Station (ft)	Enc Sta R (ft)	Rght Sta Eff (ft)	Min Ch El (ft)	Left Stagn (ft)	Right Stagn (ft)
1	-1500	PF 1	0.99	92.41	7697.9		-81.41		-41.96		11.00	2030.00		
1	-1525	PF 1	0.91	87.13	8482.7		-77.52		-41.96		9.61	2029.24		
1	-1550	PF 1	0.56	87.90	14542.5		-78.32		-41.96		9.58	2028.25		
1	-1575	PF 1	1.00	83.36	7651.4		-76.15		-41.98		7.21	2028.63		
1	-1600	PF 1	1.01	81.24	7637.1		-75.62		-42.01		5.61	2028.00		
1	-1625	PF 1	0.98	84.57	7874.1		-79.17		-42.04		5.40	2028.00		
1	-1650	PF 1	0.88	88.88	8686.1		-82.22		-42.06		6.66	2027.69		
1	-1675	PF 1	0.69	94.74	11324.2		-87.13		-42.04		7.61	2027.27		
1	-1700	PF 1	0.59	98.03	13105.4		-89.99		-42.02		8.04	2026.68		
1	-1725	PF 1	1.02	100.62	7196.0		-91.34		-42.00		9.28	2026.25		
1	-1750	PF 1	1.01	46.50	7825.6		-90.83		-42.05		11.17	2025.67		
1	-1775	PF 1	1.01	42.58	7901.2		-85.13		-42.04		12.29	2025.00		
1	-1800	PF 1	1.00	94.56	7551.3		-85.37		-42.03		12.44	2024.22		
1	-1825	PF 1	1.01	85.14	7556.0		-77.44		-42.02		7.70	2022.29		
1	-1850	PF 1	1.02	80.56	7567.9		-78.64		-42.02		1.92	2019.79		
1	-1875	PF 1	1.00	77.90	7677.5		-77.14		-42.02		0.77	2019.00		
1	-1900	PF 1	1.00	67.85	7788.1		-75.76		-42.05		-7.90	2019.00		
1	-1925	PF 1	0.60	84.58	13380.3		-76.83		-42.09		7.75	2018.98		
1	-1950	PF 1	0.49	84.51	16777.9		-76.25		-42.11		8.25	2018.37		
1	-1975	PF 1	0.86	77.65	9091.2		-70.26		-42.11		7.40	2018.00		
1	-2000	PF 1	1.00	76.91	7722.6		-69.95		-42.11		6.96	2018.00		
1	-2025	PF 1	1.01	73.87	7676.7		-67.40		-42.09		6.47	2018.00		
1	-2050	PF 1	0.98	77.64	7948.2		-72.94		-42.07		4.70	2018.00		
1	-2075	PF 1	1.01	76.32	7663.5		-72.45		-42.05		3.87	2018.00		
1	-2100	PF 1	0.79	75.40	10059.7		-75.35		-42.04		0.05	2017.57		
1	-2125	PF 1	1.02	76.51	7608.3		-73.21		-42.03		3.30	2017.06		
1	-2150	PF 1	0.96	81.16	8049.5		-74.32		-42.02		6.84	2017.15		
1	-2175	PF 1	0.86	84.84	9041.5		-76.36		-42.02		8.48	2017.00		
1	-2200	PF 1	0.74	87.14	10693.5		-78.04		-42.03		9.10	2017.00		
1	-2225	PF 1	1.01	85.20	7598.6		-77.08		-42.04		8.12	2017.00		
1	-2250	PF 1	0.96	80.41	8085.8		-75.46		-42.05		4.95	2016.82		
1	-2275	PF 1	0.71	84.44	11308.1		-77.19		-42.02		7.25	2016.34		
1	-2300	PF 1	0.90	84.84	8639.5		-77.37		-41.98		7.48	2016.00		
1	-2325	PF 1	0.78	85.51	10121.6		-78.07		-41.94		7.45	2016.00		
1	-2350	PF 1	0.56	91.17	14419.6		-81.51		-41.92		9.66	2016.00		
1	-2375	PF 1	0.54	91.85	14974.3		-80.52		-41.91		11.33	2016.00		
1	-2400	PF 1	0.51	94.73	15923.9		-82.03		-41.92		12.70	2015.91		
1	-2425	PF 1	0.77	65.88	10531.5		-53.08		-41.94		12.80	2016.00		
1	-2450	PF 1	1.01	55.91	7971.2		-41.01		-3.30		14.90	2015.42		
1	-2475	PF 1	1.01	56.84	7955.1		-46.18		-11.54		10.67	2015.14		
1	-2500	PF 1	1.00	69.34	7822.7		-60.21		-17.62		9.13	2014.86		
1	-2525	PF 1	0.77	67.46	10441.6		-54.43		-42.08		13.03	2014.44		
1	-2550	PF 1	0.56	71.18	14912.1		-55.75		-11.10		15.44	2014.00		
1	-2575	PF 1	0.47	72.64	18047.6		-53.62		-41.87		33.11	2013.64		
1	-2600	PF 1	0.41	71.04	20942.2		-50.09		-42.28		20.95	2013.26		
1	-2625	PF 1	0.39	70.23	22037.2		-45.61		1.44		24.63	2012.83		
1	-2650	PF 1	0.45	58.53	19293.5		-33.56		8.53		24.97	2012.39		
1	-2675	PF 1	0.49	50.60	17716.4		-26.62		12.71		23.97	2011.95		
1	-2683.75	PF 1	0.49	51.79	17699.1		-24.89		13.33		26.90	2011.82		
1	-2692.09	PF 1	0.47	53.55	13816.5		-23.61		13.42		29.94	2011.72		
1	-2700	PF 1	0.44	51.54	15420.3		-24.04		-2.98		27.49	2011.62		
1	-2725	PF 1	1.01	21.36	14719.8		-10.69		-0.01		10.67	2011.49		
1	-2726.48	PF 1	1.01	21.35	14711.6		-10.68		0.00		10.68	2011.48		
1	-2737.5	PF 1	1.00	21.35	14731.2		-10.67		0.00		10.67	2011.36		
1	-2750	PF 1	1.01	21.34	14714.9		-10.67		0.01		10.67	2011.22		
1	-2766.11	PF 1	1.01	21.32	14697.5		-10.66		0.01		10.66	2011.05		
1	-2775	PF 1	1.01	16.80	14073.6		-8.40		-0.05		8.40	2009.38		
1	-2782.5	PF 1	1.00	13.03	13075.3		-6.51		-0.05		6.51	2007.97		
1	-2790.28	PF 1	1.00	12.00	12525.4		-6.00		0.00		6.00	2006.50		
1	-2790.29	PF 1	1.00	12.00	12548.8		-6.00		0.00		6.00	2006.50		
1	-3290.29	PF 1	1.00	12.00	12548.8		-6.00		0.00		6.00	1997.45		

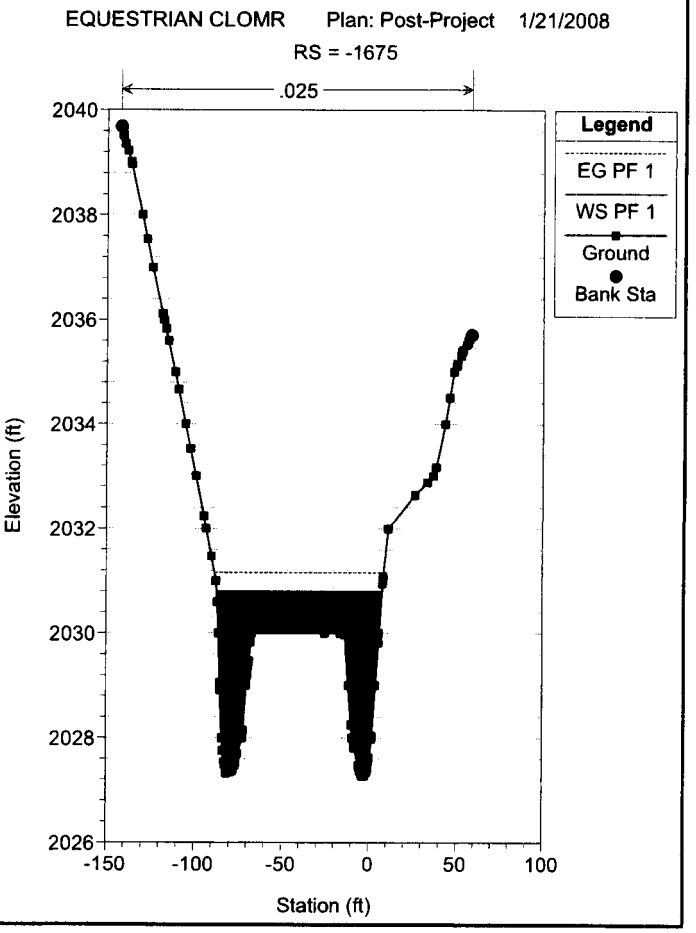

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
2035
2030
2025
2020
2015
2010
2005
2000
1995
-3000
-2500
-2000
-1500
Main Channel Cross Sections (ft)

