Request for Conditional Letter of Map Revision
Flamingo Wash-Spencer Street to Desert Inn Road
Clark County, Nevada



Submitted to:

Clark County
Regional Flood Control District

Submitted by:

The Louis Berger Group, Inc.
Las Vegas, Nevada

January 11, 2007

Request for Conditional Letter of Map Revision
Flamingo Wash
Desert Inn to Spencer Street
Clark County, Nevada

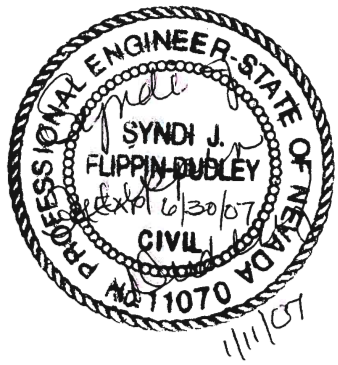
Prepared for:
CLARK COUNTY
REGIONAL FLOOD CONTROL DISTRICT
500 S. Grand Central Parkway
Las Vegas, NV 89155

CLARK COUNTY
REGIONAL FLOOD CONTROL DISTRICT



Prepared by:
THE Louis Berger Group, INC.
500 Amigo Court, Suite 100
Las Vegas, Nevada 89119
(702) 736-6632





January 11, 2007

TABLE OF CONTENTS

Page

1.0 Introduction 1

2.0 Previous Studies and LOMRs 3

2.1 Flamingo Wash Flood Insurance Study Restudy 3

2.2 Flamingo Wash at Spencer Street LOMR 8

2.3 Flamingo Wash Mojave Road to Boulder Highway LOMR 9

3.0 Hydraulic Models..... 9

3.1 Effective Hydraulic Models..... 9

3.2 Proposed HEC-RAS Model 10

4.0 Conclusion.....13

5.0 References.....14

LIST OF FIGURES

Page

FIGURE 1 Vicinity Map 2
FIGURE 2a FIRM 4
FIGURE 2b FIRM Revised to Reflect LOMR Case No. 04-09-0166P..... 5
FIGURE 2c FIRM Revised to Reflect LOMR Case No. 04-09-0167P..... 6
FIGURE 3 Annotated FIRM 7
FIGURE 4 Hydraulic Workmap (insert)
FIGURE 5 Flamingo Wash at Las Vegas National Golf Course 11
FIGURE 6 Flamingo Wash at Tioga Way 12

APPENDICES

APPENDIX A FORMS

- Overview and Concurrence Form (MT-2 Form 1)
- Riverine Hydrology & Hydraulics Form (MT-2 Form 2)
- Riverine Structures Form (MT-2 Form 3)
- Statement of Explanations

APPENDIX B Effective Hydrologic and Hydraulic Data

B.1 Flamingo Wash FIS Restudy

B.1.1 Excerpts from FIS Report
B.1.2 FIS Restudy Workmap and HEC-2 Model
B.1.3 FIS Restudy Corrected HEC-2 Model

B.2 Flamingo Wash at Spencer Street LOMR

B.2.1 LOMR Case No. 04-09-0167P
B.2.2 Flamingo Wash at Spencer Street Workmap and Post Project HECRAS Model

B.3 Flamingo Wash at Mojave Road to Boulder Highway LOMR

B.3.1 LOMR Case No. 04-09-0166P
B.3.2 Flamingo Wash Mojave Road to Boulder Highway Workmap and Post Project HECRAS Model

APPENDIX C Proposed Hydraulic Model

C.1 Proposed Subcritical HECRAS Model
C.2 Proposed Supercritical HECRAS Model

APPENDIX D Flamingo Wash Spencer Street to Desert Inn Road Improvement Plans (70% Complete)

APPENDIX E CD ROM

Flamingo Wash at Spencer Street LOMR

- Flamingo Wash at Spencer Street LOMR Post Project Conditions HECRAS Model
- Flamingo Wash at Spencer Street LOMR Workmaps

Flamingo Wash at Mojave Road to Boulder Highway LOMR

- Flamingo Wash at Mojave Road to Boulder Highway LOMR Post Project Conditions HECRAS Model
- Flamingo Wash at Mojave Road to Boulder Highway LOMR Workmap

Proposed Hydraulic Model

- Proposed Subcritical HECRAS Model
- Proposed Supercritical HECRAS Model
- CHECK-RAS Output Files
- Hydraulic Workmap

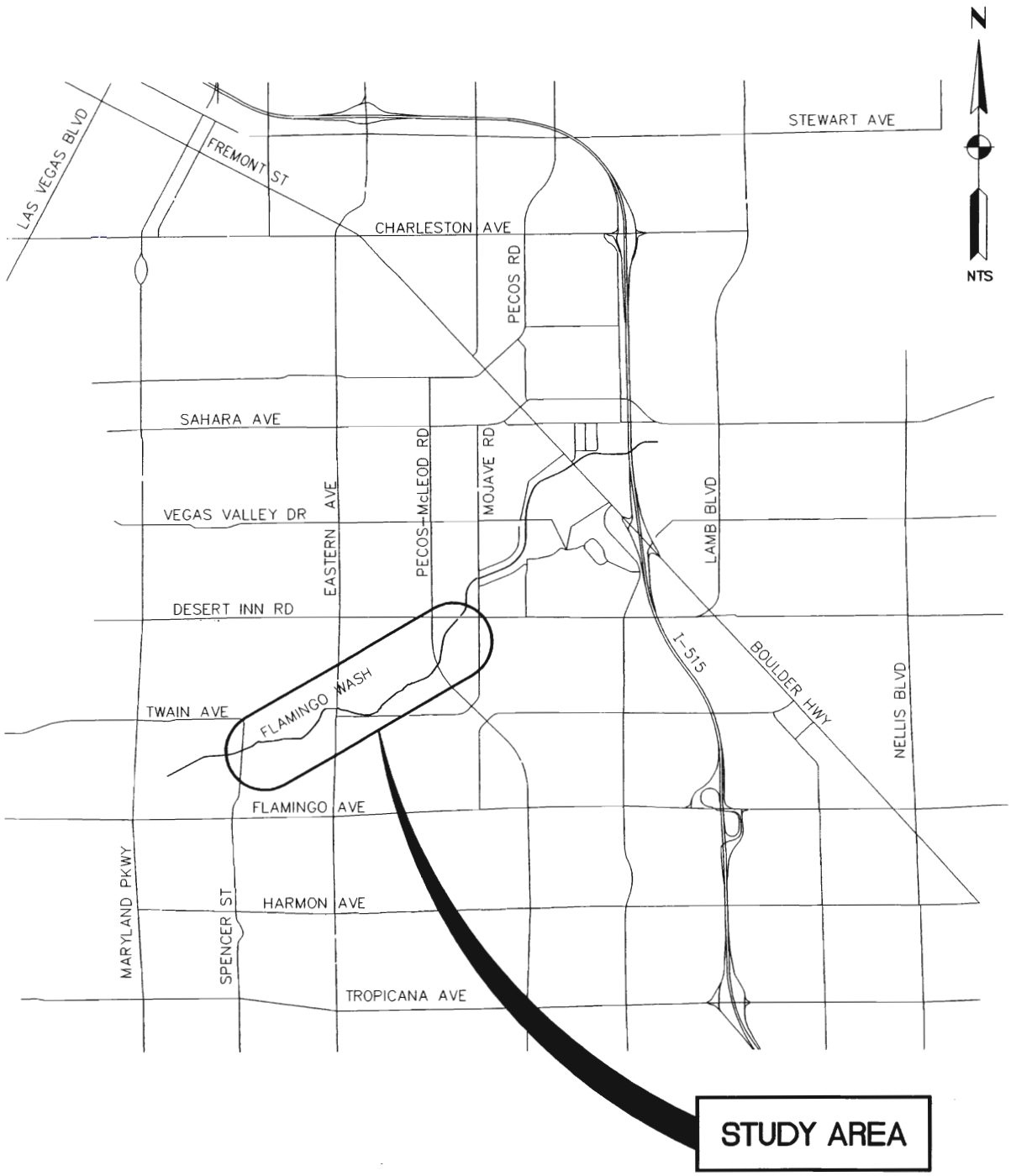
1.0 INTRODUCTION

This submittal package provides hydraulic data in support of a Request for a Conditional Letter of Map Revision (CLOMR) for the Flamingo Wash between Spencer Street and Desert Inn Road in Clark County, Nevada (see Figure 1). This CLOMR request was prepared by The Louis Berger Group, Inc. (Berger) on behalf of the Clark County Regional Flood Control District (CCRFCD).

The study area, extending from Spencer Street to Desert Inn Road, encompasses approximately 1.5 miles of the Flamingo Wash in unincorporated Clark County, Nevada, Sections 13 and 14, Township 21 South, Range 61 East. The wash between Spencer Street and Desert Inn Road is designated as Special Flood Hazard Area (SFHA) Zone A on Flood Insurance Rate Map (FIRM) Panels 2190, 2557 and 2580 for Clark County Nevada and Incorporated Areas (see Figures 2a through 2c). SFHA Zone A is defined as an area subject to flooding by the 1% annual chance flood with no base flood elevations determined.

The basis of this CLOMR request is the Flamingo Wash Spencer Street to Desert Inn Road improvement project which is under design by Berger for Clark County Public Works (County). Copies of the 70 percent complete improvement plans are provided in Appendix D. It should be noted that, while the name of the project is Flamingo Wash Spencer Street to Desert Inn Road, the new channel improvements are between Tioga Way and Desert Inn Road. Figure 3 is an annotated FIRM showing the proposed Zone A floodplain.

The Flamingo Wash channel project includes construction of three 20' x 8' RCBs and one 20' x 8.5' RCB (reinforced concrete box) at Tioga Way, an additional 22' x 8' RCB at Eastern Avenue, and a concrete-lined, rectangular channel between Eastern Avenue and Desert Inn Road. The purpose of this CLOMR is to: 1) demonstrate that the 100-year flood will be contained within the proposed channel improvements between Eastern Avenue and Desert Inn Road; 2) revise the maps to reflect the RCB construction at Tioga Way and Eastern Avenue; and,



FLAMINGO WASH
SPENCER ST TO DESERT INN RD
VICINITY MAP

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-9632
Las Vegas, Nevada 89119 Fax: 702-736-0704

FIGURE 1

3) revise the floodplain boundaries for the Flamingo Wash through the Las Vegas National Golf Course between Spencer Street and Eastern Avenue based on new topographic information.

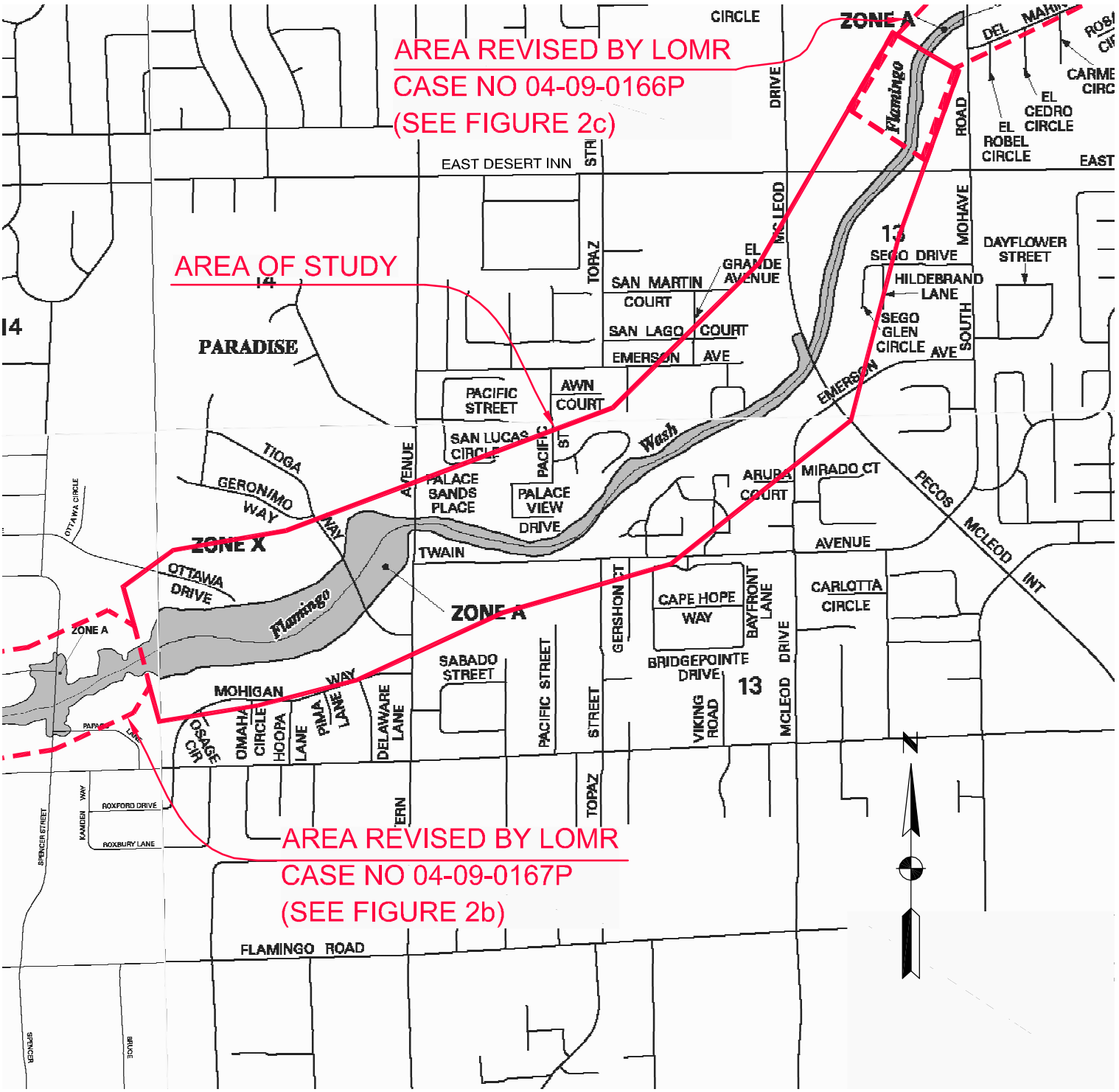
2.0 PREVIOUS STUDIES AND LOMRS

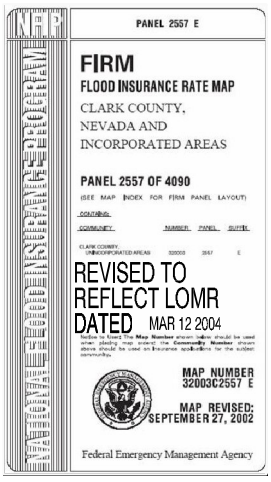
The limits of the CLOMR study are depicted on the effective FIRM (Figure 2a). With the exception of the Golf Course area between Spencer Street and Eastern Avenue, the floodplain boundaries on Figure 2a were originally modeled and delineated in the Flood Insurance Study Restudy for the Flamingo Wash in Clark County, Nevada (FIS, 1997), prepared by G.C. Wallace Inc., for the CCRFCD. The source of the floodplain mapping for the Golf Course area is not known. Subsequent to the preparation of the FIS (1997), two LOMRs (Case No. 04-09-0166P and Case No. 04-09-0167P) were issued in 2004 that revised the floodplain boundaries upstream of Spencer Street and downstream of Desert Inn Road, respectively (Figures 2b and 2c). Brief discussions of the FIS (1997) and 2004 LOMRs, as they relate to this CLOMR, are provided in the following sections.

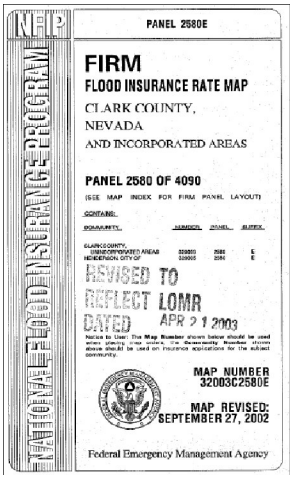
2.1 FLAMINGO WASH FLOOD INSURANCE STUDY RESTUDY

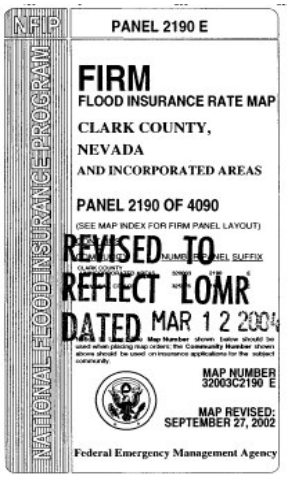
The FIS (1997) provides the "effective" 100-year flood hydrologic and hydraulic analyses for the Flamingo Wash watershed. Relevant excerpts of the FIS, including summary tables, a workmap, and the HEC-2 hydraulic model, are provided Appendix B.1 and on the enclosed CD ROM in Appendix E for reference.

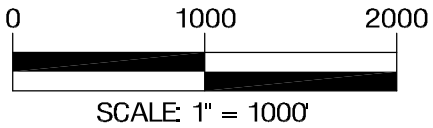
The 100-year flow rate developed by the FIS Restudy at Eastern Avenue is 5,500 cfs. The flow rate increases to 5,800 cfs approximately 450 ft upstream of Desert Inn Road.











SCALE: 1" = 1000'

CLARK COUNTY, NEVADA
DEPARTMENT OF PUBLIC WORKS

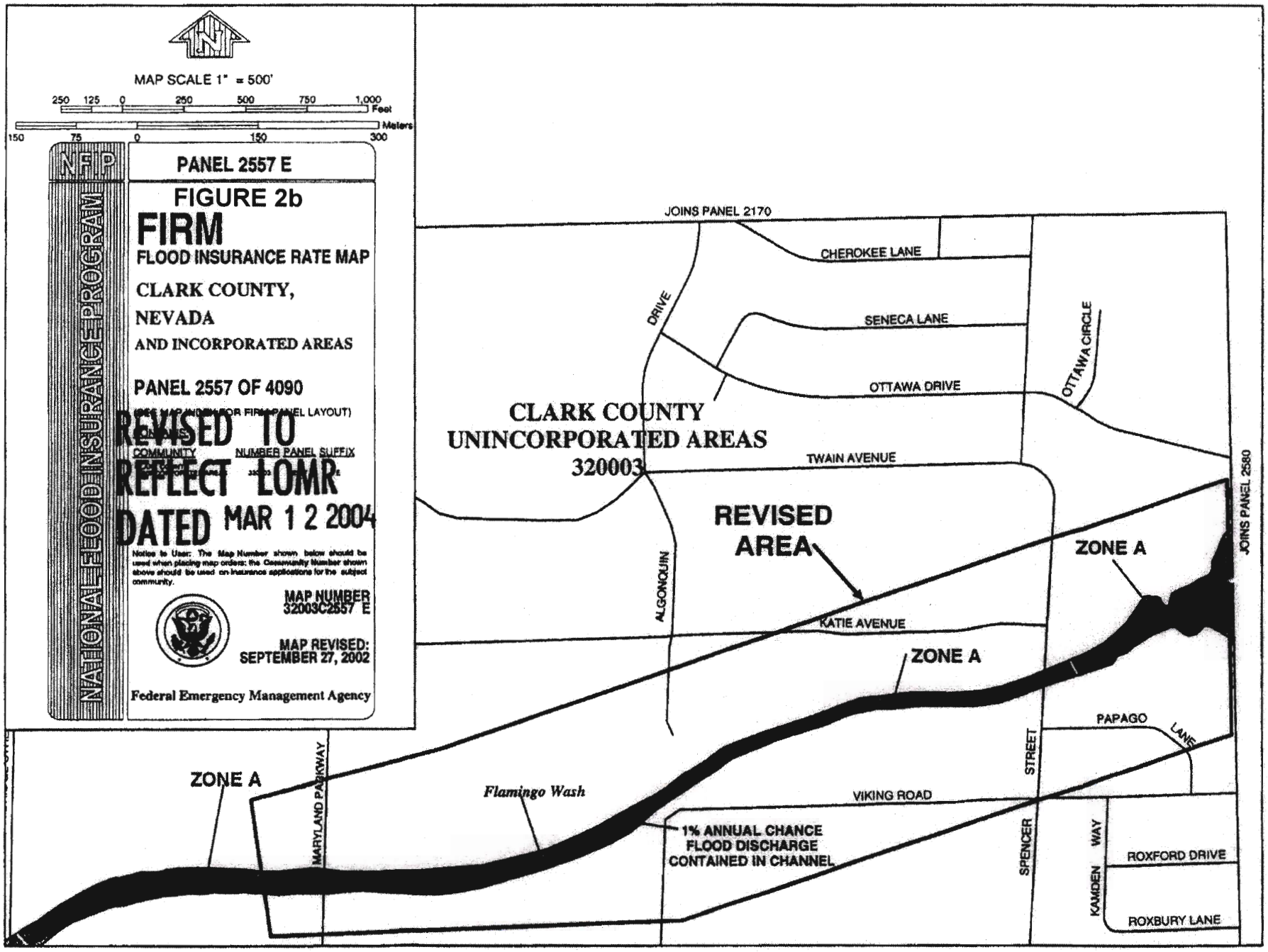
FLAMINGO WASH

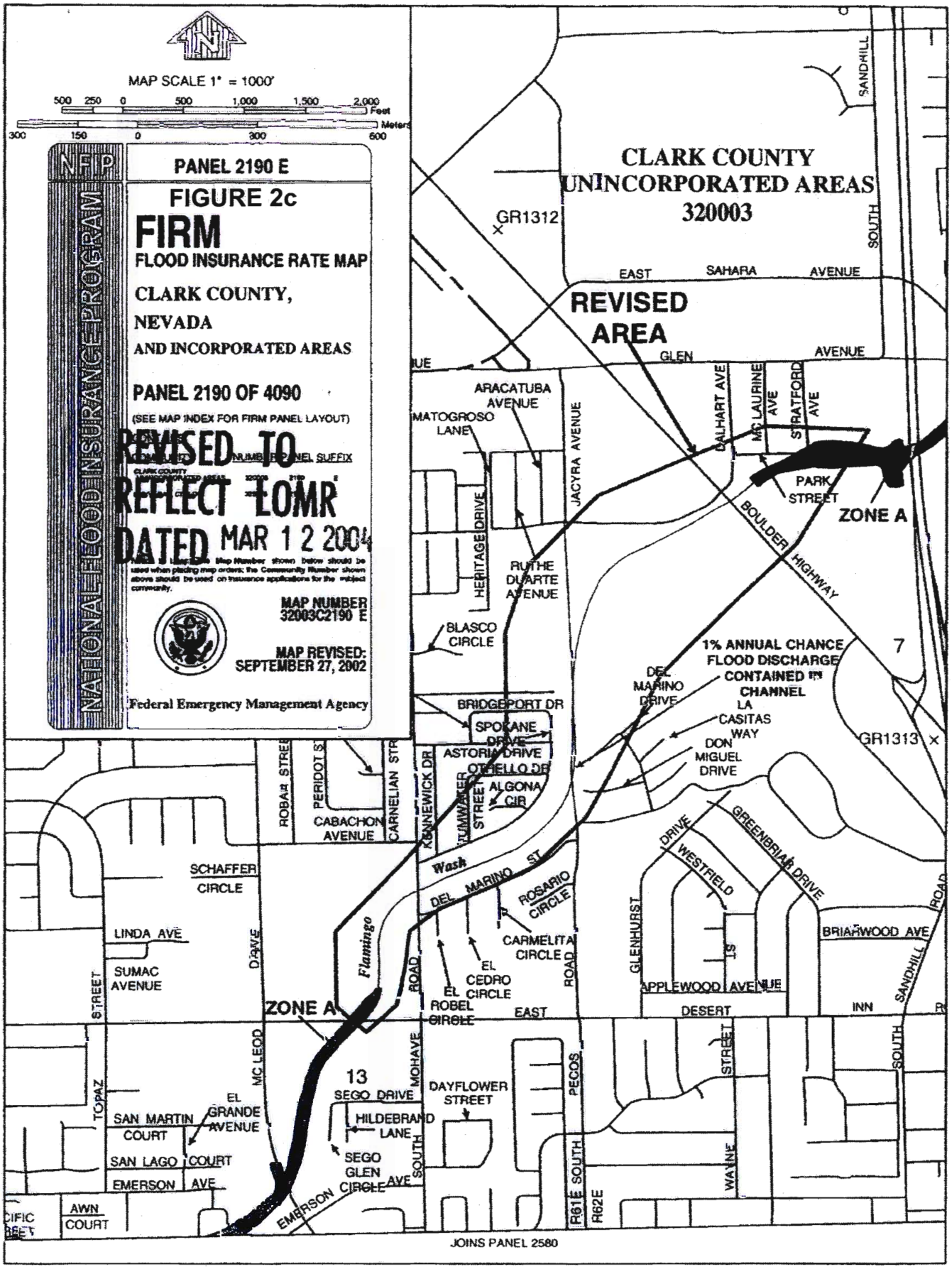
SPENCER STREET TO DESERT INN ROAD

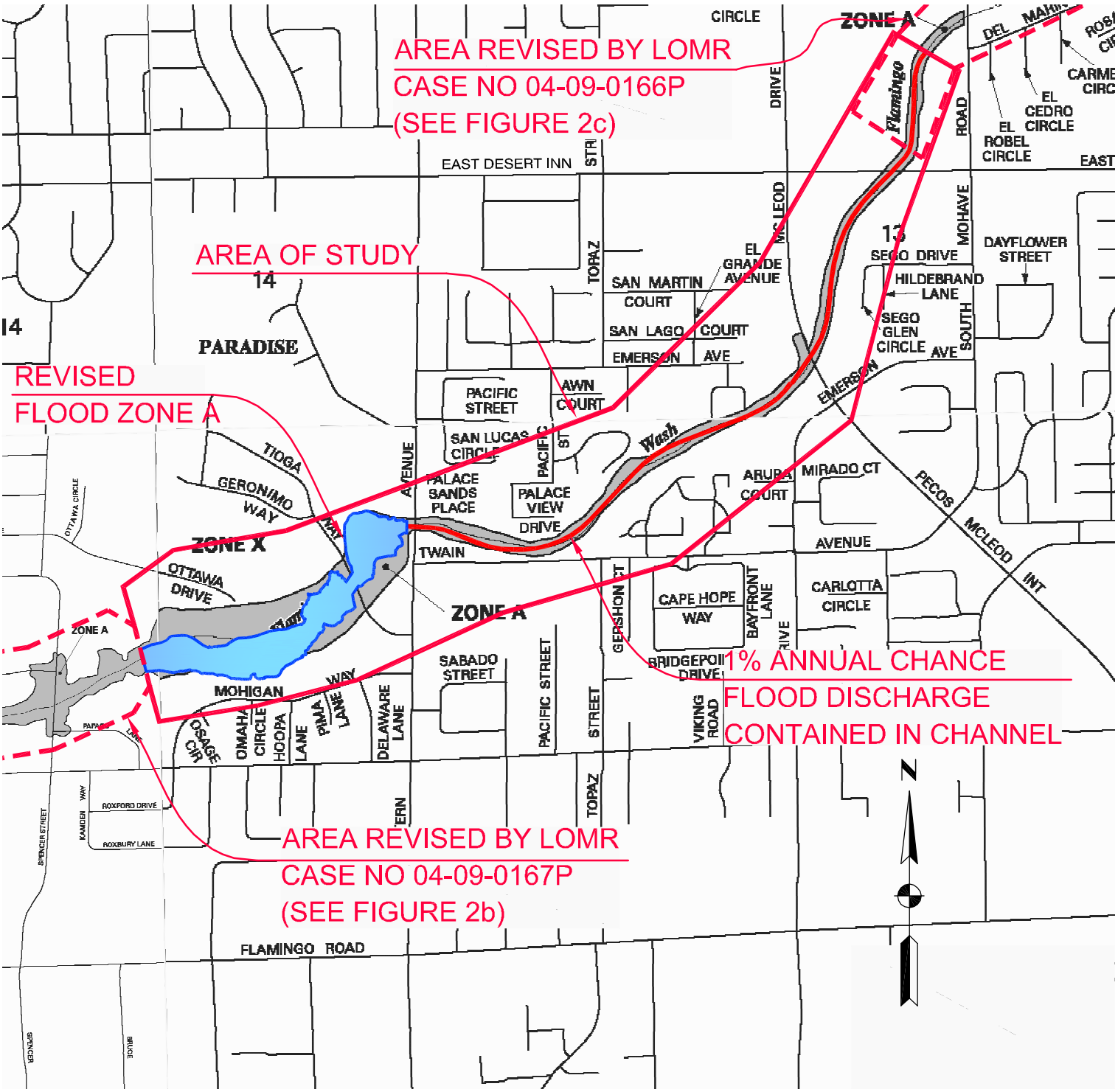
FIRM

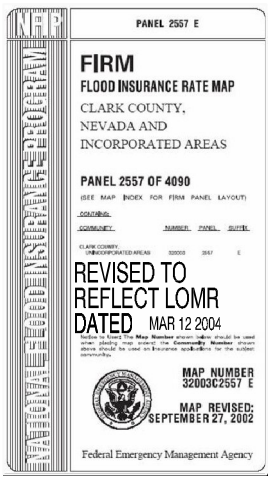
THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

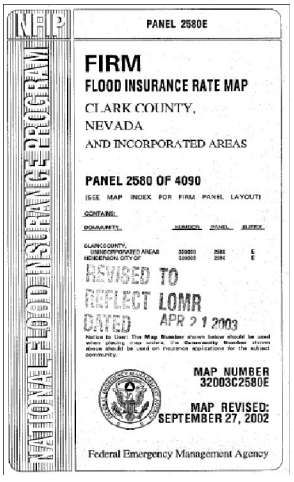
FIGURE 2a

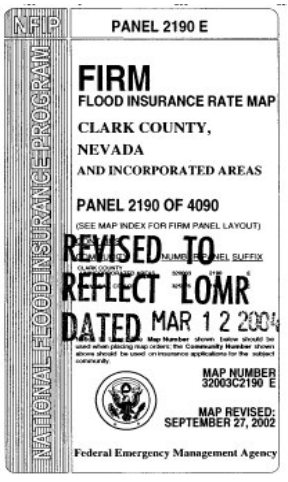

MAP SCALE 1" = 500'
250 125 0 250 500 750 1,000 Feet
150 75 0 150 300 Meters
NFIP
PANEL 2557 E
FIGURE 2b
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA
AND INCORPORATED AREAS
PANEL 2557 OF 4090
REVISED TO REFLECT LOMR DATED MAR 1 2 2004
COMMUNITY NUMBER PANEL SUFFIX
Notice to User: The Map Number 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 32003C2557 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM
JOINS PANEL 2170
CHEROKEE LANE
SENECA LANE
OTTAWA DRIVE
OTTAWA CIRCLE
DRIVE
CLARK COUNTY
UNINCORPORATED AREAS
320003
TWAIN AVENUE
REVISED
AREA
ZONE A
JOINS PANEL 2580
ALGONQUIN
KATIE AVENUE
ZONE A
PAPAGO
LANE
STREET
ZONE A
MARYLAND PARKWAY
Flamingo Wash
VIKING ROAD
1% ANNUAL CHANCE
FLOOD DISCHARGE
CONTAINED IN CHANNEL
SPENCER
WAY
KAMDEN
ROXFORD DRIVE
ROXBURY LANE


MAP SCALE 1" = 1000'
500 250 0 500 1,000 1,500 2,000 Feet
300 150 0 300 600 Meters
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 2190 E
FIGURE 2c
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA
AND INCORPORATED AREAS
PANEL 2190 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
REVISED TO REFLECT LOMR DATED MAR 1 2 2004
MAP NUMBER
32003C2190 E
MAP REVISED:
SEPTEMBER 27, 2002
Federal Emergency Management Agency
CLARK COUNTY
UNINCORPORATED AREAS
320003
GR1312
EAST SAHARA AVENUE
REVISED AREA
SANDHILL
SOUTH
GLEN AVENUE
ARACATUBA AVENUE
MATOGROSO LANE
JACYRA AVENUE
DALHART AVE
MC LAURINE AVE
STRATFORD AVE
PARK STREET
ZONE A
BOULDER HIGHWAY
HERITAGE DRIVE
RUTHE DUARTE AVENUE
BLASCO CIRCLE
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
DEL MARINO DRIVE
LA CASITAS WAY
DON MIGUEL DRIVE
GR1313
BRIDGEPORT DR
SPOKANE DRIVE
ASTORIA DRIVE
OTHELLO DR
ALGONA CIR
KENNEWICK DR
TUMWATER STREET
ROBAR STREET
PERIDOT ST
CARNELIAN STREET
CABACHON AVENUE
SCHAFFER CIRCLE
LINDA AVE
SUMAC AVENUE
DAVE STREET
Wash
DEL MARINO ST
ROSARIO CIRCLE
CARMELITA CIRCLE
EL CEDRO CIRCLE
EL ROBEL CIRCLE
Flamingo ROAD
ZONE A
EAST DRIVE
WESTFIELD ST
GREENBRIAR DRIVE
GLENHURST
BRIARWOOD AVE
APPLEWOOD AVENUE
DESERT INN ROAD
SANDHILL
MC LEOD
MOHAVE
13
SEGO DRIVE
HILDEBRAND LANE
SEGO GLEN AVE
DAYFLOWER STREET
PECOS
SOUTH STREET
TOPAZ
EL GRANDE AVENUE
SAN MARTIN COURT
SAN LAGO COURT
EMERSON AVE
EMERSON CIRCLE
AWN COURT
WAYNE
R61E SOUTH
R62E
JOINS PANEL 2580









CLARK COUNTY, NEVADA
DEPARTMENT OF PUBLIC WORKS

FLAMINGO WASH

SPENCER STREET TO DESERT INN ROAD

ANNOTATED FIRM

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

FIGURE 3

The FIS (1997) includes HEC-2 hydraulic analyses for several reaches of the Flamingo Wash. The reach that applies to this CLOMR extends from Eastern Avenue to Las Vegas Wash. This is considered the "effective" model between Eastern Avenue and Desert Inn Road.

It should be noted that the elevations in the FIS HEC-2 hydraulic model are based on the National Geodetic Vertical Datum of 1929 (NGVD29). All hydraulic modeling in this CLOMR is based on the North American Vertical Datum of 1988 (NAVD88). To correct for the differences in datum, the FIS NGVD29 elevations must be adjusted upward by a factor of 2.26 ft. A "corrected" FIS HEC-2 model was prepared previously as part of LOMR Case No. 04-09-0166P which is included in Appendix B.1.3.

2.2 FLAMINGO WASH AT SPENCER STREET LOMR

The Flamingo Wash at Spencer Street LOMR was issued by FEMA on March 12, 2004 (Case No. 04-09-0167P) in response to the Request for LOMR Flamingo Wash at Spencer Street prepared by the Louis Berger Group, Inc. for the CCRFCD (Berger, 2003a). A copy of the LOMR is provided in Appendix B.2.1.

The LOMR revised the floodplain boundary for the Flamingo Wash from Maryland Parkway to Spencer Street. A HECRAS model was prepared in support of the LOMR request. This is considered the "effective" hydraulic model for the Flamingo Wash between Maryland Parkway and Spencer Street. The HECRAS model prepared for this CLOMR ties into this model at Spencer Street. Relevant excerpts from the Flamingo Wash at Spencer Street LOMR are provided in Appendix B.2 and Appendix E (CD ROM) including the workmap and HECRAS output.

2.3 FLAMINGO WASH MOJAVE ROAD TO BOULDER HIGHWAY LOMR

This LOMR was issued by FEMA on March 12, 2004 (Case No. 04-09-0166P) in response to the Request for LOMR Flamingo Wash Mojave Road to Boulder Highway prepared by the Louis Berger Group, Inc. for the CCRFCD (Berger, 2003b). A copy of the LOMR is provided in Appendix B.3.1.

The Flamingo Wash Mojave Road to Boulder Highway LOMR revised the floodplain downstream of Desert Inn Road. A HECRAS model was prepared in support of the LOMR request. This is considered the "effective" hydraulic model for the Flamingo Wash between Desert Inn Road and Boulder Highway. The HECRAS model prepared for this CLOMR ties into this model at Desert Inn Road. Relevant excerpts from the Flamingo Wash Mojave Road to Boulder Highway LOMR are provided in Appendix B.3 and Appendix E (CD ROM) including the workmap and HECRAS output.

3.0 HYDRAULIC MODELS

3.1 Effective Hydraulic Models

There are three hydraulic models that represent the "effective" hydraulic data for the study reach:

1) The Flamingo Wash FIS Restudy HEC-2 model from Eastern Avenue to Las Vegas Boulevard;
2) The Flamingo Wash at Spencer Street LOMR Post-Project Conditions HECRAS model; and,
3) The Flamingo Wash Mojave Road to Boulder Highway LOMR Post-Project Conditions HECRAS model.

Models 2 and 3 were run using the mixed flow regime option in HECRAS. Model 1 was a subcritical run in HEC-2.

As discussed in the following section, the Proposed HECRAS model prepared for this CLOMR ties into Model 2 at the upstream end and Model 3 at the downstream end. Model 1, between Eastern Avenue and Desert Inn Road, will be superseded by the Proposed HECRAS supercritical model.

3.2 Proposed HECRAS Models

Figure 4 is a hydraulic workmap showing the effective and proposed Flood Zone A, and HECRAS cross-sections used in the Proposed HECRAS modeling. Topographic data on the workmap was developed from photographs flown in August 2003. The contour interval of the original mapping was 1 foot and 40:1 scale; however, for clarity, only the five foot index contours are shown on the workmap. Cross-section information in the golf course was developed from the 1 foot contour data. Cross-section information for the improved channel sections were developed from the Flamingo Wash improvement plans in Appendix D.

Two HECRAS models for the 100-year flood were prepared for the Proposed conditions analysis: 1) subcritical; and, 2) supercritical. The models are provided in Appendix C.1 and C.2, respectively, and on the enclosed CD ROM in Appendix D.

The subcritical model was prepared for the purpose of delineating the floodplain through the golf course between Spencer Street and Eastern Avenue. Through the golf course, the Flamingo Wash consists of a gravel bed channel with sparse cat tails and trees (see Figure 5). Flood flows exceed the banks of the gravel bed channel and inundate the grass fairways of the golf course. Manning's n values of 0.03 and 0.04 were used for the grass fairways and channel, respectively.

LEGEND

- PROPOSED FLOOD ZONE A
- EFFECTIVE FLOOD ZONE A
- EXISTING CULVERT
- STA 0+00.00 / 2323.22 — HEC-RAS CROSS-SECTION MARKER, STATION AND 100-YEAR BFE
- LIMITS OF FLAMINGO WASH DI TO SPENCER CLOMR STUDY
- (XXX) — X SECTION NUMBER IMPORTED FROM LOMR CASE NO 04-09-0166P
- (XXX) — X SECTION NUMBER IMPORTED FROM LOMR CASE NO 04-09-0167P

BENCHMARK

CLARK COUNTY BENCH MARK STATION 6C11 12SSE6. 2" DOME HEAD BRASS CAP REFERENCE MONUMENT IN TOP OF CURB, NORTHEAST CORNER OF DESERT INN RD. AND MOJAVE RD. NEAR THE PC OF DESERT INN RD. ELEVATION = 569.314 METERS (1867.82 FEET) NAVD 88.

CLARK COUNTY BENCH MARK STATION 8C11 13W4 1998. RIVET AND ROUND ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF EASTERN AVE. AND TWAIN AVE. NEAR THE PC OF EASTERN AVE. ELEVATION = 584.619 METERS (1918.04 FEET) NAVD 88.

CLARK COUNTY BENCH MARK STATION 7C11 14SSW6. RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF FLAMINGO RD. AND TAMARUS ST – ALGONQUIN DR. NEAR PC OF FLAMINGO RD. ELEVATION = 604.305 METERS (1982.62 FEET) NAVD 88.

N

NOTE

TOPOGRAPHY SHOWN WAS FLOWN BY TRI STATE SURVEYING ON AUGUST 5, 2003. FOR THE PURPOSES OF THE FLAMINGO WASH CLOMR REQUEST, THE TOPOGRAPHY SHOWN CAN BE CONSIDERED AS REPRESENTATIVE OF THE CURRENT CONDITIONS.

0 200 400 800

SCALE: 1" = 200'

DESERT INN ROAD
SPENCER STREET
COCHISE LN
PEUBLO WAY
EASTERN AVENUE
TOPAZ STREET
SAN MARTIN CT
EMERSON AVENUE
SEGO DRIVE
PECOS-MCLEOD
MCLEOD DR
TWAIN AVENUE
PACIFIC ST
OTTAWA DRIVE
TIOGA WY
MOHIGAN WAY
SPENCER ST
LAS VEGAS NATIONAL GOLF COURSE

TIE IN X-SECTION (620) STA: 2+23.47 1853.87
(630) STA: 4+44.5 1856.59
UPSTREAM LIMIT OF LOMR CASE NO 04-09-0166P
EXISTING 5 - 10' X 8' RCB
STA: 11+00 1863.30
(640) STA: 7+02.71 1860.87
STA: 14+72.60 1866.76
STA: 9+26 1858.44
STA: 16+44.83 1867.79
STA: 12+14.54 1864.72
STA: 19+03.46 1869.70
SINGLE SPAN BRIDGE
STA: 21+37.68 1874.70
STA: 29+21.88 1882.43
STA: 31+00.84 1884.38
STA: 24+32.30 1876.88
STA: 27+02.87 1880.03
VAN BUSKIRK CHANNEL TWO - 8'X8' RCB
STA: 34+00 1887.80
STA: 36+00 1889.75
STA: 38+00 1891.96
STA: 39+81.76 1892.75
STA: 42+00 1893.64
STA: 43+50 1895.24
STA: 45+12.54 1896.53
STA: 47+72.04 1898.60
STA: 51+86.67 1901.98
STA: 52+79.92 1903.83
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
STA: 50+12.88 1900.55
STA: 54+45.78 1904.81
STA: 56+48.82 1908.93
EXISTING 5-10' X 8' RCB
STA: 57+90 1911.59
STA: 57+37.74 1910.88
STA: 59+05 1916.49
STA: 61+00 1918.34
PROPOSED 22'X8' RCB
STA: 64+69 1920.74
PROPOSED 3-20'X8' RCB 1-20X8.5' RCB
STA: 65+77 1922.06
STA: 67+36 1922.96
STA: 70+00 1923.02
STA: 72+00 1925.32
STA: 74+00 1927.14
STA: 76+00 1927.45
STA: 78+00 1929.88
STA: 80+00 1931.73
STA: 82+00 1931.73
DOWNSTREAM LIMIT OF LOMR CASE NO 04-09-0167P
(20) STA:86+87.78 1933.54
(24) STA:88+37.78 1937.64
(25) STA:88+07.78 1935.21
TIE IN X-SECTION (10) STA:83+20 1932.43

CLARK COUNTY, NEVADA
DEPARTMENT OF PUBLIC WORKS

FLAMINGO WASH

SPENCER STREET TO DESERT INN ROAD

HYDRAULIC WORKMAP

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Volce: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

FIGURE 4



Figure 5. Flamingo Wash through Las Vegas National Golf Course

Flood flows through the golf course are conveyed in the subcritical flow regime. The subcritical Proposed model ties in at cross-section 10 of the Flamingo Wash at Spencer Street LOMR (Post Project) model (see Figure 4).

Four new culverts (3:20' x 8' RCB and 1:20' x 8.5' RCB) are proposed at Tioga Way and one additional culvert is proposed at Flamingo Wash (22' x 8' RCB). A backwater will be present under Proposed conditions upstream of the Tioga Way and Eastern Avenue culverts. The backwater at Eastern Avenue and Tioga Way is reduced from the current conditions because the new culverts provide significantly greater capacity than the existing culverts (see Figure 6). The existing 90" corrugated metal arch pipes (CMAP) under Tioga Way have capacity to convey approximately 2,500 cfs before flow overtops the road. Five 10' x 8' reinforced concrete boxes (RCBs) at Eastern Avenue have capacity to convey approximately 4,300 cfs before flow overtops the road. Flow overtopped Tioga Way and Eastern Avenue on July 8, 1999 during an event approximating a 100-year storm. The new culverts will prevent flow from overtopping the roadways.

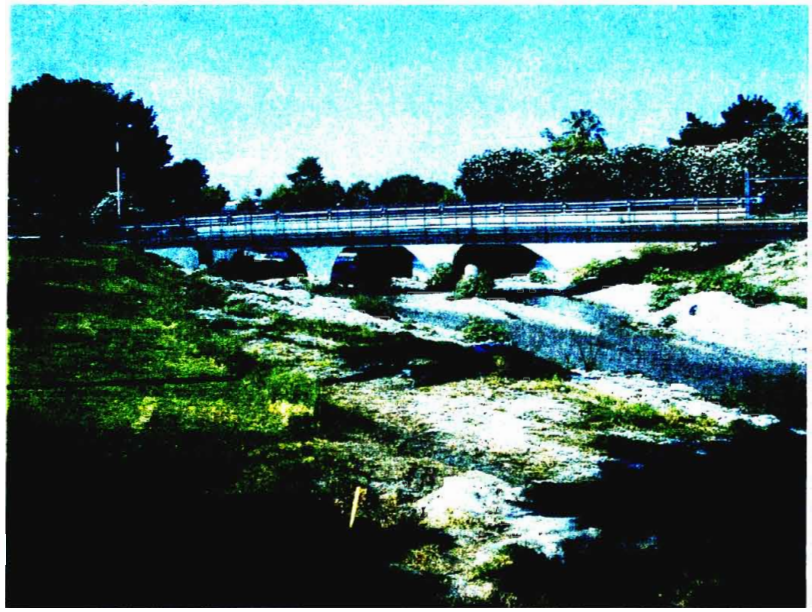


Figure 6. Existing CMP Culverts and Golf Cart Bridge at Tioga Way

The supercritical model was prepared for the proposed Flamingo Wash concrete channel improvements between Eastern Avenue and Desert Inn Road. The results of the model demonstrate that the 100-year flood will be contained within the channel. The supercritical Proposed model ties into cross-section 620 of the Flamingo Wash Mojave Road to Boulder Highway LOMR (Post-Project) model (see Figure 4).

It should be noted that the Flamingo Wash channel improvements, including Tioga Way and Eastern Avenue culverts, were designed to convey a "future" flow of 6,300 cfs from Spencer Street to the Van Buskirk confluence and 6,640 cfs from the Van Buskirk confluence to Desert Inn Road. The future flow is anticipated to be greater than the existing "effective" flow rate (5,500 cfs and 5,800 cfs) due to development in the upstream watershed. The hydraulic grade line (HGL) on the enclosed improvement plans is based on the future conditions flow rates. The concrete channel wall height was established by adding approximately 4 feet to the future HGL to account for freeboard and superelevation of the water surface.

4.0 CONCLUSION

This report presents the technical data in support of a CLOMR for the Flamingo Wash between Spencer Street to Desert Inn Road. These data included new hydraulic models to account for better topography through the golf course and proposed channel improvements and workmaps showing the revised floodplain boundaries. The results of the hydraulic models demonstrate that, if constructed as designed, the Tioga Way and Eastern Avenue structures will effectively pass flow under the roadways, and that the 100-year flood will be contained within the proposed Flamingo Wash channel improvements.

5.0 REFERENCES

1. Berger, 2003a. Request for Letter of Map Revision Flamingo Wash at Spencer Street. Prepared by THE Louis Berger Group, INC., for Clark County Regional Flood Control District, October 15, 2003.

2. Berger, 2003b. Request for Letter of Map Revision Flamingo Wash Mojave Road to Boulder Highway. Prepared by THE Louis Berger Group, INC., for Clark County Regional Flood Control District, October 15, 2003.

3. Design Manual, 1990. Hydrologic Criteria and Drainage Design Manual, prepared by: WRC Engineering, Inc., and updated by Montgomery Watson, for: Clark County Regional Flood Control District, Updated August 1999.

4. FIRM, 2002. Flood Insurance Rate Map Clark County, Nevada and Unincorporated Areas, Community Number 320003C, Panel Nos. 2190, 2557, and 2580 of 4090, Map Revised: September 27, 2002.

5. FIS, 1997. Flamingo Wash Flood Insurance Study Restudy, prepared by G.C. Wallace, Inc., for Clark County Regional Flood Control District, October 1997.

6. HEC, 2003. HECRAS. River Analysis System, Computer Program and Manuals, Version 3.1.1. U.S. Department of the Army Corps of Engineers, Hydrologic Engineering Center, Davis, CA.

FORMS

- Overview and Concurrence Form (MT-2 Form1)
- Riverine Hydrology and Hydraulics Form (MT-2 Form 2)
- Riverine Structure Form (MT-2 Form 3)
- Statement of Explanations

Appendix A

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
320003	Clark County Nevada and Incorporated Areas	NV	32003C	2190E	9/27/02
20003	Clark County Nevada and Incorporated Areas	NV	32003C	2557E	9/27/02

2. Flooding Source: Flamingo Wash

3. Project Name/Identifier: Flamingo Wash Improvements Spencer Street to Desert Inn

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

5. Basis for Request and Type of Revision:

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

☒ Physical Change ☐ Improved Methodology/Data

☐ Regulatory Floodway Revision ☐ Other (Attach Description)

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

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

Types of Flooding:	☒ Riverine	☐ Coastal	☐ Shallow Flooding (e.g., Zones AO and AH)
	☐ Alluvial fan	☐ Lakes	☐ Other (Attach Description)
Structures:	☒ Channelization	☐ Levee/Floodwall	☒ Bridge/Culvert
	☐ Dam	☐ Fill	☐ Other, Attach Description

C. REVIEW FEE

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

☒ No, Attach Explanation

Please see the FEMA Web site at http://www.fema.gov/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: Syndi J. Flippin-Dudley, Ph.D., P.E.	Company: The Louis Berger Group, Inc.	
Mailing Address: 500 East Amigo Court Suite 100 Las Vegas, NV 89119	Daytime Telephone No.: (702)-736-6632	Fax No.: (702)-736-0704
	E-Mail Address: sdudley@louisberger.com	
Signature of Requester (required): Syndi J. Flippin-Dudley		Date: 8/31/06

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: David Betley, P.E., Principal Engineer, Civil Engineering Division		Telephone No.: (702)-455-4808
Community Name: Clark County Unincorporated Areas	Community Official's Signature (required):	Date: ~~6/30/05~~ 9/6/06

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: Syndi J. Flippin-Dudley	License No.: 11070	Expiration Date: 6/30/07
Company Name: The Louis Berger Group, Inc.	Telephone No.: (702)-733-6632	Fax No.: (702)-736-0704
Signature: Syndi J. Flippin-Dudley		Date: 8/31/06

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)

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: Flamingo Wash
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	Downstream of Desert Inn Road	2+23.47 (620)	1853.87	1854.04
Upstream Limit	Downstream of Spencer Street	83+20 (10)	1932.43	1932.43

2. Hydraulic Method Used

Hydraulic Analysis 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:	Floodway File Name:
Corrected Effective Model*	Natural File Name: See Attached CD	Floodway File Name:
Existing or Pre-Project Conditions Model	Natural File Name:	Floodway File Name:
Revised or Post-Project Conditions Model	Natural File Name: See Attached CD	Floodway File Name:
Other - (attach description)	Natural File Name:	Floodway File Name:

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

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

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

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

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: Flamingo Wash
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: Flamingo Wash Improvements from Desert Inn to Spencer Street**

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

   Location of Structure: Flamingo Wash from Desert Inn Road to Spencer Street

   Downstream Limit/Cross Section: 11+00

   Upstream Limit/Cross Section: 57+90

2. **Name of Structure: Tioga Way Culvert**

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

   Location of Structure: Flamingo Wash @ Tioga Way

   Downstream Limit/Cross Section: 64+89

   Upstream Limit/Cross Section: 65+77

3. **Name of Structure: Eastern Avenue Culvert Addition**

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

   Location of Structure: Flamingo Wash @ Eastern Avenue

   Downstream Limit/Cross Section: 57+90

   Upstream Limit/Cross Section: 59+05

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

B. CHANNELIZATION

Flooding Source: Flamingo Wash

Name of Structure: Flamingo Wash from Desert Inn to Spencer Street

1. Accessory Structures

The channelization includes (check one):

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

2. Drawing Checklist

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

3. Hydraulic Considerations

The channel was designed to carry 6,300+ (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: Flamingo Wash

Name of Structure: Eastern Avenue Addition and Tioga Way Culverts

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): HECRAS
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

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

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

4. Sediment Transport Considerations

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

D. DAM

Flooding Source:

Name of Structure:

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

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

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2).
4. Does the submittal include debris/sediment yield analysis? ☐ Yes ☐ No

   If yes, then fill out Section F (Sediment Transport).
   If No, then attach your explanation for why debris/sediment analysis was not considered.
5. Does the Base Flood Elevation behind the dam or downstream of the dam change?

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

Stillwater Elevation Behind the Dam

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

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

E. LEVEE/FLOODWALL

1. System Elements

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

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

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

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

c. Structural Type (check one):

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

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

☐ Yes ☐ No

If Yes, by which agency?

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

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

2. Freeboard

a. The minimum freeboard provided above the BFE is:

Riverine

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

Coastal

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

E. LEVEE/FLOODWALL (CONTINUED)

2. Freeboard (continued)

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

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

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

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

3. Closures

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

If opening exists, list all closures:

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

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

Note: Geotechnical and geologic data

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

4. Embankment Protection

a. The maximum levee slope landside is:

b. The maximum levee slope floodside is:

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

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

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

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

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

E. LEVEE/FLOODWALL (CONTINUED)

4. Embankment Protection (continued)

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

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

Attach engineering analysis to support construction plans.

5. Embankment And Foundation Stability

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

☐ Overall height: Sta. ; height ft.

☐ Limiting foundation soil strength:

Sta. , depth to

strength ϕ = degrees, c = psf

slope: SS = (h) to (v)

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

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

c. Summary of stability analysis results:

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

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

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

If Yes, describe methodology used:

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

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

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

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

Attach engineering analysis to support construction plans.

E. LEVEE/FLOODWALL (CONTINUED)

6. Floodwall And Foundation Stability

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

☐ UBC (1988) or ☐ Other (specify):

b. Stability analysis submitted provides for:

☐ Overturning ☐ Sliding If not, explain:

c. Loading included in the analyses were:

☐ Lateral earth @ P_A = psf; P_p = psf

☐ Surcharge-Slope @ , ☐ surface psf

☐ Wind @ P_w = psf

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

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

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

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

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

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

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

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

e. Foundation bearing strength for each soil type:

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

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

Attach engineering analysis to support construction plans.

E. LEVEE/FLOODWALL (CONTINUED)

7. Settlement

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

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

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

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

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

Attach engineering analysis to support construction plans.

8. Interior Drainage

a. Specify size of each interior watershed:

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

b. Relationships Established

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

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

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

e. Which flooding conditions were analyzed?

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

If No for any of the above, attach explanation.

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

If No, attach explanation.

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

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

8. Interior Drainage (continued)

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

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

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

Will the operation be automatic? ☐ Yes ☐ No

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

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

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

9. Other Design Criteria

a. The following items have been addressed as stated:

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

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

Attach supporting documentation

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

Attach supporting documentation

d. Sediment Transport Considerations:

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

E. LEVEE/FLOODWALL (CONTINUED)

10. Operational Plan And Criteria

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

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

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

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

11. Maintenance Plan

    a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP Regulations? ☐ Yes ☐ No
    If No, please attach supporting documentation.

12. Operations and Maintenance Plan

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

F. SEDIMENT TRANSPORT

Flooding Source:

Name of Structure:

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

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

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

Sediment transport rate (percent concentration by volume)

Method used to estimate sediment transport:

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

Method used to estimate scour and/or deposition:

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

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

STATEMENTS OF EXPLANATION

1. **MT-2 Form 1, Page 2 of 2**
   Item C. Review Fee:

   The Clark County Regional Flood Control District's accounting procedures do not allow a check to be issued without an invoice. Please refer to the attached cover letter.

2. **MT-2 Form 3, Page 2 of 10**
   Item B.4 Channelization - Sediment Transport Considerations

   The concrete channel 100-year peak flow velocity is greater than 20 ft/s. It is anticipated that the channel will be self-cleaning due to high flow velocities.

3. **MT-2 Form 3, Page 2 of 10**
   Item C.4 Bridge/Culvert - Sediment Transport Considerations

   The 100-year peak flow velocities through the Tioga Way and Eastern Avenue culverts are approximately 5 ft/s and 13 ft/s, respectively. It is anticipated that the culverts will be self-cleaning due to high flow velocities.

Effective Hydrologic and Hydraulic Data

Appendix B

Flamingo Wash FIS Study

Appendix B.1

B.1.1 Excerpts from FIS Report

Flamingo Wash FIS Volume 1 of III

TECHNICAL SUPPORT DATA NOTEBOOK

For

Clark County, Nevada

(COMMUNITY NAME AND STATE)

FLOOD INSURANCE STUDY

SUBMITTED BY: G. C. Wallace, Inc.

Study Contractor

DATE SUBMITTED OCTOBER 1997

DRAFT

FLAMINGO WASH
FLOOD INSURANCE STUDY RESTUDY

CLARK COUNTY, NEVADA

550.032

OCTOBER 1997

TABLE 1
COMPARISON OF ALTERNATIVE 100-YEAR STORM SIMULATIONS FOR FLAMINGO WASH WATERSHED

Concentration Point	Description	Overall Storm			Central Storm			Adopted Discharge (cfs)
		Area (sq mi)	DARF	Peak Q (cfs)	Area (sq mi)	DARF	Peak Q (cfs)	
F8	Flamingo Wash at Rainbow Blvd.	37.94	0.72	3,874	3.38	0.92	1,310	3,900
F9	Flamingo Wash at Jones Blvd.	40.35	0.71	3,646	5.79	0.90	1,517	3,900
F14	Flamingo Wast at Decatur Blvd.	50.27	0.68	2,902	15.71	0.82	2,268	3,900
F15	Flamingo Wash at UPRR	51.59	0.68	2,921	17.03	0.80	2,366	3,900
F16	Flamingo Wash at I-15/Caesars Palace	52.11	0.68	2,931	17.55	0.80	2,445	3,900
F17	Flamingo Wash at Winnick Ave./Hughes Center	52.76	0.68	2,934	18.20	0.80	2,581	3,900
F17	Flamingo Wash at Flamingo/Tropicana Confluence	73.61	0.64	4,556	39.05	0.71	4,627	4,600
F18	Flamingo Wash at Spencer St.	77.79	0.64	5,151	43.23	0.71	5,496	5,500
F20B	Flamingo Wash at D/S Desert Inn Rd.	85.45	0.62	5,650	50.89	0.68	5,832	5,800
F22	Flamingo Wash at Boulder Hwy.	90.15	0.61	5,974	55.59	0.67	6,257	6,300
F23	Flamingo Wash at Nellis Blvd./Las Vegas Wash	92.07	0.61	6,098	57.51	0.67	6,411	6,400

the Flamingo Wash. Approximately 2,700 cfs will flow into Boulder Highway. Boulder Highway is sagged in this location and will allow the overflow to spillover back into the Flamingo Wash to the east. Note the revised floodplain in this area is increased.

After discussions with the CCRFCD, it was decided to designate the Special Flood Hazard Area by approximate methods (Zone A) because of the extent of existing development and the narrow width of the floodplain along the majority of the entire study area.

TABLE 3
HYDRAULIC ANALYSIS DISCHARGES
FLAMINGO WASH FIS RESTUDY
Clark County, Nevada

Reach	Section Numbers	100-Year Peak Flow Rates (cfs)
Rainbow Blvd. to Jones Blvd.	520 - 700	3,900
Jones Blvd. to Industrial Rd.	10 - 510	3,900
Imperial Palace to Spencer St.	10 - 50	5,500
	60 - 280	4,600
	290 - 560	3,900
Eastern Ave. to Las Vegas Wash	10 - 140	6,400
	150 - 440	6,300
	450 - 660	5,800
	670 - 810	5,500

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

4.1 Floodplain Boundaries

Floodplain boundaries for the approximate method areas were delineated on topographic maps with a scale of 1" = 400' and a contour interval of 4-feet. Spot elevations were plotted and used in areas requiring greater definition. The

B.1.2 FIS Restudy Workmap and HEC-2 Model

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
1020	1814.92	Rivet and square aluminum plate in top of curb, east side of Boulder Hwy, at north property line of 3745 Boulder Hwy, at projected centerline of Sandhill Rd.
1021	1804.74	Rivet and square aluminum plate in base of fire hydrant, east of Boulder Hwy, south of Dolhart St. and north of Flamingo Wash.
1022	1825.38	Rivet and square aluminum plate in top of curb, southeast corner of Desert Inn Rd. and Sandhill Rd. just east of wheel chair ramp.
1023	1895.32	Rivet and square aluminum plate in top of curb, northeast corner of Twain Ave. and Pecos-McLeod Interconnect near the pc of Pecos-McLeod interconnect.
1029	1889.46	Rivet and square aluminum plate in top of curb, southeast corner of Pecos-McLeod Interconnect and the bridge at the Flamingo Wash.

NOTES

MAP BASED ON 1"=400' TOPOGRAPHIC MAPPING PREPARED BY NEVADA AERIAL MAPPING FROM PHOTOGRAPHS TAKEN IN JANUARY 22, 1997.

VERTICAL CONTROL IS BASED ON THE NGVD 1929 HORIZONTAL CONTROL IS BASED ON NAD 1983. UTILIZING CLARK COUNTY MONUMENTS.

PANEL AFFECTS FIRMS 32003C2580 D & 32003C2190 D DATED AUGUST 16, 1995.

FLOODING SOURCE: FLAMINGO WASH

CONTOUR INTERVAL 4 FEET

FILE: FL3-CSE.DWG

CLARK COUNTY, NEVADA

NORTH

GRAPHIC SCALE

(IN FEET)
1 inch = 400 ft

JOINS PANEL FL4

1020
1814.92
CCBM 6C12 20N6

1022
1825.38
CCBM 6C12 18N4

1023
1895.32
CCBM 6C11 13E6

1028
1889.46
CCBM 6C01 13N6

SFHA TO BE ADDED

SFHA TO BE REMOVED

SFHA TO REMAIN

LEGEND

- REVISED APPROXIMATE 100-YEAR FLOODPLAIN BOUNDARY
- EXISTING APPROXIMATE 100-YEAR FLOODPLAIN BOUNDARY
- APPROXIMATE 100-YEAR FLOODPLAIN BOUNDARY TIE-IN
- (80) CROSS-SECTION
- ELEVATION REFERENCE MARK
- SFHA SPECIAL FLOOD HAZARD AREA

PANEL INDEX

FL1 FL2 FL3 FL4

REV	DATE	DESCRIPTION

RECOMMENDED

JERRY E. PRUITT

FIS NO. DATE 11962

G.C. WALLACE, INC.
Engineering/Architecture
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89102

FLAMINGO WASH
FIS RE-STUDY
EASTERN AVE. TO US 95
CROSS SECTION EXHIBIT

SHEET FL3 OF 4 SHEETS

590.032
PLOTTED: November 17, 1997 - FL3-CSE.DWG

APPROXIMATE METHOD
HEC-2 MODEL ANALYSIS
EASTERN AVE. TO LAS VEGAS WASH REACH

This reach from Eastern Avenue to Las Vegas Wash was flown as part of this project. Therefore, topography was generated. The starting water surface elevation was computed using normal depth. The subcritial run was used to determine the floodplain delineation for this reach.

A supplemental HEC-2 model analysis was performed to estimate the limits of flooding between Desert Inn Road and Mojave Road using a supercritical run. This reach is completely concrete lined as demonstrated by the photographs. The starting water surface elevation was computed using critical depth.

* ELEVATIONS BASED ON NGVD 1929
ADD 2.26 FT FOR COMPARIBLE
NAVD 1988 ELEVATION

```
*****************************************
*  HEC-2 WATER SURFACE PROFILES         *
*                                       *
*  Version  4.6.2;  May 1991            *
*                                       *
*  RUN DATE   06OCT97    TIME  11:11:00 *
*****************************************
```


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


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

THIS RUN EXECUTED 06OCT97 11:11:01

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

```
T1      550.032
T2      FLAMINGO WASH FIS RESTUDY
T3      FLOODPLAIN DELINEATION
T4      FILES: BASE3-4.DWG, BASE3-4.01
T4      STARTING WSE = NORMAL DEPTH
T4      SUBCRITICAL RUN

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                             0.004                         6400      1705

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     -1                 -1                                      -2        -6

VARIABLE CODES FOR SUMMARY PRINTOUT

    100                 150

NC     0.03      0.03      0.03      0.1       0.3
X1       10        18      1000   1126.64
GR     1710      1000   1710.07   1002.71      1710   1003.06      1708   1012.39      1706   1021.7
GR     1704   1031.01      1702   1040.32   1701.54   1042.48   1700.33    1049.9   1700.55   1089.4
GR     1702   1095.84      1704   1104.89      1706   1114.24      1708   1123.66    1708.6   1126.64
GR     1710   1152.79   1710.41   1160.64      1712   1288.04

NC     0.03      0.03      0.03
X1       20        17   1182.02   1322.04    483.22    497.54    488.53
GR     1712      1000   1711.97   1182.02      1710   1190.86      1708   1199.75      1706   1208.56
GR     1704   1217.31   1703.12   1221.12   1703.59   1267.53      1704   1269.51      1706   1279.06
GR     1708    1288.6      1710   1298.12   1711.95   1307.42      1712    1307.8   1713.45   1322.04
GR   1712.7   1343.21    1713.7   1500.75

NC     0.03      0.03      0.03
X1       30        16   1053.23   1154.72    494.86    503.84    498.03
GR   1714.3      1000      1714   1012.26   1712.41   1053.23      1712   1055.19      1710   1064.74
GR     1708   1074.25      1706   1083.68   1705.86   1084.33   1705.85   1124.71      1706   1125.31
GR     1708   1133.14      1710   1140.87      1712   1148.55   1713.61   1154.72      1714   1175.89
GR   1715.8   1316.21

NC     0.03      0.03      0.03
       40        20    1146.2   1238.76    500.14    481.13    491.57
GR     1718      1000   1717.12   1101.53      1716    1146.2   1715.85   1152.03      1714   1159.77
GR     1712   1168.18      1710   1176.59      1708   1185.01   1707.75   1186.07   1707.38   1196.73
GR   1707.2   1216.01      1708   1218.57      1710   1225.27      1712   1231.97      1714   1238.76
```

GR	1714.1	1239.39	1716	1283.03	1716.17	1284.32	1716.77	1316.26	1718	1327.96

[redacted]	0.03	0.03	0.03							
C1	50	21	1066.67	1235.55	334.29	277.63	305.6			
SR	1723	1000	1722	1020.92	1721.42	1037.11	1720.56	1066.67	1720	1068.75
SR	1718	1076.4	1716	1084.26	1714	1092.32	1712	1100.45	1710	1108.62
SR	1708.9	1112.98	1709	1152.91	1710	1158.04	1712	1168.25	1714	1178.41
SR	1714.6	1181.82	1716	1195.46	1717.14	1207.5	1718	1214.02	1720	1235.55
SR	1720	1249.78								
NC	0.03	0.03	0.03							
C1	60	31	1120.14	1223.41	499.62	502.1	499.27			
SR	1720	1000	1718.36	1013.98	1718	1035.26	1717.58	1105.92	1718	1119.77
SR	1718	1120.01	1718.01	1120.14	1716	1128.57	1714	1136.9	1712	1145.29
SR	1710.1	1153.14	1710	1183.08	1709.94	1194.72	1710	1194.99	1712	1203.55
SR	1714	1212.13	1716	1220.71	1716.63	1223.41	1717.35	1277.47	1718.05	1286.74
SR	1718	1287.48	1718	1296.95	1717.48	1310.09	1718	1314.87	1718.69	1321.04
SR	1718	1336.07	1717.62	1343.02	1718	1362.12	1718.73	1381.28	1718.4	1394.59
SR	1720	1400.91								
NC	0.03	0.03	0.03							
C1	70	17	1084.1	1197.56	493.27	498.08	497.95			
SR	1723.3	1000	1723.69	1084.1	1722	1090.63	1720	1098.35	1718	1106.05
SR	1716	1113.75	1714	1121.45	1712	1129.17	1712	1129.24	1712	1129.36
SR	1712.6	1169.17	1714	1174.59	1716	1182.8	1718	1191.03	1719.59	1197.56
SR	1720	1230.27	1720.07	1233.61						
N	0.03	0.03	0.03							
	80	18	1147.29	1269.91	455.76	481.96	470.68			
	1726	1000	1725.4	1007.66	1724.07	1115.85	1724	1116.84	1723.19	1147.29
SR	1722	1152.02	1720	1159.92	1718	1167.78	1716	1175.62	1714.38	1181.94
SR	1714.9	1227.68	1716	1232.07	1718	1240.31	1720	1248.54	1722	1256.76
SR	1724	1264.99	1725.21	1269.91	1724.85	1287.78				
NC	0.03	0.03	0.03							
C1	90	20	1056.45	1168.18	495.14	465.14	482.19			
SR	1726	1000	1725.75	1009.38	1724.96	1031.29	1724.64	1056.45	1724	1058.67
SR	1722	1065.64	1720	1072.62	1718	1079.6	1716	1086.6	1715.19	1089.42
SR	1716	1103.03	1717.15	1124.51	1718	1128.2	1720	1136.83	1722	1145.32
SR	1724	1153.73	1726	1162.18	1727.42	1168.18	1728	1186.62	1728.02	1187.5
NC	0.03	0.03	0.03							
C1	100	25	1022.27	1132.68	289.86	299.75	295.13			
SR	1732	1000	1732	1001	1732.08	1001.22	1730	1011.88	1728	1022.27
SR	1727.6	1024.44	1726	1027.45	1724	1031.2	1722	1034.85	1720	1038.4
SR	1718.7	1040.93	1719.04	1047.62	1718.99	1102.02	1719.04	1118.34	1720	1119.65
SR	1722	1123	1724	1126.5	1726	1130.15	1727.26	1132.68	1727.45	1139.16
SR	1728	1142.93	1728.68	1147.57	1730	1157.98	1730.09	1158.86	1730	1162.48
NC	0.03	0.03	0.015							
C1	110	21	1022.67	1137.41	25.99	26.18	25.69			
SR	1732.5	1000	1732	1002.64	1730	1012.69	1728	1022.67	1727.56	1024.87
SP	1726	1027.45	1724	1030.85	1722	1034.42	1720.5	1036.37	1720.5	1099.9
[redacted]	720.5	1122.88	1720.5	1123.19	1720.5	1123.29	1722	1126.96	1724	1130.74
SR	1726	1134.53	1727.52	1137.41	1728	1142.14	1729.05	1148.68	1730	1154.29

P	1731.7	1164.66								
[redacted]										
[redacted]	0.03	0.03	0.015							
X1	120	7	1029.49	1136.49	88.77	93.13	90.11			
X3	10			1029.49	1730	1136.49	1730			
GR	1730.3	1000	1730	1006.09	1728	1029.49	1721.9	1029.49	1721.9	1136.49
GR	1728	1136.49	1728	1146.34						
NC	0.02	0.02	0.015							
SB	0.9	1.56	2.6	145	107	7	500	0	1722.53	1721.9
X1	130	8	1035.81	1142.81	120.77	117.86	119.69			
X2			1	1727.53	1731.43			1.33		
X3	10			1035.81	1731	1142.81	1731			
GR	1728.6	1000	1728.71	1018.83	1728	1035.81	1722.53	1035.81	1722.53	1142.81
GR	1728	1142.81	1728.87	1157.29	1728.69	1174.35				
NC	0.02	0.02	0.015							
X1	140	13	1149.72	1265.63	64.74	64.09	64.14			
X3	10			1149.72	1730	1265.63	1730			
GR	1729.5	1000	1728.41	1149.72	1728	1150.76	1726	1155.81	1724	1161.07
GR	1722.8	1165.81	1722.6	1250.59	1724	1254.37	1726	1259.66	1728	1264.74
GR	1728.3	1265.63	1728.8	1316.23	1728.18	1343.83				
NC	0.02	0.02	0.02							
QT	1	6300								
X1	150	18	1018.39	1152.46	491.39	488.88	489.94			
G	1732	1000	1731.69	1018.39	1730	1024.12	1728	1030.88	1726.48	1035.9
[redacted]	1726.1	1066.83	1726	1067.43	1724.2	1074.87	1724	1083.96	1723.53	1107.26
	1724	1108.86	1725.23	1113.02	1726	1135.88	1725.99	1136.31	1728	1142.71
GR	1730	1149.03	1731.09	1152.46	1731.43	1169.72				
NC	0.02	0.02	0.02							
X1	160	22	1042.38	1195.86	501.43	502.7	501.51			
GR	1734	1000	1734.52	1002.52	1734	1015.73	1733.26	1042.38	1732	1045.87
GR	1730	1051.46	1728	1057.16	1727.61	1058.29	1727.59	1089.49	1726.47	1097.9
GR	1726	1115.47	1725.61	1127.39	1726	1131.14	1727.46	1145.07	1728	1162.54
GR	1728.2	1169.98	1730	1173.77	1732	1178.13	1733.38	1181.15	1734	1195.86
GR	1734.2	1200.57	1735.81	1203.67						
NC	0.02	0.02	0.02							
X1	170	20	1042.95	1183.42	486.67	487.82	487.26			
GR	1734.6	1000	1735.53	1003.78	1734.5	1042.95	1734	1044.42	1732	1050.31
GR	1730	1056.26	1728.7	1060.18	1728.42	1095.07	1728	1097.52	1727.66	1099.65
GR	1727.3	1123.92	1728	1128.46	1729.82	1140.57	1730	1146.01	1730.66	1167.12
GR	1732	1172.19	1734	1179.55	1735.09	1183.42	1735.4	1201.5	1736	1203.33
NC	0.02	0.02	0.02							
X1	180	19	1037.9	1178.31	490.6	492.37	491.83			
GR	1738.4	1000	1738	1017.86	1736.58	1037.9	1736	1039.45	1734	1044.91
GR	1732	1050.47	1730.22	1055.47	1730.42	1062.62	1730	1097.25	1729.6	1099.77
GR	1730	1119.42	1730.04	1121.41	1731.15	1155.75	1732	1158.51	1734	1165.22
GR	1736	1172.22	1737.72	1178.31	1738	1187.42	1738.27	1197.86		
[redacted]										

[redacted]	0.02	0.02	0.02							
X[redacted]	190	22	1000	1121.49	499.18	497.1	497.74			
GR	1743.5	950.33	1742.46	998.69	1742	1000	1740	1005.6	1738	1011
GR	1736	1016.29	1735.23	1018.97	1734.5	1040.24	1734	1042.17	1732.79	1046.61
GR	1732.9	1078.44	1734	1082	1734.71	1084.43	1736	1101.82	1736.3	1105.68
GR	1738	1110.9	1740	1116.85	1741.63	1121.49	1742	1135.5	1742.24	1142.58
GR	1742	1143.57	1741.64	1144.92						
NC	0.02	0.02	0.02							
X1	200	22	1000	1122.87	494.16	496.56	495.37			
GR	1748.8	956.38	1748	992.25	1747.84	995.39	1746	1000	1744	1004.98
GR	1742	1009.94	1740	1014.87	1738	1019.77	1737.9	1020.02	1737.52	1027.73
GR	1736.7	1037.66	1736.7	1061.55	1737.76	1074.9	1738	1083.37	1738.49	1103
GR	1740	1106.13	1742	1110.31	1744	1114.5	1746	1118.68	1748	1122.87
GR	1748.4	1123.7	1748.36	1144.3						
NC	0.02	0.02	0.02							
X1	210	25	1000	1113.22	499.74	500.05	500.38			
GR	1752	951.7	1752	1000	1750	1005.42	1748	1010.97	1746	1016.52
GR	1744	1022.03	1742	1027.65	1741.66	1028.59	1740.5	1037.62	1740	1039.36
GR	1738	1047.1	1737.52	1048.91	1737.8	1061.69	1738	1062.13	1740	1067.4
GR	1741.2	1071.1	1742	1079.44	1742.89	1088.66	1744	1091.26	1746	1095.98
GR	1748	1100.7	1750	1105.41	1752	1110.13	1753.31	1113.22	1753.21	1141.88
NC	0.02	0.02	0.02							
[redacted]	220	26	1041.51	1160.79	464.69	489.34	476.72			
	1759.7	1000	1759.83	1041.51	1758	1045.1	1756	1049.03	1754	1052.95
	1752	1056.86	1750	1060.75	1748	1064.59	1747.25	1066.03	1746.15	1087.16
GR	1746	1087.54	1744.18	1092.6	1744	1106.98	1744	1109.94	1743.96	1110.03
GR	1745.8	1113.56	1746	1116.26	1748	1139.68	1747.99	1139.83	1750	1144.13
GR	1752	1148.41	1754	1152.7	1756	1156.99	1757.77	1160.79	1758	1173.7
GR	1758.3	1199.32								
NC	0.02	0.02	0.02							
X1	230	28	1034.85	1169.03	490.46	498.91	494.76			
GR	1763.6	1000	1763.36	1034.85	1762	1040.25	1761.13	1043.65	1760.31	1056.95
GR	1760	1057.18	1758	1062.98	1756	1068.2	1754	1073.41	1753.53	1074.65
GR	1752.6	1090.81	1752	1093.04	1750.12	1100.45	1750.12	1113.46	1751.49	1119.83
GR	1752	1124.28	1753.26	1136.24	1754	1137.93	1756	1142.51	1758	1147.1
GR	1760	1151.69	1761.94	1156.15	1762	1156.82	1763.75	1168.26	1764	1169.03
GR	1766	1176.57	1766.64	1178.93	1766.86	1205.52				
NC	0.02	0.02	0.02							
X1	240	29	1026.08	1194.47	496.31	488.69	492			
GR	1774.8	1000	1774.34	1026.08	1774	1026.81	1772	1030.67	1770	1034.53
GR	1768	1038.38	1766	1042.19	1764	1045.88	1762	1049.77	1760	1053.67
GR	1758	1057.57	1757.43	1059.06	1757.79	1143.57	1758	1145.62	1758.74	1152.68
GR	1759.2	1157.83	1760	1159.46	1762	1163.99	1764	1168.57	1766	1173.21
GR	1768	1177.84	1770	1181.98	1772	1185.85	1774	1189.72	1776	1193.59
GR	1776.4	1194.47	1776.87	1267.84	1776	1276.18	1775.49	1280.88		

[redacted]

	0.02	0.02	0.015							
	250	24	1036.04	1171.85	57.45	58.44	58.6			
R	1775.4	1000	1775.23	1020.11	1774	1022.51	1772	1025.97	1770	1029.5
R	1768	1033.08	1766.5	1036.04	1766	1037.59	1764	1043.3	1762	1047.58
R	1760	1050.92	1758	1053.04	1758.34	1154.39	1760	1154.67	1762	1155.12
R	1764	1155.69	1766	1162.7	1766.67	1171.85	1768	1174.97	1770	1178.13
R	1772	1180.86	1774	1183.9	1776	1187.8	1776.99	1190.22		
C	0.02	0.02	0.015							
1	260	20	1033.31	1171.52	1	1	1			
R	1775.4	1000	1775.24	1020.49	1774	1022.9	1772	1026.35	1770	1029.81
R	1768	1033.31	1767.3	1042.07	1766	1048.18	1764	1050.85	1762	1051.85
R	1762	1154.61	1764	1155.13	1766	1155.64	1766.66	1171.52	1767.82	1173.98
R	1768	1174.12	1770	1176.75	1772	1179.4	1774	1183.08	1776	1187.74
C	0.02	0.02	0.015							
1	270	20	1008.92	1116.05	33.84	8.99	21.92			
R	1775.8	964	1775	1000	1774	1003.1	1772	1008.92	1772.04	1008.94
R	1770	1009.59	1768	1010.24	1766	1010.83	1764	1011.18	1762	1011.54
R	1762	1113.08	1762	1114.49	1762	1114.56	1764	1114.95	1766	1115.24
R	1768	1115.55	1770	1115.92	1771.04	1116.05	1772	1122.67	1774	1132.66
C	0.02	0.02	0.015							
1	280	18	1044.87	1151.21	1	1	1			
R	1775.8	1000	1775.02	1036.1	1774	1039.28	1772.37	1044.87	1772	1044.99
	1770	1045.65	1768	1046.31	1766	1047.17	1766	1103.57	1766.18	1146.5
	1766	1148.22	1766	1149.86	1768	1150.4	1770	1150.81	1772	1151.16
	1772.2	1151.21	1774.03	1160.57	1774	1160.65				
C	0.02	0.02	0.015							
1	290	7	1047.98	1151	14.68	12.7	14.95			
3	10			1047.98	1775	1150.91	1775			
R	1775.6	1000	1775.05	1036.02	1774	1047.98	1766.55	1047.98	1766.55	1151
R	1774	1151	1774.77	1160.59						
C	0.02	0.02	0.015							
B	0.9	1.56	2.6	106	103.02	5.02	588	0	1766.92	1766.55
1	300	8	1025.54	1128.56	102.54	98.55	102.75			
2			1	1772.92	1776.92			1.33		
3	10			1025.54	1775.19	1128.56	1775.56			
R	1774.8	1000	1775.19	1017.87	1775.12	1025.54	1766.92	1025.54	1766.92	1128.56
R	1775.1	1128.56	1775.56	1133.94	1775.35	1147.13				
C	0.02	0.02	0.015							
1	310	20	1022.98	1171.53	102.64	105.7	100.28			
R	1776.8	1000	1776	1016.17	1775.68	1022.98	1774	1028.26	1772	1034.5
R	1770	1040.77	1768.95	1044.12	1768	1047.77	1767.87	1048.18	1767.78	1072.14
R	1767.8	1131.12	1768	1132.45	1768.79	1137.38	1768.62	1147.75	1770	1152.28
R	1772	1158.91	1774	1165.6	1775.77	1171.53	1776	1177.59	1776.8	1198.8

	0.02	0.02	0.02							
	320	20	1022.11	1155.09	489.89	487.69	489.1			
R	1779.4	1000	1778.04	1022.01	1778	1022.11	1776	1030.73	1774	1039.26
R	1772	1047.79	1770.85	1052.67	1770.51	1061.45	1770	1063.83	1769.24	1067.59
R	1770	1104.76	1770.04	1107.08	1771.21	1112.55	1771.76	1130.75	1772	1131.67
R	1774	1139.29	1776	1146.67	1777.98	1153.84	1778	1155.09	1779.33	1191.2
C	0.02	0.02	0.02							
1	330	21	1027.28	1156.48	500.62	500.93	500.1			
R	1781	1000	1780.94	1027.28	1780	1031.83	1778	1041.53	1776	1051.25
R	1774	1060.96	1773.4	1063.9	1773.58	1078.46	1772	1084.27	1771.79	1085.02
R	1771.8	1109.74	1772	1110.11	1774	1116.37	1774.53	1118.12	1774.72	1134.82
R	1776	1138.9	1778	1145.34	1780	1151.87	1781.4	1156.48	1782	1173.24
R	1782.3	1189.26								
C	0.02	0.02	0.02							
1	340	19	1000	1116.66	496.19	495.64	496.21			
R	1783.7	907.67	1782.39	1000	1782	1002.25	1780	1013.68	1778	1025.11
R	1777	1030.73	1776.57	1040.34	1776	1043.31	1774.53	1051.15	1774.37	1080.76
R	1776	1084.3	1778	1088.43	1778.07	1088.55	1778.69	1101.43	1780	1107.4
R	1782	1116.66	1784	1125.98	1785.09	1131.04	1785.6	1161.06		
C	0.02	0.02	0.02							
1	350	22	1042.74	1155.28	460.23	420.27	436.71			
R	1786	1000	1786.37	1024.16	1787.1	1042.74	1786	1046.9	1784	1054.53
	1782	1062.22	1780	1069.93	1778	1077.61	1776.25	1084.32	1778.03	1100.93
	77.2	1111.98	1778	1120.32	1779.54	1134.41	1778.08	1145.13	1780	1148.5
	1782	1151.93	1784	1155.28	1784.22	1155.66	1785.25	1168.43	1786	1172.75
R	1787.2	1179.81	1787.3	1201.99						
C	0.02	0.02	0.02							
1	360	26	1014.07	1129.57	341.79	294.05	314.29			
3	10			1014.07	1792	1129.57	1792			
R	1798	1000	1796	1005.44	1794	1009.82	1792	1014.07	1790	1018.52
R	1788	1023.42	1787.25	1025.48	1786	1027.93	1784	1030.77	1782	1033.57
R	1781.8	1036.36	1781.62	1056.13	1780.02	1067.23	1780	1073	1779.67	1111.44
R	1780	1112.32	1782	1117.65	1784	1122.81	1786	1127.74	1786.74	1129.57
R	1786.9	1190.42	1786.92	1217.35	1788	1239.83	1788.97	1260.98	1789.6	1274.74
R	1790	1319.61								
C	0.02	0.02	0.02							
B		1.56	2.6	150	80		943	1.5	1781.68	1779.67
1	370	26	1019.93	1180.43	188.4	272.56	232.15			
2			1	1791.68	1803.16					
3	10			1019.93	1800	1180.43	1800			
R	1801.2	1000	1800	1006.14	1798	1012.48	1796	1019.93	1794	1026.84
R	1792	1033.63	1790	1039.5	1788	1044.33	1787.04	1047.52	1786	1050.99
R	1784	1063.28	1782.66	1069.39	1782	1116.66	1781.68	1141.49	1782	1142.19
R	1784	1147.19	1786	1151.46	1787.43	1154.02	1788	1156.17	1790	1161.17
R	1792	1166.33	1794	1173	1796	1180.43	1798	1186.39	1800	1192.83
R	1800.7	1196.96								

	0.03	0.03	0.02							
	380	14	1091.25	1151.34	174.12	176.08	170.96			
X3	10			1091.25	1794	1151.34	1794			
GR	1792	1090.66	1792.75	1091.25	1792	1091.78	1790	1093.21	1788	1094.63
GR	1786	1096.06	1785.68	1096.29	1785.8	1149.56	1786	1149.61	1788	1150.11
GR	1790	1150.6	1792	1151.08	1793.07	1151.34	1794	1227.86		
NC	0.03	0.03	0.02							
X1	390	21	1045.15	1103.45	420.9	420.21	420.9			
X3	10			1045.15	1797	1103.45	1797			
GR	1792.6	1000	1793.3	1031.19	1793.78	1040.57	1794	1041.52	1794.81	1045.15
GR	1794	1045.61	1792	1046.74	1790	1047.86	1788	1049.03	1787.41	1049.38
GR	1787.2	1074.16	1787.54	1100.36	1788	1100.54	1790	1101.34	1792	1102.12
GR	1794	1102.9	1795.44	1103.45	1795.23	1128.39	1795.21	1144.16	1796	1147.04
GR	1797.3	1153.05								
NC	0.03	0.03	0.02							
X1	400	18	1042.29	1103.68	216.05	217.6	216.12			
X3	10			1042.29	1797	1103.68	1797			
GR	1795.3	1000	1795.77	1024.49	1795.76	1038.23	1796	1040.26	1796.25	1042.29
GR	1796	1042.47	1794	1043.62	1792	1044.73	1790	1045.83	1789.06	1046.34
GR	1788.6	1075.55	1788.96	1100.77	1790	1101.12	1792	1101.81	1794	1102.54
GR	1796	1103.31	1796.96	1103.68	1796.49	1128.41				
NC	0.03	0.03	0.02							
X1	410	21	1041.49	1100.98	236.79	212.87	222.64			
	1799	1000	1799.04	1002.09	1799.01	1019.84	1798	1026.7	1797.57	1029.5
	1797.2	1041.49	1796	1044.75	1794	1049.87	1792	1054.82	1790	1059.57
GR	1789.3	1061.07	1789.8	1078.69	1790	1092.24	1790.1	1099.54	1792	1099.88
GR	1794	1100.24	1796	1100.6	1798	1100.94	1798.24	1100.98	1798.57	1108.1
GR	1799.4	1170.81								
NC	0.03	0.03	0.02							
X1	420	24	1148.62	1204.8	228.48	213.43	218.15			
GR	1805.1	1000	1804.85	1087.59	1804.56	1107.49	1804	1110.27	1802	1120.11
GR	1800	1129.91	1799.62	1132.29	1798.49	1148.62	1798	1150.2	1796	1155.64
GR	1794	1161.15	1792	1166.99	1790.86	1170.59	1791.29	1186.61	1790.88	1202.56
GR	1792	1202.83	1794	1203.37	1796	1203.9	1798	1204.44	1799.34	1204.8
GR	1800	1213.14	1800	1213.21	1800.65	1276.28	1800.8	1276.28		
NC	0.03	0.03	0.015							
X1	430	6	1034.79	1072.54	228.08	218.61	221.27			
X3	10			1034.79	1805	1072.54	1805			
GR	1804.5	1000	1804.31	1034.79	1793.29	1034.79	1793.29	1072.54	1803.82	1072.54
GR	1803.7	1113.05								
NC	0.03	0.03	0.015							
SB	0.9	1.56	2.6	78	37.75	1.75	246	0	1794.3	1793.29
X1	440	9	1048.13	1085.88	183.21	206.01	197.38			
X2			1	1801.3	1802.38			1.33		
X3	10			1048.13	1805	1085.88	1805			
	1804	1000	1803.68	1007.43	1803.75	1048.13	1794.3	1048.13	1794.3	1085.88
	1803.7	1085.88	1803.91	1101.01	1804	1103.62	1805.3	1113.11		

	.025	0.025	0.04							
	1	5800								
1	450	23	1056.87	1133.42	163.22	162.13	163.47			
3	10			1056.87	1809	1133.42	1809			
R	1804	1000	1804.07	1006.32	1804.32	1034.41	1804.73	1043.05	1804.96	1056.87
R	1804	1058.72	1802	1062.07	1800	1065.72	1798	1069.89	1796	1074.12
R	1795.5	1075.14	1796	1079.17	1797.92	1096.15	1798	1097.82	1799.19	1110.76
R	1800	1121.55	1802	1125.68	1804	1129.41	1806	1133.42	1806.22	1133.91
R	1806.3	1148.02	1806.93	1155.61	1806.39	1170.62				
C	0.025	0.025	0.04							
1	460	23	1048.18	1141.84	281.81	289.57	285.08			
3	10			1048.18	1810	1141.84	1810			
R	1808	1000	1808.02	1003.22	1808	1005.04	1807.55	1048.18	1806	1052.89
R	1804	1059.32	1802.11	1065.59	1802	1067.54	1800.57	1088.15	1800	1090.66
R	1798	1099.31	1797.57	1101.27	1797.83	1115.39	1798	1115.66	1800	1118.79
R	1802	1121.96	1804	1125.23	1804.77	1126.62	1805.59	1139.81	1806	1140.19
R	1808.4	1141.84	1808	1142.64	1808	1161.75				
C	0.025	0.025	0.04							
1	470	20	1035.45	1104.62	277.36	272.97	275.07			
3	10			1035.45	1812	1104.62	1812			
R	1810.7	1000	1810.44	1019.05	1811.3	1035.45	1810	1039.08	1808	1044.69
R	1806	1050.13	1804	1055.32	1802	1061.49	1800.02	1066.39	1800	1067.21
R	1799.3	1081.38	1800	1082.49	1802	1085.74	1804	1089.17	1806	1092.65
	06.1	1092.79	1808	1096.72	1810	1100.89	1810.59	1104.62	1810.87	1120.75
	0.025	0.025	0.04							
D		1.56	2.6	100	20		288	2	1799.67	1799.29
1	480	23	1049.96	1121.92	29.43	28.85	29.16			
2			1	1808	1811.3					
3	10			1049.96	1815	1121.92	1815			
R	1810.8	1000	1810.29	1022.32	1810.42	1043.96	1811.06	1049.96	1810	1052.71
R	1808	1057.64	1806	1063.42	1804	1071.44	1802	1076.07	1800.34	1079.25
R	1800	1088.82	1799.67	1097.89	1800	1098.19	1802	1100.01	1804	1101.93
R	1806	1109.03	1808	1115.05	1810	1119.54	1810.67	1121.92	1811.24	1130.7
R	1810	1145.14	1809.57	1148.54	1809.64	1162.76				
C	0.025	0.025	0.04							
1	490	27	1050.08	1127.64	421.17	376.41	404.91			
3	10			1050	1816	1127.64	1816			
R	1816	1000	1816.02	1001.56	1814.9	1019.89	1814.74	1038.47	1815.04	1050.08
R	1814	1052.5	1812	1057.09	1810	1061.66	1808	1066.16	1806	1070.64
R	1804	1075.1	1803.66	1075.85	1804	1083.12	1804.15	1088.63	1806	1092.46
R	1808	1096.8	1810	1101.52	1810.26	1101.82	1810	1113.29	1809.88	1118.54
R	1810	1119.08	1812	1125.39	1812.71	1127.64	1812.65	1132.54	1812.36	1149.58
R	1812.4	1162.71	1812.58	1182.47						

	0.025	0.025	0.04							
	500	27	1035.57	1117.1	475.67	455.34	467.9			
3	10			1035.57	1821	1117.1	1821			
R	1820.6	1000	1820.49	1017.79	1820	1035.57	1820.01	1036.35	1818	1038.99
R	1816	1041.72	1814	1044.53	1812	1047.45	1816	1050.47	1808	1053.53
R	1807.5	1054.17	1808	1059.53	1808.27	1062.4	1810	1077.16	1811.11	1085.69
R	1812	1088.38	1814	1094.42	1816	1100.48	1817.15	1103.98	1818	1112.84
R	1818.4	1117.1	1818	1130.34	1817.52	1146.76	1817.56	1162.65	1817.78	1176.1
R	1818	1181.93	1818.33	1189.71						
C	0.02	0.02	0.03							
1	510	21	1051.63	1118	410.79	403.61	413.47			
R	1822.7	1000	1822	1014.17	1821.1	1051.63	1820	1053.73	1818	1057.54
R	1816	1061.35	1814	1065.16	1812	1068.96	1811.08	1070.77	1810.29	1084.94
R	1812	1091.3	1814	1098.08	1816	1104.27	1818	1110.29	1820	1116.14
R	1820.6	1118	1821.24	1184.8	1821.07	1201.95	1821.84	1211.83	1822	1218.61
R	1822.5	1218.61								
C	0.02	0.02	0.03							
1	520	29	1020.76	1156.45	494.67	471.93	477.37			
R	1830.9	1000	1830	1005.42	1829.57	1007.86	1828.53	1020.76	1828	1022.81
R	1826	1030.61	1824	1038.4	1822	1046.19	1820	1053.98	1818.67	1059.18
R	1818.1	1072.9	1818	1073.42	1816	1079.92	1814.82	1084.01	1816	1106.79
R	1816.3	1112.44	1817.17	1120.26	1818	1123.13	1820	1130.03	1822	1136.92
R	1824	1143.81	1825.52	1149.11	1826	1150.07	1828	1153.82	1829.41	1156.45
	1828	1169.03	1830	1185.2	1832	1235.46	1832.56	1257.15		
	0.02	0.02	0.03							
1	530	25	1016.88	1152.68	371.54	424.3	399.2			
R	1832	1000	1831.88	1004.01	1831.69	1016.88	1830	1021.18	1828	1026.26
R	1826	1031.34	1824	1036.37	1822.35	1040.5	1822.35	1059.95	1822	1060.65
R	1820	1064.77	1818	1068.85	1817.83	1069.21	1817.62	1090.03	1818	1090.71
R	1820	1093.58	1822	1096.4	1823.81	1099.05	1824	1102.34	1826	1121.49
R	1828	1130.45	1828.88	1133.79	1830	1143.91	1830.93	1152.68	1831.19	1159.85
C	0.02	0.02	0.03							
1	540	26	1018.16	1117.46	460.35	522.62	489.72			
R	1834.9	1000	1834.9	1018.16	1834	1020.8	1832	1026.45	1830	1031.95
R	1828	1037.42	1827.86	1037.75	1828	1041.19	1828.5	1054.97	1828	1055.74
R	1826	1058.87	1824	1062.02	1823.45	1062.88	1823.47	1092.33	1824	1093.02
R	1826	1095.58	1828	1098.1	1828.7	1098.97	1828.48	1106.52	1830	1108.88
R	1832	1111.99	1834	1115.1	1835.51	1117.46	1836	1133.36	1836.3	1144.44
R	1836.7	1152.23								
C	0.02	0.02	0.03							
1	550	28	1021.09	1124.94	438.1	474.94	456.26			
R	1840.1	1000	1840	1001.92	1839.99	1006.32	1839.32	1021.09	1838	1024.57
R	1836	1029.84	1833.93	1035.32	1834	1035.34	1833.46	1054.03	1832	1056.65
R	1830	1060.26	1828	1063.9	1826.66	1066.34	1826.79	1083.14	1828	1085.42
R	1830	1089.19	1832	1092.91	1834.1	1096.67	1834	1097.34	1834	1105.63
R	1834	1111.84	1833.95	1114.36	1836	1119.24	1838	1124.12	1838.31	1124.94
	839.6	1150.68	1840	1160.26	1840.11	1162.86				