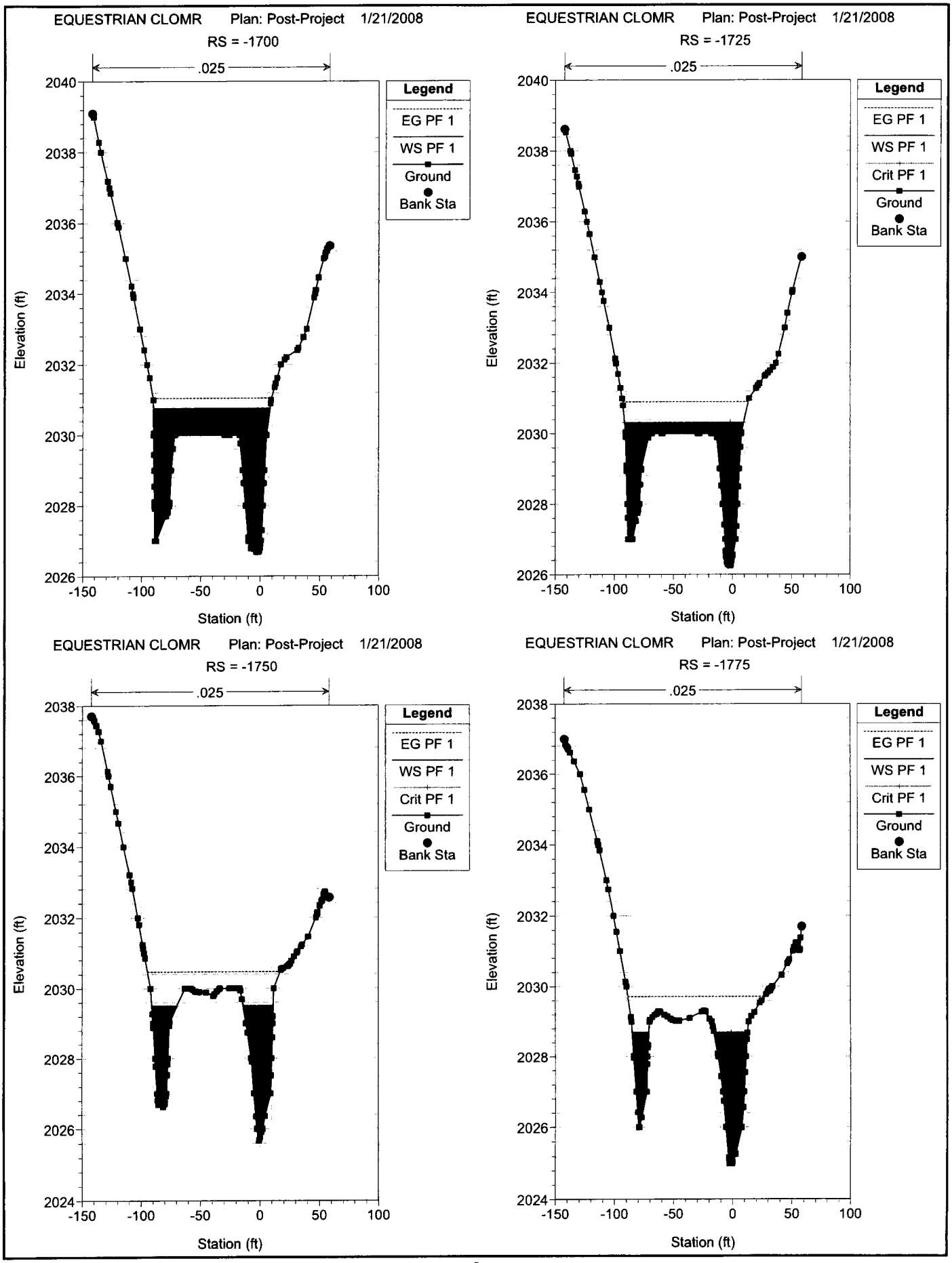

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1500
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1525
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1550
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1575
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

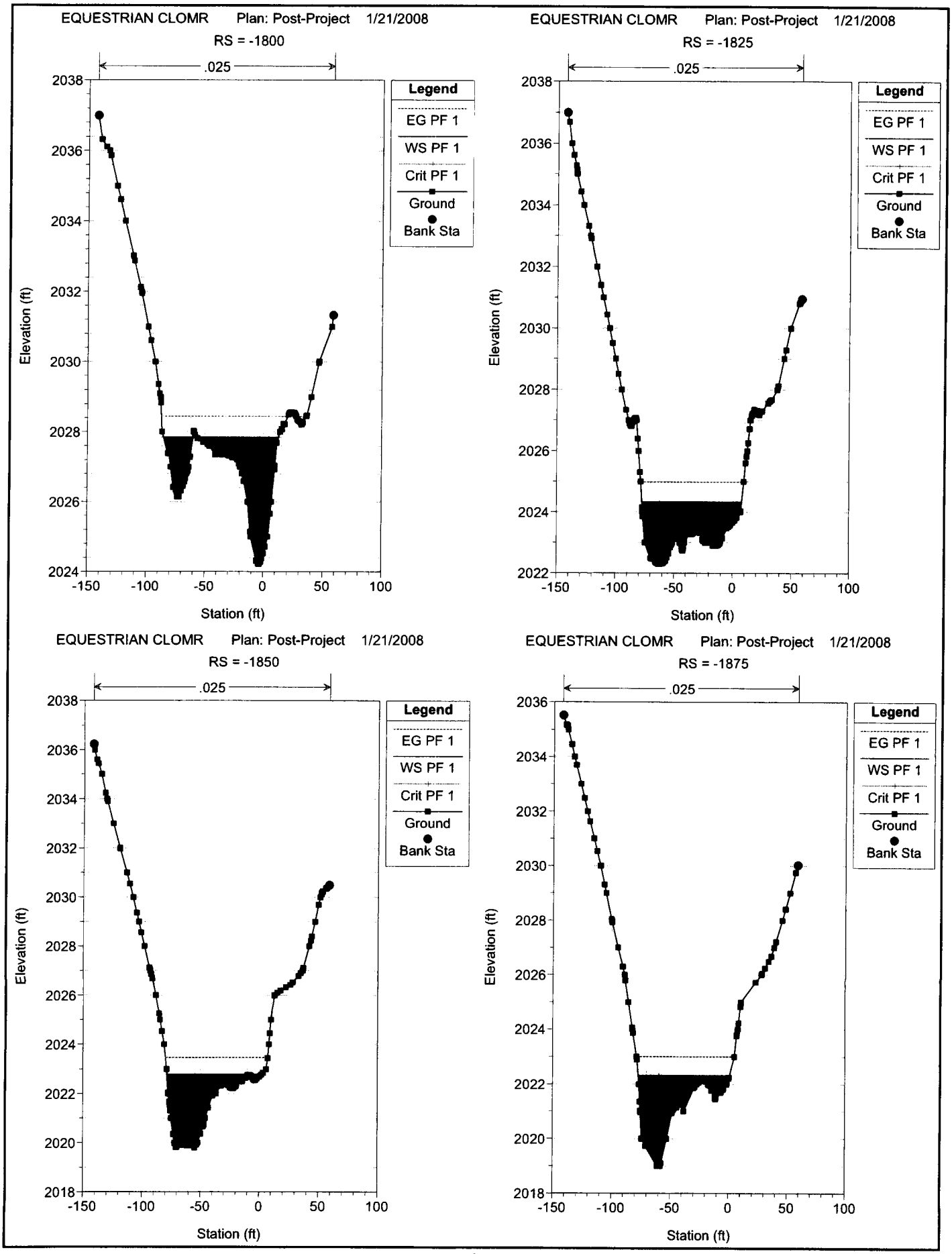

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1600
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
2042
2040
2038
2036
2034
2032
2030
2028
-150
-100
-50
0
50
100

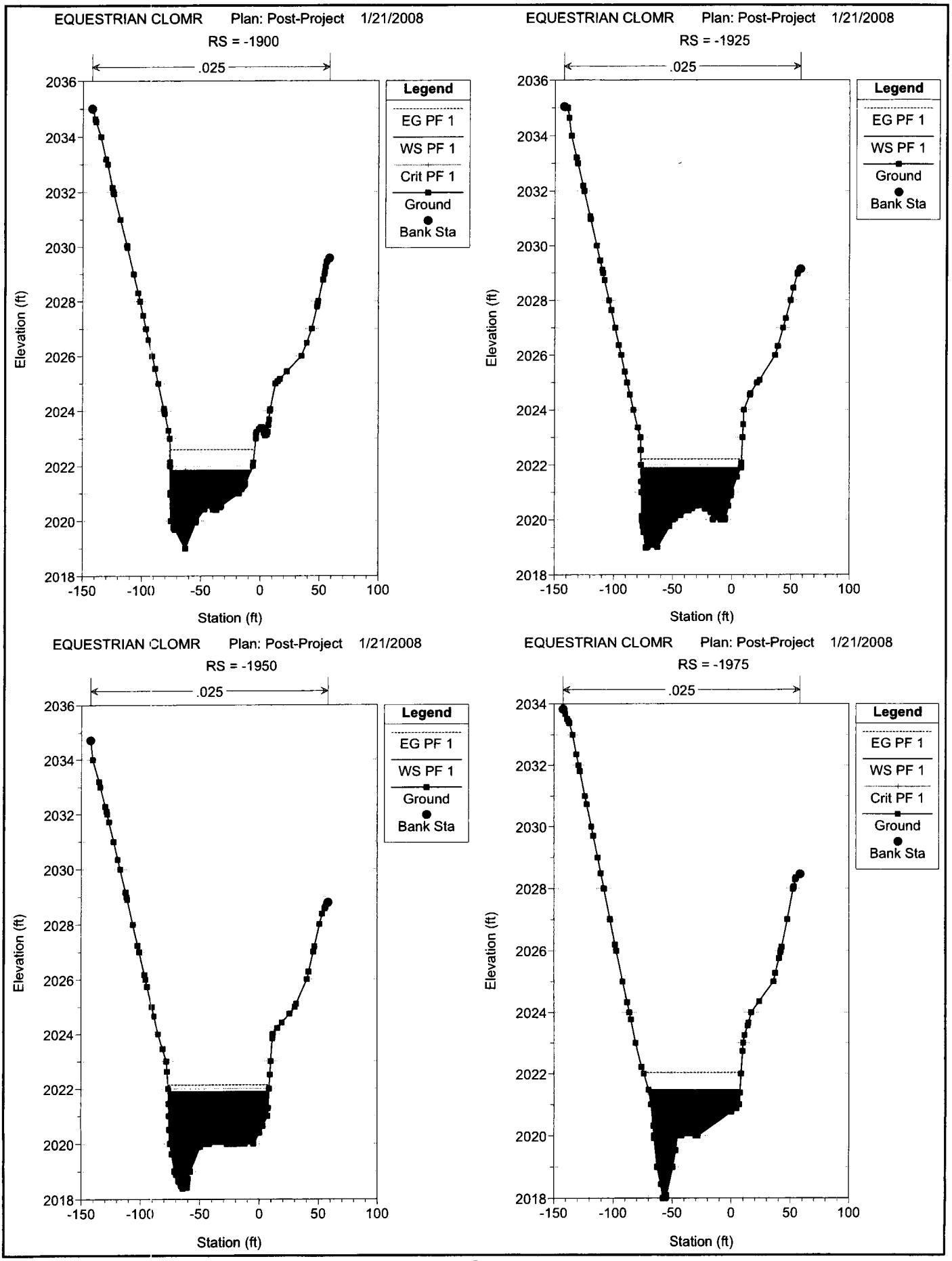

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1625
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
2042
2040
2038
2036
2034
2032
2030
2028
-150
-100
-50
0
50
100

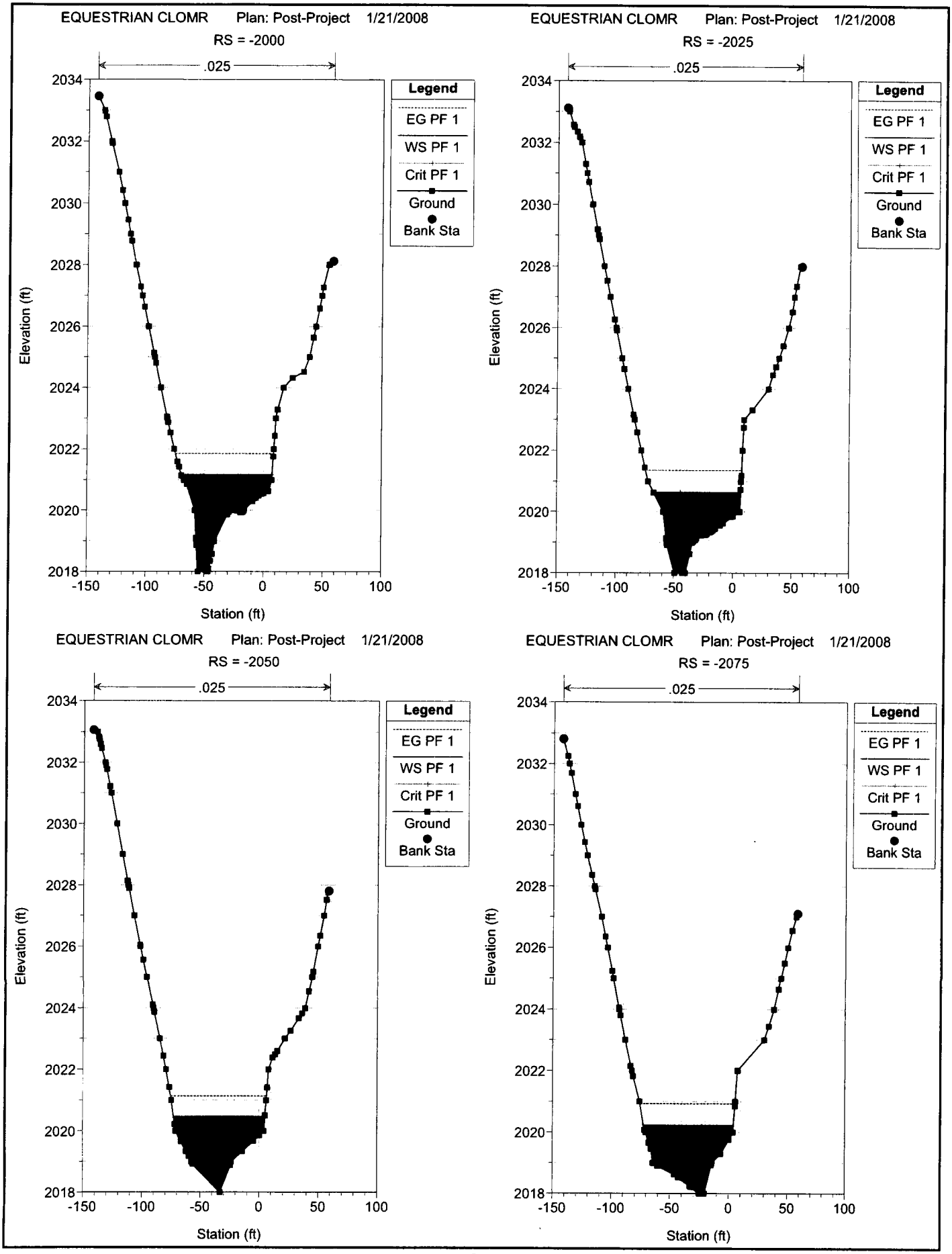

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1650
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
2042
2040
2038
2036
2034
2032
2030
2028
2026
-150
-100
-50
0
50
100