	0.02	0.02	0.03							
	560	32	1011.15	1130.99	332.03	327.26	330.24			
R	1847.8	1000	1846.27	1003.9	1846	1006.41	1845.43	1011.15	1844	1015.37
R	1842	1021.39	1840	1027.57	1838	1033.9	1836.1	1039.95	1836	1045.57
R	1835.9	1053.25	1834	1056.42	1832	1059.77	1830	1063.2	1829.01	1064.93
R	1828	1072.16	1827.85	1073.13	1828	1074.51	1828.64	1080.27	1830	1082.5
R	1832	1085.3	1834	1088.32	1836	1091.45	1836.23	1091.7	1836.22	1110.34
R	1838	1115.46	1840	1121.18	1842	1126.85	1843.5	1130.99	1844	1135.55
R	1845.8	1151.17	1845.91	1156.17						
C	0.02	0.02	0.03							
1	570	31	1064.51	1140.01	229.29	230.35	228.38			
R	1847.9	1000	1846	1056.21	1845.65	1064.51	1844	1065.7	1842	1067.16
R	1840	1068.62	1838	1070.08	1836	1071.54	1834	1072.98	1832	1073.78
R	1832	1074.63	1832	1075.05	1832	1084.35	1832	1091.24	1831.69	1120.28
R	1832	1120.51	1832	1120.78	1832	1121.95	1834	1124.47	1836	1126.81
R	1838	1129.15	1840	1131.49	1842	1133.85	1844	1136.23	1846	1138.69
R	1847	1140.01	1847.35	1156.32	1848	1159.82	1849.6	1168.44	1850	1170.12
R	1850.7	1172.42								
C	0.02	0.02	0.015							
1	580	30	1055.05	1128.8	1	1	1			
R	1847.7	1000	1847.49	1012.37	1846	1049.98	1845.83	1055.05	1844	1056.21
R	1842	1057.48	1840	1058.71	1838	1059.87	1836	1060.93	1834	1061.78
R	1834	1062.46	1834	1063.07	1834	1063.47	1834	1064.19	1834	1080.22
	1834	1109.26	1834	1109.31	1834	1114.45	1836	1116.75	1838	1119.03
	1840	1121.3	1842	1123.52	1844	1125.65	1846	1127.71	1847.09	1128.8
	1847.5	1145.88	1848	1148.67	1849.67	1157.77	1850	1158.89	1851.05	1161.45
C	0.02	0.02	0.015							
1	590	11	1031.2	1085.04	16.02	16.7	15.77			
3	10			1031.2	1848	1085.04	1848			
R	1847.3	1000	1847.01	1010.93	1846.27	1031.2	1834.21	1031.2	1834.21	1085.04
R	1846.2	1085.04	1847.07	1099.88	1848	1120.18	1849.73	1131.49	1850	1132.09
R	1851.3	1134.18								
C	0.02	0.02	0.015							
B	0.9	1.56	2.6	60	53.84	3.84	400	0	1835.13	1834.21
1	600	15	1081.85	1135.69	93.41	94.92	93.51			
2			1	1843.13	1846.5			1.33		
3	10			1081.85	1848	1135.69	1848			
R	1851	1000	1850	1003.75	1848	1011.09	1847.6	1012.57	1847.64	1032.47
R	1848	1035.82	1849.27	1065.44	1848	1070.71	1847.2	1074.22	1846	1081.85
R	1835.1	1081.85	1835.13	1135.69	1847.56	1135.69	1847.68	1152.6	1848	1170.43
C	0.02	0.02	0.015							
1	610	20	1083.2	1136.14	230.78	201.73	215.38			
3	10			1061.48	1853	1207.54	1853			
R	1851.7	1000	1851.08	1029.96	1852	1046.46	1852.83	1061.48	1852.52	1068.39
R	1852	1080.06	1851.91	1083.2	1850	1085.83	1848	1088.59	1846	1091.36
R	1844	1094.17	1842.71	1095.99	1842.62	1124.12	1844	1126.53	1846	1130
	1848	1133.45	1849.56	1136.14	1850	1155.27	1852	1197.8	1852.45	1207.54

	0.02	0.02	0.015							
X1	620	20	1033.45	1086.27	223.64	202.43	212.31			
GR	1859.3	1000	1858	1007.7	1857.16	1012.48	1856	1018.28	1855.25	1022.06
GR	1855.4	1033.45	1854	1035.35	1852	1037.9	1850	1040.44	1848	1042.97
GR	1846	1045.49	1845.48	1046.14	1845.66	1075.97	1846	1076.49	1848	1079.51
GR	1850	1082.53	1852	1085.57	1852.46	1086.27	1854	1135.67	1855.53	1176.03
NC	0.02	0.02	0.015							
X1	630	18	1031	1084.55	229.09	213.86	221.03			
GR	1861.2	1000	1860	1004.03	1858.27	1009.63	1858	1010.62	1856	1018.67
GR	1855.9	1018.82	1855.06	1031	1854	1032.96	1852	1036.68	1850	1040.45
GR	1848.1	1044.02	1848.28	1071.6	1850	1074.89	1852	1078.71	1854	1082.53
GR	1855	1084.55	1856	1129.14	1857	1165.99				
NC	0.02	0.02	0.015	0.1	0.3					
X1	640	19	1026.88	1079.43	251.59	262.14	258.21			
GR	1864.5	1000	1864.16	1004.77	1864	1005.12	1862	1009.4	1860	1013.41
GR	1858.6	1016.12	1858.09	1026.88	1858	1027.05	1856	1030.75	1854	1034.43
GR	1852	1038.12	1851.39	1039.25	1851.37	1067.22	1852	1068.01	1854	1070.51
GR	1856	1073	1858	1075.48	1860	1077.94	1861.23	1079.43		
NC	0.02	0.02	0.015							
X1	650	8	1035.35	1088.02	196.87	225.93	211.31			
X3	10			1035.35	1867	1088.02	1867			
GR	1866	941.77	1867.8	1000	1866.17	1035.35	1853.8	1035.35	1853.8	1088.02
	1866.1	1088.02	1866.1	1156.84	1866	1161.59				
	0.02	0.02	0.015							
SB	0.9	1.56	2.6	150	52.67	2.67	400	0	1856.17	1853.8
X1	660	11	1077.26	1129.93	191.11	191.17	191.78			
X2			1	1864.17	1869.17			1.33		
X3	10			1077.26	1870	1129.93	1870			
GR	1870.6	1000	1870	1032.33	1869.6	1060.4	1869.67	1077.26	1856.17	1077.26
GR	1856.1	1129.93	1869.5	1129.93	1870.02	1166.85	1870	1168.76	1870	1172.88
GR	1868.6	1207.45								
NC	0.025	0.025	0.025							
QT	1	5500								
X1	670	31	1067.82	1168.26	476.18	438.91	452.82			
GR	1879.4	1000	1878	1007.84	1877.77	1009.03	1877.27	1027.56	1876.26	1048.09
GR	1876	1049.44	1875	1054.05	1874.27	1067.82	1874	1068.59	1872	1072.93
GR	1870	1077.28	1868	1081.62	1866	1085.96	1864	1090.29	1862	1094.57
GR	1860	1098.77	1859.16	1100.51	1859	1121.06	1860	1131.32	1860.34	1134.65
GR	1860.7	1147.65	1862	1149.57	1864	1152.62	1866	1155.67	1868	1158.72
GR	1870	1161.77	1872	1164.82	1874	1167.84	1874.29	1168.26	1875	1189.7
GR	1875.3	1193.35								
NC	0.025	0.025	0.025							
X1	680	28	1032.41	1126.45	478.66	448	461.54			
GR	1882.6	1000	1882	1011.76	1880.87	1032.41	1880	1034.16	1878	1038.48
GR	1876	1042.78	1874	1047.09	1872	1051.41	1870	1055.75	1868	1060.1
	1866	1064.48	1864.4	1067.99	1864	1071.62	1862.6	1085.72	1864.01	1092.79
GR	1864	1093.89	1864.2	1101.75	1866	1104.88	1868	1108.34	1870	1111.81

[redacted]	1872	1115.28	1874	1118.74	1876	1122.22	1878	1125.69	1878.44	1126.45
	1878.7	1156.41	1878	1161.77	1876.53	1173.07				
NC	0.025	0.025	0.025							
X1	690	10	1057.3	1141.3	408.17	434.4	422.9			
X3	10			1057.3	1894	1141.3	1894			
GR	1894	1000	1894	1014.18	1886	1057.29	1877	1057.3	1866	1079.3
GR	1866	1119.3	1877	1141.3	1886	1141.31	1894	1162.81	1894	1172.96
NC	0.025	0.025	0.025							
SB		1.56	2.6	90	40		1240	2	1866	1866
X1	700	8	1011.47	1095.49	132.78	172.81	153.08			
X2			1	1886	1894					
GR	1894	1000	1886	1011.47	1877	1011.48	1866	1033.48	1866	1073.48
GR	1877	1095.48	1886	1095.49	1894	1097.52				
NC	0.025	0.025	0.025							
X1	710	22	1055.32	1141.88	416	467.23	424.6			
GR	1887	1000	1887.65	1055.32	1886	1058.98	1884	1063.38	1882	1067.76
GR	1880	1072.17	1878	1076.59	1876.67	1079.53	1876.5	1091.93	1878	1098.6
GR	1878.2	1099.74	1880	1110.14	1880.28	1112.24	1882	1115.7	1884	1119.72
GR	1886	1123.75	1888	1127.78	1890	1131.82	1892	1135.86	1894	1139.91
GR	1894.9	1141.88	1896	1168.62						
NC	0.025	0.025	0.025							
X1	720	28	1031.02	1123.52	499.28	495.17	498.02			
[redacted]	1895.4	1000	1895.51	1008.85	1894	1013.03	1892	1018.46	1890.74	1021.86
[redacted]	1890.3	1031.02	1890	1031.86	1888	1036.41	1886	1041.01	1884	1045.63
[redacted]	1882	1050.25	1882	1050.99	1881.59	1059.51	1882	1063.99	1882.46	1068.23
GR	1882.7	1085.75	1884	1093.67	1884.05	1094.02	1885.72	1102.19	1886	1102.68
GR	1888	1106.25	1890	1109.82	1892	1113.4	1894	1117.01	1896	1120.66
GR	1897.5	1123.52	1898	1138.24	1898	1204.99				
NC	0.025	0.025	0.025							
X1	730	27	1056.08	1126.41	484.5	472.89	480.56			
GR	1895.5	980.55	1890	997.92	1888.44	1014.84	1888.81	1032	1890	1034.91
GR	1892	1040.78	1892.61	1042.69	1892.66	1056.08	1892	1058.03	1890	1063.82
GR	1888	1069.32	1887.87	1069.57	1887.34	1076.5	1886	1080.07	1885.41	1081.64
GR	1885.1	1105.73	1886	1106.9	1888	1109.69	1890	1112.46	1892	1115.21
GR	1894	1117.97	1896	1120.72	1898	1123.48	1900	1126.26	1900.12	1126.41
GR	1900.5	1149.64	1900	1152.55						
NC	0.025	0.025	0.025							
X1	740	30	1042.02	1119.91	502.08	483.58	492.38			
GR	1901.2	1000	1902	1005.26	1904	1021.59	1904.51	1025.97	1904	1027.47
GR	1902	1034.42	1900	1042.02	1900.03	1042.1	1898	1046.77	1896	1051.39
GR	1894	1056.04	1893.01	1058.37	1892.51	1063.92	1892	1064.96	1890	1068.86
GR	1889.5	1069.72	1889.67	1082.45	1889.35	1096.82	1890	1098.41	1892	1103.02
GR	1892.5	1104.29	1894	1106.26	1896	1108.92	1898	1111.43	1900	1113.86
GR	1902	1116.25	1904	1118.59	1905.14	1119.91	1904.81	1126.67	1904	1127.41

[illegible]	.025	0.025	0.025							
X1	750	40	1044.53	1148.05	361.65	431.03	391.69			
GR	1906.9	1000	1906	1004.65	1905.04	1009.47	1906	1015.43	1906.84	1019.12
GR	1906	1021.92	1904	1031.78	1903.79	1032.81	1903.79	1044.53	1902	1048.63
GR	1900	1053.26	1898	1057.91	1895.97	1062.64	1896	1063.05	1894.93	1077.63
GR	1894	1083.07	1893.44	1086.12	1893.85	1093.82	1894	1094.65	1895.88	1107.68
GR	1896	1108	1898	1113.7	1900	1119.39	1900.96	1122.14	1902	1123.57
GR	1904	1126.35	1906	1129.15	1908	1131.96	1910	1134.78	1912	1137.6
GR	1914	1140.41	1916	1143.23	1918	1146.05	1919.42	1148.05	1918	1155.65
GR	1916.8	1161.99	1916.93	1173.3	1916.59	1183.77	1916.83	1193	1918	1211.96
NC	0.025	0.025	0.025							
X1	760	24	1035.23	1131.59	409.52	457.63	428.24			
GR	1906.9	1000	1906.7	1035.23	1906	1036.91	1904	1042.08	1902	1047.23
GR	1901.2	1049.24	1900	1056.11	1898.24	1065.72	1898.23	1068.7	1899.02	1080.49
GR	1899.8	1088.61	1899.92	1101.11	1900	1101.27	1902	1105.14	1904	1109.01
GR	1906	1112.87	1908	1116.71	1910	1120.52	1912	1124.3	1914	1128.06
GR	1915.9	1131.59	1914.4	1139.1	1914	1153.98	1912.9	1195.72		
NC	0.025	0.025	0.025							
X1	770	24	1015.76	1126.99	456.52	419.22	434.78			
GR	1915	1000	1914	1015.76	1913.93	1016.79	1912	1022.95	1910	1029.33
GR	1908	1035.7	1906	1042.07	1905.12	1044.87	1904.51	1063.27	1904	1066.58
GR	1903.2	1072.95	1903.42	1081.93	1903.73	1095.61	1903.96	1105.84	1904	1105.97
GR	1906	1113.03	1906.63	1115.29	1908	1117.4	1910	1120.69	1912	1124.57
G	1913.1	1126.99	1912.81	1130.93	1912.89	1143.7	1914	1148.24		
	0.025	0.025	0.015							
X1	780	8	1058.72	1114.05	52.99	49.44	49.44			
X3	10			1058.72	1916.5	1114.05	1916.5			
GR	1916.4	1000	1916	1003.3	1914.9	1058.72	1903.78	1058.72	1903.78	1114.05
GR	1914	1114.05	1914	1121.8	1915.01	1149.26				
NC	0.025	0.025	0.015							
SB	1.25	1.56	2.6	80	55.33	5.33	400	0	1905.12	1903.78
X1	790	10	1028.58	1083.91	108.42	108.26	108.02			
X2			1	1913.12	1917.12			2		
X3	10			1028.58	1916	1083.91	1916			
GR	1916	1000	1915.8	1001.42	1915.93	1017.77	1914.87	1028.58	1905.12	1028.58
GR	1905.1	1083.91	1914.59	1083.91	1916	1104.86	1916.37	1109.9	1916	1131.78
NC	0.035	0.035	0.03							
X1	800	14	1012.48	1094.47	100.8	88.06	95.8			
X3	10			1000	1915.5	1094.47	1915.5			
GR	1914.6	1000	1914.21	1012.48	1914	1012.99	1912	1017.82	1910	1022.59
GR	1908	1027.3	1904.86	1031.73	1904.86	1053.16	1904.86	1061.2	1908	1072.68
GR	1910	1078.88	1912	1084.82	1914	1090.67	1915.12	1094.47		

	.035	0.035	0.03	0.1	0.3					
I	810	28	1144.23	1205.12	221.84	144.84	185.09			
R	1918	980.65	1917.34	990.58	1916	1000	1914	1016.18	1913.61	1019.48
R	1912	1086.58	1911.68	1097.61	1911.77	1130.03	1911.33	1144.23	1910.82	1158.38
R	1910	1162.77	1908	1167.25	1906	1172.16	1905.36	1173.67	1905.8	1185.18
R	1906	1185.5	1908	1188.52	1910	1192.61	1910.28	1194.53	1911.05	1205.12
R	1911.2	1228.44	1911.5	1247.06	1912	1258.22	1914	1295.39	1914.12	1296.38
R	1915.1	1324.03	1916	1338.5	1918	1370.57				

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

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
ALLOWABLE ERROR FOR CRITICAL DEPTH DETERMINATION (ALLDC) = 2.000 PERCENT OF THE DEPTH

CHV= .100 CEHV= .300

*SECNO 10.000

10.000	8.37	1708.70	1707.40	1705.00	1710.19	1.48	.00	.00	1710.00
6400.0	.0	6400.0	.0	.0	654.9	.1	.0	.0	1708.60
.00	.00	9.77	.03	.000	.030	.030	.000	1700.33	1009.11
.004017	0.	0.	0.	0	14	5	.00	119.45	1128.56

*SECNO 20.000

20.000	7.61	1710.73	1710.04	.00	1712.55	1.82	2.27	.10	1711.97
6400.0	.0	6400.0	.0	.0	591.5	.0	7.0	1.3	1713.45
.01	.00	10.82	.00	.000	.030	.000	.000	1703.12	1187.56
.005416	483.	489.	498.	2	12	0	.00	114.06	1301.62

*SECNO 30.000

30.000	7.51	1713.36	1712.99	.00	1715.48	2.12	2.84	.09	1712.41
6400.0	27.4	6372.6	.0	11.7	544.1	.0	13.5	2.7	1713.61
.02	2.34	11.71	.00	.030	.030	.000	.000	1705.85	1028.67
.006014	495.	498.	504.	2	12	0	.00	125.10	1153.77

*SECNO 40.000

40.000	9.07	1716.27	1715.79	.00	1718.18	1.91	2.67	.02	1716.00
6400.0	1.4	6177.9	220.7	1.5	548.8	55.2	20.1	4.3	1714.00
.04	.92	11.26	4.00	.030	.030	.030	.000	1707.20	1135.37
.004947	500.	492.	481.	2	8	0	.00	154.35	1289.72

*SECNO 50.000

3301 HV CHANGED MORE THAN HVINS

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

50.000	9.46	1718.36	1716.06	.00	1719.32	.96	1.04	.10	1720.56
6400.0	.0	6400.0	.0	.0	815.2	.0	25.1	5.3	1720.00
.05	.00	7.85	.00	.000	.030	.000	.000	1708.90	1075.00
.002510	334.	306.	278.	2	15	0	.00	142.96	1217.96

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

*SECNO 60.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.45

60.000	9.73	1719.67	1717.29	.00	1720.20	.53	.84	.04	1718.01
6400.0	498.6	4971.7	929.7	199.2	769.7	335.3	37.2	8.4	1716.63
.07	2.50	6.46	2.77	.030	.030	.030	.000	1709.94	1002.76
.001193	500.	499.	502.	2	12	0	.00	396.87	1399.63

*SECNO 70.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

70.000	7.53	1719.53	1719.53	.00	1722.12	2.59	1.23	.62	1723.69
6400.0	.0	6400.0	.0	.0	495.4	.0	47.5	11.2	1719.59
.08	.00	12.92	.00	.000	.030	.000	.000	1712.00	1100.15
.007946	493.	498.	498.	0	12	0	.00	97.17	1197.32

*SECNO 80.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.54

80.000	8.83	1723.21	1721.50	.00	1724.56	1.35	2.31	.12	1723.19
6400.0	.0	6400.0	.0	.0	686.0	.0	53.9	12.3	1725.21
.10	.03	9.33	.00	.030	.030	.000	.000	1714.38	1146.51
.003339	456.	471.	482.	2	11	0	.00	115.23	1261.74

*SECNO 90.000

3301 HV CHANGED MORE THAN HVINS

90.000	9.58	1724.77	1723.80	.00	1726.63	1.85	1.91	.15	1724.64
6400.0	.4	6399.6	.0	.7	585.5	.0	60.9	13.6	1727.42
.11	.55	10.93	.00	.030	.030	.000	.000	1715.19	1046.26
.004785	495.	482.	465.	3	8	0	.00	110.73	1156.98

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

*SECNO 100.000

100.000	7.72	1726.42	1724.67	.00	1727.81	1.40	1.14	.05	1728.00
6400.0	.0	6400.0	.0	.0	674.4	.0	65.2	14.3	1727.26
.12	.00	9.49	.00	.000	.030	.000	.000	1718.70	1026.65
.003204	290.	295.	300.	2	14	0	.00	104.36	1131.01

*SECNO 110.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

110.000	5.29	1725.79	1725.79	.00	1728.22	2.43	.06	.31	1728.00
6400.0	.0	6400.0	.0	.0	512.0	.0	65.5	14.4	1727.52
.12	.00	12.50	.00	.000	.015	.000	.000	1720.50	1027.80
.002026	26.	26.	26.	0	14	0	.00	106.34	1134.14

*SECNO 120.000
7 MINIMUM SPECIFIC ENERGY
* CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1029.5 1136.5 TYPE= 1 TARGET= 107.000
ELENCL= 1730.00 ELENCR= 1730.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1728.00 ELREA= 1730.00

120.000	4.79	1726.69	1726.69	.00	1729.11	2.42	.19	.00	1728.00
6400.0	.0	6400.0	.0	.0	512.5	.0	66.6	14.6	1730.00
.12	.00	12.49	.00	.000	.015	.000	.000	1721.90	1029.49
.002207	89.	90.	93.	0	11	0	.00	107.00	1136.49

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1725.83 , NOT 1726.69 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

8 XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.56	2.60	145.00	107.00	7.00	500.00	.00	1722.53	1721.90

'SECNO 130.000
3280 CROSS SECTION 130.00 EXTENDED .83 FEET

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

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.85

PRESSURE FLOW

EGPRS	EGLWC	K3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1730.66	1730.30	.00	0.	6400.	500.	500.	1727.53	1731.43	0.

3470 ENCROACHMENT STATIONS= 1035.8 1142.8 TYPE= 1 TARGET= 107.000
ELENCL= 1731.00 ELENCR= 1731.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1728.00 ELREA= 1731.00

.000	6.99	1729.52	.00	.00	1730.66	1.14	1.55	.00	1728.00
0.0	.0	6400.0	.0	.0	748.4	.0	68.3	14.9	1731.00
.12	.00	8.55	.00	.000	.015	.000	.000	1722.53	1035.81
.000645	121.	120.	118.	3	0	0	.00	107.00	1142.81

*SECNO 140.000
3280 CROSS SECTION 140.00 EXTENDED 1.27 FEET

3470 ENCROACHMENT STATIONS= 1149.7 1265.6 TYPE= 1 TARGET= 115.910
ELENCL= 1730.00 ELENCR= 1730.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1728.41 ELREA= 1730.00

140.000	6.85	1729.45	1727.93	.00	1730.75	1.30	.05	.05	1728.41
6400.0	.0	6400.0	.0	.0	698.7	.0	69.4	15.1	1730.00
.13	.00	9.16	.00	.000	.015	.000	.000	1722.60	1149.72
.000808	65.	64.	64.	2	15	0	.00	115.91	1265.63

SECNO 150.000

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

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

150.000	6.46	1729.99	1729.99	.00	1732.17	2.18	.73	.26	1731.69
6300.0	.0	6300.0	.0	.0	532.2	.0	76.3	16.4	1731.09
.14	.00	11.84	.00	.000	.020	.000	.000	1723.53	1024.14
.003737	491.	490.	489.	0	11	0	.00	124.87	1149.01

*SECNO 160.000

3301 HV CHANGED MORE THAN HVINS

160.000	6.50	1732.11	1731.56	.00	1733.75	1.64	1.53	.05	1733.26
6300.0	.0	6300.0	.0	.0	613.0	.0	82.9	17.9	1734.00
.15	.00	10.28	.00	.000	.020	.000	.000	1725.61	1045.54
.002537	501.	502.	503.	2	11	0	.00	132.85	1178.39

*SECNO 170.000
5 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

170.000	6.04	1733.34	1733.34	.00	1735.45	2.11	1.49	.14	1734.50
6300.0	.0	6300.0	.0	.0	540.6	.0	89.4	19.4	1735.09
.16	.00	11.65	.00	.000	.020	.000	.000	1727.30	1046.37
.003759	487.	487.	488.	0	11	0	.00	130.75	1177.12

*SECNO 180.000

180.000	5.61	1735.21	1735.03	.00	1737.18	1.97	1.72	.01	1736.58
6300.0	.0	6300.0	.0	.0	559.5	.0	95.6	20.8	1737.72
.18	.00	11.26	.00	.000	.020	.000	.000	1729.60	1041.60
.003261	491.	492.	492.	2	11	0	.00	127.87	1169.47

*SECNO 190.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

190.000	6.70	1739.49	1739.49	.00	1741.88	2.39	1.71	.13	1742.00
6300.0	.0	6300.0	.0	.0	508.1	.0	101.7	22.2	1741.63
.19	.00	12.40	.00	.000	.020	.000	.000	1732.79	1006.97
.003627	499.	498.	497.	0	11	0	.00	108.37	1115.34

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

*SECNO 200.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

200.000	6.16	1742.86	1742.86	.00	1745.31	2.45	1.79	.02	1746.00
6300.0	.0	6300.0	.0	.0	502.0	.0	107.4	23.4	1748.00
.20	.00	12.55	.00	.000	.020	.000	.000	1736.70	1007.81
.003603	494.	495.	497.	0	11	0	.00	104.30	1112.11

*SECNO 210.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

210.000	9.31	1746.83	1746.83	.00	1749.68	2.85	1.78	.12	1752.00
6300.0	.0	6300.0	.0	.0	465.2	.0	113.0	24.5	1753.31
.21	.00	13.54	.00	.000	.020	.000	.000	1737.52	1014.22
.003528	500.	500.	500.	0	14	0	.00	83.71	1097.93

*SECNO 220.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

220.000	7.97	1751.93	1751.93	.00	1754.61	2.68	1.69	.02	1759.83
6300.0	.0	6300.0	.0	.0	479.2	.0	118.1	25.4	1757.77
.22	.00	13.15	.00	.000	.020	.000	.000	1743.96	1056.99
.003578	465.	477.	489.	0	15	0	.00	91.27	1148.26

*SECNO 230.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

230.000	8.28	1758.40	1758.40	.00	1761.19	2.78	1.75	.03	1763.36
6300.0	.0	6300.0	.0	.0	470.5	.0	123.5	26.4	1764.00
.23	.00	13.39	.00	.000	.020	.000	.000	1750.12	1061.81
.003514	490.	495.	499.	0	8	0	.00	86.22	1148.03

*SECNO 240.000

301 HV CHANGED MORE THAN HVINS

185 MINIMUM SPECIFIC ENERGY
720 CRITICAL DEPTH ASSUMED

240.000	5.18	1762.61	1762.61	.00	1764.88	2.26	1.77	.05	1774.34
6300.0	.0	6300.0	.0	.0	522.0	.0	129.1	27.6	1776.40
.24	.00	12.07	.00	.000	.020	.000	.000	1757.43	1048.58
.003668	496.	492.	489.	0	14	0	.00	116.82	1165.40

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

*SECNO 250.000
*185 MINIMUM SPECIFIC ENERGY
5720 CRITICAL DEPTH ASSUMED

250.000	5.05	1763.05	1763.05	.00	1765.39	2.34	.16	.02	1766.50
6300.0	.0	6300.0	.0	.0	513.2	.0	129.8	27.7	1766.67
.24	.00	12.28	.00	.000	.015	.000	.000	1758.00	1045.34
.002101	57.	59.	58.	0	8	0	.00	110.08	1155.42

*SECNO 260.000
*185 MINIMUM SPECIFIC ENERGY
5720 CRITICAL DEPTH ASSUMED

260.000	4.97	1766.97	1766.97	.00	1769.12	2.15	.00	.02	1768.00
6300.0	.0	6299.9	.1	.0	536.0	.1	129.8	27.7	1766.66
.24	.00	11.75	.95	.000	.015	.020	.000	1762.00	1043.60
.002196	1.	1.	1.	0	5	0	.00	128.59	1172.19

*SECNO 270.000
*185 MINIMUM SPECIFIC ENERGY
[illegible]RITICAL DEPTH ASSUMED

[illegible]000	4.86	1766.86	1766.86	.00	1769.28	2.42	.05	.08	1772.00
6300.0	.0	6300.0	.0	.0	504.7	.0	130.1	27.8	1771.04
.24	.00	12.48	.00	.000	.015	.000	.000	1762.00	1010.58
.002156	34.	22.	9.	0	8	0	.00	104.80	1115.37

SECNO 280.000
*185 MINIMUM SPECIFIC ENERGY
5720 CRITICAL DEPTH ASSUMED

280.000	4.89	1770.89	1770.89	.00	1773.30	2.41	.00	.00	1772.37
6300.0	.0	6300.0	.0	.0	505.9	.0	130.1	27.8	1772.20
.24	.00	12.45	.00	.000	.015	.000	.000	1766.00	1045.36
.002139	1.	1.	1.	0	5	0	.00	105.61	1150.97

SECNO 290.000
*185 MINIMUM SPECIFIC ENERGY
5720 CRITICAL DEPTH ASSUMED

470 ENCROACHMENT STATIONS= 1048.0 1150.9 TYPE= 1 TARGET= 102.930
ELENCL= 1775.00 ELENCR= 1775.00

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1774.00 ELREA= 1775.00

290.000	4.86	1771.41	1771.41	.00	1773.87	2.46	.03	.02	1774.00
6300.0	.0	6300.0	.0	.0	500.6	.0	130.3	27.8	1775.00
.24	.00	12.58	.00	.000	.015	.000	.000	1766.55	1047.98
.002208	15.	15.	13.	0	5	0	.00	102.93	1150.91

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1770.65 , NOT 1771.41 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.56	2.60	106.00	103.02	5.02	588.00	.00	1766.92	1766.55

*SECNO 300.000

3301 HV CHANGED MORE THAN HVINS

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

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1771.78 BRIDGE VELOCITY= 12.74 CALCULATED CHANNEL AREA= 476.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1774.19	1774.61	.00	0.	6300.	588.	588.	1772.92	1776.92	0.

3470 ENCROACHMENT STATIONS= 1025.5 1128.6 TYPE= 1 TARGET= 103.020
ELENCL= 1775.19 ELENCR= 1775.56

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1775.12 ELREA= 1775.56

300.000	6.16	1773.08	.00	.00	1774.61	1.53	.74	.00	1775.12
6300.0	.0	6300.0	.0	.0	634.9	.0	131.6	28.1	1775.56
.24	.00	9.92	.00	.000	.015	.000	.000	1766.92	1025.54
.001032	103.	103.	99.	0	0	0	.00	103.02	1128.56

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

*SECNO 310.000

310.000	5.24	1773.02	1772.67	.00	1774.82	1.80	.13	.08	1775.68
6300.0	.0	6300.0	.0	.0	584.9	.0	133.0	28.4	1775.77
.25	.00	10.77	.00	.000	.015	.000	.000	1767.78	1031.30
.001633	103.	100.	106.	2	15	0	.00	131.04	1162.34

*SECNO 320.000
*185 MINIMUM SPECIFIC ENERGY
*720 CRITICAL DEPTH ASSUMED

320.000	6.59	1775.83	1775.83	.00	1778.13	2.30	1.15	.15	1778.00
6300.0	.0	6300.0	.0	.0	517.7	.0	139.2	29.7	1778.00
.26	.00	12.17	.00	.000	.020	.000	.000	1769.24	1031.46
.003649	490.	489.	488.	0	11	0	.00	114.58	1146.04

*SECNO 330.000
*185 MINIMUM SPECIFIC ENERGY
*720 CRITICAL DEPTH ASSUMED

330.000	7.07	1778.86	1778.86	.00	1781.22	2.35	1.82	.02	1780.94
6300.0	.0	6300.0	.0	.0	511.8	.0	145.1	31.0	1781.40
.27	.00	12.31	.00	.000	.020	.000	.000	1771.79	1037.34
.003649	501.	500.	501.	0	8	0	.00	110.82	1148.16

*SECNO 340.000
*185 MINIMUM SPECIFIC ENERGY
*720 CRITICAL DEPTH ASSUMED

340.000	7.48	1781.85	1781.85	.00	1784.18	2.33	1.82	.00	1782.39
6300.0	.0	6300.0	.0	.0	514.5	.0	151.0	32.3	1782.00
.28	.00	12.24	.00	.000	.020	.000	.000	1774.37	1003.10
.003670	496.	496.	496.	0	8	0	.00	112.87	1115.97

*SECNO 350.000
*185 MINIMUM SPECIFIC ENERGY
*720 CRITICAL DEPTH ASSUMED

350.000	7.59	1783.84	1783.84	.00	1786.34	2.50	1.58	.05	1787.10
6300.0	.0	6300.0	.0	.0	496.9	.0	156.1	33.4	1784.00
.29	.00	12.68	.00	.000	.020	.000	.000	1776.25	1055.14
.003560	460.	437.	420.	0	5	0	.00	99.87	1155.01

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

*SECNO 360.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1014.1 1129.6 TYPE= 1 TARGET= 115.500
ELENCL= 1792.00 ELENCR= 1792.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1792.00 ELREA= 1792.00

360.000	6.39	1786.06	1786.06	.00	1788.58	2.51	1.13	.01	1792.00
6300.0	.0	6300.0	.0	.0	495.1	.0	159.6	34.1	1792.00
.30	.00	12.72	.00	.000	.020	.000	.000	1779.67	1027.81
.003601	342.	314.	294.	0	15	0	.00	100.88	1127.89

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.56	2.60	150.00	80.00	.00	943.00	1.50	1781.68	1779.67

370.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= .000 EGLWC= 1790.131 ELLC= 1791.680 PCWSE= 1786.061 ELTRD= 1803.160

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1803.16 MAX ELLC= 1791.68

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1019.9 1180.4 TYPE= 1 TARGET= 160.500
ELENCL= 1800.00 ELENCR= 1800.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1796.00 ELREA= 1800.00

370.000	6.08	1787.76	1787.76	.00	1790.11	2.35	.84	.02	1796.00
6300.0	.0	6300.0	.0	.0	512.6	.0	162.3	34.6	1800.00
.30	.00	12.29	.00	.000	.020	.000	.000	1781.68	1045.12
.003601	188.	232.	273.	0	15	0	.00	110.15	1155.27

*SECNO 380.000

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

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1091.3 1151.3 TYPE= 1 TARGET= 60.090
ELENCL= 1794.00 ELENCR= 1794.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1792.75 ELREA= 1794.00

380.000	7.42	1793.10	1793.10	.00	1796.62	3.52	.63	.35	1792.75
6300.0	.0	6300.0	.0	.0	418.2	.0	164.1	35.0	1794.00
.31	.00	15.06	.00	.000	.020	.000	.000	1785.68	1091.25
.003753	174.	171.	176.	0	11	0	.00	60.09	1151.34

*SECNO 390.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

ENCROACHMENT STATIONS= 1045.2 1103.4 TYPE= 1 TARGET= 58.300
ENCL= 1797.00 ELENCR= 1797.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1794.81 ELREA= 1797.00

390.000	7.72	1794.92	1794.92	.00	1798.52	3.60	1.58	.02	1794.81
6300.0	.0	6300.0	.0	.0	413.7	.0	168.2	35.6	1797.00
.31	.00	15.23	.00	.000	.020	.000	.000	1787.20	1045.15
.003749	421.	421.	420.	0	8	0	.00	58.10	1103.25

*SECNO 400.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1042.3 1103.7 TYPE= 1 TARGET= 61.390
ELENCL= 1797.00 ELENCR= 1797.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1796.25 ELREA= 1797.00

400.000	7.54	1796.14	1796.14	.00	1799.60	3.46	.80	.01	1796.25
6300.0	.0	6300.0	.0	.0	421.9	.0	170.2	35.8	1797.00
.32	.00	14.93	.00	.000	.020	.000	.000	1788.60	1042.37
.003696	216.	216.	218.	0	8	0	.00	60.99	1103.36

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

*SECNO 410.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

410.000	8.94	1798.24	1798.24	.00	1801.57	3.33	.78	.01	1797.20
6300.0	28.9	6271.1	.0	11.7	427.1	.0	172.4	36.2	1798.24
.32	2.46	14.68	.00	.030	.020	.000	.000	1789.30	1025.06
.003361	237.	223.	213.	0	12	0	.00	75.96	1101.01

*SECNO 420.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

420.000	9.85	1800.71	1800.71	.00	1803.49	2.78	.62	.06	1798.49
6300.0	98.3	6149.1	52.6	30.3	454.1	32.8	174.8	36.8	1799.34
.33	3.24	13.54	1.60	.030	.020	.030	.000	1790.86	1126.45
.002436	228.	218.	213.	0	8	0	.00	149.83	1276.28

*SECNO 430.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1034.8 1072.5 TYPE= 1 TARGET= 37.750

ELENCL= 1805.00 ELENCR= 1805.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1804.31 ELREA= 1805.00

430.000	9.52	1802.81	1802.81	.00	1807.58	4.77	.56	.60	1804.31
6300.0	.0	6300.0	.0	.0	359.3	.0	177.1	37.2	1805.00
.33	.00	17.53	.00	.000	.015	.000	.000	1793.29	1034.79
.002676	228.	221.	219.	0	8	0	.00	37.75	1072.54

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

PECIAL BRIDGE

227 DOWNSTREAM ELEV IS 1801.33 , NOT 1802.81 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

B	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	2.60	78.00	37.75	1.75	246.00	.00	1794.30	1793.29

SECNO 440.000
RESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1818.70	1811.23	.00	2706.	3603.	246.	252.	1801.30	1802.38	78.

6685 20 TRIALS ATTEMPTED WSEL,CWSEL
6710 WSEL ASSUMED BASED ON MIN DIFF
6693 PROBABLE MINIMUM SPECIFIC ENERGY

ENCROACHMENT STATIONS= 1048.1 1085.9 TYPE= 1 TARGET= 37.750
ELENCL= 1805.00 ELENCR= 1805.00

6495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1803.75 ELREA= 1805.00

440.000	9.55	1803.85	1803.80	.00	1808.59	4.74	.53	-.10	1803.75
6300.0	.0	6300.0	.0	.0	360.4	.0	178.7	37.4	1805.00
.33	.00	17.48	.00	.000	.015	.000	.000	1794.30	1048.13
.002647	183.	197.	206.	20	5	3	.00	37.75	1085.88

SECNO 450.000
6280 CROSS SECTION 450.00 EXTENDED 1.94 FEET

6301 HV CHANGED MORE THAN HVINS

6470 ENCROACHMENT STATIONS= 1056.9 1133.4 TYPE= 1 TARGET= 76.550
ELENCL= 1809.00 ELENCR= 1809.00

6495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1804.96 ELREA= 1809.00

450.000	12.84	1808.34	1804.77	.00	1809.41	1.08	.46	.37	1804.96
5800.0	.0	5800.0	.0	.0	696.1	.0	180.7	37.6	1809.00
.34	.00	8.33	.00	.000	.040	.000	.000	1795.50	1056.87
.002944	163.	163.	162.	4	8	0	.00	76.55	1133.42

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

SECNO 460.000
280 CROSS SECTION 460.00 EXTENDED 1.28 FEET

470 ENCROACHMENT STATIONS= 1048.2 1141.8 TYPE= 1 TARGET= 93.660
ELENCL= 1810.00 ELENCR= 1810.00

5495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1807.55 ELREA= 1810.00

460.000	11.72	1809.29	1806.55	.00	1810.35	1.06	.93	.00	1807.55
5800.0	.0	5800.0	.0	.0	702.3	.0	185.2	38.2	1810.00
.35	.00	8.26	.00	.000	.040	.000	.000	1797.57	1048.18
.003634	282.	285.	290.	2	19	0	.00	93.66	1141.84

*SECNO 470.000

5301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
[redacted]ITICAL DEPTH ASSUMED

0 ENCROACHMENT STATIONS= 1035.4 1104.6 TYPE= 1 TARGET= 69.170
ELENCL= 1812.00 ELENCR= 1812.00

5495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1811.30 ELREA= 1812.00

470.000	10.99	1810.29	1810.29	.00	1813.45	3.16	1.75	.63	1811.30
5800.0	.0	5800.0	.0	.0	406.6	.0	188.7	38.7	1812.00
.35	.00	14.27	.00	.000	.040	.000	.000	1799.30	1038.28
.013868	277.	275.	273.	0	11	0	.00	64.43	1102.71

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.56	2.60	100.00	20.00	.00	288.00	2.00	1799.67	1799.29

*SECNO 480.000
5280 CROSS SECTION 480.00 EXTENDED 4.18 FEET

5301 HV CHANGED MORE THAN HVINS

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

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.10

RESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	K3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1820.11	1813.45	.00	1830.	4005.	288.	305.	1808.00	1811.30	100.

470 ENCROACHMENT STATIONS= 1050.0 1121.9 TYPE= 1 TARGET= 71.960
ELENCL= 1815.00 ELENCR= 1815.00

495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1811.06 ELREA= 1815.00

480.000	14.15	1813.82	.00	.00	1814.97	1.15	1.53	.00	1811.06
5800.0	.0	5800.0	.0	.0	672.6	.0	189.1	38.7	1815.00
.35	.00	8.62	.00	.000	.040	.000	.000	1799.67	1049.96
57	29.	29.	29.	3	0	2	.00	71.96	1121.92

SECNO 490.000
280 CROSS SECTION 490.00 EXTENDED 2.62 FEET

301 HV CHANGED MORE THAN HVINS

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

470 ENCROACHMENT STATIONS= 1050.0 1127.6 TYPE= 1 TARGET= 77.640
ELENCL= 1816.00 ELENCR= 1816.00

495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1815.04 ELREA= 1816.00

490.000	11.54	1815.20	1813.93	.00	1817.13	1.93	1.93	.23	1815.04
5800.0	.0	5800.0	.0	.0	519.9	.0	194.7	39.4	1816.00
.36	.05	11.16	.00	.025	.040	.000	.000	1803.66	1050.00
.007968	421.	405.	376.	3	19	0	.00	77.64	1127.64

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

SECNO 500.000
280 CROSS SECTION 500.00 EXTENDED .67 FEET

270 ENCROACHMENT STATIONS= 1035.6 1117.1 TYPE= 1 TARGET= 81.530
ELENCL= 1821.00 ELENCR= 1821.00

295 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1820.00 ELREA= 1821.00

500.000	11.50	1819.00	1817.86	.00	1821.00	2.00	3.85	.02	1820.00
5800.0	.0	5800.0	.0	.0	511.4	.0	200.2	40.3	1821.00
.38	.00	11.34	.00	.000	.040	.000	.000	1807.50	1037.67
.008504	476.	468.	455.	3	11	0	.00	79.43	1117.10

SECNO 510.000
185 MINIMUM SPECIFIC ENERGY
720 CRITICAL DEPTH ASSUMED

510.000	11.75	1822.04	1822.04	.00	1823.68	1.64	2.10	.04	1821.10
5800.0	48.7	5326.1	425.2	18.2	500.3	96.3	205.5	41.6	1820.60
.39	2.67	10.65	4.42	.020	.030	.020	.000	1810.29	1013.43
.005383	411.	413.	404.	0	8	0	.00	205.18	1218.61

SECNO 520.000

520.000	9.13	1823.95	1822.70	.00	1825.46	1.51	1.77	.01	1828.53
5800.0	.0	5800.0	.0	.0	588.5	.0	212.1	43.3	1829.41
.40	.00	9.86	.00	.000	.030	.000	.000	1814.82	1038.59
.004091	495.	477.	472.	3	14	0	.00	105.06	1143.65

SECNO 530.000

301 HV CHANGED MORE THAN HVINS

185 MINIMUM SPECIFIC ENERGY
720 CRITICAL DEPTH ASSUMED

530.000	9.16	1826.78	1826.78	.00	1829.24	2.45	2.26	.28	1831.69
5800.0	.0	5800.0	.0	.0	461.5	.0	216.9	44.2	1830.93
.41	.00	12.57	.00	.000	.030	.000	.000	1817.62	1029.35
.008341	372.	399.	424.	0	5	0	.00	95.65	1125.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SS1A
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SECNO 540.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

540.000	8.31	1831.76	1831.76	.00	1834.43	2.67	4.08	.07	1834.90
5800.0	.0	5800.0	.0	.0	442.1	.0	222.0	45.2	1835.51
.42	.00	13.12	.00	.000	.030	.000	.000	1823.45	1027.12
.008330	460.	490.	523.	0	11	0	.00	84.49	1111.61

*SECNO 550.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

550.000	10.00	1836.66	1836.66	.00	1839.20	2.54	3.86	.01	1839.32
5800.0	.0	5800.0	.0	.0	453.2	.0	226.7	46.2	1838.31
.43	.00	12.80	.00	.000	.030	.000	.000	1826.66	1028.11
.008600	438.	456.	475.	0	11	0	.00	92.74	1120.84

*SECNO 560.000

560.000	11.65	1839.50	1839.24	.00	1841.81	2.31	2.59	.02	1845.43
5800.0	.0	5800.0	.0	.0	475.4	.0	230.2	46.9	1843.50
.44	.00	12.20	.00	.000	.030	.000	.000	1827.85	1029.17
.007179	332.	330.	327.	0	8	0	.00	90.56	1119.73

*SECNO 570.000

570.000	9.35	1841.04	1839.22	.00	1843.02	1.98	1.17	.03	1845.65
5800.0	.0	5800.0	.0	.0	514.1	.0	232.8	47.3	1847.00
.44	.00	11.28	.00	.000	.030	.000	.000	1831.69	1067.86
.003860	229.	228.	230.	2	14	0	.00	64.87	1132.73

*SECNO 580.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

580.000	6.94	1840.94	1840.94	.00	1844.13	3.18	.00	.36	1845.83
5800.0	.0	5800.0	.0	.0	405.1	.0	232.8	47.3	1847.09
.44	.00	14.32	.00	.000	.015	.000	.000	1834.00	1058.13
.002051	1.	1.	1.	0	15	0	.00	64.22	1122.35

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

SECNO 590.000
185 MINIMUM SPECIFIC ENERGY
720 CRITICAL DEPTH ASSUMED

470 ENCROACHMENT STATIONS= 1031.2 1085.0 TYPE= 1 TARGET= 53.840
ELENCL= 1848.00 ELENCR= 1848.00

495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1846.27 ELREA= 1848.00

590.000	7.09	1841.30	1841.30	.00	1844.88	3.58	.03	.12	1846.27
5800.0	.0	5800.0	.0	.0	381.8	.0	233.0	47.3	1848.00
.44	.00	15.19	.00	.000	.015	.000	.000	1834.21	1031.20
.002356	16.	16.	17.	0	8	0	.00	53.84	1085.04

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1839.99 , NOT 1841.30 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

[redacted]	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.56	2.60	60.00	53.84	3.84	400.00	.00	1835.13	1834.21

*SECNO 600.000
5840, FLOW IS BY WEIR AND LOW FLOW

5301 HV CHANGED MORE THAN HVINS

5302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.51

5420 BRIDGE W.S.= 1844.25 BRIDGE VELOCITY= 12.07 CALCULATED CHANNEL AREA= 456.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1846.40	1846.51	2.94	0.	5781.	400.	400.	1843.13	1846.50	60.

5470 ENCROACHMENT STATIONS= 1081.8 1135.7 TYPE= 1 TARGET= 53.840
ELENCL= 1848.00 ELENCR= 1848.00

5495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1846.00 ELREA= 1848.00

600.000	9.34	1844.44	.00	.00	1846.51	2.07	1.63	.00	1846.00
[redacted]00.0	.0	5800.0	.0	.0	501.8	.0	233.9	47.4	1848.00
[redacted].44	.00	11.56	.00	.000	.015	.000	.000	1835.10	1081.85
.001031	93.	94.	95.	4	0	0	.00	53.84	1135.69

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

SECNO 610.000
35 MINIMUM SPECIFIC ENERGY
20 CRITICAL DEPTH ASSUMED

70 ENCROACHMENT STATIONS= 1061.5 1207.5 TYPE= 1 TARGET= 146.060
LENCL= 1853.00 ELENCR= 1853.00

610.000	9.68	1852.30	1852.30	.00	1854.80	2.50	.25	.13	1851.91
5800.0	2.2	5382.6	415.1	2.1	410.1	104.7	236.4	47.9	1849.56
.45	1.05	13.13	3.97	.020	.015	.020	.000	1842.62	1073.26
.001287	231.	215.	202.	0	8	0	.00	131.09	1204.36

SECNO 620.000

265 DIVIDED FLOW

185 MINIMUM SPECIFIC ENERGY
720 CRITICAL DEPTH ASSUMED

620.000	9.83	1855.31	1855.31	.00	1857.66	2.35	.26	.02	1855.40
5800.0	.0	5322.5	477.4	.2	416.2	125.6	239.0	48.5	1852.46
[illegible]45	.24	12.79	3.80	.020	.015	.020	.000	1845.48	1021.74
.001208	224.	212.	202.	0	5	0	.00	141.80	1170.30

SECNO 630.000
280 CROSS SECTION 630.00 EXTENDED .66 FEET

185 MINIMUM SPECIFIC ENERGY
720 CRITICAL DEPTH ASSUMED

630.000	9.56	1857.66	1857.66	.00	1859.80	2.14	.25	.02	1855.06
5800.0	121.6	5170.6	507.8	32.3	417.9	138.7	241.8	49.2	1855.00
.46	3.77	12.37	3.66	.020	.015	.020	.000	1848.10	1012.01
.001093	229.	221.	214.	0	8	0	.00	153.98	1165.99

CEHV= .100 CEHV= .300
*SECNO 640.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

640.000	9.28	1860.65	1860.65	.00	1863.91	3.25	.35	.33	1858.09
5800.0	146.1	5653.9	.0	29.0	386.3	.0	244.8	49.9	1861.23
.46	5.04	14.64	.00	.020	.015	.000	.000	1851.37	1012.10
[illegible]1695	252.	258.	262.	0	8	0	.00	66.64	1078.73

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

*SECNO 650.000
*185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1035.3 1088.0 TYPE= 1 TARGET= 52.670
ELENCL= 1867.00 ELENCR= 1867.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1866.17 ELREA= 1867.00

650.000	7.20	1861.00	1861.00	.00	1864.63	3.64	.42	.12	1866.17
5800.0	.0	5800.0	.0	.0	379.0	.0	246.7	50.2	1867.00
.47	.00	15.30	.00	.000	.015	.000	.000	1853.80	1035.35
.002370	197.	211.	226.	0	15	0	.00	52.67	1088.02

SPECIAL BRIDGE

3227 DOWNSTREAM ELEV IS 1859.85 , NOT 1861.00 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

	XKOR	COFQ	ROLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.56	2.60	150.00	52.67	2.67	400.00	.00	1856.17	1853.80

*SECNO 660.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.45

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1862.46 BRIDGE VELOCITY= 15.52 CALCULATED CHANNEL AREA= 314.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1866.09	1867.56	.00	0.	5800.	400.	400.	1864.17	1869.17	0.

3470 ENCROACHMENT STATIONS= 1077.3 1129.9 TYPE= 1 TARGET= 52.670
ELENCL= 1870.00 ELENCR= 1870.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1869.67 ELREA= 1870.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	OLOB	OCH	OROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IOC	ICONT	CORAR	TOPWID	ENDST
660.000	9.24	1865.34	.00	.00	1867.56	2.22	2.93	.00	1869.67
5800.0	.0	5800.0	.0	.0	484.6	.0	248.6	50.4	1870.00
.47	.00	11.97	.00	.000	.015	.000	.000	1856.10	1077.26
.001128	191.	192.	191.	0	0	0	.00	52.67	1129.93

*SECNO 670.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

670.000	7.49	1866.49	1866.49	.00	1869.36	2.87	.95	.19	1874.27
5500.0	.0	5500.0	.0	.0	404.4	.0	253.2	51.1	1874.29
.48	.00	13.60	.00	.000	.025	.000	.000	1859.00	1084.90
.005530	476.	453.	439.	0	15	0	.00	71.51	1156.41

*SECNO 680.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

680.000	9.22	1871.82	1871.82	.00	1874.94	3.13	2.54	.08	1880.87
5500.0	.0	5500.0	.0	.0	387.6	.0	257.4	51.8	1878.44
.49	.00	14.19	.00	.000	.025	.000	.000	1862.60	1051.81
.005493	479.	462.	448.	0	11	0	.00	63.15	1114.96

*SECNO 690.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.42

3470 ENCROACHMENT STATIONS= 1057.3 1141.3 TYPE= 1 TARGET= 84.000
ELENCL= 1894.00 ELENCR= 1894.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1877.00 ELREA= 1894.00

690.000	8.87	1874.87	1873.33	.00	1876.66	1.79	1.59	.13	1877.00
5500.0	.0	5500.0	.0	.0	512.4	.0	261.8	52.5	1894.00
.50	.00	10.73	.00	.000	.025	.000	.000	1866.00	1061.55
.002727	408.	423.	434.	3	15	0	.00	75.49	1137.05

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

ECIAL BRIDGE

XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.00	1.56	2.60	90.00	40.00	.00	1240.00	2.00	1866.00	1866.00

SECNO 700.000

370,LOW FLOW BY NORMAL BRIDGE

GPRS= .000 EGLWC= 1876.664 ELLC= 1886.000 PCWSE= 1874.875 ELTRD= 1894.000

370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1894.00 MAX ELLC= 1886.00

700.000	9.60	1875.60	1873.33	.00	1877.06	1.45	.36	.03	1886.00
5500.0	.0	5500.0	.0	.0	568.2	.0	263.7	52.7	1886.00
.51	.00	9.68	.00	.000	.025	.000	.000	1866.00	1014.28
.002037	133.	153.	173.	3	19	0	.00	78.39	1092.68

710.000

3501 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

710.000	9.42	1885.92	1885.92	.00	1888.98	3.06	1.33	.48	1887.65
5500.0	.0	5500.0	.0	.0	391.6	.0	268.4	53.4	1894.90
.52	.00	14.04	.00	.000	.025	.000	.000	1876.50	1059.17
.005417	416.	425.	467.	0	8	0	.00	64.41	1123.58

*SECNO 720.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

720.000	7.74	1889.33	1889.33	.00	1892.11	2.78	2.73	.03	1890.30
5500.0	.0	5500.0	.0	.0	411.0	.0	273.0	54.2	1897.50
.53	.00	13.38	.00	.000	.025	.000	.000	1881.59	1033.38
.005533	499.	498.	495.	0	15	0	.00	75.25	1108.63

*SECNO 730.000

3301 HV CHANGED MORE THAN HVINS

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	OLOB	OCH	OROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
ME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

730.000	7.69	1892.79	1892.79	.00	1894.82	2.02	2.47	.08	1892.66
5500.0	1557.3	3942.7	.0	167.8	324.5	.0	278.0	55.3	1900.12
.54	9.28	12.15	.00	.025	.025	.000	.000	1885.10	989.10
.004791	485.	481.	473.	0	5	0	.00	127.21	1116.31

*SECNO 740.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

740.000	8.50	1897.85	1897.85	.00	1900.93	3.08	2.53	.32	1900.00
5500.0	.0	5500.0	.0	.0	390.7	.0	283.0	56.4	1905.14
.55	.00	14.08	.00	.000	.025	.000	.000	1889.35	1047.11
.005489	502.	492.	484.	0	8	0	.00	64.13	1111.24

750.000
NIMUM SPECIFIC ENERGY
) CRITICAL DEPTH ASSUMED

750.000	8.37	1901.81	1901.81	.00	1904.64	2.83	2.17	.02	1903.79
5500.0	.0	5500.0	.0	.0	407.5	.0	286.6	57.0	1919.42
.56	.00	13.50	.00	.000	.025	.000	.000	1893.44	1049.07
.005581	362.	392.	431.	0	5	0	.00	74.23	1123.31

*SECNO 760.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

760.000	7.79	1906.02	1906.02	.00	1908.81	2.79	2.40	.00	1906.70
5500.0	.0	5500.0	.0	.0	410.3	.0	290.6	57.8	1915.90
.56	.00	13.40	.00	.000	.025	.000	.000	1898.23	1036.86
.005630	410.	428.	458.	0	9	0	.00	76.05	1112.91

*SECNO 770.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

770.000	6.57	1909.77	1909.77	.00	1912.24	2.46	2.45	.03	1914.00
5500.0	.0	5500.0	.0	.0	436.8	.0	294.8	58.6	1913.10
.57	.00	12.59	.00	.000	.025	.000	.000	1903.20	1030.05
.005652	457.	435.	419.	0	15	0	.00	90.26	1120.32

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

*SECNO 780.000

5301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

5470 ENCROACHMENT STATIONS= 1058.7 1114.1 TYPE= 1 TARGET= 55.330
ELENCL= 1916.50 ELENCR= 1916.50

5495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1914.90 ELREA= 1916.50

780.000	6.72	1910.50	1910.50	.00	1913.90	3.40	.17	.28	1914.90
5500.0	.0	5500.0	.0	.0	371.9	.0	295.3	58.7	1916.50
.57	.00	14.79	.00	.000	.015	.000	.000	1903.78	1058.72
.002347	53.	49.	49.	0	8	0	.00	55.33	1114.05

SPECIAL BRIDGE

DOWNSTREAM ELEV IS 1909.08 , NOT 1910.50 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	1.56	2.60	80.00	55.33	5.33	400.00	.00	1905.12	1903.78

*SECNO 790.000

5301 HV CHANGED MORE THAN HVINS

5302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.72

CLASS B LOW FLOW

5420 BRIDGE W.S.= 1911.67 BRIDGE VELOCITY= 15.25 CALCULATED CHANNEL AREA= 327.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1915.08	1916.39	.00	0.	5500.	400.	400.	1913.12	1917.12	0.

5470 ENCROACHMENT STATIONS= 1028.6 1083.9 TYPE= 1 TARGET= 55.330
ELENCL= 1916.00 ELENCR= 1916.00

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

5495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1914.87 ELREA= 1916.00

790.000	9.63	1914.73	.00	.00	1916.39	1.66	2.49	.00	1914.87
5500.0	.0	5500.0	.0	.0	532.3	.0	296.4	58.8	1916.00
.58	.00	10.33	.00	.000	.015	.000	.000	1905.10	1028.58
.000791	108.	108.	108.	0	0	0	.00	55.33	1083.91

*SECNO 800.000

3280 CROSS SECTION 800.00 EXTENDED .05 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .53

3470 ENCROACHMENT STATIONS= 1000.0 1094.5 TYPE= 1 TARGET= 94.470
ELENCL= 1915.50 ELENCR= 1915.50

3[illegible] OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1914.21 ELREA= 1915.50

.000	10.31	1915.17	1912.90	.00	1916.55	1.38	.13	.03	1914.21
5500.0	17.7	5482.3	.0	9.6	581.3	.0	297.6	59.0	1915.50
.58	1.84	9.43	.00	.035	.030	.000	.000	1904.86	1000.00
.002830	101.	96.	88.	2	15	0	.00	94.47	1094.47

CCHV= .100 CEHV= .300
*SECNO 810.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.02

810.000	11.29	1916.65	1914.06	.00	1916.89	.24	.23	.11	1911.33
5500.0	1697.2	2353.7	1449.1	580.4	471.5	495.9	302.2	60.0	1911.05
.59	2.92	4.99	2.92	.035	.030	.035	.000	1905.36	995.44
.000695	222.	185.	145.	3	9	0	.00	353.45	1348.89

THIS RUN EXECUTED 060CT97 11:16:13

HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

FLOODPLAIN DELINEATION

SUMMARY PRINTOUT TABLE 100

	SECNO	EGLWC	ELLC	EGPRS	ELTRD	QPR	QWEIR	CLASS	M3	DEPTH	CWSEL	VCH	EG
*	130.000	1730.30	1727.53	1730.66	1731.43	6400.00	.00	10.00	.00	6.99	1729.52	8.55	1730.66
*	300.000	1774.61	1772.92	1774.19	1776.92	6300.00	.00	2.00	.00	6.16	1773.08	9.92	1774.61
*	370.000	1790.13	1791.68	.00	1803.16	6300.00	.00	59.00	.00	6.08	1787.76	12.29	1790.11
*	440.000	1811.23	1801.30	1818.70	1802.38	3603.15	2705.88	30.00	.00	9.55	1803.85	17.48	1808.59
	480.000	1813.45	1808.00	1820.11	1811.30	4005.47	1830.21	30.00	.00	14.15	1813.82	8.62	1814.97
*	600.000	1846.51	1843.13	1846.40	1846.50	5780.91	.16	15.00	2.94	9.34	1844.44	11.56	1846.51
*	660.000	1867.56	1864.17	1866.09	1869.17	5800.00	.00	2.00	.00	9.24	1865.34	11.97	1867.56
	700.000	1876.66	1886.00	.00	1894.00	5500.00	.00	59.00	.00	9.60	1875.60	9.68	1877.06
*	790.000	1916.39	1913.12	1915.08	1917.12	5500.00	.00	2.00	.00	9.63	1914.73	10.33	1916.39

FLOODPLAIN DELINEATION

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRITWS	EG	10*KS	VCH	AREA	.01K
	10.000	.00	.00	.00	1700.33	6400.00	1708.70	1707.40	1710.19	40.17	9.77	654.99	1009.81
	20.000	488.53	.00	.00	1703.12	6400.00	1710.73	1710.04	1712.55	54.16	10.82	591.46	869.66
	30.000	498.03	.00	.00	1705.85	6400.00	1713.36	1712.99	1715.48	60.14	11.71	555.76	825.31
	40.000	491.57	.00	.00	1707.20	6400.00	1716.27	1715.79	1718.18	49.47	11.26	605.53	909.92
*	50.000	305.60	.00	.00	1708.90	6400.00	1718.36	1716.06	1719.32	25.10	7.85	815.17	1277.56
*	60.000	499.27	.00	.00	1709.94	6400.00	1719.67	1717.29	1720.20	11.93	6.46	1304.23	1852.60
*	70.000	497.95	.00	.00	1712.00	6400.00	1719.53	1719.53	1722.12	79.46	12.92	495.38	717.97
*	80.000	470.68	.00	.00	1714.38	6400.00	1723.21	1721.50	1724.56	33.39	9.33	685.96	1107.62
	90.000	482.19	.00	.00	1715.19	6400.00	1724.77	1723.80	1726.63	47.85	10.93	586.21	925.18
	100.000	295.13	.00	.00	1718.70	6400.00	1726.42	1724.67	1727.81	32.04	9.49	674.45	1130.66
	110.000	25.69	.00	.00	1720.50	6400.00	1725.79	1725.79	1728.22	20.26	12.50	512.01	1421.91
*	120.000	90.11	.00	.00	1721.90	6400.00	1726.69	1726.69	1729.11	22.07	12.49	512.45	1362.37
*	130.000	119.69	1731.43	1727.53	1722.53	6400.00	1729.52	.00	1730.66	6.45	8.55	748.45	2519.99
	140.000	64.14	.00	.00	1722.60	6400.00	1729.45	1727.93	1730.75	8.08	9.16	698.74	2252.04
*	150.000	489.94	.00	.00	1723.53	6300.00	1729.99	1729.99	1732.17	37.37	11.84	532.17	1030.53
	160.000	501.51	.00	.00	1725.61	6300.00	1732.11	1731.56	1733.75	25.37	10.28	612.98	1250.86
*	170.000	487.26	.00	.00	1727.30	6300.00	1733.34	1733.34	1735.45	37.59	11.65	540.60	1027.52
	180.000	491.83	.00	.00	1729.60	6300.00	1735.21	1735.03	1737.18	32.61	11.26	559.45	1103.29
*	190.000	497.74	.00	.00	1732.79	6300.00	1739.49	1739.49	1741.88	36.27	12.40	508.15	1046.09
*	200.000	495.37	.00	.00	1736.70	6300.00	1742.86	1742.86	1745.31	36.03	12.55	501.99	1049.50
*	210.000	500.38	.00	.00	1737.52	6300.00	1746.83	1746.83	1749.68	35.28	13.54	465.25	1060.72
*	220.000	476.72	.00	.00	1743.96	6300.00	1751.93	1751.93	1754.61	35.78	13.15	479.23	1053.22
*	230.000	494.76	.00	.00	1750.12	6300.00	1758.40	1758.40	1761.19	35.14	13.39	470.48	1062.73
*	240.000	492.00	.00	.00	1757.43	6300.00	1762.61	1762.61	1764.88	36.68	12.07	521.97	1040.16

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	250.000	58.60	.00	.00	1758.00	6300.00	1763.05	1763.05	1765.39	21.01	12.28	513.16	1374.32
*	260.000	1.00	.00	.00	1762.00	6300.00	1766.97	1766.97	1769.12	21.96	11.75	536.10	1344.52
*	270.000	21.92	.00	.00	1762.00	6300.00	1766.86	1766.86	1769.28	21.56	12.48	504.71	1356.90
*	280.000	1.00	.00	.00	1766.00	6300.00	1770.89	1770.89	1773.30	21.39	12.45	505.92	1362.04
*	290.000	14.95	.00	.00	1766.55	6300.00	1771.41	1771.41	1773.87	22.08	12.58	500.64	1340.65
*	300.000	102.75	1776.92	1772.92	1766.92	6300.00	1773.08	.00	1774.61	10.32	9.92	634.90	1960.95
	310.000	100.28	.00	.00	1767.78	6300.00	1773.02	1772.67	1774.82	16.33	10.77	584.86	1558.77
*	320.000	489.10	.00	.00	1769.24	6300.00	1775.83	1775.83	1778.13	36.49	12.17	517.70	1042.95
*	330.000	500.10	.00	.00	1771.79	6300.00	1778.86	1778.86	1781.22	36.49	12.31	511.82	1042.99
*	340.000	496.21	.00	.00	1774.37	6300.00	1781.85	1781.85	1784.18	36.70	12.24	514.52	1039.97
*	350.000	436.71	.00	.00	1776.25	6300.00	1783.84	1783.84	1786.34	35.60	12.68	496.89	1055.87
*	360.000	314.29	.00	.00	1779.67	6300.00	1786.06	1786.06	1788.58	36.01	12.72	495.11	1049.91
*	370.000	232.15	1803.16	1791.68	1781.68	6300.00	1787.76	1787.76	1790.11	36.01	12.29	512.65	1049.85
	380.000	170.96	.00	.00	1785.68	6300.00	1793.10	1793.10	1796.62	37.53	15.06	418.21	1028.38
*	390.000	420.90	.00	.00	1787.20	6300.00	1794.92	1794.92	1798.52	37.49	15.23	413.68	1028.90
*	400.000	216.12	.00	.00	1788.60	6300.00	1796.14	1796.14	1799.60	36.96	14.93	421.85	1036.24
*	410.000	222.64	.00	.00	1789.30	6300.00	1798.24	1798.24	1801.57	33.61	14.68	438.82	1086.66
*	420.000	218.15	.00	.00	1790.86	6300.00	1800.71	1800.71	1803.49	24.36	13.54	517.22	1276.55
*	430.000	221.27	.00	.00	1793.29	6300.00	1802.81	1802.81	1807.58	26.76	17.53	359.32	1217.88
*	440.000	197.38	1802.38	1801.30	1794.30	6300.00	1803.85	1803.80	1808.59	26.47	17.48	360.40	1224.55
	450.000	163.47	.00	.00	1795.50	5800.00	1808.34	1804.77	1809.41	29.44	8.33	696.14	1068.91
	460.000	285.08	.00	.00	1797.57	5800.00	1809.29	1806.55	1810.35	36.34	8.26	702.34	962.09
	470.000	275.07	.00	.00	1799.30	5800.00	1810.29	1810.29	1813.45	138.68	14.27	406.58	492.51
	480.000	29.16	1811.30	1808.00	1799.67	5800.00	1813.82	.00	1814.97	31.57	8.62	672.62	1032.30
	490.000	404.91	.00	.00	1803.66	5800.00	1815.20	1813.93	1817.13	79.68	11.16	519.90	649.77
	500.000	467.90	.00	.00	1807.50	5800.00	1819.00	1817.86	1821.00	85.04	11.34	511.37	628.96

	SECNO	XLOH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	TOPWS	VOH	AREA	.01K
*	510.000	413.47	.00	.00	1810.29	5800.00	1822.04	1822.04	1823.68	33.83	10.65	614.81	997.24
	520.000	477.37	.00	.00	1814.82	5800.00	1823.95	1822.70	1825.46	40.91	9.86	588.48	906.77
*	530.000	399.20	.00	.00	1817.62	5800.00	1826.78	1826.78	1829.24	83.41	12.57	461.47	635.06
*	540.000	489.72	.00	.00	1823.45	5800.00	1831.76	1831.76	1834.43	83.30	13.12	442.12	635.50
*	550.000	456.26	.00	.00	1826.66	5800.00	1836.66	1836.66	1839.20	86.00	12.80	453.18	625.44
	560.000	330.24	.00	.00	1827.85	5800.00	1839.50	1839.24	1841.81	71.79	12.20	475.41	684.51
	570.000	228.38	.00	.00	1831.69	5800.00	1841.04	1839.22	1843.02	38.60	11.28	514.15	933.54
*	580.000	1.00	.00	.00	1834.00	5800.00	1840.94	1840.94	1844.13	20.51	14.32	405.06	1280.79
*	590.000	15.77	.00	.00	1834.21	5800.00	1841.30	1841.30	1844.88	23.56	15.19	381.84	1194.84
*	600.000	93.51	1846.50	1843.13	1835.10	5800.00	1844.44	.00	1846.51	10.31	11.56	501.84	1806.12
*	610.000	215.38	.00	.00	1842.62	5800.00	1852.30	1852.30	1854.80	12.87	13.13	516.84	1616.89
*	620.000	212.31	.00	.00	1845.48	5800.00	1855.31	1855.31	1857.66	12.08	12.79	541.92	1668.78
	630.000	221.03	.00	.00	1848.10	5800.00	1857.66	1857.66	1859.80	10.93	12.37	588.88	1754.17
	640.000	258.21	.00	.00	1851.37	5800.00	1860.65	1860.65	1863.91	16.95	14.64	415.21	1408.60
*	650.000	211.31	.00	.00	1853.80	5800.00	1861.00	1861.00	1864.63	23.70	15.30	378.99	1191.31
*	660.000	191.78	1869.17	1864.17	1856.10	5800.00	1865.34	.00	1867.56	11.28	11.97	484.63	1726.55
*	670.000	452.82	.00	.00	1859.00	5500.00	1866.49	1866.49	1869.36	55.30	13.60	404.44	739.57
*	680.000	461.54	.00	.00	1862.60	5500.00	1871.82	1871.82	1874.94	54.93	14.19	387.58	742.12
*	690.000	422.90	.00	.00	1866.00	5500.00	1874.87	1873.33	1876.66	27.27	10.73	512.41	1053.31
	700.000	153.08	1894.00	1886.00	1866.00	5500.00	1875.60	1873.33	1877.06	20.37	9.68	568.21	1218.51
*	710.000	424.60	.00	.00	1876.50	5500.00	1885.92	1885.92	1888.98	54.17	14.04	391.63	747.29
	720.000	498.02	.00	.00	1881.59	5500.00	1889.33	1889.33	1892.11	55.33	13.38	410.97	739.40
	730.000	480.56	.00	.00	1885.10	5500.00	1892.79	1892.79	1894.82	47.91	12.15	492.26	794.59
	740.000	492.38	.00	.00	1889.35	5500.00	1897.85	1897.85	1900.93	54.89	14.08	390.66	742.38
	750.000	391.69	.00	.00	1893.44	5500.00	1901.81	1901.81	1904.64	55.81	13.50	407.50	736.20
	760.000	428.24	.00	.00	1898.23	5500.00	1906.02	1906.02	1908.81	56.30	13.40	410.34	733.03

SECNO	XLOB	ELTRO	ELTC	ELMIN	Q	CWSEL	CRIWS	EG	10**KS	VOH	AREA	.01K
770.000	434.78	.00	.00	1903.20	5500.00	1909.77	1909.77	1912.24	56.52	12.59	436.79	731.56
780.000	49.44	.00	.00	1903.78	5500.00	1910.50	1910.50	1913.90	23.47	14.79	371.91	1135.21
790.000	108.02	1917.12	1913.12	1905.10	5500.00	1914.73	.00	1916.39	7.91	10.33	532.29	1955.06
800.000	95.80	.00	.00	1904.86	5500.00	1915.17	1912.90	1916.55	28.30	9.43	590.89	1033.90
810.000	185.09	.00	.00	1905.36	5500.00	1916.65	1914.06	1916.89	6.95	4.99	1547.86	2086.34

FLOODPLAIN DELINEATION

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	10.000	6400.00	1708.70	.00	.00	3.70	119.45	.00
	20.000	6400.00	1710.73	.00	2.03	.00	114.06	488.53
	30.000	6400.00	1713.36	.00	2.63	.00	125.10	498.03
	40.000	6400.00	1716.27	.00	2.91	.00	154.35	491.57
*	50.000	6400.00	1718.36	.00	2.09	.00	142.96	305.60
*	60.000	6400.00	1719.67	.00	1.31	.00	396.87	499.27
*	70.000	6400.00	1719.53	.00	-.14	.00	97.17	497.95
*	80.000	6400.00	1723.21	.00	3.68	.00	115.23	470.68
	90.000	6400.00	1724.77	.00	1.56	.00	110.73	482.19
	100.000	6400.00	1726.42	.00	1.65	.00	104.36	295.13
	110.000	6400.00	1725.79	.00	-.62	.00	106.34	25.69
*	120.000	6400.00	1726.69	.00	.90	.00	107.00	90.11
*	130.000	6400.00	1729.52	.00	2.83	.00	107.00	119.69
	140.000	6400.00	1729.45	.00	-.07	.00	115.91	64.14
*	150.000	6300.00	1729.99	.00	.54	.00	124.87	489.94
	160.000	6300.00	1732.11	.00	2.12	.00	132.85	501.51
*	170.000	6300.00	1733.34	.00	1.23	.00	130.75	487.26
	180.000	6300.00	1735.21	.00	1.87	.00	127.87	491.83
*	190.000	6300.00	1739.49	.00	4.28	.00	108.37	497.74
*	200.000	6300.00	1742.86	.00	3.37	.00	104.30	495.37
*	210.000	6300.00	1746.83	.00	3.97	.00	83.71	500.38
*	220.000	6300.00	1751.93	.00	5.10	.00	91.27	476.72
*	230.000	6300.00	1758.40	.00	6.47	.00	86.22	494.76
	240.000	6300.00	1762.61	.00	4.21	.00	116.82	492.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	250.000	6300.00	1763.05	.00	.43	.00	110.08	58.60
*	260.000	6300.00	1766.97	.00	3.93	.00	128.59	1.00
*	270.000	6300.00	1766.86	.00	-.12	.00	104.80	21.92
*	280.000	6300.00	1770.89	.00	4.03	.00	105.61	1.00
*	290.000	6300.00	1771.41	.00	.52	.00	102.93	14.95
*	300.000	6300.00	1773.08	.00	1.67	.00	103.02	102.75
	310.000	6300.00	1773.02	.00	-.06	.00	131.04	100.28
*	320.000	6300.00	1775.83	.00	2.81	.00	114.58	489.10
*	330.000	6300.00	1778.86	.00	3.04	.00	110.82	500.10
*	340.000	6300.00	1781.85	.00	2.99	.00	112.87	496.21
*	350.000	6300.00	1783.84	.00	1.99	.00	99.87	436.71
*	360.000	6300.00	1786.06	.00	2.22	.00	100.08	314.29
*	370.000	6300.00	1787.76	.00	1.70	.00	110.15	232.15
	380.000	6300.00	1793.10	.00	5.34	.00	60.09	170.96
*	390.000	6300.00	1794.92	.00	1.82	.00	58.10	420.90
*	400.000	6300.00	1796.14	.00	1.21	.00	60.99	216.12
*	410.000	6300.00	1798.24	.00	2.10	.00	75.96	222.64
*	420.000	6300.00	1800.71	.00	2.47	.00	149.83	218.15
*	430.000	6300.00	1802.81	.00	2.10	.00	37.75	221.27
*	440.000	6300.00	1803.85	.00	1.04	.00	37.75	197.38
	450.000	5800.00	1808.34	.00	4.49	.00	76.55	163.47
	460.000	5800.00	1809.29	.00	.95	.00	93.66	285.08
*	470.000	5800.00	1810.29	.00	1.00	.00	64.43	275.07
*	480.000	5800.00	1813.82	.00	3.53	.00	71.96	29.16
*	490.000	5800.00	1815.20	.00	1.38	.00	77.64	404.91
	500.000	5800.00	1819.00	.00	3.81	.00	79.43	467.90

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	510.000	5800.00	1822.04	.00	3.03	.00	205.18	413.47
	520.000	5800.00	1823.95	.00	1.92	.00	105.06	477.37
*	530.000	5800.00	1826.78	.00	2.83	.00	95.65	399.20
*	540.000	5800.00	1831.76	.00	4.97	.00	84.49	489.72
*	550.000	5800.00	1836.66	.00	4.90	.00	92.74	456.26
	560.000	5800.00	1839.50	.00	2.85	.00	90.56	330.24
	570.000	5800.00	1841.04	.00	1.54	.00	64.87	228.38
*	580.000	5800.00	1840.94	.00	-.10	.00	64.22	1.00
*	590.000	5800.00	1841.30	.00	.36	.00	53.84	15.77
*	600.000	5800.00	1844.44	.00	3.13	.00	53.84	93.51
*	610.000	5800.00	1852.30	.00	7.87	.00	131.09	215.38
*	620.000	5800.00	1855.31	.00	3.01	.00	141.80	212.31
	630.000	5800.00	1857.66	.00	2.34	.00	153.98	221.03
	640.000	5800.00	1860.65	.00	3.00	.00	66.64	258.21
*	650.000	5800.00	1861.00	.00	.34	.00	52.67	211.31
*	660.000	5800.00	1865.34	.00	4.34	.00	52.67	191.78
*	670.000	5500.00	1866.49	.00	1.15	.00	71.51	452.82
*	680.000	5500.00	1871.82	.00	5.33	.00	63.15	461.54
*	690.000	5500.00	1874.87	.00	3.06	.00	75.49	422.90
	700.000	5500.00	1875.60	.00	.73	.00	78.39	153.08
*	710.000	5500.00	1885.92	.00	10.31	.00	64.41	424.60
*	720.000	5500.00	1889.33	.00	3.42	.00	75.25	498.02
*	730.000	5500.00	1892.79	.00	3.46	.00	127.21	480.56
*	740.000	5500.00	1897.85	.00	5.06	.00	64.13	492.38
*	750.000	5500.00	1901.81	.00	3.96	.00	74.23	391.69
	760.000	5500.00	1906.02	.00	4.21	.00	76.05	428.24

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
770.000	5500.00	1909.77	.00	3.75	.00	90.26	434.78
780.000	5500.00	1910.50	.00	.73	.00	55.33	49.44
790.000	5500.00	1914.73	.00	4.23	.00	55.33	108.02
800.000	5500.00	1915.17	.00	.44	.00	94.47	95.80
810.000	5500.00	1916.65	.00	1.48	.00	353.45	185.09

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 50.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 60.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 70.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 70.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 80.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 110.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 110.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 120.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 120.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 130.000 PROFILE= 1 HYDRAULIC JUMP D.S.
WARNING SECNO= 130.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 150.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 150.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 170.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 170.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 190.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 190.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 200.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 200.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 210.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 210.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 220.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 220.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 230.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 230.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 240.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 240.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 250.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 250.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 260.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 260.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 270.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 270.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

[redacted] SECNO= 280.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
[redacted] SECNO= 280.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 290.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 290.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 300.000 PROFILE= 1 HYDRAULIC JUMP D.S.
WARNING SECNO= 300.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 320.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 320.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 330.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 330.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 340.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 340.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 350.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 350.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 360.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 360.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 370.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
[redacted] SECNO= 370.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 380.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 380.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 390.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 390.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 400.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 400.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 410.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 410.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 420.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 420.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 430.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 430.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 440.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 440.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 440.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 440.000 PROFILE= 1 HYDRAULIC JUMP D.S.

[redacted] SECNO= 470.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
[redacted] SECNO= 470.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 480.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

[redacted]G SECNO= 490.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 510.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 510.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 530.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 530.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 540.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 540.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 550.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 550.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 580.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 580.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 590.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 590.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 600.000 PROFILE= 1 HYDRAULIC JUMP D.S.
WARNING SECNO= 600.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 610.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 610.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

[redacted]N SECNO= 620.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
JTION SECNO= 620.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 630.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 630.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 640.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 640.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 650.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 650.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 660.000 PROFILE= 1 HYDRAULIC JUMP D.S.
WARNING SECNO= 660.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 670.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 670.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 680.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 680.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 690.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 710.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 710.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

[redacted]
CAUTION SECNO= 720.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

```
 ION SECNO=    720.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

AUTION SECNO=    730.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
AUTION SECNO=    730.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

AUTION SECNO=    740.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
AUTION SECNO=    740.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

AUTION SECNO=    750.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
AUTION SECNO=    750.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

AUTION SECNO=    760.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
AUTION SECNO=    760.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

AUTION SECNO=    770.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
AUTION SECNO=    770.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=    780.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    780.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=    790.000  PROFILE=  1  HYDRAULIC JUMP D.S.
WARNING SECNO=    790.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    800.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    810.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

B.1.3 FIS Restudy Corrected HEC-2 Model

Corrected Effective Model (Pre-Project Conditions)
Subcritical Flow HEC-2 Output File (NAVD88)

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    01JUL03    TIME   14:17:43 *
 *****************************************
```

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

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

1

THIS RUN EXECUTED 01JUL03 14:17:43

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

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

```
T1      REQUEST FOR LETTER OF MAP REVISION - FLAMINGO WASH
T2      CORRECTED EFFECTIVE MODEL
T3      DATUM = NAVD88
T4      ORIGINAL MODEL CREATED BY GC WALLACE INC FOR FLAMINGO WASH FIS RESTUDY
T4      ELEVATIONS RAISED BY BERGER 2.26 FEET TO CONVERT FROM NGVD 29 TO NAVD 88
T4      FILE: 879-F-C-SUB.DAT
T4      STARTING WSE = 1707.26
T4      SUBCRITICAL RUN
T4      CONCRETE CHANNEL LINING BETWEEN D.I. ROAD & MOJAVE ROAD
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			0.004			6400	1707.26	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1		-1				-2	-6		

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

100 150

```
NC      0.03        0.03        0.03        0.1         0.3
* FIELD X1.9 MODIFIED BY LBG
* 2.26 REPRESENTS DATUM CONVERSION FROM NGVD 29 TO NAVD 88
X1         10          18        1000     1126.64
GR       1710        1000     1710.07     1002.71        1710     1003.06        1708     1012.39        1706        1021.7
GR       1704     1031.01        1702     1040.32     1701.54     1042.48     1700.33      1049.9     1700.55      1089.4
GR       1702     1095.84        1704     1104.89        1706     1114.24        1708     1123.66      1708.6     1126.64
GR       1710     1152.79     1710.41     1160.64        1712     1288.04

NC      0.03        0.03        0.03
X1         20          17     1182.02     1322.04      483.22      497.54      488.53
GR       1712        1000     1711.97     1182.02        1710     1190.86        1708     1199.75        1706     1208.56
GR       1704     1217.31     1703.12     1221.12     1703.59     1267.53        1704     1269.51        1706     1279.06
GR       1708      1288.6        1710     1298.12     1711.95     1307.42        1712      1307.8     1713.45     1322.04
GR     1712.7     1343.21      1713.7     1500.75

NC      0.03        0.03        0.03
X1         30          16     1053.23     1154.72      494.86      503.84      498.03
GR     1714.3        1000        1714     1012.26     1712.41     1053.23        1712     1055.19        1710     1064.74
GR       1708     1074.25        1706     1083.68     1705.86     1084.33     1705.85     1124.71        1706     1125.31
GR       1708     1133.14        1710     1140.87        1712     1148.55     1713.61     1154.72        1714     1175.89
GR     1715.8     1316.21

NC      0.03        0.03        0.03
X1         40          20     1146.2     1238.76      500.14      481.13      491.57
GR       1718        1000     1717.12     1101.53        1716     1146.2     1715.85     1152.03        1714     1159.77
GR       1712     1168.18        1710     1176.59        1708     1185.01     1707.75     1186.07     1707.38     1196.73
GR     1707.2     1216.01        1708     1218.57        1710     1225.27        1712     1231.97        1714     1238.76
GR     1714.1     1239.39        1716     1283.03     1716.17     1284.32     1716.77     1316.26        1718     1327.96

NC      0.03        0.03        0.03
X1         50          21     1066.67     1235.55      334.29      277.63       305.6
GR       1723        1000        1722     1020.92     1721.42     1037.11     1720.56     1066.67        1720     1068.75
GR       1718      1076.4        1716     1084.26        1714     1092.32        1712     1100.45        1710     1108.62
GR     1708.9     1112.98        1709     1152.91        1710     1158.04        1712     1168.25        1714     1178.41
GR     1714.6     1181.82        1716     1195.46     1717.14      1207.5        1718     1214.02        1720     1235.55
GR       1720     1249.78

NC      0.03        0.03        0.03
X1         60          31     1120.14     1223.41      499.62       502.1      499.27
GR       1720        1000     1718.36     1013.98        1718     1035.26     1717.58     1105.92        1718     1119.77
GR       1718     1120.01     1718.01     1120.14        1716     1128.57        1714      1136.9        1712     1145.29
GR     1710.1     1153.14        1710     1183.08     1709.94     1194.72        1710     1194.99        1712     1203.55
GR       1714     1212.13        1716     1220.71     1716.63     1223.41     1717.35     1277.47     1718.05     1286.74
GR       1718     1287.48        1718     1296.95     1717.48     1310.09        1718     1314.87     1718.69     1321.04
GR       1718     1336.07     1717.62     1343.02        1718     1362.12     1718.73     1381.28      1718.4     1394.59
GR       1720     1400.91