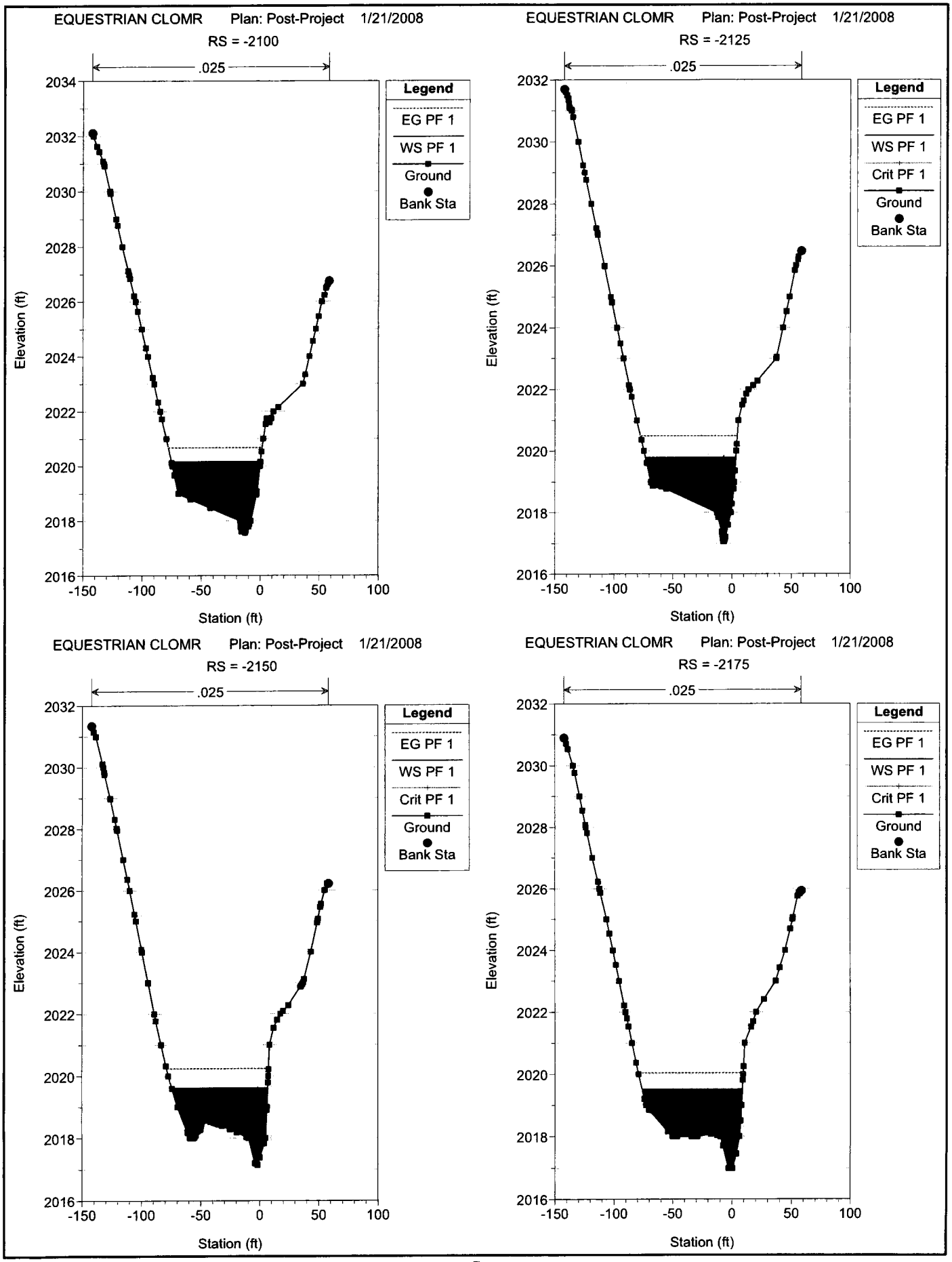

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1675
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
2040
2038
2036
2034
2032
2030
2028
2026
-150
-100
-50
0
50
100

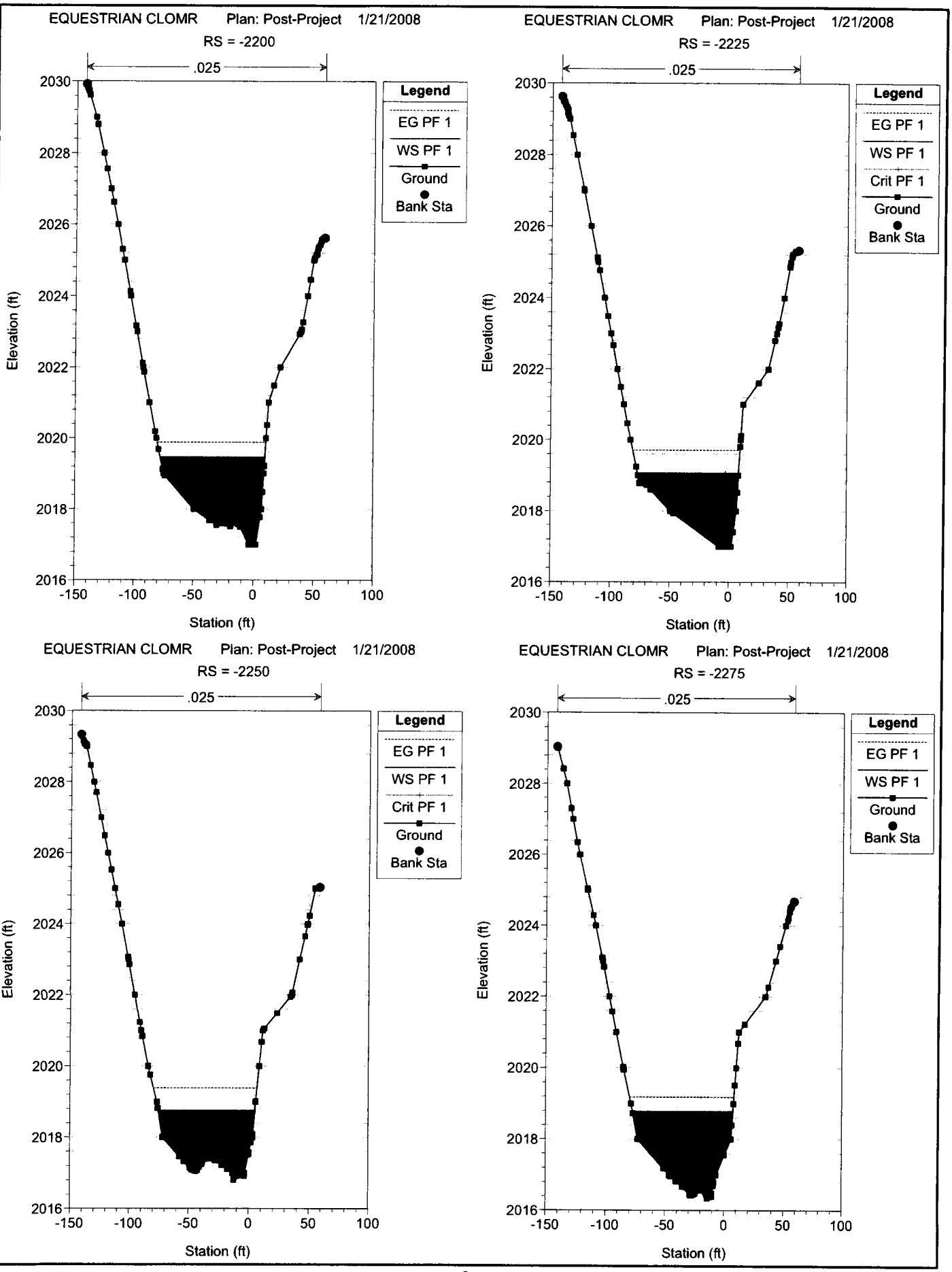

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1700
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1725
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1750
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1775
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