NC      0.03        0.03        0.03
X1         70          17      1084.1     1197.56      493.27      498.08      497.95
GR     1723.3        1000     1723.69      1084.1        1722     1090.63        1720     1098.35        1718     1106.05
GR       1716     1113.75        1714     1121.45        1712     1129.17        1712     1129.24        1712     1129.36
GR     1712.6     1169.17        1714     1174.59        1716      1182.8        1718     1191.03     1719.59     1197.56
GR       1720     1230.27     1720.07     1233.61
```

NC	0.03	0.03	0.03							
X1	80	18	1147.29	1269.91	455.76	481.96	470.68		2.26	
GR	1726	1000	1725.4	1007.66	1724.07	1115.85	1724	1116.84	1723.19	1147.29
GR	1722	1152.02	1720	1159.92	1718	1167.78	1716	1175.62	1714.38	1181.94
GR	1714.9	1227.68	1716	1232.07	1718	1240.31	1720	1248.54	1722	1256.76
GR	1724	1264.99	1725.21	1269.91	1724.85	1287.78				
NC	0.03	0.03	0.03							
X1	90	20	1056.45	1168.18	495.14	465.14	482.19		2.26	
GR	1726	1000	1725.75	1009.38	1724.96	1031.29	1724.64	1056.45	1724	1058.67
GR	1722	1065.64	1720	1072.62	1718	1079.6	1716	1086.6	1715.19	1089.42
GR	1716	1103.03	1717.15	1124.51	1718	1128.2	1720	1136.83	1722	1145.32
GR	1724	1153.73	1726	1162.18	1727.42	1168.18	1728	1186.62	1728.02	1187.5
NC	0.03	0.03	0.03							
X1	100	25	1022.27	1132.68	289.86	299.75	295.13		2.26	
GR	1732	1000	1732	1001	1732.08	1001.22	1730	1011.88	1728	1022.27
GR	1727.6	1024.44	1726	1027.45	1724	1031.2	1722	1034.85	1720	1038.4
GR	1718.7	1040.93	1719.04	1047.62	1718.99	1102.02	1719.04	1118.34	1720	1119.65
GR	1722	1123	1724	1126.5	1726	1130.15	1727.26	1132.68	1727.45	1139.16
GR	1728	1142.93	1728.68	1147.57	1730	1157.98	1730.09	1158.86	1730	1162.48
NC	0.03	0.03	0.015							
X1	110	21	1022.67	1137.41	25.99	26.18	25.69		2.26	
GR	1732.5	1000	1732	1002.64	1730	1012.69	1728	1022.67	1727.56	1024.87
GR	1726	1027.45	1724	1030.85	1722	1034.42	1720.5	1036.37	1720.5	1099.9
GR	1720.5	1122.88	1720.5	1123.19	1720.5	1123.29	1722	1126.96	1724	1130.74
GR	1726	1134.53	1727.52	1137.41	1728	1142.14	1729.05	1148.68	1730	1154.29
GR	1731.7	1164.66								
NC	0.03	0.03	0.015							
X1	120	7	1029.49	1136.49	88.77	93.13	90.11		2.26	
X3	10			1029.49	1732.26	1136.49	1732.26			
GR	1730.3	1000	1730	1006.09	1728	1029.49	1721.9	1029.49	1721.9	1136.49
GR	1728	1136.49	1728	1146.34						
NC	0.02	0.02	0.015							
SB	0.9	1.56	2.6	145	107	7	500	0	1724.79	1724.16
X1	130	8	1035.81	1142.81	120.77	117.86	119.69		2.26	
X2			1	1729.79	1733.69			1.33		
X3	10			1035.81	1733.26	1142.81	1733.26			
GR	1728.6	1000	1728.71	1018.83	1728	1035.81	1722.53	1035.81	1722.53	1142.81
GR	1728	1142.81	1728.87	1157.29	1728.69	1174.35				
NC	0.02	0.02	0.015							
X1	140	13	1149.72	1265.63	64.74	64.09	64.14		2.26	
X3	10			1149.72	1732.26	1265.63	1732.26			
GR	1729.5	1000	1728.41	1149.72	1728	1150.76	1726	1155.81	1724	1161.07
GR	1722.8	1165.81	1722.6	1250.59	1724	1254.37	1726	1259.66	1728	1264.74
GR	1728.3	1265.63	1728.8	1316.23	1728.18	1343.83				
NC	0.02	0.02	0.02							
QT	1	6300								
X1	150	18	1018.39	1152.46	491.39	488.88	489.94		2.26	
GR	1732	1000	1731.69	1018.39	1730	1024.12	1728	1030.88	1726.48	1035.9
GR	1726.1	1066.83	1726	1067.43	1724.2	1074.87	1724	1083.96	1723.53	1107.26

GR	1724	1108.86	1725.23	1113.02	1726	1135.88	1725.99	1136.31	1728	1142.71
GR	1730	1149.03	1731.09	1152.46	1731.43	1169.72				
NC	0.02	0.02	0.02							
X1	160	22	1042.38	1195.86	501.43	502.7	501.51		2.26	
GR	1734	1000	1734.52	1002.52	1734	1015.73	1733.26	1042.38	1732	1045.87
GR	1730	1051.46	1728	1057.16	1727.61	1058.29	1727.59	1089.49	1726.47	1097.9
GR	1726	1115.47	1725.61	1127.39	1726	1131.14	1727.46	1145.07	1728	1162.54
GR	1728.2	1169.98	1730	1173.77	1732	1178.13	1733.38	1181.15	1734	1195.86
GR	1734.2	1200.57	1735.81	1203.67						
NC	0.02	0.02	0.02							
X1	170	20	1042.95	1183.42	486.67	487.82	487.26		2.26	
GR	1734.6	1000	1735.53	1003.78	1734.5	1042.95	1734	1044.42	1732	1050.31
GR	1730	1056.26	1728.7	1060.18	1728.42	1095.07	1728	1097.52	1727.66	1099.65
GR	1727.3	1123.92	1728	1128.46	1729.82	1140.57	1730	1146.01	1730.66	1167.12
GR	1732	1172.19	1734	1179.55	1735.09	1183.42	1735.4	1201.5	1736	1203.33
NC	0.02	0.02	0.02							
X1	180	19	1037.9	1178.31	490.6	492.37	491.83		2.26	
GR	1738.4	1000	1738	1017.86	1736.58	1037.9	1736	1039.45	1734	1044.91
GR	1732	1050.47	1730.22	1055.47	1730.42	1062.62	1730	1097.25	1729.6	1099.77
GR	1730	1119.42	1730.04	1121.41	1731.15	1155.75	1732	1158.51	1734	1165.22
GR	1736	1172.22	1737.72	1178.31	1738	1187.42	1738.27	1197.86		

1

NC	0.02	0.02	0.02							
X1	190	22	1000	1121.49	499.18	497.1	497.74		2.26	
GR	1743.5	950.33	1742.46	998.69	1742	1000	1740	1005.6	1738	1011
GR	1736	1016.29	1735.23	1018.97	1734.5	1040.24	1734	1042.17	1732.79	1046.61
GR	1732.9	1078.44	1734	1082	1734.71	1084.43	1736	1101.82	1736.3	1105.68
GR	1738	1110.9	1740	1116.85	1741.63	1121.49	1742	1135.5	1742.24	1142.58
GR	1742	1143.57	1741.64	1144.92						
NC	0.02	0.02	0.02							
X1	200	22	1000	1122.87	494.16	496.56	495.37		2.26	
GR	1748.8	956.38	1748	992.25	1747.84	995.39	1746	1000	1744	1004.98
GR	1742	1009.94	1740	1014.87	1738	1019.77	1737.9	1020.02	1737.52	1027.73
GR	1736.7	1037.66	1736.7	1061.55	1737.76	1074.9	1738	1083.37	1738.49	1103
GR	1740	1106.13	1742	1110.31	1744	1114.5	1746	1118.68	1748	1122.87
GR	1748.4	1123.7	1748.36	1144.3						
NC	0.02	0.02	0.02							
X1	210	25	1000	1113.22	499.74	500.05	500.38		2.26	
GR	1752	951.7	1752	1000	1750	1005.42	1748	1010.97	1746	1016.52
GR	1744	1022.03	1742	1027.65	1741.66	1028.59	1740.5	1037.62	1740	1039.36
GR	1738	1047.1	1737.52	1048.91	1737.8	1061.69	1738	1062.13	1740	1067.4
GR	1741.2	1071.1	1742	1079.44	1742.89	1088.66	1744	1091.26	1746	1095.98
GR	1748	1100.7	1750	1105.41	1752	1110.13	1753.31	1113.22	1753.21	1141.88
NC	0.02	0.02	0.02							
X1	220	26	1041.51	1160.79	464.69	489.34	476.72		2.26	
GR	1759.7	1000	1759.83	1041.51	1758	1045.1	1756	1049.03	1754	1052.95

GR	1752	1056.86	1750	1060.75	1748	1064.59	1747.25	1066.03	1746.15	1087.16
GR	1746	1087.54	1744.18	1092.6	1744	1106.98	1744	1109.94	1743.96	1110.03
GR	1745.8	1113.56	1746	1116.26	1748	1139.68	1747.99	1139.83	1750	1144.13
GR	1752	1148.41	1754	1152.7	1756	1156.99	1757.77	1160.79	1758	1173.7
GR	1758.3	1199.32								
NC	0.02	0.02	0.02							
X1	230	28	1034.85	1169.03	490.46	498.91	494.76		2.26	
GR	1763.6	1000	1763.36	1034.85	1762	1040.25	1761.13	1043.65	1760.31	1056.95
GR	1760	1057.18	1758	1062.98	1756	1068.2	1754	1073.41	1753.53	1074.65
GR	1752.6	1090.81	1752	1093.04	1750.12	1100.45	1750.12	1113.46	1751.49	1119.83
GR	1752	1124.28	1753.26	1136.24	1754	1137.93	1756	1142.51	1758	1147.1
GR	1760	1151.69	1761.94	1156.15	1762	1156.82	1763.75	1168.26	1764	1169.03
GR	1766	1176.57	1766.64	1178.93	1766.86	1205.52				
NC	0.02	0.02	0.02							
X1	240	29	1026.08	1194.47	496.31	488.69	492		2.26	
GR	1774.8	1000	1774.34	1026.08	1774	1026.81	1772	1030.67	1770	1034.53
GR	1768	1038.38	1766	1042.19	1764	1045.88	1762	1049.77	1760	1053.67
GR	1758	1057.57	1757.43	1059.06	1757.79	1143.57	1758	1145.62	1758.74	1152.68
GR	1759.2	1157.83	1760	1159.46	1762	1163.99	1764	1168.57	1766	1173.21
GR	1768	1177.84	1770	1181.98	1772	1185.85	1774	1189.72	1776	1193.59
GR	1776.4	1194.47	1776.87	1267.84	1776	1276.18	1775.49	1280.88		

1

NC	0.02	0.02	0.015							
X1	250	24	1036.04	1171.85	57.45	58.44	58.6		2.26	
GR	1775.4	1000	1775.23	1020.11	1774	1022.51	1772	1025.97	1770	1029.5
GR	1768	1033.08	1766.5	1036.04	1766	1037.59	1764	1043.3	1762	1047.58
GR	1760	1050.92	1758	1053.04	1758.34	1154.39	1760	1154.67	1762	1155.12
GR	1764	1155.69	1766	1162.7	1766.67	1171.85	1768	1174.97	1770	1178.13
GR	1772	1180.86	1774	1183.9	1776	1187.8	1776.99	1190.22		
NC	0.02	0.02	0.015							
X1	260	20	1033.31	1171.52	1	1	1		2.26	
GR	1775.4	1000	1775.24	1020.49	1774	1022.9	1772	1026.35	1770	1029.81
GR	1768	1033.31	1767.3	1042.07	1766	1048.18	1764	1050.85	1762	1051.85
GR	1762	1154.61	1764	1155.13	1766	1155.64	1766.66	1171.52	1767.82	1173.98
GR	1768	1174.12	1770	1176.75	1772	1179.4	1774	1183.08	1776	1187.74
NC	0.02	0.02	0.015							
X1	270	20	1008.92	1116.05	33.84	8.99	21.92		2.26	
GR	1775.8	964	1775	1000	1774	1003.1	1772	1008.92	1772.04	1008.94
GR	1770	1009.59	1768	1010.24	1766	1010.83	1764	1011.18	1762	1011.54
GR	1762	1113.08	1762	1114.49	1762	1114.56	1764	1114.95	1766	1115.24
GR	1768	1115.55	1770	1115.92	1771.04	1116.05	1772	1122.67	1774	1132.66
NC	0.02	0.02	0.015							
X1	280	18	1044.87	1151.21	1	1	1		2.26	
GR	1775.8	1000	1775.02	1036.1	1774	1039.28	1772.37	1044.87	1772	1044.99
GR	1770	1045.65	1768	1046.31	1766	1047.17	1766	1103.57	1766.18	1146.5
GR	1766	1148.22	1766	1149.86	1768	1150.4	1770	1150.81	1772	1151.16
GR	1772.2	1151.21	1774.03	1160.57	1774	1160.65				

NC	0.02	0.02	0.015							
X1	290	7	1047.98	1151	14.68	12.7	14.95		2.26	
X3	10			1047.98	1777.26	1150.91	1777.26			
GR	1775.6	1000	1775.05	1036.02	1774	1047.98	1766.55	1047.98	1766.55	1151
GR	1774	1151	1774.77	1160.59						
NC	0.02	0.02	0.015							
SB	0.9	1.56	2.6	106	103.02	5.02	588	0	1769.18	1768.81
X1	300	8	1025.54	1128.56	102.54	98.55	102.75		2.26	
X2			1	1775.18	1779.18			1.33		
X3	10			1025.54	1777.45	1128.56	1777.82			
GR	1774.8	1000	1775.19	1017.87	1775.12	1025.54	1766.92	1025.54	1766.92	1128.56
GR	1775.1	1128.56	1775.56	1133.94	1775.35	1147.13				
NC	0.02	0.02	0.015							
X1	310	20	1022.98	1171.53	102.64	105.7	100.28		2.26	
GR	1776.8	1000	1776	1016.17	1775.68	1022.98	1774	1028.26	1772	1034.5
GR	1770	1040.77	1768.95	1044.12	1768	1047.77	1767.87	1048.18	1767.78	1072.14
GR	1767.8	1131.12	1768	1132.45	1768.79	1137.38	1768.62	1147.75	1770	1152.28
GR	1772	1158.91	1774	1165.6	1775.77	1171.53	1776	1177.59	1776.8	1198.8

1

NC	0.02	0.02	0.02							
X1	320	20	1022.11	1155.09	489.89	487.69	489.1		2.26	
GR	1779.4	1000	1778.04	1022.01	1778	1022.11	1776	1030.73	1774	1039.26
GR	1772	1047.79	1770.85	1052.67	1770.51	1061.45	1770	1063.83	1769.24	1067.59
GR	1770	1104.76	1770.04	1107.08	1771.21	1112.55	1771.76	1130.75	1772	1131.67
GR	1774	1139.29	1776	1146.67	1777.98	1153.84	1778	1155.09	1779.33	1191.2
NC	0.02	0.02	0.02							
X1	330	21	1027.28	1156.48	500.62	500.93	500.1		2.26	
GR	1781	1000	1780.94	1027.28	1780	1031.83	1778	1041.53	1776	1051.25
GR	1774	1060.96	1773.4	1063.9	1773.58	1078.46	1772	1084.27	1771.79	1085.02
GR	1771.8	1109.74	1772	1110.11	1774	1116.37	1774.53	1118.12	1774.72	1134.82
GR	1776	1138.9	1778	1145.34	1780	1151.87	1781.4	1156.48	1782	1173.24
GR	1782.3	1189.26								
NC	0.02	0.02	0.02							
X1	340	19	1000	1116.66	496.19	495.64	496.21		2.26	
GR	1783.7	907.67	1782.39	1000	1782	1002.25	1780	1013.68	1778	1025.11
GR	1777	1030.73	1776.57	1040.34	1776	1043.31	1774.53	1051.15	1774.37	1080.76
GR	1776	1084.3	1778	1088.43	1778.07	1088.55	1778.69	1101.43	1780	1107.4
GR	1782	1116.66	1784	1125.98	1785.09	1131.04	1785.6	1161.06		
NC	0.02	0.02	0.02							
X1	350	22	1042.74	1155.28	460.23	420.27	436.71		2.26	
GR	1786	1000	1786.37	1024.16	1787.1	1042.74	1786	1046.9	1784	1054.53
GR	1782	1062.22	1780	1069.93	1778	1077.61	1776.25	1084.32	1778.03	1100.93
GR	1777.2	1111.98	1778	1120.32	1779.54	1134.41	1778.08	1145.13	1780	1148.5
GR	1782	1151.93	1784	1155.28	1784.22	1155.66	1785.25	1168.43	1786	1172.75
GR	1787.2	1179.81	1787.3	1201.99						

NC	0.02	0.02	0.02							
X1	360	26	1014.07	1129.57	341.79	294.05	314.29		2.26	
X3	10			1014.07	1794.26	1129.57	1794.26			
GR	1798	1000	1796	1005.44	1794	1009.82	1792	1014.07	1790	1018.52
GR	1788	1023.42	1787.25	1025.48	1786	1027.93	1784	1030.77	1782	1033.57
GR	1781.8	1036.36	1781.62	1056.13	1780.02	1067.23	1780	1073	1779.67	1111.44
GR	1780	1112.32	1782	1117.65	1784	1122.81	1786	1127.74	1786.74	1129.57
GR	1786.9	1190.42	1786.92	1217.35	1788	1239.83	1788.97	1260.98	1789.6	1274.74
GR	1790	1319.61								
NC	0.02	0.02	0.02							
SB		1.56	2.6	150	80		943	1.5	1783.94	1781.93
X1	370	26	1019.93	1180.43	188.4	272.56	232.15		2.26	
X2			1	1793.94	1805.42					
X3	10			1019.93	1802.26	1180.43	1802.26			
GR	1801.2	1000	1800	1006.14	1798	1012.48	1796	1019.93	1794	1026.84
GR	1792	1033.63	1790	1039.5	1788	1044.33	1787.04	1047.52	1786	1050.99
GR	1784	1063.28	1782.66	1069.39	1782	1116.66	1781.68	1141.49	1782	1142.19
GR	1784	1147.19	1786	1151.46	1787.43	1154.02	1788	1156.17	1790	1161.17
GR	1792	1166.33	1794	1173	1796	1180.43	1798	1186.39	1800	1192.83
GR	1800.7	1196.96								

1

NC	0.03	0.03	0.02							
X1	380	14	1091.25	1151.34	174.12	176.08	170.96		2.26	
X3	10			1091.25	1796.26	1151.34	1796.26			
GR	1792	1090.66	1792.75	1091.25	1792	1091.78	1790	1093.21	1788	1094.63
GR	1786	1096.06	1785.68	1096.29	1785.8	1149.56	1786	1149.61	1788	1150.11
GR	1790	1150.6	1792	1151.08	1793.07	1151.34	1794	1227.86		
NC	0.03	0.03	0.02							
X1	390	21	1045.15	1103.45	420.9	420.21	420.9		2.26	
X3	10			1045.15	1799.26	1103.45	1799.26			
GR	1792.6	1000	1793.3	1031.19	1793.78	1040.57	1794	1041.52	1794.81	1045.15
GR	1794	1045.61	1792	1046.74	1790	1047.86	1788	1049.03	1787.41	1049.38
GR	1787.2	1074.16	1787.54	1100.36	1788	1100.54	1790	1101.34	1792	1102.12
GR	1794	1102.9	1795.44	1103.45	1795.23	1128.39	1795.21	1144.16	1796	1147.04
GR	1797.3	1153.05								
NC	0.03	0.03	0.02							
X1	400	18	1042.29	1103.68	216.05	217.6	216.12		2.26	
X3	10			1042.29	1799.26	1103.68	1799.26			
GR	1795.3	1000	1795.77	1024.49	1795.76	1038.23	1796	1040.26	1796.25	1042.29
GR	1796	1042.47	1794	1043.62	1792	1044.73	1790	1045.83	1789.06	1046.34
GR	1788.6	1075.55	1788.96	1100.77	1790	1101.12	1792	1101.81	1794	1102.54
GR	1796	1103.31	1796.96	1103.68	1796.49	1128.41				
NC	0.03	0.03	0.02							
X1	410	21	1041.49	1100.98	236.79	212.87	222.64		2.26	
GR	1799	1000	1799.04	1002.09	1799.01	1019.84	1798	1026.7	1797.57	1029.5
GR	1797.2	1041.49	1796	1044.75	1794	1049.87	1792	1054.82	1790	1059.57
GR	1789.3	1061.07	1789.8	1078.69	1790	1092.24	1790.1	1099.54	1792	1099.88
GR	1794	1100.24	1796	1100.6	1798	1100.94	1798.24	1100.98	1798.57	1108.1

GR	1799.4	1170.81								
NC	0.03	0.03	0.02							
X1	420	24	1148.62	1204.8	228.48	213.43	218.15		2.26	
GR	1805.1	1000	1804.85	1087.59	1804.56	1107.49	1804	1110.27	1802	1120.11
GR	1800	1129.91	1799.62	1132.29	1798.49	1148.62	1798	1150.2	1796	1155.64
GR	1794	1161.15	1792	1166.99	1790.86	1170.59	1791.29	1186.61	1790.88	1202.56
GR	1792	1202.83	1794	1203.37	1796	1203.9	1798	1204.44	1799.34	1204.8
GR	1800	1213.14	1800	1213.21	1800.65	1276.28	1800.8	1276.28		
NC	0.03	0.03	0.015							
X1	430	6	1034.79	1072.54	228.08	218.61	221.27		2.26	
X3	10			1034.79	1807.26	1072.54	1807.26			
GR	1804.5	1000	1804.31	1034.79	1793.29	1034.79	1793.29	1072.54	1803.82	1072.54
GR	1803.7	1113.05								
NC	0.03	0.03	0.015							
SB	0.9	1.56	2.6	78	37.75	1.75	246	0	1796.56	1795.55
X1	440	9	1048.13	1085.88	183.21	206.01	197.38		2.26	
X2			1	1803.56	1804.64			1.33		
X3	10			1048.13	1807.26	1085.88	1807.26			
GR	1804	1000	1803.68	1007.43	1803.75	1048.13	1794.3	1048.13	1794.3	1085.88
GR	1803.7	1085.88	1803.91	1101.01	1804	1103.62	1805.3	1113.11		

1

NC	0.025	0.025	0.04							
QT	1	5800								
X1	450	23	1056.87	1133.42	163.22	162.13	163.47		2.26	
X3	10			1056.87	1811.26	1133.42	1811.26			
GR	1804	1000	1804.07	1006.32	1804.32	1034.41	1804.73	1043.05	1804.96	1056.87
GR	1804	1058.72	1802	1062.07	1800	1065.72	1798	1069.89	1796	1074.12
GR	1795.5	1075.14	1796	1079.17	1797.92	1096.15	1798	1097.82	1799.19	1110.76
GR	1800	1121.55	1802	1125.68	1804	1129.41	1806	1133.42	1806.22	1133.91
GR	1806.3	1148.02	1806.93	1155.61	1806.39	1170.62				
NC	0.025	0.025	0.04							
X1	460	23	1048.18	1141.84	281.81	289.57	285.08		2.26	
X3	10			1048.18	1812.26	1141.84	1812.26			
GR	1808	1000	1808.02	1003.22	1808	1005.04	1807.55	1048.18	1806	1052.89
GR	1804	1059.32	1802.11	1065.59	1802	1067.54	1800.57	1088.15	1800	1090.66
GR	1798	1099.31	1797.57	1101.27	1797.83	1115.39	1798	1115.66	1800	1118.79
GR	1802	1121.96	1804	1125.23	1804.77	1126.62	1805.59	1139.81	1806	1140.19
GR	1808.4	1141.84	1808	1142.64	1808	1161.75				
NC	0.025	0.025	0.04							
X1	470	20	1035.45	1104.62	277.36	272.97	275.07		2.26	
X3	10			1035.45	1814.26	1104.62	1814.26			
GR	1810.7	1000	1810.44	1019.05	1811.3	1035.45	1810	1039.08	1808	1044.69
GR	1806	1050.13	1804	1055.32	1802	1061.49	1800.02	1066.39	1800	1067.21
GR	1799.3	1081.38	1800	1082.49	1802	1085.74	1804	1089.17	1806	1092.65
GR	1806.1	1092.79	1808	1096.72	1810	1100.89	1810.59	1104.62	1810.87	1120.75
NC	0.025	0.025	0.04							

SB		1.56	2.6	100	20		288	2	1801.93	1801.55
X1	480	23	1049.96	1121.92	29.43	28.85	29.16		2.26	
X2			1	1810.26	1813.56					
X3	10			1049.96	1817.26	1121.92	1817.26			
GR	1810.8	1000	1810.29	1022.32	1810.42	1043.96	1811.06	1049.96	1810	1052.71
GR	1808	1057.64	1806	1063.42	1804	1071.44	1802	1076.07	1800.34	1079.25
GR	1800	1088.82	1799.67	1097.89	1800	1098.19	1802	1100.01	1804	1101.93
GR	1806	1109.03	1808	1115.05	1810	1119.54	1810.67	1121.92	1811.24	1130.7
GR	1810	1145.14	1809.57	1148.54	1809.64	1162.76				
NC	0.025	0.025	0.04							
X1	490	27	1050.08	1127.64	421.17	376.41	404.91		2.26	
X3	10			1050	1818.26	1127.64	1818.26			
GR	1816	1000	1816.02	1001.56	1814.9	1019.89	1814.74	1038.47	1815.04	1050.08
GR	1814	1052.5	1812	1057.09	1810	1061.66	1808	1066.16	1806	1070.64
GR	1804	1075.1	1803.66	1075.85	1804	1083.12	1804.15	1088.63	1806	1092.46
GR	1808	1096.8	1810	1101.52	1810.26	1101.82	1810	1113.29	1809.88	1118.54
GR	1810	1119.08	1812	1125.39	1812.71	1127.64	1812.65	1132.54	1812.36	1149.58
GR	1812.4	1162.71	1812.58	1182.47						

1

01JUL03 14:17:43 PAGE 9

NC	0.025	0.025	0.04							
X1	500	27	1035.57	1117.1	475.67	455.34	467.9		2.26	
X3	10			1035.57	1823.26	1117.1	1823.26			
GR	1820.6	1000	1820.49	1017.79	1820	1035.57	1820.01	1036.35	1818	1038.99
GR	1816	1041.72	1814	1044.53	1812	1047.45	1810	1050.47	1808	1053.53
GR	1807.5	1054.17	1808	1059.53	1808.27	1062.4	1810	1077.16	1811.11	1085.69
GR	1812	1088.38	1814	1094.42	1816	1100.48	1817.15	1103.98	1818	1112.84
GR	1818.4	1117.1	1818	1130.34	1817.52	1146.76	1817.56	1162.65	1817.78	1176.1
GR	1818	1181.93	1818.33	1189.71						
NC	0.02	0.02	0.03							
X1	510	21	1051.63	1118	410.79	403.61	413.47		2.26	
GR	1822.7	1000	1822	1014.17	1821.1	1051.63	1820	1053.73	1818	1057.54
GR	1816	1061.35	1814	1065.16	1812	1068.96	1811.08	1070.77	1810.29	1084.94
GR	1812	1091.3	1814	1098.08	1816	1104.27	1818	1110.29	1820	1116.14
GR	1820.6	1118	1821.24	1184.8	1821.07	1201.95	1821.84	1211.83	1822	1218.61
GR	1822.5	1218.61								
NC	0.02	0.02	0.03							
X1	520	29	1020.76	1156.45	494.67	471.93	477.37		2.26	
GR	1830.9	1000	1830	1005.42	1829.57	1007.86	1828.53	1020.76	1828	1022.81
GR	1826	1030.61	1824	1038.4	1822	1046.19	1820	1053.98	1818.67	1059.18
GR	1818.1	1072.9	1818	1073.42	1816	1079.92	1814.82	1084.01	1816	1106.79
GR	1816.3	1112.44	1817.17	1120.26	1818	1123.13	1820	1130.03	1822	1136.92
GR	1824	1143.81	1825.52	1149.11	1826	1150.07	1828	1153.82	1829.41	1156.45
GR	1828	1169.03	1830	1185.2	1832	1235.46	1832.56	1257.15		
NC	0.02	0.02	0.03							
X1	530	25	1016.88	1152.68	371.54	424.3	399.2		2.26	
GR	1832	1000	1831.88	1004.01	1831.69	1016.88	1830	1021.18	1828	1026.26
GR	1826	1031.34	1824	1036.37	1822.35	1040.5	1822.35	1059.95	1822	1060.65
GR	1820	1064.77	1818	1068.85	1817.83	1069.21	1817.62	1090.03	1818	1090.71

GR	1820	1093.58	1822	1096.4	1823.81	1099.05	1824	1102.34	1826	1121.49
GR	1828	1130.45	1828.88	1133.79	1830	1143.91	1830.93	1152.68	1831.19	1159.85
NC	0.02	0.02	0.03							
X1	540	26	1018.16	1117.46	460.35	522.62	489.72		2.26	
GR	1834.9	1000	1834.9	1018.16	1834	1020.8	1832	1026.45	1830	1031.95
GR	1828	1037.42	1827.86	1037.75	1828	1041.19	1828.5	1054.97	1828	1055.74
GR	1826	1058.87	1824	1062.02	1823.45	1062.88	1823.47	1092.33	1824	1093.02
GR	1826	1095.58	1828	1098.1	1828.7	1098.97	1828.48	1106.52	1830	1108.88
GR	1832	1111.99	1834	1115.1	1835.51	1117.46	1836	1133.36	1836.3	1144.44
GR	1836.7	1152.23								
NC	0.02	0.02	0.03							
X1	550	28	1021.09	1124.94	438.1	474.94	456.26		2.26	
GR	1840.1	1000	1840	1001.92	1839.99	1006.32	1839.32	1021.09	1838	1024.57
GR	1836	1029.84	1833.93	1035.32	1834	1035.34	1833.46	1054.03	1832	1056.65
GR	1830	1060.26	1828	1063.9	1826.66	1066.34	1826.79	1083.14	1828	1085.42
GR	1830	1089.19	1832	1092.91	1834.1	1096.67	1834	1097.34	1834	1105.63
GR	1834	1111.84	1833.95	1114.36	1836	1119.24	1838	1124.12	1838.31	1124.94
GR	1839.6	1150.68	1840	1160.26	1840.11	1162.86				

1

NC	0.02	0.02	0.03							
X1	560	32	1011.15	1130.99	332.03	327.26	330.24		2.26	
GR	1847.8	1000	1846.27	1003.9	1846	1006.41	1845.43	1011.15	1844	1015.37
GR	1842	1021.39	1840	1027.57	1838	1033.9	1836.1	1039.95	1836	1045.57
GR	1835.9	1053.25	1834	1056.42	1832	1059.77	1830	1063.2	1829.01	1064.93
GR	1828	1072.16	1827.85	1073.13	1828	1074.51	1828.64	1080.27	1830	1082.3
GR	1832	1085.3	1834	1088.32	1836	1091.45	1836.23	1091.7	1836.22	1110.34
GR	1838	1115.46	1840	1121.18	1842	1126.85	1843.5	1130.99	1844	1135.55
GR	1845.8	1151.17	1845.91	1156.17						
NC	0.02	0.02	0.03							
X1	570	31	1064.51	1140.01	229.29	230.35	228.38		2.26	
GR	1847.9	1000	1846	1056.21	1845.65	1064.51	1844	1065.7	1842	1067.16
GR	1840	1068.62	1838	1070.08	1836	1071.54	1834	1072.98	1832	1073.78
GR	1832	1074.63	1832	1075.05	1832	1084.35	1832	1091.24	1831.69	1120.28
GR	1832	1120.51	1832	1120.78	1832	1121.95	1834	1124.47	1836	1126.81
GR	1838	1129.15	1840	1131.49	1842	1133.85	1844	1136.23	1846	1138.69
GR	1847	1140.01	1847.35	1156.32	1848	1159.82	1849.6	1168.44	1850	1170.12
GR	1850.7	1172.42								
NC	0.02	0.02	0.015							
X1	580	30	1055.05	1128.8	1	1	1		2.26	
GR	1847.7	1000	1847.49	1012.37	1846	1049.98	1845.83	1055.05	1844	1056.21
GR	1842	1057.48	1840	1058.71	1838	1059.87	1836	1060.93	1834	1061.78
GR	1834	1062.46	1834	1063.07	1834	1063.47	1834	1064.19	1834	1080.22
GR	1834	1109.26	1834	1109.31	1834	1114.45	1836	1116.75	1838	1119.03
GR	1840	1121.3	1842	1123.52	1844	1125.65	1846	1127.71	1847.09	1128.8
GR	1847.5	1145.88	1848	1148.67	1849.67	1157.77	1850	1158.89	1851.05	1161.45
NC	0.02	0.02	0.015							
X1	590	11	1031.2	1085.04	16.02	16.7	15.77		2.26	

X3	10			1031.2	1850.26	1085.04	1850.26			
GR	1847.3	1000	1847.01	1010.93	1846.27	1031.2	1834.21	1031.2	1834.21	1085.04
GR	1846.2	1085.04	1847.07	1099.88	1848	1120.18	1849.73	1131.49	1850	1132.09
GR	1851.3	1134.18								
NC	0.02	0.02	0.015							
SB	0.9	1.56	2.6	60	53.84	3.84	400	0	1837.39	1836.47
X1	600	15	1081.85	1135.69	93.41	94.92	93.51		2.26	
X2			1	1845.39	1848.76			1.33		
X3	10			1081.85	1850.26	1135.69	1850.26			
GR	1851	1000	1850	1003.75	1848	1011.09	1847.6	1012.57	1847.64	1032.47
GR	1848	1035.82	1849.27	1065.44	1848	1070.71	1847.2	1074.22	1846	1081.85
GR	1835.1	1081.85	1835.13	1135.69	1847.56	1135.69	1847.68	1152.6	1848	1170.43
NC	0.02	0.02	0.015							
X1	610	20	1083.2	1136.14	230.78	201.73	215.38		2.26	
X3	10			1061.48	1855.26	1207.54	1855.26			
GR	1851.7	1000	1851.08	1029.96	1852	1046.46	1852.83	1061.48	1852.52	1068.39
GR	1852	1080.06	1851.91	1083.2	1850	1085.83	1848	1088.59	1846	1091.36
GR	1844	1094.17	1842.71	1095.99	1842.62	1124.12	1844	1126.53	1846	1130
GR	1848	1133.45	1849.56	1136.14	1850	1155.27	1852	1197.8	1852.45	1207.54

1

NC	0.02	0.02	0.015							
X1	620	20	1033.45	1086.27	223.64	202.43	212.31		2.26	
GR	1859.3	1000	1858	1007.7	1857.16	1012.48	1856	1018.28	1855.25	1022.06
GR	1855.4	1033.45	1854	1035.35	1852	1037.9	1850	1040.44	1848	1042.97
GR	1846	1045.49	1845.48	1046.14	1845.66	1075.97	1846	1076.49	1848	1079.51
GR	1850	1082.53	1852	1085.57	1852.46	1086.27	1854	1135.67	1855.53	1176.03
NC	0.02	0.02	0.015							
X1	630	18	1031	1084.55	229.09	213.86	221.03		2.26	
GR	1861.2	1000	1860	1004.03	1858.27	1009.63	1858	1010.62	1856	1018.67
GR	1855.9	1018.82	1855.06	1031	1854	1032.96	1852	1036.68	1850	1040.45
GR	1848.1	1044.02	1848.28	1071.6	1850	1074.89	1852	1078.71	1854	1082.53
GR	1855	1084.55	1856	1129.14	1857	1165.99				
NC	0.02	0.02	0.015	0.1	0.3					
X1	640	19	1026.88	1079.43	251.59	262.14	258.21		2.26	
GR	1864.5	1000	1864.16	1004.77	1864	1005.12	1862	1009.4	1860	1013.41
GR	1858.6	1016.12	1858.09	1026.88	1858	1027.05	1856	1030.75	1854	1034.43
GR	1852	1038.12	1851.39	1039.25	1851.37	1067.22	1852	1068.01	1854	1070.51
GR	1856	1073	1858	1075.48	1860	1077.94	1861.23	1079.43		
NC	0.02	0.02	0.015							
X1	650	8	1035.35	1088.02	196.87	225.93	211.31		2.26	
X3	10			1035.35	1869.26	1088.02	1869.26			
GR	1866	941.77	1867.8	1000	1866.17	1035.35	1853.8	1035.35	1853.8	1088.02
GR	1866.1	1088.02	1866.1	1156.84	1866	1161.59				
NC	0.02	0.02	0.015							
SB	0.9	1.56	2.6	150	52.67	2.67	400	0	1858.43	1856.06
X1	660	11	1077.26	1129.93	191.11	191.17	191.78		2.26	

X2			1	1866.43	1871.43			1.33		
X3	10			1077.26	1872.26	1129.93	1872.26			
GR	1870.6	1000	1870	1032.33	1869.6	1060.4	1869.67	1077.26	1856.17	1077.26
GR	1856.1	1129.93	1869.5	1129.93	1870.02	1166.85	1870	1168.76	1870	1172.88
GR	1868.6	1207.45								
NC	0.025	0.025	0.025							
QT	1	5500								
X1	670	31	1067.82	1168.26	476.18	438.91	452.82		2.26	
GR	1879.4	1000	1878	1007.84	1877.77	1009.03	1877.27	1027.56	1876.26	1048.09
GR	1876	1049.44	1875	1054.05	1874.27	1067.82	1874	1068.59	1872	1072.93
GR	1870	1077.28	1868	1081.62	1866	1085.96	1864	1090.29	1862	1094.57
GR	1860	1098.77	1859.16	1100.51	1859	1121.06	1860	1131.32	1860.34	1134.65
GR	1860.7	1147.65	1862	1149.57	1864	1152.62	1866	1155.67	1868	1158.72
GR	1870	1161.77	1872	1164.82	1874	1167.84	1874.29	1168.26	1875	1189.7
GR	1875.3	1193.35								
NC	0.025	0.025	0.025							
X1	680	28	1032.41	1126.45	478.66	448	461.54		2.26	
GR	1882.6	1000	1882	1011.76	1880.87	1032.41	1880	1034.16	1878	1038.48
GR	1876	1042.78	1874	1047.09	1872	1051.41	1870	1055.75	1868	1060.1
GR	1866	1064.48	1864.4	1067.99	1864	1071.62	1862.6	1085.72	1864.01	1092.79
GR	1864	1093.89	1864.2	1101.75	1866	1104.88	1868	1108.34	1870	1111.81

1

GR	1872	1115.28	1874	1118.74	1876	1122.22	1878	1125.69	1878.44	1126.45
GR	1878.7	1156.41	1878	1161.77	1876.53	1173.07				
NC	0.025	0.025	0.025							
X1	690	10	1057.3	1141.3	408.17	434.4	422.9		2.26	
X3	10			1057.3	1896.26	1141.3	1896.26			
GR	1894	1000	1894	1014.18	1886	1057.29	1877	1057.3	1866	1079.3
GR	1866	1119.3	1877	1141.3	1886	1141.31	1894	1162.81	1894	1172.96
NC	0.025	0.025	0.025							
SB		1.56	2.6	90	40		1240	2	1868.26	1868.26
X1	700	8	1011.47	1095.49	132.78	172.81	153.08		2.26	
X2			1	1888.26	1896.26					
GR	1894	1000	1886	1011.47	1877	1011.48	1866	1033.48	1866	1073.48
GR	1877	1095.48	1886	1095.49	1894	1097.52				
NC	0.025	0.025	0.025							
X1	710	22	1055.32	1141.88	416	467.23	424.6		2.26	
GR	1887	1000	1887.65	1055.32	1886	1058.98	1884	1063.38	1882	1067.76
GR	1880	1072.17	1878	1076.59	1876.67	1079.53	1876.5	1091.93	1878	1098.6
GR	1878.2	1099.74	1880	1110.14	1880.28	1112.24	1882	1115.7	1884	1119.72
GR	1886	1123.75	1888	1127.78	1890	1131.82	1892	1135.86	1894	1139.91
GR	1894.9	1141.88	1896	1168.62						
NC	0.025	0.025	0.025							
X1	720	28	1031.02	1123.52	499.28	495.17	498.02		2.26	
GR	1895.4	1000	1895.51	1008.85	1894	1013.03	1892	1018.46	1890.74	1021.86
GR	1890.3	1031.02	1890	1031.86	1888	1036.41	1886	1041.01	1884	1045.63
GR	1882	1050.25	1882	1050.99	1881.59	1059.51	1882	1063.99	1882.46	1068.23

GR	1882.7	1085.75	1884	1093.67	1884.05	1094.02	1885.72	1102.19	1886	1102.68
GR	1888	1106.25	1890	1109.82	1892	1113.4	1894	1117.01	1896	1120.66
GR	1897.5	1123.52	1898	1138.24	1898	1204.99				
NC	0.025	0.025	0.025							
X1	730	27	1056.08	1126.41	484.5	472.89	480.56		2.26	
GR	1895.5	980.55	1890	997.92	1888.44	1014.84	1888.81	1032	1890	1034.91
GR	1892	1040.78	1892.61	1042.69	1892.66	1056.08	1892	1058.03	1890	1063.82
GR	1888	1069.32	1887.87	1069.57	1887.34	1076.5	1886	1080.07	1885.41	1081.64
GR	1885.1	1105.73	1886	1106.9	1888	1109.69	1890	1112.46	1892	1115.21
GR	1894	1117.97	1896	1120.72	1898	1123.48	1900	1126.26	1900.12	1126.41
GR	1900.5	1149.64	1900	1152.55						
NC	0.025	0.025	0.025							
X1	740	30	1042.02	1119.91	502.08	483.58	492.38		2.26	
GR	1901.2	1000	1902	1005.26	1904	1021.59	1904.51	1025.97	1904	1027.47
GR	1902	1034.42	1900	1042.02	1900.03	1042.1	1898	1046.77	1896	1051.39
GR	1894	1056.04	1893.01	1058.37	1892.51	1063.92	1892	1064.96	1890	1068.86
GR	1889.5	1069.72	1889.67	1082.45	1889.35	1096.82	1890	1098.41	1892	1103.02
GR	1892.5	1104.29	1894	1106.26	1896	1108.92	1898	1111.43	1900	1113.86
GR	1902	1116.25	1904	1118.59	1905.14	1119.91	1904.81	1126.67	1904	1127.41

1

NC	0.025	0.025	0.025							
X1	750	40	1044.53	1148.05	361.65	431.03	391.69		2.26	
GR	1906.9	1000	1906	1004.65	1905.04	1009.47	1906	1015.43	1906.84	1019.12
GR	1906	1021.92	1904	1031.78	1903.79	1032.81	1903.79	1044.53	1902	1048.63
GR	1900	1053.26	1898	1057.91	1895.97	1062.64	1896	1063.05	1894.93	1077.63
GR	1894	1083.07	1893.44	1086.12	1893.85	1093.82	1894	1094.65	1895.88	1107.68
GR	1896	1108	1898	1113.7	1900	1119.39	1900.96	1122.14	1902	1123.57
GR	1904	1126.35	1906	1129.15	1908	1131.96	1910	1134.78	1912	1137.6
GR	1914	1140.41	1916	1143.23	1918	1146.05	1919.42	1148.05	1918	1155.65
GR	1916.8	1161.99	1916.93	1173.3	1916.59	1183.77	1916.83	1193	1918	1211.96
NC	0.025	0.025	0.025							
X1	760	24	1035.23	1131.59	409.52	457.63	428.24		2.26	
GR	1906.9	1000	1906.7	1035.23	1906	1036.91	1904	1042.08	1902	1047.23
GR	1901.2	1049.24	1900	1056.11	1898.24	1065.72	1898.23	1068.7	1899.02	1080.49
GR	1899.8	1088.61	1899.92	1101.11	1900	1101.27	1902	1105.14	1904	1109.01
GR	1906	1112.87	1908	1116.71	1910	1120.52	1912	1124.3	1914	1128.06
GR	1915.9	1131.59	1914.4	1139.1	1914	1153.98	1912.9	1195.72		
NC	0.025	0.025	0.025							
X1	770	24	1015.76	1126.99	456.52	419.22	434.78		2.26	
GR	1915	1000	1914	1015.76	1913.93	1016.79	1912	1022.95	1910	1029.33
GR	1908	1035.7	1906	1042.07	1905.12	1044.87	1904.51	1063.27	1904	1066.58
GR	1903.2	1072.95	1903.42	1081.93	1903.73	1095.61	1903.96	1105.84	1904	1105.97
GR	1906	1113.03	1906.63	1115.29	1908	1117.4	1910	1120.69	1912	1124.57
GR	1913.1	1126.99	1912.81	1130.93	1912.89	1143.7	1914	1148.24		
NC	0.025	0.025	0.015							
X1	780	8	1058.72	1114.05	52.99	49.44	49.44		2.26	
X3	10			1058.72	1918.76	1114.05	1918.76			

```
GR   1916.4      1000      1916     1003.3     1914.9     1058.72    1903.78    1058.72    1903.78    1114.05
GR     1914   1114.05      1914     1121.8    1915.01     1149.26

NC    0.025     0.025     0.015
SB     1.25      1.56       2.6         80      55.33       5.33        400          0    1907.38    1906.04
X1      790        10   1028.58    1083.91     108.42     108.26     108.02                  2.26
X2                            1    1915.38    1919.38                                2
X3       10                      1028.58    1918.26    1083.91    1918.26
GR     1916      1000    1915.8    1001.42    1915.93    1017.77    1914.87    1028.58    1905.12    1028.58
GR   1905.1   1083.91   1914.59    1083.91       1916    1104.86    1916.37     1109.9       1916    1131.78

NC    0.035     0.035      0.03
X1      800        14   1012.48    1094.47      100.8      88.06       95.8                  2.26
X3       10                          1000    1917.76    1094.47    1917.76
GR   1914.6      1000    1914.21    1012.48       1914    1012.99       1912    1017.82       1910    1022.59
GR     1908    1027.3    1904.86    1031.73    1904.86    1053.16    1904.86     1061.2       1908    1072.68
GR     1910   1078.88       1912    1084.82       1914    1090.67    1915.12    1094.47
```



```
NC    0.035     0.035      0.03       0.1       0.3
X1      810        28   1144.23    1205.12    221.84     144.84     185.09                  2.26
GR     1918    980.65   1917.34     990.58      1916       1000       1914    1016.18    1913.61    1019.48
GR     1912   1086.58   1911.68    1097.61   1911.77    1130.03    1911.33    1144.23    1910.82    1158.38
GR     1910   1162.77      1908    1167.25      1906    1172.16    1905.36    1173.67     1905.8    1185.18
GR     1906    1185.5      1908    1188.52      1910    1192.61    1910.28    1194.53    1911.05    1205.12
GR   1911.2   1228.44    1911.5    1247.06      1912    1258.22       1914    1295.39    1914.12    1296.38
GR   1915.1   1324.03      1916     1338.5      1918    1370.57
```



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

 *PROF 1

 CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
 ALLOWABLE ERROR FOR CRITICAL DEPTH DETERMINATION (ALLDC) =  2.000 PERCENT OF THE DEPTH

 CCHV=      .100 CEHV=      .300
 *SECNO 10.000
     10.000       8.37    1710.96    1709.66    1707.26    1712.45       1.48        .00        .00    1712.26
     6400.0         .0     6400.0         .0         .0      654.9         .1         .0         .0    1710.86
        .00        .00       9.77        .03       .000       .030       .030       .000    1702.59    1009.11
    .004017         0.         0.         0.          0         14          5        .00     119.45    1128.56
```

*SECNO 20.000

20.000	7.61	1712.99	1712.30	.00	1714.81	1.82	2.27	.10	1714.23
6400.0	.0	6400.0	.0	.0	591.5	.0	7.0	1.3	1715.71
.01	.00	10.82	.00	.000	.030	.000	.000	1705.38	1187.56
.005416	483.	489.	498.	2	12	0	.00	114.06	1301.62

*SECNO 30.000

30.000	7.51	1715.62	1715.25	.00	1717.74	2.12	2.84	.09	1714.67
6400.0	27.4	6372.6	.0	11.7	544.1	.0	13.5	2.7	1715.87
.02	2.34	11.71	.00	.030	.030	.000	.000	1708.11	1028.67
.006014	495.	498.	504.	2	12	0	.00	125.10	1153.77

*SECNO 40.000

40.000	9.07	1718.53	1718.05	.00	1720.44	1.91	2.67	.02	1718.26
6400.0	1.4	6177.9	220.7	1.5	548.8	55.2	20.1	4.3	1716.26
.04	.92	11.26	4.00	.030	.030	.030	.000	1709.46	1135.37
.004947	500.	492.	481.	2	8	0	.00	154.35	1289.72

*SECNO 50.000

3301 HV CHANGED MORE THAN HVINS

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

50.000	9.46	1720.62	1718.32	.00	1721.58	.96	1.04	.10	1722.82
6400.0	.0	6400.0	.0	.0	815.2	.0	25.1	5.3	1722.26
.05	.00	7.85	.00	.000	.030	.000	.000	1711.16	1075.00
.002510	334.	306.	278.	2	15	0	.00	142.96	1217.96

1

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

*SECNO 60.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.45

60.000	9.73	1721.93	1719.55	.00	1722.46	.53	.84	.04	1720.27
6400.0	498.6	4971.7	929.7	199.2	769.7	335.3	37.2	8.4	1718.89
.07	2.50	6.46	2.77	.030	.030	.030	.000	1712.20	1002.76
.001193	500.	499.	502.	2	12	0	.00	396.87	1399.63

*SECNO 70.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

70.000	7.53	1721.79	1721.79	.00	1724.38	2.59	1.23	.62	1725.95
6400.0	.0	6400.0	.0	.0	495.4	.0	47.5	11.2	1721.85
.08	.00	12.92	.00	.000	.030	.000	.000	1714.26	1100.15
.007946	493.	498.	498.	0	12	0	.00	97.17	1197.32

*SECNO 80.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.54

80.000	8.83	1725.47	1723.76	.00	1726.82	1.35	2.31	.12	1725.45
6400.0	.0	6400.0	.0	.0	686.0	.0	53.9	12.3	1727.47
.10	.03	9.33	.00	.030	.030	.000	.000	1716.64	1146.51
.003339	456.	471.	482.	2	11	0	.00	115.23	1261.74

*SECNO 90.000

3301 HV CHANGED MORE THAN HVINS

90.000	9.58	1727.03	1726.06	.00	1728.89	1.85	1.91	.15	1726.90
6400.0	.4	6399.6	.0	.7	585.5	.0	60.9	13.6	1729.68
.11	.55	10.93	.00	.030	.030	.000	.000	1717.45	1046.26
.004785	495.	482.	465.	3	8	0	.00	110.73	1156.98

1
01JUL03 14:17:43 PAGE 17

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

*SECNO 100.000

100.000	7.72	1728.68	1726.93	.00	1730.07	1.40	1.14	.05	1730.26
6400.0	.0	6400.0	.0	.0	674.4	.0	65.2	14.3	1729.52
.12	.00	9.49	.00	.000	.030	.000	.000	1720.96	1026.65
.003204	290.	295.	300.	2	14	0	.00	104.36	1131.01

*SECNO 110.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

110.000	5.29	1728.05	1728.05	.00	1730.48	2.43	.06	.31	1730.26
6400.0	.0	6400.0	.0	.0	512.0	.0	65.5	14.4	1729.78
.12	.00	12.50	.00	.000	.015	.000	.000	1722.76	1027.80
.002026	26.	26.	26.	0	14	0	.00	106.34	1134.14

*SECNO 120.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1029.5 1136.5 TYPE= 1 TARGET= 107.000
ELENCL= 1732.26 ELENCR= 1732.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1730.26 ELREA= 1732.26

120.000	4.79	1728.95	1728.95	.00	1731.37	2.42	.19	.00	1730.26
6400.0	.0	6400.0	.0	.0	512.5	.0	66.6	14.6	1732.26
.12	.00	12.49	.00	.000	.015	.000	.000	1724.16	1029.49
.002207	89.	90.	93.	0	11	0	.00	107.00	1136.49

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1728.09 , NOT 1728.95 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	2.60	145.00	107.00	7.00	500.00	.00	1724.79	1724.16

*SECNO 130.000
1

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

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.85

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1732.92	1732.56	.00	0.	6400.	500.	500.	1729.79	1733.69	0.

3470 ENCROACHMENT STATIONS= 1035.8 1142.8 TYPE= 1 TARGET= 107.000

ELENCL= 1733.26 ELENCR= 1733.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1730.26 ELREA= 1733.26

130.000	6.99	1731.78	.00	.00	1732.92	1.14	1.55	.00	1730.26
6400.0	.0	6400.0	.0	.0	748.4	.0	68.3	14.9	1733.26
.12	.00	8.55	.00	.000	.015	.000	.000	1724.79	1035.81
.000645	121.	120.	118.	3	0	0	.00	107.00	1142.81

*SECNO 140.000

3470 ENCROACHMENT STATIONS= 1149.7 1265.6 TYPE= 1 TARGET= 115.910
ELENCL= 1732.26 ELENCR= 1732.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1730.67 ELREA= 1732.26

140.000	6.85	1731.71	1730.19	.00	1733.01	1.30	.05	.05	1730.67
6400.0	.0	6400.0	.0	.0	698.7	.0	69.4	15.1	1732.26
.13	.00	9.16	.00	.000	.015	.000	.000	1724.86	1149.72
.000808	65.	64.	64.	2	15	0	.00	115.91	1265.63

*SECNO 150.000

3301 HV CHANGED MORE THAN HVINS

1

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

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

150.000	6.46	1732.25	1732.25	.00	1734.43	2.18	.73	.26	1733.95
6300.0	.0	6300.0	.0	.0	532.2	.0	76.3	16.4	1733.35
.14	.00	11.84	.00	.000	.020	.000	.000	1725.79	1024.14
.003737	491.	490.	489.	0	11	0	.00	124.87	1149.01

*SECNO 160.000

3301 HV CHANGED MORE THAN HVINS

160.000	6.50	1734.37	1733.82	.00	1736.01	1.64	1.53	.05	1735.52
6300.0	.0	6300.0	.0	.0	613.0	.0	82.9	17.9	1736.26
.15	.00	10.28	.00	.000	.020	.000	.000	1727.87	1045.54
.002537	501.	502.	503.	2	11	0	.00	132.85	1178.39

*SECNO 170.000

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

170.000	6.04	1735.60	1735.60	.00	1737.71	2.11	1.49	.14	1736.76
6300.0	.0	6300.0	.0	.0	540.6	.0	89.4	19.4	1737.35
.16	.00	11.65	.00	.000	.020	.000	.000	1729.56	1046.37
.003759	487.	487.	488.	0	11	0	.00	130.75	1177.12

*SECNO 180.000

180.000	5.61	1737.47	1737.29	.00	1739.44	1.97	1.72	.01	1738.84
6300.0	.0	6300.0	.0	.0	559.5	.0	95.6	20.8	1739.98
.18	.00	11.26	.00	.000	.020	.000	.000	1731.86	1041.60
.003261	491.	492.	492.	2	11	0	.00	127.87	1169.47

*SECNO 190.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

190.000	6.70	1741.75	1741.75	.00	1744.14	2.39	1.71	.13	1744.26
6300.0	.0	6300.0	.0	.0	508.1	.0	101.7	22.2	1743.89
.19	.00	12.40	.00	.000	.020	.000	.000	1735.05	1006.97
.003627	499.	498.	497.	0	11	0	.00	108.37	1115.34

1
01JUL03 14:17:43 PAGE 20

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

*SECNO 200.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

200.000	6.16	1745.12	1745.12	.00	1747.57	2.45	1.79	.02	1748.26
6300.0	.0	6300.0	.0	.0	502.0	.0	107.4	23.4	1750.26
.20	.00	12.55	.00	.000	.020	.000	.000	1738.96	1007.81
.003603	494.	495.	497.	0	11	0	.00	104.30	1112.11

*SECNO 210.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

210.000	9.31	1749.09	1749.09	.00	1751.94	2.85	1.78	.12	1754.26
6300.0	.0	6300.0	.0	.0	465.2	.0	113.0	24.5	1755.57
.21	.00	13.54	.00	.000	.020	.000	.000	1739.78	1014.22
.003528	500.	500.	500.	0	14	0	.00	83.71	1097.93

*SECNO 220.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

220.000	7.97	1754.19	1754.19	.00	1756.87	2.68	1.69	.02	1762.09

6300.0	.0	6300.0	.0	.0	479.2	.0	118.1	25.4	1760.03
.22	.00	13.15	.00	.000	.020	.000	.000	1746.22	1056.99
.003578	465.	477.	489.	0	15	0	.00	91.27	1148.26

*SECNO 230.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

230.000	8.28	1760.66	1760.66	.00	1763.45	2.78	1.75	.03	1765.62
6300.0	.0	6300.0	.0	.0	470.5	.0	123.5	26.4	1766.26
.23	.00	13.39	.00	.000	.020	.000	.000	1752.38	1061.81
.003514	490.	495.	499.	0	8	0	.00	86.22	1148.03

*SECNO 240.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

240.000	5.18	1764.87	1764.87	.00	1767.14	2.26	1.77	.05	1776.60
6300.0	.0	6300.0	.0	.0	522.0	.0	129.1	27.6	1778.66
.24	.00	12.07	.00	.000	.020	.000	.000	1759.69	1048.58
.003668	496.	492.	489.	0	14	0	.00	116.82	1165.40

1

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

*SECNO 250.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

250.000	5.05	1765.31	1765.31	.00	1767.65	2.34	.16	.02	1768.76
6300.0	.0	6300.0	.0	.0	513.2	.0	129.8	27.7	1768.93
.24	.00	12.28	.00	.000	.015	.000	.000	1760.26	1045.34
.002101	57.	59.	58.	0	8	0	.00	110.08	1155.42

*SECNO 260.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

260.000	4.97	1769.23	1769.23	.00	1771.38	2.15	.00	.02	1770.26
6300.0	.0	6299.9	.1	.0	536.0	.1	129.8	27.7	1768.92
.24	.00	11.75	.95	.000	.015	.020	.000	1764.26	1043.60
.002196	1.	1.	1.	0	5	0	.00	128.59	1172.19

*SECNO 270.000
7185 MINIMUM SPECIFIC ENERGY

```
3720 CRITICAL DEPTH ASSUMED
   270.000      4.86   1769.12   1769.12       .00   1771.54      2.42       .05       .08   1774.26
    6300.0        .0    6300.0        .0        .0     504.7        .0     130.1      27.8   1773.30
       .24       .00     12.48       .00      .000      .015      .000      .000   1764.26   1010.58
   .002156       34.       22.        9.         0         8         0       .00    104.80   1115.37


*SECNO 280.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   280.000      4.89   1773.15   1773.15       .00   1775.56      2.41       .00       .00   1774.63
    6300.0        .0    6300.0        .0        .0     505.9        .0     130.1      27.8   1774.46
       .24       .00     12.45       .00      .000      .015      .000      .000   1768.26   1045.36
   .002139        1.        1.        1.         0         5         0       .00    105.61   1150.97


*SECNO 290.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1048.0    1150.9  TYPE=       1  TARGET=      102.930
 ELENCL=    1777.26  ELENCR=    1777.26
1
   01JUL03       14:17:43                                                                  PAGE   22

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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1776.26 ELREA=      1777.26

   290.000      4.86   1773.67   1773.67       .00   1776.13      2.46       .03       .02   1776.26
    6300.0        .0    6300.0        .0        .0     500.6        .0     130.3      27.8   1777.26
       .24       .00     12.58       .00      .000      .015      .000      .000   1768.81   1047.98
   .002208       15.       15.       13.         0         5         0       .00    102.93   1150.91


SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS    1772.91 , NOT    1773.67 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB   XK         XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
       .90       1.56       2.60     106.00     103.02       5.02     588.00        .00    1769.18    1768.81

*SECNO 300.000

3301 HV CHANGED MORE THAN HVINS


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

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1774.04 BRIDGE VELOCITY= 12.74 CALCULATED CHANNEL AREA= 476.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1776.45	1776.87	.00	0.	6300.	588.	588.	1775.18	1779.18	0.

3470 ENCROACHMENT STATIONS= 1025.5 1128.6 TYPE= 1 TARGET= 103.020
ELENCL= 1777.45 ELENCR= 1777.82

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1777.38 ELREA= 1777.82

300.000	6.16	1775.34	.00	.00	1776.87	1.53	.74	.00	1777.38
6300.0	.0	6300.0	.0	.0	634.9	.0	131.6	28.1	1777.82
.24	.00	9.92	.00	.000	.015	.000	.000	1769.18	1025.54
.001032	103.	103.	99.	0	0	0	.00	103.02	1128.56

1

01JUL03 14:17:43

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

*SECNO 310.000

310.000	5.24	1775.28	1774.93	.00	1777.08	1.80	.13	.08	1777.94
6300.0	.0	6300.0	.0	.0	584.9	.0	133.0	28.4	1778.03
.25	.00	10.77	.00	.000	.015	.000	.000	1770.04	1031.30
.001633	103.	100.	106.	2	15	0	.00	131.04	1162.34

*SECNO 320.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

320.000	6.59	1778.09	1778.09	.00	1780.39	2.30	1.15	.15	1780.26
6300.0	.0	6300.0	.0	.0	517.7	.0	139.2	29.7	1780.26
.26	.00	12.17	.00	.000	.020	.000	.000	1771.50	1031.46
.003649	490.	489.	488.	0	11	0	.00	114.58	1146.04

*SECNO 330.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

330.000	7.07	1781.12	1781.12	.00	1783.48	2.35	1.82	.02	1783.20
6300.0	.0	6300.0	.0	.0	511.8	.0	145.1	31.0	1783.66
.27	.00	12.31	.00	.000	.020	.000	.000	1774.05	1037.34
.003649	501.	500.	501.	0	8	0	.00	110.82	1148.16

*SECNO 340.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

340.000	7.48	1784.11	1784.11	.00	1786.44	2.33	1.82	.00	1784.65
6300.0	.0	6300.0	.0	.0	514.5	.0	151.0	32.3	1784.26
.28	.00	12.24	.00	.000	.020	.000	.000	1776.63	1003.10
.003670	496.	496.	496.	0	8	0	.00	112.87	1115.97

*SECNO 350.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

350.000	7.59	1786.10	1786.10	.00	1788.60	2.50	1.58	.05	1789.36
6300.0	.0	6300.0	.0	.0	496.9	.0	156.1	33.4	1786.26
.29	.00	12.68	.00	.000	.020	.000	.000	1778.51	1055.14
.003560	460.	437.	420.	0	5	0	.00	99.87	1155.01

1
01JUL03 14:17:43 PAGE 24

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

*SECNO 360.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1014.1 1129.6 TYPE= 1 TARGET= 115.500
ELENCL= 1794.26 ELENCR= 1794.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1794.26 ELREA= 1794.26

360.000	6.39	1788.32	1788.32	.00	1790.84	2.51	1.13	.01	1794.26
6300.0	.0	6300.0	.0	.0	495.1	.0	159.6	34.1	1794.26
.30	.00	12.72	.00	.000	.020	.000	.000	1781.93	1027.81
.003601	342.	314.	294.	0	15	0	.00	100.08	1127.89

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.56	2.60	150.00	80.00	.00	943.00	1.50	1783.94	1781.93

*SECNO 370.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= .000 EGLWC= 1792.391 ELLC= 1793.940 PCWSE= 1788.321 ELTRD= 1805.420

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 1805.42 MAX ELLC= 1793.94

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1019.9 1180.4 TYPE= 1 TARGET= 160.500
ELENCL= 1802.26 ELENCR= 1802.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1798.26 ELREA= 1802.26

370.000	6.08	1790.02	1790.02	.00	1792.37	2.35	.84	.02	1798.26
6300.0	.0	6300.0	.0	.0	512.6	.0	162.3	34.6	1802.26
.30	.00	12.29	.00	.000	.020	.000	.000	1783.94	1045.12
.003603	188.	232.	273.	0	15	0	.00	110.15	1155.27

*SECNO 380.000
1
01JUL03 14:17:43 PAGE 25

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

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1091.3 1151.3 TYPE= 1 TARGET= 60.090
ELENCL= 1796.26 ELENCR= 1796.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1795.01 ELREA= 1796.26

380.000	7.42	1795.36	1795.36	.00	1798.88	3.52	.63	.35	1795.01
6300.0	.0	6300.0	.0	.0	418.2	.0	164.1	35.0	1796.26
.31	.00	15.07	.00	.000	.020	.000	.000	1787.94	1091.25
.003754	174.	171.	176.	0	11	0	.00	60.09	1151.34

*SECNO 390.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1045.2 1103.4 TYPE= 1 TARGET= 58.300
ELENCL= 1799.26 ELENCR= 1799.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1797.07 ELREA= 1799.26

390.000	7.72	1797.18	1797.18	.00	1800.78	3.60	1.58	.02	1797.07
6300.0	.0	6300.0	.0	.0	413.7	.0	168.2	35.6	1799.26
.31	.00	15.23	.00	.000	.020	.000	.000	1789.46	1045.15
.003749	421.	421.	420.	0	8	0	.00	58.10	1103.25

```
*SECNO 400.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1042.3    1103.7  TYPE=      1  TARGET=       61.390
 ELENCL=   1799.26  ELENCR=   1799.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1798.51 ELREA=      1799.26

   400.000      7.54   1798.40   1798.40       .00   1801.86      3.46       .80       .01   1798.51
    6300.0        .0    6300.0        .0        .0     421.9        .0     170.2      35.8   1799.26
       .32       .00     14.93       .00      .000      .020      .000      .000   1790.86   1042.37
   .003696      216.      216.      218.         0         8         0       .00     60.99   1103.36


1
   01JUL03      14:17:43                                                                          PAGE   26

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

*SECNO 410.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   410.000      8.94   1800.50   1800.50       .00   1803.83      3.33       .78       .01   1799.46
    6300.0      28.9    6271.1        .0      11.7     427.1        .0     172.4      36.2   1800.50
       .32      2.46     14.68       .00      .030      .020      .000      .000   1791.56   1025.06
   .003361      237.      223.      213.         0        12         0       .00     75.96   1101.01


*SECNO 420.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   420.000      9.85   1802.97   1802.97       .00   1805.75      2.78       .62       .06   1800.75
    6300.0      98.3    6149.1      52.6      30.3     454.1      32.8     174.8      36.8   1801.60
       .33      3.24     13.54      1.60      .030      .020      .030      .000   1793.12   1126.45
   .002436      228.      218.      213.         0         8         0       .00     149.83   1276.28


*SECNO 430.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1034.8    1072.5  TYPE=      1  TARGET=       37.750
```

ELENCL= 1807.26 ELENCR= 1807.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1806.57 ELREA= 1807.26

430.000	9.52	1805.07	1805.07	.00	1809.84	4.77	.56	.60	1806.57
6300.0	.0	6300.0	.0	.0	359.3	.0	177.1	37.2	1807.26
.33	.00	17.53	.00	.000	.015	.000	.000	1795.55	1034.79
.002676	228.	221.	219.	0	8	0	.00	37.75	1072.54

1

01JUL03 14:17:43 PAGE 27

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

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1803.59 , NOT 1805.07 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	2.60	78.00	37.75	1.75	246.00	.00	1796.56	1795.55

*SECNO 440.000
PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1820.96	1813.49	.00	2706.	3603.	246.	252.	1803.56	1804.64	78.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3710 WSEL ASSUMED BASED ON MIN DIFF
3693 PROBABLE MINIMUM SPECIFIC ENERGY

3470 ENCROACHMENT STATIONS= 1048.1 1085.9 TYPE= 1 TARGET= 37.750
ELENCL= 1807.26 ELENCR= 1807.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1806.01 ELREA= 1807.26

440.000	9.55	1806.11	1806.06	.00	1810.85	4.74	.53	-.10	1806.01
6300.0	.0	6300.0	.0	.0	360.4	.0	178.7	37.4	1807.26
.33	.00	17.48	.00	.000	.015	.000	.000	1796.56	1048.13
.002647	183.	197.	206.	20	5	3	.00	37.75	1085.88

*SECNO 450.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 1056.9 1133.4 TYPE= 1 TARGET= 76.550
ELENCL= 1811.26 ELENCR= 1811.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1807.22 ELREA= 1811.26

450.000	12.84	1810.60	1807.03	.00	1811.67	1.08	.46	.37	1807.22
5800.0	.0	5800.0	.0	.0	696.1	.0	180.7	37.6	1811.26
.34	.00	8.33	.00	.000	.040	.000	.000	1797.76	1056.87
.002944	163.	163.	162.	4	8	0	.00	76.55	1133.42

1

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

*SECNO 460.000

3470 ENCROACHMENT STATIONS= 1048.2 1141.8 TYPE= 1 TARGET= 93.660
ELENCL= 1812.26 ELENCR= 1812.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1809.81 ELREA= 1812.26

460.000	11.72	1811.55	1808.81	.00	1812.61	1.06	.93	.00	1809.81
5800.0	.0	5800.0	.0	.0	702.3	.0	185.2	38.2	1812.26
.35	.00	8.26	.00	.000	.040	.000	.000	1799.83	1048.18
.003634	282.	285.	290.	2	19	0	.00	93.66	1141.84

*SECNO 470.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1035.4 1104.6 TYPE= 1 TARGET= 69.170
ELENCL= 1814.26 ELENCR= 1814.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1813.56 ELREA= 1814.26

470.000	10.99	1812.55	1812.55	.00	1815.71	3.16	1.75	.63	1813.56
5800.0	.0	5800.0	.0	.0	406.6	.0	188.7	38.7	1814.26
.35	.00	14.27	.00	.000	.040	.000	.000	1801.56	1038.28
.013868	277.	275.	273.	0	11	0	.00	64.43	1102.71

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.56	2.60	100.00	20.00	.00	288.00	2.00	1801.93	1801.55

*SECNO 480.000
3280 CROSS SECTION 480.00 EXTENDED 1.92 FEET

3301 HV CHANGED MORE THAN HVINS

1
01JUL03 14:17:43 PAGE 29

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.10

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1822.37	1815.71	.00	1830.	4005.	288.	305.	1810.26	1813.56	100.

3470 ENCROACHMENT STATIONS= 1050.0 1121.9 TYPE= 1 TARGET= 71.960
ELENCL= 1817.26 ELENCR= 1817.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1813.32 ELREA= 1817.26

480.000	14.15	1816.08	.00	.00	1817.23	1.15	1.53	.00	1813.32
5800.0	.0	5800.0	.0	.0	672.6	.0	189.1	38.7	1817.26
.35	.00	8.62	.00	.000	.040	.000	.000	1801.93	1049.96
.003157	29.	29.	29.	3	0	2	.00	71.96	1121.92

*SECNO 490.000
3280 CROSS SECTION 490.00 EXTENDED .36 FEET

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS= 1050.0 1127.6 TYPE= 1 TARGET= 77.640
ELENCL= 1818.26 ELENCR= 1818.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1817.30 ELREA= 1818.26

490.000	11.54	1817.46	1816.19	.00	1819.39	1.93	1.93	.23	1817.30
5800.0	.0	5800.0	.0	.0	519.9	.0	194.7	39.4	1818.26
.36	.05	11.16	.00	.025	.040	.000	.000	1805.92	1050.00
.007968	421.	405.	376.	3	19	0	.00	77.64	1127.64

1

01JUL03 14:17:43 PAGE 30

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

*SECNO 500.000

3470 ENCROACHMENT STATIONS= 1035.6 1117.1 TYPE= 1 TARGET= 81.530
ELENCL= 1823.26 ELENCR= 1823.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1822.26 ELREA= 1823.26

500.000	11.50	1821.26	1820.12	.00	1823.26	2.00	3.85	.02	1822.26
5800.0	.0	5800.0	.0	.0	511.4	.0	200.2	40.3	1823.26
.38	.00	11.34	.00	.000	.040	.000	.000	1809.76	1037.67
.008504	476.	468.	455.	3	11	0	.00	79.43	1117.10

*SECNO 510.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

510.000	11.75	1824.30	1824.30	.00	1825.94	1.64	2.10	.04	1823.36
5800.0	48.7	5326.1	425.2	18.2	500.3	96.3	205.5	41.6	1822.86
.39	2.67	10.65	4.42	.020	.030	.020	.000	1812.55	1013.43
.003383	411.	413.	404.	0	8	0	.00	205.18	1218.61

*SECNO 520.000

520.000	9.13	1826.21	1824.96	.00	1827.72	1.51	1.77	.01	1830.79
5800.0	.0	5800.0	.0	.0	588.5	.0	212.1	43.3	1831.67
.40	.00	9.86	.00	.000	.030	.000	.000	1817.08	1038.59
.004091	495.	477.	472.	3	14	0	.00	105.06	1143.65

*SECNO 530.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

530.000	9.16	1829.04	1829.04	.00	1831.50	2.45	2.26	.28	1833.95
5800.0	.0	5800.0	.0	.0	461.5	.0	216.9	44.2	1833.19
.41	.00	12.57	.00	.000	.030	.000	.000	1819.88	1029.35
.008341	372.	399.	424.	0	5	0	.00	95.65	1125.00

*SECNO 540.000
7185 MINIMUM SPECIFIC ENERGY
1
01JUL03 14:17:43 PAGE 31

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

3720 CRITICAL DEPTH ASSUMED

540.000	8.31	1834.02	1834.02	.00	1836.69	2.67	4.08	.07	1837.16
5800.0	.0	5800.0	.0	.0	442.1	.0	222.0	45.2	1837.77
.42	.00	13.12	.00	.000	.030	.000	.000	1825.71	1027.12
.008330	460.	490.	523.	0	11	0	.00	84.49	1111.61

*SECNO 550.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

550.000	10.00	1838.92	1838.92	.00	1841.46	2.54	3.86	.01	1841.58
5800.0	.0	5800.0	.0	.0	453.2	.0	226.7	46.2	1840.57
.43	.00	12.80	.00	.000	.030	.000	.000	1828.92	1028.11
.008600	438.	456.	475.	0	11	0	.00	92.74	1120.84

*SECNO 560.000

560.000	11.65	1841.76	1841.50	.00	1844.07	2.31	2.59	.02	1847.69
5800.0	.0	5800.0	.0	.0	475.4	.0	230.2	46.9	1845.76
.44	.00	12.20	.00	.000	.030	.000	.000	1830.11	1029.17
.007179	332.	330.	327.	0	8	0	.00	90.56	1119.73

*SECNO 570.000

570.000	9.35	1843.30	1841.48	.00	1845.28	1.98	1.17	.03	1847.91
5800.0	.0	5800.0	.0	.0	514.1	.0	232.8	47.3	1849.26
.44	.00	11.28	.00	.000	.030	.000	.000	1833.95	1067.86
.003860	229.	228.	230.	2	14	0	.00	64.87	1132.73

*SECNO 580.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

580.000	6.94	1843.20	1843.20	.00	1846.39	3.18	.00	.36	1848.09
5800.0	.0	5800.0	.0	.0	405.1	.0	232.8	47.3	1849.35
.44	.00	14.32	.00	.000	.015	.000	.000	1836.26	1058.13
.002051	1.	1.	1.	0	15	0	.00	64.22	1122.35

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

*SECNO 590.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1031.2 1085.0 TYPE= 1 TARGET= 53.840
ELENCL= 1850.26 ELENCR= 1850.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1848.53 ELREA= 1850.26

590.000	7.09	1843.56	1843.56	.00	1847.14	3.58	.03	.12	1848.53
5800.0	.0	5800.0	.0	.0	381.8	.0	233.0	47.3	1850.26
.44	.00	15.19	.00	.000	.015	.000	.000	1836.47	1031.20
.002356	16.	16.	17.	0	8	0	.00	53.84	1085.04

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1842.25 , NOT 1843.56 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	2.60	60.00	53.84	3.84	400.00	.00	1837.39	1836.47

*SECNO 600.000
6840, FLOW IS BY WEIR AND LOW FLOW

3301 HV CHANGED MORE THAN HVINS

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

3420 BRIDGE W.S.= 1846.51 BRIDGE VELOCITY= 12.07 CALCULATED CHANNEL AREA= 456.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1848.66	1848.77	2.94	0.	5781.	400.	400.	1845.39	1848.76	60.

3470 ENCROACHMENT STATIONS= 1081.8 1135.7 TYPE= 1 TARGET= 53.840
ELENCL= 1850.26 ELENCR= 1850.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1848.26 ELREA= 1850.26

600.000	9.34	1846.70	.00	.00	1848.77	2.07	1.63	.00	1848.26
5800.0	.0	5800.0	.0	.0	501.8	.0	233.9	47.4	1850.26

```
      .44        .00      11.56        .00       .000       .015       .000       .000   1837.36   1081.85
   .001031       93.        94.        95.          4          0          0        .00     53.84   1135.69


1
   01JUL03       14:17:43                                                                                PAGE   33

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

*SECNO 610.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1061.5    1207.5  TYPE=       1  TARGET=      146.060
 ELENCL=   1855.26  ELENCR=   1855.26
   610.000       9.68    1854.56    1854.56        .00    1857.06       2.50        .25        .13    1854.17
    5800.0        2.2     5382.6      415.1        2.1      410.1      104.7      236.4       47.9    1851.82
       .45       1.05      13.13       3.97       .020       .015       .020       .000    1844.88    1073.26
   .001287       231.       215.       202.          0          8          0        .00     131.09    1204.36


*SECNO 620.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   620.000       9.83    1857.57    1857.57        .00    1859.92       2.35        .26        .02    1857.66
    5800.0         .0     5322.5      477.4         .2      416.2      125.6      239.0       48.5    1854.72
       .45        .24      12.79       3.80       .020       .015       .020       .000    1847.74    1021.74
   .001208       224.       212.       202.          0          5          0        .00     141.80    1170.30


*SECNO 630.000
3280 CROSS SECTION    630.00 EXTENDED       .66 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
   630.000       9.56    1859.92    1859.92        .00    1862.06       2.14        .25        .02    1857.32
    5800.0      121.6     5170.6      507.8       32.3      417.9      138.7      241.8       49.2    1857.26
       .46       3.77      12.37       3.66       .020       .015       .020       .000    1850.36    1012.01
   .001093       229.       221.       214.          0          8          0        .00     153.98    1165.99


CCHV=      .100 CEHV=      .300
*SECNO 640.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
```

640.000	9.28	1862.91	1862.91	.00	1866.17	3.25	.35	.33	1860.35
5800.0	146.1	5653.9	.0	29.0	386.3	.0	244.8	49.9	1863.49
.46	5.04	14.64	.00	.020	.015	.000	.000	1853.63	1012.10
.001695	252.	258.	262.	0	8	0	.00	66.64	1078.73

1

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

*SECNO 650.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1035.3 1088.0 TYPE= 1 TARGET= 52.670
ELENCL= 1869.26 ELENCR= 1869.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1868.43 ELREA= 1869.26

650.000	7.20	1863.26	1863.26	.00	1866.89	3.64	.42	.12	1868.43
5800.0	.0	5800.0	.0	.0	379.0	.0	246.7	50.2	1869.26
.47	.00	15.30	.00	.000	.015	.000	.000	1856.06	1035.35
.002370	197.	211.	226.	0	15	0	.00	52.67	1088.02

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1862.11 , NOT 1863.26 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.56	2.60	150.00	52.67	2.67	400.00	.00	1858.43	1856.06

*SECNO 660.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.45

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1864.72 BRIDGE VELOCITY= 15.52 CALCULATED CHANNEL AREA= 314.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1868.35	1869.82	.00	0.	5800.	400.	400.	1866.43	1871.43	0.

3470 ENCROACHMENT STATIONS= 1077.3 1129.9 TYPE= 1 TARGET= 52.670
ELENCL= 1872.26 ELENCR= 1872.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1871.93 ELREA= 1872.26

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
660.000	9.24	1867.60	.00	.00	1869.82	2.22	2.93	.00	1871.93
5800.0	.0	5800.0	.0	.0	484.6	.0	248.6	50.4	1872.26
.47	.00	11.97	.00	.000	.015	.000	.000	1858.36	1077.26
.001128	191.	192.	191.	0	0	0	.00	52.67	1129.93

*SECNO 670.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

670.000	7.49	1868.75	1868.75	.00	1871.62	2.87	.95	.19	1876.53
5500.0	.0	5500.0	.0	.0	404.4	.0	253.2	51.1	1876.55
.48	.00	13.60	.00	.000	.025	.000	.000	1861.26	1084.90
.005530	476.	453.	439.	0	15	0	.00	71.51	1156.41

*SECNO 680.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

680.000	9.22	1874.08	1874.08	.00	1877.20	3.13	2.54	.08	1883.13
5500.0	.0	5500.0	.0	.0	387.6	.0	257.4	51.8	1880.70
.49	.00	14.19	.00	.000	.025	.000	.000	1864.86	1051.81
.005493	479.	462.	448.	0	11	0	.00	63.15	1114.96

*SECNO 690.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.42

3470 ENCROACHMENT STATIONS= 1057.3 1141.3 TYPE= 1 TARGET= 84.000
ELENCL= 1896.26 ELENCR= 1896.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1879.26 ELREA= 1896.26

690.000	8.87	1877.13	1875.59	.00	1878.92	1.79	1.59	.13	1879.26

```
    5500.0        .0     5500.0        .0        .0      512.4        .0      261.8      52.5   1896.26
       .50        .00     10.73        .00       .000     .025       .000      .000   1868.26   1061.55
   .002727       408.      423.       434.         3       15          0       .00     75.49   1137.05


1
    01JUL03      14:17:43                                                                          PAGE   36

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


 SPECIAL BRIDGE

 SB  XK         XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
       .00       1.56       2.60      90.00      40.00        .00    1240.00       2.00    1868.26    1868.26

 *SECNO 700.000

 6070,LOW FLOW BY NORMAL BRIDGE

 EGPRS=        .000  EGLWC=    1878.924  ELLC=    1888.260  PCWSE=    1877.135  ELTRD=    1896.260

 3370 NORMAL BRIDGE, NRD=    0 MIN ELTRD=  1896.26 MAX ELLC=  1888.26

    700.000       9.60    1877.86    1875.59       .00     1879.32       1.45       .36        .03    1888.26
     5500.0        .0      5500.0        .0        .0       568.2         .0      263.7       52.7    1888.26
        .51        .00        9.68       .00       .000      .025       .000      .000    1868.26    1014.28
    .002037       133.       153.       173.         3         19          0       .00     78.39    1092.68


 *SECNO 710.000

 3301 HV CHANGED MORE THAN HVINS

 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED
    710.000       9.42    1888.18    1888.18       .00     1891.24       3.06      1.33        .48    1889.91
     5500.0        .0      5500.0        .0        .0       391.6         .0      268.4       53.4    1897.16
        .52        .00       14.04       .00       .000      .025       .000      .000    1878.76    1059.17
    .005417       416.       425.       467.         0          8          0       .00     64.41    1123.58


 *SECNO 720.000
 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED
    720.000       7.74    1891.59    1891.59       .00     1894.37       2.78      2.73        .03    1892.56
     5500.0        .0      5500.0        .0        .0       411.0         .0      273.0       54.2    1899.76
        .53        .00       13.38       .00       .000      .025       .000      .000    1883.85    1033.38
    .005533       499.       498.       495.         0         15          0       .00     75.25    1108.63
```

*SECNO 730.000

3301 HV CHANGED MORE THAN HVINS

1
01JUL03 14:17:43 PAGE 37

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

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

730.000	7.69	1895.05	1895.05	.00	1897.08	2.02	2.47	.08	1894.92
5500.0	1557.3	3942.7	.0	167.8	324.5	.0	278.0	55.3	1902.38
.54	9.28	12.15	.00	.025	.025	.000	.000	1887.36	989.10
.004791	485.	481.	473.	0	5	0	.00	127.21	1116.31

*SECNO 740.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

740.000	8.50	1900.11	1900.11	.00	1903.19	3.08	2.53	.32	1902.26
5500.0	.0	5500.0	.0	.0	390.7	.0	283.0	56.4	1907.40
.55	.00	14.08	.00	.000	.025	.000	.000	1891.61	1047.11
.005489	502.	492.	484.	0	8	0	.00	64.13	1111.24

*SECNO 750.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

750.000	8.37	1904.07	1904.07	.00	1906.90	2.83	2.17	.02	1906.05
5500.0	.0	5500.0	.0	.0	407.5	.0	286.6	57.0	1921.68
.56	.00	13.50	.00	.000	.025	.000	.000	1895.70	1049.07
.005581	362.	392.	431.	0	5	0	.00	74.23	1123.31

*SECNO 760.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

760.000	7.79	1908.28	1908.28	.00	1911.07	2.79	2.40	.00	1908.96
5500.0	.0	5500.0	.0	.0	410.3	.0	290.6	57.8	1918.16
.56	.00	13.40	.00	.000	.025	.000	.000	1900.49	1036.86
.005630	410.	428.	458.	0	9	0	.00	76.05	1112.91

*SECNO 770.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

770.000	6.57	1912.03	1912.03	.00	1914.50	2.46	2.45	.03	1916.26

5500.0	.0	5500.0	.0	.0	436.8	.0	294.8	58.6	1915.36
.57	.00	12.59	.00	.000	.025	.000	.000	1905.46	1030.05
.005652	457.	435.	419.	0	15	0	.00	90.26	1120.32

1

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

*SECNO 780.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1058.7 1114.1 TYPE= 1 TARGET= 55.330
ELENCL= 1918.76 ELENCR= 1918.76

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1917.16 ELREA= 1918.76

780.000	6.72	1912.76	1912.76	.00	1916.16	3.40	.17	.28	1917.16
5500.0	.0	5500.0	.0	.0	371.9	.0	295.3	58.7	1918.76
.57	.00	14.79	.00	.000	.015	.000	.000	1906.04	1058.72
.002347	53.	49.	49.	0	8	0	.00	55.33	1114.05

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1911.34 , NOT 1912.76 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	2.60	80.00	55.33	5.33	400.00	.00	1907.38	1906.04

*SECNO 790.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.72

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1913.93 BRIDGE VELOCITY= 15.25 CALCULATED CHANNEL AREA= 327.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1917.34	1918.65	.00	0.	5500.	400.	400.	1915.38	1919.38	0.

3470 ENCROACHMENT STATIONS= 1028.6 1083.9 TYPE= 1 TARGET= 55.330
ELENCL= 1918.26 ELENCR= 1918.26

1
01JUL03 14:17:43 PAGE 39

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1917.13 ELREA= 1918.26

790.000	9.63	1916.99	.00	.00	1918.65	1.66	2.49	.00	1917.13
5500.0	.0	5500.0	.0	.0	532.3	.0	296.4	58.8	1918.26
.58	.00	10.33	.00	.000	.015	.000	.000	1907.36	1028.58
.000791	108.	108.	108.	0	0	0	.00	55.33	1083.91

*SECNO 800.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .53

3470 ENCROACHMENT STATIONS= 1000.0 1094.5 TYPE= 1 TARGET= 94.470
ELENCL= 1917.76 ELENCR= 1917.76

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1916.47 ELREA= 1917.76

800.000	10.31	1917.43	1915.16	.00	1918.81	1.38	.13	.03	1916.47
5500.0	17.7	5482.3	.0	9.6	581.3	.0	297.6	59.0	1917.76
.58	1.84	9.43	.00	.035	.030	.000	.000	1907.12	1000.00
.002830	101.	96.	88.	2	15	0	.00	94.47	1094.47

CCHV= .100 CEHV= .300
*SECNO 810.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.02

810.000	11.29	1918.91	1916.32	.00	1919.15	.24	.23	.11	1913.59
5500.0	1697.2	2353.7	1449.1	580.4	471.5	495.9	302.2	60.0	1913.31
.59	2.92	4.99	2.92	.035	.030	.035	.000	1907.62	995.44
.000695	222.	185.	145.	3	9	0	.00	353.45	1348.89

1
01JUL03 14:17:43 PAGE 40

THIS RUN EXECUTED 01JUL03 14:17:44

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

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

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

FLOODPLAIN DELINEATION -

SUMMARY PRINTOUT TABLE 100

	SECNO	EGLWC	ELLC	EGPRS	ELTRD	QPR	QWEIR	CLASS	H3	DEPTH	CWSEL	VCH	EG
*	130.000	1732.56	1729.79	1732.92	1733.69	6400.00	.00	10.00	.00	6.99	1731.78	8.55	1732.92
*	300.000	1776.87	1775.18	1776.45	1779.18	6300.00	.00	2.00	.00	6.16	1775.34	9.92	1776.87
*	370.000	1792.39	1793.94	.00	1805.42	6300.00	.00	59.00	.00	6.08	1790.02	12.29	1792.37
*	440.000	1813.49	1803.56	1820.96	1804.64	3603.15	2705.88	30.00	.00	9.55	1806.11	17.48	1810.85
*	480.000	1815.71	1810.26	1822.37	1813.56	4005.47	1830.21	30.00	.00	14.15	1816.08	8.62	1817.23
*	600.000	1848.77	1845.39	1848.66	1848.76	5780.91	.16	15.00	2.94	9.34	1846.70	11.56	1848.77
*	660.000	1869.82	1866.43	1868.35	1871.43	5800.00	.00	2.00	.00	9.24	1867.60	11.97	1869.82
	700.000	1878.92	1888.26	.00	1896.26	5500.00	.00	59.00	.00	9.60	1877.86	9.68	1879.32
*	790.000	1918.65	1915.38	1917.34	1919.38	5500.00	.00	2.00	.00	9.63	1916.99	10.33	1918.65

1
01JUL03 14:17:43 PAGE 41

FLOODPLAIN DELINEATION -

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
10.000	.00	.00	.00	1702.59	6400.00	1710.96	1709.66	1712.45	40.17	9.77	654.99	1009.81
20.000	488.53	.00	.00	1705.38	6400.00	1712.99	1712.30	1714.81	54.16	10.82	591.46	869.66
30.000	498.03	.00	.00	1708.11	6400.00	1715.62	1715.25	1717.74	60.14	11.71	555.76	825.31

	40.000	491.57	.00	.00	1709.46	6400.00	1718.53	1718.05	1720.44	49.47	11.26	605.53	909.92
*	50.000	305.60	.00	.00	1711.16	6400.00	1720.62	1718.32	1721.58	25.10	7.85	815.17	1277.56
*	60.000	499.27	.00	.00	1712.20	6400.00	1721.93	1719.55	1722.46	11.93	6.46	1304.23	1852.60
*	70.000	497.95	.00	.00	1714.26	6400.00	1721.79	1721.79	1724.38	79.46	12.92	495.38	717.97
*	80.000	470.68	.00	.00	1716.64	6400.00	1725.47	1723.76	1726.82	33.39	9.33	685.96	1107.62
	90.000	482.19	.00	.00	1717.45	6400.00	1727.03	1726.06	1728.89	47.85	10.93	586.21	925.18
	100.000	295.13	.00	.00	1720.96	6400.00	1728.68	1726.93	1730.07	32.04	9.49	674.45	1130.66
*	110.000	25.69	.00	.00	1722.76	6400.00	1728.05	1728.05	1730.48	20.26	12.50	512.01	1421.91
*	120.000	90.11	.00	.00	1724.16	6400.00	1728.95	1728.95	1731.37	22.07	12.49	512.45	1362.37
*	130.000	119.69	1733.69	1729.79	1724.79	6400.00	1731.78	.00	1732.92	6.45	8.55	748.45	2519.99
	140.000	64.14	.00	.00	1724.86	6400.00	1731.71	1730.19	1733.01	8.08	9.16	698.74	2252.04
*	150.000	489.94	.00	.00	1725.79	6300.00	1732.25	1732.25	1734.43	37.37	11.84	532.17	1030.53
	160.000	501.51	.00	.00	1727.87	6300.00	1734.37	1733.82	1736.01	25.37	10.28	612.98	1250.86
*	170.000	487.26	.00	.00	1729.56	6300.00	1735.60	1735.60	1737.71	37.59	11.65	540.60	1027.52
	180.000	491.83	.00	.00	1731.86	6300.00	1737.47	1737.29	1739.44	32.61	11.26	559.45	1103.29
*	190.000	497.74	.00	.00	1735.05	6300.00	1741.75	1741.75	1744.14	36.27	12.40	508.15	1046.09
*	200.000	495.37	.00	.00	1738.96	6300.00	1745.12	1745.12	1747.57	36.03	12.55	501.99	1049.50
*	210.000	500.38	.00	.00	1739.78	6300.00	1749.09	1749.09	1751.94	35.28	13.54	465.25	1060.72
*	220.000	476.72	.00	.00	1746.22	6300.00	1754.19	1754.19	1756.87	35.78	13.15	479.23	1053.22
*	230.000	494.76	.00	.00	1752.38	6300.00	1760.66	1760.66	1763.45	35.14	13.39	470.48	1062.73
*	240.000	492.00	.00	.00	1759.69	6300.00	1764.87	1764.87	1767.14	36.68	12.07	521.97	1040.16

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	250.000	58.60	.00	.00	1760.26	6300.00	1765.31	1765.31	1767.65	21.01	12.28	513.16	1374.32
*	260.000	1.00	.00	.00	1764.26	6300.00	1769.23	1769.23	1771.38	21.96	11.75	536.10	1344.52
*	270.000	21.92	.00	.00	1764.26	6300.00	1769.12	1769.12	1771.54	21.56	12.48	504.71	1356.90
*	280.000	1.00	.00	.00	1768.26	6300.00	1773.15	1773.15	1775.56	21.39	12.45	505.92	1362.04

*	290.000	14.95	.00	.00	1768.81	6300.00	1773.67	1773.67	1776.13	22.08	12.58	500.64	1340.65
*	300.000	102.75	1779.18	1775.18	1769.18	6300.00	1775.34	.00	1776.87	10.32	9.92	634.90	1960.95
	310.000	100.28	.00	.00	1770.04	6300.00	1775.28	1774.93	1777.08	16.33	10.77	584.86	1558.77
*	320.000	489.10	.00	.00	1771.50	6300.00	1778.09	1778.09	1780.39	36.49	12.17	517.70	1042.95
*	330.000	500.10	.00	.00	1774.05	6300.00	1781.12	1781.12	1783.48	36.49	12.31	511.82	1042.99
*	340.000	496.21	.00	.00	1776.63	6300.00	1784.11	1784.11	1786.44	36.70	12.24	514.52	1039.97
*	350.000	436.71	.00	.00	1778.51	6300.00	1786.10	1786.10	1788.60	35.60	12.68	496.89	1055.87
*	360.000	314.29	.00	.00	1781.93	6300.00	1788.32	1788.32	1790.84	36.01	12.72	495.11	1049.91
*	370.000	232.15	1805.42	1793.94	1783.94	6300.00	1790.02	1790.02	1792.37	36.03	12.29	512.55	1049.57
*	380.000	170.96	.00	.00	1787.94	6300.00	1795.36	1795.36	1798.88	37.54	15.07	418.16	1028.18
*	390.000	420.90	.00	.00	1789.46	6300.00	1797.18	1797.18	1800.78	37.49	15.23	413.68	1028.90
*	400.000	216.12	.00	.00	1790.86	6300.00	1798.40	1798.40	1801.86	36.96	14.93	421.85	1036.24
*	410.000	222.64	.00	.00	1791.56	6300.00	1800.50	1800.50	1803.83	33.61	14.68	438.82	1086.66
*	420.000	218.15	.00	.00	1793.12	6300.00	1802.97	1802.97	1805.75	24.36	13.54	517.22	1276.55
*	430.000	221.27	.00	.00	1795.55	6300.00	1805.07	1805.07	1809.84	26.76	17.53	359.32	1217.88
*	440.000	197.38	1804.64	1803.56	1796.56	6300.00	1806.11	1806.06	1810.85	26.47	17.48	360.40	1224.55
	450.000	163.47	.00	.00	1797.76	5800.00	1810.60	1807.03	1811.67	29.44	8.33	696.14	1068.91
	460.000	285.08	.00	.00	1799.83	5800.00	1811.55	1808.81	1812.61	36.34	8.26	702.34	962.09
*	470.000	275.07	.00	.00	1801.56	5800.00	1812.55	1812.55	1815.71	138.68	14.27	406.58	492.51
*	480.000	29.16	1813.56	1810.26	1801.93	5800.00	1816.08	.00	1817.23	31.57	8.62	672.62	1032.30
*	490.000	404.91	.00	.00	1805.92	5800.00	1817.46	1816.19	1819.39	79.68	11.16	519.90	649.77
	500.000	467.90	.00	.00	1809.76	5800.00	1821.26	1820.12	1823.26	85.04	11.34	511.37	628.96

1

01JUL03 14:17:43 PAGE 43

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	510.000	413.47	.00	.00	1812.55	5800.00	1824.30	1824.30	1825.94	33.83	10.65	614.81	997.24
	520.000	477.37	.00	.00	1817.08	5800.00	1826.21	1824.96	1827.72	40.91	9.86	588.48	906.77
*	530.000	399.20	.00	.00	1819.88	5800.00	1829.04	1829.04	1831.50	83.41	12.57	461.47	635.06

*	540.000	489.72	.00	.00	1825.71	5800.00	1834.02	1834.02	1836.69	83.30	13.12	442.12	635.50
*	550.000	456.26	.00	.00	1828.92	5800.00	1838.92	1838.92	1841.46	86.00	12.80	453.18	625.44
	560.000	330.24	.00	.00	1830.11	5800.00	1841.76	1841.50	1844.07	71.79	12.20	475.41	684.51
	570.000	228.38	.00	.00	1833.95	5800.00	1843.30	1841.48	1845.28	38.60	11.28	514.15	933.54
*	580.000	1.00	.00	.00	1836.26	5800.00	1843.20	1843.20	1846.39	20.51	14.32	405.06	1280.79
*	590.000	15.77	.00	.00	1836.47	5800.00	1843.56	1843.56	1847.14	23.56	15.19	381.84	1194.84
*	600.000	93.51	1848.76	1845.39	1837.36	5800.00	1846.70	.00	1848.77	10.31	11.56	501.84	1806.12
*	610.000	215.38	.00	.00	1844.88	5800.00	1854.56	1854.56	1857.06	12.87	13.13	516.84	1616.89
*	620.000	212.31	.00	.00	1847.74	5800.00	1857.57	1857.57	1859.92	12.08	12.79	541.92	1668.78
*	630.000	221.03	.00	.00	1850.36	5800.00	1859.92	1859.92	1862.06	10.93	12.37	588.88	1754,17
*	640.000	258.21	.00	.00	1853.63	5800.00	1862.91	1862.91	1866.17	16.95	14.64	415.21	1408.60
*	650.000	211.31	.00	.00	1856.06	5800.00	1863.26	1863.26	1866.89	23.70	15.30	378.99	1191.31
*	660.000	191.78	1871.43	1866.43	1858.36	5800.00	1867.60	.00	1869.82	11.28	11.97	484.63	1726.55
*	670.000	452.82	.00	.00	1861.26	5500.00	1868.75	1868.75	1871.62	55.30	13.60	404.44	739.57
*	680.000	461.54	.00	.00	1864.86	5500.00	1874.08	1874.08	1877.20	54.93	14.19	387.58	742.12
*	690.000	422.90	.00	.00	1868.26	5500.00	1877.13	1875.59	1878.92	27.27	10.73	512.41	1053.31
	700.000	153.08	1896.26	1888.26	1868.26	5500.00	1877.86	1875.59	1879.32	20.37	9.68	568.21	1218.51
*	710.000	424.60	.00	.00	1878.76	5500.00	1888.18	1888.18	1891.24	54.17	14.04	391.63	747.29
*	720.000	498.02	.00	.00	1883.85	5500.00	1891.59	1891.59	1894.37	55.33	13.38	410.97	739.40
*	730.000	480.56	.00	.00	1887.36	5500.00	1895.05	1895.05	1897.08	47.91	12.15	492.26	794.59
*	740.000	492.38	.00	.00	1891.61	5500.00	1900.11	1900.11	1903.19	54.89	14.08	390.66	742.38
*	750.000	391.69	.00	.00	1895.70	5500.00	1904.07	1904.07	1906.90	55.81	13.50	407.50	736.20
*	760.000	428.24	.00	.00	1900.49	5500.00	1908.28	1908.28	1911.07	56.30	13.40	410.34	733.03

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	770.000	434.78	.00	.00	1905.46	5500.00	1912.03	1912.03	1914.50	56.52	12.59	436.79	731.56
*	780.000	49.44	.00	.00	1906.04	5500.00	1912.76	1912.76	1916.16	23.47	14.79	371.91	1135.21

*	790.000	108.02	1919.38	1915.38	1907.36	5500.00	1916.99	.00	1918.65	7.91	10.33	532.29	1955.06
*	800.000	95.80	.00	.00	1907.12	5500.00	1917.43	1915.16	1918.81	28.30	9.43	590.89	1033.90
*	810.000	185.09	.00	.00	1907.62	5500.00	1918.91	1916.32	1919.15	6.95	4.99	1547.86	2086.34

1

FLOODPLAIN DELINEATION -

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	10.000	6400.00	1710.96	.00	.00	3.70	119.45	.00
	20.000	6400.00	1712.99	.00	2.03	.00	114.06	488.53
	30.000	6400.00	1715.62	.00	2.63	.00	125.10	498.03
	40.000	6400.00	1718.53	.00	2.91	.00	154.35	491.57
*	50.000	6400.00	1720.62	.00	2.09	.00	142.96	305.60
*	60.000	6400.00	1721.93	.00	1.31	.00	396.87	499.27
*	70.000	6400.00	1721.79	.00	-.14	.00	97.17	497.95
*	80.000	6400.00	1725.47	.00	3.68	.00	115.23	470.68
	90.000	6400.00	1727.03	.00	1.56	.00	110.73	482.19
	100.000	6400.00	1728.68	.00	1.65	.00	104.36	295.13
*	110.000	6400.00	1728.05	.00	-.62	.00	106.34	25.69
*	120.000	6400.00	1728.95	.00	.90	.00	107.00	90.11
*	130.000	6400.00	1731.78	.00	2.83	.00	107.00	119.69
	140.000	6400.00	1731.71	.00	-.07	.00	115.91	64.14
*	150.000	6300.00	1732.25	.00	.54	.00	124.87	489.94
	160.000	6300.00	1734.37	.00	2.12	.00	132.85	501.51
*	170.000	6300.00	1735.60	.00	1.23	.00	130.75	487.26
	180.000	6300.00	1737.47	.00	1.87	.00	127.87	491.83
*	190.000	6300.00	1741.75	.00	4.28	.00	108.37	497.74
*	200.000	6300.00	1745.12	.00	3.37	.00	104.30	495.37

*	210.000	6300.00	1749.09	.00	3.97	.00	83.71	500.38
*	220.000	6300.00	1754.19	.00	5.10	.00	91.27	476.72
*	230.000	6300.00	1760.66	.00	6.47	.00	86.22	494.76
*	240.000	6300.00	1764.87	.00	4.21	.00	116.82	492.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	250.000	6300.00	1765.31	.00	.43	.00	110.08	58.60
*	260.000	6300.00	1769.23	.00	3.93	.00	128.59	1.00
*	270.000	6300.00	1769.12	.00	-.12	.00	104.80	21.92
*	280.000	6300.00	1773.15	.00	4.03	.00	105.61	1.00
*	290.000	6300.00	1773.67	.00	.52	.00	102.93	14.95
*	300.000	6300.00	1775.34	.00	1.67	.00	103.02	102.75
	310.000	6300.00	1775.28	.00	-.06	.00	131.04	100.28
*	320.000	6300.00	1778.09	.00	2.81	.00	114.58	489.10
*	330.000	6300.00	1781.12	.00	3.04	.00	110.82	500.10
*	340.000	6300.00	1784.11	.00	2.99	.00	112.87	496.21
*	350.000	6300.00	1786.10	.00	1.99	.00	99.87	436.71
*	360.000	6300.00	1788.32	.00	2.22	.00	100.08	314.29
*	370.000	6300.00	1790.02	.00	1.70	.00	110.15	232.15
*	380.000	6300.00	1795.36	.00	5.34	.00	60.09	170.96
*	390.000	6300.00	1797.18	.00	1.82	.00	58.10	420.90
*	400.000	6300.00	1798.40	.00	1.21	.00	60.99	216.12
*	410.000	6300.00	1800.50	.00	2.10	.00	75.96	222.64
*	420.000	6300.00	1802.97	.00	2.47	.00	149.83	218.15
*	430.000	6300.00	1805.07	.00	2.10	.00	37.75	221.27
*	440.000	6300.00	1806.11	.00	1.04	.00	37.75	197.38
	450.000	5800.00	1810.60	.00	4.49	.00	76.55	163.47

	460.000	5800.00	1811.55	.00	.95	.00	93.66	285.08
*	470.000	5800.00	1812.55	.00	1.00	.00	64.43	275.07
*	480.000	5800.00	1816.08	.00	3.53	.00	71.96	29.16
*	490.000	5800.00	1817.46	.00	1.38	.00	77.64	404.91
	500.000	5800.00	1821.26	.00	3.81	.00	79.43	467.90

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	510.000	5800.00	1824.30	.00	3.03	.00	205.18	413.47
	520.000	5800.00	1826.21	.00	1.92	.00	105.06	477.37
*	530.000	5800.00	1829.04	.00	2.83	.00	95.65	399.20
*	540.000	5800.00	1834.02	.00	4.97	.00	84.49	489.72
*	550.000	5800.00	1838.92	.00	4.90	.00	92.74	456.26
	560.000	5800.00	1841.76	.00	2.85	.00	90.56	330.24
	570.000	5800.00	1843.30	.00	1.54	.00	64.87	228.38
*	580.000	5800.00	1843.20	.00	-.10	.00	64.22	1.00
*	590.000	5800.00	1843.56	.00	.36	.00	53.84	15.77
*	600.000	5800.00	1846.70	.00	3.13	.00	53.84	93.51
*	610.000	5800.00	1854.56	.00	7.87	.00	131.09	215.38
*	620.000	5800.00	1857.57	.00	3.01	.00	141.80	212.31
*	630.000	5800.00	1859.92	.00	2.34	.00	153.98	221.03
*	640.000	5800.00	1862.91	.00	3.00	.00	66.64	258.21
*	650.000	5800.00	1863.26	.00	.34	.00	52.67	211.31
*	660.000	5800.00	1867.60	.00	4.34	.00	52.67	191.78
*	670.000	5500.00	1868.75	.00	1.15	.00	71.51	452.82
*	680.000	5500.00	1874.08	.00	5.33	.00	63.15	461.54
*	690.000	5500.00	1877.13	.00	3.06	.00	75.49	422.90
	700.000	5500.00	1877.86	.00	.73	.00	78.39	153.08

*	710.000	5500.00	1888.18	.00	10.31	.00	64.41	424.60
*	720.000	5500.00	1891.59	.00	3.42	.00	75.25	498.02
*	730.000	5500.00	1895.05	.00	3.46	.00	127.21	480.56
*	740.000	5500.00	1900.11	.00	5.06	.00	64.13	492.38
*	750.000	5500.00	1904.07	.00	3.96	.00	74.23	391.69
*	760.000	5500.00	1908.28	.00	4.21	.00	76.05	428.24

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	770.000	5500.00	1912.03	.00	3.75	.00	90.26	434.78
*	780.000	5500.00	1912.76	.00	.73	.00	55.33	49.44
*	790.000	5500.00	1916.99	.00	4.23	.00	55.33	108.02
*	800.000	5500.00	1917.43	.00	.44	.00	94.47	95.80
*	810.000	5500.00	1918.91	.00	1.48	.00	353.45	185.09

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=     50.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     60.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     70.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     70.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     80.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    110.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    110.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=    120.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    120.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=    130.000  PROFILE=  1  HYDRAULIC JUMP D.S.
WARNING SECNO=    130.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

```
 CAUTION SECNO=    150.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    150.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    170.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    170.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    190.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    190.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    200.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    200.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    210.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    210.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    220.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    220.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    230.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    230.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    240.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    240.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    250.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    250.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    260.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    260.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    270.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    270.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
1
    01JUL03      14:17:43                                                PAGE   50


 CAUTION SECNO=    280.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    280.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    290.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    290.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    300.000  PROFILE=  1  HYDRAULIC JUMP D.S.
 WARNING SECNO=    300.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=    320.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    320.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    330.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    330.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    340.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    340.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    350.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
```

```
 CAUTION SECNO=    350.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    360.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    360.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    370.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    370.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    380.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    380.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    390.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    390.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    400.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    400.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    410.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    410.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    420.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    420.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    430.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    430.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    440.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
 CAUTION SECNO=    440.000  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
 CAUTION SECNO=    440.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
 CAUTION SECNO=    440.000  PROFILE=  1  HYDRAULIC JUMP D.S.

 CAUTION SECNO=    470.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    470.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 WARNING SECNO=    480.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
1
    01JUL03      14:17:43                                                    PAGE   51


 WARNING SECNO=    490.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=    510.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    510.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    530.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    530.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    540.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    540.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    550.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    550.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 CAUTION SECNO=    580.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=    580.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
```

Corrected Effective Model (Pre-Project Conditions)
Supercritical Flow HEC-2 Output File (NAVD88)

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES         *
 *                                       *
 *  Version   4.6.2;  May 1991           *
 *                                       *
 *  RUN DATE    13AUG03    TIME   11:13:13  *
 *****************************************
```


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


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

1

THIS RUN EXECUTED 13AUG03 11:13:13

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

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

```
T1      REQUEST FOR LETTER OF MAP REVISION - FLAMINGO WASH
T2      CORRECTED EFFECTIVE MODEL
T3      ORIGINAL MODEL CREATED BY GC WALLACE  FOR FLAMINGO WASH FIS
T4      ELEVATIONS RAISED BY BERGER 2.26 FEET TO CONVERT FROM NGVD29 TO NAVD88
T4      DATUM = NAVD88
T4      FILE: 879-F-C-SUPER.DAT
T4      STARTING WSE = CRITICAL DEPTH
T4      SUPERCRITICAL RUN
T4      CONCRETE CHANNEL LINING BETWEEN D.I. ROAD & MOJAVE ROAD
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2		1	-1			5800	1862.70	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1		-1				-2	-6		

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	150	100

NC	0.02	0.02	0.015	0.1	0.3					
X1	640	19	1026.88	1079.43	251.59	262.14	258.21		2.26	
GR	1864.5	1000	1864.16	1004.77	1864	1005.12	1862	1009.4	1860	1013.41
GR	1858.6	1016.12	1858.09	1026.88	1858	1027.05	1856	1030.75	1854	1034.43
GR	1852	1038.12	1851.39	1039.25	1851.37	1067.22	1852	1068.01	1854	1070.51
GR	1856	1073	1858	1075.48	1860	1077.94	1861.23	1079.43		
NC	0.02	0.02	0.015							
X1	630	18	1031	1084.55	229.09	213.86	221.03		2.26	
GR	1861.2	1000	1860	1004.03	1858.27	1009.63	1858	1010.62	1856	1018.67
GR	1855.9	1018.82	1855.06	1031	1854	1032.96	1852	1036.68	1850	1040.45
GR	1848.1	1044.02	1848.28	1071.6	1850	1074.89	1852	1078.71	1854	1082.53
GR	1855	1084.55	1856	1129.14	1857	1165.99				
NC	0.02	0.02	0.015							
X1	620	20	1033.45	1086.27	223.64	202.43	212.31		2.26	
GR	1859.3	1000	1858	1007.7	1857.16	1012.48	1856	1018.28	1855.25	1022.06
GR	1855.4	1033.45	1854	1035.35	1852	1037.9	1850	1040.44	1848	1042.97
GR	1846	1045.49	1845.48	1046.14	1845.66	1075.97	1846	1076.49	1848	1079.51
GR	1850	1082.53	1852	1085.57	1852.46	1086.27	1854	1135.67	1855.53	1176.03

1

NC	0.02	0.02	0.015							
X1	610	20	1083.2	1136.14	230.78	201.73	215.38		2.26	
X3	10			1061.48	1855.26	1207.54	1855.26			
GR	1851.7	1000	1851.08	1029.96	1852	1046.46	1852.83	1061.48	1852.52	1068.39
GR	1852	1080.06	1851.91	1083.2	1850	1085.83	1848	1088.59	1846	1091.36
GR	1844	1094.17	1842.71	1095.99	1842.62	1124.12	1844	1126.53	1846	1130
GR	1848	1133.45	1849.56	1136.14	1850	1155.27	1852	1197.8	1852.45	1207.54
NC	0.02	0.02	0.015							
X1	600	15	1081.85	1135.69					2.26	
X3	10			1081.85	1850.26	1135.69	1850.26			
GR	1851	1000	1850	1003.75	1848	1011.09	1847.6	1012.57	1847.64	1032.47
GR	1848	1035.82	1849.27	1065.44	1848	1070.71	1847.2	1074.22	1846	1081.85
GR	1835.1	1081.85	1835.1	1135.69	1847.56	1135.69	1847.68	1152.6	1848	1170.43

1

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

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

ALLOWABLE ERROR FOR CRITICAL DEPTH DETERMINATION (ALLDC) = 2.000 PERCENT OF THE DEPTH
0

CCHV= .100 CEHV= .300
*SECNO 640.000
3720 CRITICAL DEPTH ASSUMED

640.000	9.27	1862.90	1862.90	1862.70	1866.17	3.27	.00	.00	1860.35
5800.0	144.5	5655.5	.0	28.7	385.3	.0	.0	.0	1863.49
.00	5.04	14.68	.00	.020	.015	.000	.000	1853.63	1012.14
.001710	0.	0.	0.	0	7	0	.00	66.57	1078.71

*SECNO 630.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.00

630.000	6.51	1856.87	1859.88	.00	1864.91	8.04	.78	.48	1857.32
5800.0	.0	5800.0	.0	.0	254.9	.0	2.0	.4	1857.26
.00	.00	22.75	.00	.000	.015	.000	.000	1850.36	1031.84
.006841	252.	258.	262.	9	8	0	.00	51.91	1083.75

*SECNO 620.000

3301 HV CHANGED MORE THAN HVINS

620.000	6.31	1854.05	1857.58	.00	1863.20	9.15	1.60	.11	1857.66
5800.0	.0	5800.0	.0	.0	238.9	.0	3.2	.6	1854.72
.01	.00	24.27	.00	.000	.015	.000	.000	1847.74	1038.17
.007680	229.	221.	214.	10	17	0	.00	47.08	1085.25

*SECNO 610.000

3301 HV CHANGED MORE THAN HVINS

1
13AUG03 11:13:13 PAGE 4

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

3470 ENCROACHMENT STATIONS= 1061.5 1207.5 TYPE= 1 TARGET= 146.060
ELENCL= 1855.26 ELENCR= 1855.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1854.17 ELREA= 1851.82

610.000	6.01	1850.89	1854.56	.00	1861.28	10.39	1.79	.12	1854.17

5800.0	.0	5800.0	.0	.0	224.2	.0	4.4	.8	1851.82
.01	.00	25.86	.00	.000	.015	.000	.000	1844.88	1087.71
.009304	224.	212.	202.	9	14	0	.00	46.85	1134.55

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS= 1081.8 1135.7 TYPE= 1 TARGET= 53.840
ELENCL= 1850.26 ELENCR= 1850.26

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1848.26 ELREA= 1850.26

600.000	3.26	1840.62	1844.45	.00	1857.47	16.85	3.16	.65	1848.26
5800.0	.0	5800.0	.0	.0	176.1	.0	5.4	1.1	1850.26
.01	.00	32.94	.00	.000	.015	.000	.000	1837.36	1081.85
.026536	231.	215.	202.	6	11	0	.00	53.84	1135.69

1
13AUG03 11:13:13 PAGE 5

THIS RUN EXECUTED 13AUG03 11:13:13

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

DATUM = NAVD88

SUMMARY PRINTOUT TABLE 100

SECNO	EGLWC	ELLC	EGPRS	ELTRD	QPR	QWEIR	CLASS	H3	DEPTH	CWSEL	VCH	EG

1
13AUG03 11:13:13 PAGE 6

DATUM = NAVD88

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	640.000	.00	.00	.00	1853.63	5800.00	1862.90	1862.90	1866.17	17.10	14.68	413.92	1402.59
*	630.000	258.21	.00	.00	1850.36	5800.00	1856.87	1859.88	1864.91	68.41	22.75	254.90	701.25
	620.000	221.03	.00	.00	1847.74	5800.00	1854.05	1857.58	1863.20	76.80	24.27	238.94	661.84
	610.000	212.31	.00	.00	1844.88	5800.00	1850.89	1854.56	1861.28	93.04	25.86	224.25	601.29
*	600.000	215.38	.00	.00	1837.36	5800.00	1840.62	1844.45	1857.47	265.36	32.94	176.07	356.05

1
13AUG03 11:13:13 PAGE 7

DATUM = NAVD88

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	640.000	5800.00	1862.90	.00	.00	.20	66.57	.00
*	630.000	5800.00	1856.87	.00	-6.03	.00	51.91	258.21
	620.000	5800.00	1854.05	.00	-2.82	.00	47.08	221.03
	610.000	5800.00	1850.89	.00	-3.15	.00	46.85	212.31
*	600.000	5800.00	1840.62	.00	-10.27	.00	53.84	215.38

1
13AUG03 11:13:13 PAGE 8

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 640.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

WARNING SECNO= 630.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 600.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

Flamingo Wash at Spencer Street LOMR

Appendix B.2

B.2.1 LOMR Case No. 04-09-0167P

Federal Emergency Management Agency

Washington, D.C. 20472

MAR 12 2004

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Chip Maxfield, P.E.
Chair, Clark County Board
of Commissioners
500 South Grand Central Parkway
Las Vegas, NV 89155

IN REPLY REFER TO:
Case No.: 04-09-0167P
Community Name: Clark County, NV
Community No.: 320003
Effective Date of This Revision: MAR 12 2004

Dear Mr. Maxfield:

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) 627-7103, 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,

Max H. Yuan, P.E., Project Engineer
Hazard Identification Section
Mitigation Division
Emergency Preparedness
and Response Directorate

For: Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness
and Response Directorate

List of Enclosures:
Letter of Map Revision Determination Document
Annotated Flood Insurance Rate Map

cc: Mr. David Betley, P.E.
Principal Engineer
Civil Engineering Division
Department of Public Works
Clark County

Syndi J. Flippin-Dudley, Ph.D., P.E.
Director of Water Resources
The Louis Berger Group, Inc.

Mr. Kevin Eubanks, P.E.
Assistant General Manager
Clark County Regional Flood Control District

2004 MAR 15 PM 3:09
RFCD

 | Issue Date: MAR 12 2004 | Effective Date: MAR 12 2004 | Case No.: 04-09-0167P | 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	Clark County Nevada (Unincorporated Areas)	BRIDGE CHANNELIZATION	HYDRAULIC ANALYSIS NEW TOPOGRAPHIC DATA
	COMMUNITY NO.: 320003		
IDENTIFIER	Flamingo Wash – Maryland Parkway to Spencer Street	APPROXIMATE LATITUDE & LONGITUDE: 36.12, 115.14 SOURCE: USGS QUADRANGLE DATUM: NAD 83	
FLOODING SOURCE(S) & REVISED REACH(ES)	Flamingo Wash – from approximately 700 feet downstream of Spencer Street to just upstream of Maryland Parkway		

SUMMARY OF REVISIONS

Effective Flooding: Zone A
Revised Flooding: Zone A
Increases: YES
Decreases: YES

* BFEs – Base Flood Elevations

ANNOTATED MAPPING ENCLOSURES	ANNOTATED STUDY ENCLOSURES
TYPE: FIRM* NO.: 32003C2557 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 1-877-336-2677 (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.

Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness and Response Directorate

102426DA04090167-102IC

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 bridge rests with your community. We may request that your community submit a description and schedule of channel and bridge 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 1-877-336-2677 (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.

Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness and Response Directorate

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) 627-7103

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 1-877-336-2677 (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.

Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness and Response Directorate

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

PUBLIC NOTIFICATION OF REVISION

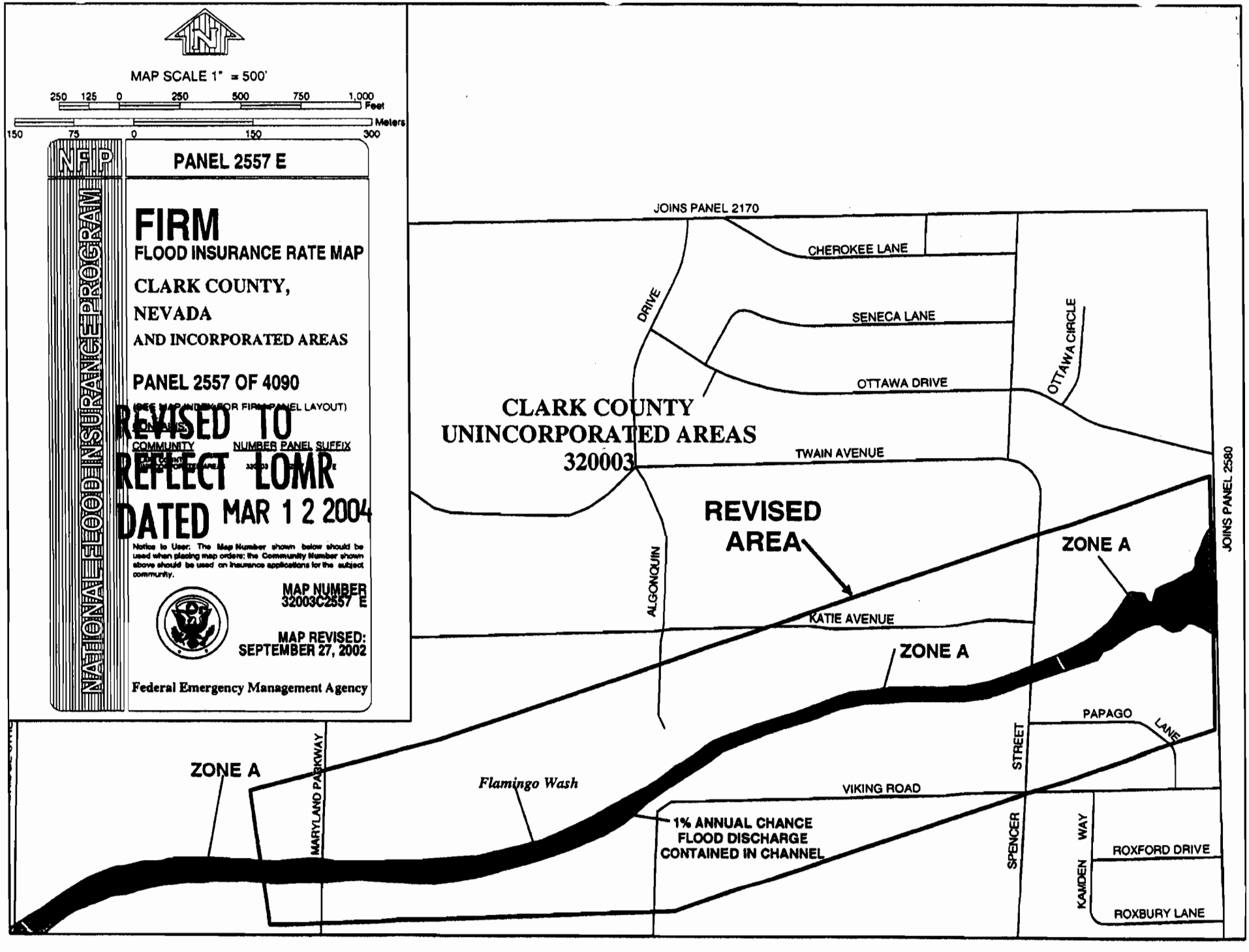
This revision is effective as of the date of this letter. Any requests to review or alter this determination should be made within 30 days and must be based on scientific or technical data.

As a result of the modifications, the Special Flood Hazard Area, the area that would be inundated by the base (1-percent-annual-chance) flood, along Flamingo Wash, from approximately 1,200 feet downstream to just upstream of Maryland Parkway, shifted approximately 30 feet to the north to better reflect existing topography. The base flood is contained in the channel in this reach.

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 1-877-336-2677 (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.

Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness and Response Directorate

102426DA04090167-102IC


MAP SCALE 1" = 500'
250 125 0 250 500 750 1,000 Feet
150 75 0 150 300 Meters
PANEL 2557 E
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA
AND INCORPORATED AREAS
PANEL 2557 OF 4090
REVISED TO REFLECT LOMR DATED MAR 1 2 2004
COMMUNITY NUMBER PANEL SUFFIX
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
32003C2557 E
MAP REVISED:
SEPTEMBER 27, 2002
Federal Emergency Management Agency
JOINS PANEL 2170
CHEROKEE LANE
SENECA LANE
OTTAWA DRIVE
OTTAWA CIRCLE
DRIVE
CLARK COUNTY
UNINCORPORATED AREAS
320003
TWAIN AVENUE
REVISED
AREA
ALGONQUIN
KATIE AVENUE
ZONE A
ZONE A
ZONE A
JOINS PANEL 2580
PAPAGO
LANE
STREET
VIKING ROAD
MARYLAND PARKWAY
Flamingo Wash
1% ANNUAL CHANCE
FLOOD DISCHARGE
CONTAINED IN CHANNEL
SPENCER
KAMDEN WAY
ROXFORD DRIVE
ROXBURY LANE

B.2.2 Flamingo Wash at Spencer Street Workmap and Post Project HECRAS Model

Request for Letter of Map Revision
Flamingo Wash
at Spencer Street
Clark County, Nevada

Prepared for:
CLARK COUNTY
REGIONAL FLOOD CONTROL DISTRICT
500 S. Grand Central Parkway
Las Vegas, NV 89155

CLARK COUNTY
REGIONAL FLOOD CONTROL DISTRICT



Prepared by:
THE Louis Berger Group, INC.
500 Amigo Court, Suite 100
Las Vegas, Nevada 89119
(702) 736-6632



November 26, 2003

TWAIN

TWAIN

ALG

SPENCER

DOWNSTREAM LIMIT OF STUDY

KATIE

MARYLAND

CAMBRIDGE

FLAMINGO WASH

VIKING

KAMDEN

ROXFORD

ROXBURY

CRAIGLEA

LIMIT OF STUDY

FLAMINGO

CLAYMONT

GROVE

MARYLAND

COTTAGE GROVE

ESCONDIDO

ALGONQUIN

TAMARACK

NEVSO

POST PROJECT ZONE A CONTAINED IN CHANNEL

SPENCER STREET BRIDGE

UPSTREAM LIMIT OF STUDY

EXISTING ZONE "A" BOUNDARY SHIFTED NORTH TO LINE UP WITH CHANNEL.

EXISTING ZONE "A" BOUNDARY

FLOODWAY

NOTES:

1. THE VERTICAL CONTROL IS BASED ON THE NGVD 29 AND HORIZONTAL CONTROL IS BASED ON THE NAVD 83, UTILIZING CLARK COUNTY MONUMENTS.
2. THE CORRECTION FACTOR FROM NGVD 29 TO NAVD 88 IS +2.26 ft. THE HECRAS MODEL CROSS-SECTION ELEVATIONS ARE BASED ON NAVD 88.
3. PLAN MODIFIED FROM "FLAMINGO WASH FIS-RESTUDY IMPERIAL PALACE TO SPENCER STREET CROSS SECTION EXHIBIT" PREPARED BY G.C. WALLACE INC. DATED 11-11-1997.
4. THE EXISTING FLOOD ZONE LIMITS SHOWN HEREON ARE FROM THE CLARK COUNTY GIS DATA.

LEGEND

(150) FLAMINGO WASH FIS RESTUDY CROSS SECTION (TYP)

[130] POST PROJECT CONDITIONS CROSS SECTION (TYP)

PROFESSIONAL ENGINEER-STATE OF NEVADA
SYNDI L. FUPPIANI-DUDLEY
No. 11070
EXP 12/31/05
CIVIL
10/15/03

N

200 100 0 200 400 800

WORK MAP

FLAMINGO WASH AT SPENCER

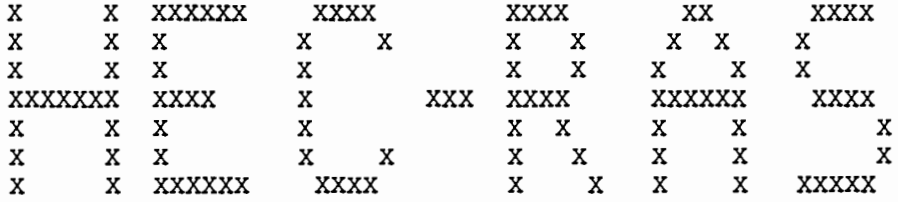
FIGURE 3

THE LOUIS BERGER GROUP, INC.
LAS VEGAS, NEVADA

FILE NAME: X:\879-Flamingo\Exhibit\879-FIGURE-03.dgn - 10/15/2003 - 12:53:11 JPS

Post-Project Conditions HEC-RAS Output File

HEC-RAS Version 3.0.1 Mar 2001
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104



PROJECT DATA
Project Title: Flamingo Wash at Spencer
Project File : 879_D_Spnc.prj
Run Date and Time: 12/1/2003 9:57:57 AM

Project in English units

Project Description:
FLAMINGO WASH
  LETTER OF MAP REVISION
  EXISTING CHANNEL TO SPENCER
STREET
  STARTING WSE = NORMAL DEPTH
  SUBCRITICAL RUN

PLAN DATA

Plan Title: Post Project
Plan File : C:\Documents and Settings\jdouglas\Desktop\HEC-Ras\879_D_Spnc.p03

Geometry Title: Post Project Geometry
Geometry File : C:\Documents and Settings\jdouglas\Desktop\HEC-Ras\879_D_Spnc.g03

Flow Title : Post Project
Flow File : C:\Documents and Settings\jdouglas\Desktop\HEC-Ras\879_D_Spnc.f03

Plan Summary Information:
Number of: Cross Sections = 50 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 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: Post Project
Flow File : C:\Documents and Settings\jdouglas\Desktop\HEC-Ras\879_D_Spnc.f02

Flow Data (cfs)

River	Reach	RS	PF 1
RIVER-1	Reach-1	180	5300
RIVER-1	Reach-1	50	5500

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	PF 1	Critical	Normal S = .01

GEOMETRY DATA

Geometry Title: Post Project Geometry
Geometry File : C:\Documents and Settings\jdouglas\Desktop\HEC-Ras\879_D_Spnc.g03

CROSS SECTION RIVER: RIVER-1

REACH: Reach-1 RS: 180

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1972.26	1028.94	1971.67	1064.62	1970.62	1086	1970.89	1087.29	1972.26
1087.42	1972.36	1100.03	1972.26	1105.54	1972.23	1109.38	1970.26	1113.23	1968.26
1117.01	1966.26	1120.79	1964.26	1124.58	1962.26	1128.36	1960.26	1131.88	1958.41
1143	1959.06	1147.31	1958.26	1152.03	1957.33	1170.74	1958.26	1170.74	1958.19
1176.71	1960.26	1180.23	1961.75	1180.82	1962.26	1183.17	1964.26	1185.58	1966.26
1188.01	1968.26	1190.47	1970.26	1192.93	1972.26	1195.38	1974.26	1197.84	1976.26
1199.53	1977.56	1202.18	1978.26	1204.15	1978.79	1230.41	1980.26	1230.73	1980.32
1268.21	1981.86	1278.63	1982.26						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.03	1105.54	.025	1192.93	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1105.54	1192.93	358.08	363.91	374.39	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1968.30	Element			
Vel Head (ft)	2.94	Wt. n-Val.		0.025	
W.S. Elev (ft)	1965.36	Reach Len. (ft)	358.08	363.91	374.39
Crit W.S. (ft)	1965.36	Flow Area (sq ft)		385.47	
E.G. Slope (ft/ft)	0.005479	Area (sq ft)		385.47	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	65.80	Top Width (ft)		65.80	
Vel Total (ft/s)	13.75	Avg. Vel. (ft/s)		13.75	
Max Chl Dpth (ft)	8.03	Hydr. Depth (ft)		5.86	
Conv. Total (cfs)	71600.3	Conv. (cfs)		71600.3	
Length Wtd. (ft)	363.91	Wetted Per. (ft)		69.77	
Min Ch El (ft)	1957.33	Shear (lb/sq ft)		1.89	
Alpha	1.00	Stream Power (lb/ft s)		25.98	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.37	19.82	0.07
C & E Loss (ft)		Cum SA (acres)	0.35	3.40	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 170

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1969.26	1012.58	1968.26	1012.86	1968.25	1017.32	1966.26	1021.04	1964.26

```
1023.53 1963.56 1025.98 1962.26 1029.63 1960.26 1033.27 1958.26 1036.91 1956.26
1039.96 1954.56 1078.78 1954.75 1090.15 1955.06 1091.24 1956.26 1093.09 1958.26
1094.94 1960.26  1096.8 1962.26 1098.54 1964.14 1098.85 1964.26 1103.45 1966.26
1107.87 1968.26 1112.15 1970.26  1112.6 1970.48 1119.73 1970.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    1000    .025 1021.94    .015 1098.85    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1021.94 1098.85             98.31   97.13   96.38            .1       .3

CROSS SECTION OUTPUT    Profile #PF 1

  E.G. Elev (ft)           1965.20    Element                Left OB    Channel   Right OB
  Vel Head (ft)               1.32    Wt. n-Val.                        0.015
  W.S. Elev (ft)           1963.89    Reach Len. (ft)          98.31     97.13      96.38
  Crit W.S. (ft)           1961.31    Flow Area (sq ft)                 575.14
  E.G. Slope (ft/ft)      0.000642    Area (sq ft)                      575.14
  Q Total (cfs)            5300.00    Flow (cfs)                       5300.00
  Top Width (ft)             75.51    Top Width (ft)                     75.51
  Vel Total (ft/s)            9.22    Avg. Vel. (ft/s)                    9.22
  Max Chl Dpth (ft)           9.32    Hydr. Depth (ft)                    7.62
  Conv. Total (cfs)        209191.8    Conv. (cfs)                    209191.8
  Length Wtd. (ft)           97.13    Wetted Per. (ft)                   81.75
  Min Ch El (ft)           1954.56    Shear (lb/sq ft)                    0.28
  Alpha                       1.00    Stream Power (lb/ft s)              2.60
  Frctn Loss (ft)             0.10    Cum Volume (acre-ft)      0.37     15.81      0.07
  C & E Loss (ft)             0.20    Cum SA (acres)            0.35      2.81      0.07


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

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 160

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    1000 1966.26 1020.85 1964.26  1022.9  1963.4 1024.28 1962.26 1026.68 1960.26
 1029.05 1958.26 1031.39 1956.26 1033.69 1954.26 1033.96 1954.02 1074.55 1954.03
 1074.73 1954.26  1076.3 1956.26 1077.86 1958.26 1079.44 1960.26 1081.05 1962.26
 1081.97 1963.36  1085.8 1964.26 1091.98 1966.26 1097.23 1968.26 1098.86 1968.94
 1124.37 1969.36
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1022.9	.015	1081.97	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1022.9	1081.97	119.51	114.85	110.97	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1964.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.29	Wt. n-Val.		0.015	
W.S. Elev (ft)	1961.61	Reach Len. (ft)	119.51	114.85	110.97
Crit W.S. (ft)	1961.61	Flow Area (sq ft)		363.92	
E.G. Slope (ft/ft)	0.002039	Area (sq ft)		363.92	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	55.47	Top Width (ft)		55.47	
Vel Total (ft/s)	14.56	Avg. Vel. (ft/s)		14.56	
Max Chl Dpth (ft)	7.59	Hydr. Depth (ft)		6.56	
Conv. Total (cfs)	117380.3	Conv. (cfs)		117380.3	
Length Wtd. (ft)	114.85	Wetted Per. (ft)		61.94	
Min Ch El (ft)	1954.02	Shear (lb/sq ft)		0.75	
Alpha	1.00	Stream Power (lb/ft s)		10.89	
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	0.37	14.76	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	2.67	0.07

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: RIVER-1
REACH: Reach-1 RS: 150

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1967.66	1124.53	1966.51	1124.8	1966.26	1129.47	1964.26	1133.87	1962.26
1135	1961.76	1136.46	1960.26	1138.43	1958.26	1140.4	1956.26	1142.4	1954.26
1143.5	1952.76	1183.5	1952.76	1187.45	1954.26	1189.03	1956.26	1190.57	1958.26
1192.09	1960.26	1193.6	1962.25	1193.68	1962.26	1198.04	1964.26	1202.42	1966.26
1206.72	1968.26	1208.61	1969.15	1222.54	1969.43	1280.29	1968.65		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1135	.015	1193.6	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1135	1193.6	1	1	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1964.32	Element			
Vel Head (ft)	5.72	Wt. n-Val.		0.015	
W.S. Elev (ft)	1958.60	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)	1960.22	Flow Area (sq ft)		276.25	
E.G. Slope (ft/ft)	0.004649	Area (sq ft)		276.25	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	52.74	Top Width (ft)		52.74	
Vel Total (ft/s)	19.19	Avg. Vel. (ft/s)		19.19	
Max Chl Dpth (ft)	5.84	Hydr. Depth (ft)		5.24	
Conv. Total (cfs)	77729.7	Conv. (cfs)		77729.7	
Length Wtd. (ft)	1.00	Wetted Per. (ft)		57.71	
Min Ch El (ft)	1952.76	Shear (lb/sq ft)		1.39	
Alpha	1.00	Stream Power (lb/ft s)		26.66	
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	0.37	13.92	0.07
C & E Loss (ft)	0.24	Cum SA (acres)	0.35	2.53	0.07

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: RIVER-1
REACH: Reach-1 RS: 140

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1967.36	1109.48	1966.26	1112.94	1966.35	1117.49	1964.26	1121.87	1962.26
1123.53	1961.46	1124.74	1960.26	1126.67	1958.26	1128.54	1956.26	1130.26	1954.26
1131.84	1952.26	1132.5	1950.76	1172.5	1950.76	1175.19	1952.26	1176.29	1954.26
1177.52	1956.26	1178.95	1958.26	1180.42	1960.26	1181.8	1962.12	1182.12	1962.26
1186.57	1964.26	1191.03	1966.26	1195.47	1968.26	1197.34	1969.11	1258.33	1968.62

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1123.53	.015	1181.8	.025

Bank Sta: Left Right Lengths: Left Channel Right

1123.53	1181.8	57.23	55.76	56.76	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1964.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.12	Wt. n-Val.		0.015	
W.S. Elev (ft)	1955.95	Reach Len. (ft)	57.23	55.76	56.76
Crit W.S. (ft)	1958.44	Flow Area (sq ft)		231.74	
E.G. Slope (ft/ft)	0.007598	Area (sq ft)		231.74	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	48.52	Top Width (ft)		48.52	
Vel Total (ft/s)	22.87	Avg. Vel. (ft/s)		22.87	
Max Chl Dpth (ft)	5.19	Hydr. Depth (ft)		4.78	
Conv. Total (cfs)	60803.4	Conv. (cfs)		60803.4	
Length Wtd. (ft)	55.76	Wetted Per. (ft)		53.76	
Min Ch El (ft)	1950.76	Shear (lb/sq ft)		2.04	
Alpha	1.00	Stream Power (lb/ft s)		46.76	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.37	13.91	0.07
C & E Loss (ft)	0.24	Cum SA (acres)	0.35	2.52	0.07

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: RIVER-1
REACH: Reach-1 RS: 130

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1965.26	1082.33	1964.26	1086.89	1962.26	1090.09	1960.83	1091.34	1960.26
1092.89	1958.26	1094.44	1956.26	1095.99	1954.26	1097.54	1952.26	1099.5	1950.26
1139.5	1950.26	1141.65	1952.26	1142.63	1954.26	1143.6	1956.26	1144.57	1958.26
1145.53	1960.26	1147.33	1962.26	1148.78	1963.65	1151.72	1964.26	1155.18	1965.09
1156.8	1966.26	1157.37	1966.73	1174.08	1967.42	1213.65	1967.97		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1091.34	.015	1145.53	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1091.34	1145.53	125.29	125.31	125.61	.1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1963.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.20	Wt. n-Val.		0.015	

Crit W.S. (ft)	1957.93	Flow Area (sq ft)		230.61		
E.G. Slope (ft/ft)	0.007633	Area (sq ft)		230.61		
Q Total (cfs)	5300.00	Flow (cfs)		5300.00		
Top Width (ft)	48.12	Top Width (ft)		48.12		
Vel Total (ft/s)	22.98	Avg. Vel. (ft/s)		22.98		
Max Chl Dpth (ft)	5.18	Hydr. Depth (ft)		4.79		
Conv. Total (cfs)	60664.7	Conv. (cfs)		60664.7		
Length Wtd. (ft)	125.31	Wetted Per. (ft)		53.29		
Min Ch El (ft)	1950.26	Shear (lb/sq ft)		2.06		
Alpha	1.00	Stream Power (lb/ft s)		47.39		
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	0.37	13.61	0.07	
C & E Loss (ft)	0.01	Cum SA (acres)	0.35	2.46	0.07	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 120

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1961.96	1034.06	1962.26	1069.3	1962.96	1077.37	1962.26	1081.8	1961.8
1082.95	1960.26	1084.44	1958.26	1085.94	1956.26	1087.44	1954.26	1088.93	1952.26
1090.43	1950.26	1090.88	1949.76	1130.88	1949.76	1133.47	1950.26	1134.85	1952.26
1136.24	1954.26	1137.62	1956.26	1138.99	1958.26	1139.81	1959.48	1140.72	1960.26
1142.7	1962.26	1144.46	1964.26	1148.81	1964.28	1152.73	1964.26	1157.77	1964.26
1185.25	1964.66	1223.58	1966.04						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1082.95	.015	1140.72	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1082.95	1140.72	25.32	24.78	22.42	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1962.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.55	Wt. n-Val.		0.015	
W.S. Elev (ft)	1954.99	Reach Len. (ft)	25.32	24.78	22.42
Crit W.S. (ft)	1957.27	Flow Area (sq ft)		240.42	
E.G. Slope (ft/ft)	0.006924	Area (sq ft)		240.42	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	49.85	Top Width (ft)		49.85	
Vel Total (ft/s)	22.05	Avg. Vel. (ft/s)		22.05	
Max Chl Dpth (ft)	5.23	Hydr. Depth (ft)		4.82	
Conv. Total (cfs)	63694.8	Conv. (cfs)		63694.8	
Length Wtd. (ft)	24.78	Wetted Per. (ft)		54.97	

Alpha	1.00	Stream Power (lb/ft s)		41.68	
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	0.37	12.94	0.07
C & E Loss (ft)	0.20	Cum SA (acres)	0.35	2.32	0.07

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: RIVER-1
REACH: Reach-1 RS: 110

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1960.26	1058.72	1961.52	1069.8	1960.78	1070.23	1960.26	1071.86	1958.26
1073.49	1956.26	1075.13	1954.26	1076.77	1952.26	1078.41	1950.26	1079.37	1949.49
1119.37	1949.46	1122.31	1950.26	1123.63	1952.26	1124.96	1954.26	1126.29	1956.26
1127.61	1958.26	1128.23	1959.2	1130.3	1960.26	1134.23	1962.26	1137.72	1964.04
1156.11	1964.26	1162.57	1964.26	1167.55	1964.26	1180.81	1964.48	1218.4	1965.79

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1070.23	.015	1130.3	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070.23	1130.3	1	1	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1962.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.74	Wt. n-Val.		0.015	
W.S. Elev (ft)	1954.60	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)	1956.96	Flow Area (sq ft)		237.36	
E.G. Slope (ft/ft)	0.007247	Area (sq ft)		237.36	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	50.33	Top Width (ft)		50.33	
Vel Total (ft/s)	22.33	Avg. Vel. (ft/s)		22.33	
Max Chl Dpth (ft)	5.14	Hydr. Depth (ft)		4.72	
Conv. Total (cfs)	62257.1	Conv. (cfs)		62257.1	
Length Wtd. (ft)	1.00	Wetted Per. (ft)		55.09	
Min Ch El (ft)	1949.46	Shear (lb/sq ft)		1.95	
Alpha	1.00	Stream Power (lb/ft s)		43.53	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.37	12.80	0.07
C & E Loss (ft)	0.02	Cum SA (acres)	0.35	2.29	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 100

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1961.93	1057.4	1962.22	1068.55	1961.32	1068.7	1961.03	1070.39	1959.03
1071.98	1957.03	1073.58	1955.03	1075.17	1953.03	1076.75	1951.03	1078.32	1949.03
1079	1947.73	1119	1947.73	1119.77	1949.03	1121.07	1951.03	1122.37	1953.03
1123.68	1955.03	1124.99	1957.03	1126.31	1959.03	1126.86	1959.87	1129.14	1961.03
1133.08	1963.03	1136.43	1964.73	1161.01	1965.03	1164.12	1965.03	1169.92	1965.03
1180.79	1965.13	1218.41	1966.51						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1068.7	.015	1129.14	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1068.7	1129.14	346.14	342.73	339.84	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1962.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.46	Wt. n-Val.		0.015	
W.S. Elev (ft)	1952.70	Reach Len. (ft)	346.14	342.73	339.84
Crit W.S. (ft)	1955.55	Flow Area (sq ft)		214.74	
E.G. Slope (ft/ft)	0.009375	Area (sq ft)		214.74	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	46.72	Top Width (ft)		46.72	
Vel Total (ft/s)	24.68	Avg. Vel. (ft/s)		24.68	
Max Chl Dpth (ft)	4.97	Hydr. Depth (ft)		4.60	
Conv. Total (cfs)	54738.3	Conv. (cfs)		54738.3	
Length Wtd. (ft)	342.73	Wetted Per. (ft)		52.03	
Min Ch El (ft)	1947.73	Shear (lb/sq ft)		2.42	
Alpha	1.00	Stream Power (lb/ft s)		59.62	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.37	12.80	0.07
C & E Loss (ft)	0.17	Cum SA (acres)	0.35	2.29	0.07

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: RIVER-1
REACH: Reach-1 RS: 90

INPUT
Description:

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1958.08	1006.02	1956.88	1007.66	1956.56	1022.15	1955.35	1035.65	1954.88
1045.56	1954.48	1052.98	1953.95	1054.57	1952.88	1057.59	1950.88	1060.63	1948.88
1063.71	1946.88	1065.06	1945.98	1105.06	1945.98	1109.3	1946.88	1110.15	1948.88
1110.99	1950.88	1111.87	1952.88	1112.94	1954.88	1113.6	1955.91	1119.02	1956.88
1121.63	1957.18	1145.66	1956.88	1187.07	1956.55				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1052.98	.015	1113.6	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1052.98	1113.6	53.02	51.93	56.59	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1958.74	Element			
Vel Head (ft)	7.88	Wt. n-Val.		0.015	
W.S. Elev (ft)	1950.86	Reach Len. (ft)	53.02	51.93	56.59
Crit W.S. (ft)	1953.25	Flow Area (sq ft)		235.27	
E.G. Slope (ft/ft)	0.007910	Area (sq ft)		235.27	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	53.35	Top Width (ft)		53.35	
Vel Total (ft/s)	22.53	Avg. Vel. (ft/s)		22.53	
Max Chl Dpth (ft)	4.88	Hydr. Depth (ft)		4.41	
Conv. Total (cfs)	59592.8	Conv. (cfs)		59592.8	
Length Wtd. (ft)	51.93	Wetted Per. (ft)		57.54	
Min Ch El (ft)	1945.98	Shear (lb/sq ft)		2.02	
Alpha	1.00	Stream Power (lb/ft s)		45.48	
Frctn Loss (ft)	2.95	Cum Volume (acre-ft)	0.37	11.03	0.07
C & E Loss (ft)	0.47	Cum SA (acres)	0.35	1.90	0.07

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: RIVER-1
REACH: Reach-1 RS: 81

INPUT
Description: Begining of Phase 1 Improvements
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1954.26	1002.13	1954.26	1036.88	1953.71	1070.25	1953.68	1078.25	1945.72
1121.75	1945.72	1129.75	1953.68	1142.98	1954.14	1143.96	1954.26	1156.72	1956.26
1157.77	1956.26	1201.02	1956.64						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1070.25	.015	1129.75	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070.25	1129.75	50	50	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1958.25	Element			
Vel Head (ft)	7.58	Wt. n-Val.		0.015	
W.S. Elev (ft)	1950.67	Reach Len. (ft)	50.00	50.00	50.00
Crit W.S. (ft)	1952.99	Flow Area (sq ft)		239.88	
E.G. Slope (ft/ft)	0.007413	Area (sq ft)		239.88	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	53.45	Top Width (ft)		53.45	
Vel Total (ft/s)	22.09	Avg. Vel. (ft/s)		22.09	
Max Chl Dpth (ft)	4.95	Hydr. Depth (ft)		4.49	
Conv. Total (cfs)	61556.8	Conv. (cfs)		61556.8	
Length Wtd. (ft)	50.00	Wetted Per. (ft)		57.53	
Min Ch El (ft)	1945.72	Shear (lb/sq ft)		1.93	
Alpha	1.00	Stream Power (lb/ft s)		42.63	
Frctn Loss (ft)	0.40	Cum Volume (acre-ft)	0.37	10.74	0.07
C & E Loss (ft)	0.09	Cum SA (acres)	0.35	1.83	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 75

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1077.5	1952.32	1077.5	1944.52	1100	1944.07	1122.5	1944.52	1122.5	1952.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1077.5	.025	1077.5	.015	1122.5	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1077.5	1122.5	151.76	151.76	151.76	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1957.78	Element			
Vel Head (ft)	8.43	Wt. n-Val.		0.015	
W.S. Elev (ft)	1949.35	Reach Len. (ft)	151.76	151.76	151.76
Crit W.S. (ft)	1951.85	Flow Area (sq ft)		227.51	
E.G. Slope (ft/ft)	0.008262				

Q Total (cfs)	5300.00	Flow (cfs)		5300.00		
Top Width (ft)	45.00	Top Width (ft)		45.00		
Vel Total (ft/s)	23.30	Avg. Vel. (ft/s)		23.30		
Max Chl Dpth (ft)	5.28	Hydr. Depth (ft)		5.06		
Conv. Total (cfs)	58308.1	Conv. (cfs)		58308.1		
Length Wtd. (ft)	151.76	Wetted Per. (ft)		54.67		
Min Ch El (ft)	1944.07	Shear (lb/sq ft)		2.15		
Alpha	1.00	Stream Power (lb/ft s)		50.00		
Frctn Loss (ft)	0.39	Cum Volume (acre-ft)	0.37	10.47	0.07	
C & E Loss (ft)	0.08	Cum SA (acres)	0.35	1.78	0.07	

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: RIVER-1
REACH: Reach-1 RS: 70

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1077.5	1949.6	1077.5	1941.8	1100	1941.35	1122.5	1941.8	1122.5	1949.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1077.5	.025	1077.5	.015	1122.5	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1077.5	1122.5	100	100	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1956.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.98	Wt. n-Val.		0.015	
W.S. Elev (ft)	1946.22	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1949.12	Flow Area (sq ft)		209.11	
E.G. Slope (ft/ft)	0.010727	Area (sq ft)		209.11	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	45.00	Top Width (ft)		45.00	
Vel Total (ft/s)	25.35	Avg. Vel. (ft/s)		25.35	
Max Chl Dpth (ft)	4.87	Hydr. Depth (ft)		4.65	
Conv. Total (cfs)	51173.2	Conv. (cfs)		51173.2	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		53.85	
Min Ch El (ft)	1941.35	Shear (lb/sq ft)		2.60	
Alpha	1.00	Stream Power (lb/ft s)		65.91	
Frctn Loss (ft)	1.42	Cum Volume (acre-ft)	0.37	9.71	0.07
C & E Loss (ft)	0.15	Cum SA (acres)	0.35	1.62	0.07

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: RIVER-1
REACH: Reach-1 RS: 65

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1082.5	1947.71	1082.5	1939.91	1100	1939.56	1117.5	1939.91	1117.5	1947.71

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1082.5	.025	1082.5	.015	1117.5	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1082.5	1117.5	100	100	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1955.00	Element			
Vel Head (ft)	8.97	Wt. n-Val.		0.015	
W.S. Elev (ft)	1946.04	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1948.66	Flow Area (sq ft)		220.55	
E.G. Slope (ft/ft)	0.007546	Area (sq ft)		220.55	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	35.00	Top Width (ft)		35.00	
Vel Total (ft/s)	24.03	Avg. Vel. (ft/s)		24.03	
Max Chl Dpth (ft)	6.48	Hydr. Depth (ft)		6.30	
Conv. Total (cfs)	61013.1	Conv. (cfs)		61013.1	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		47.26	
Min Ch El (ft)	1939.56	Shear (lb/sq ft)		2.20	
Alpha	1.00	Stream Power (lb/ft s)		52.83	
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	0.37	9.22	0.07
C & E Loss (ft)	0.30	Cum SA (acres)	0.35	1.53	0.07

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: RIVER-1
REACH: Reach-1 RS: 60

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1082.5	1947.48	1082.5	1938.48	1100	1938.13	1117.5	1938.48	1117.5	1947.48

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1082.5	.025	1082.5	.015	1117.5	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1082.5	1117.5	166.19	166.19	166.19	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1954.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.78	Wt. n-Val.		0.015	
W.S. Elev (ft)	1944.34	Reach Len. (ft)	166.19	166.19	166.19
Crit W.S. (ft)	1947.22	Flow Area (sq ft)		211.19	
E.G. Slope (ft/ft)	0.008588	Area (sq ft)		211.19	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	35.00	Top Width (ft)		35.00	
Vel Total (ft/s)	25.10	Avg. Vel. (ft/s)		25.10	
Max Chl Dpth (ft)	6.21	Hydr. Depth (ft)		6.03	
Conv. Total (cfs)	57190.8	Conv. (cfs)		57190.8	
Length Wtd. (ft)	166.19	Wetted Per. (ft)		46.73	
Min Ch El (ft)	1938.13	Shear (lb/sq ft)		2.42	
Alpha	1.00	Stream Power (lb/ft s)		60.82	
Frctn Loss (ft)	0.80	Cum Volume (acre-ft)	0.37	8.73	0.07
C & E Loss (ft)	0.08	Cum SA (acres)	0.35	1.45	0.07

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: RIVER-1
REACH: Reach-1 RS: 55

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1082.5	1945.1	1082.5	1936.1	1100	1935.75	1117.5	1936.1	1117.5	1945.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1082.5	.025	1082.5	.015	1117.5	.025

Bank Sta: Left Right

1082.5 1117.5 290.11 288.11 286.11 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1952.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	10.81	Wt. n-Val.		0.015	
W.S. Elev (ft)	1941.66	Reach Len. (ft)	290.11	288.11	286.11
Crit W.S. (ft)	1944.85	Flow Area (sq ft)		200.83	
E.G. Slope (ft/ft)	0.009985	Area (sq ft)		200.83	
Q Total (cfs)	5300.00	Flow (cfs)		5300.00	
Top Width (ft)	35.00	Top Width (ft)		35.00	
Vel Total (ft/s)	26.39	Avg. Vel. (ft/s)		26.39	
Max Chl Dpth (ft)	5.91	Hydr. Depth (ft)		5.74	
Conv. Total (cfs)	53040.5	Conv. (cfs)		53040.5	
Length Wtd. (ft)	288.11	Wetted Per. (ft)		46.13	
Min Ch El (ft)	1935.75	Shear (lb/sq ft)		2.71	
Alpha	1.00	Stream Power (lb/ft s)		71.61	
Frctn Loss (ft)	1.54	Cum Volume (acre-ft)	0.37	7.94	0.07
C & E Loss (ft)	0.10	Cum SA (acres)	0.35	1.32	0.07

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: RIVER-1
REACH: Reach-1 RS: 50

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1942.6	1093.5	1943.16	1100.84	1942.75	1115.98	1942.71	1129.89	1942.1
1182.5	1940.98	1182.5	1931.98	1200	1931.63	1217.5	1931.98	1217.5	1940.98
1239.96	1943.1	1254.01	1943.3	1350.42	1943.74				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1182.5	.015	1217.5	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1182.5	1217.5	101	99	97 .1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1182.5	1943.63	1217.5	1350.42	1943.63

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1949.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	11.86	Wt. n-Val.		0.015	
W.S. Elev (ft)	1937.49	Reach Len. (ft)	0.10	0.10	0.10
Crit W.S. (ft)	1940.95	Flow Area (sq ft)		199.05	
E.G. Slope (ft/ft)	0.011043	Area (sq ft)		199.05	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	35.00	Top Width (ft)		35.00	
Vel Total (ft/s)	27.63	Avg. Vel. (ft/s)		27.63	
Max Chl Dpth (ft)	5.86	Hydr. Depth (ft)		5.69	
Conv. Total (cfs)	52337.3	Conv. (cfs)		52337.3	
Length Wtd. (ft)	0.10	Wetted Per. (ft)		46.03	
Min Ch El (ft)	1931.63	Shear (lb/sq ft)		2.98	
Alpha	1.00	Stream Power (lb/ft s)		82.38	
Frctn Loss (ft)	3.03	Cum Volume (acre-ft)	0.37	6.62	0.07
C & E Loss (ft)	0.10	Cum SA (acres)	0.35	1.08	0.07

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.

BRIDGE RIVER: RIVER-1
REACH: Reach-1 RS: 45

INPUT
Description: Bridge #1

Distance from Upstream XS = .1
Deck/Roadway Width = 98.8
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
1000	1943.8	1941.63	1182.5	1943.8	1941.63	1182.5	1943.8	1941.63
1217.5	1943.8	1941.63	1217.5	1943.8	1941.63	1350.42	1943.8	1941.63

Upstream Bridge Cross Section Data
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1942.6	1093.5	1943.16	1100.84	1942.75	1115.98	1942.71	1129.89	1942.1
1182.5	1940.98	1182.5	1931.98	1200	1931.63	1217.5	1931.98	1217.5	1940.98
1239.96	1943.1	1254.01	1943.3	1350.42	1943.74				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.025	1182.5	.015	1217.5	.025

```
       1182.5  1217.5              .1        .3
Blocked Obstructions     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    1000  1182.5 1943.63  1217.5 1350.42 1943.63

Downstream  Deck/Roadway Coordinates
    num=        6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    1000  1943.8 1941.63  1132.5  1943.8 1941.63  1132.5  1943.8 1941.63
  1167.5  1943.8 1941.63  1167.5  1943.8 1941.63 1350.42  1943.8 1941.63

Downstream Bridge Cross Section Data
Station Elevation Data    num=       13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    1000 1940.65 1090.13  1940.8 1104.02 1941.12  1132.5 1941.12  1132.5 1931.12
    1150 1930.77  1167.5 1931.12  1167.5 1941.12 1206.88 1941.12 1232.32 1941.12
  1242.6 1941.35 1251.47 1941.95 1256.84 1943.35

Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
    1000    .025  1132.5    .015  1167.5    .025

Bank Sta: Left   Right    Coeff Contr.   Expan.
        1132.5  1167.5              .1        .3
Blocked Obstructions     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    1000  1132.5 1943.77  1167.5 1256.84 1943.77

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           = 1943.13
Energy head used in spillway design           =
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =     1.2
Selected Low Flow Methods = Momentum

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =.8006408
           Max Low Cord                = 1941.63
```

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #PF 1
Opening : Single BR

			Inside BR US	Inside BR DS
E.G. US. (ft)	1947.50	Element		
W.S. US. (ft)	1937.49	E.G. Elev (ft)	1949.35	1947.49
Q Total (cfs)	5500.00	W.S. Elev (ft)	1937.49	1936.99
Q Bridge (cfs)	5500.00	Crit W.S. (ft)	1940.97	1940.11
Q Weir (cfs)		Max Chl Dpth (ft)	5.86	6.22
Weir Sta Lft (ft)		Vel Total (ft/s)	27.63	26.01
Weir Sta Rgt (ft)		Flow Area (sq ft)	199.05	211.44
Weir Submerg		Froude # Chl	2.04	1.87
Weir Max Depth (ft)		Specif Force (cu ft)	5285.78	5219.15
Min El Weir Flow (ft)	1943.81	Hydr Depth (ft)	5.69	6.04
Min El Prs (ft)	1941.63	W.P. Total (ft)	46.03	46.74
Delta EG (ft)	0.00	Conv. Total (cfs)	52337.3	57291.1
Delta WS (ft)	0.51	Top Width (ft)	35.00	35.00
BR Open Area (sq ft)	343.88	Frctn Loss (ft)		
BR Open Vel (ft/s)	27.63	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	2.98	2.60
Br Sel Method	Momentum	Power Total (lb/ft s)	82.38	67.71

Warning: The cross section had to be extended vertically during the critical depth calculations.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 40

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1940.65	1090.13	1940.8	1104.02	1941.12	1132.5	1941.12	1132.5	1931.12
1150	1930.77	1167.5	1931.12	1167.5	1941.12	1206.88	1941.12	1232.32	1941.12
1242.6	1941.35	1251.47	1941.95	1256.84	1943.35				

Manning's n Values num= 3

1000	.025	1132.5	.015	1167.5	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1132.5	1167.5	15	15	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1132.5	1943.77	1167.5	1256.84	1943.77

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1947.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	10.51	Wt. n-Val.		0.015	
W.S. Elev (ft)	1936.99	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	1940.10	Flow Area (sq ft)		211.41	
E.G. Slope (ft/ft)	0.009220	Area (sq ft)		211.41	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	35.00	Top Width (ft)		35.00	
Vel Total (ft/s)	26.02	Avg. Vel. (ft/s)		26.02	
Max Chl Dpth (ft)	6.22	Hydr. Depth (ft)		6.04	
Conv. Total (cfs)	57280.7	Conv. (cfs)		57280.7	
Length Wtd. (ft)	15.00	Wetted Per. (ft)		46.74	
Min Ch El (ft)	1930.77	Shear (lb/sq ft)		2.60	
Alpha	1.00	Stream Power (lb/ft s)		67.73	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.37	6.15	0.07
C & E Loss (ft)		Cum SA (acres)	0.35	1.00	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 35

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1082.5	1940.99	1082.5	1930.99	1100	1930.64	1117.5	1930.99	1117.5	1940.99

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1082.5	.025	1082.5	.015	1117.5	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1082.5	1117.5	102	102	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1947.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	10.51	Wt. n-Val.		0.015	
W.S. Elev (ft)	1936.86	Reach Len. (ft)	102.00	102.00	102.00

E.G. Slope (ft/ft)	0.009220	Area (sq ft)		211.41	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	35.00	Top Width (ft)		35.00	
Vel Total (ft/s)	26.02	Avg. Vel. (ft/s)		26.02	
Max Chl Dpth (ft)	6.22	Hydr. Depth (ft)		6.04	
Conv. Total (cfs)	57280.7	Conv. (cfs)		57280.7	
Length Wtd. (ft)	102.00	Wetted Per. (ft)		46.74	
Min Ch El (ft)	1930.64	Shear (lb/sq ft)		2.60	
Alpha	1.00	Stream Power (lb/ft s)		67.73	
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	0.37	6.08	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.99	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 30

INPUT
Description: Begining of Energy Dissipator
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.25	1075	1930.25	1100	1929.75	1125	1930.25	1125	1940.25

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.015	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	2.49	2.49	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1946.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	12.08	Wt. n-Val.		0.015	
W.S. Elev (ft)	1933.95	Reach Len. (ft)	2.49	2.49	2.49
Crit W.S. (ft)	1937.21	Flow Area (sq ft)		197.23	
E.G. Slope (ft/ft)	0.015283	Area (sq ft)		197.23	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	27.89	Avg. Vel. (ft/s)		27.89	
Max Chl Dpth (ft)	4.19	Hydr. Depth (ft)		3.94	
Conv. Total (cfs)	44488.9	Conv. (cfs)		44488.9	
Length Wtd. (ft)	2.49	Wetted Per. (ft)		57.40	
Min Ch El (ft)	1929.75	Shear (lb/sq ft)		3.28	
Alpha	1.00	Stream Power (lb/ft s)		91.43	
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	0.37	5.60	0.07
C & E Loss (ft)	0.16	Cum SA (acres)	0.35	0.89	0.07

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: RIVER-1
REACH: Reach-1 RS: 29.6*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.3	1075	1929.2	1100	1928.7	1125	1929.2	1125	1940.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.04	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	2.49 2.49	2.49	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1945.84	Element			
Vel Head (ft)	13.10	Wt. n-Val.		0.040	
W.S. Elev (ft)	1932.74	Reach Len. (ft)	2.49	2.49	2.49
Crit W.S. (ft)	1936.16	Flow Area (sq ft)		189.37	
E.G. Slope (ft/ft)	0.123543	Area (sq ft)		189.37	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	29.04	Avg. Vel. (ft/s)		29.04	
Max Chl Dpth (ft)	4.04	Hydr. Depth (ft)		3.79	
Conv. Total (cfs)	15647.8	Conv. (cfs)		15647.8	
Length Wtd. (ft)	2.49	Wetted Per. (ft)		57.08	
Min Ch El (ft)	1928.70	Shear (lb/sq ft)		25.59	
Alpha	1.00	Stream Power (lb/ft s)		743.11	
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	0.37	5.59	0.07
C & E Loss (ft)	0.10	Cum SA (acres)	0.35	0.89	0.07

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: RIVER-1
REACH: Reach-1 RS: 29.2*

INPUT
Description:

Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.36	1075	1928.16	1100	1927.66	1125	1928.16	1125	1940.36

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.04	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	2.49	2.49	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1945.44	Element			
Vel Head (ft)	13.84	Wt. n-Val.		0.040	
W.S. Elev (ft)	1931.59	Reach Len. (ft)	2.49	2.49	2.49
Crit W.S. (ft)	1935.13	Flow Area (sq ft)		184.20	
E.G. Slope (ft/ft)	0.134844	Area (sq ft)		184.20	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	29.86	Avg. Vel. (ft/s)		29.86	
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)		3.68	
Conv. Total (cfs)	14977.8	Conv. (cfs)		14977.8	
Length Wtd. (ft)	2.49	Wetted Per. (ft)		56.88	
Min Ch El (ft)	1927.66	Shear (lb/sq ft)		27.26	
Alpha	1.00	Stream Power (lb/ft s)		814.03	
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	0.37	5.58	0.07
C & E Loss (ft)	0.07	Cum SA (acres)	0.35	0.89	0.07

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: RIVER-1
REACH: Reach-1 RS: 28.8*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.41	1075	1927.11	1100	1926.61	1125	1927.11	1125	1940.41

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.04	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	2.49	2.49	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1945.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	14.56	Wt. n-Val.		0.040	
W.S. Elev (ft)	1930.45	Reach Len. (ft)	2.49	2.49	2.49
Crit W.S. (ft)	1934.07	Flow Area (sq ft)		179.59	
E.G. Slope (ft/ft)	0.146092	Area (sq ft)		179.59	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	30.63	Avg. Vel. (ft/s)		30.63	
Max Chl Dpth (ft)	3.84	Hydr. Depth (ft)		3.59	
Conv. Total (cfs)	14389.6	Conv. (cfs)		14389.6	
Length Wtd. (ft)	2.49	Wetted Per. (ft)		56.69	
Min Ch El (ft)	1926.61	Shear (lb/sq ft)		28.89	
Alpha	1.00	Stream Power (lb/ft s)		884.81	
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	0.37	5.57	0.07
C & E Loss (ft)	0.07	Cum SA (acres)	0.35	0.88	0.07

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: RIVER-1
REACH: Reach-1 RS: 28.4*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.47	1075	1926.07	1100	1925.57	1125	1926.07	1125	1940.47

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.04	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	2.49	2.49	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1944.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	15.24	Wt. n-Val.		0.040	
W.S. Elev (ft)	1929.33	Reach Len. (ft)	2.49	2.49	2.49
Crit W.S. (ft)	1933.03	Flow Area (sq ft)		175.56	
E.G. Slope (ft/ft)	0.156972	Area (sq ft)		175.56	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	31.33	Avg. Vel. (ft/s)		31.33	
Max Chl Dpth (ft)	3.76	Hydr. Depth (ft)		3.51	

Conv. Total (cfs)	13882.0	Conv. (cfs)		13882.0	
Length Wtd. (ft)	2.49	Wetted Per. (ft)		56.53	
Min Ch El (ft)	1925.57	Shear (lb/sq ft)		30.43	
Alpha	1.00	Stream Power (lb/ft s)		953.41	
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	0.37	5.56	0.07
C & E Loss (ft)	0.07	Cum SA (acres)	0.35	0.88	0.07

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: RIVER-1
REACH: Reach-1 RS: 28

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.52	1075	1925.02	1100	1924.52	1125	1925.02	1125	1940.52

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.015	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1944.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	16.17	Wt. n-Val.		0.015	
W.S. Elev (ft)	1928.18	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1931.98	Flow Area (sq ft)		170.43	
E.G. Slope (ft/ft)	0.024248	Area (sq ft)		170.43	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	32.27	Avg. Vel. (ft/s)		32.27	
Max Chl Dpth (ft)	3.66	Hydr. Depth (ft)		3.41	
Conv. Total (cfs)	35320.0	Conv. (cfs)		35320.0	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		56.33	
Min Ch El (ft)	1924.52	Shear (lb/sq ft)		4.58	
Alpha	1.00	Stream Power (lb/ft s)		147.82	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	0.37	5.55	0.07
C & E Loss (ft)	0.09	Cum SA (acres)	0.35	0.88	0.07

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

than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 27.6666*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.48	1075	1924.98	1100	1924.48	1125	1924.98	1125	1940.48

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.015	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1943.94	Element			
Vel Head (ft)	15.76	Wt. n-Val.		0.015	
W.S. Elev (ft)	1928.18	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1931.94	Flow Area (sq ft)		172.66	
E.G. Slope (ft/ft)	0.023270	Area (sq ft)		172.66	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	31.85	Avg. Vel. (ft/s)		31.85	
Max Chl Dpth (ft)	3.70	Hydr. Depth (ft)		3.45	
Conv. Total (cfs)	36054.8	Conv. (cfs)		36054.8	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		56.42	
Min Ch El (ft)	1924.48	Shear (lb/sq ft)		4.45	
Alpha	1.00	Stream Power (lb/ft s)		141.63	
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	0.37	5.50	0.07
C & E Loss (ft)	0.12	Cum SA (acres)	0.35	0.87	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 27.3333*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.45	1075	1924.95	1100	1924.45	1125	1924.95	1125	1940.45

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.10	Wt. n-Val.		0.015	
W.S. Elev (ft)	1937.76	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1931.91	Flow Area (sq ft)		652.82	
E.G. Slope (ft/ft)	0.000408	Area (sq ft)		652.82	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	8.42	Avg. Vel. (ft/s)		8.42	
Max Chl Dpth (ft)	13.31	Hydr. Depth (ft)		13.06	
Conv. Total (cfs)	272139.1	Conv. (cfs)		272139.1	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		75.62	
Min Ch El (ft)	1924.45	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		1.85	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.37	5.39	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.85	0.07

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

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 27.*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.41	1075	1924.91	1100	1924.41	1125	1924.91	1125	1940.41

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.015	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.10	Wt. n-Val.		0.015	
W.S. Elev (ft)	1937.76	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)		Flow Area (sq ft)		654.80	
E.G. Slope (ft/ft)	0.000405	Area (sq ft)		654.80	
Q Total (cfs)	5500.00	Flow (cfs)			

Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	8.40	Avg. Vel. (ft/s)		8.40	
Max Chl Dpth (ft)	13.35	Hydr. Depth (ft)		13.10	
Conv. Total (cfs)	273327.6	Conv. (cfs)		273327.6	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		75.70	
Min Ch El (ft)	1924.41	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		1.84	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.37	5.21	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.84	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 26.6666*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.37	1075	1924.87	1100	1924.37	1125	1924.87	1125	1940.37

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.015	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.		0.015	
W.S. Elev (ft)	1937.76	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)		Flow Area (sq ft)		656.79	
E.G. Slope (ft/ft)	0.000401	Area (sq ft)		656.79	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	8.37	Avg. Vel. (ft/s)		8.37	
Max Chl Dpth (ft)	13.39	Hydr. Depth (ft)		13.14	
Conv. Total (cfs)	274520.8	Conv. (cfs)		274520.8	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		75.78	
Min Ch El (ft)	1924.37	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		1.82	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.37	5.03	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.82	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 26.3333*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.34	1075	1924.84	1100	1924.34	1125	1924.84	1125	1940.34

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.015	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1938.84	Element			
Vel Head (ft)	1.08	Wt. n-Val.		0.015	
W.S. Elev (ft)	1937.75	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)		Flow Area (sq ft)		658.22	
E.G. Slope (ft/ft)	0.000399	Area (sq ft)		658.22	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	8.36	Avg. Vel. (ft/s)		8.36	
Max Chl Dpth (ft)	13.41	Hydr. Depth (ft)		13.16	
Conv. Total (cfs)	275378.1	Conv. (cfs)		275378.1	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		75.84	
Min Ch El (ft)	1924.34	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		1.81	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.37	4.84	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.81	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 26

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.3	1075	1924.8	1100	1924.3	1125	1924.8	1125	1940.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.015	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	1	1	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.08	Wt. n-Val.		0.015	
W.S. Elev (ft)	1937.75	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)		Flow Area (sq ft)		660.21	
E.G. Slope (ft/ft)	0.000395	Area (sq ft)		660.21	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	8.33	Avg. Vel. (ft/s)		8.33	
Max Chl Dpth (ft)	13.45	Hydr. Depth (ft)		13.20	
Conv. Total (cfs)	276569.8	Conv. (cfs)		276569.8	
Length Wtd. (ft)	1.00	Wetted Per. (ft)		75.92	
Min Ch El (ft)	1924.30	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		1.79	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.37	4.66	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.80	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.3333*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.41	1075	1924.97	1100	1924.47	1125	1924.97	1125	1940.41

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.018	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	1	1	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.		0.018	
W.S. Elev (ft)	1937.72	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)		Flow Area (sq ft)		649.77	
E.G. Slope (ft/ft)	0.000596	Area (sq ft)		649.77	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	8.46	Avg. Vel. (ft/s)		8.46	
Max Chl Dpth (ft)	13.25	Hydr. Depth (ft)		13.00	
Conv. Total (cfs)	225260.9	Conv. (cfs)		225260.9	
Length Wtd. (ft)	1.00	Wetted Per. (ft)		75.50	
Min Ch El (ft)	1924.47	Shear (lb/sq ft)		0.32	
Alpha	1.00	Stream Power (lb/ft s)		[illegible]	

Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.37	4.65	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.80	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.6666*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.51	1075	1925.13	1100	1924.63	1125	1925.13	1125	1940.51

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.022	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	1	1	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.15	Wt. n-Val.		0.022	
W.S. Elev (ft)	1937.68	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)		Flow Area (sq ft)		639.81	
E.G. Slope (ft/ft)	0.000931	Area (sq ft)		639.81	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	8.60	Avg. Vel. (ft/s)		8.60	
Max Chl Dpth (ft)	13.05	Hydr. Depth (ft)		12.80	
Conv. Total (cfs)	180256.7	Conv. (cfs)		180256.7	
Length Wtd. (ft)	1.00	Wetted Per. (ft)		75.10	
Min Ch El (ft)	1924.63	Shear (lb/sq ft)		0.50	
Alpha	1.00	Stream Power (lb/ft s)		4.26	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.37	4.63	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.79	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24

INPUT
Description: End of Energy Dissipator
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.62	1075	1925.3	1100	1924.8	1125	1925.3	1125	1940.62

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1075	.025	1075	.025	1125	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1075	1125	6	6	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.19	Wt. n-Val.		0.025	
W.S. Elev (ft)	1937.63	Reach Len. (ft)	6.00	6.00	6.00
Crit W.S. (ft)		Flow Area (sq ft)		629.08	
E.G. Slope (ft/ft)	0.001262	Area (sq ft)		629.08	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	8.74	Avg. Vel. (ft/s)		8.74	
Max Chl Dpth (ft)	12.83	Hydr. Depth (ft)		12.58	
Conv. Total (cfs)	154807.4	Conv. (cfs)		154807.4	
Length Wtd. (ft)	6.00	Wetted Per. (ft)		74.67	
Min Ch El (ft)	1924.80	Shear (lb/sq ft)		0.66	
Alpha	1.00	Stream Power (lb/ft s)		5.80	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.37	4.62	0.07
C & E Loss (ft)	0.01	Cum SA (acres)	0.35	0.79	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.6*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1072.45	1940.47	1078.45	1925.21	1100	1924.78	1121.55	1925.21	1127.55	1940.47

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1072.45	.025	1072.45	.025	1127.55	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1072.45	1127.55	6	6	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.		0.025	
W.S. Elev (ft)	1937.48	Reach Len. (ft)	6.00	6.00	6.00
Crit W.S. (ft)		Flow Area (sq ft)		597.38	
E.G. Slope (ft/ft)	0.001362	Area (sq ft)		597.38	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	

Top Width (ft)	52.75	Top Width (ft)		52.75	
Vel Total (ft/s)	9.21	Avg. Vel. (ft/s)		9.21	
Max Chl Dpth (ft)	12.70	Hydr. Depth (ft)		11.32	
Conv. Total (cfs)	149016.4	Conv. (cfs)		149016.4	
Length Wtd. (ft)	6.00	Wetted Per. (ft)		69.48	
Min Ch El (ft)	1924.78	Shear (lb/sq ft)		0.73	
Alpha	1.00	Stream Power (lb/ft s)		6.73	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.37	4.53	0.07
C & E Loss (ft)	0.02	Cum SA (acres)	0.35	0.79	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.2*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1069.9	1940.32	1081.9	1925.13	1100	1924.76	1118.1	1925.13	1130.1	1940.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1069.9	.025	1069.9	.025	1130.1	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1069.9	1130.1	6	6	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.48	Wt. n-Val.		0.025	
W.S. Elev (ft)	1937.30	Reach Len. (ft)	6.00	6.00	6.00
Crit W.S. (ft)		Flow Area (sq ft)		564.06	
E.G. Slope (ft/ft)	0.001578	Area (sq ft)		564.06	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	55.42	Top Width (ft)		55.42	
Vel Total (ft/s)	9.75	Avg. Vel. (ft/s)		9.75	
Max Chl Dpth (ft)	12.54	Hydr. Depth (ft)		10.18	
Conv. Total (cfs)	138445.2	Conv. (cfs)		138445.2	
Length Wtd. (ft)	6.00	Wetted Per. (ft)		67.22	
Min Ch El (ft)	1924.76	Shear (lb/sq ft)		0.83	
Alpha	1.00	Stream Power (lb/ft s)		8.06	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.37	4.45	0.07
C & E Loss (ft)	0.02	Cum SA (acres)	0.35	0.78	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.8*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1067.35	1940.17	1085.35	1925.04	1100	1924.75	1114.65	1925.04	1132.65	1940.17

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1067.35	.025	1067.35	.025	1132.65	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1067.35	1132.65	6	6	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1938.74	Element			
Vel Head (ft)	1.68	Wt. n-Val.		0.025	
W.S. Elev (ft)	1937.06	Reach Len. (ft)	6.00	6.00	6.00
Crit W.S. (ft)		Flow Area (sq ft)		528.17	
E.G. Slope (ft/ft)	0.001943	Area (sq ft)		528.17	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	57.89	Top Width (ft)		57.89	
Vel Total (ft/s)	10.41	Avg. Vel. (ft/s)		10.41	
Max Chl Dpth (ft)	12.31	Hydr. Depth (ft)		9.12	
Conv. Total (cfs)	124770.0	Conv. (cfs)		124770.0	
Length Wtd. (ft)	6.00	Wetted Per. (ft)		66.66	
Min Ch El (ft)	1924.75	Shear (lb/sq ft)		0.96	
Alpha	1.00	Stream Power (lb/ft s)		10.01	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.37	4.38	0.07
C & E Loss (ft)	0.03	Cum SA (acres)	0.35	0.77	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.4*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1064.8	1940.02	1088.8	1924.95	1100	1924.73	1111.2	1924.95	1135.2	1940.02

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1064.8	.025	1064.8	.025	1135.2	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1064.8	1135.2	6	6	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.99	Wt. n-Val.		0.025	
W.S. Elev (ft)	1936.71	Reach Len. (ft)	6.00	6.00	6.00
Crit W.S. (ft)		Flow Area (sq ft)		485.93	
E.G. Slope (ft/ft)	0.002564	Area (sq ft)		485.93	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	59.85	Top Width (ft)		59.85	
Vel Total (ft/s)	11.32	Avg. Vel. (ft/s)		11.32	
Max Chl Dpth (ft)	11.98	Hydr. Depth (ft)		8.12	
Conv. Total (cfs)	108627.4	Conv. (cfs)		108627.4	
Length Wtd. (ft)	6.00	Wetted Per. (ft)		66.62	
Min Ch El (ft)	1924.73	Shear (lb/sq ft)		1.17	
Alpha	1.00	Stream Power (lb/ft s)		13.21	
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.37	4.31	0.07
C & E Loss (ft)	0.13	Cum SA (acres)	0.35	0.76	0.07

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: RIVER-1
REACH: Reach-1 RS: 22

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1062.25	1939.865	1092.25	1924.865	1100	1924.71	1107.75	1924.865	1137.75	1939.865

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1062.25	.025	1062.25	.025	1137.75	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1062.25	1137.75	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.33	Wt. n-Val.		0.025	
W.S. Elev (ft)	1935.21	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1935.21	Flow Area (sq ft)		375.72	
E.G. Slope (ft/ft)	0.005464	Area (sq ft)		375.72	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	56.89	Top Width (ft)		56.89	

Max Chl Dpth (ft)	10.50	Hydr. Depth (ft)		6.60	
Conv. Total (cfs)	74407.0	Conv. (cfs)		74407.0	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		61.78	
Min Ch El (ft)	1924.71	Shear (lb/sq ft)		2.07	
Alpha	1.00	Stream Power (lb/ft s)		30.37	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.37	4.25	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.75	0.07

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: RIVER-1
REACH: Reach-1 RS: 21.8*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1062.46	1939.5	1091.8	1924.84	1100	1924.67	1108.2	1924.84	1137.54	1939.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1062.46	.025	1062.46	.025	1137.54	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1062.46	1137.54	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.91	Wt. n-Val.		0.025	
W.S. Elev (ft)	1934.50	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1935.03	Flow Area (sq ft)		346.57	
E.G. Slope (ft/ft)	0.006822	Area (sq ft)		346.57	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	55.07	Top Width (ft)		55.07	
Vel Total (ft/s)	15.87	Avg. Vel. (ft/s)		15.87	
Max Chl Dpth (ft)	9.83	Hydr. Depth (ft)		6.29	
Conv. Total (cfs)	66590.1	Conv. (cfs)		66590.1	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		59.63	
Min Ch El (ft)	1924.67	Shear (lb/sq ft)		2.48	
Alpha	1.00	Stream Power (lb/ft s)		39.28	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.37	4.15	0.07
C & E Loss (ft)	0.06	Cum SA (acres)	0.35	0.74	0.07

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: RIVER-1
REACH: Reach-1 RS: 21.6*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1062.68	1939.14	1091.34	1924.81	1100	1924.64	1108.66	1924.81	1137.32	1939.14

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1062.68	.025	1062.68	.025	1137.32	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1062.68	1137.32	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1938.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.30	Wt. n-Val.		0.025	
W.S. Elev (ft)	1934.85	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1934.85	Flow Area (sq ft)		377.06	
E.G. Slope (ft/ft)	0.005452	Area (sq ft)		377.06	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	57.49	Top Width (ft)		57.49	
Vel Total (ft/s)	14.59	Avg. Vel. (ft/s)		14.59	
Max Chl Dpth (ft)	10.21	Hydr. Depth (ft)		6.56	
Conv. Total (cfs)	74485.8	Conv. (cfs)		74485.8	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		62.23	
Min Ch El (ft)	1924.64	Shear (lb/sq ft)		2.06	
Alpha	1.00	Stream Power (lb/ft s)		30.08	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.37	4.05	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.35	0.72	0.07

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: RIVER-1
REACH: Reach-1 RS: 21.4*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1062.9	1938.78	1090.89	1924.78	1100	1924.6	1109.11	1924.78	1137.1	1938.78

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1062.9	.025	1062.9	.025	1137.1	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1062.9	1137.1	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1938.03	Element			
Vel Head (ft)	3.87	Wt. n-Val.		0.025	
W.S. Elev (ft)	1934.16	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1934.68	Flow Area (sq ft)		348.51	
E.G. Slope (ft/ft)	0.006777	Area (sq ft)		348.51	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	55.73	Top Width (ft)		55.73	
Vel Total (ft/s)	15.78	Avg. Vel. (ft/s)		15.78	
Max Chl Dpth (ft)	9.56	Hydr. Depth (ft)		6.25	
Conv. Total (cfs)	66811.7	Conv. (cfs)		66811.7	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		60.17	
Min Ch El (ft)	1924.60	Shear (lb/sq ft)		2.45	
Alpha	1.00	Stream Power (lb/ft s)		38.68	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.37	3.95	0.07
C & E Loss (ft)	0.06	Cum SA (acres)	0.35	0.71	0.07

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: RIVER-1
REACH: Reach-1 RS: 21.2*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1063.11	1938.41	1090.43	1924.75	1100	1924.56	1109.57	1924.75	1136.89	1938.41

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1063.11	.025	1063.11	.025	1136.89	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1063.11	1136.89	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1937.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.30	Wt. n-Val.		0.025	
W.S. Elev (ft)	1934.48	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1934.48	Flow Area (sq ft)		377.56	
E.G. Slope (ft/ft)	0.005479	Area (sq ft)		377.56	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	58.07	Top Width (ft)		58.07	
Vel Total (ft/s)	14.57	Avg. Vel. (ft/s)		14.57	
Max Chl Dpth (ft)	9.92	Hydr. Depth (ft)		6.50	
Conv. Total (cfs)	74301.3	Conv. (cfs)		74301.3	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		62.67	
Min Ch El (ft)	1924.56	Shear (lb/sq ft)		2.06	
Alpha	1.00	Stream Power (lb/ft s)		30.02	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.37	3.85	0.07
C & E Loss (ft)	0.17	Cum SA (acres)	0.35	0.69	0.07

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: RIVER-1
REACH: Reach-1 RS: 21.*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1063.32	1938.05	1089.97	1924.73	1100	1924.52	1110.03	1924.73	1136.68	1938.05

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1063.32	.025	1063.32	.025	1136.68	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1063.32	1136.68	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1937.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.82	Wt. n-Val.		0.025	
W.S. Elev (ft)	1933.84	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1934.33	Flow Area (sq ft)		350.82	
E.G. Slope (ft/ft)	0.006724	Area (sq ft)		350.82	

Top Width (ft)	56.51	Top Width (ft)		56.51	
Vel Total (ft/s)	15.68	Avg. Vel. (ft/s)		15.68	
Max Chl Dpth (ft)	9.32	Hydr. Depth (ft)		6.21	
Conv. Total (cfs)	67072.1	Conv. (cfs)		67072.1	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		60.81	
Min Ch El (ft)	1924.52	Shear (lb/sq ft)		2.42	
Alpha	1.00	Stream Power (lb/ft s)		37.97	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.37	3.75	0.07
C & E Loss (ft)	0.05	Cum SA (acres)	0.35	0.68	0.07

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: RIVER-1
REACH: Reach-1 RS: 20.8*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1063.54	1937.69	1089.52	1924.7	1100	1924.49	1110.48	1924.7	1136.46	1937.69

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1063.54	.025	1063.54	.025	1136.46	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1063.54	1136.46	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1937.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.08	Wt. n-Val.		0.025	
W.S. Elev (ft)	1933.46	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1934.17	Flow Area (sq ft)		339.35	
E.G. Slope (ft/ft)	0.007402	Area (sq ft)		339.35	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	56.00	Top Width (ft)		56.00	
Vel Total (ft/s)	16.21	Avg. Vel. (ft/s)		16.21	
Max Chl Dpth (ft)	8.97	Hydr. Depth (ft)		6.06	
Conv. Total (cfs)	63925.5	Conv. (cfs)		63925.5	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		60.15	
Min Ch El (ft)	1924.49	Shear (lb/sq ft)		2.61	
Alpha	1.00	Stream Power (lb/ft s)		42.26	
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	0.37	3.65	0.07
C & E Loss (ft)	0.03	Cum SA (acres)	0.35	0.66	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.6*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1063.76	1937.32	1089.06	1924.67	1100	1924.45	1110.94	1924.67	1136.24	1937.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1063.76	.025	1063.76	.025	1136.24	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1063.76	1136.24	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1937.42	Element			
Vel Head (ft)	4.29	Wt. n-Val.		0.025	
W.S. Elev (ft)	1933.14	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1934.00	Flow Area (sq ft)		330.99	
E.G. Slope (ft/ft)	0.007973	Area (sq ft)		330.99	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	55.74	Top Width (ft)		55.74	
Vel Total (ft/s)	16.62	Avg. Vel. (ft/s)		16.62	
Max Chl Dpth (ft)	8.69	Hydr. Depth (ft)		5.94	
Conv. Total (cfs)	61595.6	Conv. (cfs)		61595.6	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		59.75	
Min Ch El (ft)	1924.45	Shear (lb/sq ft)		2.76	
Alpha	1.00	Stream Power (lb/ft s)		45.82	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	0.37	3.56	0.07
C & E Loss (ft)	0.02	Cum SA (acres)	0.35	0.65	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.4*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1063.97	1936.96	1088.61	1924.64	1100	1924.41	1111.39	1924.64	1136.03	1936.96

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1063.97	.025	1063.97	.025	1136.03	.025

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

1063.97 1136.03 12 12 12 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1937.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.45	Wt. n-Val.		0.025	
W.S. Elev (ft)	1932.86	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1933.84	Flow Area (sq ft)		325.02	
E.G. Slope (ft/ft)	0.008434	Area (sq ft)		325.02	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	55.66	Top Width (ft)		55.66	
Vel Total (ft/s)	16.92	Avg. Vel. (ft/s)		16.92	
Max Chl Dpth (ft)	8.45	Hydr. Depth (ft)		5.84	
Conv. Total (cfs)	59887.4	Conv. (cfs)		59887.4	
Length Wtd. (ft)	12.00	Wetted Per. (ft)		59.55	
Min Ch El (ft)	1924.41	Shear (lb/sq ft)		2.87	
Alpha	1.00	Stream Power (lb/ft s)		48.64	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	0.37	3.47	0.07
C & E Loss (ft)	0.02	Cum SA (acres)	0.35	0.63	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.2*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1064.19	1936.6	1088.15	1924.61	1100	1924.38	1111.85	1924.61	1135.81	1936.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1064.19	.025	1064.19	.025	1135.81	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1064.19	1135.81	12	12	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1937.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.57	Wt. n-Val.		0.025	
W.S. Elev (ft)	1932.62	Reach Len. (ft)	12.00	12.00	12.00
Crit W.S. (ft)	1933.69	Flow Area (sq ft)		320.47	
E.G. Slope (ft/ft)	0.008827	Area (sq ft)		320.47	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	55.69	Top Width (ft)		55.69	
Vel Total (ft/s)	17.16	Avg. Vel. (ft/s)		17.16	
Max Chl Dpth (ft)	8.23	Hydr. Depth (ft)		5.75	
Conv. Total (cfs)	58541.5	Conv. (cfs)		58541.5	

Length Wtd. (ft)	12.00	Wetted Per. (ft)		59.48			
Min Ch El (ft)	1924.38	Shear (lb/sq ft)		2.97			
Alpha	1.00	Stream Power (lb/ft s)		50.96			
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	0.37	3.38	0.07		
C & E Loss (ft)	0.01	Cum SA (acres)	0.35	0.61	0.07		

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20

INPUT
Description: End of Phase 1 Improvements
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1064.4	1936.236	1087.7	1924.586	1100	1924.34	1112.3	1924.586	1135.6	1936.236

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1064.4	.025	1064.4	.025	1135.6	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1064.4	1135.6	382.58	367.78	346.32	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1937.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.68	Wt. n-Val.		0.025	
W.S. Elev (ft)	1932.39	Reach Len. (ft)	382.58	367.78	346.32
Crit W.S. (ft)	1933.54	Flow Area (sq ft)		316.95	
E.G. Slope (ft/ft)	0.009166	Area (sq ft)		316.95	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	55.83	Top Width (ft)		55.83	
Vel Total (ft/s)	17.35	Avg. Vel. (ft/s)		17.35	
Max Chl Dpth (ft)	8.05	Hydr. Depth (ft)		5.68	
Conv. Total (cfs)	57447.6	Conv. (cfs)		57447.6	
Length Wtd. (ft)		Wetted Per. (ft)		59.52	
Min Ch El (ft)	1924.34	Shear (lb/sq ft)		3.05	
Alpha	1.00	Stream Power (lb/ft s)		52.88	
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	0.37	3.30	0.07
C & E Loss (ft)	0.01	Cum SA (acres)	0.35	0.60	0.07

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 10

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
   1000 1937.36 1049.49 1936.26 1095.06 1934.26 1144.27 1932.26 1220.49 1930.39
 1220.83 1930.26 1228.41 1928.26  1235.7 1926.26 1237.99 1925.61  1249.9 1924.26
 1252.38 1923.96 1254.61 1924.26 1271.01 1926.26 1272.95 1926.49  1279.8  1927.8
 1285.65 1928.26 1306.65 1930.26 1322.46 1932.26 1329.96 1933.29 1344.12 1934.26
 1372.27 1936.26 1402.27 1938.26 1409.32 1938.72 1418.36 1939.14 1426.01 1940.26
 1436.49 1941.26 1496.07 1942.26 1580.86 1943.11 1671.03 1944.26 1677.54 1944.52
 1685.16 1944.66  1718.9 1946.26

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
    1000    .035 1220.49     .03 1306.65    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1220.49 1306.65                0       0       0              .1      .3

CROSS SECTION OUTPUT    Profile #PF 1

  E.G. Elev (ft)           1934.25    Element                 Left OB    Channel   Right OB
  Vel Head (ft)               1.82    Wt. n-Val.                0.035      0.030      0.035
  W.S. Elev (ft)           1932.43    Reach Len. (ft)
  Crit W.S. (ft)           1932.43    Flow Area (sq ft)         84.57     463.60      18.60
  E.G. Slope (ft/ft)      0.005458    Area (sq ft)              84.57     463.60      18.60
  Q Total (cfs)            5500.00    Flow (cfs)               274.31    5164.19      61.51
  Top Width (ft)            183.61    Top Width (ft)            80.40      86.16      17.05
  Vel Total (ft/s)            9.70    Avg. Vel. (ft/s)           3.24      11.14       3.31
  Max Chl Dpth (ft)           8.47    Hydr. Depth (ft)           1.05       5.38       1.09
  Conv. Total (cfs)        74444.3    Conv. (cfs)              3712.8    69898.9      832.5
  Length Wtd. (ft)                    Wetted Per. (ft)          80.43      87.29      17.18
  Min Ch El (ft)           1923.96    Shear (lb/sq ft)           0.36       1.81       0.37
  Alpha                       1.24    Stream Power (lb/ft s)     1.16      20.16       1.22
  Frctn Loss (ft)                     Cum Volume (acre-ft)
  C & E Loss (ft)                     Cum SA (acres)

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.