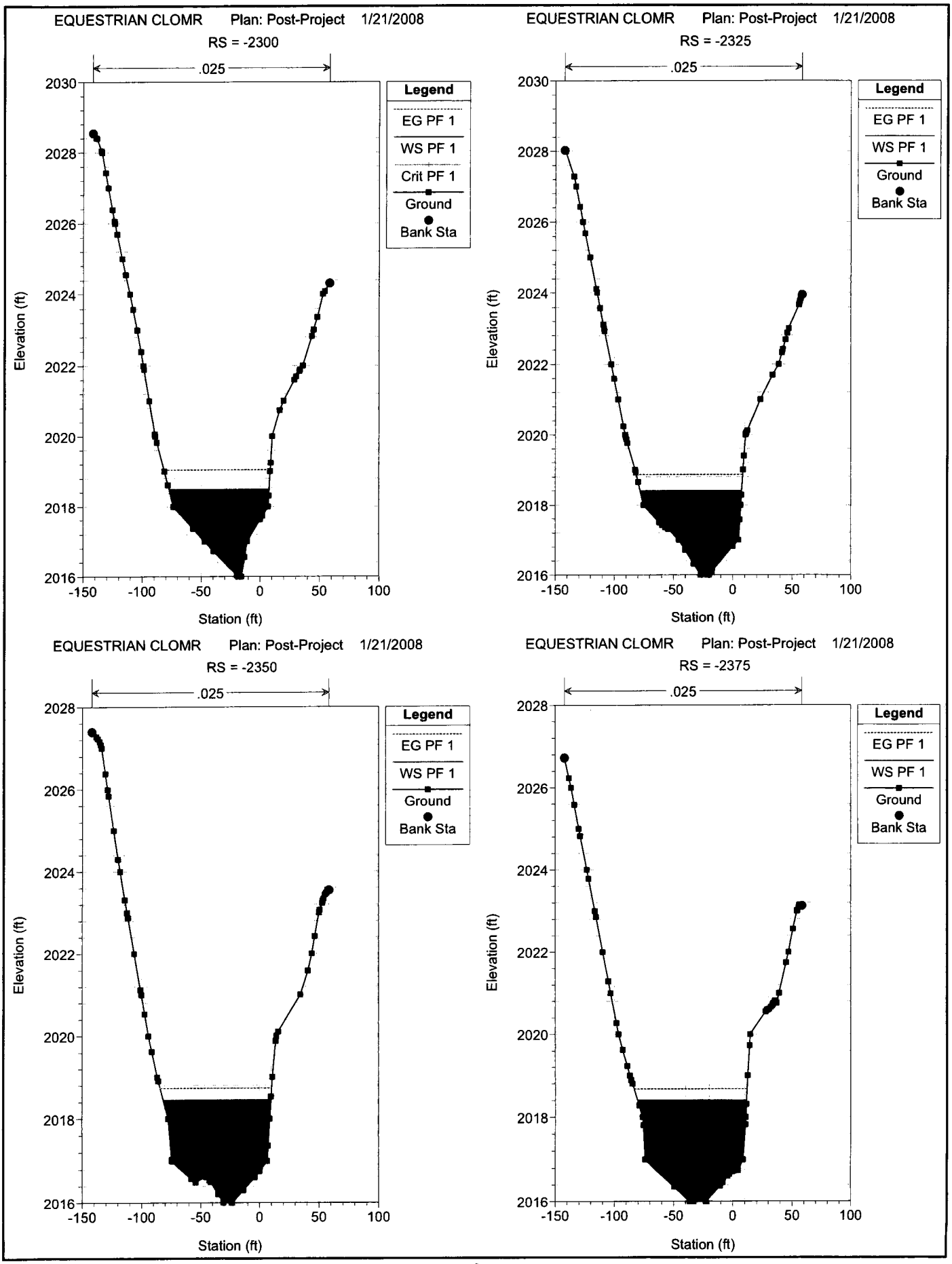

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1800
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1825
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1850
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1875
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

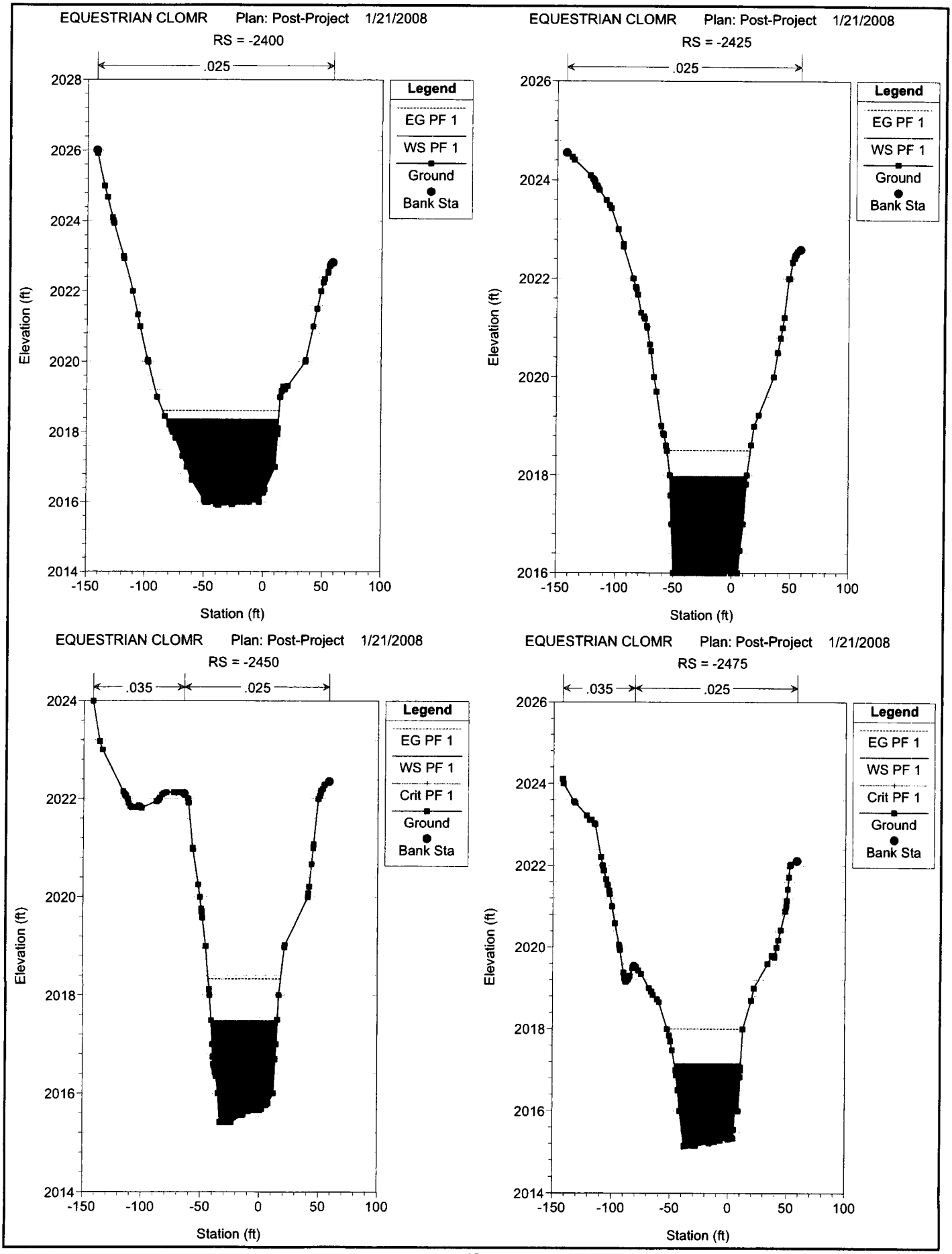

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1900
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1925
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1950
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -1975
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

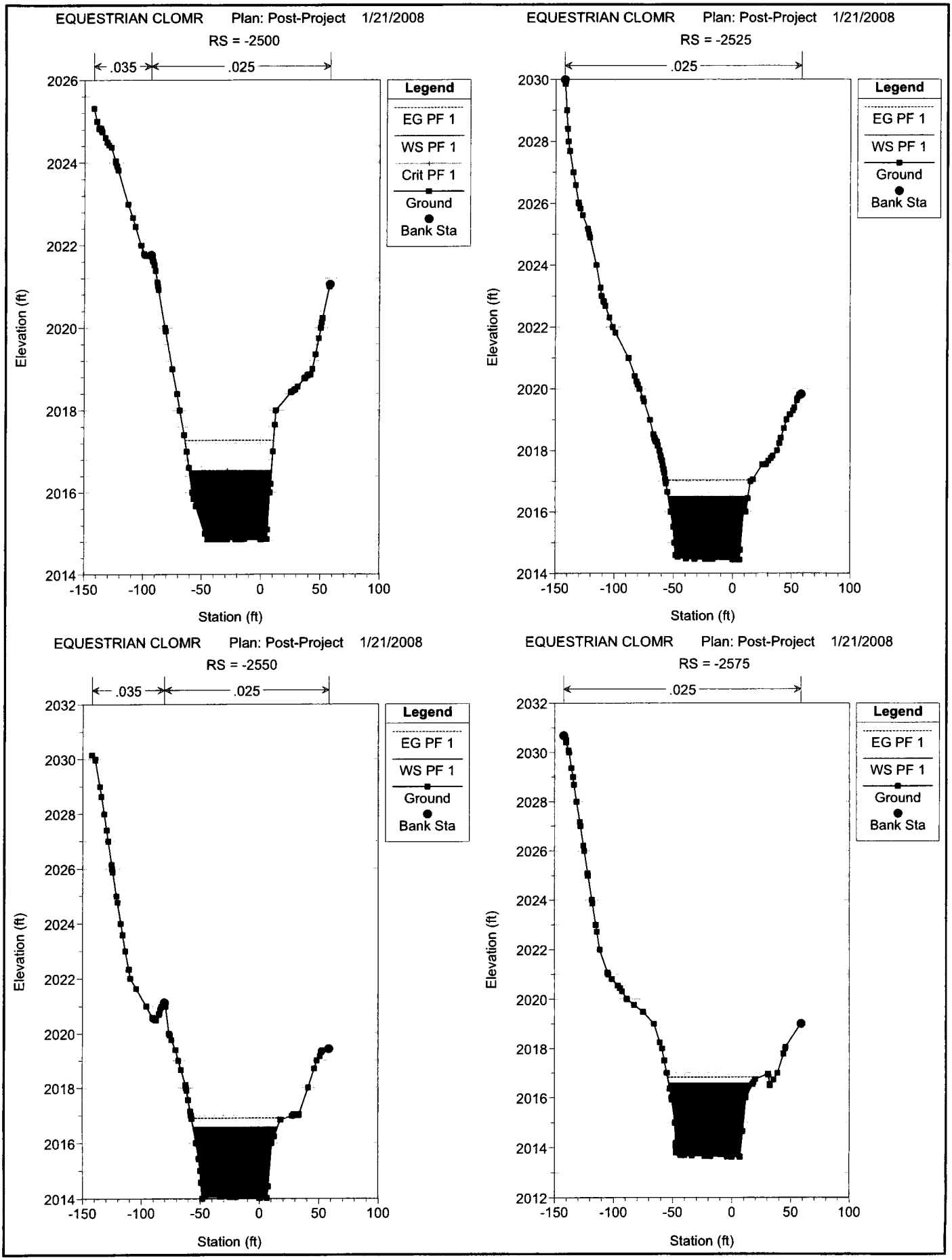

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2000
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2025
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2050
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2075
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