SUMMARY OF MANNING'S N VALUES

River:RIVER-1

      Reach          River Sta.       n1        n2        n3
```

Reach-1	180	.03	.025	.03
Reach-1	170	.025	.015	.025
Reach-1	160	.025	.015	.025
Reach-1	150	.025	.015	.025
Reach-1	140	.025	.015	.025
Reach-1	130	.025	.015	.025
Reach-1	120	.025	.015	.025
Reach-1	110	.025	.015	.025
Reach-1	100	.025	.015	.025
Reach-1	90	.025	.015	.025
Reach-1	81	.025	.015	.025
Reach-1	75	.025	.015	.025
Reach-1	70	.025	.015	.025
Reach-1	65	.025	.015	.025
Reach-1	60	.025	.015	.025
Reach-1	55	.025	.015	.025
Reach-1	50	.025	.015	.025
Reach-1	45	Bridge		
Reach-1	40	.025	.015	.025
Reach-1	35	.025	.015	.025
Reach-1	30	.025	.015	.025
Reach-1	29.6*	.025	.04	.025
Reach-1	29.2*	.025	.04	.025
Reach-1	28.8*	.025	.04	.025
Reach-1	28.4*	.025	.04	.025
Reach-1	28	.025	.015	.025
Reach-1	27.6666*	.025	.015	.025
Reach-1	27.3333*	.025	.015	.025
Reach-1	27.*	.025	.015	.025
Reach-1	26.6666*	.025	.015	.025
Reach-1	26.3333*	.025	.015	.025
Reach-1	26	.025	.015	.025
Reach-1	25.3333*	.025	.018	.025
Reach-1	24.6666*	.025	.022	.025
Reach-1	24	.025	.025	.025
Reach-1	23.6*	.025	.025	.025
Reach-1	23.2*	.025	.025	.025
Reach-1	22.8*	.025	.025	.025
Reach-1	22.4*	.025	.025	.025
Reach-1	22	.025	.025	.025
Reach-1	21.8*	.025	.025	.025
Reach-1	21.6*	.025	.025	.025
Reach-1	21.4*	.025	.025	.025
Reach-1	21.2*	.025	.025	.025
Reach-1	21.*	.025	.025	.025
Reach-1	20.8*	.025	.025	.025
Reach-1	20.6*	.025	.025	.025
Reach-1	20.4*	.025	.025	.025
Reach-1	20.2*	.025	.025	.025

Reach-1	20	.025	.025	.025
Reach-1	10	.035	.03	.035

SUMMARY OF REACH LENGTHS

River: RIVER-1

Reach	River Sta.	Left	Channel	Right
Reach-1	180	358.08	363.91	374.39
Reach-1	170	98.31	97.13	96.38
Reach-1	160	119.51	114.85	110.97
Reach-1	150	1	1	1
Reach-1	140	57.23	55.76	56.76
Reach-1	130	125.29	125.31	125.61
Reach-1	120	25.32	24.78	22.42
Reach-1	110	1	1	1
Reach-1	100	346.14	342.73	339.84
Reach-1	90	53.02	51.93	56.59
Reach-1	81	50	50	50
Reach-1	75	151.76	151.76	151.76
Reach-1	70	100	100	100
Reach-1	65	100	100	100
Reach-1	60	166.19	166.19	166.19
Reach-1	55	290.11	288.11	286.11
Reach-1	50	101	99	97
Reach-1	45	Bridge		
Reach-1	40	15	15	15
Reach-1	35	102	102	102
Reach-1	30	2.49	2.49	2.49
Reach-1	29.6*	2.49	2.49	2.49
Reach-1	29.2*	2.49	2.49	2.49
Reach-1	28.8*	2.49	2.49	2.49
Reach-1	28.4*	2.49	2.49	2.49
Reach-1	28	12	12	12
Reach-1	27.6666*	12	12	12
Reach-1	27.3333*	12	12	12
Reach-1	27.*	12	12	12
Reach-1	26.6666*	12	12	12
Reach-1	26.3333*	12	12	12
Reach-1	26	1	1	1
Reach-1	25.3333*	1	1	1
Reach-1	24.6666*	1	1	1
Reach-1	24	6	6	6
Reach-1	23.6*	6	6	6
Reach-1	23.2*	6	6	6

Reach-1	22.8*	6	6	6
Reach-1	22.4*	6	6	6
Reach-1	22	12	12	12
Reach-1	21.8*	12	12	12
Reach-1	21.6*	12	12	12
Reach-1	21.4*	12	12	12
Reach-1	21.2*	12	12	12
Reach-1	21.*	12	12	12
Reach-1	20.8*	12	12	12
Reach-1	20.6*	12	12	12
Reach-1	20.4*	12	12	12
Reach-1	20.2*	12	12	12
Reach-1	20	382.58	367.78	346.32
Reach-1	10	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: RIVER-1

Reach	River Sta.	Contr.	Expan.
Reach-1	180	.1	.3
Reach-1	170	.1	.3
Reach-1	160	.1	.3
Reach-1	150	.1	.3
Reach-1	140	.1	.3
Reach-1	130	.1	.3
Reach-1	120	.1	.3
Reach-1	110	.1	.3
Reach-1	100	.1	.3
Reach-1	90	.1	.3
Reach-1	81	.1	.3
Reach-1	75	.1	.3
Reach-1	70	.1	.3
Reach-1	65	.1	.3
Reach-1	60	.1	.3
Reach-1	55	.1	.3
Reach-1	50	.1	.3
Reach-1	45	Bridge	
Reach-1	40	.1	.3
Reach-1	35	.1	.3
Reach-1	30	.1	.3
Reach-1	29.6*	.1	.3
Reach-1	29.2*	.1	.3
Reach-1	28.8*	.1	.3
Reach-1	28.4*	.1	.3

Reach-1	28	.1	.3
Reach-1	27.6666*	.1	.3
Reach-1	27.3333*	.1	.3
Reach-1	27.*	.1	.3
Reach-1	26.6666*	.1	.3
Reach-1	26.3333*	.1	.3
Reach-1	26	.1	.3
Reach-1	25.3333*	.1	.3
Reach-1	24.6666*	.1	.3
Reach-1	24	.1	.3
Reach-1	23.6*	.1	.3
Reach-1	23.2*	.1	.3
Reach-1	22.8*	.1	.3
Reach-1	22.4*	.1	.3
Reach-1	22	.1	.3
Reach-1	21.8*	.1	.3
Reach-1	21.6*	.1	.3
Reach-1	21.4*	.1	.3
Reach-1	21.2*	.1	.3
Reach-1	21.*	.1	.3
Reach-1	20.8*	.1	.3
Reach-1	20.6*	.1	.3
Reach-1	20.4*	.1	.3
Reach-1	20.2*	.1	.3
Reach-1	20	.1	.3
Reach-1	10	.1	.3

Profile Output Table - CHECKRAS

Reach	River Sta	Froude # Chl	Top Wdth Act	Conv.	Total	Prof Delta WS	Left Sta Eff	Enc Sta L	Center Station	Enc Sta R	Rght Sta Eff
		Min Ch El	Left Stagn	Right Stagn							
(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
Reach-1	180		1.00	65.80	71600.3		1118.70			1149.24	
		1184.50	1957.33								
Reach-1	170		0.59	75.51	209191.8		1022.79			1060.40	
		1098.30	1954.56								
Reach-1	160		1.00	55.47	117380.3		1025.06			1052.44	
		1080.53	1954.02								
Reach-1	150		1.48	52.74	77729.7		1138.09			1164.30	
		1190.83	1952.76								
Reach-1	140		1.84	48.52	60803.4		1128.81			1152.67	
		1177.33	1950.76								
Reach-1	130		1.85	48.12	60664.7		1095.08			1118.44	
		1143.20	1950.26								
Reach-1	120		1.77	49.85	63694.8		1086.89			1111.84	
		1136.74	1949.76								

Reach-1	110		1.81	50.33	62257.1		1074.85
1100.27		1125.19	1949.46				
Reach-1	100		2.03	46.72	54738.3		1075.43
1098.92		1122.16	1947.73				
Reach-1	90		1.89	53.35	59592.8		1057.63
1083.29		1110.98	1945.98				
Reach-1	81		1.84	53.45	61556.8		1073.28
1100.00		1126.72	1945.72				
Reach-1	75		1.83	45.00	58308.1		1077.50
1100.00		1122.50	1944.07				
Reach-1	70		2.07	45.00	51173.2		1077.50
1100.00		1122.50	1941.35				
Reach-1	65		1.69	35.00	61013.1		1082.50
1100.00		1117.50	1939.56				
Reach-1	60		1.80	35.00	57190.8		1082.50
1100.00		1117.50	1938.13				
Reach-1	55		1.94	35.00	53040.5		1082.50
1100.00		1117.50	1935.75				
Reach-1	50		2.04	35.00	52337.3		1182.50
1200.00		1217.50	1931.63				
Reach-1	45	BR U	2.04	35.00	52337.3		1182.50
1200.00		1217.50	1931.63				
Reach-1	45	BR D	1.87	35.00	57291.1		1132.50
1150.00		1167.50	1930.77				
Reach-1	40		1.87	35.00	57280.7		1132.50
1150.00		1167.50	1930.77				
Reach-1	35		1.87	35.00	57280.7		1082.50
1100.00		1117.50	1930.64				
Reach-1	30		2.47	50.00	44488.9		1075.00
1100.00		1125.00	1929.75				
Reach-1	29.6*		2.63	50.00	15647.8		1075.00
1100.00		1125.00	1928.70				
Reach-1	29.2*		2.74	50.00	14977.8		1075.00
1100.00		1125.00	1927.66				
Reach-1	28.8*		2.85	50.00	14389.6		1075.00
1100.00		1125.00	1926.61				
Reach-1	28.4*		2.95	50.00	13882.0		1075.00
1100.00		1125.00	1925.57				
Reach-1	28		3.08	50.00	35320.0		1075.00
1100.00		1125.00	1924.52				
Reach-1	27.6666*		3.02	50.00	36054.8		1075.00
1100.00		1125.00	1924.48				
Reach-1	27.3333*		0.41	50.00	272139.1		1075.00
1100.00		1125.00	1924.45				
Reach-1	27.*		0.41	50.00	273327.6		1075.00
1100.00		1125.00	1924.41				
Reach-1	26.6666*		0.41	50.00	274520.8		1075.00
1100.00		1125.00	1924.37				
Reach-1	26.3333*		0.41	50.00	275370.1		

1100.00		1125.00	1924.34			
Reach-1	26		0.40	50.00	276569.8	1075.00
1100.00		1125.00	1924.30			
Reach-1	25.3333*		0.41	50.00	225260.9	1075.00
1100.00		1125.00	1924.47			
Reach-1	24.6666*		0.42	50.00	180256.7	1075.00
1100.00		1125.00	1924.63			
Reach-1	24		0.43	50.00	154807.4	1075.00
1100.00		1125.00	1924.80			
Reach-1	23.6*		0.48	52.75	149016.4	1073.63
1100.00		1126.38	1924.78			
Reach-1	23.2*		0.54	55.42	138445.2	1072.29
1100.00		1127.71	1924.76			
Reach-1	22.8*		0.61	57.89	124770.0	1071.05
1100.00		1128.95	1924.75			
Reach-1	22.4*		0.70	59.85	108627.4	1070.08
1100.00		1129.92	1924.73			
Reach-1	22		1.00	56.89	74407.0	1071.56
1100.00		1128.45	1924.71			
Reach-1	21.8*		1.11	55.07	66590.1	1072.47
1100.00		1127.53	1924.67			
Reach-1	21.6*		1.00	57.49	74485.8	1071.26
1100.00		1128.74	1924.64			
Reach-1	21.4*		1.11	55.73	66811.7	1072.14
1100.00		1127.87	1924.60			
Reach-1	21.2*		1.01	58.07	74301.3	1070.96
1100.00		1129.04	1924.56			
Reach-1	21.*		1.11	56.51	67072.1	1071.75
1100.00		1128.25	1924.52			
Reach-1	20.8*		1.16	56.00	63925.5	1072.00
1100.00		1128.00	1924.49			
Reach-1	20.6*		1.20	55.74	61595.6	1072.13
1100.00		1127.87	1924.45			
Reach-1	20.4*		1.23	55.66	59887.4	1072.17
1100.00		1127.83	1924.41			
Reach-1	20.2*		1.26	55.69	58541.5	1072.15
1100.00		1127.85	1924.38			
Reach-1	20		1.28	55.83	57447.6	1072.09
1100.00		1127.91	1924.34			
Reach-1	10		0.85	183.61	74444.3	1140.09
1263.57		1323.70	1923.96			

HEC-RAS H . Post River: RIVER-1 Reach: Reach-1 Profile: PF 1

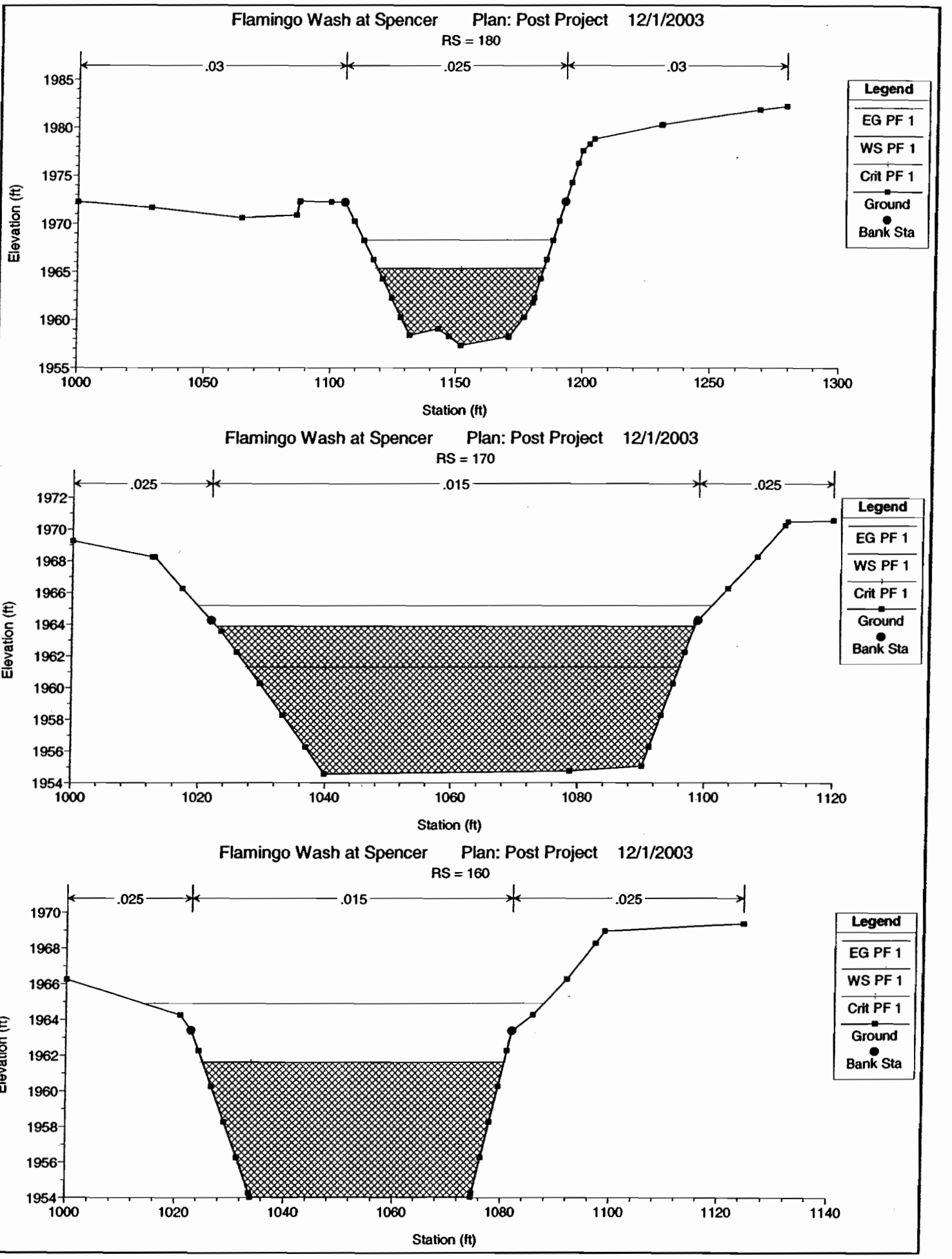
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	180	PF 1	5300.00	1957.33	1965.36	1965.36	1968.30	0.005479	13.75	385.47	65.80	1.00
Reach-1	170	PF 1	5300.00	1954.56	1963.89	1961.31	1965.20	0.000642	9.22	575.14	75.51	0.59
Reach-1	160	PF 1	5300.00	1954.02	1961.61	1961.61	1964.90	0.002039	14.56	363.92	55.47	1.00
Reach-1	150	PF 1	5300.00	1952.76	1958.60	1960.22	1964.32	0.004649	19.19	276.25	52.74	1.48
Reach-1	140	PF 1	5300.00	1950.76	1955.95	1958.44	1964.07	0.007598	22.87	231.74	48.52	1.84
Reach-1	130	PF 1	5300.00	1950.26	1955.44	1957.93	1963.64	0.007633	22.98	230.61	48.12	1.85
Reach-1	120	PF 1	5300.00	1949.76	1954.99	1957.27	1962.54	0.006924	22.05	240.42	49.85	1.77
Reach-1	110	PF 1	5300.00	1949.46	1954.60	1956.96	1962.34	0.007247	22.33	237.36	50.33	1.81
Reach-1	100	PF 1	5300.00	1947.73	1952.70	1955.55	1962.16	0.009375	24.68	214.74	46.72	2.03
Reach-1	90	PF 1	5300.00	1945.98	1950.86	1953.25	1958.74	0.007910	22.53	235.27	53.35	1.89
Reach-1	81	PF 1	5300.00	1945.72	1950.67	1952.99	1958.25	0.007413	22.09	239.88	53.45	1.84
Reach-1	75	PF 1	5300.00	1944.07	1949.35	1951.85	1957.78	0.008262	23.30	227.51	45.00	1.83
Reach-1	70	PF 1	5300.00	1941.35	1946.22	1949.12	1956.20	0.010727	25.35	209.11	45.00	2.07
Reach-1	65	PF 1	5300.00	1939.56	1946.04	1948.66	1955.00	0.007546	24.03	220.55	35.00	1.69
Reach-1	60	PF 1	5300.00	1938.13	1944.34	1947.22	1954.12	0.008588	25.10	211.19	35.00	1.80
Reach-1	55	PF 1	5300.00	1935.75	1941.66	1944.85	1952.48	0.009985	26.39	200.83	35.00	1.94
Reach-1	50	PF 1	5500.00	1931.63	1937.49	1940.95	1949.35	0.011043	27.63	199.05	35.00	2.04
Reach-1	45		Bridge									
Reach-1	40	PF 1	5500.00	1930.77	1936.99	1940.10	1947.50	0.009220	26.02	211.41	35.00	1.87
Reach-1	35	PF 1	5500.00	1930.64	1936.86	1939.97	1947.37	0.009220	26.02	211.41	35.00	1.87
Reach-1	30	PF 1	5500.00	1929.75	1933.95	1937.21	1946.02	0.015283	27.89	197.23	50.00	2.47
Reach-1	29.6*	PF 1	5500.00	1928.70	1932.74	1936.16	1945.84	0.123543	29.04	189.37	50.00	2.63
Reach-1	29.2*	PF 1	5500.00	1927.66	1931.59	1935.13	1945.44	0.134844	29.86	184.20	50.00	2.74
Reach-1	28.8*	PF 1	5500.00	1926.61	1930.45	1934.07	1945.02	0.146092	30.63	179.59	50.00	2.85
Reach-1	28.4*	PF 1	5500.00	1925.57	1929.33	1933.03	1944.57	0.156972	31.33	175.56	50.00	2.95
Reach-1	28	PF 1	5500.00	1924.52	1928.18	1931.98	1944.35	0.024248	32.27	170.43	50.00	3.08
Reach-1	27.6666*	PF 1	5500.00	1924.48	1928.18	1931.94	1943.94	0.023270	31.85	172.66	50.00	3.02
Reach-1	27.3333*	PF 1	5500.00	1924.45	1937.76	1931.91	1938.86	0.000408	8.42	652.82	50.00	0.41
Reach-1	27*	PF 1	5500.00	1924.41	1937.76		1938.85	0.000405	8.40	654.80	50.00	0.41
Reach-1	26.6666*	PF 1	5500.00	1924.37	1937.76		1938.85	0.000401	8.37	656.79	50.00	0.41
Reach-1	26.3333*	PF 1	5500.00	1924.34	1937.75		1938.84	0.000399	8.36	658.22	50.00	0.41
Reach-1	26	PF 1	5500.00	1924.30	1937.75		1938.83	0.000395	8.33	660.21	50.00	0.40
Reach-1	25.3333*	PF 1	5500.00	1924.47	1937.72		1938.83	0.000596	8.46	649.77	50.00	0.41
Reach-1	24.6666*	PF 1	5500.00	1924.63	1937.68		1938.82	0.000931	8.60	639.81	50.00	0.42
Reach-1	24	PF 1	5500.00	1924.80	1937.63		1938.82	0.001262	8.74	629.08	50.00	0.43
Reach-1	23.6*	PF 1	5500.00	1924.78	1937.48		1938.80	0.001362	9.21	597.38	52.75	0.48
Reach-1	23.2*	PF 1	5500.00	1924.76	1937.30		1938.77	0.001578	9.75	564.06	55.42	0.54
Reach-1	22.8*	PF 1	5500.00	1924.75	1937.06		1938.74	0.001943	10.41	528.17	57.89	0.61
Reach-1	22.4*	PF 1	5500.00	1924.73	1936.71		1938.70	0.002564	11.32	485.93	59.85	0.70
Reach-1	22	PF 1	5500.00	1924.71	1935.21	1935.21	1938.54	0.005464	14.64	375.72	56.89	1.00
Reach-1	21.8*	PF 1	5500.00	1924.67	1934.50	1935.03	1938.41	0.006822	15.87	346.57	55.07	1.11
Reach-1	21.6*	PF 1	5500.00	1924.64	1934.85	1934.85	1938.16	0.005452	14.59	377.06	57.49	1.00

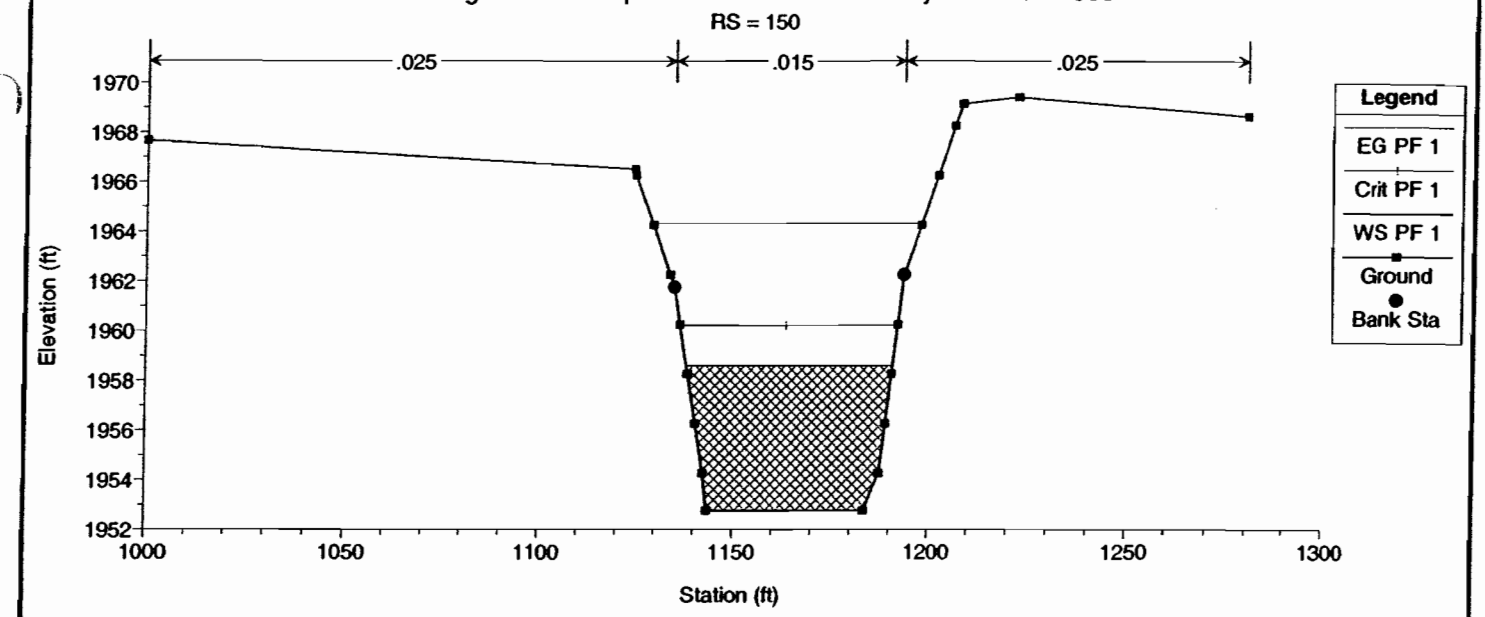
HEC-RAS Plan: Post River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

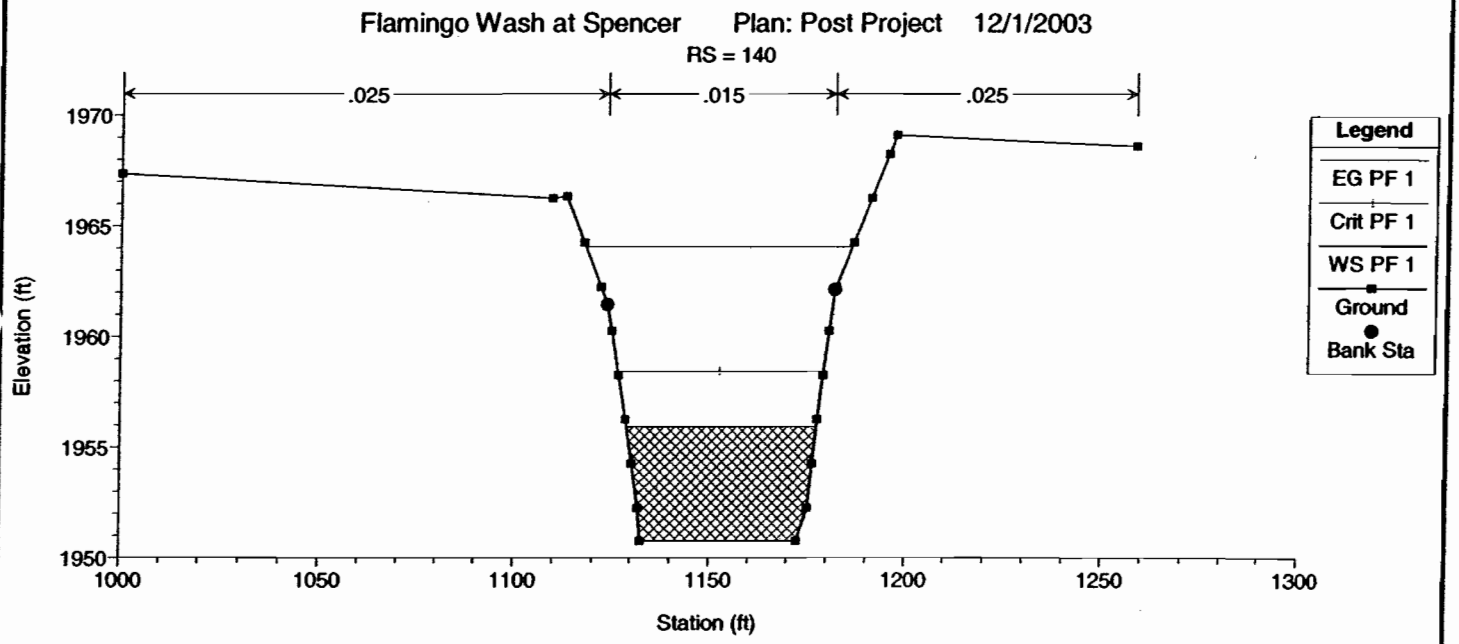
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	21.4*	PF 1	5500.00	1924.60	1934.16	1934.68	1938.03	0.006777	15.78	348.51	55.73	1.11
Reach-1	21.2*	PF 1	5500.00	1924.56	1934.48	1934.48	1937.78	0.005479	14.57	377.56	58.07	1.01
Reach-1	21*	PF 1	5500.00	1924.52	1933.84	1934.33	1937.66	0.006724	15.68	350.82	56.51	1.11
Reach-1	20.8*	PF 1	5500.00	1924.49	1933.46	1934.17	1937.54	0.007402	16.21	339.35	56.00	1.16
Reach-1	20.6*	PF 1	5500.00	1924.45	1933.14	1934.00	1937.42	0.007973	16.62	330.99	55.74	1.20
Reach-1	20.4*	PF 1	5500.00	1924.41	1932.86	1933.84	1937.31	0.008434	16.92	325.02	55.66	1.23
Reach-1	20.2*	PF 1	5500.00	1924.38	1932.62	1933.69	1937.19	0.008827	17.16	320.47	55.69	1.26
Reach-1	20	PF 1	5500.00	1924.34	1932.39	1933.54	1937.07	0.009166	17.35	316.95	55.83	1.28
Reach-1	10	PF 1	5500.00	1923.96	1932.43	1932.43	1934.25	0.005458	11.14	566.77	183.61	0.85

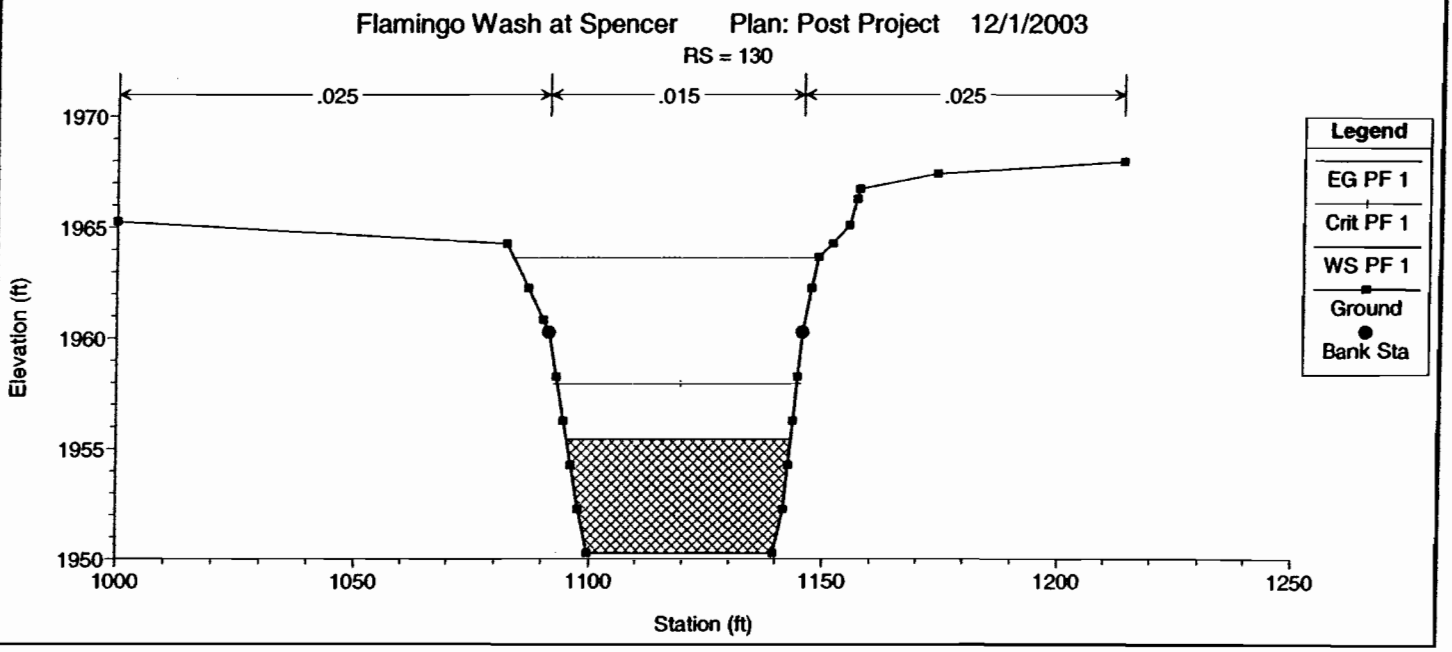
HEC-RAS Plan: Post River: RIVER-1 Reach: Reach-1 Profile: PF 1

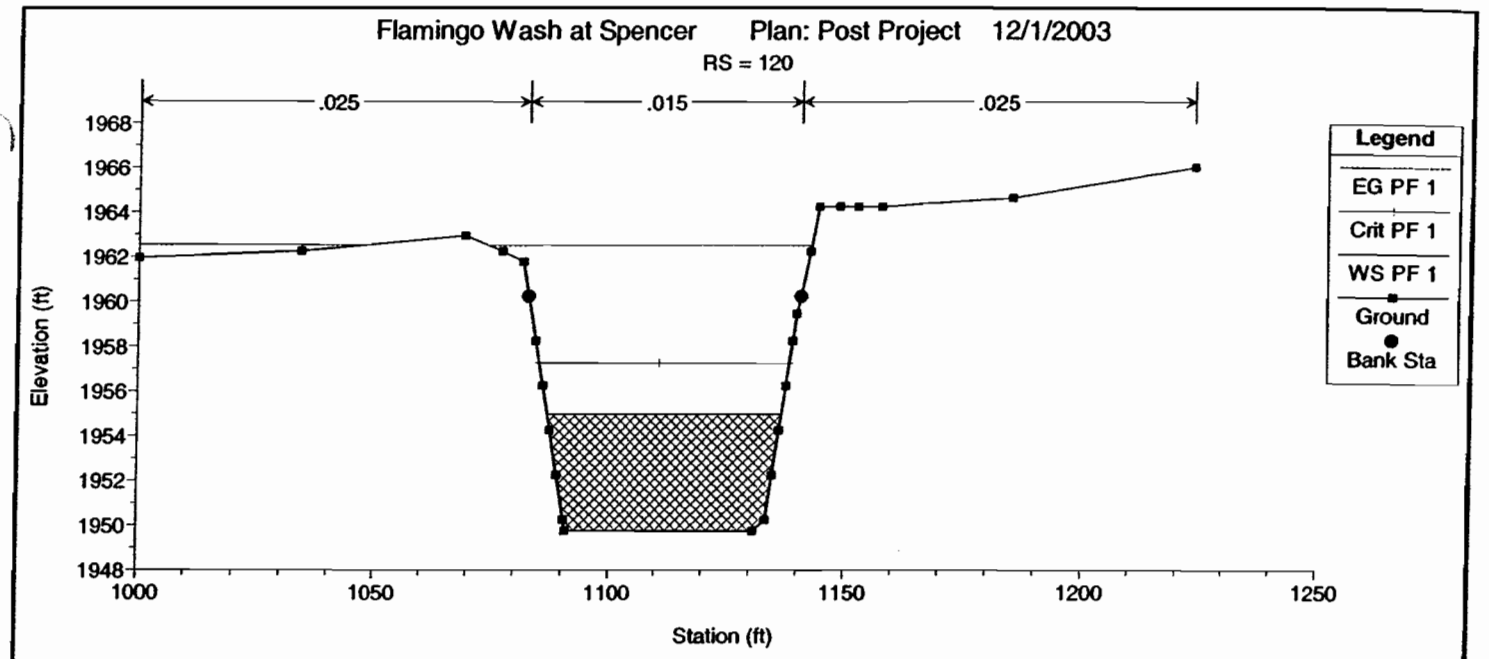
Reach	River Sta	Profile	E.G. US.	Min El Prs	BR Open Area	Prs O WS	Q Total	Min El Weir Flow	Q Weir	Delta EG
			(ft)	(ft)	(sq ft)	(ft)	(cfs)	(ft)	(cfs)	(ft)
Reach-1	45	PF 1	1947.50	1941.63	343.88	1937.49	5500.00	1943.81		0.00

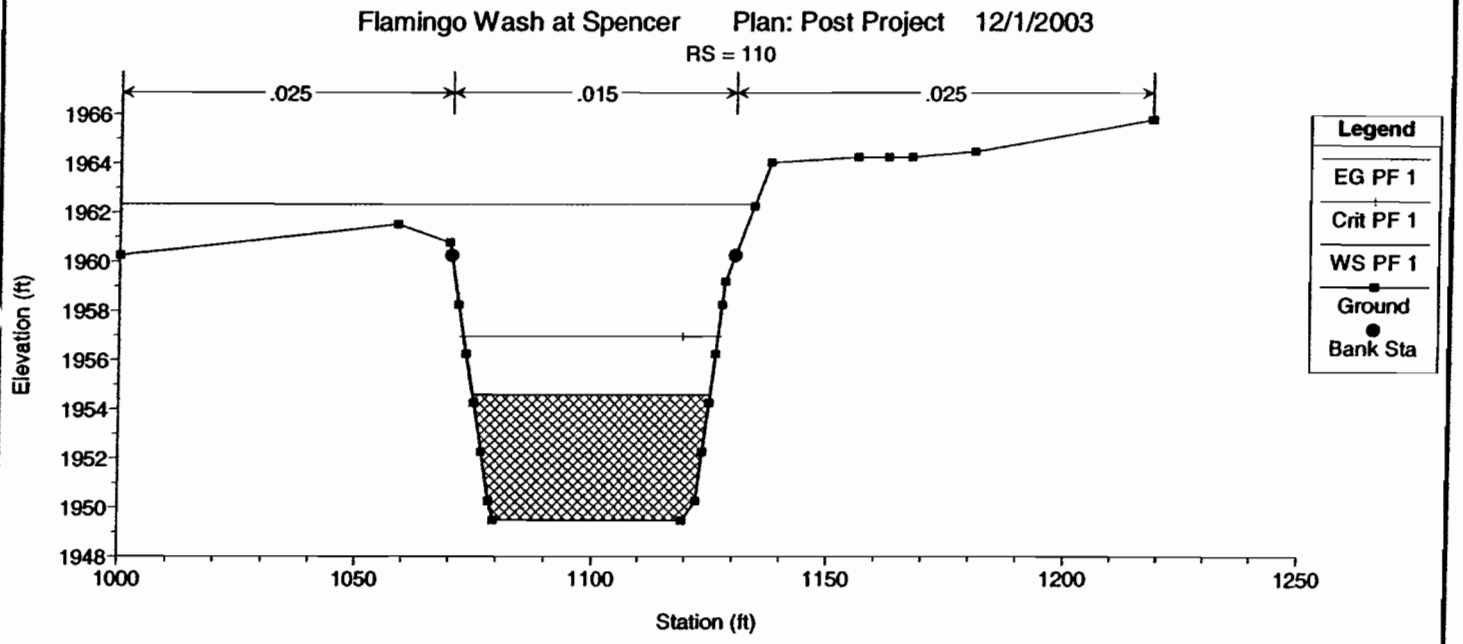

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 180
.03
.025
.03
Elevation (ft)
1985
1980
1975
1970
1965
1960
1955
1000
1050
1100
1150
1200
1250
1300
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 170
.025
.015
.025
Elevation (ft)
1972
1970
1968
1966
1964
1962
1960
1958
1956
1954
1000
1020
1040
1060
1080
1100
1120
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 160
.025
.015
.025
Elevation (ft)
1970
1968
1966
1964
1962
1960
1958
1956
1954
1000
1020
1040
1060
1080
1100
1120
1140
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta

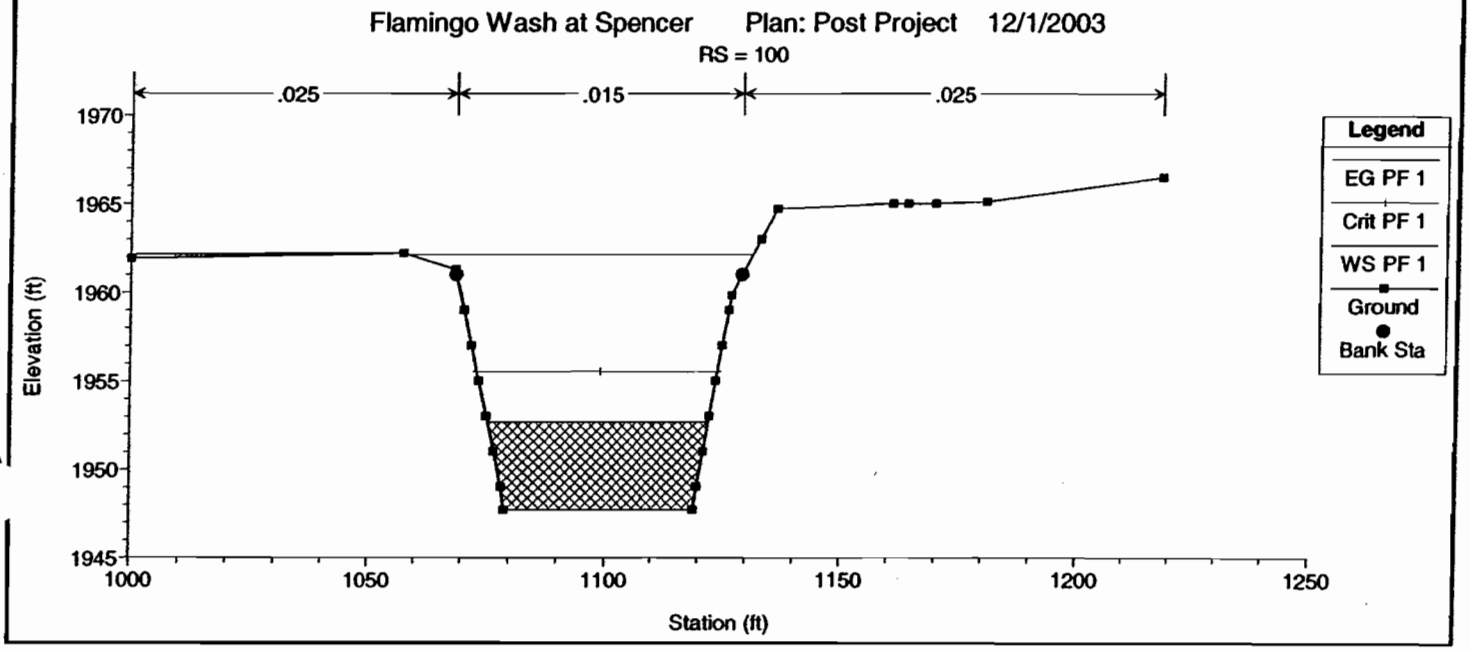

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 150
.025
.015
.025
Elevation (ft)
1970
1968
1966
1964
1962
1960
1958
1956
1954
1952
1000
1050
1100
1150
1200
1250
1300
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

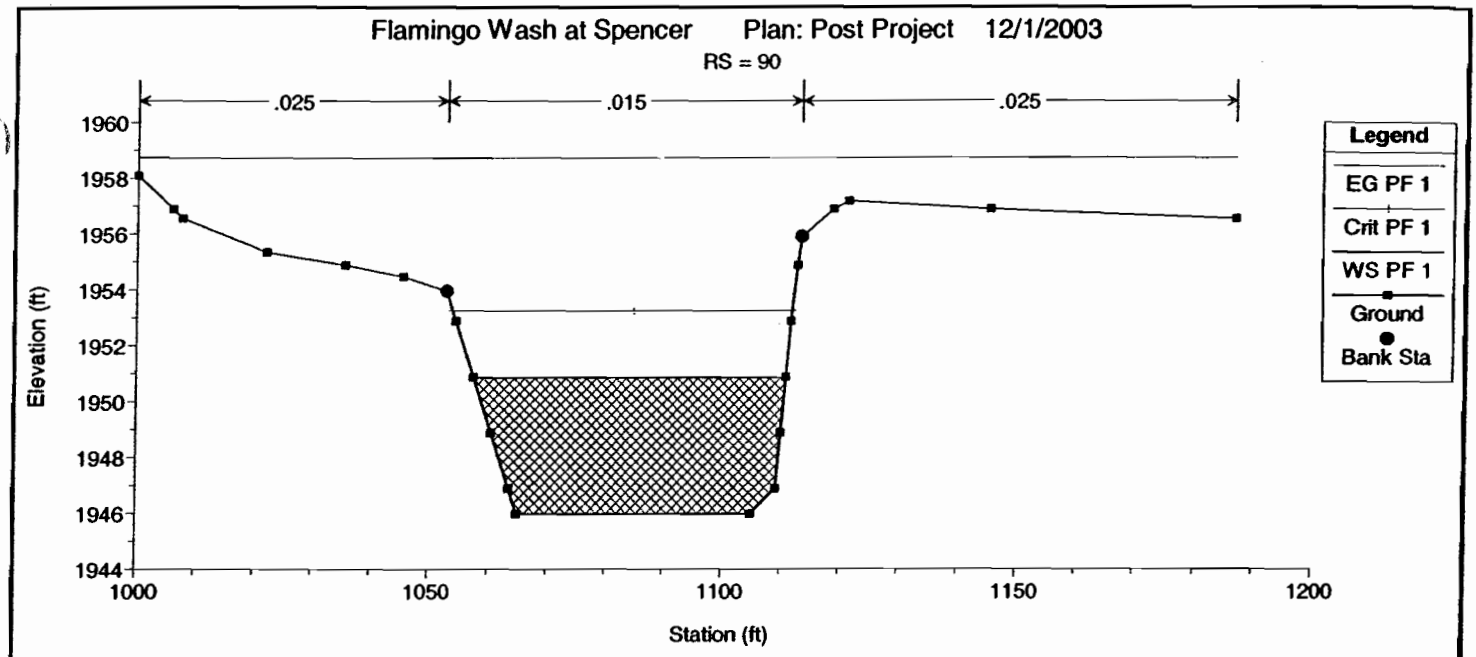

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 140
.025
.015
.025
Elevation (ft)
1970
1965
1960
1955
1950
1000
1050
1100
1150
1200
1250
1300
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

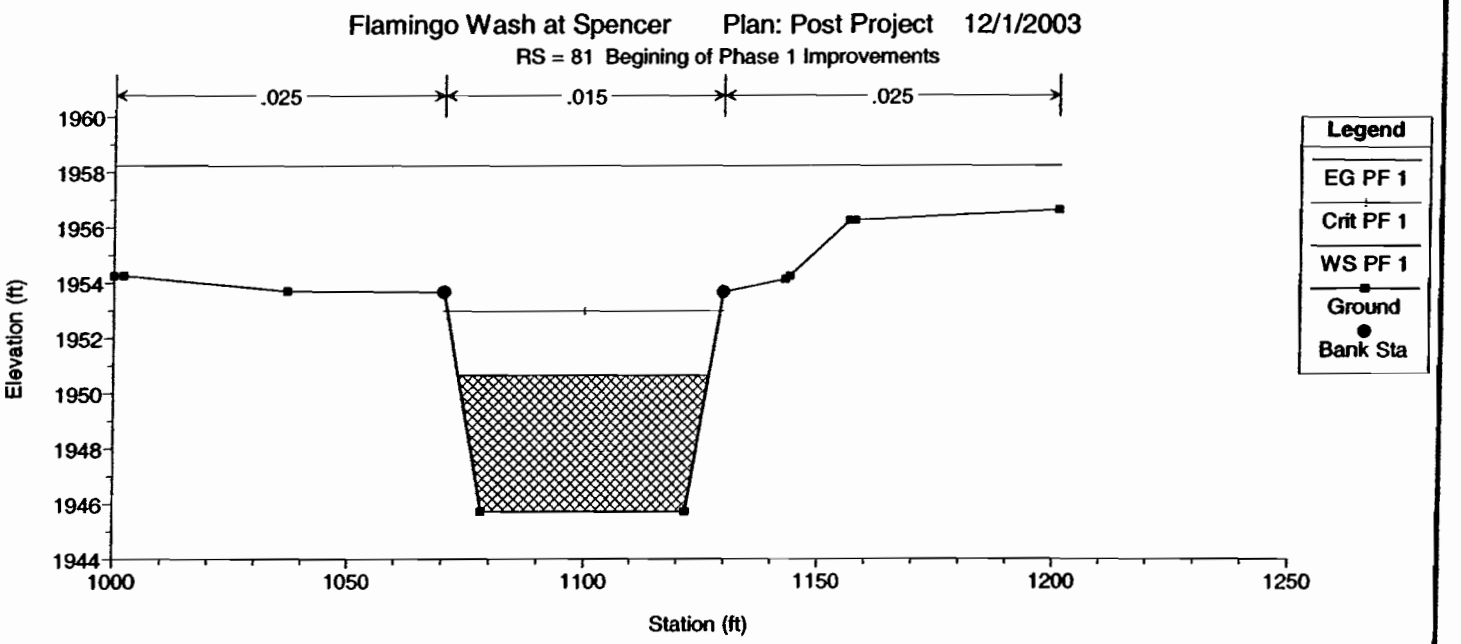

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 130
.025
.015
.025
Elevation (ft)
1970
1965
1960
1955
1950
1000
1050
1100
1150
1200
1250
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

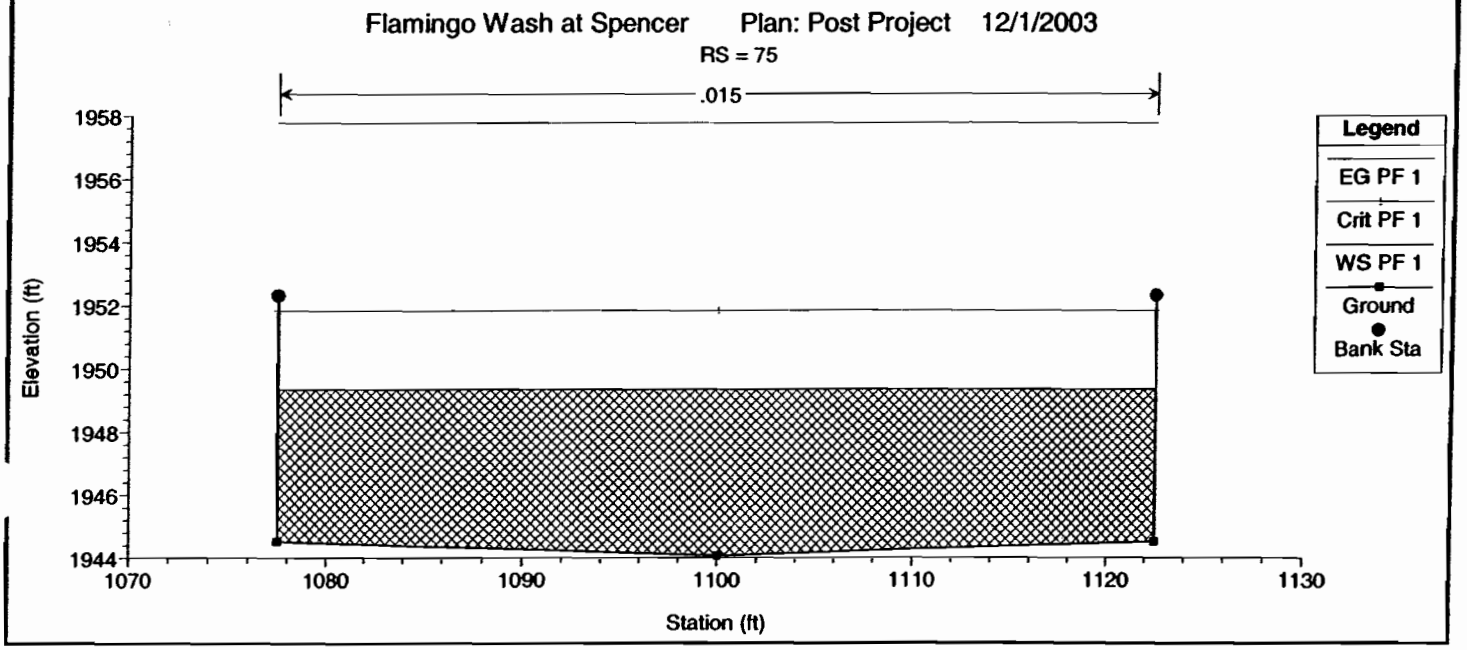

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 120
.025
.015
.025
Elevation (ft)
1968
1966
1964
1962
1960
1958
1956
1954
1952
1950
1948
1000
1050
1100
1150
1200
1250
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

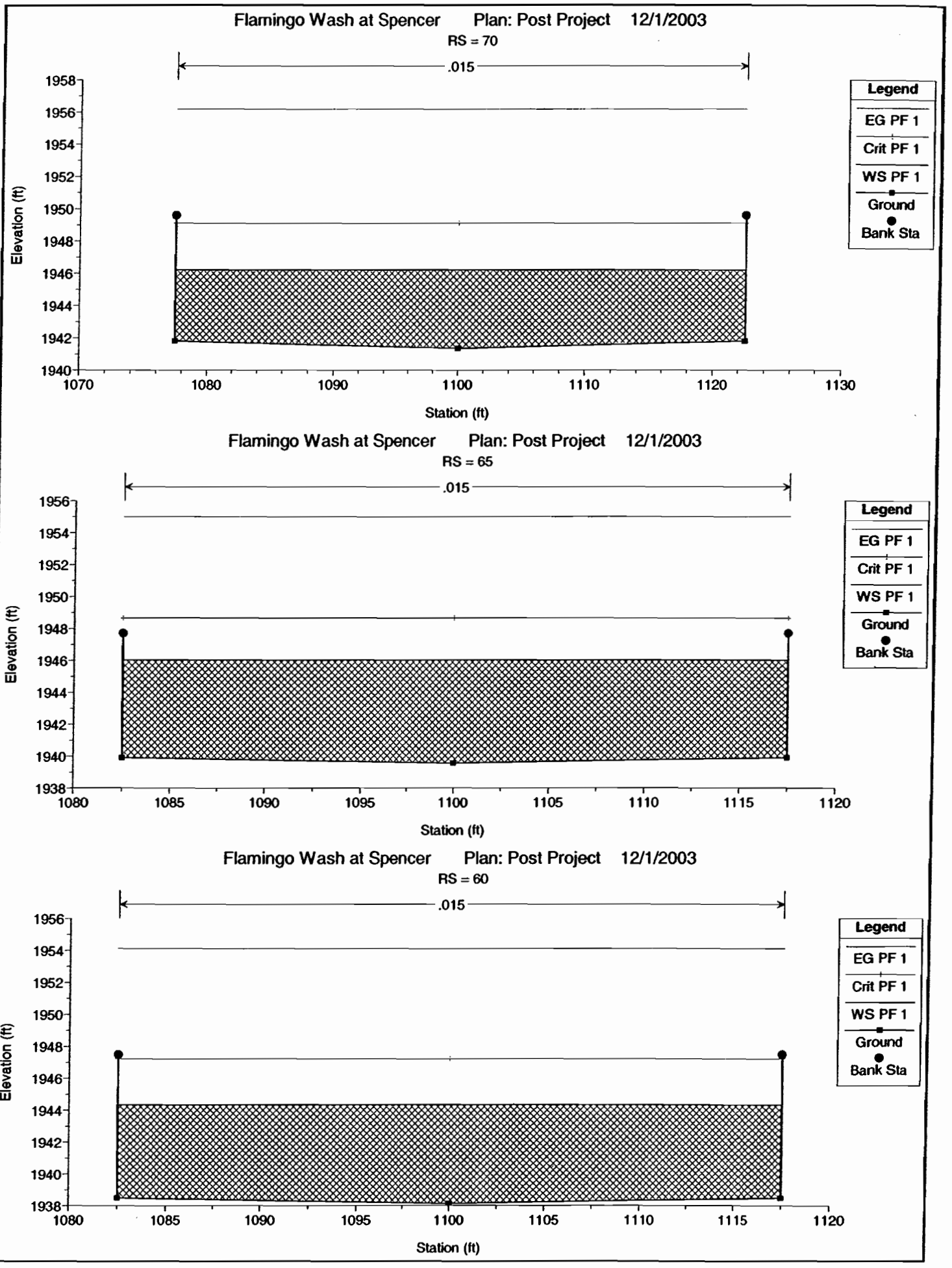

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 110
.025
.015
.025
Elevation (ft)
1966
1964
1962
1960
1958
1956
1954
1952
1950
1948
1000
1050
1100
1150
1200
1250
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

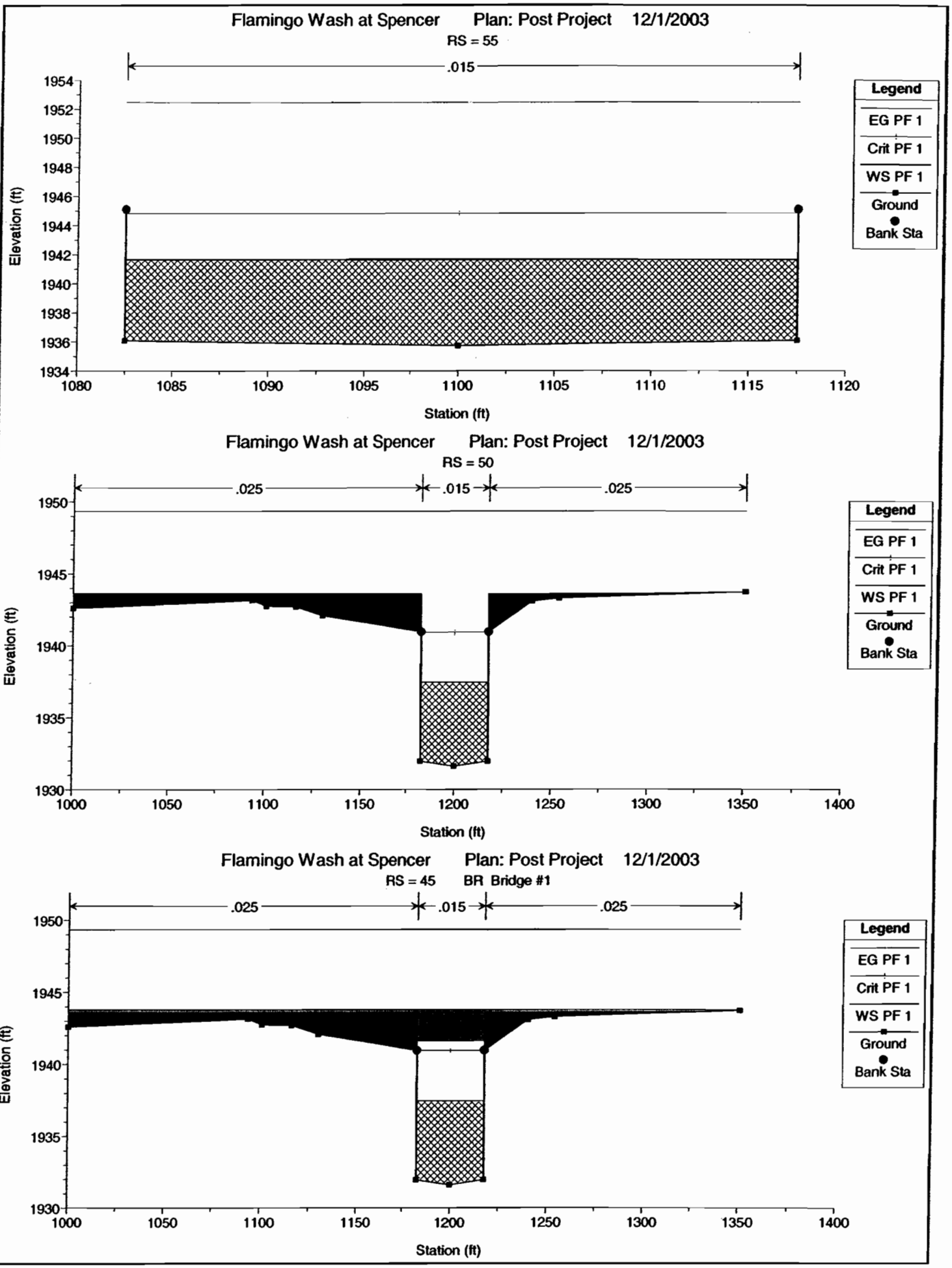

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 100
.025
.015
.025
Elevation (ft)
1970
1965
1960
1955
1950
1945
1000
1050
1100
1150
1200
1250
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

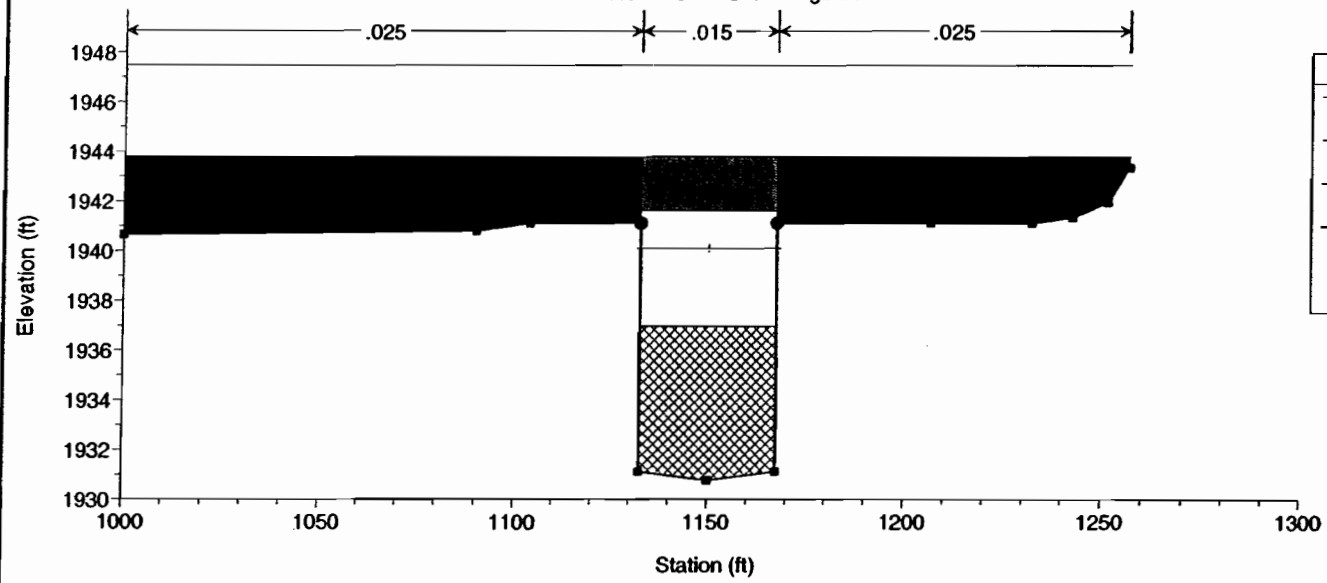

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 90
.025
.015
.025
Elevation (ft)
1960
1958
1956
1954
1952
1950
1948
1946
1944
1000
1050
1100
1150
1200
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

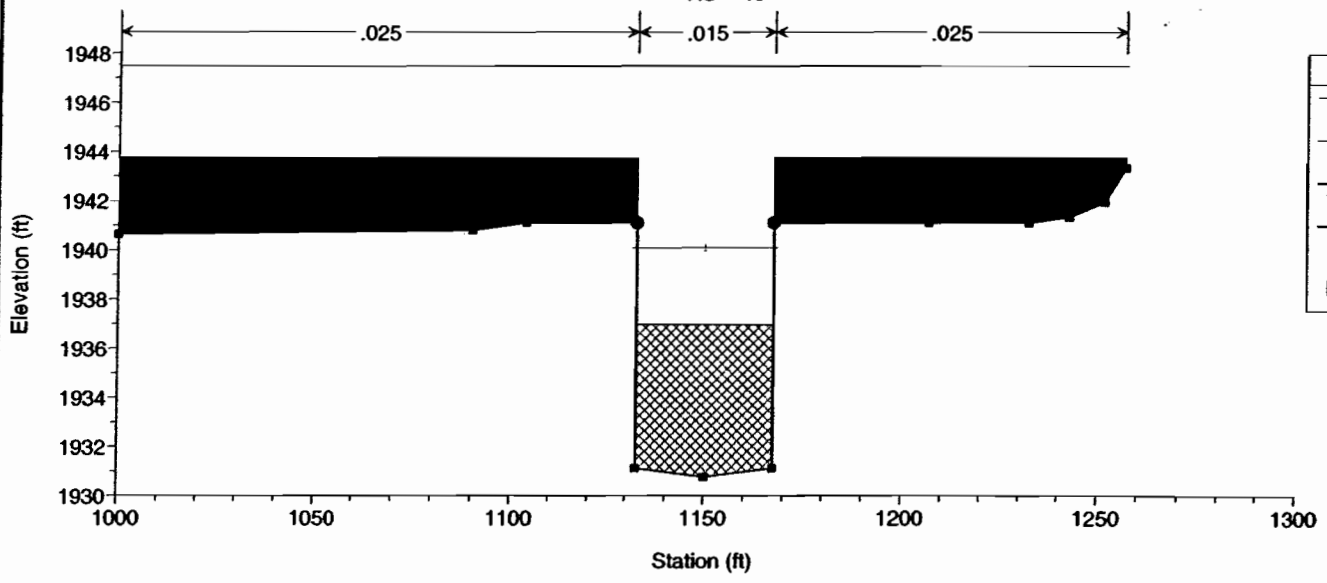

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 81 Begining of Phase 1 Improvements
.025
.015
.025
Elevation (ft)
1960
1958
1956
1954
1952
1950
1948
1946
1944
1000
1050
1100
1150
1200
1250
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

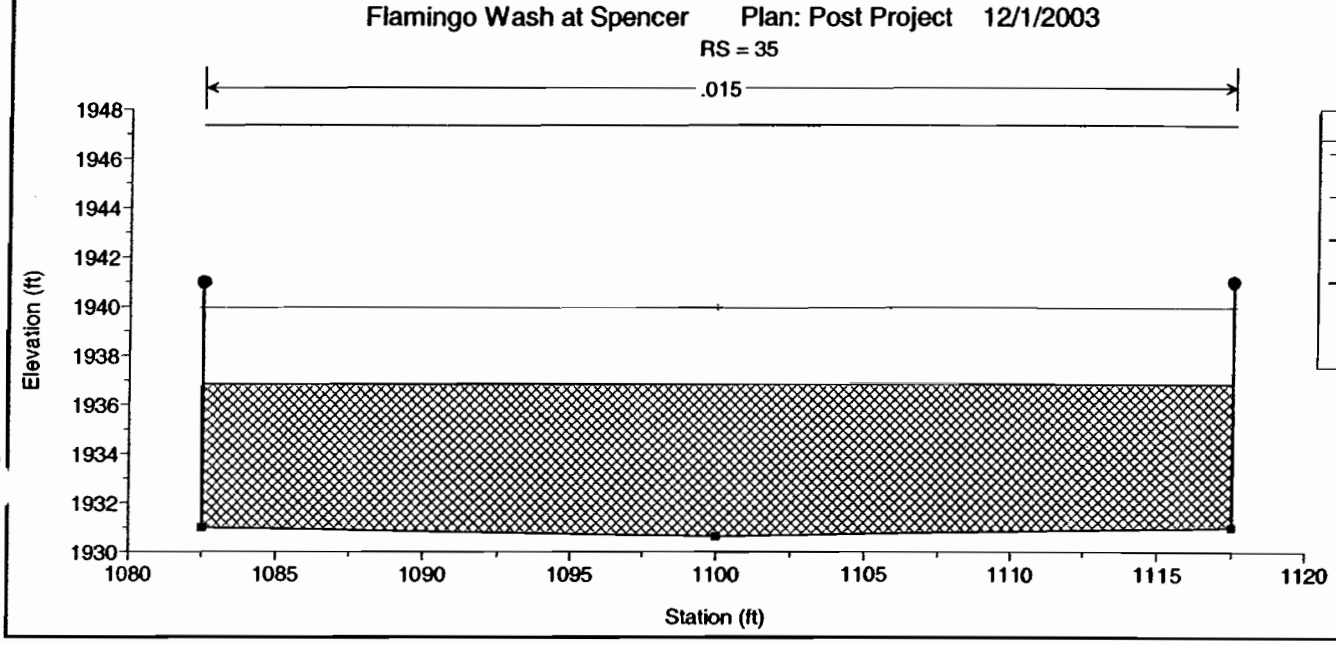

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 75
.015
Elevation (ft)
1958
1956
1954
1952
1950
1948
1946
1944
1070
1080
1090
1100
1110
1120
1130
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

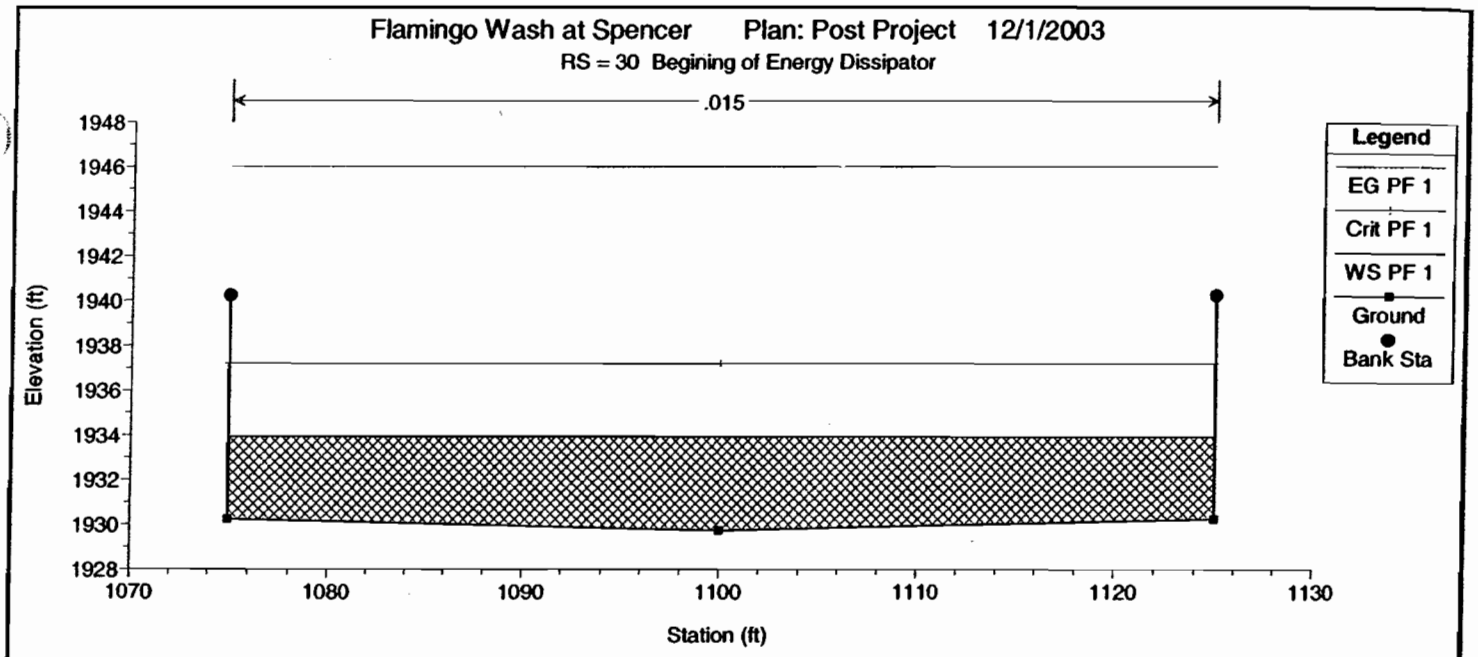

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 70
.015
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 65
.015
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 60
.015
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

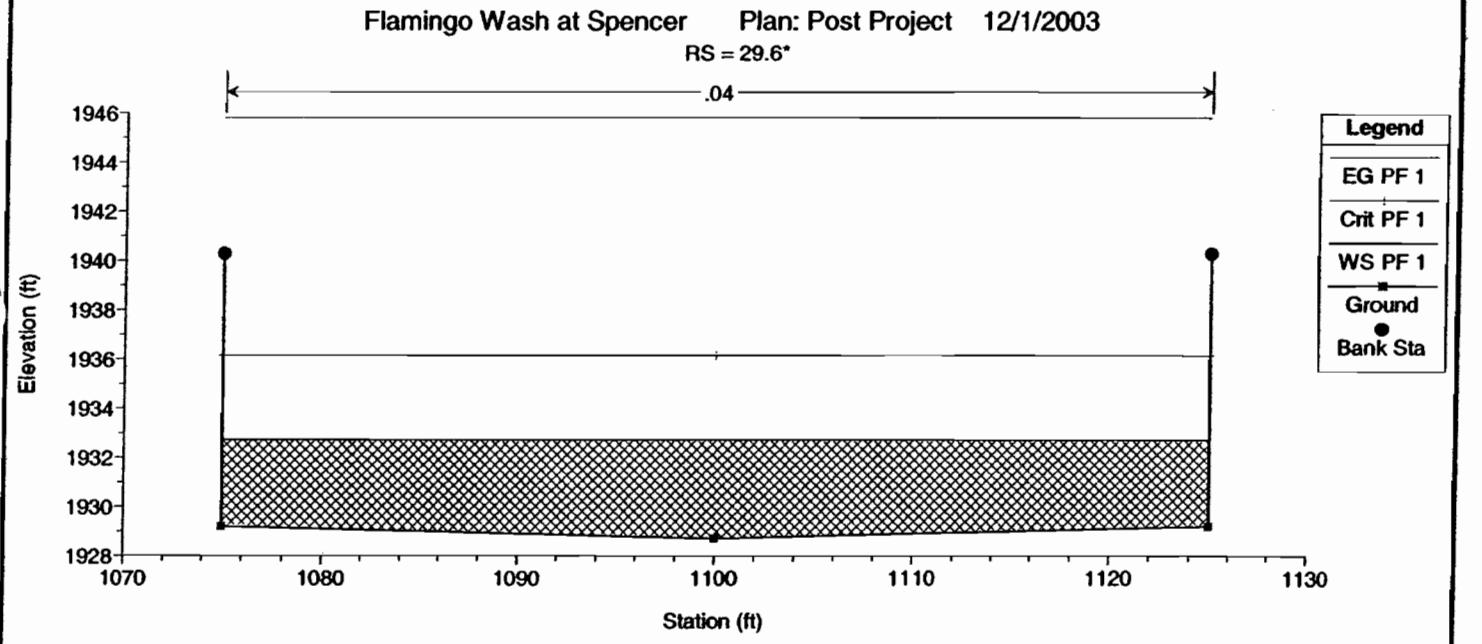

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 55
.015
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 50
.025
.015
.025
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 45 BR Bridge #1
.025
.015
.025
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

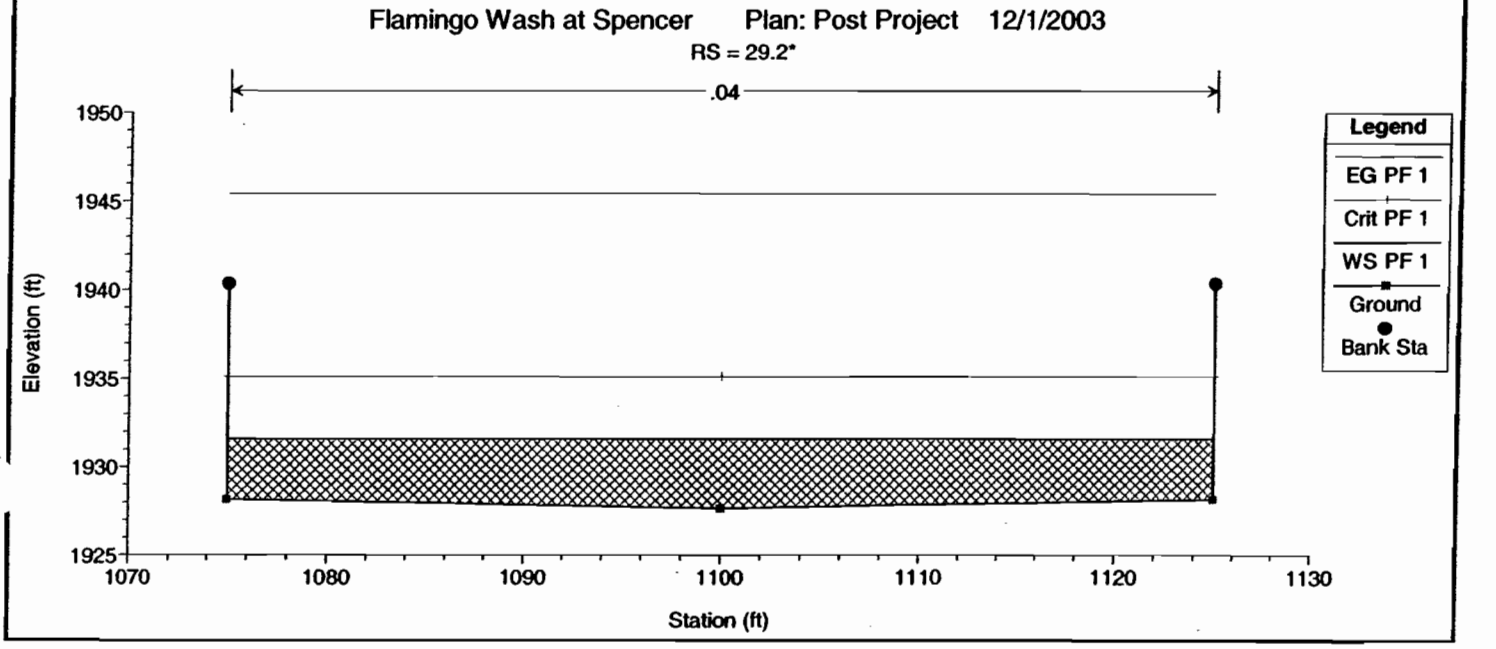

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 45 BR Bridge #1
.025
.015
.025
Elevation (ft)
1948
1946
1944
1942
1940
1938
1936
1934
1932
1930
1000
1050
1100
1150
1200
1250
1300
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

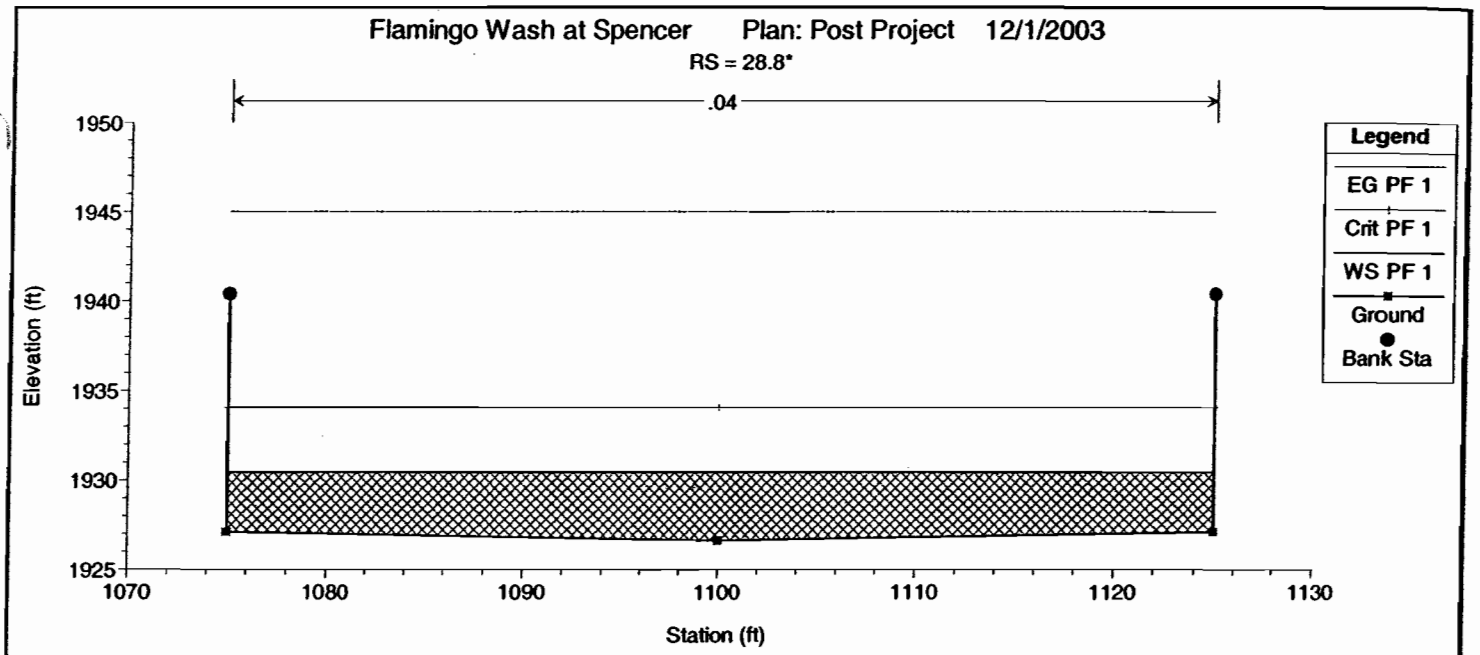

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 40
.025
.015
.025
Elevation (ft)
1948
1946
1944
1942
1940
1938
1936
1934
1932
1930
1000
1050
1100
1150
1200
1250
1300
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

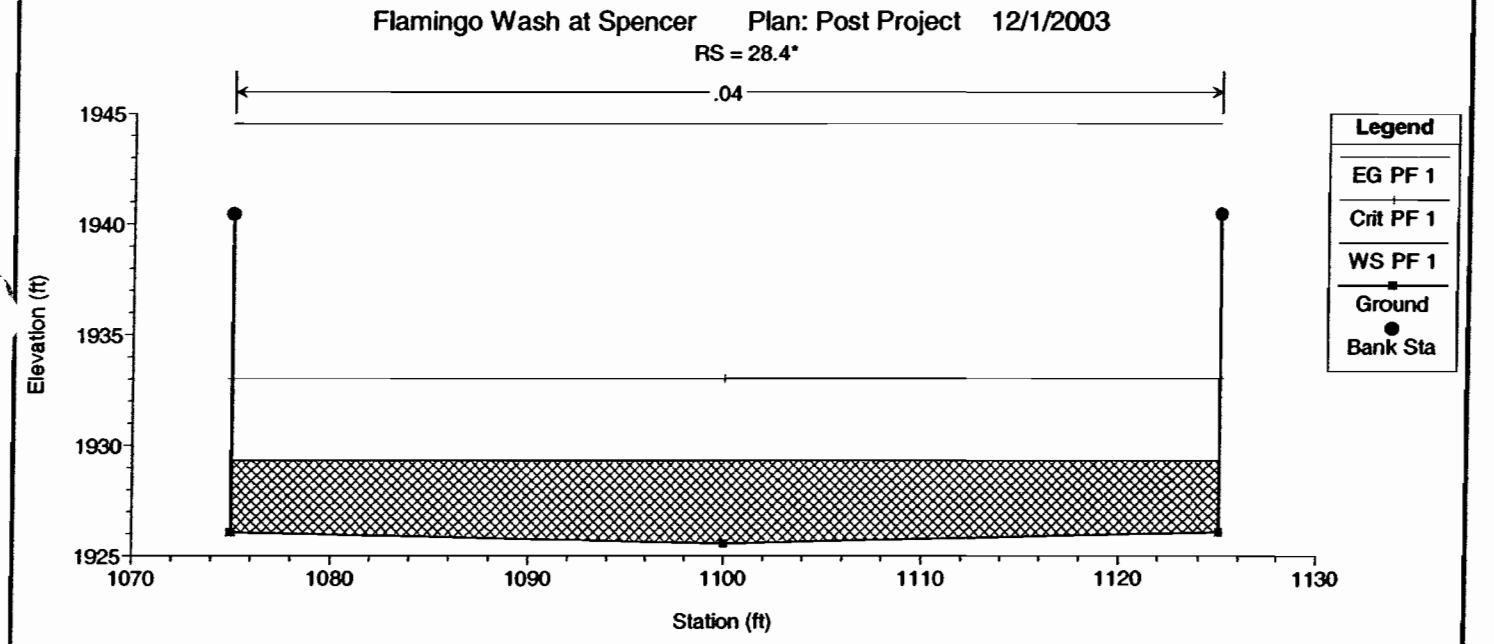

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 35
.015
Elevation (ft)
1948
1946
1944
1942
1940
1938
1936
1934
1932
1930
1080
1085
1090
1095
1100
1105
1110
1115
1120
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

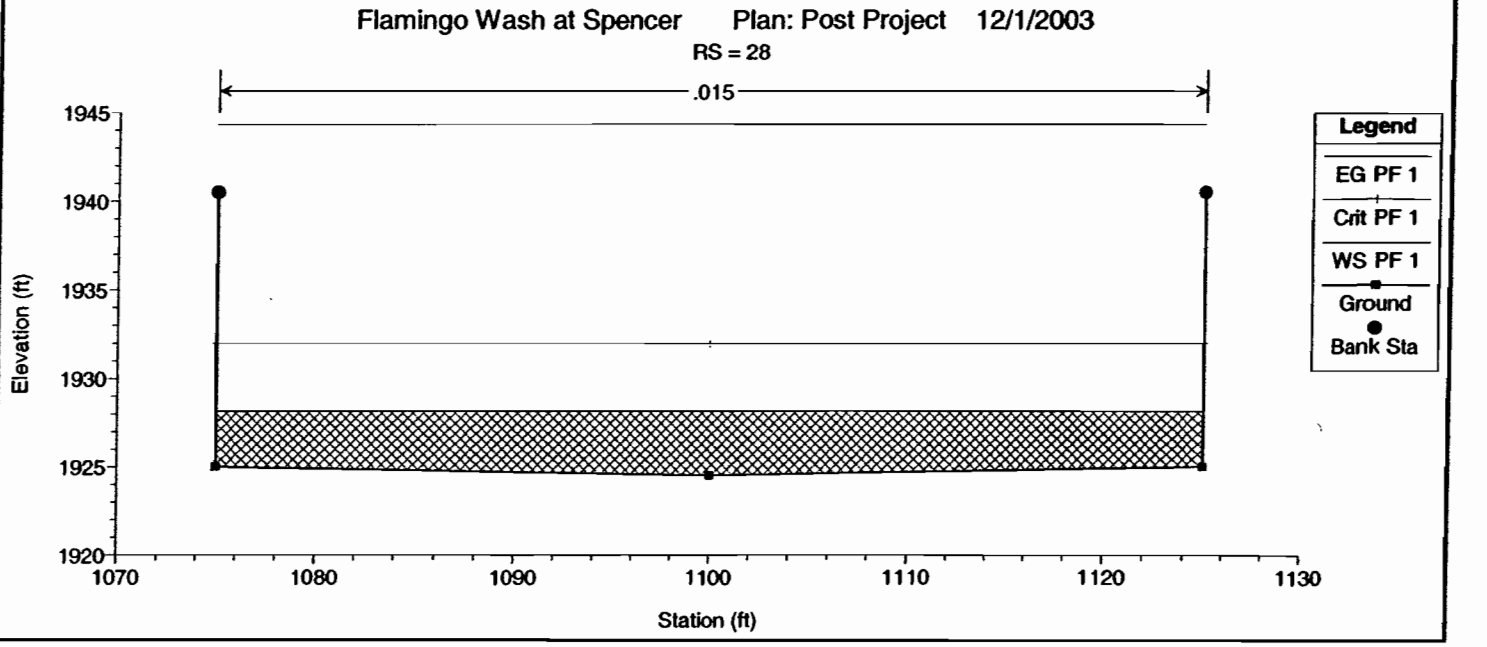

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 30 Begining of Energy Dissipator
.015
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

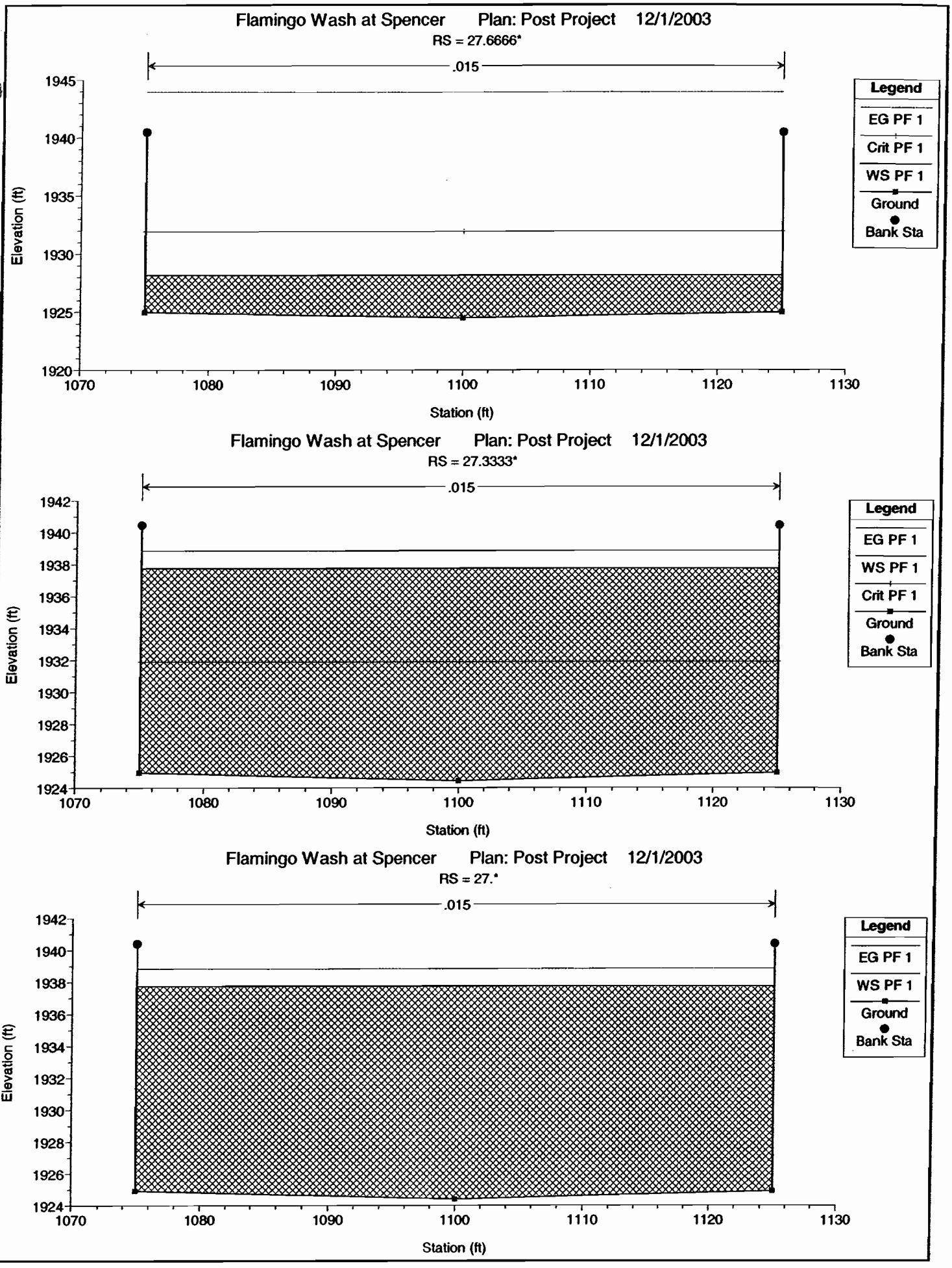

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 29.6*
.04
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

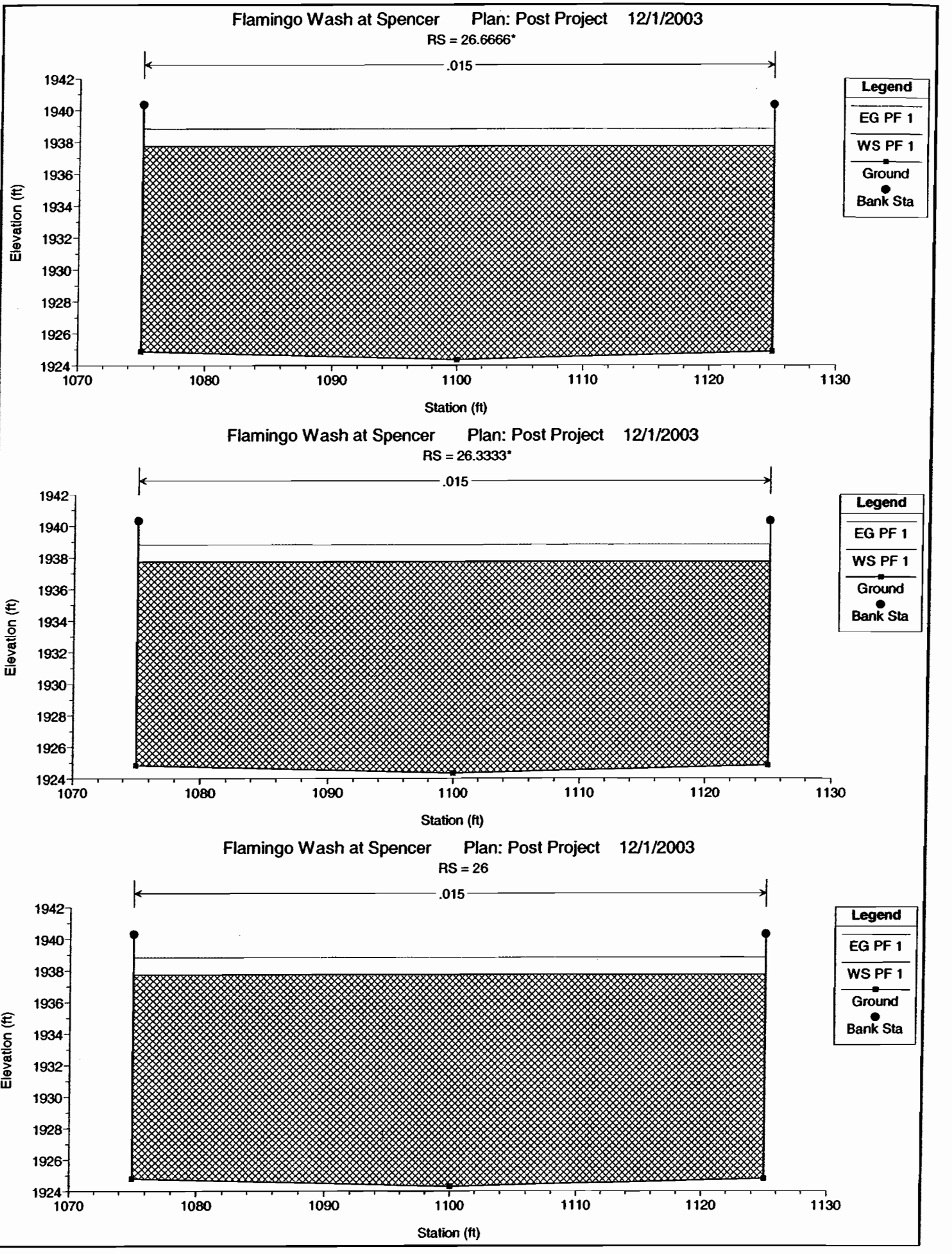

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 29.2*
.04
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

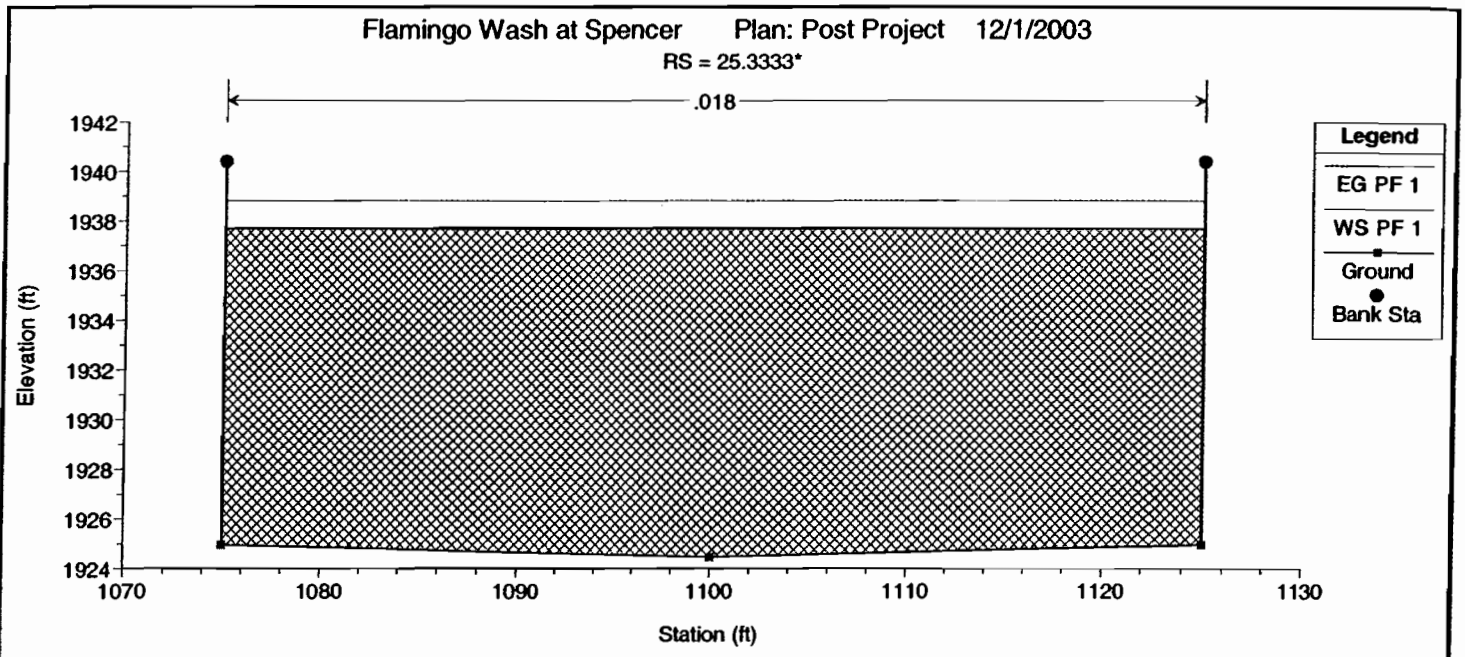

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 28.8*
.04
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1950
1945
1940
1935
1930
1925
1070
1080
1090
1100
1110
1120
1130
Station (ft)

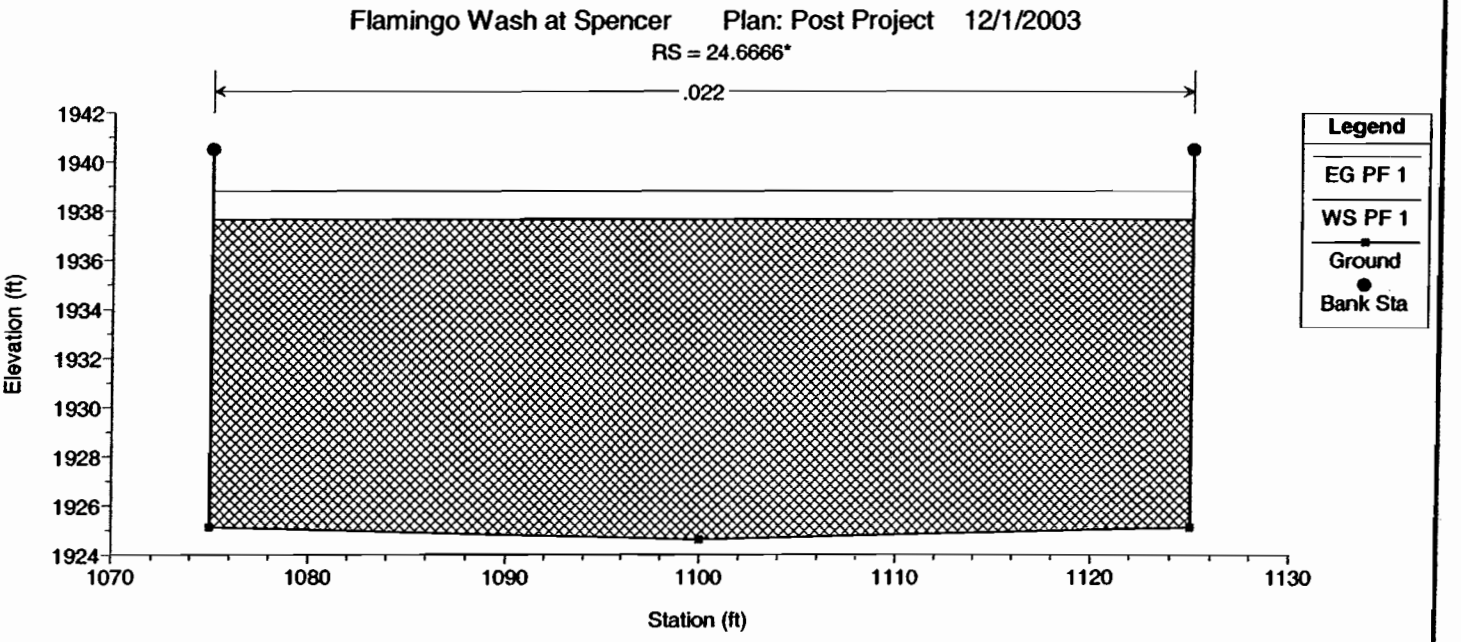

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 28.4*
.04
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1945
1940
1935
1930
1925
1070
1080
1090
1100
1110
1120
1130
Station (ft)

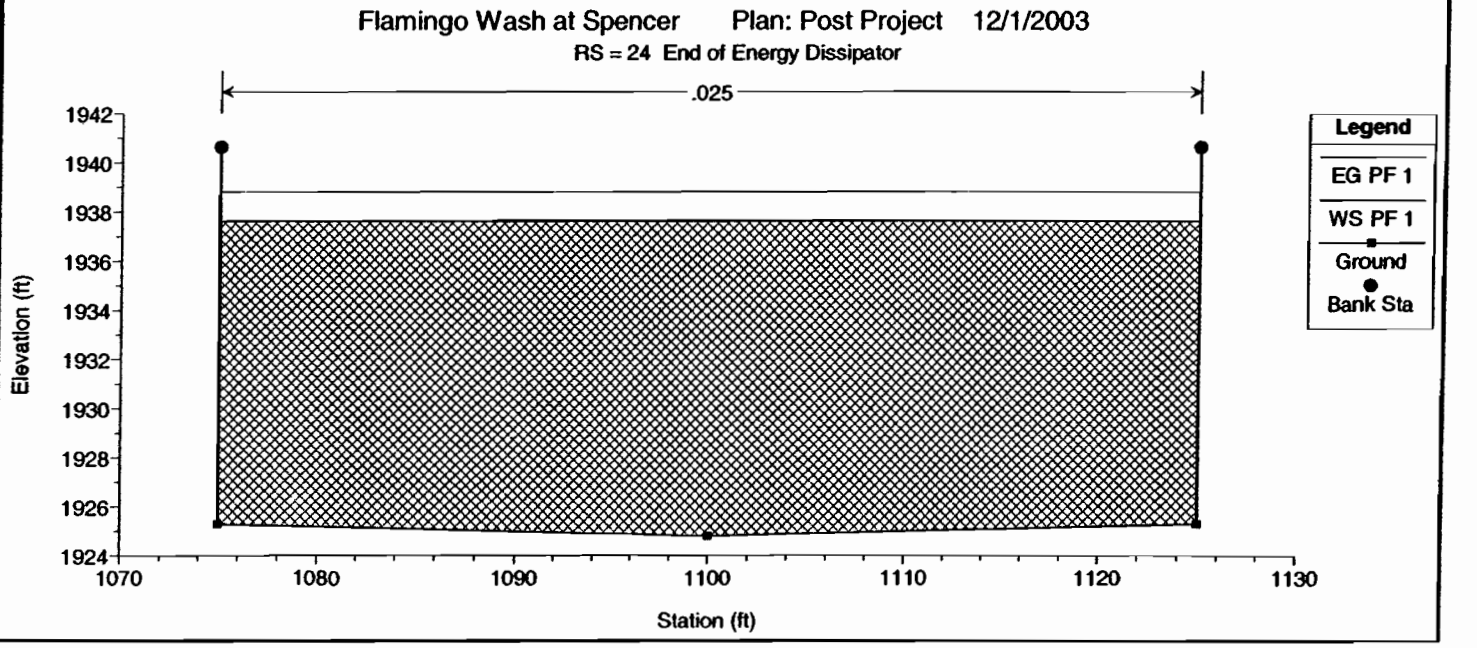

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 28
.015
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1945
1940
1935
1930
1925
1920
1070
1080
1090
1100
1110
1120
1130
Station (ft)

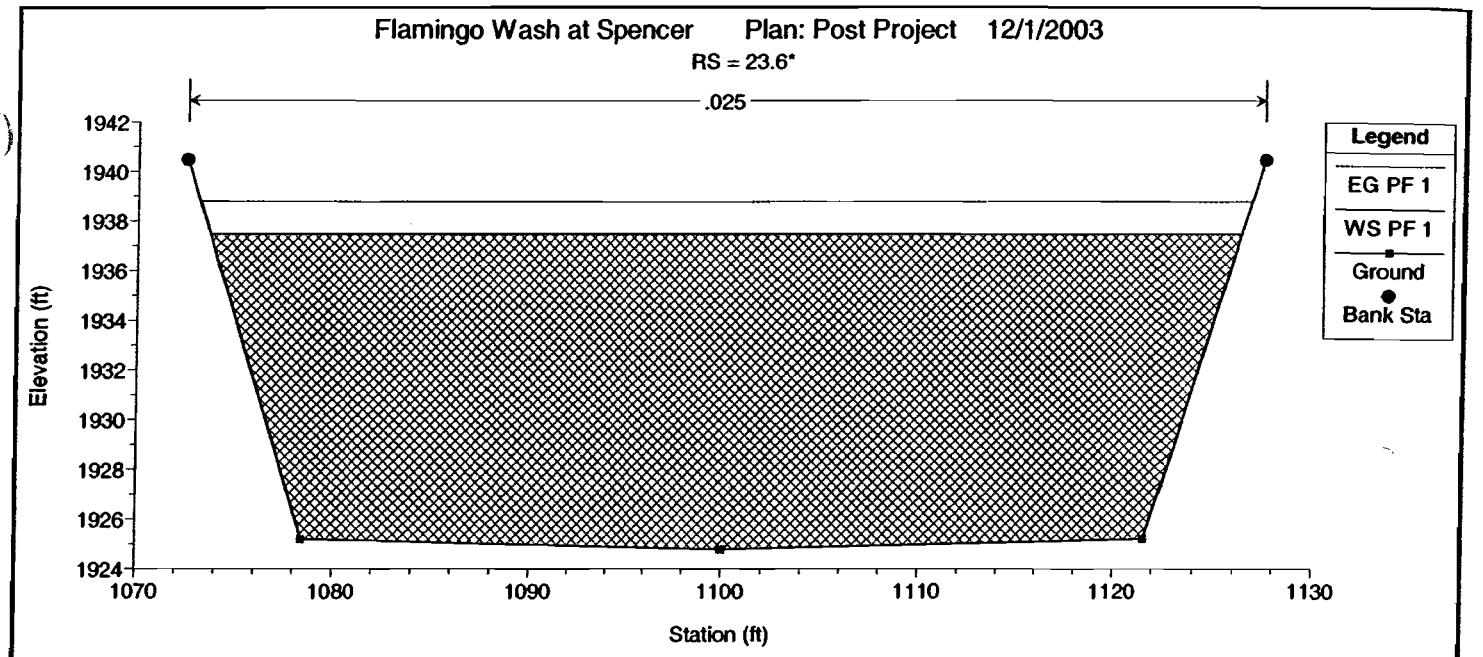

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 27.6666*
.015
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 27.3333*
.015
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 27.*
.015
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

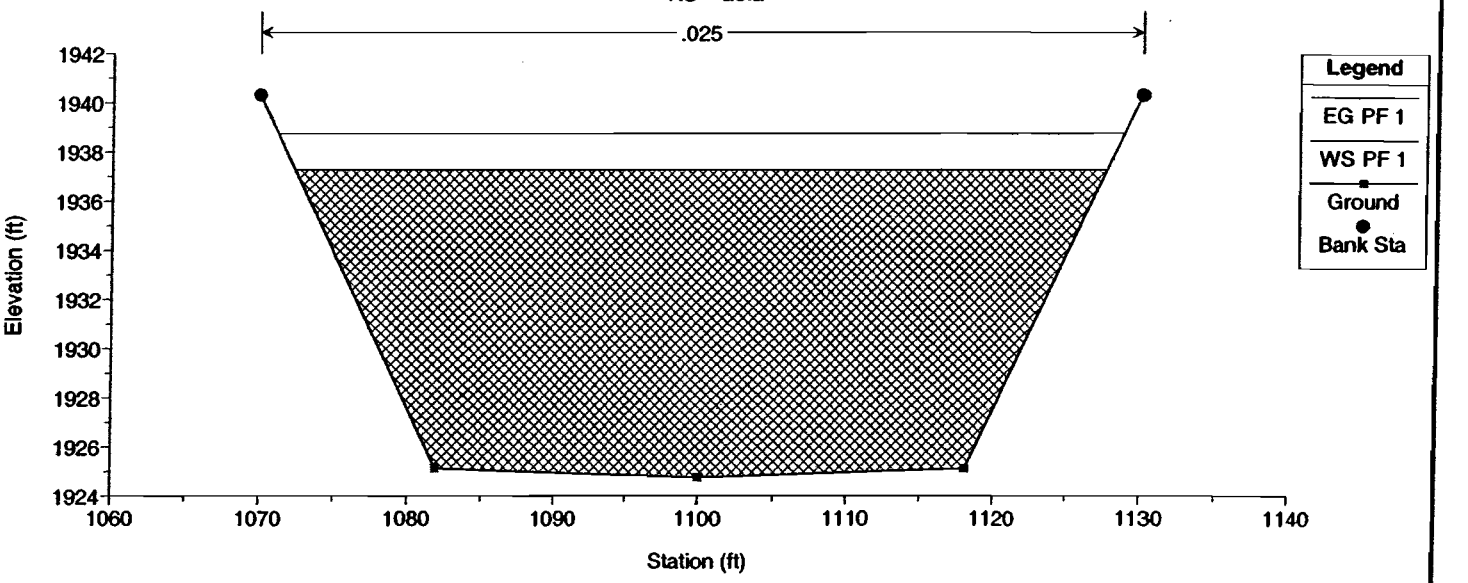

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 26.6666*
.015
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1942
1940
1938
1936
1934
1932
1930
1928
1926
1924
1070
1080
1090
1100
1110
1120
1130
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 26.3333*
.015
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 26
.015
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

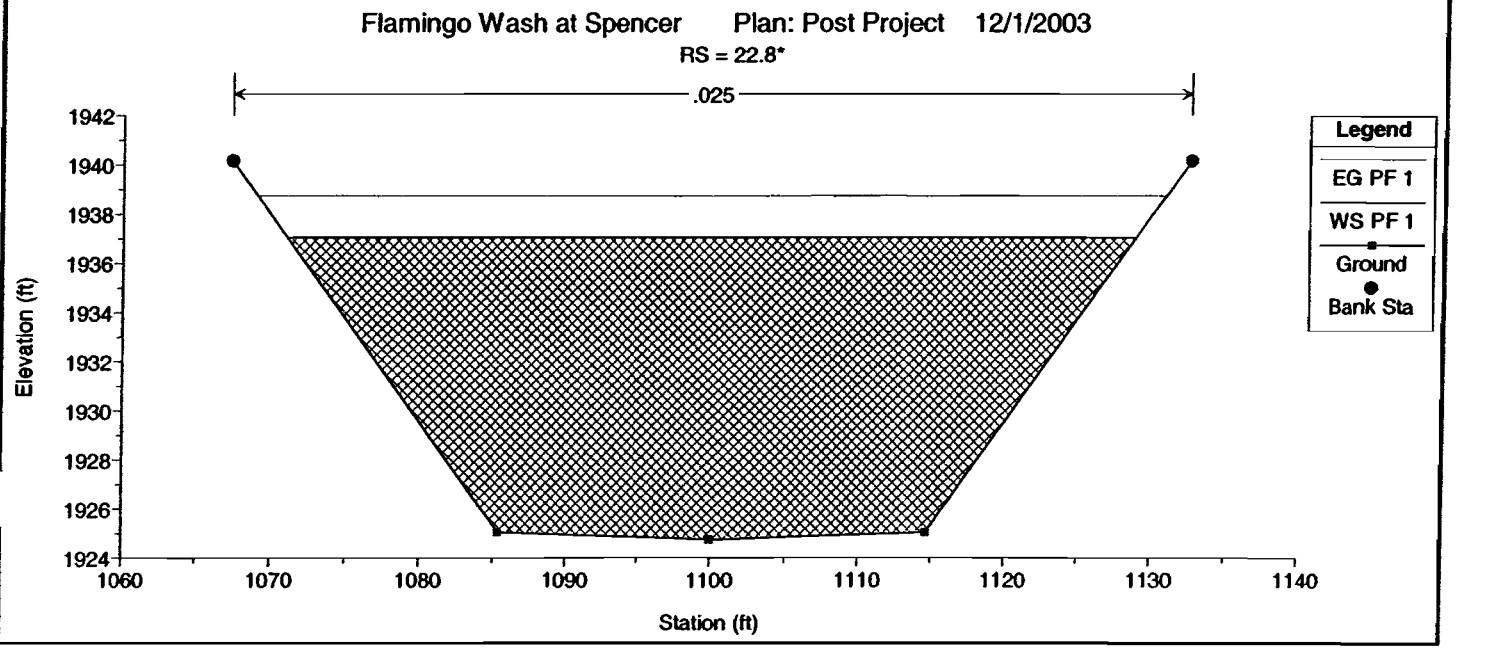

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 25.3333*
.018
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1942
1940
1938
1936
1934
1932
1930
1928
1926
1924
1070
1080
1090
1100
1110
1120
1130
Station (ft)

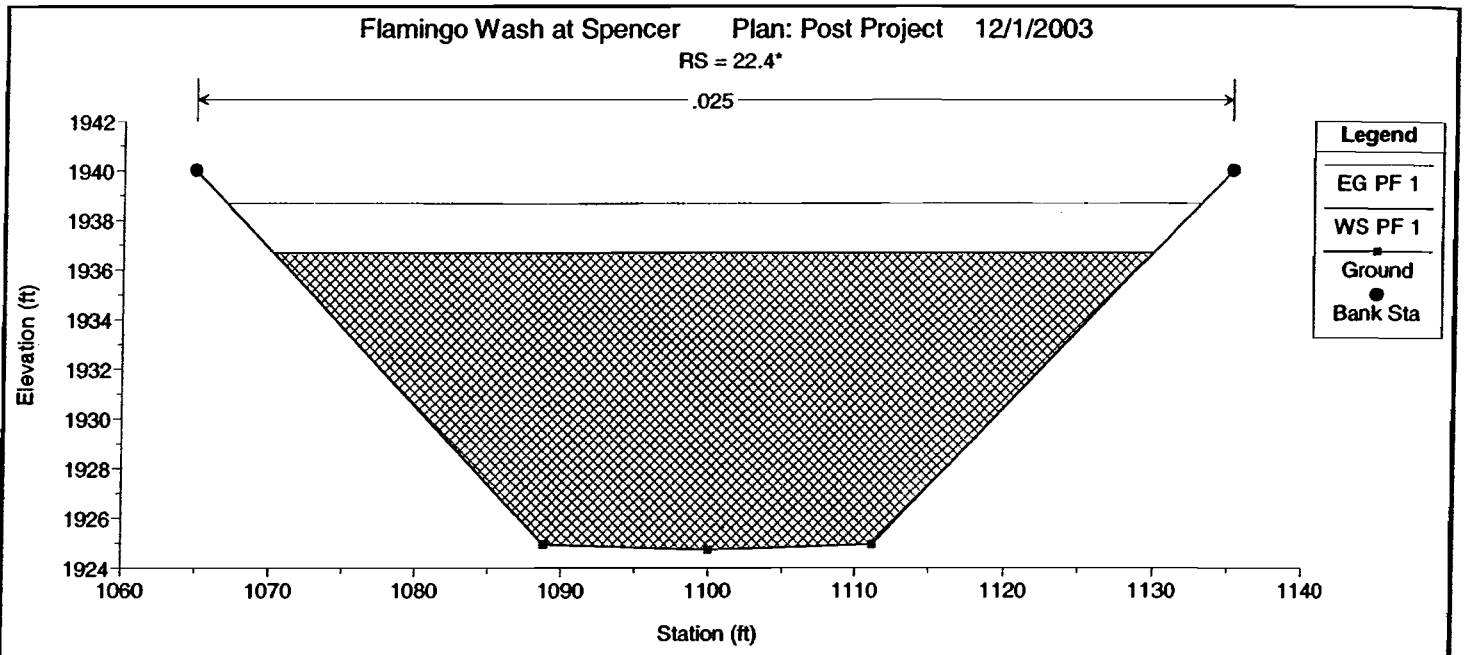

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 24.6666*
.022
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1942
1940
1938
1936
1934
1932
1930
1928
1926
1924
1070
1080
1090
1100
1110
1120
1130
Station (ft)

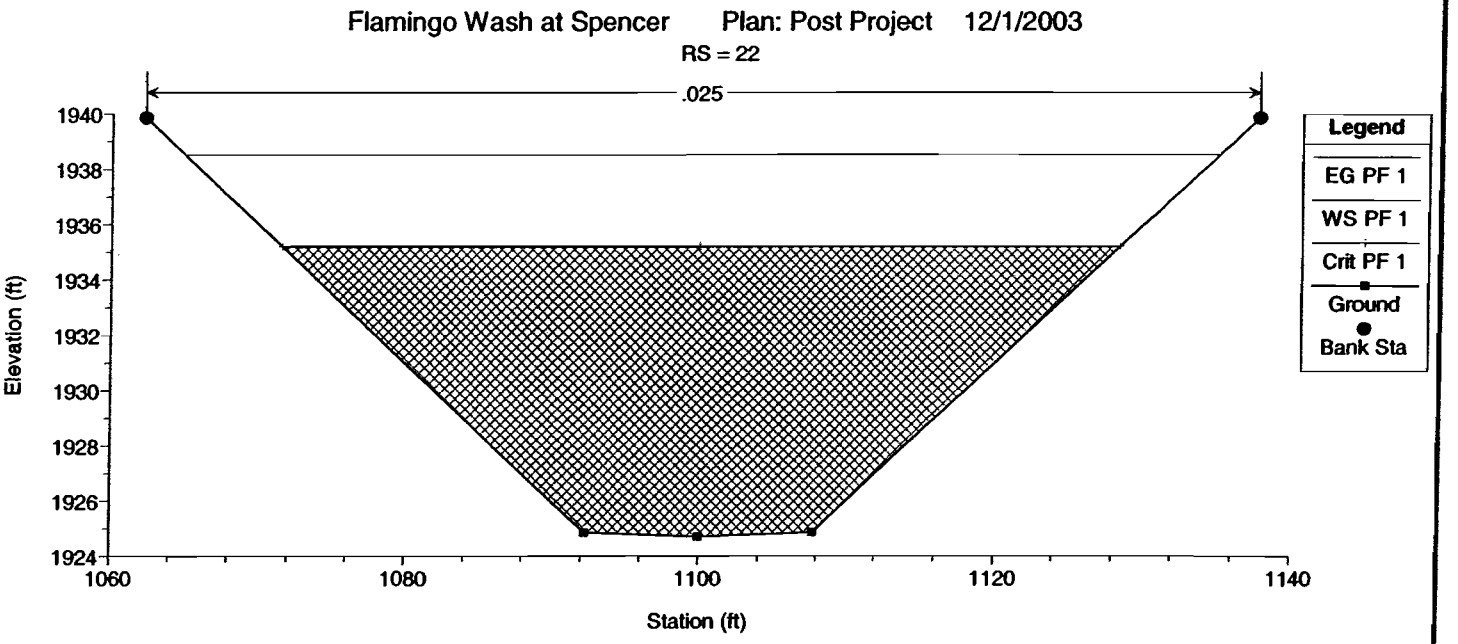

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 24 End of Energy Dissipator
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1942
1940
1938
1936
1934
1932
1930
1928
1926
1924
1070
1080
1090
1100
1110
1120
1130
Station (ft)

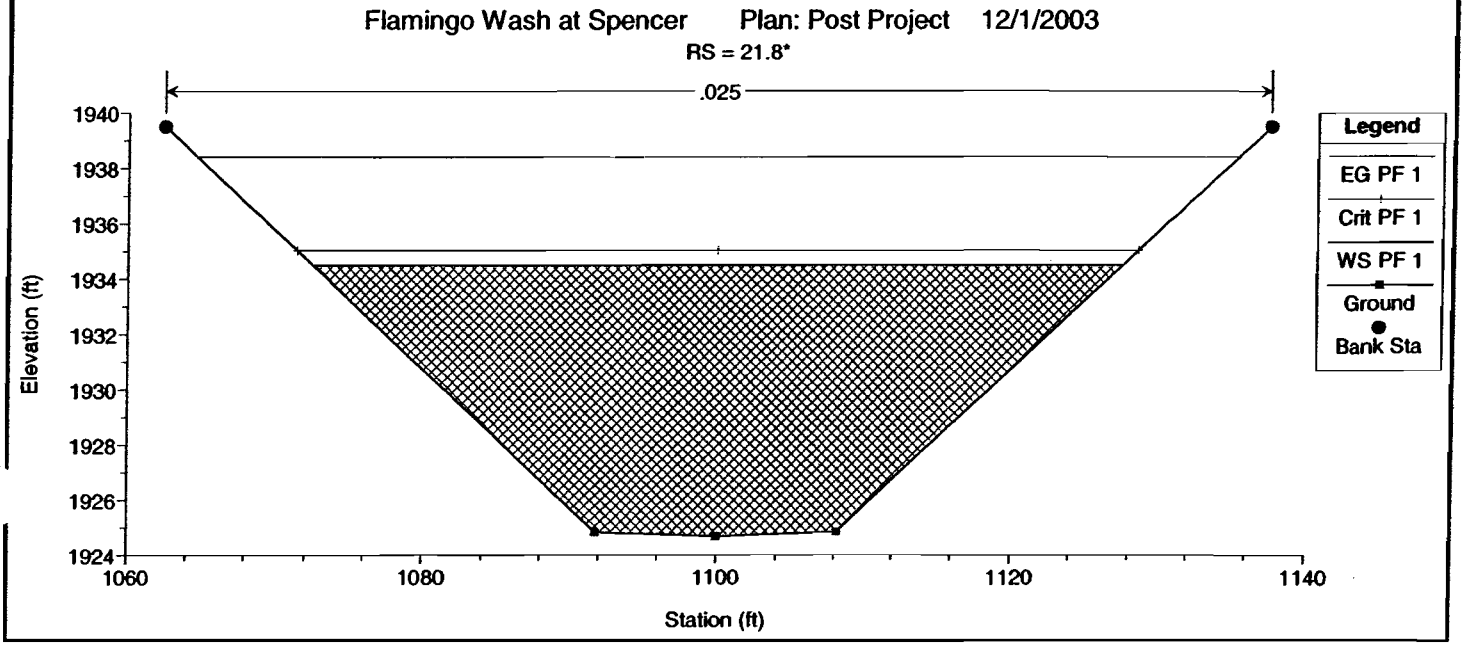

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 23.6*
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1942
1940
1938
1936
1934
1932
1930
1928
1926
1924
1070
1080
1090
1100
1110
1120
1130
Station (ft)

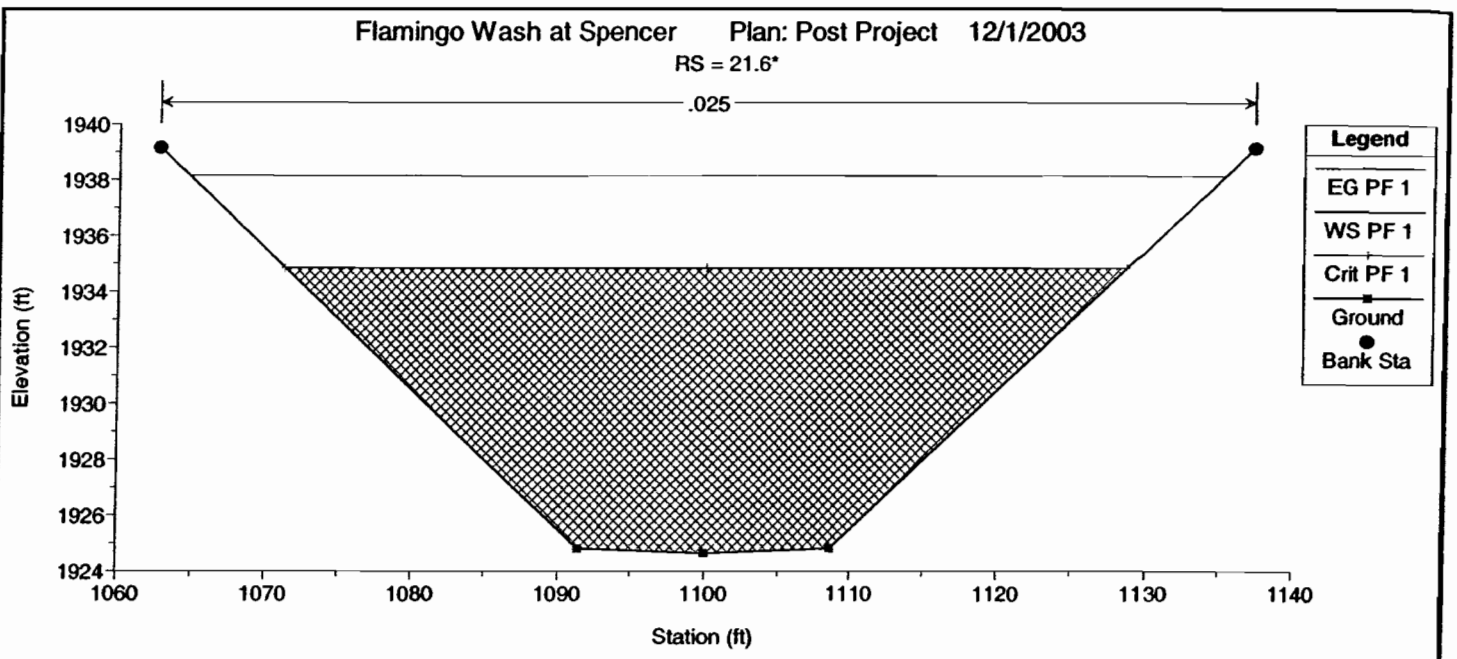

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 23.2*
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1942
1940
1938
1936
1934
1932
1930
1928
1926
1924
1060
1070
1080
1090
1100
1110
1120
1130
1140
Station (ft)

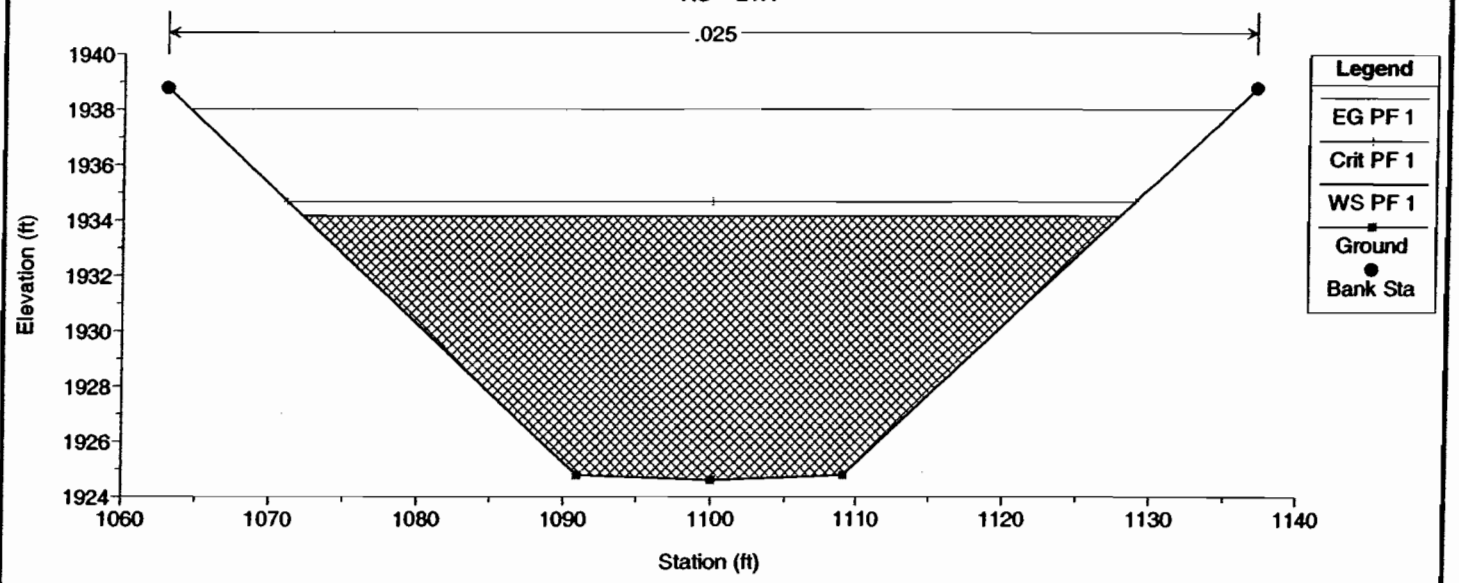

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 22.8*
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1942
1940
1938
1936
1934
1932
1930
1928
1926
1924
1060
1070
1080
1090
1100
1110
1120
1130
1140
Station (ft)

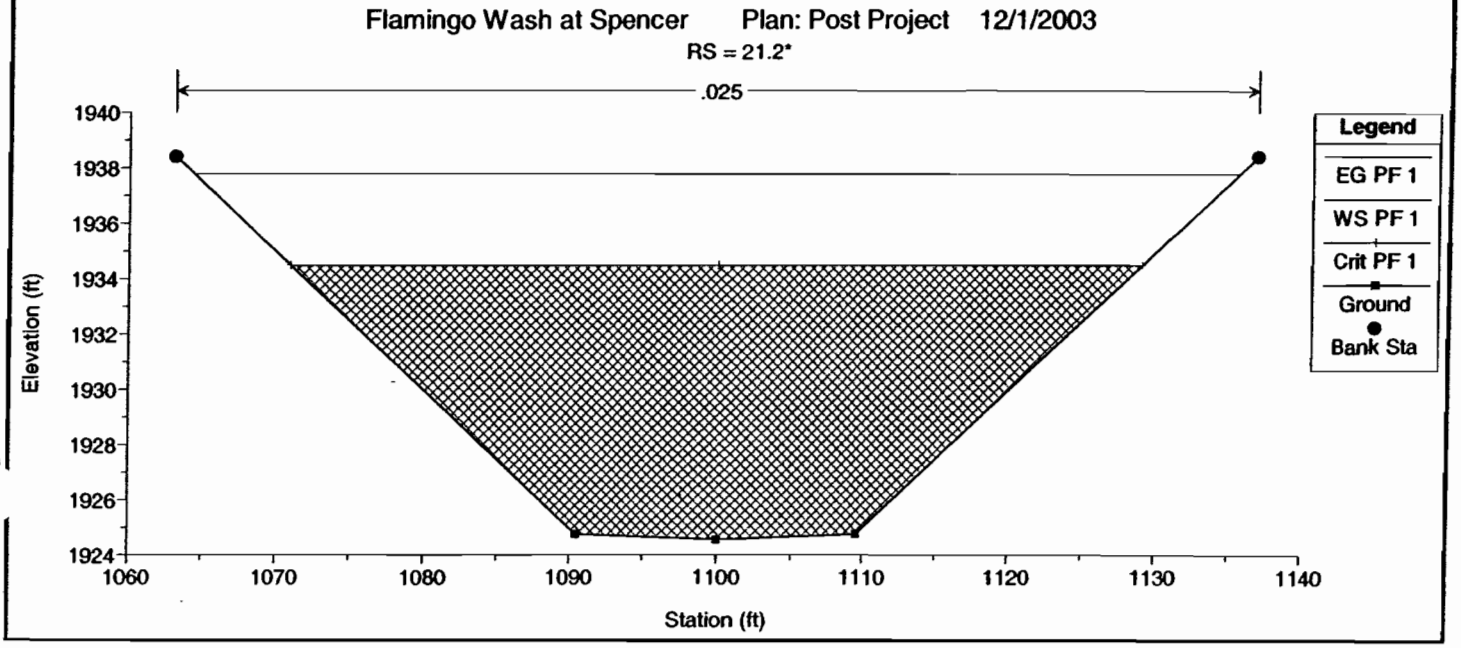

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 22.4*
.025
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1942
1940
1938
1936
1934
1932
1930
1928
1926
1924
1060
1070
1080
1090
1100
1110
1120
1130
1140

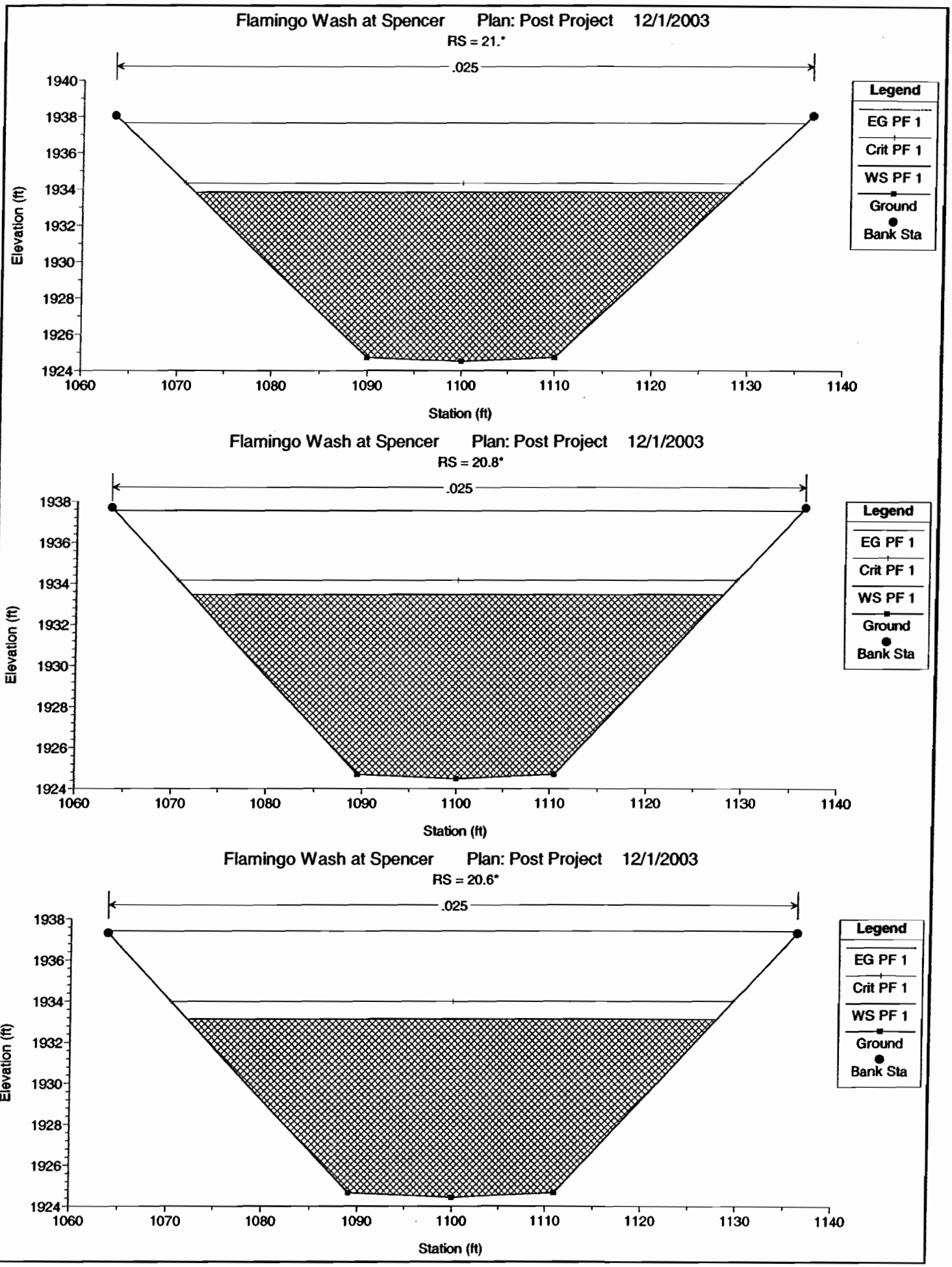

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 22
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1940
1938
1936
1934
1932
1930
1928
1926
1924
1060
1080
1100
1120
1140


Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 21.8*
.025
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1940
1938
1936
1934
1932
1930
1928
1926
1924
1060
1080
1100
1120
1140


Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 21.6*
.025
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta

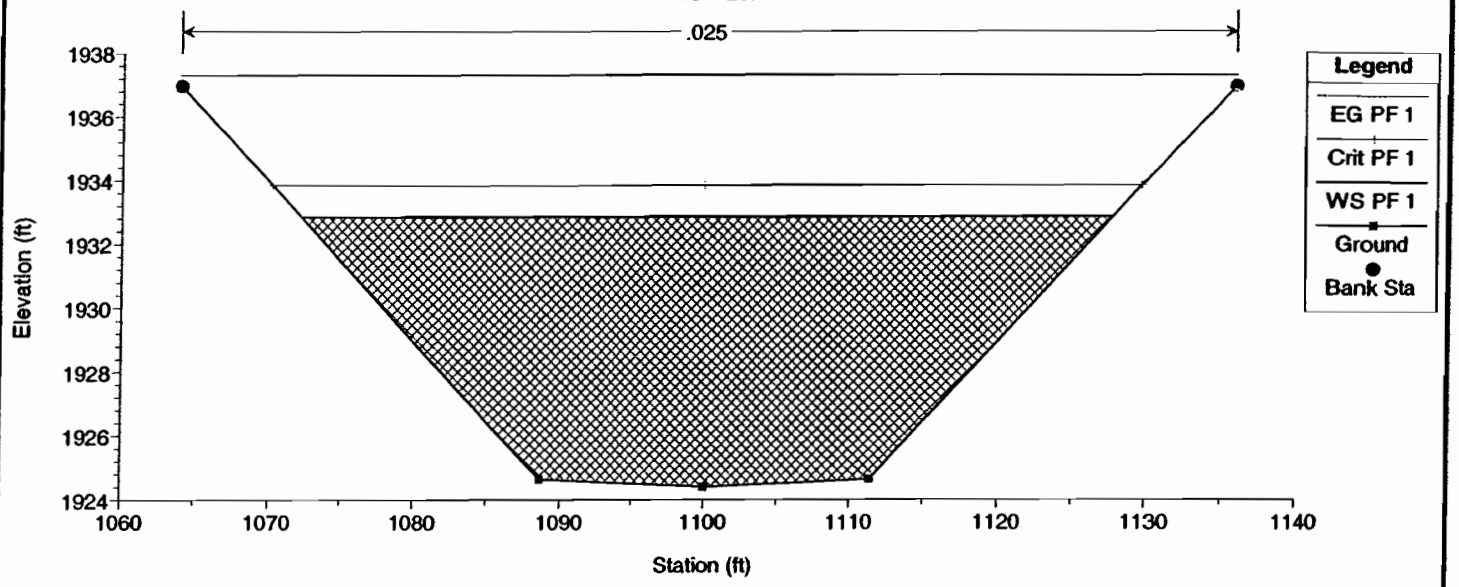

Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 21.4*
.025
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta


Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 21.2*
.025
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta


Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 21.*
.025
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 20.8*
.025
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 20.6*
.025
Elevation (ft)
Station (ft)
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta

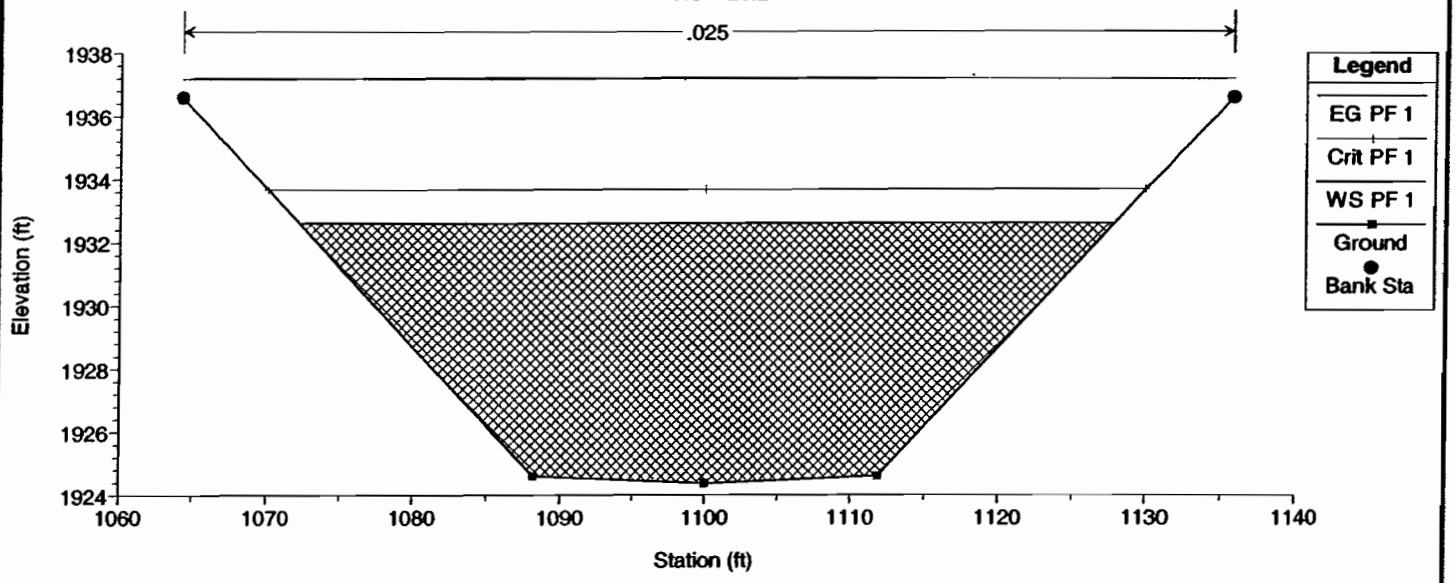
Flamingo Wash at Spencer Plan: Post Project 12/1/2003

RS = 20.4*



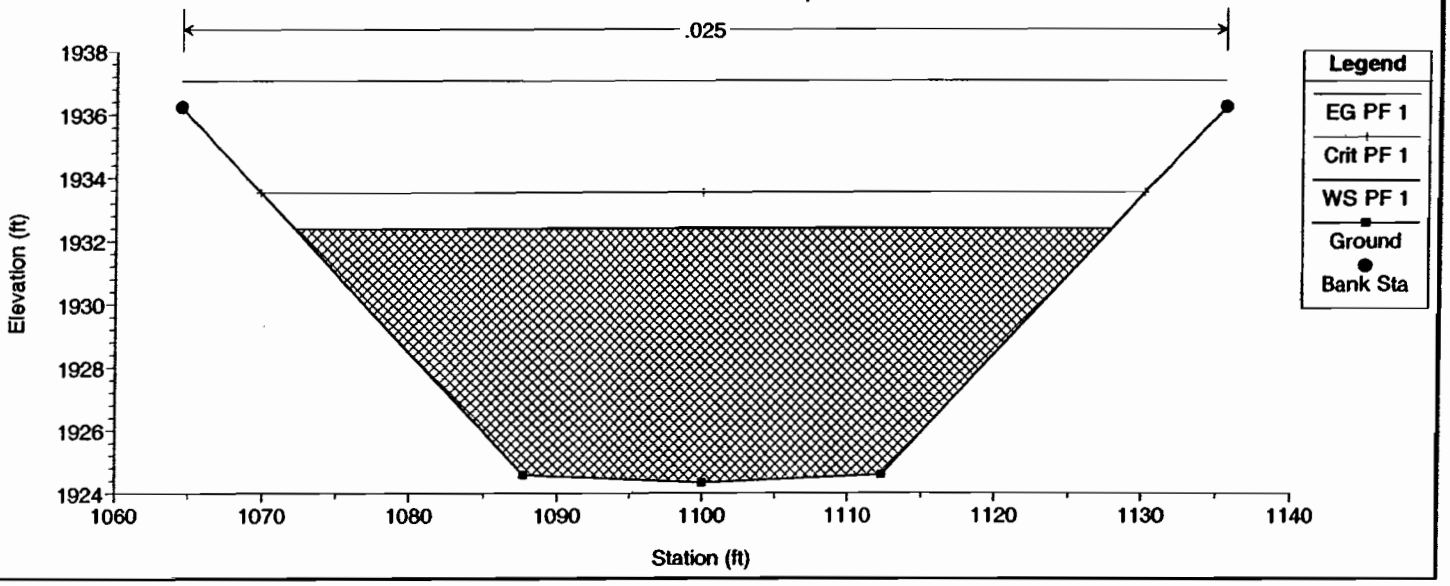
Flamingo Wash at Spencer Plan: Post Project 12/1/2003

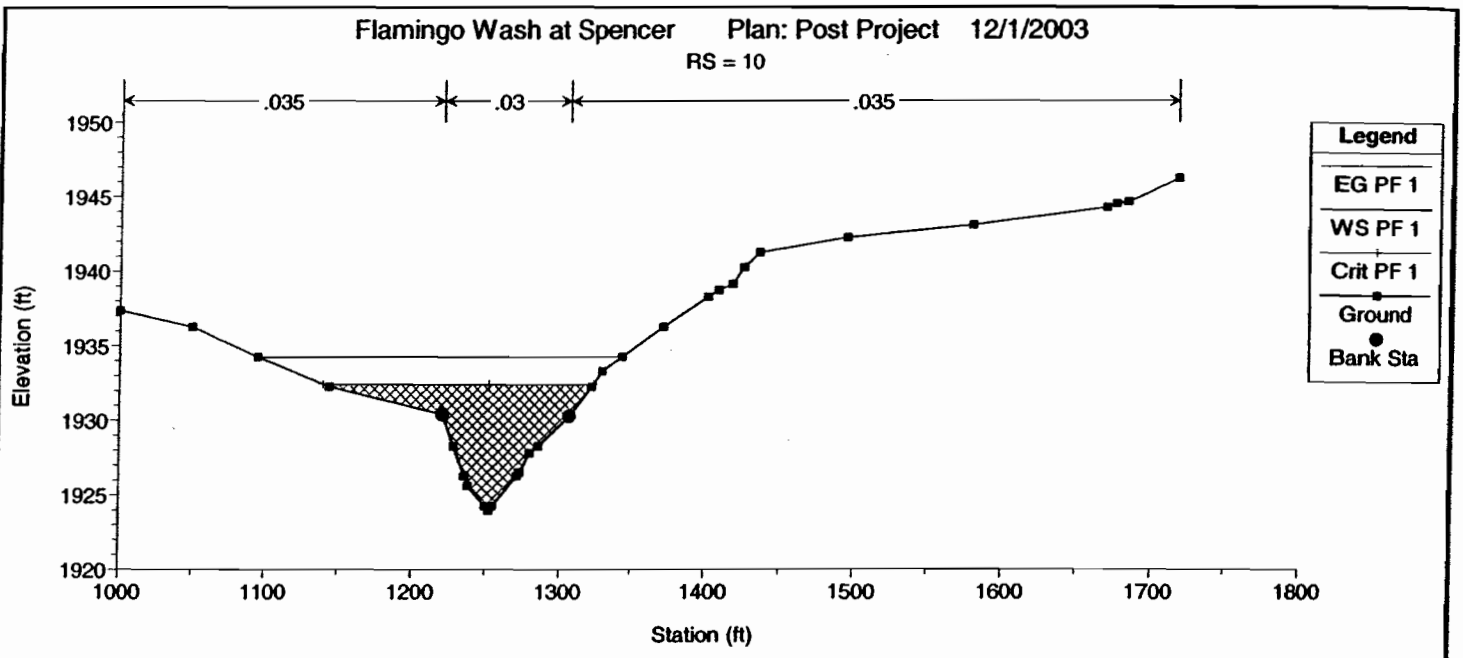
RS = 20.2*



Flamingo Wash at Spencer Plan: Post Project 12/1/2003

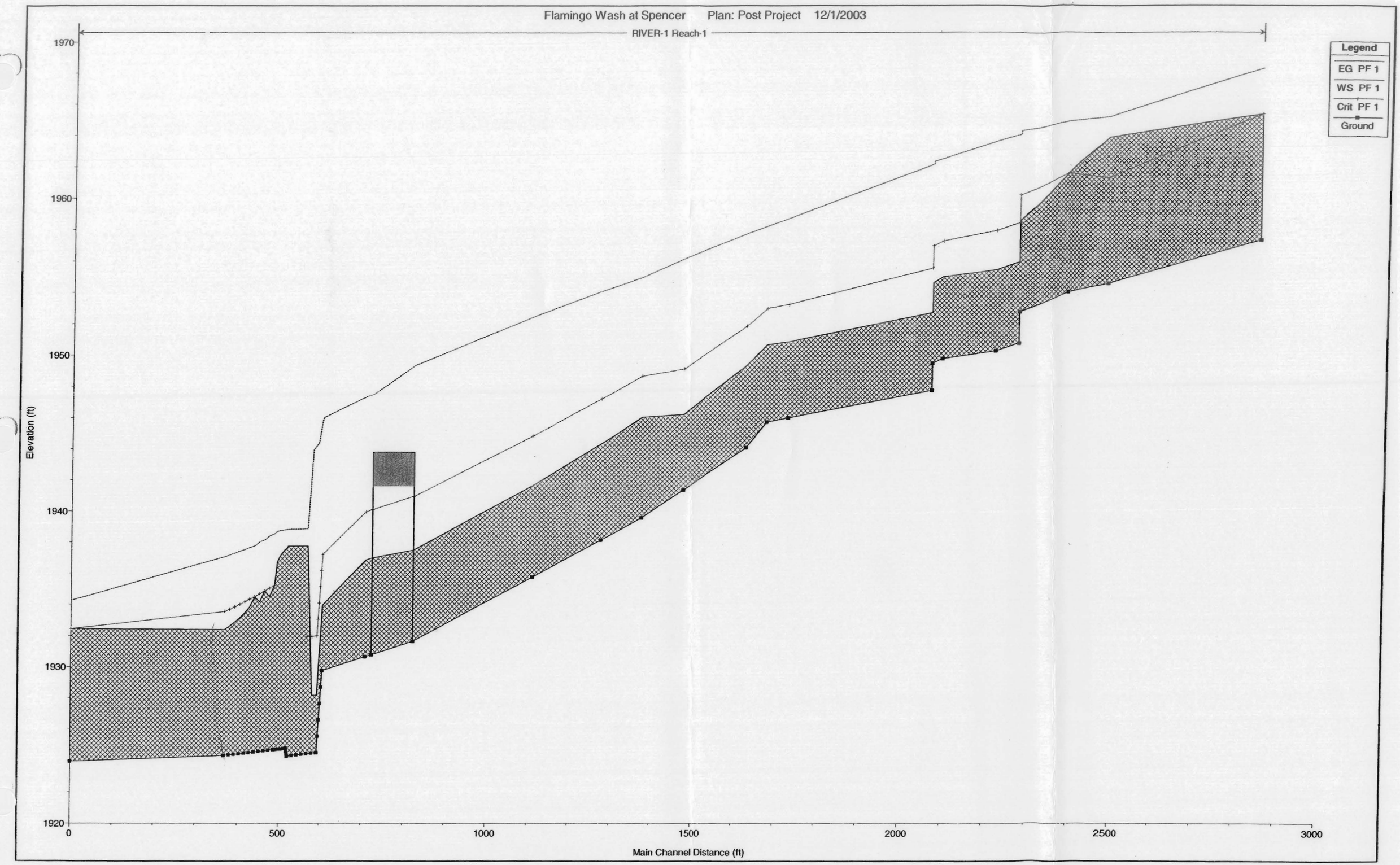
RS = 20 End of Phase 1 Improvements




Flamingo Wash at Spencer Plan: Post Project 12/1/2003
RS = 10
.035
.03
.035
Elevation (ft)
1950
1945
1940
1935
1930
1925
1920
1000
1100
1200
1300
1400
1500
1600
1700
1800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta

Flamingo Wash at Spencer Plan: Post Project 12/1/2003

RIVER-1 Reach-1



Flamingo Wash at Mojave Road to Boulder Highway LOMR

Appendix B.3

B.3.1 LOMR Case No. 04-09-0166P

Federal Emergency Management Agency

Washington, D.C. 20472

RFCD

MAR 12 2004

2004 MAR 15 PM 2:13

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Chip Maxfield, P.E.
Chair, Clark County Board
of Commissioners
500 South Grand Central Parkway
Las Vegas, NV 89155

IN REPLY REFER TO:
Case No.: 04-09-0166P
Community Name: Clark County, NV
Community No.: 320003
Effective Date of This Revision: MAR 12 2004

Dear Mr. Maxfield:

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) 627-7103, 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,

Max H. Yuan, P.E., Project Engineer
Hazard Identification Section
Mitigation Division
Emergency Preparedness
and Response Directorate

For: Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness
and Response Directorate

List of Enclosures:
Letter of Map Revision Determination Document
Annotated Flood Insurance Rate Map

cc: Mr. David Betley, P.E.
Principal Engineer
Civil Engineering Division
Department of Public Works
Clark County

Mr. Kevin Eubanks, P.E.
Assistant General Manager
Clark County Regional Flood Control District

Syndi J. Flippin-Dudley, Ph.D., P.E.
Director of Water Resources
The Louis Berger Group, Inc.

 | Issue Date: MAR 12 2004 | Effective Date: MAR 12 2004 | Case No.: 04-09-0166P | 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	Clark County Nevada (Unincorporated Areas)	BRIDGE CHANNELIZATION	HYDRAULIC ANALYSIS NEW TOPOGRAPHIC DATA
	COMMUNITY NO.: 320003		
IDENTIFIER	Flamingo Wash – Mohave Road to Boulder Highway	APPROXIMATE LATITUDE & LONGITUDE: 36.16, 115.09 SOURCE: USGS QUADRANGLE DATUM: NAD 83	
FLOODING SOURCE(S) & REVISED REACH(ES)	Flamingo Wash – from approximately 500 feet downstream of Boulder Highway to just upstream of Mohave Road		

SUMMARY OF REVISIONS

Effective Flooding: Zone A
Revised Flooding: Zone A
Increases: NONE
Decreases: YES

* BFEs – Base Flood Elevations

ANNOTATED MAPPING ENCLOSURES	ANNOTATED STUDY ENCLOSURES
TYPE: FIRM* NO.: 32003C2190 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 1-877-336-2677 (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.

Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness and Response Directorate

102426DA04090166-102D

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 bridge rests with your community. We may request that your community submit a description and schedule of channel and bridge 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 1-877-336-2677 (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.

Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness and Response Directorate

102426DA04090166-102D

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) 627-7103

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 1-877-336-2677 (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.

Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness and Response Directorate

102426DA04090166-102D

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

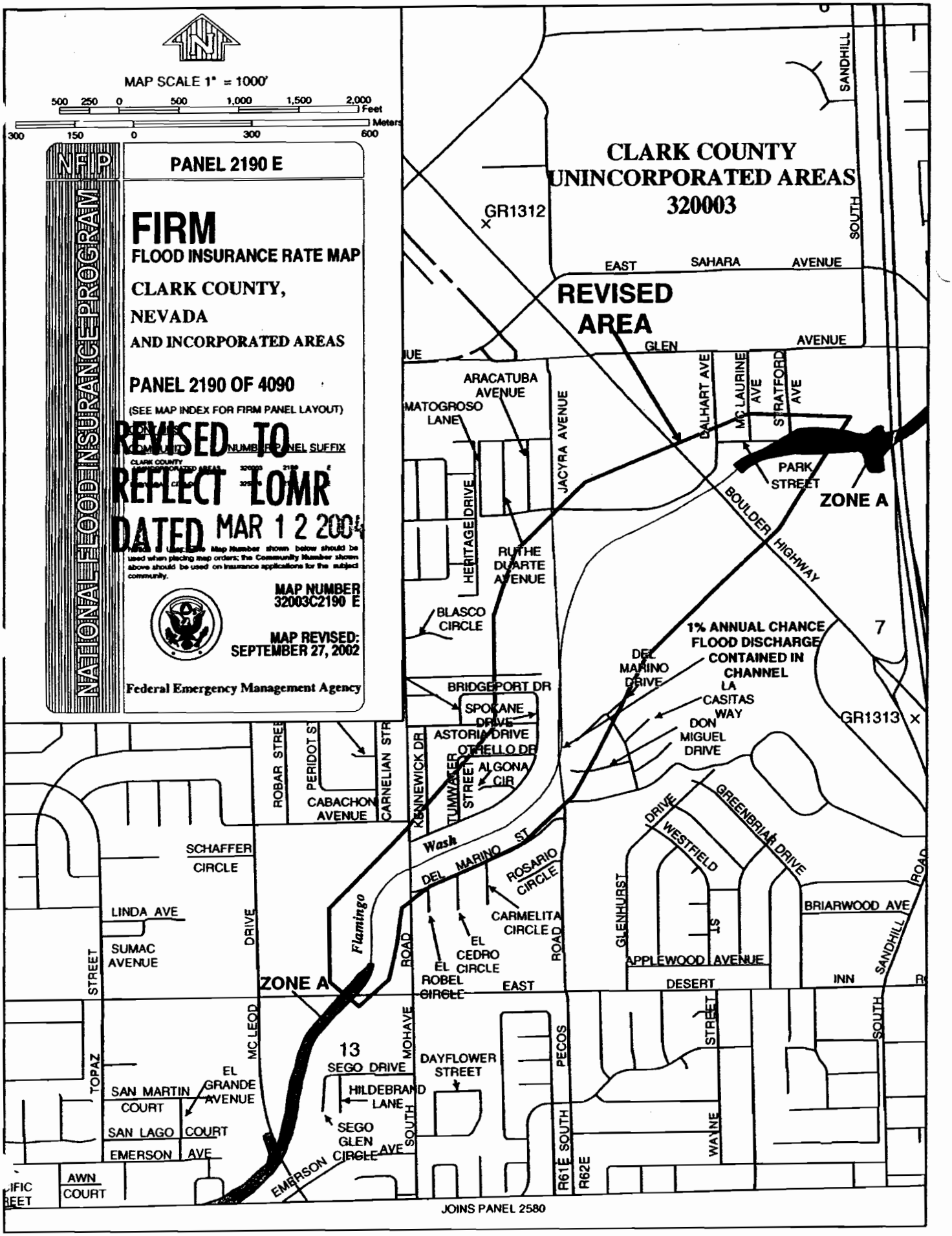
PUBLIC NOTIFICATION OF REVISION

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 1-877-336-2677 (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.

Doug Bellomo, P.E., CFM, Acting Chief
Hazard Identification Section
Mitigation Division
Emergency Preparedness and Response Directorate

102426DA04090166-102D


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 2190 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA
AND INCORPORATED AREAS
PANEL 2190 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
REVISED TO REFLECT LOMR DATED MAR 12 2004
MAP NUMBER
32003C2190 E
MAP REVISED:
SEPTEMBER 27, 2002
Federal Emergency Management Agency
CLARK COUNTY
UNINCORPORATED AREAS
320003
REVISED AREA
GR1312
GR1313
EAST SAHARA AVENUE
SOUTH SANDHILL
GLEN AVENUE
ARACATUBA AVENUE
MATOGROSO LANE
JACYRA AVENUE
GALHART AVE
MC LAURINE AVE
STRATFORD AVE
PARK STREET
ZONE A
BOULDER HIGHWAY
HERITAGE DRIVE
RUTHE DUARTE AVENUE
BLASCO CIRCLE
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
DEL MARINO DRIVE
LA CASITAS WAY
DON MIGUEL DRIVE
BRIDGEPORT DR
SPOKANE DRIVE
ASTORIA DRIVE
OTHELLO DR
ALGONA CIR
KENNEWICK DR
TUMWATER STREET
ROBAR STREET
PERIDOT ST
CARNELIAN STR
CABACHON AVENUE
Wash
DEL MARINO ST
ROSARIO CIRCLE
CARMELITA CIRCLE
EL CEDRO CIRCLE
EL ROBEL CIRCLE
EAST DESERT INN ROAD
GREENBRIAR DRIVE
WESTFIELD DRIVE
GLENHURST ST
APPLEWOOD AVENUE
BRIARWOOD AVE
SANDHILL ROAD
SCHAFFER CIRCLE
LINDA AVE
SUMAC AVENUE
TOPAZ STREET
MC LEOD DRIVE
Flamingo ROAD
ZONE A
13
SEGO DRIVE
HILDEBRAND LANE
SEGO GLEN CIRCLE
EMERSON AVE
SAN MARTIN COURT
SAN LAGO COURT
EMERSON AVE
EL GRANDE AVENUE
AWN COURT
MOHAVE SOUTH
DAYFLOWER STREET
PECOS STREET
WAYNE
R61E SOUTH
R62E
JOINS PANEL 2580

B.3.2 Flamingo Wash Mojave Road to Boulder Highway Workmap and Post Project HECRAS Model

Request for Letter of Map Revision
Flamingo Wash
Mojave Road to Boulder Highway
Clark County, Nevada

Prepared for:
CLARK COUNTY
REGIONAL FLOOD CONTROL DISTRICT
500 S. Grand Central Parkway
Las Vegas, NV 89155

CLARK COUNTY
REGIONAL FLOOD CONTROL DISTRICT



Prepared by:
THE Louis Berger Group, INC.
500 Amigo Court, Suite 100
Las Vegas, Nevada 89119
(702) 736-6632



October 15, 2003

NOTES:

1. VERTICAL CONTROL IS BASED ON THE NGVD 29 AND HORIZONTAL CONTROL IS BASED ON THE NAD 1983, UTILIZING CLARK COUNTY MONUMENTS.
2. THE CORRECTION FACTOR FROM NGVD 29 TO NAVD 88 IS +2.26 ft. THE HECRAS MODEL CROSS-SECTION ELEVATIONS ARE BASED ON NAVD 88.
3. PLAN MODIFIED FROM "FLAMINGO WASH FIS RE-STUDY EASTERN AVE TO US 95 CROSS SECTION EXHIBIT" PREPARED BY G.C. WALLACE INC. DATED 11-11-1997.
4. THE EXISTING FLOOD ZONE LIMITS SHOWN HEREON ARE FROM THE CLARK COUNTY GIS DATA.

POST-PROJECT ZONE "A" CONTAINED IN CHANNEL

UPSTREAM LIMIT OF STUDY

PRE-PROJECT ZONE "A" LIMIT

CLARK COUNTY BENCH MARK 6C11 13N6
REFERENCE MARK #1029
ELEVATION = 1889.46 FT. (NGVD)

LEGEND

(410) FLAMINGO WASH FIS CROSS SECTION (TYP)

[420] POST-PROJECT CONDITIONS CROSS SECTION (TYP)

WORK MAP

FLAMINGO WASH
MOJAVE RD TO BOULDER HWY
LOMR
FIGURE 3A

THE LOUIS BERGER GROUP, INC.
LAS VEGAS, NEVADA

PROFESSIONAL ENGINEER-STATE OF NEVADA
SYNDI J. FLIPPIN-DUDLEY
No. 17070
CIVIL

FILE NAME: X:\879-Flamingo\Exhibit\879-FIGURE-05.dgn - 10/15/2003 - 12:14:46 JPS

NOTES:

1. VERTICAL CONTROL IS BASED ON THE NGVD 29 AND HORIZONTAL CONTROL IS BASED ON THE NAD 1983, UTILIZING CLARK COUNTY MONUMENTS.
2. THE CORRECTION FACTOR FROM NGVD 29 TO NAVD 88 IS +2.26 ft. THE HECRAS MODEL CROSS-SECTION ELEVATIONS ARE BASED ON NAVD 88.
3. PLAN MODIFIED FROM "FLAMINGO WASH FIS RE-STUDY EASTERN AVE TO US 95 CROSS SECTION EXHIBIT" PREPARED BY G.C. WALLACE INC. DATED 11-11-1997.
4. THE EXISTING FLOOD ZONE LIMITS SHOWN HEREON ARE FROM THE CLARK COUNTY GIS DATA.

CLARK COUNTY BENCH MARK 6C12 7NW6
REFERENCE MARK #1021
ELEVATION = 1804.74 FT. (NGVD)

CLARK COUNTY BENCH MARK 6C12 7C4
REFERENCE MARK #1020
ELEVATION = 1814.92 FT. (NGVD)

POST-PROJECT ZONE "A" CONTAINED IN CHANNEL

PRE-PROJECT ZONE "A" LIMIT PER FLAMINGO WASH RESTUDY

100-YEAR FLOOD CONTAINED IN CHANNEL

BOULDER HIGHWAY BRIDGE

DOWNSTREAM LIMIT OF STUDY

FLAMINGO WASH

LEGEND

(410) FLAMINGO WASH FIS CROSS SECTION (TYP)

[420] POST-PROJECT CONDITIONS CROSS SECTION (TYP)

WORK MAP
FLAMINGO WASH
MOJAVE RD TO BOULDER HWY
LOMR
FIGURE 3B

THE LOUIS BERGER GROUP, INC.
LAS VEGAS, NEVADA

PROFESSIONAL ENGINEER-STATE OF NEVADA
SYNDI A. FLIPPIN-DUDLEY
EXP. 12/31/05
CIVIL
10/15/03

FILE NAME: X:\879-Flamingo\Exhibit\879-FIGURE-04.dgn - 10/15/2003 - 11:59:52 JPS

Post-Project Conditions HEC-RAS Output File

HEC-RAS Version 3.1.1 May 2003
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

```
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: Request for Letter of Map Revision
Project File : 879_P_Flamingo.prj
Run Date and Time: 8/29/2003 4:22:25 PM

Project in English units

Project Description:
REQUEST FOR LETTER OF MAP REVISION - FLAMINGO WASH
POST PROJECT CONDITIONS MODEL
DATUM - NAVD88
FILE: 879_P_FLAMINGO.PRJ
STARTING WSE = CRITICAL DEPTH
SUPERCRITICAL RUN
PHASE 1&2 OF THE FLAMINGO WASH IMPROVEMENTS FROM MOJAVE ROAD TO BOULDER HIGHWAY

PLAN DATA

Plan Title: Post Project Conditions
Plan File : E:\879-Flamingo\HEC-Ras\879_P_Flamingo.p02

Geometry Title: Flamingo Wash - Mojave Road to Boulder Highway
Geometry File : E:\879-Flamingo\HEC-Ras\879_P_Flamingo.g02

Flow Title : Flamingo Wash 100-year Storm
Flow File : E:\879-Flamingo\HEC-Ras\879_P_Flamingo.f02

Plan Summary Information:

Number of:	Cross Sections	= 30	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 2	Lateral Structures	=	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 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:     Supercritical Flow



FLOW DATA

Flow Title: Flamingo Wash 100-year Storm
Flow File : E:\879-Flamingo\HEC-Ras\879_P_Flamingo.f02

Flow Data (cfs)

  River           Reach           RS                  PF 1
  RIVER-1         Reach-1         640                 5800
  RIVER-1         Reach-1         420                 6300


Boundary Conditions

  River           Reach           Profile                     Upstream              Downstream

  RIVER-1         Reach-1         PF 1                          Critical



GEOMETRY DATA

Geometry Title: Flamingo Wash - Mojave Road to Boulder Highway
Geometry File : E:\879-Flamingo\HEC-Ras\879_P_Flamingo.g02