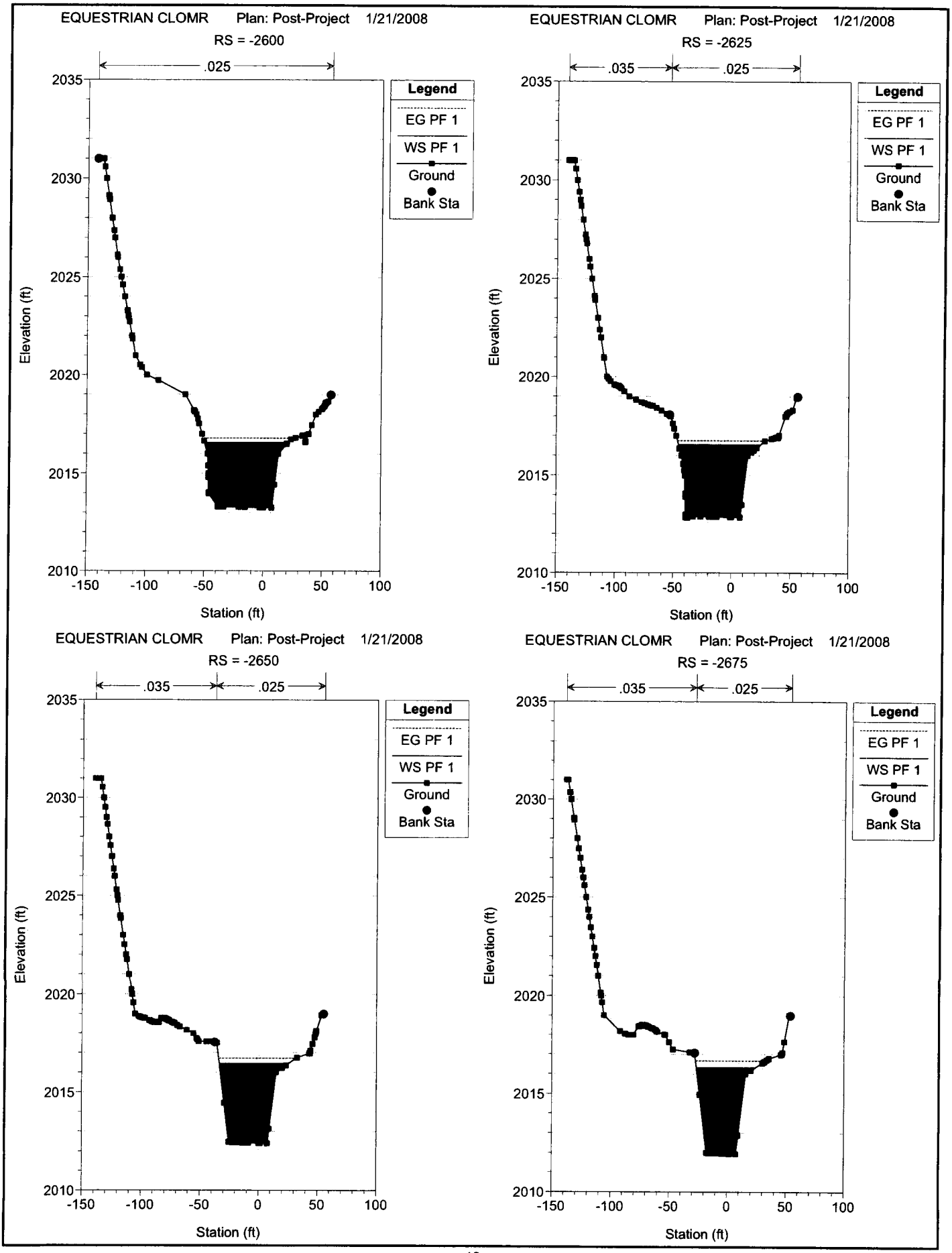

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2100
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2125
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2150
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2175
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

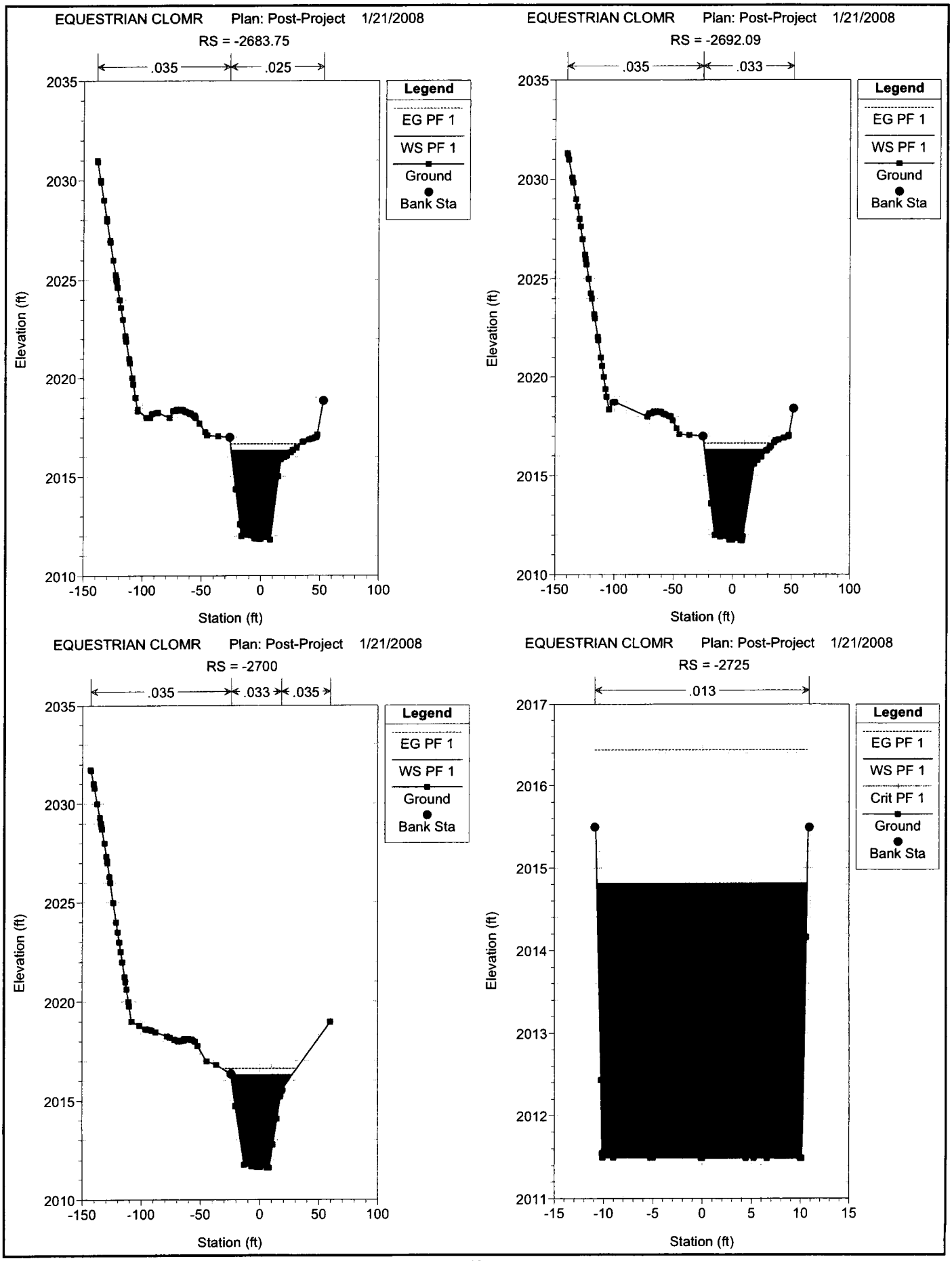

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2200
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2225
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2250
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2275
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