CROSS SECTION


RIVER: RIVER-1
REACH: Reach-1            RS: 640

INPUT
Description: FIS Cross Section
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    1000 1866.76 1004.77 1866.42 1005.12 1866.26  1009.4 1864.26 1013.41 1862.26
 1016.12 1860.86 1026.88 1860.35 1027.05 1860.26 1030.75 1858.26 1034.43 1856.26
 1038.12 1854.26 1039.25 1853.65 1067.22 1853.63 1068.01 1854.26 1070.51 1856.26
    1073 1858.26 1075.48 1860.26 1077.94 1862.26 1079.43 1863.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    1000     .02 1026.88    .015 1079.43     .02
```

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1026.88	1079.43	251.59	258.21 262.14	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1866.18	Element			
Vel Head (ft)	3.29	Wt. n-Val.	0.020	0.015	
W.S. Elev (ft)	1862.89	Reach Len. (ft)	251.59	258.21	262.14
Crit W.S. (ft)	1862.89	Flow Area (sq ft)	28.60	385.00	
E.G. Slope (ft/ft)	0.001720	Area (sq ft)	28.60	385.00	
Q Total (cfs)	5800.00	Flow (cfs)	134.08	5665.92	
Top Width (ft)	66.56	Top Width (ft)	14.73	51.82	
Vel Total (ft/s)	14.02	Avg. Vel. (ft/s)	4.69	14.72	
Max Chl Dpth (ft)	9.26	Hydr. Depth (ft)	1.94	7.43	
Conv. Total (cfs)	139845.0	Conv. (cfs)	3232.9	136612.1	
Length Wtd. (ft)	258.13	Wetted Per. (ft)	15.23	56.79	
Min Ch El (ft)	1853.63	Shear (lb/sq ft)	0.20	0.73	
Alpha	1.08	Stream Power (lb/ft s)	0.95	10.71	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.11	44.54	
C & E Loss (ft)		Cum SA (acres)	0.10	10.12	

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 630

INPUT
Description: FIS Cross Section
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1863.46	1004.03	1862.26	1009.63	1860.53	1010.62	1860.26	1018.67	1858.26
1018.82	1858.16	1031	1857.32	1032.96	1856.26	1036.68	1854.26	1040.45	1852.26
1044.02	1850.36	1071.6	1850.54	1074.89	1852.26	1078.71	1854.26	1082.53	1856.26
1084.55	1857.26	1129.14	1858.26	1165.99	1859.26				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1031	.015	1084.55	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1031	1084.55	229.09	221.03 213.86	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1864.92	Element			
Vel Head (ft)	8.06	Wt. n-Val.		0.015	
W.S. Elev (ft)	1856.86	Reach Len. (ft)	229.09	221.03	213.86
Crit W.S. (ft)	1859.94	Flow Area (sq ft)		254.51	
E.G. Slope (ft/ft)	0.006872	Area (sq ft)		254.51	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	51.88	Top Width (ft)		51.88	
Vel Total (ft/s)	22.79	Avg. Vel. (ft/s)		22.79	
Max Chl Dpth (ft)	6.50	Hydr. Depth (ft)		4.91	
Conv. Total (cfs)	69965.0	Conv. (cfs)		69965.0	
Length Wtd. (ft)	221.03	Wetted Per. (ft)		55.05	

Min Ch El (ft)	1850.36	Shear (lb/sq ft)		1.98
Alpha	1.00	Stream Power (lb/ft s)		45.20
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	0.03	42.65
C & E Loss (ft)	0.48	Cum SA (acres)	0.06	9.81

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: RIVER-1
REACH: Reach-1 RS: 620

INPUT
Description: FIS Cross Section
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1861.56	1007.7	1860.26	1012.48	1859.42	1018.28	1858.26	1022.06	1857.51
1033.45	1857.66	1035.35	1856.26	1037.9	1854.26	1040.44	1852.26	1042.97	1850.26
1045.49	1848.26	1046.14	1847.74	1075.97	1847.92	1076.49	1848.26	1079.51	1850.26
1082.53	1852.26	1085.57	1854.26	1086.27	1854.72	1135.67	1856.26	1176.03	1857.79

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1033.45	.015	1086.27	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1033.45	1086.27	223.64	212.31	202.43	.1	.3

CROSS SECTION OUTPUT Profile #PF 1 TIE IN

E.G. Elev (ft)	1863.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.17	Wt. n-Val.		0.015	
W.S. Elev (ft)	1854.04	Reach Len. (ft)	223.64	212.31	202.43
Crit W.S. (ft)	1857.57	Flow Area (sq ft)		238.69	
E.G. Slope (ft/ft)	0.007704	Area (sq ft)		238.69	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	47.06	Top Width (ft)		47.06	
Vel Total (ft/s)	24.30	Avg. Vel. (ft/s)		24.30	
Max Chl Dpth (ft)	6.30	Hydr. Depth (ft)		5.07	
Conv. Total (cfs)	66078.2	Conv. (cfs)		66078.2	
Length Wtd. (ft)	212.31	Wetted Per. (ft)		51.09	
Min Ch El (ft)	1847.74	Shear (lb/sq ft)		2.25	
Alpha	1.00	Stream Power (lb/ft s)		54.60	
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	0.03	41.40	
C & E Loss (ft)	0.11	Cum SA (acres)	0.06	9.56	

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: RIVER-1
REACH: Reach-1 RS: 610

INPUT
Description: FIS Cross Section
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1853.96	1029.96	1853.34	1046.46	1854.26	1061.48	1855.09	1068.39	1854.78
1080.06	1854.26	1083.2	1854.17	1085.83	1852.26	1088.59	1850.26	1091.36	1848.26
1094.17	1846.26	1095.99	1844.97	1124.12	1844.88	1126.53	1846.26	1130	1848.26
1133.45	1850.26	1136.14	1851.82	1155.27	1852.26	1197.8	1854.26	1207.54	1854.71

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1083.2	.015	1136.14	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1083.2	1136.14	230.78	215.38 201.73	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
1000	1083.2	1854.17	F
1136.14	1207.54	1851.82	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1061.48	1855.26	1207.54	1207.54	1855.26

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1861.29	Element			
Vel Head (ft)	10.39	Wt. n-Val.		0.015	
W.S. Elev (ft)	1850.90	Reach Len. (ft)	230.78	215.38	201.73
Crit W.S. (ft)	1854.54	Flow Area (sq ft)		224.17	
E.G. Slope (ft/ft)	0.009315	Area (sq ft)		224.17	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	46.84	Top Width (ft)		46.84	
Vel Total (ft/s)	25.87	Avg. Vel. (ft/s)		25.87	
Max Chl Dpth (ft)	6.02	Hydr. Depth (ft)		4.79	
Conv. Total (cfs)	60094.6	Conv. (cfs)		60094.6	
Length Wtd. (ft)	215.38	Wetted Per. (ft)		50.36	
Min Ch El (ft)	1844.88	Shear (lb/sq ft)		2.59	
Alpha	1.00	Stream Power (lb/ft s)		66.98	
Frctn Loss (ft)	1.79	Cum Volume (acre-ft)	0.03	40.27	
C & E Loss (ft)	0.12	Cum SA (acres)	0.06	9.33	

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.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 600

INPUT
Description: FIS Cross Section
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1853.26	1003.75	1852.26	1011.09	1850.26	1012.57	1849.86	1032.47	1849.9
1035.82	1850.26	1065.44	1851.53	1070.71	1850.26	1074.22	1849.46	1081.85	1848.26
1081.85	1837.36	1135.69	1837.39	1135.69	1849.82	1152.6	1849.94	1170.43	1850.26

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1081.85	.015	1135.69	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1081.85	1135.69	93.41	93.51	94.92	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
1000	1081.85	1848.26	F
1135.69	1170.43	1849.82	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1081.85	1850.26	1135.69	1170.43	1850.26

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1857.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	16.84	Wt. n-Val.		0.015	
W.S. Elev (ft)	1840.65	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)	1844.49	Flow Area (sq ft)		176.13	
E.G. Slope (ft/ft)	0.026515	Area (sq ft)		176.13	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	53.84	Top Width (ft)		53.84	
Vel Total (ft/s)	32.93	Avg. Vel. (ft/s)		32.93	
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)		3.27	
Conv. Total (cfs)	35619.2	Conv. (cfs)		35619.2	
Length Wtd. (ft)	1.00	Wetted Per. (ft)		60.38	
Min Ch El (ft)	1837.36	Shear (lb/sq ft)		4.83	
Alpha	1.00	Stream Power (lb/ft s)		159.00	
Frctn Loss (ft)	3.16	Cum Volume (acre-ft)	0.03	39.28	
C & E Loss (ft)	0.64	Cum SA (acres)	0.06	9.09	

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.
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, energy was used.

BRIDGE

RIVER: RIVER-1
REACH: Reach-1 RS: 595

INPUT
Description: Bridge #1

Distance from Upstream XS = 1
Deck/Roadway Width = 91.51
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
1000	1848.76	1836.47	1081.85	1848.76	1836.47	1081.85	1848.76	1845.39
1134.18	1848.76	1845.39	1135.69	1848.76	1845.39			

Upstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1853.26	1003.75	1852.26	1011.09	1850.26	1012.57	1849.86	1032.47	1849.9
1035.82	1850.26	1065.44	1851.53	1070.71	1850.26	1074.22	1849.46	1081.85	1848.26
1081.85	1837.36	1135.69	1837.39	1135.69	1849.82	1152.6	1849.94	1170.43	1850.26

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1081.85	.015	1135.69	.02

Bank Sta: Left Right Coeff Contr. Expan.
1081.85 1135.69 .1 .3
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
1000	1081.85	1848.26	F
1135.69	1170.43	1849.82	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1081.85	1850.26	1135.69	1170.43	1850.26

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
1000	1848.76	1836.47	1031.2	1848.76	1836.47	1031.2	1848.76	1845.39
1085.04	1848.76	1845.39	1085.04	1848.76	1836.47	1134.18	1848.76	1836.47

Downstream Bridge Cross Section Data
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1849.56	1010.93	1849.27	1031.2	1848.53	1031.2	1836.47	1085.04	1836.47
1085.04	1848.46	1099.88	1849.33	1120.18	1850.26	1131.49	1851.99	1132.09	1852.26
1134.18	1853.56								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1031.2	.015	1085.04	.02

Bank Sta: Left Right Coeff Contr. Expan.
1031.2 1085.04 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
1000	1031.2	1848.53	F
1085.04	1134.18	1848.46	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1031.2	1850.26	1085.04	1134.18	1850.26

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 = 1848.76
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Piers = 1

Pier Data
Pier Station Upstream= 1108.77 Downstream= 1058.12

Upstream num= 2

Width	Elev	Width	Elev
3.84	1837.36	3.84	1845.39

Downstream num= 2

Width	Elev	Width	Elev
3.84	1836.47	3.84	1845.39

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Yarnell KVal = .9
Selected Low Flow Methods = Yarnell

High Flow Method
Pressure and Weir flow
Submerged Inlet Cd =
Submerged Inlet + Outlet Cd =.8006408
Max Low Cord = 1845.39

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #PF 1

			Inside BR US	Inside BR DS
E.G. US. (ft)	1857.49	Element		
W.S. US. (ft)	1840.65	E.G. Elev (ft)	1857.33	1854.40
Q Total (cfs)	5800.00	W.S. Elev (ft)	1840.95	1840.32
Q Bridge (cfs)	5800.00	Crit W.S. (ft)	1844.87	1843.96
Q Weir (cfs)		Max Chl Dpth (ft)	3.59	3.85
Weir Sta Lft (ft)		Vel Total (ft/s)	32.48	30.11
Weir Sta Rgt (ft)		Flow Area (sq ft)	178.55	192.63
Weir Submerg		Froude # Chl	3.03	2.70
Weir Max Depth (ft)		Specif Force (cu ft)	6170.05	5794.45
Min El Weir Flow (ft)	1848.77	Hydr Depth (ft)	3.57	3.85

Min El Prs (ft)	1845.39	W.P. Total (ft)	64.28	65.41
Delta EG (ft)	3.14	Conv. Total (cfs)	34947.9	39206.3
Delta WS (ft)	0.63	Top Width (ft)	50.00	50.00
BR Open Area (sq ft)	400.75	Frctn Loss (ft)	0.03	2.24
BR Open Vel (ft/s)	32.48	C & E Loss (ft)	0.14	0.69
Coef of Q		Shear Total (lb/sq ft)	4.78	4.02
Br Sel Method	Energy only	Power Total (lb/ft s)	155.14	121.15

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
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, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 590

INPUT
Description: END OF PHASE II IMPROVEMENTS
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1849.56	1010.93	1849.27	1031.2	1848.53	1031.2	1836.47	1085.04	1836.47
1085.04	1848.46	1099.88	1849.33	1120.18	1850.26	1131.49	1851.99	1132.09	1852.26
1134.18	1853.56								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1031.2	.015	1085.04	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1031.2	1085.04	16.02 15.77	16.7	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
1000	1031.2	1848.53	F
1085.04	1134.18	1848.46	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1031.2	1850.26	1085.04	1134.18	1850.26

CROSS SECTION OUTPUT Profile #PF 1

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	1854.35				
Vel Head (ft)	14.33	Wt. n-Val.		0.015	
W.S. Elev (ft)	1840.02	Reach Len. (ft)	16.02	15.77	16.70
Crit W.S. (ft)	1843.60	Flow Area (sq ft)		190.90	
E.G. Slope (ft/ft)	0.020517	Area (sq ft)		190.90	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	53.84	Top Width (ft)		53.84	

Vel Total (ft/s)	30.38	Avg. Vel. (ft/s)			30.38
Max Chl Dpth (ft)	3.55	Hydr. Depth (ft)			3.55
Conv. Total (cfs)	40492.1	Conv. (cfs)			40492.1
Length Wtd. (ft)	15.77	Wetted Per. (ft)			60.93
Min Ch El (ft)	1836.47	Shear (lb/sq ft)			4.01
Alpha	1.00	Stream Power (lb/ft s)			121.93
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)		0.03	38.88
C & E Loss (ft)	0.03	Cum SA (acres)		0.06	8.98

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 580

INPUT
Description: Station 74+05 - Transition
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1055	1843.79	1070	1836.29	1100	1835.69	1130	1836.29	1145	1843.79

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1055	.025	1055	.015	1145	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1055	1145	658	658	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1853.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	14.92	Wt. n-Val.		0.015	
W.S. Elev (ft)	1838.88	Reach Len. (ft)	658.00	658.00	658.00
Crit W.S. (ft)	1842.21	Flow Area (sq ft)		187.13	
E.G. Slope (ft/ft)	0.027202	Area (sq ft)		187.13	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	70.38	Top Width (ft)		70.38	
Vel Total (ft/s)	31.00	Avg. Vel. (ft/s)		31.00	
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)		2.66	
Conv. Total (cfs)	35166.4	Conv. (cfs)		35166.4	
Length Wtd. (ft)	658.00	Wetted Per. (ft)		71.61	
Min Ch El (ft)	1835.69	Shear (lb/sq ft)		4.44	
Alpha	1.00	Stream Power (lb/ft s)		137.54	
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)	0.03	38.81	
C & E Loss (ft)	0.18	Cum SA (acres)	0.06	8.96	

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: RIVER-1
REACH: Reach-1 RS: 570

INPUT
Description: Station 67+47 - PT

Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1055	1837.58	1070	1830.08	1100	1829.48	1130	1830.08	1145	1837.58

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1055	.025	1055	.015	1145	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1055	1145	566.67	584.2 601.73	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1841.47	Element			
Vel Head (ft)	7.80	Wt. n-Val.		0.015	
W.S. Elev (ft)	1833.66	Reach Len. (ft)	566.67	584.20	601.73
Crit W.S. (ft)	1836.00	Flow Area (sq ft)		258.76	
E.G. Slope (ft/ft)	0.010002	Area (sq ft)		258.76	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	74.34	Top Width (ft)		74.34	
Vel Total (ft/s)	22.41	Avg. Vel. (ft/s)		22.41	
Max Chl Dpth (ft)	4.18	Hydr. Depth (ft)		3.48	
Conv. Total (cfs)	57993.0	Conv. (cfs)		57993.0	
Length Wtd. (ft)	584.20	Wetted Per. (ft)		76.04	
Min Ch El (ft)	1829.48	Shear (lb/sq ft)		2.12	
Alpha	1.00	Stream Power (lb/ft s)		47.63	
Frctn Loss (ft)	10.20	Cum Volume (acre-ft)	0.03	35.45	
C & E Loss (ft)	2.13	Cum SA (acres)	0.06	7.86	

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: RIVER-1
REACH: Reach-1 RS: 560

INPUT
Description: Station 61+63- PCC

Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1055	1832.08	1070	1824.58	1100	1823.98	1130	1824.58	1145	1832.08

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1055	.025	1055	.015	1145	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1055	1145	252.78	262.84	272.87	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1835.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.47	Wt. n-Val.		0.015	
W.S. Elev (ft)	1828.24	Reach Len. (ft)	252.78	262.84	272.87
Crit W.S. (ft)	1830.50	Flow Area (sq ft)		264.36	
E.G. Slope (ft/ft)	0.009369	Area (sq ft)		264.36	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	74.64	Top Width (ft)		74.64	
Vel Total (ft/s)	21.94	Avg. Vel. (ft/s)		21.94	
Max Chl Dpth (ft)	4.26	Hydr. Depth (ft)		3.54	
Conv. Total (cfs)	59920.5	Conv. (cfs)		59920.5	
Length Wtd. (ft)	262.84	Wetted Per. (ft)		76.38	
Min Ch El (ft)	1823.98	Shear (lb/sq ft)		2.02	
Alpha	1.00	Stream Power (lb/ft s)		44.42	
Frctn Loss (ft)	5.65	Cum Volume (acre-ft)	0.03	31.94	
C & E Loss (ft)	0.10	Cum SA (acres)	0.06	6.86	

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: RIVER-1
REACH: Reach-1 RS: 550

INPUT
Description: Station 59+00 - Grade Break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1055	1829.6	1070	1822.1	1100	1821.5	1130	1822.1	1145	1829.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1055	.025	1055	.015	1145	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1055	1145	209.44	217.76	226.09	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1833.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.50	Wt. n-Val.		0.015	
W.S. Elev (ft)	1825.75	Reach Len. (ft)	209.44	217.76	226.09
Crit W.S. (ft)	1828.02	Flow Area (sq ft)		263.93	
E.G. Slope (ft/ft)	0.009416	Area (sq ft)		263.93	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	74.62	Top Width (ft)		74.62	
Vel Total (ft/s)	21.98	Avg. Vel. (ft/s)		21.98	
Max Chl Dpth (ft)	4.25	Hydr. Depth (ft)		3.54	
Conv. Total (cfs)	59772.2	Conv. (cfs)		59772.2	

Length Wtd. (ft)	217.76	Wetted Per. (ft)			76.35
Min Ch El (ft)	1821.50	Shear (lb/sq ft)			2.03
Alpha	1.00	Stream Power (lb/ft s)			44.65
Frctn Loss (ft)	2.47	Cum Volume (acre-ft)		0.03	30.34
C & E Loss (ft)	0.00	Cum SA (acres)		0.06	6.41

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: RIVER-1
REACH: Reach-1 RS: 540

INPUT
Description: Station 56+82 - PC
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1055	1828.18	1070	1820.68	1100	1820.08	1130	1820.68	1145	1828.18

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1055	.025	1055	.015	1145	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1055	1145	232.24	232.24	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1831.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.54	Wt. n-Val.		0.015	
W.S. Elev (ft)	1824.58	Reach Len. (ft)	232.24	232.24	232.24
Crit W.S. (ft)	1826.60	Flow Area (sq ft)		282.55	
E.G. Slope (ft/ft)	0.007647	Area (sq ft)		282.55	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	75.61	Top Width (ft)		75.61	
Vel Total (ft/s)	20.53	Avg. Vel. (ft/s)		20.53	
Max Chl Dpth (ft)	4.50	Hydr. Depth (ft)		3.74	
Conv. Total (cfs)	66326.0	Conv. (cfs)		66326.0	
Length Wtd. (ft)	232.24	Wetted Per. (ft)		77.46	
Min Ch El (ft)	1820.08	Shear (lb/sq ft)		1.74	
Alpha	1.00	Stream Power (lb/ft s)		35.75	
Frctn Loss (ft)	1.84	Cum Volume (acre-ft)	0.03	28.98	
C & E Loss (ft)	0.29	Cum SA (acres)	0.06	6.04	

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: RIVER-1

REACH: Reach-1 RS: 530

INPUT
Description: Station 54+50 - Grade Break / Transition
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1055	1826.67	1070	1819.17	1100	1818.57	1130	1819.17	1145	1826.67

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1055	.025	1055	.015	1145	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1055	1145	100	100	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1829.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.11	Wt. n-Val.		0.015	
W.S. Elev (ft)	1823.20	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1825.09	Flow Area (sq ft)		292.38	
E.G. Slope (ft/ft)	0.006892	Area (sq ft)		292.38	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	76.13	Top Width (ft)		76.13	
Vel Total (ft/s)	19.84	Avg. Vel. (ft/s)		19.84	
Max Chl Dpth (ft)	4.63	Hydr. Depth (ft)		3.84	
Conv. Total (cfs)	69866.7	Conv. (cfs)		69866.7	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		78.04	
Min Ch El (ft)	1818.57	Shear (lb/sq ft)		1.61	
Alpha	1.00	Stream Power (lb/ft s)		31.98	
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	0.03	27.45	
C & E Loss (ft)	0.13	Cum SA (acres)	0.06	5.63	

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: RIVER-1
REACH: Reach-1 RS: 520

INPUT
Description: Station 53+50 - Grade Break / Transition
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1824.3	1070	1817.32	1100	1816.72	1130	1817.32	1130	1824.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	201.5	201.5	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1828.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.94	Wt. n-Val.		0.015	
W.S. Elev (ft)	1821.59	Reach Len. (ft)	201.50	201.50	201.50
Crit W.S. (ft)	1823.64	Flow Area (sq ft)		274.31	
E.G. Slope (ft/ft)	0.007172	Area (sq ft)		274.31	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	60.00	Top Width (ft)		60.00	
Vel Total (ft/s)	21.14	Avg. Vel. (ft/s)		21.14	
Max Chl Dpth (ft)	4.87	Hydr. Depth (ft)		4.57	
Conv. Total (cfs)	68487.6	Conv. (cfs)		68487.6	
Length Wtd. (ft)	201.50	Wetted Per. (ft)		68.56	
Min Ch El (ft)	1816.72	Shear (lb/sq ft)		1.79	
Alpha	1.00	Stream Power (lb/ft s)		37.88	
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	0.03	26.79	
C & E Loss (ft)	0.08	Cum SA (acres)	0.06	5.48	

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: RIVER-1
REACH: Reach-1 RS: 510

INPUT
Description: Station 51+48.5 - PT
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1822.26	1070	1815.28	1100	1814.68	1130	1815.28	1130	1822.26

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	806.7 793.47	780.25	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1826.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.57	Wt. n-Val.		0.015	
W.S. Elev (ft)	1819.36	Reach Len. (ft)	806.70	793.47	780.25
Crit W.S. (ft)	1821.58	Flow Area (sq ft)		262.68	
E.G. Slope (ft/ft)	0.008224	Area (sq ft)		262.68	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	60.00	Top Width (ft)		60.00	
Vel Total (ft/s)	22.08	Avg. Vel. (ft/s)		22.08	
Max Chl Dpth (ft)	4.68	Hydr. Depth (ft)		4.38	
Conv. Total (cfs)	63957.8	Conv. (cfs)		63957.8	
Length Wtd. (ft)	793.47	Wetted Per. (ft)		68.17	
Min Ch El (ft)	1814.68	Shear (lb/sq ft)		1.98	
Alpha	1.00	Stream Power (lb/ft s)		43.68	
Frctn Loss (ft)	1.55	Cum Volume (acre-ft)	0.03	25.55	
C & E Loss (ft)	0.06	Cum SA (acres)	0.06	5.20	

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: RIVER-1
REACH: Reach-1 RS: 505

INPUT
Description: Station 43+55 - PC
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1814.25	1070	1807.27	1100	1806.67	1130	1807.27	1130	1814.25

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	59	59	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1819.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.56	Wt. n-Val.		0.015	
W.S. Elev (ft)	1811.09	Reach Len. (ft)	59.00	59.00	59.00
Crit W.S. (ft)	1813.57	Flow Area (sq ft)		247.05	
E.G. Slope (ft/ft)	0.009987	Area (sq ft)		247.05	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	60.00	Top Width (ft)		60.00	
Vel Total (ft/s)	23.48	Avg. Vel. (ft/s)		23.48	
Max Chl Dpth (ft)	4.42	Hydr. Depth (ft)		4.12	
Conv. Total (cfs)	58037.9	Conv. (cfs)		58037.9	
Length Wtd. (ft)	59.00	Wetted Per. (ft)		67.65	
Min Ch El (ft)	1806.67	Shear (lb/sq ft)		2.28	
Alpha	1.00	Stream Power (lb/ft s)		53.46	
Frctn Loss (ft)	7.17	Cum Volume (acre-ft)	0.03	20.91	
C & E Loss (ft)	0.10	Cum SA (acres)	0.06	4.11	

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 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: RIVER-1
REACH: Reach-1 RS: 500

INPUT

Description: Station 42+96 - PT
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1813.66	1070	1806.68	1100	1806.08	1130	1806.68	1130	1813.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	454.21	432.58	410.95	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1819.05	Element			
Vel Head (ft)	8.54	Wt. n-Val.		0.015	
W.S. Elev (ft)	1810.50	Reach Len. (ft)	454.21	432.58	410.95
Crit W.S. (ft)	1812.98	Flow Area (sq ft)		247.26	
E.G. Slope (ft/ft)	0.009960	Area (sq ft)		247.26	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	60.00	Top Width (ft)		60.00	
Vel Total (ft/s)	23.46	Avg. Vel. (ft/s)		23.46	
Max Chl Dpth (ft)	4.42	Hydr. Depth (ft)		4.12	
Conv. Total (cfs)	58115.7	Conv. (cfs)		58115.7	
Length Wtd. (ft)	432.58	Wetted Per. (ft)		67.65	
Min Ch El (ft)	1806.08	Shear (lb/sq ft)		2.27	
Alpha	1.00	Stream Power (lb/ft s)		53.31	
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	0.03	20.58	
C & E Loss (ft)	0.00	Cum SA (acres)	0.06	4.03	

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 490

INPUT
Description: Station 38+63 - PC
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1809.28	1070	1802.3	1100	1801.7	1130	1802.3	1130	1809.28

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	64.61	64.61	64.61	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1814.71	Element			
Vel Head (ft)	8.60	Wt. n-Val.		0.015	
W.S. Elev (ft)	1806.11	Reach Len. (ft)	64.61	64.61	64.61
Crit W.S. (ft)	1808.60	Flow Area (sq ft)		246.45	
E.G. Slope (ft/ft)	0.010065	Area (sq ft)		246.45	

Q Total (cfs)	5800.00	Flow (cfs)		5800.00
Top Width (ft)	60.00	Top Width (ft)		60.00
Vel Total (ft/s)	23.53	Avg. Vel. (ft/s)		23.53
Max Chl Dpth (ft)	4.41	Hydr. Depth (ft)		4.11
Conv. Total (cfs)	57813.0	Conv. (cfs)		57813.0
Length Wtd. (ft)	64.61	Wetted Per. (ft)		67.63
Min Ch El (ft)	1801.70	Shear (lb/sq ft)		2.29
Alpha	1.00	Stream Power (lb/ft s)		53.89
Frctn Loss (ft)	4.33	Cum Volume (acre-ft)	0.03	18.12
C & E Loss (ft)	0.01	Cum SA (acres)	0.06	3.43

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: RIVER-1
REACH: Reach-1 RS: 480

INPUT
Description: Station 37+98.5
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1808.65	1070	1801.67	1100	1801.07	1130	1801.67	1130	1808.65

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	20	20	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1814.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.58	Wt. n-Val.		0.015	
W.S. Elev (ft)	1805.48	Reach Len. (ft)	20.00	20.00	20.00
Crit W.S. (ft)	1807.97	Flow Area (sq ft)		246.76	
E.G. Slope (ft/ft)	0.010024	Area (sq ft)		246.76	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	60.00	Top Width (ft)		60.00	
Vel Total (ft/s)	23.50	Avg. Vel. (ft/s)		23.50	
Max Chl Dpth (ft)	4.41	Hydr. Depth (ft)		4.11	
Conv. Total (cfs)	57930.2	Conv. (cfs)		57930.2	
Length Wtd. (ft)	20.00	Wetted Per. (ft)		67.64	
Min Ch El (ft)	1801.07	Shear (lb/sq ft)		2.28	
Alpha	1.00	Stream Power (lb/ft s)		53.66	
Frctn Loss (ft)	0.65	Cum Volume (acre-ft)	0.03	17.76	
C & E Loss (ft)	0.01	Cum SA (acres)	0.06	3.34	

CROSS SECTION

RIVER: RIVER-1

REACH: Reach-1 RS: 470

INPUT
Description: Station 37+78.5

Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1808.57	1070	1801.59	1100	1800.99	1130	1801.59	1130	1808.57

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	342.31	342.31 342.31	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1813.79	Element			
Vel Head (ft)	8.32	Wt. n-Val.		0.015	
W.S. Elev (ft)	1805.47	Reach Len. (ft)	342.31	342.31	342.31
Crit W.S. (ft)	1807.89	Flow Area (sq ft)		250.49	
E.G. Slope (ft/ft)	0.009558	Area (sq ft)		250.49	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	60.00	Top Width (ft)		60.00	
Vel Total (ft/s)	23.15	Avg. Vel. (ft/s)		23.15	
Max Chl Dpth (ft)	4.47	Hydr. Depth (ft)		4.17	
Conv. Total (cfs)	59324.9	Conv. (cfs)		59324.9	
Length Wtd. (ft)	342.31	Wetted Per. (ft)		67.76	
Min Ch El (ft)	1800.99	Shear (lb/sq ft)		2.21	
Alpha	1.00	Stream Power (lb/ft s)		51.08	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	0.03	17.64	
C & E Loss (ft)	0.08	Cum SA (acres)	0.06	3.31	

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 460

INPUT
Description: Station 37+36 PT

Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1807.32	1070	1800.34	1100	1799.74	1130	1800.34	1130	1807.32

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	232.69	236.24 239.78	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1810.65	Element			
Vel Head (ft)	5.45	Wt. n-Val.		0.015	

W.S. Elev (ft)	1805.20	Reach Len. (ft)	232.69	236.24	239.78
Crit W.S. (ft)	1806.64	Flow Area (sq ft)		309.67	
E.G. Slope (ft/ft)	0.004897	Area (sq ft)		309.67	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	60.00	Top Width (ft)		60.00	
Vel Total (ft/s)	18.73	Avg. Vel. (ft/s)		18.73	
Max Chl Dpth (ft)	5.46	Hydr. Depth (ft)		5.16	
Conv. Total (cfs)	82878.4	Conv. (cfs)		82878.4	
Length Wtd. (ft)	236.24	Wetted Per. (ft)		69.73	
Min Ch El (ft)	1799.74	Shear (lb/sq ft)		1.36	
Alpha	1.00	Stream Power (lb/ft s)		25.43	
Frctn Loss (ft)	2.28	Cum Volume (acre-ft)	0.03	15.44	
C & E Loss (ft)	0.86	Cum SA (acres)	0.06	2.84	

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: RIVER-1
REACH: Reach-1 RS: 450

INPUT
Description: Station 32+00 - Transition
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1070	1806.46	1070	1799.48	1100	1798.88	1130	1799.48	1130	1806.46

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1070	.025	1070	.015	1130	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1070	1130	48.98	49.72	50.47	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1809.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.57	Wt. n-Val.		0.015	
W.S. Elev (ft)	1804.82	Reach Len. (ft)	48.98	49.72	50.47
Crit W.S. (ft)	1805.78	Flow Area (sq ft)		338.23	
E.G. Slope (ft/ft)	0.003716	Area (sq ft)		338.23	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	60.00	Top Width (ft)		60.00	
Vel Total (ft/s)	17.15	Avg. Vel. (ft/s)		17.15	
Max Chl Dpth (ft)	5.94	Hydr. Depth (ft)		5.64	
Conv. Total (cfs)	95140.3	Conv. (cfs)		95140.3	
Length Wtd. (ft)	49.72	Wetted Per. (ft)		70.69	
Min Ch El (ft)	1798.88	Shear (lb/sq ft)		1.11	
Alpha	1.00	Stream Power (lb/ft s)		19.04	
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	0.03	13.69	
C & E Loss (ft)	0.26	Cum SA (acres)	0.06	2.52	

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: RIVER-1
REACH: Reach-1 RS: 445

INPUT
Description: Station 31+50 - Transition
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1062.5	1807.03	1062.5	1799.45	1100	1798.7	1137.5	1799.45	1137.5	1807.03

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1062.5	.025	1062.5	.015	1137.5	.025

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1062.5	1137.5	94.83	106.25	100.54	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1808.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.97	Wt. n-Val.		0.015	
W.S. Elev (ft)	1803.02	Reach Len. (ft)	94.83	106.25	100.54
Crit W.S. (ft)	1804.76	Flow Area (sq ft)		295.72	
E.G. Slope (ft/ft)	0.007105	Area (sq ft)		295.72	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	75.00	Top Width (ft)		75.00	
Vel Total (ft/s)	19.61	Avg. Vel. (ft/s)		19.61	
Max Chl Dpth (ft)	4.32	Hydr. Depth (ft)		3.94	
Conv. Total (cfs)	68808.3	Conv. (cfs)		68808.3	
Length Wtd. (ft)	106.25	Wetted Per. (ft)		82.15	
Min Ch El (ft)	1798.70	Shear (lb/sq ft)		1.60	
Alpha	1.00	Stream Power (lb/ft s)		31.32	
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	0.03	13.32	
C & E Loss (ft)	0.14	Cum SA (acres)	0.06	2.44	

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: RIVER-1
REACH: Reach-1 RS: 440

INPUT
Description: Upstream Face - Mojave Road Bridge
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
   1000  1806.3 1007.43 1805.94 1010.88 1806.82 1010.88 1797.82 1085.88 1797.82
 1085.88  1806.8 1101.01 1806.17 1103.62 1806.26 1113.11 1807.56

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    1000     .03 1010.88    .015 1085.88     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1010.88 1085.88           183.21  197.38  206.01             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    1000 1010.88 1806.82       F
 1085.88 1113.11  1806.8       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    1000 1010.88 1806.82 1085.88 1113.11  1806.8

CROSS SECTION OUTPUT  Profile #PF 1

  E.G. Elev (ft)           1808.12    Element                Left OB    Channel   Right OB
  Vel Head (ft)               6.53    Wt. n-Val.                        0.015
  W.S. Elev (ft)           1801.59    Reach Len. (ft)           1.00       1.00      1.00
  Crit W.S. (ft)           1803.54    Flow Area (sq ft)                  282.82
  E.G. Slope (ft/ft)       0.008297   Area (sq ft)                       282.82
  Q Total (cfs)            5800.00    Flow (cfs)                        5800.00
  Top Width (ft)             75.00    Top Width (ft)                      75.00
  Vel Total (ft/s)           20.51    Avg. Vel. (ft/s)                    20.51
  Max Chl Dpth (ft)           3.77    Hydr. Depth (ft)                     3.77
  Conv. Total (cfs)        63673.7    Conv. (cfs)                       63673.7
  Length Wtd. (ft)            1.00    Wetted Per. (ft)                    82.54
  Min Ch El (ft)           1797.82    Shear (lb/sq ft)                     1.77
  Alpha                       1.00    Stream Power (lb/ft s)              36.40
  Frctn Loss (ft)             0.81    Cum Volume (acre-ft)      0.03      12.62
  C & E Loss (ft)             0.06    Cum SA (acres)            0.06       2.26


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,
         energy was used.

BRIDGE


RIVER: RIVER-1
REACH: Reach-1            RS: 435

INPUT
Description: Bridge #2

Distance from Upstream XS =       1
Deck/Roadway Width        =  195.38
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     900 1807.75 1796.29 1010.88 1807.75 1796.29 1010.88 1807.75 1805.75
```

```
1085.88 1807.75 1805.75 1085.88 1807.75 1796.29 1113.05 1807.75 1796.29

Upstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    1000  1806.3 1007.43 1805.94 1010.88 1806.82 1010.88 1797.82 1085.88 1797.82
 1085.88  1806.8 1101.01 1806.17 1103.62 1806.26 1113.11 1807.56

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    1000     .03 1010.88    .015 1085.88     .03

Bank Sta: Left   Right    Coeff Contr.   Expan.
       1010.88 1085.88             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    1000 1010.88 1806.82       F
 1085.88 1113.11  1806.8       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    1000 1010.88 1806.82 1085.88 1113.11  1806.8

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     900 1807.75 1796.29    1000 1807.75 1796.29    1000 1807.75 1805.75
    1075 1807.75 1805.75    1075 1807.75 1796.29 1113.05 1807.75 1796.29

Downstream Bridge Cross Section Data
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     900  1806.8    1000 1806.29    1000 1796.29    1075 1796.29    1075 1806.29
 1113.05    1806

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     900     .03    1000    .015    1075     .03

Bank Sta: Left   Right    Coeff Contr.   Expan.
         1000    1075             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     900    1000 1806.29       F
    1075 1113.05 1806.29       F
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
     900    1000 1806.29    1075 1113.05 1806.29

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        = 1807.75
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Piers =  1
```

```
Pier Data
Pier Station     Upstream= 1048.38    Downstream=  1037.5
Upstream     num=        2
    Width   Elev    Width   Elev
       3 1797.82        3 1805.75
Downstream     num=        2
    Width   Elev    Width   Elev
       3 1796.29        3 1805.75

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Yarnell                KVal =      .9
Selected Low Flow Methods = Yarnell

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =.8006408
           Max Low Cord                = 1805.75

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #PF 1

  E.G. US. (ft)              1808.12    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)              1801.59    E.G. Elev (ft)            1807.63       1806.19
  Q Total (cfs)              5800.00    W.S. Elev (ft)            1802.08       1800.50
  Q Bridge (cfs)             5800.00    Crit W.S. (ft)            1803.68       1802.14
  Q Weir (cfs)                          Max Chl Dpth (ft)            4.26          4.21
  Weir Sta Lft (ft)                     Vel Total (ft/s)            18.90         19.15
  Weir Sta Rgt (ft)                     Flow Area (sq ft)          306.89        302.92
  Weir Submerg                          Froude # Chl                 1.61          1.65
  Weir Max Depth (ft)                   Specif Force (cu ft)      4058.27       4086.03
  Min El Weir Flow (ft)      1807.76    Hydr Depth (ft)              4.26          4.21
  Min El Prs (ft)            1805.75    W.P. Total (ft)             89.05         88.83
  Delta EG (ft)                 1.99    Conv. Total (cfs)          69361.1       67986.5
  Delta WS (ft)                 1.32    Top Width (ft)              72.00         72.00
  BR Open Area (sq ft)        570.96    Frctn Loss (ft)              0.01          1.39
  BR Open Vel (ft/s)           19.15    C & E Loss (ft)              0.49          0.04
  Coef of Q                             Shear Total (lb/sq ft)       1.50          1.55
  Br Sel Method          Energy only    Power Total (lb/ft s)       28.43         29.67


Note:    Momentum answer is not valid if the water surface is above the low chord or if there is weir flow.
         The momentum answer has been disregarded.
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,
         energy was used.
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, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 430

INPUT
Description: Downstream Face - Mojave Road Bridge
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
900	1806.8	1000	1806.29	1000	1796.29	1075	1796.29	1075	1806.29
1113.05	1806								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
900	.03	1000	.015	1075	.03

Bank Sta: Left 1000 Right 1075 Lengths: Left Channel 193.4 Right 187.5 181.7 Coeff Contr. .3 Expan. .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
900	1000	1806.29	F
1075	1113.05	1806.29	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
900	1000	1806.29	1075	1113.05	1806.29

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1806.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.86	Wt. n-Val.		0.015	
W.S. Elev (ft)	1800.27	Reach Len. (ft)	193.40	187.50	181.70
Crit W.S. (ft)	1802.01	Flow Area (sq ft)		298.52	
E.G. Slope (ft/ft)	0.006977	Area (sq ft)		298.52	
Q Total (cfs)	5800.00	Flow (cfs)		5800.00	
Top Width (ft)	75.00	Top Width (ft)		75.00	
Vel Total (ft/s)	19.43	Avg. Vel. (ft/s)		19.43	
Max Chl Dpth (ft)	3.98	Hydr. Depth (ft)		3.98	
Conv. Total (cfs)	69439.2	Conv. (cfs)		69439.2	
Length Wtd. (ft)	187.50	Wetted Per. (ft)		82.96	
Min Ch El (ft)	1796.29	Shear (lb/sq ft)		1.57	
Alpha	1.00	Stream Power (lb/ft s)		30.45	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.03	11.24	
C & E Loss (ft)	0.05	Cum SA (acres)	0.06	1.93	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1

REACH: Reach-1 RS: 420

INPUT
Description: Station 19+10 (Phase 1)
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1803	1016	1794.97	1061	1794.52	1098.5	1794.9	1098.5	1802.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.03	1000	.02	1098.5	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1000	1098.5	143.6	140	136.6	.3	.5

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1804.36	Element			
Vel Head (ft)	5.84	Wt. n-Val.		0.020	
W.S. Elev (ft)	1798.52	Reach Len. (ft)	143.60	140.00	136.60
Crit W.S. (ft)	1800.26	Flow Area (sq ft)		324.85	
E.G. Slope (ft/ft)	0.013045	Area (sq ft)		324.85	
Q Total (cfs)	6300.00	Flow (cfs)		6300.00	
Top Width (ft)	89.56	Top Width (ft)		89.56	
Vel Total (ft/s)	19.39	Avg. Vel. (ft/s)		19.39	
Max Chl Dpth (ft)	3.99	Hydr. Depth (ft)		3.63	
Conv. Total (cfs)	55158.4	Conv. (cfs)		55158.4	
Length Wtd. (ft)		Wetted Per. (ft)		94.02	
Min Ch El (ft)	1794.52	Shear (lb/sq ft)		2.81	
Alpha	1.00	Stream Power (lb/ft s)		54.57	
Frctn Loss (ft)	1.77	Cum Volume (acre-ft)	0.03	9.90	
C & E Loss (ft)	0.01	Cum SA (acres)	0.06	1.58	

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: RIVER-1
REACH: Reach-1 RS: 415

INPUT
Description: Station 17+70 - Begining of Phase 1 Improvements
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1801.5	1016	1793.48	1031.5	1793.32	1069	1793.7	1069	1801.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.03	1000	.02	1069	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1000	1069	109.9	108.5	106.7	.3	.5

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1803.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.24	Wt. n-Val.		0.020	
W.S. Elev (ft)	1800.72	Reach Len. (ft)	109.90	108.50	106.70
Crit W.S. (ft)	1800.72	Flow Area (sq ft)		436.27	
E.G. Slope (ft/ft)	0.003688	Area (sq ft)		436.27	
Q Total (cfs)	6300.00	Flow (cfs)		6300.00	
Top Width (ft)	67.45	Top Width (ft)		67.45	
Vel Total (ft/s)	14.44	Avg. Vel. (ft/s)		14.44	
Max Chl Dpth (ft)	7.40	Hydr. Depth (ft)		6.47	
Conv. Total (cfs)	103746.3	Conv. (cfs)		103746.3	
Length Wtd. (ft)	108.50	Wetted Per. (ft)		76.19	
Min Ch El (ft)	1793.32	Shear (lb/sq ft)		1.32	
Alpha	1.00	Stream Power (lb/ft s)		19.04	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.03	8.67	
C & E Loss (ft)		Cum SA (acres)	0.06	1.32	

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 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: RIVER-1
REACH: Reach-1 RS: 410

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1801.26	1002.09	1801.3	1019.84	1801.27	1026.7	1800.26	1029.5	1799.83
1041.49	1799.46	1044.75	1798.26	1049.87	1796.26	1054.82	1794.26	1059.57	1792.26
1061.07	1791.56	1078.69	1792.06	1092.24	1792.26	1099.54	1792.36	1099.88	1794.26
1100.24	1796.26	1100.6	1798.26	1100.94	1800.26	1100.98	1800.5	1108.1	1800.83
1170.81	1801.66								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.03	1041.49	.02	1100.98	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1041.49	1100.98	236.79	222.64	212.87	.1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1803.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.	0.030	0.020	
W.S. Elev (ft)	1800.24	Reach Len. (ft)	236.79	222.64	212.87
Crit W.S. (ft)	1800.52	Flow Area (sq ft)	7.69	411.56	
E.G. Slope (ft/ft)	0.003800	Area (sq ft)	7.69	411.56	
Q Total (cfs)	6300.00	Flow (cfs)	15.25	6284.75	
Top Width (ft)	74.11	Top Width (ft)	14.66	59.45	

Vel Total (ft/s)	15.03	Avg. Vel. (ft/s)	1.98	15.27
Max Chl Dpth (ft)	8.68	Hydr. Depth (ft)	0.52	6.92
Conv. Total (cfs)	102194.9	Conv. (cfs)	247.3	101947.6
Length Wtd. (ft)	222.66	Wetted Per. (ft)	14.70	67.60
Min Ch El (ft)	1791.56	Shear (lb/sq ft)	0.12	1.44
Alpha	1.03	Stream Power (lb/ft s)	0.25	22.06
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	0.02	7.62
C & E Loss (ft)	0.02	Cum SA (acres)	0.04	1.17

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.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 400

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1797.56	1024.49	1798.03	1038.23	1798.02	1040.26	1798.26	1042.29	1798.51
1042.47	1798.26	1043.62	1796.26	1044.73	1794.26	1045.83	1792.26	1046.34	1791.32
1075.55	1790.86	1100.77	1791.22	1101.12	1792.26	1101.81	1794.26	1102.54	1796.26
1103.31	1798.26	1103.68	1799.22	1128.41	1798.75				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.03	1042.29	.02	1103.68	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1042.29	1103.68	216.05	216.12	217.6	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
1000	1042.29	1798.51	F
1103.68	1128.41	1799.22	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1042.29	1799.26	1103.68	1128.41	1799.26

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1802.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.58	Wt. n-Val.		0.020	
W.S. Elev (ft)	1796.91	Reach Len. (ft)	216.05	216.12	217.60
Crit W.S. (ft)	1798.52	Flow Area (sq ft)		332.48	
E.G. Slope (ft/ft)	0.007665	Area (sq ft)		332.48	
Q Total (cfs)	6300.00	Flow (cfs)		6300.00	
Top Width (ft)	59.55	Top Width (ft)		59.55	
Vel Total (ft/s)	18.95	Avg. Vel. (ft/s)		18.95	
Max Chl Dpth (ft)	6.05	Hydr. Depth (ft)		5.58	
Conv. Total (cfs)	71957.2	Conv. (cfs)		71957.2	
Length Wtd. (ft)	216.12	Wetted Per. (ft)		66.87	
Min Ch El (ft)	1790.86	Shear (lb/sq ft)		2.38	

Alpha	1.00	Stream Power (lb/ft s)	45.08
Frctn Loss (ft)	1.17	Cum Volume (acre-ft)	5.72
C & E Loss (ft)	0.20	Cum SA (acres)	0.86

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 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 390

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1794.86	1031.19	1795.56	1040.57	1796.04	1041.52	1796.26	1045.15	1797.07
1045.61	1796.26	1046.74	1794.26	1047.86	1792.26	1049.03	1790.26	1049.38	1789.67
1074.16	1789.46	1100.36	1789.8	1100.54	1790.26	1101.34	1792.26	1102.12	1794.26
1102.9	1796.26	1103.45	1797.7	1128.39	1797.49	1144.16	1797.47	1147.04	1798.26
1153.05	1799.56								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.03	1045.15	.02	1103.45	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1045.15	1103.45	420.9	420.9 420.21	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
1000	1045.15	1797.07	F
1103.45	1153.05	1797.7	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	1045.15	1799.26	1103.45	1153.05	1799.26

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1800.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.		0.020	
W.S. Elev (ft)	1797.18	Reach Len. (ft)	420.90	420.90	420.21
Crit W.S. (ft)	1797.22	Flow Area (sq ft)		413.22	
E.G. Slope (ft/ft)	0.003763	Area (sq ft)		413.22	
Q Total (cfs)	6300.00	Flow (cfs)		6300.00	
Top Width (ft)	58.10	Top Width (ft)		58.10	
Vel Total (ft/s)	15.25	Avg. Vel. (ft/s)		15.25	
Max Chl Dpth (ft)	7.72	Hydr. Depth (ft)		7.11	
Conv. Total (cfs)	102703.2	Conv. (cfs)		102703.2	

Length Wtd. (ft)	420.90	Wetted Per. (ft)	67.53
Min Ch El (ft)	1789.46	Shear (lb/sq ft)	1.44
Alpha	1.00	Stream Power (lb/ft s)	21.91
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	3.87
C & E Loss (ft)	0.59	Cum SA (acres)	0.57

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 380

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1090.66	1794.26	1091.25	1795.01	1091.78	1794.26	1093.21	1792.26	1094.63	1790.26
1096.06	1788.26	1096.29	1787.94	1149.56	1788.06	1149.61	1788.26	1150.11	1790.26
1150.6	1792.26	1151.08	1794.26	1151.34	1795.33	1227.86	1796.26		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1090.66	.03	1091.25	.02	1151.34	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1091.25	1151.34	0 420.9	0	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
1090.66	1091.25	1795.01	F
1151.34	1227.86	1795.33	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1090.66	1091.25	1796.26	1151.34	1227.86	1796.26

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1798.96	Element			
Vel Head (ft)	4.12	Wt. n-Val.		0.020	
W.S. Elev (ft)	1794.84	Reach Len. (ft)			
Crit W.S. (ft)	1795.41	Flow Area (sq ft)		386.94	
E.G. Slope (ft/ft)	0.004794	Area (sq ft)		386.94	
Q Total (cfs)	6300.00	Flow (cfs)		6300.00	
Top Width (ft)	59.85	Top Width (ft)		59.85	
Vel Total (ft/s)	16.28	Avg. Vel. (ft/s)		16.28	
Max Chl Dpth (ft)	6.90	Hydr. Depth (ft)		6.47	
Conv. Total (cfs)	90986.1	Conv. (cfs)		90986.1	
Length Wtd. (ft)		Wetted Per. (ft)		68.72	
Min Ch El (ft)	1787.94	Shear (lb/sq ft)		1.69	

Alpha	1.00	Stream Power (lb/ft s)	27.44
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	
C & E Loss (ft)	0.05	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:RIVER-1

Reach	River Sta.	n1	n2	n3
Reach-1	640	.02	.015	.02
Reach-1	630	.02	.015	.02
Reach-1	620	.02	.015	.02
Reach-1	610	.02	.015	.02
Reach-1	600	.02	.015	.02
Reach-1	595	Bridge		
Reach-1	590	.02	.015	.02
Reach-1	580	.025	.015	.025
Reach-1	570	.025	.015	.025
Reach-1	560	.025	.015	.025
Reach-1	550	.025	.015	.025
Reach-1	540	.025	.015	.025
Reach-1	530	.025	.015	.025
Reach-1	520	.025	.015	.025
Reach-1	510	.025	.015	.025
Reach-1	505	.025	.015	.025
Reach-1	500	.025	.015	.025
Reach-1	490	.025	.015	.025
Reach-1	480	.025	.015	.025
Reach-1	470	.025	.015	.025
Reach-1	460	.025	.015	.025
Reach-1	450	.025	.015	.025
Reach-1	445	.025	.015	.025
Reach-1	440	.03	.015	.03
Reach-1	435	Bridge		
Reach-1	430	.03	.015	.03
Reach-1	420	.03	.02	.03
Reach-1	415	.03	.02	.03
Reach-1	410	.03	.02	.03
Reach-1	400	.03	.02	.03
Reach-1	390	.03	.02	.03
Reach-1	380	.03	.02	.03

SUMMARY OF REACH LENGTHS

River: RIVER-1

Reach	River Sta.	Left	Channel	Right
Reach-1	640	251.59	258.21	262.14
Reach-1	630	229.09	221.03	213.86
Reach-1	620	223.64	212.31	202.43
Reach-1	610	230.78	215.38	201.73
Reach-1	600	93.41	93.51	94.92
Reach-1	595	Bridge		
Reach-1	590	16.02	15.77	16.7
Reach-1	580	658	658	658
Reach-1	570	566.67	584.2	601.73
Reach-1	560	252.78	262.84	272.87
Reach-1	550	209.44	217.76	226.09
Reach-1	540	232.24	232.24	232.24
Reach-1	530	100	100	100
Reach-1	520	201.5	201.5	201.5
Reach-1	510	806.7	793.47	780.25
Reach-1	505	59	59	59
Reach-1	500	454.21	432.58	410.95
Reach-1	490	64.61	64.61	64.61
Reach-1	480	20	20	20
Reach-1	470	342.31	342.31	342.31
Reach-1	460	232.69	236.24	239.78
Reach-1	450	48.98	49.72	50.47
Reach-1	445	94.83	106.25	100.54
Reach-1	440	183.21	197.38	206.01
Reach-1	435	Bridge		
Reach-1	430	193.4	187.5	181.7
Reach-1	420	143.6	140	136.6
Reach-1	415	109.9	108.5	106.7
Reach-1	410	236.79	222.64	212.87
Reach-1	400	216.05	216.12	217.6
Reach-1	390	420.9	420.9	420.21
Reach-1	380	0	420.9	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: RIVER-1

Reach	River Sta.	Contr.	Expan.
Reach-1	640	.1	.3
Reach-1	630	.1	.3
Reach-1	620	.1	.3
Reach-1	610	.1	.3
Reach-1	600	.1	.3
Reach-1	595	Bridge	
Reach-1	590	.3	.5
Reach-1	580	.1	.3
Reach-1	570	.1	.3
Reach-1	560	.1	.3
Reach-1	550	.1	.3

Reach-1	540		.1	.3
Reach-1	530		.1	.3
Reach-1	520		.1	.3
Reach-1	510		.1	.3
Reach-1	505		.1	.3
Reach-1	500		.1	.3
Reach-1	490		.1	.3
Reach-1	480		.1	.3
Reach-1	470		.1	.3
Reach-1	460		.1	.3
Reach-1	450		.1	.3
Reach-1	445		.1	.3
Reach-1	440		.3	.5
Reach-1	435	Bridge		
Reach-1	430		.3	.5
Reach-1	420		.3	.5
Reach-1	415		.3	.5
Reach-1	410		.1	.3
Reach-1	400		.1	.3
Reach-1	390		.1	.3
Reach-1	380		.1	.3

HEC-RAS Plan: Post River: RIVER-1 Reach: Reach-1 Profile: PF 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
Reach-1	640	PF 1	5800.00	1853.63	1862.89	1862.89	1866.18	0.001720	14.72	413.60	66.56	0.95
Reach-1	630	PF 1	5800.00	1850.36	1856.86	1859.94	1864.92	0.006872	22.79	254.51	51.88	1.81
Reach-1	620	PF 1	5800.00	1847.74	1854.04	1857.57	1863.21	0.007704	24.30	238.69	47.06	1.90
Reach-1	610	PF 1	5800.00	1844.88	1850.90	1854.54	1861.29	0.009315	25.87	224.17	46.84	2.08
Reach-1	600	PF 1	5800.00	1837.36	1840.65	1844.49	1857.49	0.026515	32.93	176.13	53.84	3.21
Reach-1	595		Bridge									
Reach-1	590	PF 1	5800.00	1836.47	1840.02	1843.60	1854.35	0.020517	30.38	190.90	53.84	2.84
Reach-1	580	PF 1	5800.00	1835.69	1838.88	1842.21	1853.80	0.027202	31.00	187.13	70.38	3.35
Reach-1	570	PF 1	5800.00	1829.48	1833.66	1836.00	1841.47	0.010002	22.41	258.76	74.34	2.12
Reach-1	560	PF 1	5800.00	1823.98	1828.24	1830.50	1835.71	0.009369	21.94	264.36	74.64	2.05
Reach-1	550	PF 1	5800.00	1821.50	1825.75	1828.02	1833.25	0.009416	21.98	263.93	74.62	2.06
Reach-1	540	PF 1	5800.00	1820.08	1824.58	1826.60	1831.13	0.007647	20.53	282.55	75.61	1.87
Reach-1	530	PF 1	5800.00	1818.57	1823.20	1825.09	1829.31	0.006892	19.84	292.38	76.13	1.78
Reach-1	520	PF 1	5800.00	1816.72	1821.59	1823.64	1828.53	0.007172	21.14	274.31	60.00	1.74
Reach-1	510	PF 1	5800.00	1814.68	1819.36	1821.58	1826.93	0.008224	22.08	262.68	60.00	1.86
Reach-1	505	PF 1	5800.00	1806.67	1811.09	1813.57	1819.65	0.009987	23.48	247.05	60.00	2.04
Reach-1	500	PF 1	5800.00	1806.08	1810.50	1812.98	1819.05	0.009960	23.46	247.26	60.00	2.04
Reach-1	490	PF 1	5800.00	1801.70	1806.11	1808.60	1814.71	0.010065	23.53	246.45	60.00	2.05
Reach-1	480	PF 1	5800.00	1801.07	1805.48	1807.97	1814.06	0.010024	23.50	246.76	60.00	2.04
Reach-1	470	PF 1	5800.00	1800.99	1805.47	1807.89	1813.79	0.009558	23.15	250.49	60.00	2.00
Reach-1	460	PF 1	5800.00	1799.74	1805.20	1806.64	1810.65	0.004897	18.73	309.67	60.00	1.45
Reach-1	450	PF 1	5800.00	1798.88	1804.82	1805.78	1809.38	0.003716	17.15	338.23	60.00	1.27
Reach-1	445	PF 1	5800.00	1798.70	1803.02	1804.76	1808.99	0.007105	19.61	295.72	75.00	1.74
Reach-1	440	PF 1	5800.00	1797.82	1801.59	1803.54	1808.12	0.008297	20.51	282.82	75.00	1.86
Reach-1	435		Bridge									
Reach-1	430	PF 1	5800.00	1796.29	1800.27	1802.01	1806.13	0.006977	19.43	298.52	75.00	1.72
Reach-1	420	PF 1	6300.00	1794.52	1798.52	1800.26	1804.36	0.013045	19.39	324.85	89.56	1.79
Reach-1	415	PF 1	6300.00	1793.32	1800.72	1800.72	1803.96	0.003688	14.44	436.27	67.45	1.00
Reach-1	410	PF 1	6300.00	1791.56	1800.24	1800.52	1803.85	0.003800	15.27	419.25	74.11	1.02
Reach-1	400	PF 1	6300.00	1790.86	1796.91	1798.52	1802.49	0.007665	18.95	332.48	59.55	1.41
Reach-1	390	PF 1	6300.00	1789.46	1797.18	1797.22	1800.79	0.003763	15.25	413.22	58.10	1.01
Reach-1	380	PF 1	6300.00	1787.94	1794.84	1795.41	1798.96	0.004794	16.28	386.94	59.85	1.13

HEC-RAS Plan: Post River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Profile	E.G. US. (ft)	Min El. Prs (ft)	BR Open Area (sq ft)	Prs O.W.S. (ft)	Q Total (cfs)	Min El. Weir Flow (ft)	Q Weir (cfs)	Delta EG (ft)
Reach-1	595	PF 1	1857.49	1845.39	400.75	1840.65	5800.00	1848.77		3.14
Reach-1	435	PF 1	1808.12	1805.75	570.96	1801.59	5800.00	1807.76		1.99

Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

RIVER-1 Reach-1

Legend

EG PF 1

Crit PF 1

WS PF 1

Ground

Elevation (ft)

1880

1860

1840

1820

1800

1780

0

1000

2000

3000

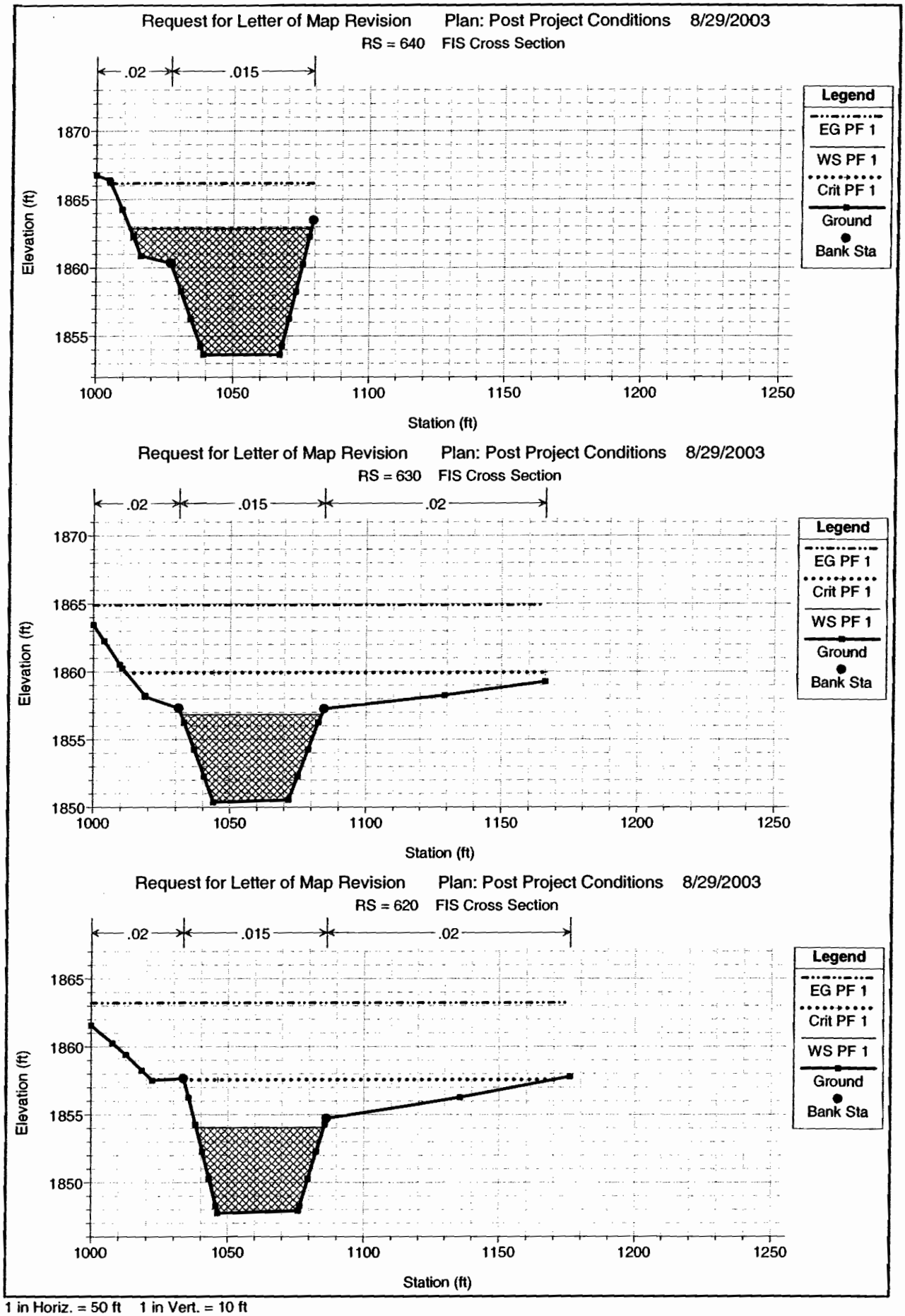
4000

5000

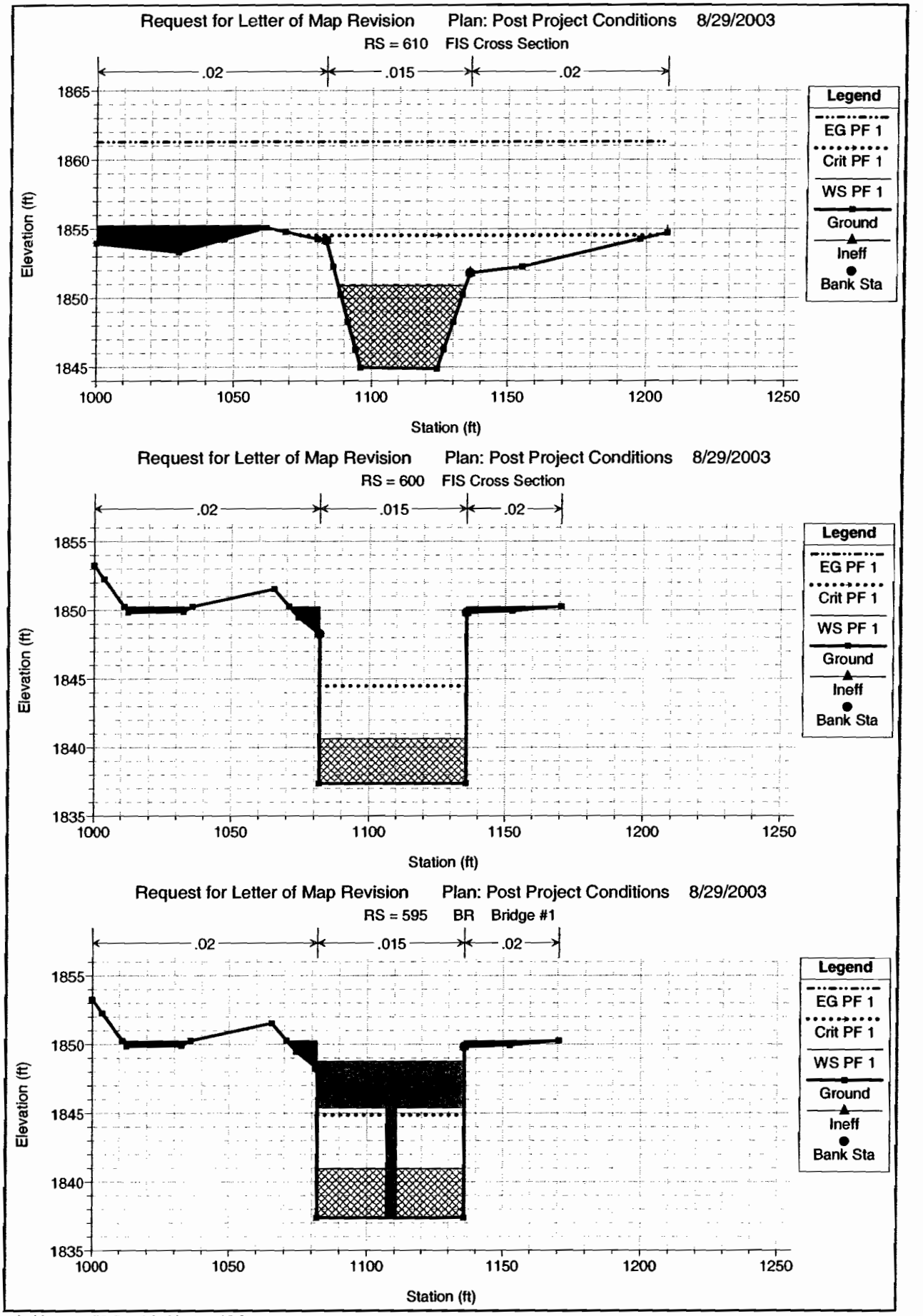
6000

7000

Main Channel Distance (ft)



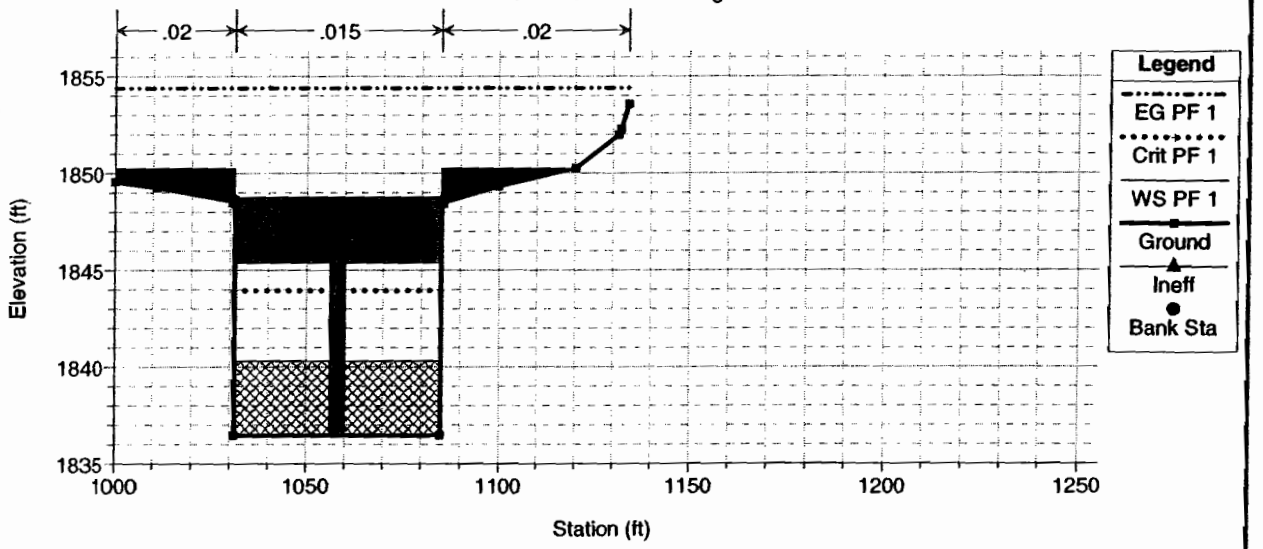
1 in Horiz. = 50 ft 1 in Vert. = 10 ft



1 in Horiz. = 50 ft 1 in Vert. = 10 ft

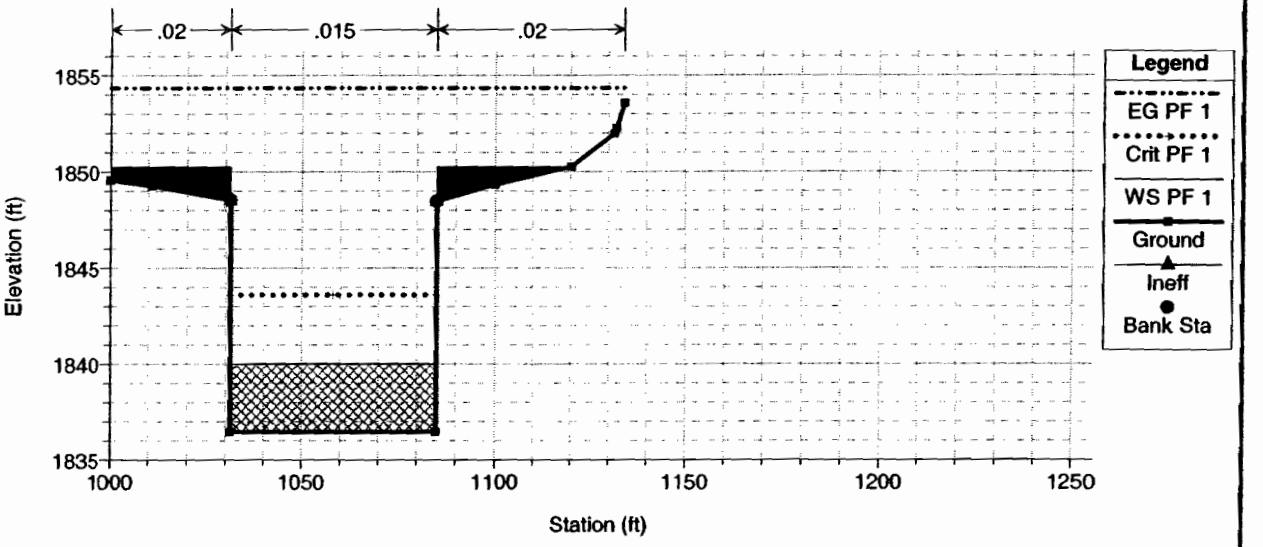
Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

RS = 595 BR Bridge #1



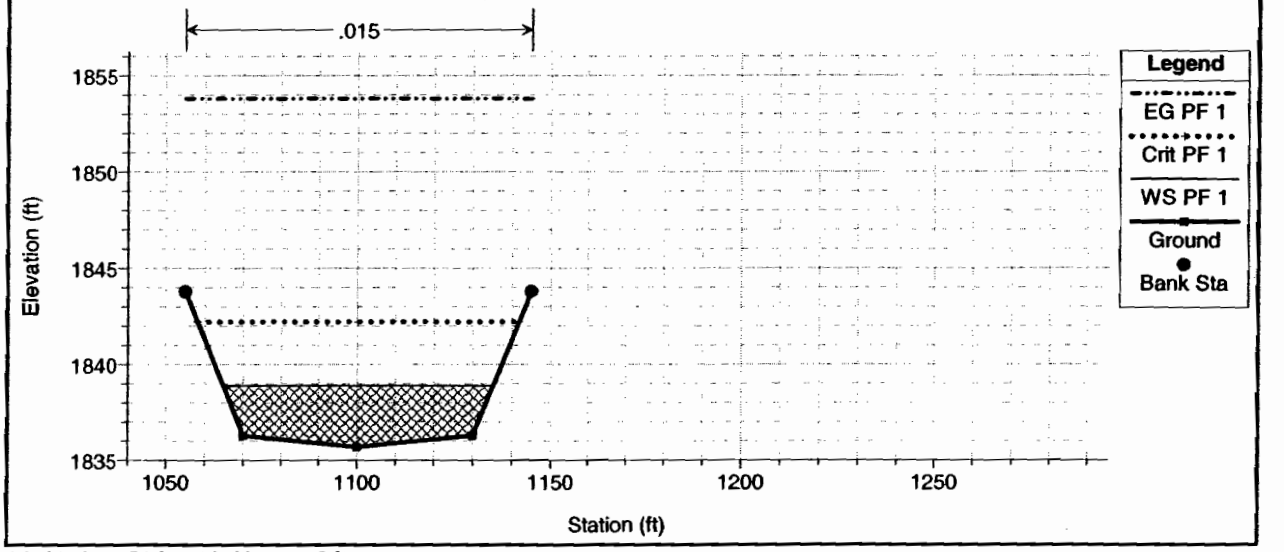
Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

RS = 590 END OF PHASE II IMPROVEMENTS

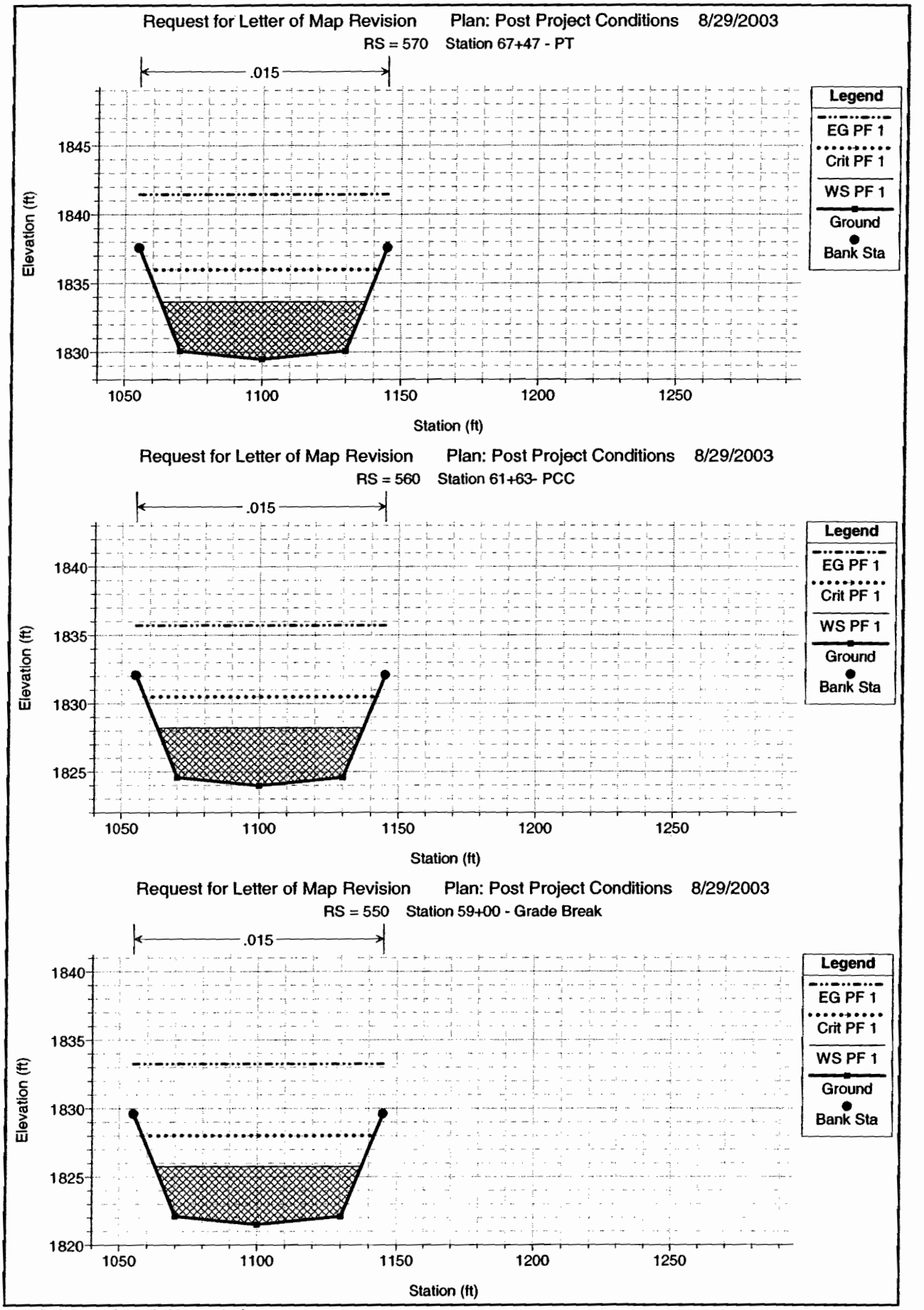


Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

RS = 580 Station 74+05 - Transition



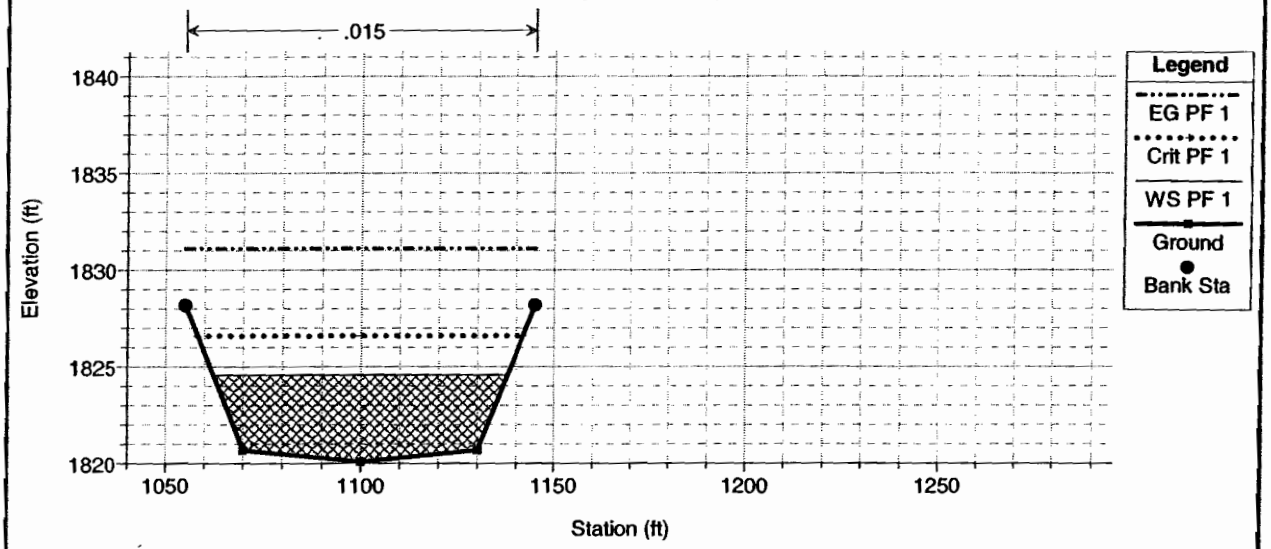
1 in Horiz. = 50 ft 1 in Vert. = 10 ft



1 in Horiz. = 50 ft 1 in Vert. = 10 ft

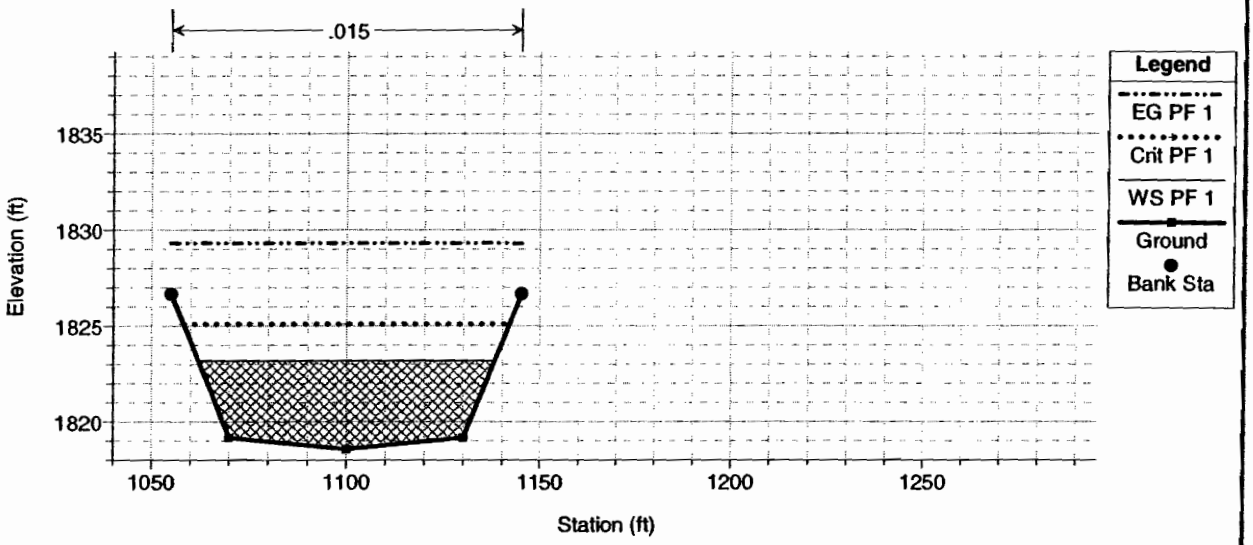
Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

RS = 540 Station 56+82 - PC



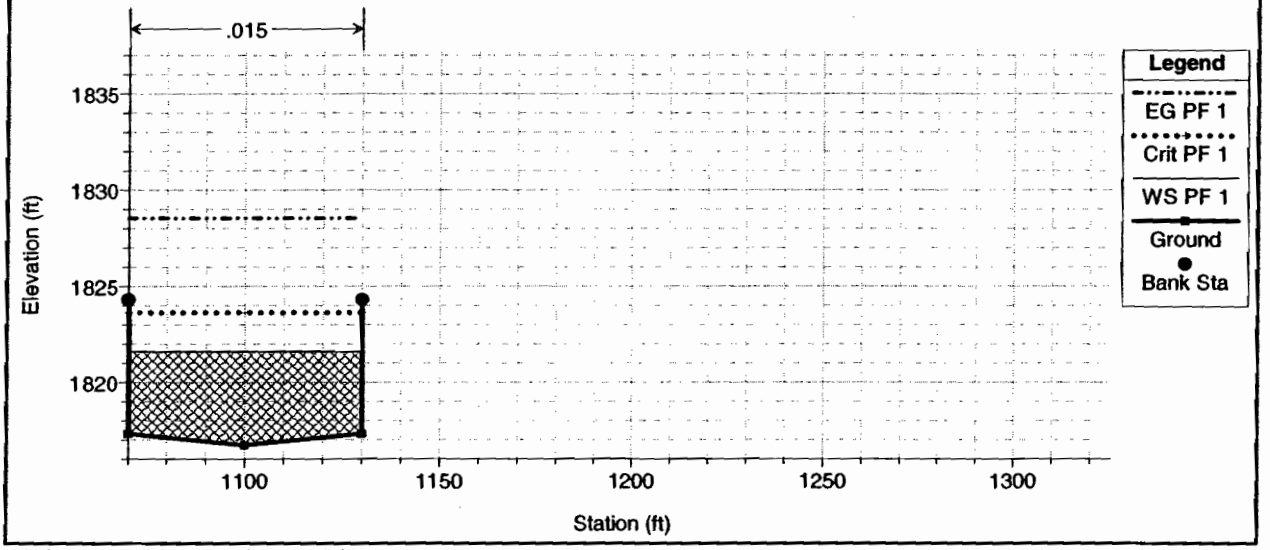
Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

RS = 530 Station 54+50 - Grade Break / Transition

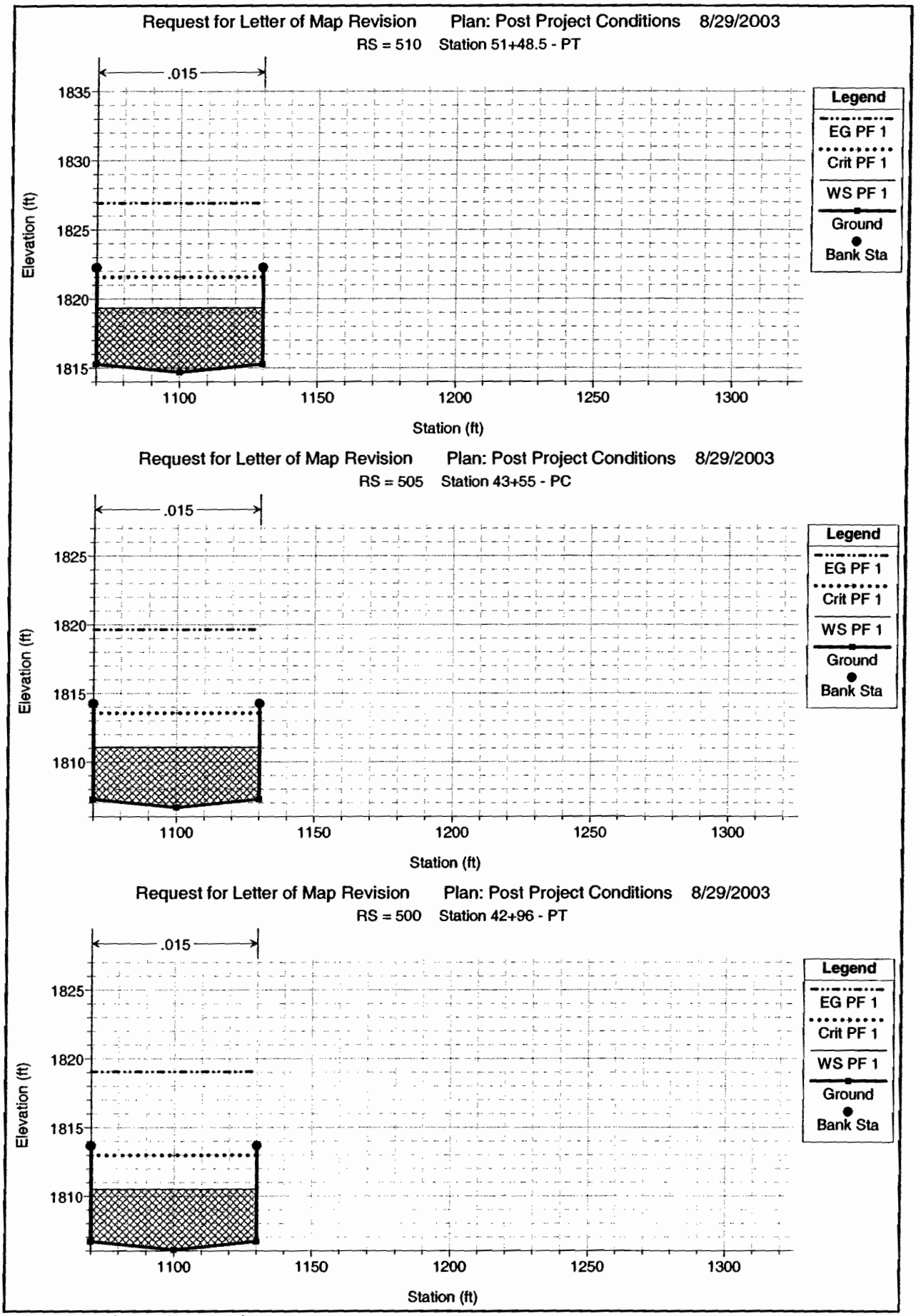


Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

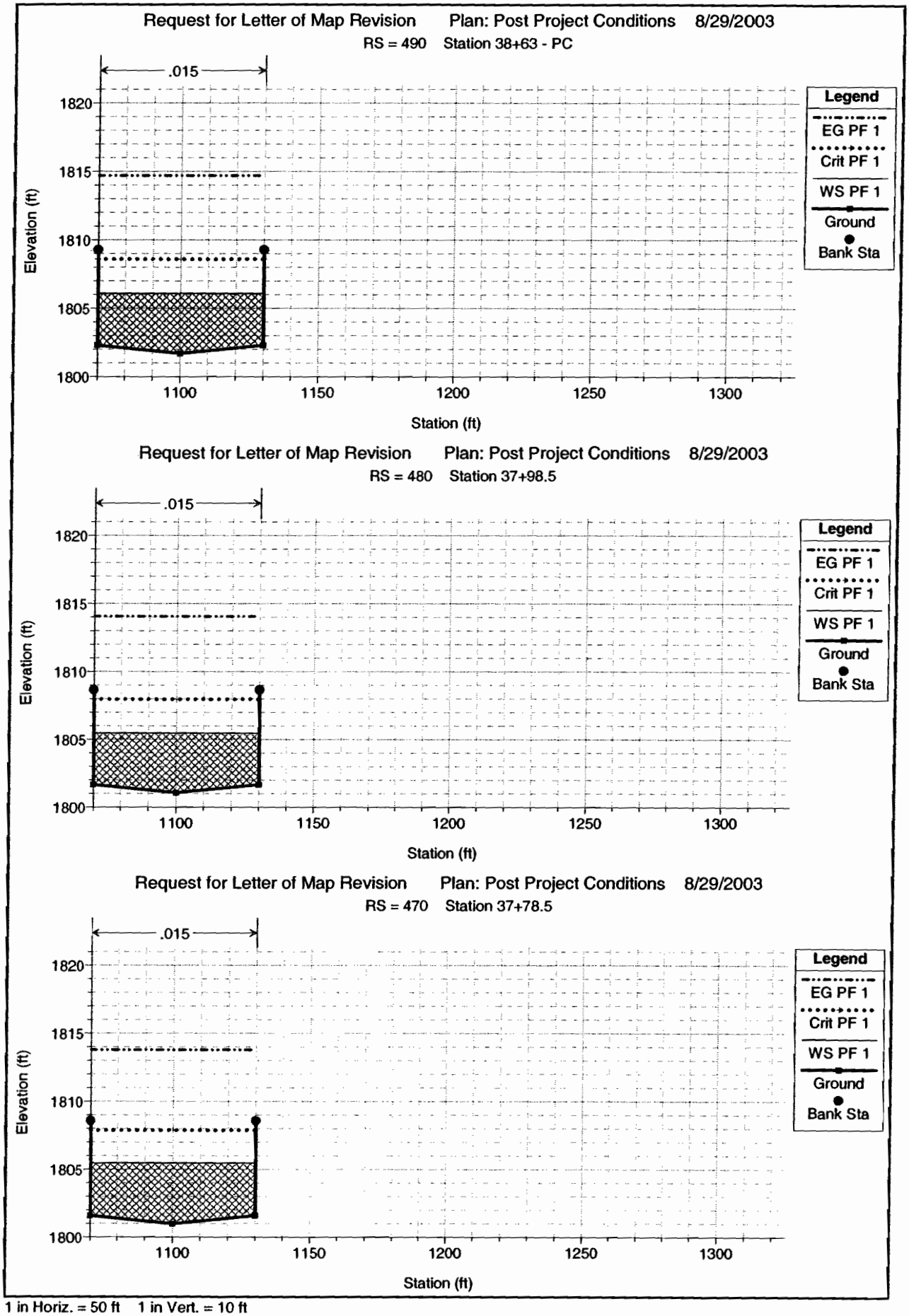
RS = 520 Station 53+50 - Grade Break / Transition



1 in Horiz. = 50 ft 1 in Vert. = 10 ft



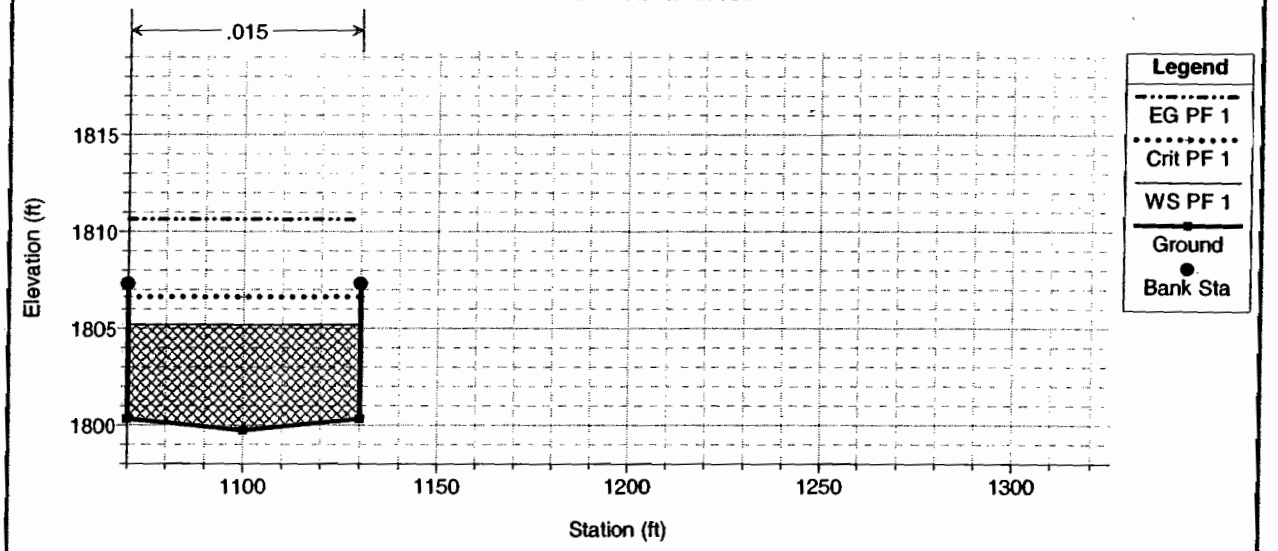
1 in Horiz. = 50 ft 1 in Vert. = 10 ft



1 in Horiz. = 50 ft 1 in Vert. = 10 ft

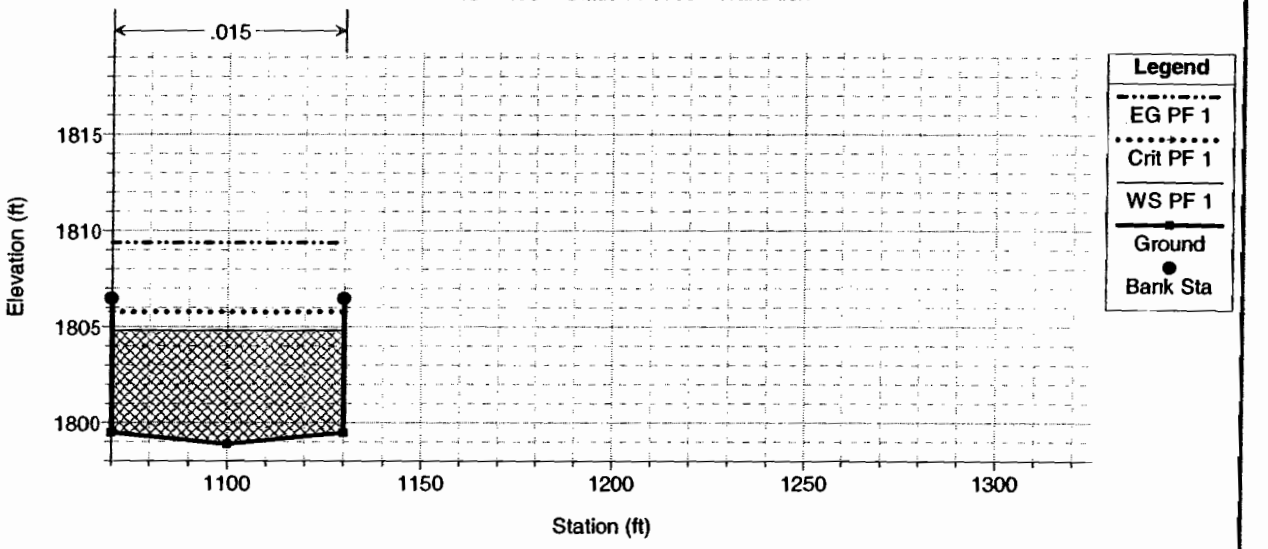
Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

RS = 460 Station 37+36 PT



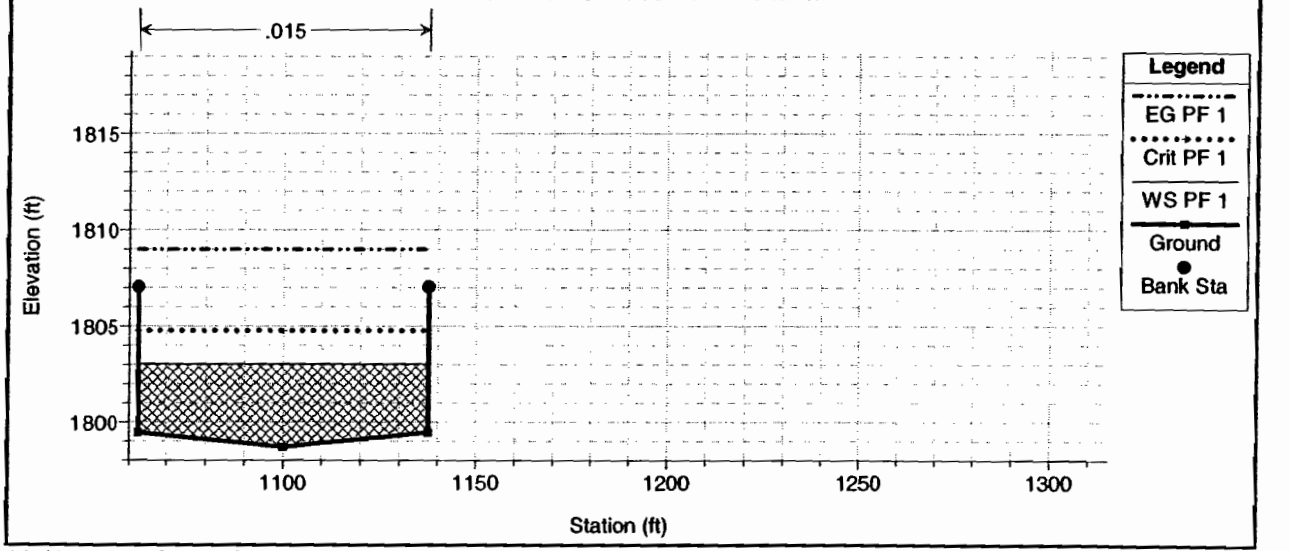
Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

RS = 450 Station 32+00 - Transition

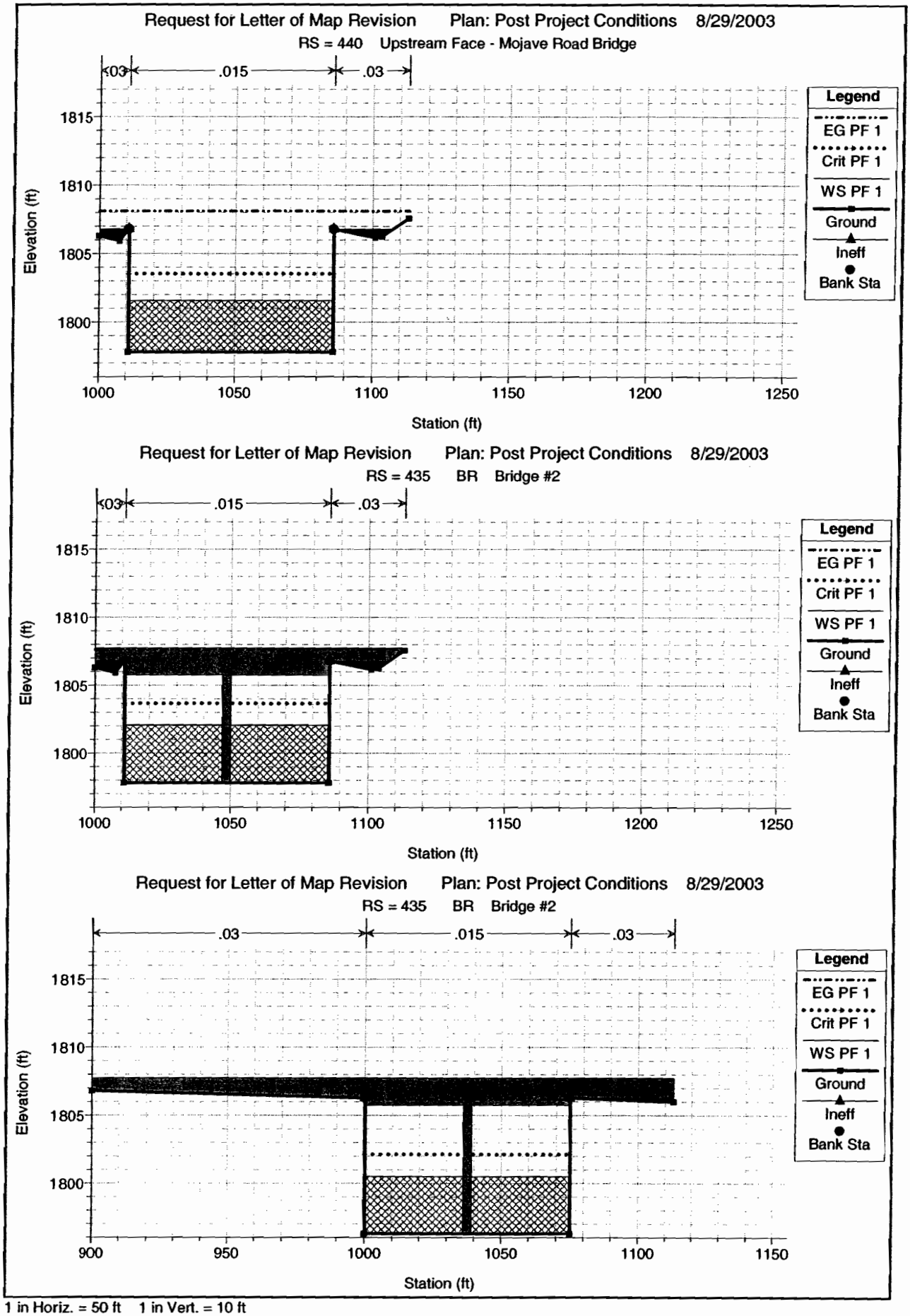


Request for Letter of Map Revision Plan: Post Project Conditions 8/29/2003

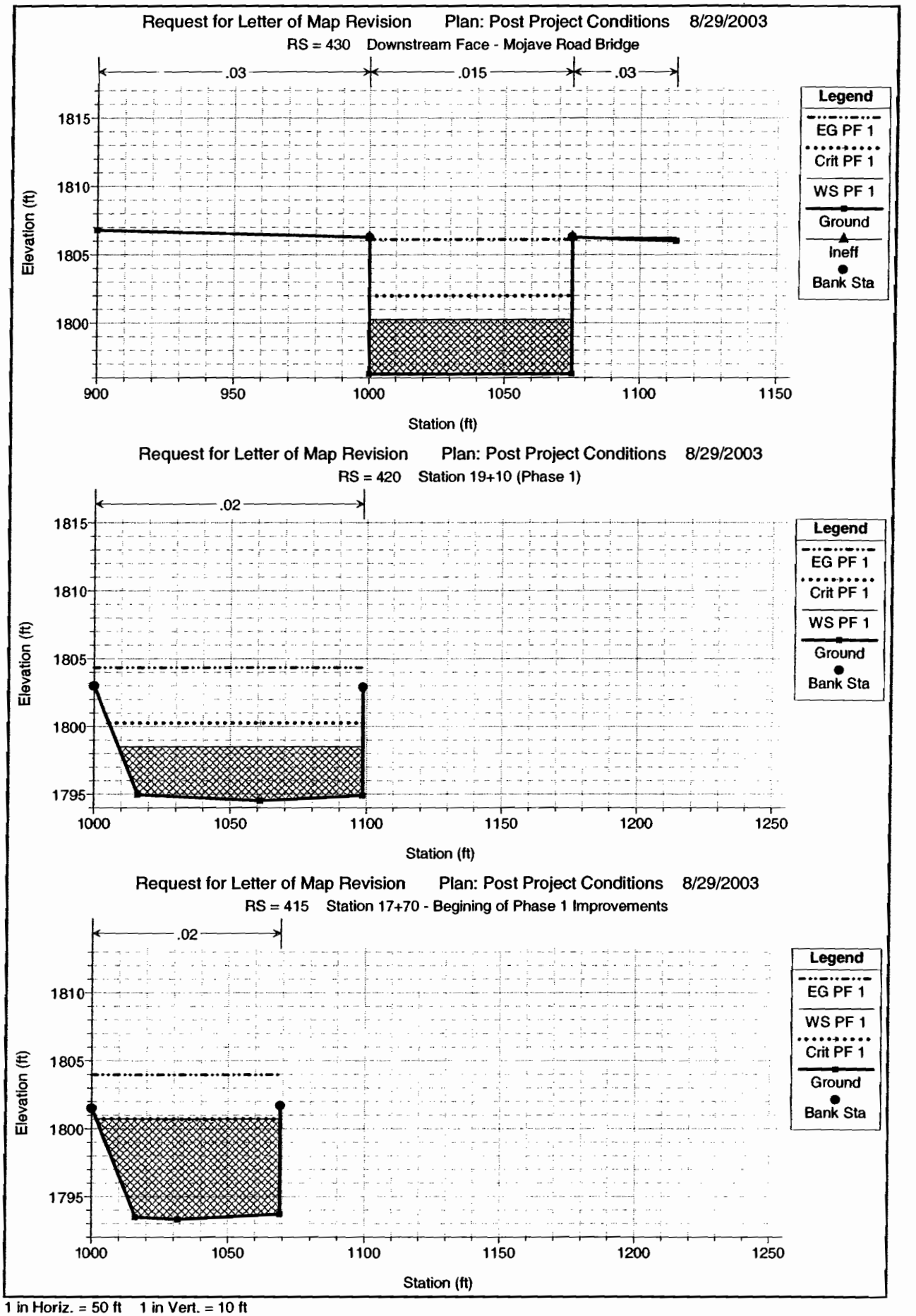
RS = 445 Station 31+50 - Transition



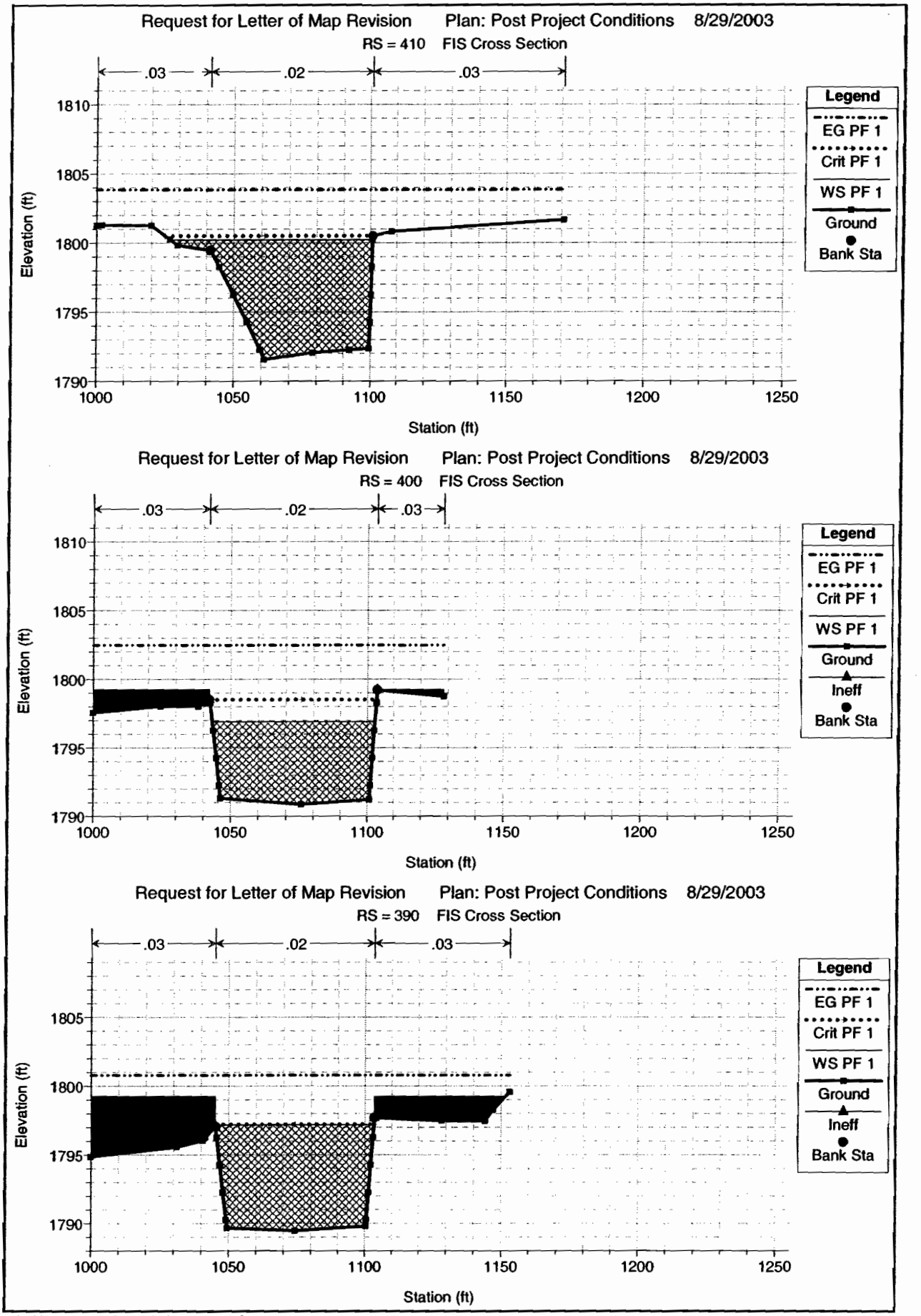
1 in Horiz. = 50 ft 1 in Vert. = 10 ft



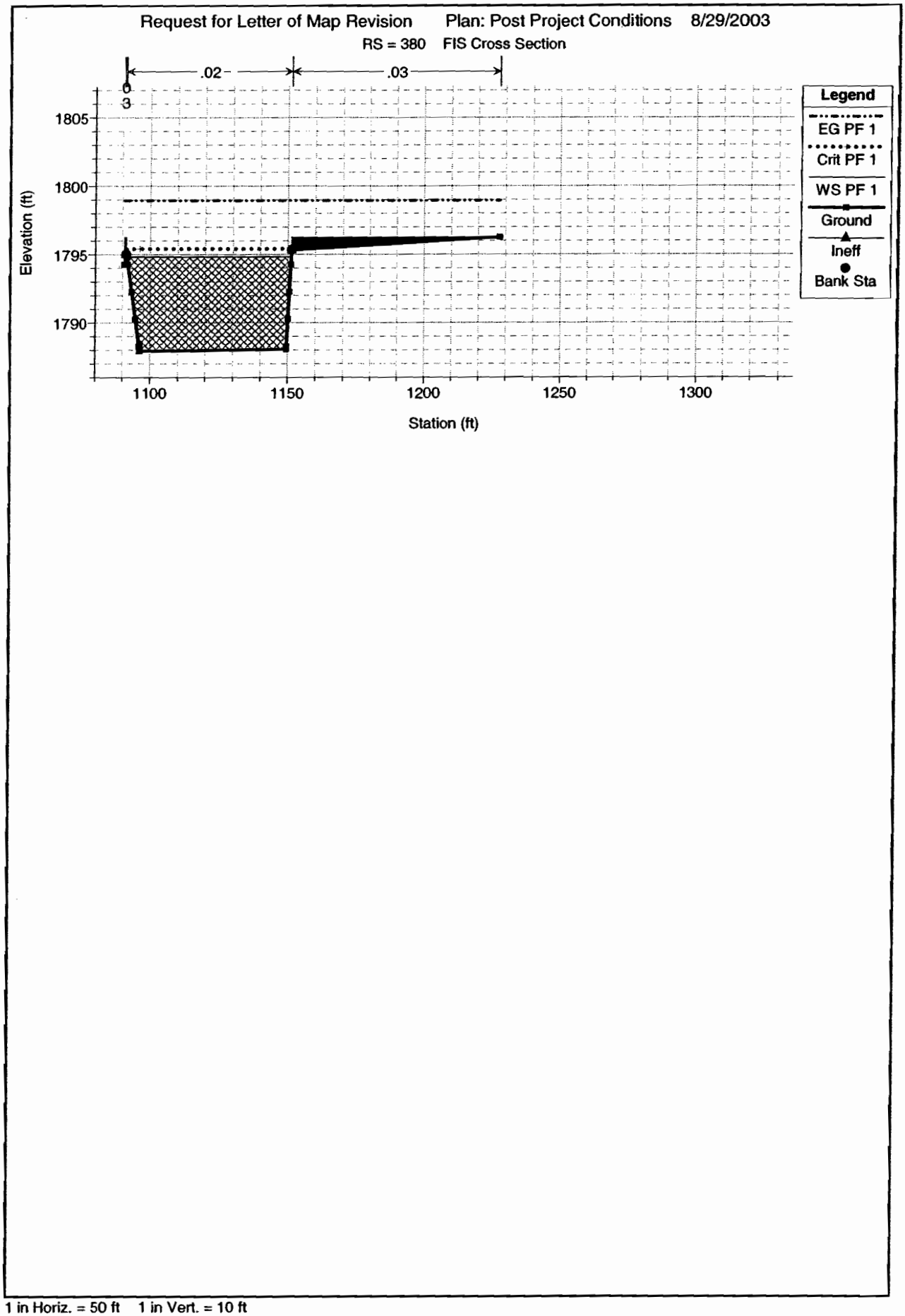
1 in Horiz. = 50 ft 1 in Vert. = 10 ft



1 in Horiz. = 50 ft 1 in Vert. = 10 ft



1 in Horiz. = 50 ft 1 in Vert. = 10 ft



1 in Horiz. = 50 ft 1 in Vert. = 10 ft

CHECK-RAS Output Files

CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.prj
Plan File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.p02
Geometry File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.g02
Flow File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.f02
Report File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.nt
Selected profiles: PF 1
Date: 9/5/2003
Time: 10:12:33 AM

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP
RIVER-1,Reach-1						
640		0.02	0.015	0.02	0.1	0.3
630		0.02	0.015	0.02	0.1	0.3
620		0.02	0.015	0.02	0.1	0.3
610		0.02	0.015	0.02	0.1	0.3
600		0.02	0.015	0.02	0.1	0.3
595	Bridge-Up	0.02	0.015	0.02	0.1	0.3
595	Bridge-Dn	0.02	0.015	0.02	0.3	0.5
590		0.02	0.015	0.02	0.3	0.5
580		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
570		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
560		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
550		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
540		-----	0.015	0.025	0.1	0.3
		-----	0.025	-----		
530		-----	0.015	0.025	0.1	0.3
		-----	0.025	-----		
520		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
510		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
505		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
500		-----	0.015	0.025	0.1	0.3
		-----	0.025	-----		
490		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
480		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
470		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
460		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
450		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
445		-----	0.025	0.025	0.1	0.3
		-----	0.015	-----		
440		0.03	0.015	0.03	0.3	0.5
435	Bridge-Up	0.03	0.015	0.03	0.3	0.5
435	Bridge-Dn	0.03	0.015	0.03	0.3	0.5
430		0.03	0.015	0.03	0.3	0.5
420		-----	0.03	0.03	0.3	0.5
		-----	0.02	-----		
415		-----	0.02	0.03	0.3	0.5
		-----	0.03	-----		
410		0.03	0.02	0.03	0.1	0.3
400		0.03	0.02	0.03	0.1	0.3
390		0.03	0.02	0.03	0.1	0.3
380		0.03	0.02	0.03	0.1	0.3

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.02	0.03
Right Overbank n Value:	0.02	0.03

Channel n Value:	0.015	0.03
Contraction Coefficient:	0.1	0.3
Expansion Coefficient:	0.3	0.5

ROUGHNESS COEFFICIENT CHECK

RS: 640
NT RC 01 Left 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: 640
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: 640
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: 630
NT RC 01 Left 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: 630
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: 630
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: 620
NT RC 01 Left 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: 620
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: 620
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: 610
NT RC 01 Left 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: 610
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: 610
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: 600

NT RC 01 Left 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: 600
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: 600
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: 595
NT RC 01 Left 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: 595
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: 595
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: 595
NT RC 01 Left 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: 595
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: 595
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: 590
NT RC 01 Left 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: 590
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: 590
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: 580
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: 580
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:       570
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:       570
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:       560
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:       560
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:       550
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:       550
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:       540
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:       540
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:       530
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:       530
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:       520
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:       520
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:       510
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:       510
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: 505
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: 505
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: 500
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: 500
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: 490
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: 490
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: 480
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: 480
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: 470
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: 470
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: 460
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: 460
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: 450
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:       450
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:       445
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:       445
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:       440
NT RC 01 Left 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:       440
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:       440
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:       435
NT RC 01 Left 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:       435
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:       435
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:       435
NT RC 01 Left 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:       435
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:       435
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:       430
NT RC 01 Left 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:       430
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:       430
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:       420
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:       415
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:       410
NT RC 01 Left 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:       410
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:       410
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:       400
NT RC 01 Left 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:       400
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:       400
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:       390
NT RC 01 Left 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:       390
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:       390
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:       610
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:       600
```

```
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:      595
NT TL 01 This is section Bridge-Up
         Contraction and expansion loss coefficients are 0.1 and 0.3
         They should be equal to 0.3 and 0.5 respectively.

RS:      445
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:      420
NT TL 02 Contraction and expansion loss coefficients are 0.3 and 0.5
         respectively. However, this cross section is not at the structure.
         They should be equal to 0.1 and 0.3.

RS:      415
NT TL 02 Contraction and expansion loss coefficients are 0.3 and 0.5
         respectively. However, this cross section is not at the structure.
         They should be equal to 0.1 and 0.3.

ROUGHNESS COEFFICIENT AT STRUCTURES
-----------------------------------

RS:      595
NT RS 02 The channel n value of 0.015 for the upstream internal bridge opening
         section is equal or larger than the channel n value of 0.015 at Section 3.
         Usually, the channel n value of the bridge opening section is
         less than the channel n value of Section 3.
         The selection of the n value(s) should be reevaluated.

RS:      595
NT RS 02 The channel n value of 0.015 for the downstream internal bridge opening
         section is equal or larger than the channel n value of 0.015 at Section 2
         Usually, the channel n value of the bridge opening section is
         less than the channel n value of Section 2.
         The selection of the n value(s) should be reevaluated.

RS:      435
NT RS 02 The channel n value of 0.015 for the upstream internal bridge opening
         section is equal or larger than the channel n value of 0.015 at Section 3.
         Usually, the channel n value of the bridge opening section is
         less than the channel n value of Section 3.
         The selection of the n value(s) should be reevaluated.

RS:      435
NT RS 02 The channel n value of 0.015 for the downstream internal bridge opening
         section is equal or larger than the channel n value of 0.015 at Section 2
         Usually, the channel n value of the bridge opening section is
         less than the channel n value of Section 2.
         The selection of the n value(s) should be reevaluated.

---END---
```

CHECK-RAS Program, XS Check
Cross Section Location and Alignment Review

Project File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.prj
Plan File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.p02
Geometry File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.g02
Flow File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.f02
Report File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.xs
Selected profiles: PF 1
Date: 9/5/2003
Time: 10:12:11 AM

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code
RIVER-1,Reach-1						
640	251.59	258.21	262.14	66.56	5800	C
630	229.09	221.03	213.86	51.88	5800	
620	223.64	212.31	202.43	47.06	5800	
610	230.78	215.38	201.73	46.84	5800	B
600	93.41	93.51	94.92	53.84	5800	B
595	Single BR-Up					
595	Single BR-Dn					
590	16.02	15.77	16.7	53.84	5800	B
580	658	658	658	70.38	5800	
570	566.67	584.2	601.73	74.34	5800	
560	252.78	262.84	272.87	74.64	5800	
550	209.44	217.76	226.09	74.62	5800	
540	232.24	232.24	232.24	75.61	5800	
530	100	100	100	76.13	5800	
520	201.5	201.5	201.5	60	5800	
510	806.7	793.47	780.25	60	5800	
505	59	59	59	60	5800	
500	454.21	432.58	410.95	60	5800	
490	64.61	64.61	64.61	60	5800	
480	20	20	20	60	5800	
470	342.31	342.31	342.31	60	5800	
460	232.69	236.24	239.78	60	5800	
450	48.98	49.72	50.47	60	5800	
445	94.83	106.25	100.54	75	5800	
440	183.21	197.38	206.01	75	5800	B
435	Single BR-Up					
435	Single BR-Dn					
430	193.4	187.5	181.7	75	5800	B
420	143.6	140	136.6	89.56	6300	
415	109.9	108.5	106.7	67.45	6300	C
410	236.79	222.64	212.87	74.11	6300	
400	216.05	216.12	217.6	59.55	6300	B
390	420.9	420.9	420.21	58.1	6300	E,B
380	0	420.9	0	59.85	6300	E,B

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: 590
XS DT 01 Both right and left overbank distances are longer than the channel distance.

SPACING CHECK

INEFFECTIVE FLOW CHECK

DISCHARGE CHECK

LOCATION CHECK

BOUNDARY CONDITION CHECK

XS BC 02 The name of the stream is RIVER-1,Reach-1
Critical is specified as the upstream boundary
for profile PF 1

XS FR 01 The profile is computed as supercritical flow regime.

---END---

CHECK-RAS Program: Structure Check

Project File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.prj
Plan File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.p02
Geometry File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.g02
Flow File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.f02
Report File: E:\879-Flamingo\HEC-Ras\879_P_Flamingo.br
Selected profiles: PF 1
Date: 9/5/2003
Time: 10:12:14 AM

RS	MaxLoChord	MnTpRd	EGEL	WSEL	MinChEl	Structure
RIVER-1,Reach-1						
640			1866.18	1862.89	1853.63	
630			1864.92	1856.86	1850.36	
620			1863.21	1854.04	1847.74	
610			1861.29	1850.9	1844.88	
600			1857.49	1840.65	1837.36	
590			1854.35	1840.02	1836.47	
580			1853.8	1838.88	1835.69	
570			1841.47	1833.66	1829.48	
560			1835.71	1828.24	1823.98	
550			1833.25	1825.75	1821.5	
540			1831.13	1824.58	1820.08	
530			1829.31	1823.2	1818.57	
520			1828.53	1821.59	1816.72	
510			1826.93	1819.36	1814.68	
505			1819.65	1811.09	1806.67	
500			1819.05	1810.5	1806.08	
490			1814.71	1806.11	1801.7	
480			1814.06	1805.48	1801.07	
470			1813.79	1805.47	1800.99	
460			1810.65	1805.2	1799.74	
450			1809.38	1804.82	1798.88	
445			1808.99	1803.02	1798.7	
440			1808.12	1801.59	1797.82	
430			1806.13	1800.27	1796.29	
420			1804.36	1798.52	1794.52	
415			1803.96	1800.72	1793.32	
410			1803.85	1800.24	1791.56	
400			1802.49	1796.91	1790.86	
390			1800.79	1797.18	1789.46	
380			1798.96	1794.84	1787.94	

RIVER/REACH: RIVER-1, Reach-1
RIVER STATION: 595
TYPE OF STRUCTURE: Bridge

Description:	Bridge #1
Distance from Upstream XS:	1
Deck/Roadway Width:	91.51
Weir Coefficient:	2.6
Maximum allowable submergence for weir flow:	0.95
Elevation at which weir flow begins:	1848.76
Weir crest shape:	Broad Crested

Sec	River Station	Length Channel	WSEL	Surch.	EGEL	TopWidth Actual	
4	610	215.38	1850.9		1861.29	46.84	
3	600	93.51	1840.65		1857.49	53.84	
	595	91.51	0		0	Null	Single BR-Up
	595	1.00	0		0	Null	Single BR-Dn
2	590	15.77	1840.02		1854.35	53.84	
1	580	658.00	1838.88		1853.8	70.38	

	Ineffective Flow, Section 3			Ineffective Flow, Section 2		
	Sta L	Sta R	Elev	Sta L	Sta R	Elev
1	888	0	0	888	0	0
2	0	0	0	0	0	0

BRIDGE:
Bridge Name: Single BR
LowFlowMethod: Yarnell
Momentum Cd: 0
HighFlowMethod: Pressure and Weir flow
SluiceGate Cd: 0 Submerged Cd: 0.8006408

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

---

MaxLowChord: 1845.39 MinTopRd: 0 MinElPrs: 1845.39

Opening Type	StagStaL	StagStaR	EncStaL	EncStaR	LIfStaS	RIfStaS
Bridge					0	U
					0	D

	LAbutSt	RAbutSt	LMnTpRd	RMnTpRd	MnTpRd	MxLoCd
Single BR	1081.85	1135.69	1837.39	1837.39	1837.39	1845.39 U
	1031.20	1085.04	1848.76	1848.76	1848.76	1845.39 D

Name	Q Total.	Q Struc	Q Weir	Selected Method	Flow Type
Single BR	5800	5800	0	Energy only	UNKNOWN

GEOMETRIC CHECK

RS: 595
ST GD 03 The end station of 1135.69 from upstream road/weir data
is less than the end station of 1170.43 from upstream internal
section/section 3.
The high chord elevation of 1848.76 for the end road/weir station is
greater than the ground elevation of 1837.39 for the same ground station.
The road/weir profile may need to be extended.

TYPE OF FLOW CHECK

RS: 595 This is Single BR
BR TF 01 Type of flow is UNKNOWN.
CHECKRAS can not find MxLoCd or MnTpRd elevation
or the given conditions do not satisfy the type of flow
specified in the CHECK-RAS program.
Please review the ground and road data, and encroachment stations.
or please review the messages, BR LF 01, BR PF 01, BR PF 02, BR LW 01
BR PW 01 for bridges to determine the type of flow.

RIVER/REACH: RIVER-1, Reach-1
RIVER STATION: 435
TYPE OF STRUCTURE: Bridge

Description:	Bridge #2
Distance from Upstream XS:	1
Deck/Roadway Width:	195.38
Weir Coefficient:	2.6
Maximum allowable submergence for weir flow:	0.95
Elevation at which weir flow begins:	1807.75
Weir crest shape:	Broad Crested

Sec	River Station	Length Channel	WSEL	Surch.	EGEL	TopWidth Actual	
4	445	106.25	1803.02		1808.99	75	
3	440	197.38	1801.59		1808.12	75	
	435	195.38	0		0	Null	Single BR-Up
	435	1.00	0		0	Null	Single BR-Dn
2	430	187.50	1800.27		1806.13	75	
1	420	140.00	1798.52		1804.36	89.56	

	Ineffective Flow, Section 3			Ineffective Flow, Section 2		
	Sta L	Sta R	Elev	Sta L	Sta R	Elev
1	888	0	0	888	0	0
2	0	0	0	0	0	0

BRIDGE:
Bridge Name: Single BR
LowFlowMethod: Yarnell
Momentum Cd: 0
HighFlowMethod: Pressure and Weir flow
SluiceGate Cd: 0 Submerged Cd: 0.8006408

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

MaxLowChord: 1805.75 MinTopRd: 0 MinElPrs: 1805.75

Opening Type	StagStaL	StagStaR	EncStaL	EncStaR	LIfStaS	RIfStaS	
Bridge					0		U
					0		D

	LAbutSt	RAbutSt	LMnTpRd	RMnTpRd	MnTpRd	MxLoCd	
Single BR	1010.88	1085.88	1807.75	1807.55	1807.55	1805.75	U
	1000.00	1075.00	1807.75	1807.75	1807.75	1805.75	D

Name	Q Total.	Q Struc	Q Weir	Selected Method	Flow Type
Single BR	5800	5800	0	Energy only	UNKNOWN

GEOMETRIC CHECK

RS: 435
ST GD 03 The starting station of 900 from upstream road/weir data
is less than the starting station of 1000 from upstream internal
section/ secion 3.
The high chord elevation of 1807.75 for the starting road/weir station is

greater than the ground elevation of 1806.3 for the starting ground station.
The EGEL at section 3 of 1808.12 is greater than the ground elevation.
The road/weir data should be included in the ground data

RS: 435
ST GD 03 The end station of 1113.05 from upstream road/weir data
is less than the end station of 1113.11 from upstream internal
section/section 3.
The high chord elevation of 1807.75 for the end road/weir station is
greater than the ground elevation of 1807.552 for the same ground station.
The road/weir profile may need to be extended.

RS: 435
ST GD 04 There is only one bridge. This is upstream bridge section.
However, the low chord line crosses the ground line at more than
two locations.
The ground and deck/roadway data should be checked.