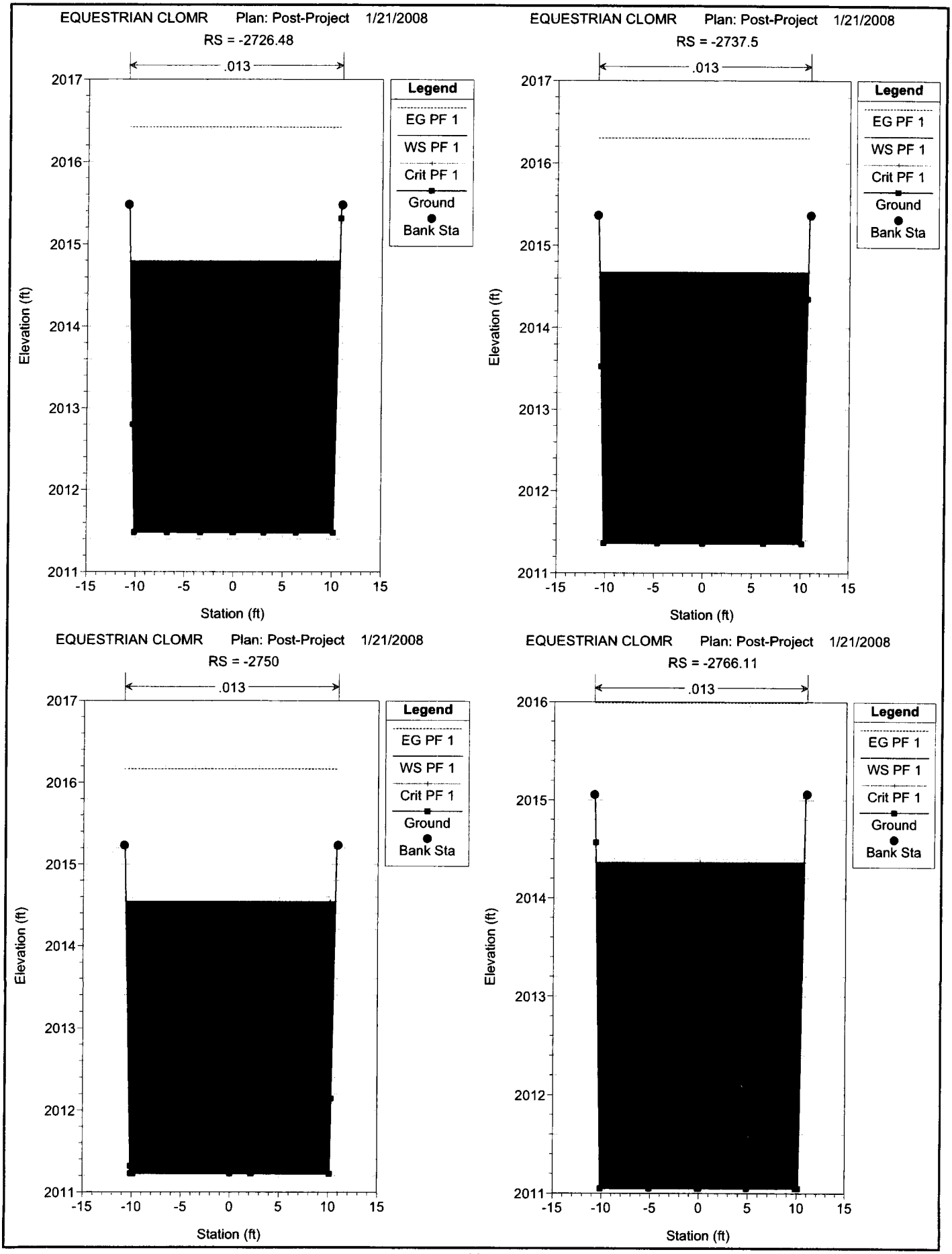

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2300
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2325
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2350
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2375
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Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

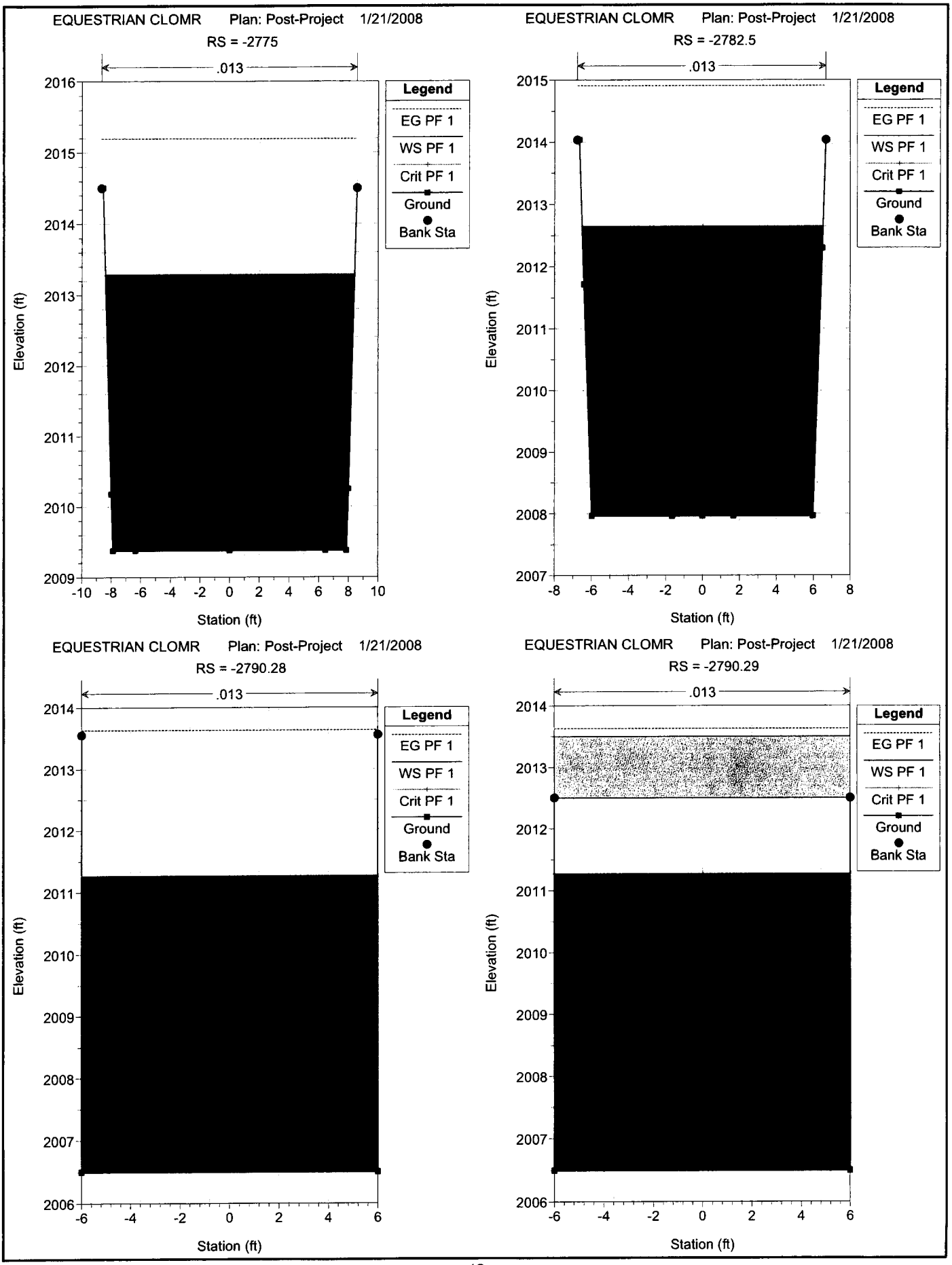

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2400
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Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2425
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2450
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2475
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

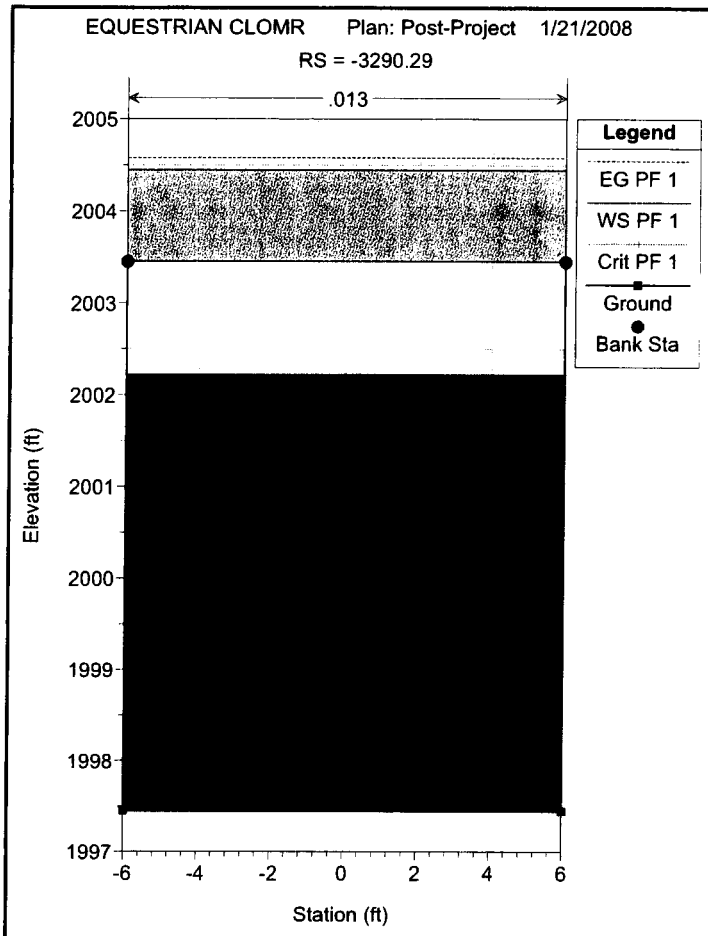

EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2500
.035
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2525
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2550
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2575
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2600
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2625
.035
.025
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2650
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2675


EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2683.75
.035
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2692.09
.035
.033
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2700
.035
.033
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2725
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2726.48
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2737.5
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2750
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2766.11
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2775
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2782.5
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2790.28
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -2790.29
.013
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


EQUESTRIAN CLOMR Plan: Post-Project 1/21/2008
RS = -3290.29
.013
2005
2004
2003
2002
2001
2000
1999
1998
1997
Elevation (ft)
-6
-4
-2
0
2
4
6
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta

HERITAGE PARK OUTFALL CHANNEL CLOMR
POST-PROJECT CONDITIONS: CHECK-RAS OUTPUT

CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.prj
Plan File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.p02
Geometry File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.g09
Flow File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.f05
Report File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.nt
Selected profiles: PF 1
Date: 1/21/2008
Time: 1:51:28 PM

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP
EQUESTRIAN DB OF,1						
-1500		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1525		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1550		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1575		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1600		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1625		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1650		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1675		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1700		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1725		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1750		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1775		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1800		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1825		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1850		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1875		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1900		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1925		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-1950		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-1975		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-2000		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2025		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2050		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-2075		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2100		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2125		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2150		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2175		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2200		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2225		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2250		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-2275		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2300		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2325		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2350		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2375		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2400		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2425		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		
-2450		0.035	0.025	0.035	0.1	0.3
-2475		0.035	0.025	0.035	0.1	0.3
-2500		0.035	0.025	0.035	0.1	0.3
-2525		-----	0.025	0.035	0.1	0.3
		-----	0.035	-----		
-2550		0.035	0.025	0.035	0.1	0.3
-2575		-----	0.035	0.035	0.1	0.3
		-----	0.025	-----		

-2600	-----	0.035	0.035	0.1	0.3
	-----	0.025	-----		
-2625	0.035	0.025	0.035	0.1	0.3
-2650	0.035	0.025	0.035	0.1	0.3
-2675	0.035	0.025	0.035	0.1	0.3
-2683.75	0.035	0.025	0.035	0.1	0.3
-2692.09	0.035	0.033	0.035	0.1	0.3
-2700	0.035	0.033	0.035	0.1	0.3
-2725	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2726.48	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2737.5	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2750	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2766.11	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2775	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2782.5	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2790.28	-----	0.035	0.035	0.1	0.3
	-----	0.013	-----		
-2790.29	-----	0.013	0.013	0.1	0.3
	-----	0.013	-----		
-3290.29	-----	0.013	0.013	0.1	0.3
	-----	0.013	-----		

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.035	0.035
Right Overbank n Value:	0.013	0.035
Channel n Value:	0.013	0.035
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

RS: -2450
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2475
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2500
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2550
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2625
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2650
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2675
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2683.75
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a concrete lined channel.

RS: -2790.29
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger then 0.035.
The n value should be reevaluated.

RS: -2790.29
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a

concrete lined channel.

TRANSITION LOSS COEFFICIENT CHECK

ROUGHNESS COEFFICIENT AT STRUCTURES

---END---

CHECK-RAS Program, XS Check
Cross Section Location and Alignment Review

Project File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.prj
Plan File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.p02
Geometry File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.g09
Flow File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.f05
Report File: J:\JOBS\6928\3_1st Update CLOMR_Jan 2008\Appendix D - Data CD\Hydraulic Models\HEC-RAS\CLOMR.xs
Selected profiles: PF 1
Date: 1/21/2008
Time: 1:51:30 PM

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code
EQUESTRIAN DB OF,1						
-1500	25	25	25	92.41	706	C
-1525	25	25	0	87.13	706	
-1550	25	25	25	87.9	706	
-1575	25	25	25	83.36	706	C
-1600	25	25	25	81.24	706	C
-1625	25	25	25	84.57	706	
-1650	25	25	25	88.88	706	
-1675	25	25	25	94.74	706	
-1700	25	25	25	98.03	706	
-1725	25	25	25	100.62	706	C
-1750	25	25	25	46.5	706	D,C
-1775	25	25	25	42.58	706	D,C
-1800	25	25	25	94.56	706	D,C
-1825	25	25	25	85.14	706	C
-1850	25	25	25	80.56	706	C
-1875	25	25	25	77.9	706	C
-1900	25	25	25	67.85	706	C
-1925	25	25	25	84.58	706	
-1950	25	25	25	84.51	706	
-1975	25	25	25	77.65	706	
-2000	25	25	25	76.91	706	C
-2025	25	25	25	73.87	706	C
-2050	25	25	25	77.64	706	
-2075	25	25	25	76.32	706	C
-2100	25	25	25	75.4	706	
-2125	25	25	25	76.51	706	C
-2150	25	25	25	81.16	706	
-2175	25	25	25	84.84	706	
-2200	25	25	25	87.14	706	
-2225	25	25	25	85.2	706	C
-2250	25	25	25	80.41	706	
-2275	25	25	25	84.44	706	
-2300	25	25	25	84.84	706	
-2325	25	25	25	85.51	706	
-2350	25	25	25	91.17	706	
-2375	25	25	25	91.85	706	
-2400	25	25	25	94.73	706	
-2425	25	25	25	65.88	706	
-2450	25	25	25	55.91	706	C
-2475	25	25	25	56.84	706	C
-2500	25	25	25	69.34	706	C
-2525	25	25	25	67.46	706	
-2550	25	25	25	71.18	706	
-2575	25	25	25	72.64	706	D
-2600	25	25	25	71.04	706	
-2625	25	25	25	70.23	706	
-2650	25	25	25	58.53	706	
-2675	8.75	8.75	8.75	50.6	706	
-2683.75	8.33	8.33	8.33	51.79	706	
-2692.09	7.92	7.92	7.92	53.55	706	
-2700	25	25	25	51.54	706	
-2725	1.48	1.48	1.48	21.36	706	C
-2726.48	11.02	11.02	11.02	21.35	706	C
-2737.5	12.5	12.5	12.5	21.35	706	C
-2750	16.11	16.11	16.11	21.34	706	C
-2766.11	8.89	8.89	8.89	21.32	706	C
-2775	7.5	7.5	7.5	16.8	706	C
-2782.5	7.78	7.78	7.78	13.03	706	C
-2790.28	0	0	0	12	706	
-2790.29	0	0	0	12	706	C
-3290.29	0	0	0	12	706	C

B=blocked obstruction	XS SC 05
C=critial depth	XS SC 03
D=divided flow	XS SC 01
E=cross section extended	XS SC 02
K=known water-surface	XS SC 04

DISTANCE CHECK

RS: -1525
XS DT 02 Right overbank distance is equal to zero.

RS: -2790.28
XS DT 02 Channel distance is equal to zero.

RS: -2790.28
XS DT 02 Left overbank distance is equal to zero.

RS: -2790.28

```
XS DT 02 Right overbank distance is equal to zero.

RS:     -2790.29
XS DT 02 Channel distance is equal to zero.

RS:     -2790.29
XS DT 02 Left overbank distance is equal to zero.

RS:     -2790.29
XS DT 02 Right overbank distance is equal to zero.


SPACING CHECK
-------------


INEFFECTIVE FLOW CHECK
----------------------

RS:     -1500
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:     -1525
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.


DISCHARGE CHECK
---------------

XS DC 02 Constant dicharge used for the EQUESTRIAN DB OF,1


LOCATION CHECK
--------------

RS:     -2700
XS LC 01 Lenchl Up/TopwdthAct Dn = 1.17
         MaxChlDpth Up/MaxChlDpth Dn = 1.41
         TopwdthAct Up/TopwdthAct Dn = 2.41
         This cross section is located too far upstream from the
         critical depth cross section.


BOUNDARY CONDITION CHECK
------------------------

XS BC 02 The name of the stream is EQUESTRIAN DB OF,1
         Normal S = 0.0137 is specified as the downstream boundary
         for profile PF 1

XS BC 02 The name of the stream is EQUESTRIAN DB OF,1
         Normal S = 0.0304 is specified as the upstream boundary
         for profile PF 1

XS BC 03 Maximum number of iterations is 0
         It should not be less than 20.


LATERAL WEIRS CHECK
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---END---
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1st Addendum to the

Conditional Letter of Map Revision

Heritage Park Outfall Channel

Appendix D
Data CD

vtn