---END

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   28AUG03  TIME  14:25:39   *
*                                       *
*****************************************
```

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

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

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

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

1 HEC-1 INPUT PAGE 1

```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
              *DIAGRAM
    1         ID               McCARRAN INTERNATIONAL AIRPORT, LAS VEGAS, NV.
    2         ID              HYDROLOGIC MODEL PREPARED BY: LOUIS BERGER GROUP
    3         ID       ---------PRELIMINARY DESIGN, RUSSELL RD RELOCATION----------
    4         ID
    5         ID            ---------EXISTING CONDITIONS ANALYSIS------------
    6         ID
    7         ID       THIS FILE IS A COMPOSITE OF THREE HYDROLOGIC MODELS DEVELOPED BY:
    8         ID          PENTACORE ENGINEERING, PARADISE ROAD EXTENSION, JUNE 1992
    9         ID            BOYLE ENGINEERING, RUNWAY 7L-25R EXTENSION, MARCH 1993
   10         ID       PBS&J ENGINEERING,TERMINAL "D" SITEWORK AND TAXIWAY, JULY 2000
   11         ID
   12         ID       ************************************************************
   13         ID       * WASH NAME/          AREA         D.A.R.F.          RATIO      *
   14         ID       * CONCEN. PT.         SQ. MI.                        NUMBER     *
   15         ID       * ---------------------------------------------------------    *
   16         ID       * 100-YEAR             0.0000        1.000             1
   17         ID       * SPENCER POND          .9376        0.971             2        *
   18         ID       * EAST AIRPORT POND    1.9542        0.932             3        *
   19         ID       * RAWHIDE CHANNEL      2.8953        0.921             4        *
   20         ID       * 10-YEAR                            0.570             5
   21         ID       ************************************************************
   22         ID
   23         ID
   24         IT       3       0       0     300
   25         IN       5       0       0
   26         IO       5       0       0
   27         JR     PREC   0.971    .971    .932    .921   0.570

   28         KK       B1 DRAINAGE AREA B1
   29         KM       ************************************************************
   30         KM        THE FOLLOWING DATA WAS DEVLOPED BY PENTACORE ENGINEERING, FOR THE
   31         KM                    PARADISE ROAD EXTENSION, JUNE 1992
   32         KM       ************************************************************
   33         BA    .0173
   34         PC     .000   0.020    .057    .070    .087    .108    .124    .130    .130    .130
   35         PC     .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
   36         PC     .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
   37         PC     .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
   38         PC     .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
   39         PC     .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
   40         PC     .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
   41         PC     .998    .999   1.00
   42         PB    2.77
   43         LS       0      95
   44         UD     .12

   45         KK       R1 ROUTE FLOWS NORTH IN 30" SD
   46         RK      300    .006    .013       0    CIRC     2.5
```

1 HEC-1 INPUT PAGE 2

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

   47         KK       B2 DRAINAGE AREA B2
   48         BA    .0581
   49         LS       0      95
   50         UD     .16

   51         KK       C1 COMBINE FLOWS IN 48" SD CP#1
   52         HC        2

   53         KK     DIV2 DIVERT FLOWS TO DETENTION BASIN 1 IN 48" SD
   54         DT       D2
   55         DI        0      50     100     200     400    1000
   56         DQ        0      50     100     100     100     100

   57         KK       A1 DRAINAGE AREA A1
   58         BA    .0302
   59         LS       0      95
   60         UD     .24

   61         KK       C2 COMBINE FLOWS AT CP#2
   62         HC        2
```

Proposed Hydraulic Model

Appendix C

Proposed Subcritical HECRAS Model

Appendix C.1

HEC-RAS Version 3.1.3 May 2005
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: FWash LOMR Sp St. to DI Subcritical run
Project File : FWLomr_sub.prj
Run Date and Time: 1/10/2007 5:24:45 PM

Project in English units

Project Description:
FWash LOMR Sp St. to DI Subrcritical run

****

PLAN DATA

Plan Title: 70percent n=0.013
Plan File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Subcritical HECRAS Model\FWLomr_sub.p01

Geometry Title: FMWash LOMR Geometry
Geometry File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Subcritical HECRAS Model\FWLomr_sub.g02

Flow Title : 100-yr +
Flow File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Subcritical HECRAS Model\FWLomr_sub.f04

Plan Summary Information:
Number of: Cross Sections = 102 Multiple Openings = 0
Culverts = 2 Inline Structures = 0
Bridges = 1 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: 100-yr +
Flow File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Subcritical HECRAS Model\FWLomr_sub.f04

Flow Data (cfs)

River	Reach	RS	100-yr FIS
Flamingo Wash	1	8837.78	5500
Flamingo Wash	1	2702.87	5500
Flamingo Wash	1	1558.62	5800
Flamingo Wash	1	926	5800
Flamingo Wash	1	702.71	5800
Flamingo Wash	1	223.47	5800

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Flamingo Wash	1	100-yr FIS	Normal S = 0.0087	Normal S = 0.01

****

GEOMETRY DATA

Geometry Title: FMWash LOMR Geometry
Geometry File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Subcritical HECRAS Model\FWLomr_sub.g02

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 8837.78

INPUT
Description: X-section 24 from Case no. 04-09-0167P LOMR
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1075	1940.62	1075	1925.3	1100	1924.8	1125	1925.3	1125	1940.62

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    1075    .025    1075    .025    1125    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1075    1125               30      30      30             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)          * 1938.82  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.19  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 1937.64  * Reach Len. (ft)        *   30.00  *   30.00  *   30.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          *  629.31  *          *
* E.G. Slope (ft/ft)      *0.001261  * Area (sq ft)           *          *  629.31  *          *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)          *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)        *    8.74  * Avg. Vel. (ft/s)       *          *    8.74  *          *
* Max Chl Dpth (ft)       *   12.84  * Hydr. Depth (ft)       *          *   12.59  *          *
* Conv. Total (cfs)       *154887.5  * Conv. (cfs)            *          *154887.5  *          *
* Length Wtd. (ft)        *   30.00  * Wetted Per. (ft)       *          *   74.68  *          *
* Min Ch El (ft)          * 1924.80  * Shear (lb/sq ft)       *          *    0.66  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    5.80  *          *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)   *    8.09  *   82.27  *   11.46  *
* C & E Loss (ft)         *    0.21  * Cum SA (acres)         *    4.85  *   11.15  *    5.42  *
*****************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 8807.78

INPUT
Description: X-section 22 from Case no. 04-09-0167P LOMR
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
 1062.251939.865 1092.251924.865    1100 1924.71 1107.751924.865 1137.751939.865

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 1062.25    .025 1062.25    .025 1137.75    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1062.25 1137.75             120     120     120             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)          * 1938.54  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    3.33  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)          * 1935.21  * Reach Len. (ft)        *  120.00  *  120.00  *  120.00  *
* Crit W.S. (ft)          * 1935.21  * Flow Area (sq ft)      *          *  375.66  *          *
* E.G. Slope (ft/ft)      *0.005466  * Area (sq ft)           *          *  375.66  *          *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)          *   56.89  * Top Width (ft)         *          *   56.89  *          *
* Vel Total (ft/s)        *   14.64  * Avg. Vel. (ft/s)       *          *   14.64  *          *
* Max Chl Dpth (ft)       *   10.50  * Hydr. Depth (ft)       *          *    6.60  *          *
* Conv. Total (cfs)       * 74390.4  * Conv. (cfs)            *          * 74390.4  *          *
* Length Wtd. (ft)        *  120.00  * Wetted Per. (ft)       *          *   61.77  *          *
* Min Ch El (ft)          * 1924.71  * Shear (lb/sq ft)       *          *    2.08  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *   30.38  *          *
* Frctn Loss (ft)         *    0.65  * Cum Volume (acre-ft)   *    8.09  *   81.92  *   11.46  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)         *    4.85  *   11.11  *    5.42  *
*****************************************************************************************************

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 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: Flamingo Wash
REACH: 1                  RS: 8687.78

INPUT
Description: X-section 20 from Case no. 04-09-0167P LOMR
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
  1064.41936.236  1087.71924.586    1100 1924.34  1112.31924.586  1135.61936.236

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
  1064.4    .025  1064.4    .025  1135.6    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         1064.4  1135.6           382.58  367.78  346.32             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)          * 1936.73  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    3.20  * Wt. n-Val.             *          *   0.025  *          *
```

W.S. Elev (ft)	1933.54	Reach Len. (ft)	382.58	367.78	346.32	
Crit W.S. (ft)	1933.54	Flow Area (sq ft)		383.39		
E.G. Slope (ft/ft)	*0.005425	Area (sq ft)		383.39		
Q Total (cfs)	5500.00	Flow (cfs)		5500.00		
Top Width (ft)	60.40	Top Width (ft)		60.40		
Vel Total (ft/s)	14.35	Avg. Vel. (ft/s)		14.35		
Max Chl Dpth (ft)	9.20	Hydr. Depth (ft)		6.35		
Conv. Total (cfs)	74674.7	Conv. (cfs)		74674.7		
Length Wtd. (ft)	368.03	Wetted Per. (ft)		64.63		
Min Ch El (ft)	1924.34	Shear (lb/sq ft)		2.01		
Alpha	1.00	Stream Power (lb/ft s)		28.82		
Frctn Loss (ft)	2.00	Cum Volume (acre-ft)	8.09	80.88	11.46	
C & E Loss (ft)	0.41	Cum SA (acres)	4.85	10.95	5.42	

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 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: Flamingo Wash
REACH: 1 RS: 8320

INPUT
Description: X-section 10 from Case no. 04-09-0167P LOMR
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1937.36	1049.49	1936.26	1095.06	1934.26	1144.27	1932.26	1220.49	1930.39
1220.83	1930.26	1228.41	1928.26	1235.7	1926.26	1237.99	1925.61	1249.9	1924.26
1252.38	1923.96	1254.61	1924.26	1271.01	1926.26	1272.95	1926.49	1279.8	1927.8
1285.65	1928.26	1306.65	1930.26	1322.46	1932.26	1329.96	1933.29	1344.12	1934.26
1372.27	1936.26	1402.27	1938.26	1409.32	1938.72	1418.36	1939.14	1426.01	1940.26
1436.49	1941.26	1496.07	1942.26	1580.86	1943.11	1671.03	1944.26	1677.54	1944.52
1685.16	1944.66	1718.9	1946.26						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	1220.49	.03	1306.65	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
1220.49 1306.65 120 120 120 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1934.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.82	Wt. n-Val.	0.035	0.030	0.035
W.S. Elev (ft)	1932.43	Reach Len. (ft)	120.00	120.00	120.00
Crit W.S. (ft)	1932.43	Flow Area (sq ft)	84.57	463.60	18.60
E.G. Slope (ft/ft)	*0.005458	Area (sq ft)	84.57	463.60	18.60
Q Total (cfs)	5500.00	Flow (cfs)	274.31	5164.19	61.51
Top Width (ft)	183.61	Top Width (ft)	80.40	86.16	17.05
Vel Total (ft/s)	9.70	Avg. Vel. (ft/s)	3.24	11.14	3.31
Max Chl Dpth (ft)	8.47	Hydr. Depth (ft)	1.05	5.38	1.09
Conv. Total (cfs)	74444.3	Conv. (cfs)	3712.8	69898.9	832.5
Length Wtd. (ft)	120.00	Wetted Per. (ft)	80.43	87.29	17.18
Min Ch El (ft)	1923.96	Shear (lb/sq ft)	0.36	1.81	0.37
Alpha	1.24	Stream Power (lb/ft s)	1.16	20.16	1.22
Frctn Loss (ft)	0.71	Cum Volume (acre-ft)	7.72	77.30	11.39
C & E Loss (ft)	0.05	Cum SA (acres)	4.49	10.33	5.35

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: Flamingo Wash
REACH: 1 RS: 8200

INPUT
Description: 8200
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1937.82	3.6581937.838		10.6881937.934		19.7231938.023		20.9691938.058	
29.6781937.831		41.0151937.492		43.7331937.428		44.6641937.407		45.484	1937.36
47.7651937.247		70.8731936.194		76.421935.774		80.1531935.466		85.5271935.228	
96.2841934.653		109.7221934.061		121.6841933.445		129.993	1933.07	147.0811932.337	
150.484	1932.13	159.1321931.786		171.7981931.641		172.4861931.644		176.2051931.575	
197.891931.208		200.14	1931.31	207.2751931.405		215.4191931.054		223.2911930.635	
238.404	1930.16	239.6571930.113		243.561928.243		251.3841924.516		252.5161924.447	
260.111923.987		262.0981923.188		264.9271921.795		279.1551922.147		279.7531922.158	
285.4441923.947		288.8411924.505		293.9851926.031		300.481927.722		301.7351928.178	
308.1061928.621		321.971929.582		323.1111929.671		324.8981929.797		326.1821929.909	
342.5171931.044		342.9141931.073		347.3781931.407		350.2991931.558		359.656	1932.29
372.8841933.413		373.621933.478		385.3711934.642		396.29	1935.73	398.941935.916	
412.717	1936.97	414.8221937.122							

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
*********************************************
       0     .03 239.657     .04 301.735     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       239.657 301.735               100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1933.39  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.66  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1931.73  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 1931.18  * Flow Area (sq ft)      *   45.04  *  448.32  *   89.84  *
* E.G. Slope (ft/ft)      *0.006424  * Area (sq ft)           *   45.04  *  448.32  *   89.84  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *  126.58  * 4852.37  *  521.05  *
* Top Width (ft)          *  188.40  * Top Width (ft)         *   75.57  *   62.08  *   50.75  *
* Vel Total (ft/s)        *    9.43  * Avg. Vel. (ft/s)       *    2.81  *   10.82  *    5.80  *
* Max Chl Dpth (ft)       *    9.93  * Hydr. Depth (ft)       *    0.60  *    7.22  *    1.77  *
* Conv. Total (cfs)       * 68621.6  * Conv. (cfs)            *  1579.3  * 60541.3  *  6501.0  *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)       *   75.60  *   64.68  *   50.88  *
* Min Ch El (ft)          * 1921.80  * Shear (lb/sq ft)       *    0.24  *    2.78  *    0.71  *
* Alpha                   *    1.20  * Stream Power (lb/ft s) *    0.67  *   30.09  *    4.11  *
* Frctn Loss (ft)         *    0.51  * Cum Volume (acre-ft)   *    7.54  *   76.04  *   11.24  *
* C & E Loss (ft)         *    0.18  * Cum SA (acres)         *    4.28  *   10.13  *    5.26  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 8100.*

INPUT
Description:
Station Elevation Data    num=     142
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
       0 1937.05    4.27 1936.95       7 1936.89    9.01  1936.8   12.47 1936.76
   19.96 1936.67   23.01 1936.65   24.47 1936.65    28.4 1936.56   29.58 1936.53
   31.21 1936.48   33.18 1936.36   34.63 1936.34   46.76 1936.15   47.86 1936.13
   51.03 1936.07   52.12 1936.05   52.84 1936.03   53.07 1936.02   55.74 1935.92
   56.96 1935.88   74.73 1935.27    82.7 1934.99   89.17 1934.68   91.16 1934.58
   93.53 1934.47   96.61 1934.38    99.8 1934.31  112.25 1933.97  112.35 1933.97
   118.5 1933.81  125.25 1933.65  128.03 1933.58  140.38 1933.26  141.99 1933.21
  151.17 1932.95  151.69 1932.94  157.16 1932.82  159.24 1932.64  168.92  1932.1
  171.63 1931.94  174.99  1931.7   175.6 1931.67  179.66 1931.52  184.16 1931.39
  185.69 1931.35  200.47 1931.11  201.27  1931.1  201.63 1931.09  205.61 1931.03
  206.98 1931.01  225.06 1929.68  225.71 1929.63  226.32 1929.58  226.33 1929.58
  230.92 1929.55  233.54 1929.61  237.15 1929.63  241.87 1929.72  246.15 1929.69
  249.85 1929.68  251.37 1929.61  260.56 1929.17  261.75 1929.13  271.71 1928.64
  278.19 1928.44  279.52 1928.39  279.65 1928.39  279.97 1928.27  280.55 1928.09
  284.64 1926.74  292.17 1924.26  294.63 1923.62  296.08 1923.43  302.29 1922.59
  305.78 1922.35  307.07 1922.09  308.32 1921.82  311.29 1921.08  311.93 1920.92
  321.07  1922.4  321.46 1922.46  325.11 1923.88  327.29 1924.47   330.6  1925.7
  331.28 1925.94  334.77 1927.13  335.58 1927.47  340.83 1927.83  346.35 1928.31
  347.09 1928.37  352.54  1928.5  364.85 1929.04  369.34 1929.23   369.8 1929.26
  371.73 1929.35  374.75 1929.48  376.92 1929.59  377.35 1929.61  381.29 1929.88
   382.6 1930.05  389.11 1930.81  396.28 1931.74  398.67 1931.76  400.41  1931.8
  401.64 1932.02  404.55 1932.15  405.22 1932.19  412.77 1932.54  415.65 1932.66
  417.71 1932.75  418.13 1932.77   419.3 1932.83  419.54 1932.86  433.54 1933.23
  434.95 1933.27  435.88  1933.3  452.01 1933.79  453.65 1933.83  455.14 1933.89
  455.91 1933.92  457.15 1933.95  471.41 1934.42  472.12 1934.45  477.03 1934.79
  477.42 1934.81  489.05 1935.12  489.16 1935.12  489.34 1935.13  493.91 1935.26
  495.49 1935.32  499.98 1935.44  506.75 1935.65  506.78 1935.68   517.8 1937.29
  523.28 1938.07  524.34 1938.22  524.58 1938.25  524.65 1938.25  525.24 1938.35
  525.74 1938.42  526.84 1938.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0     .03  279.65     .04  335.58     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        279.65  335.58               100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1932.69  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.04  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1931.65  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *  164.11  *  433.71  *  145.66  *
* E.G. Slope (ft/ft)      *0.004116  * Area (sq ft)           *  164.11  *  433.71  *  145.66  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *  708.81  * 3956.79  *  834.40  *
* Top Width (ft)          *  219.41  * Top Width (ft)         *  103.49  *   55.93  *   60.00  *
* Vel Total (ft/s)        *    7.40  * Avg. Vel. (ft/s)       *    4.32  *    9.12  *    5.73  *
* Max Chl Dpth (ft)       *   10.73  * Hydr. Depth (ft)       *    1.59  *    7.75  *    2.43  *
* Conv. Total (cfs)       * 85723.9  * Conv. (cfs)            * 11047.6  * 61671.1  * 13005.2  *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)       *  103.58  *   57.91  *   60.18  *
* Min Ch El (ft)          * 1920.92  * Shear (lb/sq ft)       *    0.41  *    1.92  *    0.62  *
* Alpha                   *    1.23  * Stream Power (lb/ft s) *    1.76  *   17.56  *    3.56  *
* Frctn Loss (ft)         *    0.28  * Cum Volume (acre-ft)   *    7.30  *   75.03  *   10.97  *
* C & E Loss (ft)         *    0.15  * Cum SA (acres)         *    4.07  *    9.99  *    5.13  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 8000
```

```
INPUT
Description: 8000
Station Elevation Data    num=      86
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**********************************************************************************
       01936.271   8.0031935.919  10.3031935.706  22.8191935.348  32.457 1935.15
  33.8161935.121  35.672 1935.05  37.9261934.857  53.443 1934.78  60.3941934.681
  65.106 1934.56  85.414 1934.03 104.2011933.517 110.4241933.416 128.3051933.289
  135.451933.197 143.1661933.131 160.4631933.004 172.7951932.809 179.6421932.766
 182.0131932.482 193.0821931.772 200.0141931.239  205.35 1931.04 210.4981930.941
 230.465 1930.55 236.5791930.467 257.2511928.058 257.996 1927.97 258.6891927.886
 258.7011927.888 271.0631927.907 281.3521928.135 285.5831928.248 299.1831927.651
 310.5761926.955 319.4991926.665  319.651926.659 320.0371926.556 320.7391926.409
 334.8821923.083 337.886 1922.73 347.2011921.022 353.0181920.591 358.1561920.121
 358.935 1920.05 367.5151925.568 369.4211926.765 376.8141927.267 385.6331928.094
 393.3091928.122 410.651  1928.7 416.9781928.906 428.2631929.295  433.821929.675
 435.662 1929.96 444.8351931.204 454.9351932.777 458.2931932.715 460.7481932.733
 462.4781933.119 482.2271933.824 485.7111933.962 487.3681934.028 487.693 1934.07
 509.4111934.187 510.7131934.201  533.441934.354 535.7461934.362 537.8571934.413
 560.7671934.526 561.7751934.544 569.2421934.961 585.6221934.885 585.7821934.884
 586.029 1934.89 592.461 1934.88 610.5511935.068 610.5991935.136 626.1251937.862
 635.3341939.415 635.6681939.479 635.772 1939.47 636.5991939.648  637.311939.764
  638.851940.195

Manning's n Values        num=       3
     Sta    n Val      Sta    n Val      Sta    n Val
************************************************
       0     .03  319.65     .04 369.421     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        319.65 369.421              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)          * 1932.26  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.53  * Wt. n-Val.            *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1931.73  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *  339.41  *  441.04  *  231.71  *
* E.G. Slope (ft/ft)      *0.001973  * Area (sq ft)           *  339.41  *  441.04  *  231.71  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             * 1443.52  * 3012.36  * 1044.12  *
* Top Width (ft)          *  254.63  * Top Width (ft)         *  126.05  *   49.77  *   78.81  *
* Vel Total (ft/s)        *    5.43  * Avg. Vel. (ft/s)       *    4.25  *    6.83  *    4.51  *
* Max Chl Dpth (ft)       *   11.68  * Hydr. Depth (ft)       *    2.69  *    8.86  *    2.94  *
* Conv. Total (cfs)       *123827.5  * Conv. (cfs)            * 32499.6  * 67820.5  * 23507.4  *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)       *  126.27  *   52.37  *   79.04  *
* Min Ch El (ft)          * 1920.05  * Shear (lb/sq ft)       *    0.33  *    1.04  *    0.36  *
* Alpha                   *    1.16  * Stream Power (lb/ft s) *    1.41  *    7.08  *    1.63  *
* Frctn Loss (ft)         *    0.27  * Cum Volume (acre-ft)   *    6.72  *   74.03  *   10.54  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)         *    3.81  *    9.87  *    4.97  *
*****************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 7900.*

INPUT
Description:
Station Elevation Data    num=     164
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**********************************************************************************
       0 1935.96     6.88 1935.52     6.98 1935.52     8.32 1935.47     8.99 1935.42
   13.66 1935.28     19.9 1935.11    21.52 1935.07    21.91 1935.06    28.31 1934.81
   29.48 1934.76    29.49 1934.76    31.11  1934.7    33.08 1934.56    34.56 1934.52
    36.2 1934.46    46.61    1934    47.77 1933.94    52.68 1933.78    56.79 1933.62
   57.43 1933.59    64.63 1933.36     67.4 1933.32     74.5  1933.1    90.88 1932.59
   95.23 1932.48    96.31 1932.46    96.79 1932.45  111.91 1932.24  116.81 1932.15
  118.14 1932.13  124.87 1932.04  126.15 1932.02  126.45 1932.01  127.17    1932
   133.8 1931.94  139.96 1931.78  147.28 1931.56  150.71 1931.48  152.71 1931.44
  155.52 1931.38  156.68 1931.35  158.75 1931.18  168.41 1930.66  174.45 1930.29
  179.11 1930.11   180.3 1930.07   183.6 1929.97  184.88 1929.93  187.23 1929.88
  189.27  1929.8  201.01 1929.46  201.63 1929.44  203.32 1929.49  206.34 1929.58
  214.25 1929.35  218.59 1929.43  223.37 1929.41  224.37  1929.4  225.02 1929.39
  225.63 1929.38  225.64 1929.38  231.97 1929.73  236.42 1929.65   245.4 1929.61
   246.1  1929.6  249.09 1929.64     251 1929.59  255.63 1929.35  260.95 1929.02
  270.88 1928.31  274.27 1928.13  275.88 1928.07  276.27 1928.02  278.67 1927.46
   278.8 1927.43  279.14  1927.3  279.75  1927.1   292.1 1922.83  294.72  1922.1
  298.19 1921.01  300.58 1920.25  301.23 1920.18  302.86    1920  307.94 1919.76
  312.43 1919.51  313.11 1919.47  317.18 1921.64   323.6 1925.17  325.93 1926.43
  331.71 1926.84  332.93 1926.93  336.76 1927.26  341.27 1927.65  345.09  1927.8
  348.53 1927.91  349.78 1927.97  352.88 1928.06  358.37 1928.16  364.93 1928.28
  370.91 1928.38   380.9 1928.55  381.59 1928.56  383.92 1928.64  384.12 1928.65
  386.84 1928.79  388.59 1928.95  389.92 1929.07   391.7 1929.21  394.12 1929.18
  397.26 1929.15  398.37 1929.15  405.71 1929.95  406.81 1930.08  409.99 1930.15
  410.66 1930.17  412.31 1930.24  413.05 1930.36  413.95 1930.47  421.43 1930.64
  427.36 1930.87  432.63 1931.01  433.01 1931.02  435.92  1931.1  437.49 1931.15
  437.51 1931.15   437.8 1931.18  458.34 1931.65  459.52 1931.68  459.57 1931.68
  481.06 1932.24  483.25 1932.29   485.1 1932.36  485.24 1932.36  486.19 1932.39
  489.14 1932.47  491.11 1932.51  506.91 1932.79  507.86 1932.82  510.11 1932.92
  513.01 1933.06  513.73 1933.09  514.93 1933.15  521.69 1933.25  530.42 1933.39
  530.57 1933.39   530.8  1933.4   532.9 1933.44  536.89 1933.54  540.88 1933.67
  546.93 1933.93     554 1934.47  554.04  1934.5  557.21 1935.02  566.57 1936.65
  568.73 1937.07     570 1937.31  577.44 1938.06  577.75  1938.1  577.85 1938.09
  578.63 1938.19   579.3 1938.26  580.29 1938.41  580.76 1938.49

Manning's n Values        num=       3
     Sta    n Val      Sta    n Val      Sta    n Val
************************************************
       0     .03   278.8     .04  325.93     .03
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         278.8  325.93             100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1931.94  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.04  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1930.90  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *  160.11  *  396.92  *  221.15  *
* E.G. Slope (ft/ft)     *0.004020  * Area (sq ft)           *  160.11  *  396.92  *  221.15  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *  626.69  * 3716.01  * 1157.30  *
* Top Width (ft)         *  264.66  * Top Width (ft)         *  114.89  *   47.13  *  102.64  *
* Vel Total (ft/s)       *    7.07  * Avg. Vel. (ft/s)       *    3.91  *    9.36  *    5.23  *
* Max Chl Dpth (ft)      *   11.43  * Hydr. Depth (ft)       *    1.39  *    8.42  *    2.15  *
* Conv. Total (cfs)      * 86748.0  * Conv. (cfs)            *  9884.4  * 58610.3  * 18253.4  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *  115.05  *   50.08  *  102.80  *
* Min Ch El (ft)         * 1919.47  * Shear (lb/sq ft)       *    0.35  *    1.99  *    0.54  *
* Alpha                  *    1.34  * Stream Power (lb/ft s) *    1.37  *   18.62  *    2.83  *
* Frctn Loss (ft)        *    0.50  * Cum Volume (acre-ft)   *    6.15  *   73.07  *   10.02  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)         *    3.53  *    9.76  *    4.76  *
************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 7800

INPUT
Description: 7800
Station Elevation Data    num=      83
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************
       01935.645    5.869 1935.12     7.11935.155  11.6611934.999   18.371934.832
  18.697 1934.82  25.1591934.408  29.4921934.198  30.8971934.073  40.7721933.118
  49.0151932.649  55.1591932.392  57.5251932.401  81.2761931.532  82.6061931.478
  99.6931931.087 107.6651930.921  107.921930.912 108.5371930.887 114.1961930.817
 125.7031930.251  130.331930.085 132.7331929.981 153.8821929.132 157.7941928.957
 159.7951928.894 161.5331928.778 172.0871928.339  173.531928.466 182.8561929.286
 186.5581930.022  190.641930.636 197.9761931.558 210.036 1931.05  214.221931.029
 218.1741930.777 234.079 1929.43 235.454 1929.37 235.7891929.287 237.9471928.194
 254.5241920.011 256.571    1919 257.1211918.993 267.2781918.883 272.0971921.083
 282.4491926.098 287.8891926.502 292.654 1926.87 300.5111927.487 304.9321927.767
 307.8541927.841 313.0231927.857 334.2621927.839 337.1141927.813 337.2991927.821
 342.7691927.987 344.445 1928.02  346.731927.601 350.7331926.911 357.6511927.314
 362.3151927.625 364.5741927.809 372.4681927.884 378.0591928.118 383.3851928.205
 387.633 1928.27 408.3821929.155 432.4941930.306  433.52 1930.36 436.305  1930.5
  438.161930.573 456.0711931.156 458.8081931.262 459.4811931.288 466.9891931.571
 477.5521931.984 485.0781932.415 490.783 1932.87  500.471934.315 509.291 1935.84
 512.5271936.536 522.227 1936.77 522.673 1936.78

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
       0     .03 237.947     .04 282.449     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       237.947 282.449             100     100     100             .1       .3
Left Levee      Station=  197.98      Elevation= 1931.56

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1931.39  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.51  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1929.88  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1929.88  * Flow Area (sq ft)      *    4.53  *  347.07  *  269.15  *
* E.G. Slope (ft/ft)     *0.006421  * Area (sq ft)           *    4.53  *  347.07  *  269.15  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *   10.96  * 3848.43  * 1640.61  *
* Top Width (ft)         *  194.90  * Top Width (ft)         *    9.22  *   44.50  *  141.18  *
* Vel Total (ft/s)       *    8.86  * Avg. Vel. (ft/s)       *    2.42  *   11.09  *    6.10  *
* Max Chl Dpth (ft)      *   11.00  * Hydr. Depth (ft)       *    0.49  *    7.80  *    1.91  *
* Conv. Total (cfs)      * 68635.7  * Conv. (cfs)            *   136.7  * 48025.4  * 20473.6  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *    9.51  *   48.28  *  141.42  *
* Min Ch El (ft)         * 1918.88  * Shear (lb/sq ft)       *    0.19  *    2.88  *    0.76  *
* Alpha                  *    1.24  * Stream Power (lb/ft s) *    0.46  *   31.96  *    4.65  *
* Frctn Loss (ft)        *    0.57  * Cum Volume (acre-ft)   *    5.96  *   72.21  *    9.45  *
* C & E Loss (ft)        *    0.11  * Cum SA (acres)         *    3.39  *    9.65  *    4.48  *
************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 7700.*

INPUT
Description:
Station Elevation Data    num=     126
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
*********************************************************************************
       0 1932.42     4.3 1932.11     5.2 1932.12    8.54    1932   10.77 1931.94
   13.46 1931.88    13.7 1931.87   18.43 1931.64   21.61 1931.51   22.64 1931.44
   23.44 1931.38   29.87 1930.91   35.91 1930.62   40.41 1930.46   42.15 1930.45
   50.15 1930.19   59.55  1929.8   60.52 1929.76    63.6 1929.66   73.04 1929.39
   78.88 1929.24   79.07 1929.23   79.52 1929.21   83.67 1929.12    89.5 1928.85
```

```
    92.1 1928.72   95.49 1928.57   97.25 1928.48  103.76 1928.18  112.74 1927.79
  115.61 1927.66  117.08  1927.6  118.35 1927.52  126.08 1927.18  127.14 1927.23
  128.88 1927.31  133.97 1927.55  136.68 1927.88  139.68 1928.15  145.05 1928.55
  153.89 1928.18  156.95 1928.13  157.35 1928.11  159.85 1927.97   171.5 1927.14
  171.57 1927.13  172.51 1927.09  172.75 1927.04  174.34 1926.47   187.5 1920.76
  191.53 1918.99  192.64  1918.5  193.65 1918.25  194.22 1918.23   195.8  1918.2
  204.76 1918.01  208.82 1920.15  208.89 1920.19  213.62 1922.74  215.56 1924.02
  217.76  1925.3   222.2 1925.78  223.11 1925.87  223.65 1925.92   225.4 1926.01
  227.79 1926.13  235.52 1926.53  239.87 1926.71  242.75 1926.78  247.15 1926.83
  247.83 1926.84  259.24  1926.9   261.5 1926.89  268.72 1926.71  271.53 1926.63
  271.71 1926.63   276.4  1926.6  277.09 1926.59  278.74 1926.57  280.99 1926.31
  281.56 1926.25  282.01  1926.2  282.21 1926.19  283.12  1926.1  284.92 1925.93
  287.96 1926.01  290.66 1926.16  291.73 1926.22  296.32 1926.49   297.9 1926.59
  298.54 1926.62   306.3 1926.66  310.57 1926.75   311.8 1926.78  317.04 1926.83
  321.22 1926.87  323.34 1926.92  335.62 1927.25  341.63 1927.43  348.78 1927.65
  360.45 1927.86  365.35 1927.95  366.36 1927.97   369.1 1928.02  370.92 1928.04
  374.09 1928.08  388.54 1928.69  391.23 1928.81  391.89 1928.84  396.48 1929.05
  399.28 1929.13  401.68  1929.2  406.61 1929.91  409.67  1930.3  417.07 1931.32
  422.68 1932.16  425.39 1932.66  432.21  1933.9  439.22 1935.26  439.45  1935.3
   439.6 1935.32  440.89  1935.5  444.07    1936  448.12 1936.25  453.61 1936.31
  454.05 1936.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .03  174.34     .04  217.76     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        174.34  217.76              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1930.04  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.14  * Wt. n-Val.            *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1928.90  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1928.90  * Flow Area (sq ft)     *   84.70  *  343.32  *  325.39  *
* E.G. Slope (ft/ft)     *0.005176  * Area (sq ft)          *   84.70  *  343.32  *  325.39  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *  298.21  * 3452.97  * 1748.83  *
* Top Width (ft)         *  304.92  * Top Width (ft)        *   85.99  *   43.42  *  175.51  *
* Vel Total (ft/s)       *    7.30  * Avg. Vel. (ft/s)      *    3.52  *   10.06  *    5.37  *
* Max Chl Dpth (ft)      *   10.89  * Hydr. Depth (ft)      *    0.98  *    7.91  *    1.85  *
* Conv. Total (cfs)      * 76451.1  * Conv. (cfs)           *  4145.1  * 47996.9  * 24309.1  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *   86.23  *   47.03  *  175.65  *
* Min Ch El (ft)         * 1918.01  * Shear (lb/sq ft)      *    0.32  *    2.36  *    0.60  *
* Alpha                  *    1.38  * Stream Power (lb/ft s) *    1.12  *   23.72  *    3.22  *
* Frctn Loss (ft)        *    0.54  * Cum Volume (acre-ft)  *    5.85  *   71.42  *    8.77  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    3.28  *    9.55  *    4.12  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 7600

INPUT
Description: 7600
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       01929.193   6.8381928.963  14.885  1928.8   31.851928.374  40.3951927.939
  56.8421927.284  65.8991926.732  81.8551925.937  99.9391925.227 108.9671924.843
 110.7251924.744 124.3591919.593  129.691917.526 132.9551917.427 142.2421917.137
 145.619 1919.26 149.6191921.725 151.2371923.188 153.0641924.508 157.4341925.128
 158.8611925.301 160.5781925.348 181.9691925.815 193.8591925.947  196.081925.929
 210.7281925.227 215.8031924.989 216.2481924.979 216.4471924.984 217.3391924.969
 222.1031924.931 224.7531925.071  231.881925.428 244.3351925.444 256.8881925.479
 268.9681925.607 281.9091925.802 293.3811925.651 306.7981925.473 328.8141926.627
 333.9291926.725 338.7761927.957 357.2471932.032  370.851934.972 371.0681935.017
 371.2241935.029 379.6031935.866 385.4321935.859

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .03 110.725     .04 153.064     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       110.725 153.064              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1928.59  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.14  * Wt. n-Val.            *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1927.45  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1927.45  * Flow Area (sq ft)     *   82.30  *  320.06  *  333.80  *
* E.G. Slope (ft/ft)     *0.005662  * Area (sq ft)          *   82.30  *  320.06  *  333.80  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *  387.04  * 3261.98  * 1850.98  *
* Top Width (ft)         *  284.06  * Top Width (ft)        *   58.01  *   42.34  *  183.71  *
* Vel Total (ft/s)       *    7.47  * Avg. Vel. (ft/s)      *    4.70  *   10.19  *    5.55  *
* Max Chl Dpth (ft)      *   10.31  * Hydr. Depth (ft)      *    1.42  *    7.56  *    1.82  *
* Conv. Total (cfs)      * 73091.5  * Conv. (cfs)           *  5143.5  * 43349.6  * 24598.4  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *   58.07  *   45.97  *  183.93  *
* Min Ch El (ft)         * 1917.14  * Shear (lb/sq ft)      *    0.50  *    2.46  *    0.64  *
* Alpha                  *    1.32  * Stream Power (lb/ft s) *    2.36  *   25.08  *    3.56  *
* Frctn Loss (ft)        *    0.42  * Cum Volume (acre-ft)  *    5.66  *   70.66  *    8.02  *
* C & E Loss (ft)        *    0.13  * Cum SA (acres)        *    3.12  *    9.45  *    3.71  *
*************************************************************************************************
```

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: Flamingo Wash
REACH: 1 RS: 7500.*

INPUT
Description:
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1928.85	4.1	1928.75	8.3	1928.62	18.08	1928.39	20.22	1928.34
26.79	1928.19	38.68	1927.98	41.52	1927.9	49.06	1927.55	54.59	1927.33
62.8	1926.96	69.03	1926.63	74.75	1926.27	80.03	1926.14	84.08	1926.05
94.58	1925.56	99.4	1925.39	105.77	1925.2	114.95	1925.17	121.37	1924.99
126.66	1924.83	132.33	1924.64	133.46	1924.6	134.46	1924.55	144.41	1919.32
146.28	1918.33	146.38	1918.32	147.05	1918.21	147.79	1918.09	149.98	1917.75
152.2	1917.39	152.9	1917.34	153.01	1917.31	153.94	1917.3	155.09	1917.28
156.2	1917.23	156.43	1917.21	160.03	1917.03	165.28	1916.78	167.65	1918.11
169.12	1919	173.67	1921.71	175.5	1923.04	177.58	1924.37	181.58	1924.72
181.63	1924.72	182.88	1924.82	184.45	1924.85	189.57	1924.96	191.46	1925.23
191.74	1925.31	200.95	1924.88	202.82	1924.84	204	1924.82	204.15	1924.81
214.86	1924.48	216.89	1924.4	218.75	1924.28	223.31	1924	224.03	1923.98
229.94	1923.75	230.28	1923.74	231.1	1923.73	234.92	1923.63	235.33	1923.63
235.51	1923.63	236.32	1923.62	240.68	1923.61	243.1	1923.68	249.61	1923.86
252.28	1923.87	257.21	1923.87	260.41	1923.95	260.99	1923.96	272.47	1924.24
283.51	1924.55	284.86	1924.59	295.33	1924.74	305.82	1924.72	312.39	1924.71
312.52	1924.71	314.46	1924.73	318.08	1924.77	338.2	1925.73	338.68	1925.74
340.11	1925.79	341.81	1925.89	342.87	1925.95	347.3	1926.78	364.19	1929.61
366.13	1929.94	366.79	1930.03	367.18	1930.09	367.58	1930.12	370.96	1930.85
376.62	1931.91	376.82	1931.95	376.96	1931.96	384.62	1932.91	388.1	1933.15
389.94	1933.21								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	134.46	.04	177.58	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
134.46 177.58 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1927.89	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.69	* Wt. n-Val.	* 0.030	* 0.040	* 0.030 *
* W.S. Elev (ft)	* 1927.20	* Reach Len. (ft)	* 100.00	* 100.00	* 100.00 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 115.67	* 338.44	* 443.69 *
* E.G. Slope (ft/ft)	*0.003301	* Area (sq ft)	* 115.67	* 338.44	* 443.69 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 431.98	* 2697.05	* 2370.97 *
* Top Width (ft)	* 292.20	* Top Width (ft)	* 76.89	* 43.12	* 172.20 *
* Vel Total (ft/s)	* 6.13	* Avg. Vel. (ft/s)	* 3.73	* 7.97	* 5.34 *
* Max Chl Dpth (ft)	* 10.42	* Hydr. Depth (ft)	* 1.50	* 7.85	* 2.58 *
* Conv. Total (cfs)	* 95721.6	* Conv. (cfs)	* 7518.1	* 46939.3	* 41264.2 *
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	* 76.94	* 46.91	* 172.44 *
* Min Ch El (ft)	* 1916.78	* Shear (lb/sq ft)	* 0.31	* 1.49	* 0.53 *
* Alpha	* 1.19	* Stream Power (lb/ft s)	* 1.16	* 11.85	* 2.83 *
* Frctn Loss (ft)	* 0.24	* Cum Volume (acre-ft)	* 5.43	* 69.90	* 7.12 *
* C & E Loss (ft)	* 0.08	* Cum SA (acres)	* 2.96	* 9.35	* 3.30 *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 7400

INPUT
Description: 7400
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
01928.499	4.8291928.416	23.7941927.916	31.5251927.758	48.8481927.536					
64.231926.897	73.89 1926.44	87.9481925.541	98.921 1925.54	111.2741924.977					
124.4471924.663	135.2411924.905	149.0171924.624	157.0171924.411	158.202 1924.36					
167.926 1917.74	169.7531916.485	169.851916.496	170.4971916.529	173.3681916.773					
175.5361916.944	176.2141917.104	177.2311917.103	178.3581917.104	179.6661917.007					
183.1871916.763	188.3151916.429	190.971917.781	202.11924.231	205.7691924.312					
212.9571924.446	214.668 1924.95	214.9221925.093	223.2651924.013	224.9591923.897					
226.1691923.811	239.3881922.731	243.5231922.408	244.1691922.399	249.5271922.259					
250.5721922.272	269.7631922.306	274.228 1922.3	277.1251922.459	299.273 1923.56					
324.2071923.856	324.3221923.859	326.0791923.931	348.0181924.852	349.3161924.917					
350.861925.073	372.887 1927.38	373.4851927.406	373.8321927.445	374.1991927.401					
377.2581928.066	392.7841930.429	394.4551930.557							

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	158.202	.04	202.1	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
158.202 202.1 77.52 100 117 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1927.57	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.43	* Wt. n-Val.	* 0.030	* 0.040	* 0.030 *
* W.S. Elev (ft)	* 1927.14	* Reach Len. (ft)	* 77.52	* 100.00	* 117.00 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 174.68	* 364.29	* 567.73 *
* E.G. Slope (ft/ft)	*0.001857	* Area (sq ft)	* 174.68	* 364.29	* 567.73 *

* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 541.66	* 2238.58	* 2719.76	*
* Top Width (ft)	* 312.05	* Top Width (ft)	* 99.70	* 43.90	* 168.45	*
* Vel Total (ft/s)	* 4.97	* Avg. Vel. (ft/s)	* 3.10	* 6.14	* 4.79	*
* Max Chl Dpth (ft)	* 10.71	* Hydr. Depth (ft)	* 1.75	* 8.30	* 3.37	*
* Conv. Total (cfs)	*127617.5	* Conv. (cfs)	* 12568.3	* 51942.1	* 63107.0	*
* Length Wtd. (ft)	* 103.39	* Wetted Per. (ft)	* 99.77	* 48.45	* 168.87	*
* Min Ch El (ft)	* 1916.43	* Shear (lb/sq ft)	* 0.20	* 0.87	* 0.39	*
* Alpha	* 1.12	* Stream Power (lb/ft s)	* 0.63	* 5.36	* 1.87	*
* Frctn Loss (ft)	* 0.25	* Cum Volume (acre-ft)	* 5.10	* 69.10	* 5.96	*
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 2.76	* 9.26	* 2.91	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 7300.*

INPUT
Description:
Station Elevation Data num= 111

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1928.84	.03	1928.84	.89	1928.82	5.01	1928.8	10.84	1928.74
13.59	1928.69	18.79	1928.53	22.56	1928.44	24.69	1928.46	27.71	1928.49
28.66	1928.39	30.5	1928.32	32.71	1928.11	45.73	1926.94	46.85	1926.91
49.92	1926.77	50.69	1926.74	65.68	1925.87	66.65	1925.79	71.41	1925.38
76.68	1925.09	78.23	1924.99	88.75	1924.42	91.26	1924.3	93.06	1924.27
98.92	1924.56	102.65	1924.73	104.05	1924.76	110.3	1925.06	110.98	1925.03
114.49	1924.8	115.47	1924.75	118.19	1924.66	120.75	1924.63	122.16	1924.59
123.59	1924.57	129.14	1924.55	139.7	1924.73	140.34	1924.72	148.46	1924.48
154.64	1924.35	159.28	1924.24	162.94	1924	164.17	1923.9	171.74	1919.95
174.12	1918.72	177.47	1917.82	179.1	1917.38	179.97	1917.14	180.1	1917.14
180.99	1917.14	184.92	1917.18	185.61	1917.18	187.88	1917.21	188.81	1917.28
190.2	1917.26	191.74	1917.24	191.96	1917.23	193.53	1917.13	194.17	1917.08
198.35	1916.86	204.71	1916.52	205.37	1916.49	206.29	1916.86	207.07	1917.18
208.32	1917.73	220.68	1923.61	223.58	1923.76	229.27	1924.03	230.62	1924.34
230.82	1924.42	237.43	1924.12	238.77	1924.11	239.73	1924.1	242.45	1924.06
250.19	1923.75	252.29	1923.67	253.46	1923.59	253.97	1923.58	258.21	1923.42
259.04	1923.41	259.45	1923.4	260.61	1923.38	260.99	1923.35	261.6	1923.35
268.7	1923.47	274.23	1923.54	277.76	1923.58	280.06	1923.69	283.3	1923.82
285.33	1923.94	297.58	1924.66	305.98	1924.95	317.32	1925.31	317.41	1925.32
318.8	1925.39	321.46	1925.52	336.16	1926.33	337.19	1926.39	338.41	1926.5
354.71	1928.05	355.85	1928.15	356.32	1928.17	356.59	1928.19	356.89	1928.18
357.59	1928.29	358.93	1928.51	359.31	1928.57	362.63	1928.94	371.59	1929.95
372.92	1930.04								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	164.17	.04	220.68	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
164.17	220.68	77.52	100	117	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1927.27	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.80	* Wt. n-Val.	* 0.030	* 0.040	* 0.030	*
* W.S. Elev (ft)	* 1926.48	* Reach Len. (ft)	* 77.52	* 100.00	* 117.00	*
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 179.62	* 441.18	* 244.02	*
* E.G. Slope (ft/ft)	*0.003400	* Area (sq ft)	* 179.62	* 441.18	* 244.02	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 723.56	* 3630.05	* 1146.39	*
* Top Width (ft)	* 282.88	* Top Width (ft)	* 108.91	* 56.51	* 117.45	*
* Vel Total (ft/s)	* 6.36	* Avg. Vel. (ft/s)	* 4.03	* 8.23	* 4.70	*
* Max Chl Dpth (ft)	* 9.98	* Hydr. Depth (ft)	* 1.65	* 7.81	* 2.08	*
* Conv. Total (cfs)	* 94327.2	* Conv. (cfs)	* 12409.4	* 62256.8	* 19661.0	*
* Length Wtd. (ft)	* 99.38	* Wetted Per. (ft)	* 109.03	* 59.59	* 117.61	*
* Min Ch El (ft)	* 1916.49	* Shear (lb/sq ft)	* 0.35	* 1.57	* 0.44	*
* Alpha	* 1.27	* Stream Power (lb/ft s)	* 1.41	* 12.93	* 2.07	*
* Frctn Loss (ft)	* 0.45	* Cum Volume (acre-ft)	* 4.79	* 68.17	* 4.87	*
* C & E Loss (ft)	* 0.06	* Cum SA (acres)	* 2.57	* 9.14	* 2.53	*

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: Flamingo Wash
REACH: 1 RS: 7200

INPUT
Description: 7200
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
01929.176	.0281929.178	.9211929.159	11.2291929.203	14.0881929.178
19.4741928.997	23.3761928.912	28.722 1929.12	29.7031928.938	31.604 1928.83
47.397 1926.29	48.5541926.229	51.7361926.003	68.0721924.799	74.011924.083
81.0681923.637	91.9711923.146	96.4431922.998	102.5111923.578	107.8321924.048
114.3071924.907	115.0081924.887	118.651924.575	122.4831924.406	125.1361924.397
126.5951924.363	128.0781924.357	144.7771924.561	153.8571924.224	165.0681923.971
170.1341923.448	179.7481919.317	182.7671918.042	189.0791917.829	197.3491917.551
205.4031917.365	208.2061917.195	221.5881916.581	222.4181916.548	223.4291916.876
224.2871917.148	239.2531922.987	255.292 1924.6	262.5371924.824	267.8121924.532
268.6641924.481	268.9431924.428	269.391924.419	274.622 1924.65	285.3731924.986
286.8721925.082	302.0821926.222	313.4821926.972	337.9671928.861	340.0921928.989
341.0811929.064	343.7991929.174	351.3791929.518		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	170.134	.04	239.253	.03

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       170.134 239.253               69     100  115.52             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1926.76  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.45  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1925.32  * Reach Len. (ft)        *   69.00  *  100.00  *  115.52  *
* Crit W.S. (ft)         * 1925.32  * Flow Area (sq ft)      *  129.33  *  467.74  *   43.72  *
* E.G. Slope (ft/ft)     *0.006186  * Area (sq ft)           *  129.33  *  467.74  *   43.72  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *  563.58  * 4782.43  *  153.99  *
* Top Width (ft)         *  228.94  * Top Width (ft)         *  109.08  *   69.12  *   50.74  *
* Vel Total (ft/s)       *    8.58  * Avg. Vel. (ft/s)       *    4.36  *   10.22  *    3.52  *
* Max Chl Dpth (ft)      *    8.77  * Hydr. Depth (ft)       *    1.19  *    6.77  *    0.86  *
* Conv. Total (cfs)      * 69928.7  * Conv. (cfs)            *  7165.5  * 60805.4  *  1957.9  *
* Length Wtd. (ft)       *   96.64  * Wetted Per. (ft)       *  109.33  *   71.45  *   50.86  *
* Min Ch El (ft)         * 1916.55  * Shear (lb/sq ft)       *    0.46  *    2.53  *    0.33  *
* Alpha                  *    1.27  * Stream Power (lb/ft s) *    1.99  *   25.85  *    1.17  *
* Frctn Loss (ft)        *    0.67  * Cum Volume (acre-ft)   *    4.51  *   67.13  *    4.49  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *    2.38  *    9.00  *    2.30  *
*********************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 7100.*

INPUT
Description:
Station Elevation Data    num=     115
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1930.64     .03 1930.64     .85  1930.6   10.36 1930.31   10.74  1930.3
   11.59 1930.12      13 1929.84   15.29 1929.37   17.96 1929.19   21.56 1928.97
   24.61 1928.88   26.49 1928.76    27.4  1928.6   29.15 1928.39   43.72 1925.89
   44.79 1925.77   46.45 1925.56   47.72 1925.49    49.4 1925.39   50.42 1925.31
   51.64 1925.23   57.61 1924.89   59.55 1924.79   62.79 1924.66    66.5 1924.41
   68.27 1924.26   74.78 1923.92   82.31 1923.61   84.84 1923.39   86.22 1923.29
   88.96 1923.05   94.56 1922.95   96.68  1922.9   99.47 1922.79  100.02 1922.78
  105.44 1922.76  106.09 1922.71  107.46 1922.54  109.45 1922.42  112.98 1922.29
  114.37 1922.27  115.43 1922.25  116.77 1922.22  118.14  1922.2  123.67 1922.18
  133.55 1922.29  139.83 1922.19  141.92 1922.17  150.71 1922.15  152.26 1922.15
  156.93 1921.96  164.45 1919.38  165.34 1919.06  167.98 1918.15   173.5 1917.47
  174.87  1917.3  180.73 1916.92  181.83 1916.86  187.77 1916.56  190.22 1916.38
  190.37 1916.38  197.64 1916.12  201.92 1916.01  202.65 1915.99  203.83 1916.16
  204.84 1916.29  209.84 1917.13  213.96 1918.77   214.6 1919.03  217.69 1919.32
  217.71 1919.32  222.08 1921.02  222.29 1921.11  222.42 1921.17  229.72 1923.52
  231.19 1923.66  238.67 1924.21  246.02 1924.49  251.37 1924.47  252.23 1924.47
  252.51 1924.45  252.97 1924.45   256.3 1924.61  258.27 1924.74   259.7 1924.82
   263.9 1925.11  269.17 1925.46  270.69 1925.58  286.11 1926.93  287.92 1927.08
  297.66 1927.94   300.2 1928.18  303.36 1928.48  304.48  1928.6  305.09 1928.72
  306.66 1928.89  307.73 1929.02  308.73 1929.11  310.62 1929.39  311.53 1929.51
  313.24 1929.66  314.59 1929.83  315.85  1929.9  317.39 1929.85  318.58 1929.89
  320.34 1929.91  322.48 1929.78  323.17 1929.74  324.64 1929.75  325.64 1929.77
  325.69 1929.77   328.4 1929.74  329.64 1929.73  332.99 1929.84  336.08 1929.93

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0     .03  156.93     .04  222.42     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        156.93  222.42               69     100  115.52             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1925.89  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.74  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1924.15  * Reach Len. (ft)        *   69.00  *  100.00  *  115.52  *
* Crit W.S. (ft)         * 1924.15  * Flow Area (sq ft)      *  128.72  *  418.56  *   15.67  *
* E.G. Slope (ft/ft)     *0.007923  * Area (sq ft)           *  128.72  *  418.56  *   15.67  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *  738.69  * 4692.79  *   68.53  *
* Top Width (ft)         *  167.56  * Top Width (ft)         *   86.60  *   65.49  *   15.47  *
* Vel Total (ft/s)       *    9.77  * Avg. Vel. (ft/s)       *    5.74  *   11.21  *    4.37  *
* Max Chl Dpth (ft)      *    8.16  * Hydr. Depth (ft)       *    1.49  *    6.39  *    1.01  *
* Conv. Total (cfs)      * 61791.8  * Conv. (cfs)            *  8299.0  * 52722.8  *   769.9  *
* Length Wtd. (ft)       *   94.63  * Wetted Per. (ft)       *   86.67  *   67.04  *   15.86  *
* Min Ch El (ft)         * 1915.99  * Shear (lb/sq ft)       *    0.73  *    3.09  *    0.49  *
* Alpha                  *    1.17  * Stream Power (lb/ft s) *    4.22  *   34.62  *    2.14  *
* Frctn Loss (ft)        *    0.75  * Cum Volume (acre-ft)   *    4.31  *   66.11  *    4.41  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *    2.22  *    8.84  *    2.21  *
*********************************************************************************************

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.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 7000
```

```
INPUT
Description: 7000
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
       01932.104    9.841931.401  10.6121931.044  14.0021929.636  22.5441928.726
  42.5451925.027  45.2481924.907   46.181924.823  47.3011924.769  52.7661924.574
  54.5411924.522  60.9091924.507  75.3831923.943  78.9731923.478  88.5451922.018
  91.6071921.424  98.4231920.323 104.7531920.131 113.2661919.927 128.0691920.065
 138.0341920.294 143.7361920.473 150.1691918.996 159.0941916.826 165.0551916.195
 172.3651915.563 178.5911915.443 182.8771915.437 191.1351915.443 195.8691917.353
 196.6071917.676 200.1491917.215 200.1741917.225 205.1921919.158 205.4361919.266
 205.5781919.344 212.9841923.321 214.4741923.457  239.921924.647  243.371924.947
 247.6291925.405 271.9731927.823 284.4181929.191 287.6221929.555 288.7541929.705
  289.37 1929.91 290.9621930.125 292.0531930.302 293.057  1930.4 294.9771930.818
 295.8951931.002 297.6361931.153 298.9961931.404 300.2751931.447 301.8431931.226
  303.051931.215 304.8331931.115 307.6991930.572 310.2561930.479 314.2541930.233
 317.6531930.297 320.7831930.339

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .03 143.736     .04 205.578     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       143.736 205.578               100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
**************************************************************************************************
* E.G. Elev (ft)         * 1924.69  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.66  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1923.02  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1922.74  * Flow Area (sq ft)      *  153.16  *  380.62  *   12.58  *
* E.G. Slope (ft/ft)     *0.007992  * Area (sq ft)           *  153.16  *  380.62  *   12.58  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            * 1239.31  * 4183.86  *   76.83  *
* Top Width (ft)         *  130.45  * Top Width (ft)        *   61.76  *   61.84  *    6.85  *
* Vel Total (ft/s)       *   10.07  * Avg. Vel. (ft/s)      *    8.09  *   10.99  *    6.11  *
* Max Chl Dpth (ft)      *    7.58  * Hydr. Depth (ft)      *    2.48  *    6.15  *    1.84  *
* Conv. Total (cfs)      * 61523.7  * Conv. (cfs)           * 13863.1  * 46801.2  *   859.4  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *   61.99  *   63.20  *    7.77  *
* Min Ch El (ft)         * 1915.44  * Shear (lb/sq ft)      *    1.23  *    3.00  *    0.81  *
* Alpha                  *    1.06  * Stream Power (lb/ft s) *   9.97  *   33.03  *    4.93  *
* Frctn Loss (ft)        *    0.55  * Cum Volume (acre-ft)  *    4.08  *   65.19  *    4.37  *
* C & E Loss (ft)        *    0.22  * Cum SA (acres)        *    2.11  *    8.69  *    2.18  *
**************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 6868.*

INPUT
Description:
Station Elevation Data    num=     130
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
       0 1928.45    1.04 1928.51   11.75 1928.84    13.6 1928.84      14 1928.86
    15.1 1928.75   15.87 1928.68   19.93 1928.27   21.44 1928.28    22.3 1928.28
    25.3 1928.13   27.34 1927.94   30.14 1927.73   32.08  1927.6   34.16  1927.4
   36.17 1927.26   36.54 1927.24   42.09 1926.78   42.49 1926.76   46.43 1926.48
   49.52 1926.32   52.08 1926.19   52.68 1926.19   58.14 1926.06   60.54 1925.98
   61.61    1926   64.39 1926.07   65.54 1926.08   65.72 1926.07   67.31 1925.99
   72.86 1925.74   74.78 1925.66   75.09 1925.67   75.39 1925.68   75.94 1925.67
   76.62 1925.61   77.61 1925.51   80.54 1925.22   86.68  1924.9   91.95 1924.56
   104.9 1923.52  105.58 1923.48   105.6 1923.47  105.77 1923.45  107.27 1923.28
  107.95 1923.18  109.73 1922.92  112.38 1922.51  112.96 1922.41  114.86 1922.09
  115.58 1922.05  118.36 1922.02  119.65    1922  119.98 1921.98     126 1921.61
  130.36 1921.28  131.36 1921.22  132.85 1921.11  134.43 1920.97  140.06 1920.46
  146.48 1920.17  149.07 1920.11  157.94 1919.93  161.18 1919.89  163.16  1919.9
  182.25 1919.69  184.27 1919.68  190.33 1919.53  194.55 1919.53  196.43 1919.53
  204.54 1919.54  206.12 1918.88  209.55 1917.35  211.26 1916.57  214.78 1915.85
   216.5 1915.49  221.15 1914.91  222.09 1914.81  224.65 1914.62  226.84 1914.49
  231.69 1914.42  235.03  1914.4  238.54 1914.41  239.66  1914.6  242.89 1915.26
  248.87 1915.77  249.13 1915.79  254.52 1916.87  254.75 1916.95  257.21 1917.33
  258.48 1917.54  261.64 1917.53  264.52 1917.59  264.57  1917.6  273.13 1919.07
  273.55 1919.15  273.79  1919.2  280.06 1921.52  281.32 1921.65  282.58 1921.75
  292.35 1922.18  302.85 1922.74  304.68 1922.88  305.77    1923  309.38 1923.42
   315.9 1924.15  329.98 1925.54  336.52 1926.23  340.51 1926.57  343.22 1926.81
  344.18  1926.9   344.7 1927.02  346.05 1927.15  346.97 1927.26  347.43  1927.3
  347.82 1927.34  349.44 1927.62  350.22 1927.75  351.69 1927.89  352.84 1928.06
  353.93 1928.14  355.25 1928.08  356.27 1928.12  357.71 1928.14  357.78 1928.14
  360.21 1927.95  362.37 1927.97  365.76 1927.95  368.63 1928.08  371.28 1928.18

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .03  204.54     .04  273.79     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        204.54  273.79               100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
**************************************************************************************************
* E.G. Elev (ft)         * 1923.91  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.93  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1922.98  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *  245.17  *  468.98  *   35.58  *
* E.G. Slope (ft/ft)     *0.004060  * Area (sq ft)           *  245.17  *  468.98  *   35.58  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            * 1451.95  * 3928.20  *  119.85  *
* Top Width (ft)         *  196.30  * Top Width (ft)        *   95.23  *   69.25  *   31.81  *
* Vel Total (ft/s)       *    7.34  * Avg. Vel. (ft/s)      *    5.92  *    8.38  *    3.37  *
* Max Chl Dpth (ft)      *    8.58  * Hydr. Depth (ft)      *    2.57  *    6.77  *    1.12  *
```

* Conv. Total (cfs)	* 86318.7	* Conv. (cfs)	* 22787.3	* 61650.4	* 1881.0	*
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	* 95.38	* 70.45	* 32.28	*
* Min Ch El (ft)	* 1914.40	* Shear (lb/sq ft)	* 0.65	* 1.69	* 0.28	*
* Alpha	* 1.11	* Stream Power (lb/ft s)	* 3.86	* 14.13	* 0.94	*
* Frctn Loss (ft)	* 0.30	* Cum Volume (acre-ft)	* 3.63	* 64.22	* 4.31	*
* C & E Loss (ft)	* 0.12	* Cum SA (acres)	* 1.93	* 8.54	* 2.14	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 6736

INPUT
Description: 67+36
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
01924.794	1.3461924.969	15.2461926.171	17.6431926.264	20.587 1926.55
27.8161927.031	28.9281927.102	32.8221927.026	35.4641926.789	39.106 1926.59
44.3171926.342	46.9251926.321	47.4031926.328	54.5981926.138	55.1231926.138
60.2341926.109	64.241926.177	67.561 1926.25	68.3421926.341	75.4191926.773
79.9261927.012	85.0291927.325	94.5141926.848	97.0131926.729	97.7981926.798
98.513 1926.79	99.3991926.683	104.481925.931	119.2861924.754	136.0831923.027
136.9611922.978	136.9961922.959	137.2131922.907	140.0441922.479	142.351922.123
146.5371921.412	149.0021920.975	149.9341920.958	153.5441921.199	155.2181921.303
155.6451921.298	170.4091921.127	172.3411921.088	174.396 1920.97	190.0271920.154
204.8871919.874	211.6581919.854	239.0451919.256	246.9151918.865	252.3911918.797
265.345 1918.61	266.4791917.755	270.161914.676	272.6791914.343	277.9141913.526
279.7461913.435	287.1841913.371	292.1461913.386	293.735 1913.76	298.3051915.076
306.7591916.089	314.7481917.017	315.0681917.136	324.818 1917.63	342.0091919.063
349.1981919.973	357.1971920.288	367.2851920.927	376.4651922.128	393.3391923.782
402.2611924.237	410.6731925.164	421.7781926.029							

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	265.345	.04	342.009	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
265.345 342.009 41 33.96 23 .1 .3
Left Levee Station= 28.93 Elevation= 1927.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1923.49	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.52	* Wt. n-Val.	* 0.030	* 0.040	* 0.030 *
* W.S. Elev (ft)	* 1922.96	* Reach Len. (ft)	* 41.00	* 33.96	* 23.00 *
* Crit W.S. (ft)	* 1921.50	* Flow Area (sq ft)	* 361.53	* 538.10	* 87.93 *
* E.G. Slope (ft/ft)	*0.002298	* Area (sq ft)	* 361.53	* 538.10	* 87.93 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 1709.86	* 3454.75	* 335.39 *
* Top Width (ft)	* 248.00	* Top Width (ft)	* 128.36	* 76.66	* 42.98 *
* Vel Total (ft/s)	* 5.57	* Avg. Vel. (ft/s)	* 4.73	* 6.42	* 3.81 *
* Max Chl Dpth (ft)	* 9.59	* Hydr. Depth (ft)	* 2.82	* 7.02	* 2.05 *
* Conv. Total (cfs)	*114744.4	* Conv. (cfs)	* 35672.1	* 72075.2	* 6997.1 *
* Length Wtd. (ft)	* 35.00	* Wetted Per. (ft)	* 128.58	* 78.59	* 43.18 *
* Min Ch El (ft)	* 1913.37	* Shear (lb/sq ft)	* 0.40	* 0.98	* 0.29 *
* Alpha	* 1.09	* Stream Power (lb/ft s)	* 1.91	* 6.31	* 1.11 *
* Frctn Loss (ft)	* 0.08	* Cum Volume (acre-ft)	* 2.93	* 63.06	* 4.17 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 1.67	* 8.38	* 2.05 *

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 6702.04

INPUT
Description: 67+02.04
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1925	11.5	1924	23.5	1923	33	1922	43.2	1921
101	1920	167	1919	171	1918	173	1917	175	1916
177	1915	179	1914	208	1914	209.2	1915	212.8	1916
217	1917	223.5	1918	241.5	1919	255	1920	271.7	1921
281	1922	292.3	1923	305.6	1924	318.4	1925		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	167	.04	223.5	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
167 223.5 .1 .1 .1 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1923.41	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.54	* Wt. n-Val.	* 0.030	* 0.040	* 0.030 *
* W.S. Elev (ft)	* 1922.86	* Reach Len. (ft)	* 0.10	* 0.10	* 0.10 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 375.93	* 427.49	* 180.26 *
* E.G. Slope (ft/ft)	*0.002380	* Area (sq ft)	* 375.93	* 427.49	* 180.26 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 1735.83	* 2925.27	* 838.90 *
* Top Width (ft)	* 265.94	* Top Width (ft)	* 142.20	* 56.50	* 67.25 *
* Vel Total (ft/s)	* 5.59	* Avg. Vel. (ft/s)	* 4.62	* 6.84	* 4.65 *
* Max Chl Dpth (ft)	* 8.86	* Hydr. Depth (ft)	* 2.64	* 7.57	* 2.68 *
* Conv. Total (cfs)	*112745.2	* Conv. (cfs)	* 35583.0	* 59965.5	* 17196.7 *
* Length Wtd. (ft)	* 0.10	* Wetted Per. (ft)	* 142.31	* 58.26	* 67.43 *
* Min Ch El (ft)	* 1914.00	* Shear (lb/sq ft)	* 0.39	* 1.09	* 0.40 *
* Alpha	* 1.12	* Stream Power (lb/ft s)	* 1.81	* 7.46	* 1.85 *

* Frctn Loss (ft)	* 0.00	* Cum Volume (acre-ft)	* 2.58	* 62.69	* 4.10	*
* C & E Loss (ft)	* 0.10	* Cum SA (acres)	* 1.54	* 8.33	* 2.02	*

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: Flamingo Wash
REACH: 1 RS: 6701.94

INPUT
Description: 67+01.94 End Low Flow Channel End Armortec lining
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1925	11.5	1924	23.5	1923	33	1922	43.2	1921
101	1920	167	1919	171	1918	173	1917	175	1916
177	1915	179	1914	184	1914	184	1913.7	194	1913.5
204	1913.7	204	1914	208	1914	209.2	1915	212.8	1916
217	1917	223.5	1918	241.5	1919	255	1920	271.7	1921
281	1922	292.3	1923	305.6	1924	318.4	1925		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	167	.03	184	.013	208	.03	223.5	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
167	223.5	124.94	124.94	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1923.31	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.50	* Wt. n-Val.	* 0.030	* 0.024	* 0.030 *
* W.S. Elev (ft)	* 1921.81	* Reach Len. (ft)	* 124.94	* 124.94	* 124.94 *
* Crit W.S. (ft)	* 1921.81	* Flow Area (sq ft)	* 232.05	* 376.24	* 115.91 *
* E.G. Slope (ft/ft)	*0.002624	* Area (sq ft)	* 232.05	* 376.24	* 115.91 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 856.82	* 4165.03	* 478.15 *
* Top Width (ft)	* 244.37	* Top Width (ft)	* 132.10	* 56.50	* 55.77 *
* Vel Total (ft/s)	* 7.59	* Avg. Vel. (ft/s)	* 3.69	* 11.07	* 4.13 *
* Max Chl Dpth (ft)	* 8.31	* Hydr. Depth (ft)	* 1.76	* 6.66	* 2.08 *
* Conv. Total (cfs)	*107377.5	* Conv. (cfs)	* 16727.8	* 81314.6	* 9335.0 *
* Length Wtd. (ft)	* 124.94	* Wetted Per. (ft)	* 132.16	* 58.86	* 55.91 *
* Min Ch El (ft)	* 1913.50	* Shear (lb/sq ft)	* 0.29	* 1.05	* 0.34 *
* Alpha	* 1.67	* Stream Power (lb/ft s)	* 1.06	* 11.59	* 1.40 *
* Frctn Loss (ft)	* 0.09	* Cum Volume (acre-ft)	* 2.58	* 62.68	* 4.10 *
* C & E Loss (ft)	* 0.35	* Cum SA (acres)	* 1.54	* 8.32	* 2.02 *

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: 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: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 6577

INPUT
Description: 65+77 US Face of bridge at Tioga
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1925	9.8	1924	20	1923	57	1922	67	1921.5
78	1922	111.2	1922	113.3	1921	115.4	1920	118	1919
120.8	1918	124	1917	127.7	1916	132.1	1915	137	1914
143.42	1913	182.4	1912.43	182.4	1911.93	194	1911.73	206	1911.93
206	1912.43	231	1913	234.7	1914	237.85	1915	241	1916
244	1917	246.6	1918	248.9	1919	253.5	1919	265.75	1920
276.3	1921	307.8	1922	328.7	1923	358	1924	368	1925

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	111.2	.03	182.4	.013	206	.03	253.5	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.2	253.5	108	108	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1922.41	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.35	* Wt. n-Val.	* 0.030	* 0.023	* 0.030 *
* W.S. Elev (ft)	* 1922.06	* Reach Len. (ft)	* 108.00	* 108.00	* 108.00 *
* Crit W.S. (ft)	* 1917.15	* Flow Area (sq ft)	* 8.48	* 1143.16	* 65.41 *
* E.G. Slope (ft/ft)	*0.000335	* Area (sq ft)	* 8.48	* 1143.16	* 65.41 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 2.18	* 5431.77	* 66.06 *
* Top Width (ft)	* 254.19	* Top Width (ft)	* 56.36	* 142.30	* 55.52 *
* Vel Total (ft/s)	* 4.52	* Avg. Vel. (ft/s)	* 0.26	* 4.75	* 1.01 *
* Max Chl Dpth (ft)	* 10.33	* Hydr. Depth (ft)	* 0.15	* 8.03	* 1.18 *
* Conv. Total (cfs)	*300503.9	* Conv. (cfs)	* 118.8	*296775.8	* 3609.4 *
* Length Wtd. (ft)	* 108.00	* Wetted Per. (ft)	* 56.39	* 145.70	* 55.63 *
* Min Ch El (ft)	* 1911.73	* Shear (lb/sq ft)	* 0.00	* 0.16	* 0.02 *
* Alpha	* 1.09	* Stream Power (lb/ft s)	* 0.00	* 0.78	* 0.02 *
* Frctn Loss (ft)	*	* Cum Volume (acre-ft)	* 2.24	* 60.51	* 3.84 *

* C & E Loss (ft) * * Cum SA (acres) * 1.27 * 8.04 * 1.86 *
****

CULVERT

RIVER: Flamingo Wash
REACH: 1 RS: 6500

INPUT
Description: Tioga
Distance from Upstream XS = 25.2
Deck/Roadway Width = 75
Weir Coefficient = 2.6
Bridge Deck/Roadway Skew = 30
Upstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
****
0 1922.75 1919.85 310.31 1922.75 1919.85

Upstream Bridge Cross Section Data
Station Elevation Data num= 38
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
****
0 1922.98 5.58 1922.44 12.18 1922.23 12.75 1922.17 29.47 1922.26
40.08 1922.27 49.54 1921.64 49.65 1921.63 50.58 1921.62 57.95 1921.76
62.06 1922.05 62.82 1922.11 63.91 1922.06 68.07 1922.06 68.52 1921.98
85.17 1922.23 91.86 1922.11 95.83 1922.12 99.37 1922.11 103.76 1922.15
105.84 1922.18 111.24 1922.19 119.87 1921.89 123.12 1921.99 126.69 1922.26
127.74 1922.19 128.75 1922.1 134 1921.5 134 1911.2 233 1911.2
233 1921 255.92 1921.03 257.73 1921.14 257.89 1921.14 275.6 1921.69
285.11 1921.79 295.36 1922.21 310.31 1923.02

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
****
0 .03 126.69 .04 257.73 .03

Bank Sta: Left Right Coeff Contr. Expan.
134 233 .1 .3

Downstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
****
0 1922.75 1919.52 213.59 1922.75 1919.52

Downstream Bridge Cross Section Data
Station Elevation Data num= 29
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
****
0 1920.18 .34 1920.19 3.35 1920.13 10.52 1920.28 19.47 1920.81
25.83 1920.97 26.55 1921 27.58 1921.02 29.78 1920.99 33.87 1920.93
34 1920.96 34 1910.8 133 1910.8 133 1920.3 146.25 1920.71
153.72 1920.78 162.49 1920.9 164.22 1920.93 172.9 1921.43 175.13 1921.47
188.62 1921.7 189.89 1921.71 190.79 1921.72 199.46 1922.19 207.05 1922.62
207.59 1922.63 208.29 1922.63 211.28 1922.84 213.59 1923.03

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
****
0 .03 34 .04 146.25 .03

Bank Sta: Left Right Coeff Contr. Expan.
34 133 .1 .3
Skew Angle = 30

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 1922.75
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 4

Culvert Name Shape Rise Span
Culvert #1 Box 8 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
25.2 80 .013 .013 0 .4 1
Upstream Elevation = 1911.85
Centerline Station = 148
Downstream Elevation = 1911.52
Centerline Station = 48

Culvert Name Shape Rise Span
Culvert #2 Box 8 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
25.2 80 .013 .013 0 .4 1
Upstream Elevation = 1911.85
Centerline Station = 172
Downstream Elevation = 1911.52
Centerline Station = 72

Culvert Name Shape Rise Span
Culvert #3 Box 8.5 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.

```
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              25.2      80     .013     .013        0                  .4               1
Upstream   Elevation =  1911.35
           Centerline Station =  196
Downstream Elevation =  1911.02
           Centerline Station =  96

Culvert Name     Shape      Rise    Span
Culvert #4           Box       8      20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
              25.2      80     .013     .013        0                  .4               1
Upstream   Elevation =  1911.85
           Centerline Station =  220
Downstream Elevation =  1911.52
           Centerline Station =  120

CULVERT OUTPUT  Profile #100-yr FIS  Culv Group:  Culvert #1
*********************************************************************
* Q Culv Group (cfs)     * 1350.26  * Culv Full Len (ft)      *   80.00  *
* # Barrels              *       1  * Culv Vel US (ft/s)      *    8.44  *
* Q Barrel (cfs)         * 1350.26  * Culv Vel DS (ft/s)      *    8.44  *
* E.G. US. (ft)          * 1922.41  * Culv Inv El Up (ft)    * 1911.85  *
* W.S. US. (ft)          * 1922.06  * Culv Inv El Dn (ft)    * 1911.52  *
* E.G. DS (ft)           * 1921.19  * Culv Frctn Ls (ft)     *    0.11  *
* W.S. DS (ft)           * 1920.74  * Culv Exit Loss (ft)    *    0.66  *
* Delta EG (ft)          *    1.21  * Culv Entr Loss (ft)    *    0.44  *
* Delta WS (ft)          *    1.32  * Q Weir (cfs)           *          *
* E.G. IC (ft)           * 1920.27  * Weir Sta Lft (ft)      *          *
* E.G. OC (ft)           * 1922.40  * Weir Sta Rgt (ft)      *          *
* Culvert Control        *  Outlet  * Weir Submerg           *          *
* Culv WS Inlet (ft)     * 1919.85  * Weir Max Depth (ft)    *          *
* Culv WS Outlet (ft)    * 1919.52  * Weir Avg Depth (ft)    *          *
* Culv Nml Depth (ft)    *         * Weir Flow Area (sq ft) *          *
* Culv Crt Depth (ft)    *    5.21  * Min El Weir Flow (ft)  * 1922.76  *
*********************************************************************

CULVERT OUTPUT  Profile #100-yr FIS  Culv Group:  Culvert #2
*********************************************************************
* Q Culv Group (cfs)     * 1350.26  * Culv Full Len (ft)      *   80.00  *
* # Barrels              *       1  * Culv Vel US (ft/s)      *    8.44  *
* Q Barrel (cfs)         * 1350.26  * Culv Vel DS (ft/s)      *    8.44  *
* E.G. US. (ft)          * 1922.41  * Culv Inv El Up (ft)    * 1911.85  *
* W.S. US. (ft)          * 1922.06  * Culv Inv El Dn (ft)    * 1911.52  *
* E.G. DS (ft)           * 1921.19  * Culv Frctn Ls (ft)     *    0.11  *
* W.S. DS (ft)           * 1920.74  * Culv Exit Loss (ft)    *    0.66  *
* Delta EG (ft)          *    1.21  * Culv Entr Loss (ft)    *    0.44  *
* Delta WS (ft)          *    1.32  * Q Weir (cfs)           *          *
* E.G. IC (ft)           * 1920.27  * Weir Sta Lft (ft)      *          *
* E.G. OC (ft)           * 1922.40  * Weir Sta Rgt (ft)      *          *
* Culvert Control        *  Outlet  * Weir Submerg           *          *
* Culv WS Inlet (ft)     * 1919.85  * Weir Max Depth (ft)    *          *
* Culv WS Outlet (ft)    * 1919.52  * Weir Avg Depth (ft)    *          *
* Culv Nml Depth (ft)    *         * Weir Flow Area (sq ft) *          *
* Culv Crt Depth (ft)    *    5.21  * Min El Weir Flow (ft)  * 1922.76  *
*********************************************************************

CULVERT OUTPUT  Profile #100-yr FIS  Culv Group:  Culvert #3
*********************************************************************
* Q Culv Group (cfs)     * 1449.23  * Culv Full Len (ft)      *   80.00  *
* # Barrels              *       1  * Culv Vel US (ft/s)      *    8.52  *
* Q Barrel (cfs)         * 1449.23  * Culv Vel DS (ft/s)      *    8.52  *
* E.G. US. (ft)          * 1922.41  * Culv Inv El Up (ft)    * 1911.35  *
* W.S. US. (ft)          * 1922.06  * Culv Inv El Dn (ft)    * 1911.02  *
* E.G. DS (ft)           * 1921.19  * Culv Frctn Ls (ft)     *    0.08  *
* W.S. DS (ft)           * 1920.74  * Culv Exit Loss (ft)    *    0.68  *
* Delta EG (ft)          *    1.21  * Culv Entr Loss (ft)    *    0.45  *
* Delta WS (ft)          *    1.32  * Q Weir (cfs)           *          *
* E.G. IC (ft)           * 1920.17  * Weir Sta Lft (ft)      *          *
* E.G. OC (ft)           * 1922.43  * Weir Sta Rgt (ft)      *          *
* Culvert Control        *  Outlet  * Weir Submerg           *          *
* Culv WS Inlet (ft)     * 1919.85  * Weir Max Depth (ft)    *          *
* Culv WS Outlet (ft)    * 1919.52  * Weir Avg Depth (ft)    *          *
* Culv Nml Depth (ft)    *         * Weir Flow Area (sq ft) *          *
* Culv Crt Depth (ft)    *    5.46  * Min El Weir Flow (ft)  * 1922.76  *
*********************************************************************

CULVERT OUTPUT  Profile #100-yr FIS  Culv Group:  Culvert #4
*********************************************************************
* Q Culv Group (cfs)     * 1350.26  * Culv Full Len (ft)      *   80.00  *
* # Barrels              *       1  * Culv Vel US (ft/s)      *    8.44  *
* Q Barrel (cfs)         * 1350.26  * Culv Vel DS (ft/s)      *    8.44  *
* E.G. US. (ft)          * 1922.41  * Culv Inv El Up (ft)    * 1911.85  *
* W.S. US. (ft)          * 1922.06  * Culv Inv El Dn (ft)    * 1911.52  *
* E.G. DS (ft)           * 1921.19  * Culv Frctn Ls (ft)     *    0.11  *
* W.S. DS (ft)           * 1920.74  * Culv Exit Loss (ft)    *    0.66  *
* Delta EG (ft)          *    1.21  * Culv Entr Loss (ft)    *    0.44  *
* Delta WS (ft)          *    1.32  * Q Weir (cfs)           *          *
* E.G. IC (ft)           * 1920.27  * Weir Sta Lft (ft)      *          *
* E.G. OC (ft)           * 1922.40  * Weir Sta Rgt (ft)      *          *
* Culvert Control        *  Outlet  * Weir Submerg           *          *
* Culv WS Inlet (ft)     * 1919.85  * Weir Max Depth (ft)    *          *
* Culv WS Outlet (ft)    * 1919.52  * Weir Avg Depth (ft)    *          *
* Culv Nml Depth (ft)    *         * Weir Flow Area (sq ft) *          *
* Culv Crt Depth (ft)    *    5.21  * Min El Weir Flow (ft)  * 1922.76  *
*********************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 6469
```

```
INPUT
Description: Sta 64+69 DS Face of bridge at Tioga
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1925      22    1924    32.2    1923    43.3    1922      56    1921
      88    1920     105    1919   131.5    1920     139    1921   157.7    1922
     170    1922     186    1921     190    1921     190    1917     192    1916
     194    1915     196    1914     198    1912     200 1911.68     247 1911.68
     247 1911.18   258.6 1910.98     270 1911.18     270 1911.68     294 1911.68
     296    1912     299    1913     301    1914   303.5    1915   303.5  1920.5
     323    1921   332.7    1922     364    1922   381.8    1922     400    1923
     418    1924     446    1925

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************************************************
       0     .03     186     .03     247    .013     270     .03   332.7     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          186   332.7                67     119     153             .1       .3
Skew Angle = 30

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1921.19  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.45  * Wt. n-Val.            *   0.030  *   0.023  *          *
* W.S. Elev (ft)         * 1920.74  * Reach Len. (ft)       *   67.00  *  119.00  *  153.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *   64.88  * 1004.09  *          *
* E.G. Slope (ft/ft)     *0.000453  * Area (sq ft)          *   64.88  * 1004.09  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *   63.27  * 5436.73  *          *
* Top Width (ft)         *  195.72  * Top Width (ft)        *   72.80  *  122.93  *          *
* Vel Total (ft/s)       *    5.15  * Avg. Vel. (ft/s)      *    0.98  *    5.41  *          *
* Max Chl Dpth (ft)      *    9.76  * Hydr. Depth (ft)      *    0.89  *    8.17  *          *
* Conv. Total (cfs)      *258452.0  * Conv. (cfs)           *  2973.0  *255479.0  *          *
* Length Wtd. (ft)       *  117.14  * Wetted Per. (ft)      *   72.91  *  135.35  *          *
* Min Ch El (ft)         * 1910.98  * Shear (lb/sq ft)      *    0.03  *    0.21  *          *
* Alpha                  *    1.10  * Stream Power (lb/ft s) *    0.02  *    1.14  *          *
* Frctn Loss (ft)        *    0.11  * Cum Volume (acre-ft)  *    2.15  *   57.84  *    3.76  *
* C & E Loss (ft)        *    0.14  * Cum SA (acres)        *    1.11  *    7.71  *    1.79  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 6350

INPUT
Description: 63+50 Begin Articulated Block
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1924       5    1923      10    1922      15    1921      20    1920
      25    1919    26.7  1918.5    28.2    1919    32.2    1920    44.6    1920
    48.9    1919    53.1    1918      63    1917     105    1916   109.8    1915
     114    1914  118.32    1913     122    1912     127 1911.27     127 1910.77
     137 1910.57     147 1910.77     147 1911.27  149.34    1912  153.32    1913
  157.29    1914     161    1915     168    1916  184.65    1917     200    1918
     212    1919   221.7    1920   231.6    1921   245.3    1922  276.41    1923

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************************************************
       0     .03     105     .03     127    .013     147     .03     161     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          105     161                  .1      .1      .1             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1920.94  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.86  * Wt. n-Val.            *   0.030  *   0.025  *   0.030  *
* W.S. Elev (ft)         * 1919.08  * Reach Len. (ft)       *    0.10  *    0.10  *    0.10  *
* Crit W.S. (ft)         * 1919.08  * Flow Area (sq ft)     *  127.44  *  372.83  *   99.18  *
* E.G. Slope (ft/ft)     *0.003269  * Area (sq ft)          *  127.44  *  372.83  *   99.18  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *  612.28  * 4455.47  *  432.25  *
* Top Width (ft)         *  168.10  * Top Width (ft)        *   60.34  *   56.00  *   51.76  *
* Vel Total (ft/s)       *    9.18  * Avg. Vel. (ft/s)      *    4.80  *   11.95  *    4.36  *
* Max Chl Dpth (ft)      *    8.51  * Hydr. Depth (ft)      *    2.11  *    6.66  *    1.92  *
* Conv. Total (cfs)      * 96202.2  * Conv. (cfs)           * 10709.6  * 77932.0  *  7560.6  *
* Length Wtd. (ft)       *    0.10  * Wetted Per. (ft)      *   60.70  *   58.02  *   51.94  *
* Min Ch El (ft)         * 1910.57  * Shear (lb/sq ft)      *    0.43  *    1.31  *    0.39  *
* Alpha                  *    1.42  * Stream Power (lb/ft s) *    2.06  *   15.67  *    1.70  *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    2.00  *   55.96  *    3.59  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)        *    1.01  *    7.47  *    1.70  *
*************************************************************************************************

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.
Note:    Manning's n values were composited to a single value in the main channel.

CROSS SECTION
```

RIVER: Flamingo Wash
REACH: 1 RS: 6349.9

INPUT
Description: 63+49.9 End Earth Channel
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1924	5	1923	10	1922	15	1921	20	1920
25	1919	26.7	1918.5	28.2	1919	32.2	1920	44.6	1920
48.9	1919	53.1	1918	63	1917	105	1916	109.8	1915
114	1914	118.32	1913	122	1912	127	1911.27	127	1910.77
137	1910.57	147	1910.77	147	1911.27	149.34	1912	153.32	1913
157.29	1914	161	1915	168	1916	184.65	1917	200	1918
212	1919	221.7	1920	231.6	1921	245.3	1922	276.41	1923

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	105	.04	127	.013	147	.04	161	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
105	161	103	99.99	96	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1920.72	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.73	* Wt. n-Val.	* 0.030	* 0.032	* 0.030 *
* W.S. Elev (ft)	* 1918.99	* Reach Len. (ft)	* 103.00	* 99.99	* 96.00 *
* Crit W.S. (ft)	* 1918.99	* Flow Area (sq ft)	* 122.29	* 368.01	* 94.76 *
* E.G. Slope (ft/ft)	*0.005197	* Area (sq ft)	* 122.29	* 368.01	* 94.76 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 726.18	* 4263.02	* 510.80 *
* Top Width (ft)	* 166.13	* Top Width (ft)	* 59.22	* 56.00	* 50.91 *
* Vel Total (ft/s)	* 9.40	* Avg. Vel. (ft/s)	* 5.94	* 11.58	* 5.39 *
* Max Chl Dpth (ft)	* 8.42	* Hydr. Depth (ft)	* 2.07	* 6.57	* 1.86 *
* Conv. Total (cfs)	* 76295.6	* Conv. (cfs)	* 10073.5	* 59136.3	* 7085.8 *
* Length Wtd. (ft)	* 100.20	* Wetted Per. (ft)	* 59.55	* 58.02	* 51.08 *
* Min Ch El (ft)	* 1910.57	* Shear (lb/sq ft)	* 0.67	* 2.06	* 0.60 *
* Alpha	* 1.26	* Stream Power (lb/ft s)	* 3.96	* 23.84	* 3.24 *
* Frctn Loss (ft)	* 0.38	* Cum Volume (acre-ft)	* 2.00	* 55.96	* 3.59 *
* C & E Loss (ft)	* 0.25	* Cum SA (acres)	* 1.01	* 7.47	* 1.70 *

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 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.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 6250

INPUT
Description: Sta 62+50
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1925	23	1920.01	25.64	1919.43	27.22	1919.25	29.82	1918.88
39.78	1917.35	41.73	1917.11	45.19	1916.86	48.06	1916.45	56.64	1916.5
73.56	1916.51	76.88	1916.53	80.73	1916.14	83.25	1915.97	94.32	1915.56
99.51	1915.1	123.59	1914.69	125.29	1914.65	126.36	1914.63	130.67	1914.58
135.65	1914.51	143.22	1914.77	151.01	1915.04	154.3	1915.03	172.88	1910.69
172.88	1910.19	182.88	1909.99	192.88	1910.19	192.88	1910.69	205.77	1913.76
205.87	1913.75	216.03	1914.39	225.05	1915.12	226.26	1915.05	226.99	1915.1
228.95	1915.26	230.39	1915.33	231.83	1915.38	235.19	1915.76	247.57	1916.78
254.91	1917.43	261.07	1917.97	264.16	1918.04	265.94	1918.19	268.74	1918.55
269.77	1918.64	271.73	1918.78	293.17	1920.14	293.4	1920.15	330	1922
371	1925								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	154.3	.04	172.88	.013	192.88	.04	205.77	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
154.3	205.77	158	150	140	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1919.25	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.90	* Wt. n-Val.	* 0.030	* 0.031	* 0.030 *
* W.S. Elev (ft)	* 1918.35	* Reach Len. (ft)	* 158.00	* 150.00	* 140.00 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 320.43	* 346.09	* 147.38 *
* E.G. Slope (ft/ft)	*0.002948	* Area (sq ft)	* 320.43	* 346.09	* 147.38 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 1647.56	* 3143.41	* 709.03 *
* Top Width (ft)	* 233.90	* Top Width (ft)	* 121.02	* 51.47	* 61.40 *
* Vel Total (ft/s)	* 6.76	* Avg. Vel. (ft/s)	* 5.14	* 9.08	* 4.81 *
* Max Chl Dpth (ft)	* 8.36	* Hydr. Depth (ft)	* 2.65	* 6.72	* 2.40 *
* Conv. Total (cfs)	*101290.0	* Conv. (cfs)	* 30342.0	* 57890.2	* 13057.8 *
* Length Wtd. (ft)	* 148.89	* Wetted Per. (ft)	* 121.22	* 53.33	* 61.60 *
* Min Ch El (ft)	* 1909.99	* Shear (lb/sq ft)	* 0.49	* 1.19	* 0.44 *
* Alpha	* 1.27	* Stream Power (lb/ft s)	* 2.50	* 10.85	* 2.12 *
* Frctn Loss (ft)	* 0.30	* Cum Volume (acre-ft)	* 1.47	* 55.14	* 3.32 *
* C & E Loss (ft)	* 0.13	* Cum SA (acres)	* 0.80	* 7.34	* 1.58 *

Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 6100

INPUT
Description: Sta 61+00
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1923.37	6.96	1923.31	7.58	1923.31	7.85	1923.31	8.24	1923.3
8.57	1923.28	9.38	1923.26	10.48	1923.29	13.39	1923.26	19.45	1923.23
23.16	1921.98	30.94	1919.37	31.29	1919.31	33.93	1919.21	59.45	1917.1
75.89	1916.51	84.88	1916.03	90.66	1915.61	105.99	1916.16	109.89	1916.17
112.85	1916.1	141	1909.62	141	1909.12	151	1908.92	161	1909.12
161	1909.62	184.85	1913.39	186.29	1913.45	187.29	1913.48	189.57	1913.51
203.51	1914.01	211.31	1914.22	214.95	1914.21	217.82	1914.39	225.32	1914.17
238.1	1913.76	238.58	1913.74	244.29	1913.84	247.69	1913.84	255.31	1913.91
259.31	1914.03	269.71	1914.03	271.66	1914.09	277.97	1914.56	278.58	1914.61
281.27	1914.76	286.32	1915.06	293.82	1915.42	309.45	1916.1	321.67	1916.61
337.69	1917.25	345.31	1917.77	349.7	1917.88	355.14	1917.98	394	1919

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	112.85	.04	141	.013	161	.04	184.85	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
112.85 184.85 130 108.42 102 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
280.43	394	1923.65	T

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1918.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.030	0.034	0.030
W.S. Elev (ft)	1918.34	Reach Len. (ft)	130.00	108.42	102.00
Crit W.S. (ft)		Flow Area (sq ft)	120.55	503.89	415.64
E.G. Slope (ft/ft)	*0.001466	Area (sq ft)	120.55	503.89	559.95
Q Total (cfs)	5500.00	Flow (cfs)	333.19	3067.28	2099.53
Top Width (ft)	324.55	Top Width (ft)	68.43	72.00	184.12
Vel Total (ft/s)	5.29	Avg. Vel. (ft/s)	2.76	6.09	5.05
Max Chl Dpth (ft)	9.42	Hydr. Depth (ft)	1.76	7.00	4.35
Conv. Total (cfs)	*143626.1	Conv. (cfs)	8700.8	80098.5	54826.8
Length Wtd. (ft)	107.40	Wetted Per. (ft)	68.53	74.04	95.64
Min Ch El (ft)	1908.92	Shear (lb/sq ft)	0.16	0.62	0.40
Alpha	1.10	Stream Power (lb/ft s)	0.45	3.79	2.01
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	0.68	53.68	2.18
C & E Loss (ft)	0.04	Cum SA (acres)	0.45	7.13	1.18

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: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5991.58

INPUT
Description: 59+91.58 Low Flow Channel Starts
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1920	13	1919	34	1918	50	1917	78	1916
80	1915	82	1914	84	1913	86	1912	88	1911
90	1910	91	1909.5	99.5	1909.2	99.5	1908.7	109.5	1908.5
119.5	1908.7	119.5	1909.2	129	1909.5	132	1910	135.6	1911
139.2	1912	142.9	1913	146.7	1914	150.4	1915	154.3	1916
158.8	1917	169	1917	181.5	1916	201	1915	248	1915
270	1916	289	1917	315	1918	338	1919	370	1920

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	78	.04	99.5	.013	119.5	.04	158.8	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
78 158.8 .1 .1 .1 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1918.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.84	Wt. n-Val.	0.030	0.034	0.030
W.S. Elev (ft)	1917.73	Reach Len. (ft)	0.10	0.10	0.10
Crit W.S. (ft)	1916.78	Flow Area (sq ft)	38.65	532.07	273.77
E.G. Slope (ft/ft)	*0.002981	Area (sq ft)	38.65	532.07	273.77
Q Total (cfs)	5500.00	Flow (cfs)	102.67	4288.00	1109.33
Top Width (ft)	269.60	Top Width (ft)	39.66	80.80	149.14
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	2.66	8.06	4.05
Max Chl Dpth (ft)	9.23	Hydr. Depth (ft)	0.97	6.59	1.84
Conv. Total (cfs)	*100731.9	Conv. (cfs)	1880.4	78534.3	20317.2
Length Wtd. (ft)	0.10	Wetted Per. (ft)	39.70	84.29	149.27
Min Ch El (ft)	1908.50	Shear (lb/sq ft)	0.18	1.17	0.34
Alpha	1.27	Stream Power (lb/ft s)	0.48	9.47	1.38
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.44	52.39	1.21
C & E Loss (ft)	0.10	Cum SA (acres)	0.29	6.94	0.79

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: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5991.48

INPUT
Description: 59+91.48 Grouted Riprap Ends
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1920	13	1919	34	1918	50	1917	78	1916
80	1915	82	1914	84	1913	86	1912	88	1911
90	1910	92	1909	93	1908.5	125	1908.5	127	1909
132	1910	135.6	1911	139.2	1912	142.9	1913	146.7	1914
150.4	1915	154.3	1916	158.8	1917	169	1917	181.5	1916
201	1915	248	1915	270	1916	289	1917	315	1918
338	1919	370	1920						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	78	.025	93	.013	127	.025	158.8	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
78 158.8 95 86.48 80 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1918.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.86	Wt. n-Val.	0.030	0.020	0.030
W.S. Elev (ft)	1916.60	Reach Len. (ft)	95.00	86.48	80.00
Crit W.S. (ft)	1916.60	Flow Area (sq ft)	5.05	455.86	126.61
E.G. Slope (ft/ft)	0.002445	Area (sq ft)	5.05	455.86	126.61
Q Total (cfs)	5500.00	Flow (cfs)	5.55	5148.67	345.78
Top Width (ft)	203.25	Top Width (ft)	16.82	79.00	107.43
Vel Total (ft/s)	9.36	Avg. Vel. (ft/s)	1.10	11.29	2.73
Max Chl Dpth (ft)	8.10	Hydr. Depth (ft)	0.30	5.77	1.18
Conv. Total (cfs)	111234.5	Conv. (cfs)	112.2	104129.1	6993.1
Length Wtd. (ft)	86.28	Wetted Per. (ft)	16.83	81.79	107.51
Min Ch El (ft)	1908.50	Shear (lb/sq ft)	0.05	0.85	0.18
Alpha	1.37	Stream Power (lb/ft s)	0.05	9.61	0.49
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.44	52.39	1.21
C & E Loss (ft)	0.29	Cum SA (acres)	0.29	6.94	0.79

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 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.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5905

INPUT
Description: 59+05 US Face of Eastern Ave. Bridge
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
155	1915.8	161.5	1907.81	200.5	1907.8	239.5	1907.81	246	1915.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
155	.025	161.5	.013	239.5	.025

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
155 246 115 115 115 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
155	157	1919	F
244	246	1919	F

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1917.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.		0.015	
W.S. Elev (ft)	1916.49	Reach Len. (ft)	115.00	115.00	115.00
Crit W.S. (ft)	1913.09	Flow Area (sq ft)		730.64	
E.G. Slope (ft/ft)	0.000373	Area (sq ft)		738.32	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	91.00	Top Width (ft)		91.00	
Vel Total (ft/s)	7.53	Avg. Vel. (ft/s)		7.53	
Max Chl Dpth (ft)	8.69	Hydr. Depth (ft)		8.40	
Conv. Total (cfs)	284777.4	Conv. (cfs)		284777.4	
Length Wtd. (ft)	115.00	Wetted Per. (ft)		92.26	
Min Ch El (ft)	1907.80	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		1.39	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.43	51.20	1.09
C & E Loss (ft)		Cum SA (acres)	0.27	6.77	0.70

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CULVERT

RIVER: Flamingo Wash
REACH: 1 RS: 5800

INPUT
Description: Eastern
Distance from Upstream XS = 10.9
Deck/Roadway Width = 100
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0 1919.75	1915.75	484.7 1919.75	1915.75

Upstream Bridge Cross Section Data
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1917.5	150	1917.5	150	1907.5	250	1907.5	250	1917.5
484.7	1917.5								

Manning's n Values num= 1

Sta	n Val
0	.015

Bank Sta: Left Right Coeff Contr. Expan.
150 250 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	157	1919	F
244	484.7	1919	F

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0 1919.75	1914.5	493.275 1919.75	1914.5

Downstream Bridge Cross Section Data
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1917	150	1917	150	1906.5	250	1906.5	250	1917.5
484.7	1917.5								

Manning's n Values num= 1

Sta	n Val
0	.015

Bank Sta: Left Right Coeff Contr. Expan.
150 250 .3 .5

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 = 1919.75
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 2

Culvert Name Shape Rise Span
Culvert #2 Box 8 22
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
10.9	98	.013	.013	0	.4	1

Upstream Elevation = 1907.75
Centerline Station = 174
Downstream Elevation = 1906.5
Centerline Station = 174

Culvert Name Shape Rise Span
Culvert #1 Box 8 10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
10.9	98	.013	.013	0	.4	1

Number of Barrels = 5
Upstream Elevation = 1907.75
Centerline Stations

Sta.	Sta.	Sta.	Sta.	Sta.
192	203	214	225	236

Downstream Elevation = 1906.5
Centerline Stations

Sta.	Sta.	Sta.	Sta.	Sta.
192	203	214	225	236

CULVERT OUTPUT Profile #100-yr FIS Culv Group: Culvert #2

Q Culv Group (cfs)	1678.13	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	13.49
Q Barrel (cfs)	1678.13	Culv Vel DS (ft/s)	18.08
E.G. US. (ft)	1917.37	Culv Inv El Up (ft)	1907.75
W.S. US. (ft)	1916.49	Culv Inv El Dn (ft)	1906.50

* E.G. DS (ft)	* 1914.22	* Culv Frctn Ls (ft)	*	0.44	*
* W.S. DS (ft)	* 1911.59	* Culv Exit Loss (ft)	*	1.58	*
* Delta EG (ft)	* 3.16	* Culv Entr Loss (ft)	*	1.13	*
* Delta WS (ft)	* 4.90	* Q Weir (cfs)	*		*
* E.G. IC (ft)	* 1916.88	* Weir Sta Lft (ft)	*		*
* E.G. OC (ft)	* 1917.36	* Weir Sta Rgt (ft)	*		*
* Culvert Control	* Inlet	* Weir Submerg	*		*
* Culv WS Inlet (ft)	* 1913.40	* Weir Max Depth (ft)	*		*
* Culv WS Outlet (ft)	* 1910.72	* Weir Avg Depth (ft)	*		*
* Culv Nml Depth (ft)	* 3.22	* Weir Flow Area (sq ft)	*		*
* Culv Crt Depth (ft)	* 5.65	* Min El Weir Flow (ft)	*	1919.76	*

Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #100-yr FIS Culv Group: Culvert #1

* Q Culv Group (cfs)	* 3821.87	* Culv Full Len (ft)	*		*
* # Barrels	* 5	* Culv Vel US (ft/s)	*	13.50	*
* Q Barrel (cfs)	* 764.37	* Culv Vel DS (ft/s)	*	17.52	*
* E.G. US. (ft)	* 1917.37	* Culv Inv El Up (ft)	*	1907.75	*
* W.S. US. (ft)	* 1916.49	* Culv Inv El Dn (ft)	*	1906.50	*
* E.G. DS (ft)	* 1914.22	* Culv Frctn Ls (ft)	*	0.61	*
* W.S. DS (ft)	* 1911.59	* Culv Exit Loss (ft)	*	1.41	*
* Delta EG (ft)	* 3.16	* Culv Entr Loss (ft)	*	1.13	*
* Delta WS (ft)	* 4.90	* Q Weir (cfs)	*		*
* E.G. IC (ft)	* 1916.89	* Weir Sta Lft (ft)	*		*
* E.G. OC (ft)	* 1917.37	* Weir Sta Rgt (ft)	*		*
* Culvert Control	* Inlet	* Weir Submerg	*		*
* Culv WS Inlet (ft)	* 1913.41	* Weir Max Depth (ft)	*		*
* Culv WS Outlet (ft)	* 1910.86	* Weir Avg Depth (ft)	*		*
* Culv Nml Depth (ft)	* 3.62	* Weir Flow Area (sq ft)	*		*
* Culv Crt Depth (ft)	* 5.66	* Min El Weir Flow (ft)	*	1919.76	*

Note: The flow in the culvert is entirely supercritical.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5790

INPUT
Description: Sta 57+90 DS of Eastern Ave. Bridge
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
163	1917.91	163	1906.3	203.64	1906.41	244.27	1906.42	244.27	1917.91

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
163	.013	163	.013	244.27	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163	244.27	52.26	52.26	.3	.5

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1914.22	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 2.63	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1911.59	* Reach Len. (ft)	* 52.26	* 52.26	* 52.26 *
* Crit W.S. (ft)	* 1911.59	* Flow Area (sq ft)	*	* 423.00	* *
* E.G. Slope (ft/ft)	*0.001686	* Area (sq ft)	*	* 423.00	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 81.27	* Top Width (ft)	*	* 81.27	* *
* Vel Total (ft/s)	* 13.00	* Avg. Vel. (ft/s)	*	* 13.00	* *
* Max Chl Dpth (ft)	* 5.29	* Hydr. Depth (ft)	*	* 5.20	* *
* Conv. Total (cfs)	*133953.1	* Conv. (cfs)	*	*133953.1	* *
* Length Wtd. (ft)	* 52.26	* Wetted Per. (ft)	*	* 91.73	* *
* Min Ch El (ft)	* 1906.30	* Shear (lb/sq ft)	*	* 0.49	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 6.31	* *
* Frctn Loss (ft)	* 0.09	* Cum Volume (acre-ft)	* 0.43	* 49.67	* 1.09 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.27	* 6.54	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 5737.74

INPUT
Description: 57+37.74 Begin 79.77' Channel. End transition
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
81.5	1916.2	81.5	1906.4	121.34	1905.6	161.27	1906.4	161.27	1916.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
81.5	.013	81.5	.013	161.27	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
81.5	161.27	89.32	89.32	.3	.5

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1913.93	Element	Left OB	Channel	Right OB	
Vel Head (ft)	2.66	Wt. n-Val.		0.013		
W.S. Elev (ft)	1911.27	Reach Len. (ft)	89.32	89.32	89.32	
Crit W.S. (ft)	1911.27	Flow Area (sq ft)		420.06		
E.G. Slope (ft/ft)	*0.001670	Area (sq ft)		420.06		
Q Total (cfs)	5500.00	Flow (cfs)		5500.00		
Top Width (ft)	79.77	Top Width (ft)		79.77		
Vel Total (ft/s)	13.09	Avg. Vel. (ft/s)		13.09		
Max Chl Dpth (ft)	5.67	Hydr. Depth (ft)		5.27		
Conv. Total (cfs)	*134574.2	Conv. (cfs)		*134574.2		
Length Wtd. (ft)	89.32	Wetted Per. (ft)		89.52		
Min Ch El (ft)	1905.60	Shear (lb/sq ft)		0.49		
Alpha	1.00	Stream Power (lb/ft s)		6.41		
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.43	49.16	1.09	
C & E Loss (ft)	0.03	Cum SA (acres)	0.27	6.45	0.70	

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: Flamingo Wash
REACH: 1 RS: 5648.42

INPUT
Description: 56+48.42 begin transition from 75' to 79.77' and PT
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1914	0	1904.95	37.5	1904.2	75	1904.95	75	1914

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	75	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	75	99.6	99.6	.05	.2

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1912.84	Element	Left OB	Channel	Right OB	
Vel Head (ft)	2.75	Wt. n-Val.		0.013		
W.S. Elev (ft)	1910.08	Reach Len. (ft)	99.60	99.60	99.60	
Crit W.S. (ft)	1910.08	Flow Area (sq ft)		412.98		
E.G. Slope (ft/ft)	*0.001657	Area (sq ft)		412.98		
Q Total (cfs)	5500.00	Flow (cfs)		5500.00		
Top Width (ft)	75.00	Top Width (ft)		75.00		
Vel Total (ft/s)	13.32	Avg. Vel. (ft/s)		13.32		
Max Chl Dpth (ft)	5.88	Hydr. Depth (ft)		5.51		
Conv. Total (cfs)	*135114.8	Conv. (cfs)		*135114.8		
Length Wtd. (ft)	99.60	Wetted Per. (ft)		85.28		
Min Ch El (ft)	1904.20	Shear (lb/sq ft)		0.50		
Alpha	1.00	Stream Power (lb/ft s)		6.67		
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	0.43	48.31	1.09	
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	6.29	0.70	

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: Flamingo Wash
REACH: 1 RS: 5548.82*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1912.45	0	1903.4	37.5	1902.65	75	1903.4	75	1912.45

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	75	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	75	99.6	99.6	.05	.2

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1911.29	Element	Left OB	Channel	Right OB	
Vel Head (ft)	2.75	Wt. n-Val.		0.013		
W.S. Elev (ft)	1908.53	Reach Len. (ft)	99.60	99.60	99.60	
Crit W.S. (ft)	1908.53	Flow Area (sq ft)		412.96		
E.G. Slope (ft/ft)	*0.001657	Area (sq ft)		412.96		
Q Total (cfs)	5500.00	Flow (cfs)		5500.00		
Top Width (ft)	75.00	Top Width (ft)		75.00		
Vel Total (ft/s)	13.32	Avg. Vel. (ft/s)		13.32		
Max Chl Dpth (ft)	5.88	Hydr. Depth (ft)		5.51		

* Conv. Total (cfs)	*135105.3	* Conv. (cfs)	*	*135105.3	*	*		
* Length Wtd. (ft)	* 99.60	* Wetted Per. (ft)	*	* 85.28	*	*		
* Min Ch El (ft)	* 1902.65	* Shear (lb/sq ft)	*	* 0.50	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 6.67	*	*		
* Frctn Loss (ft)	* 0.14	* Cum Volume (acre-ft)	* 0.43	* 47.37	*	1.09	*	
* C & E Loss (ft)	* 0.10	* Cum SA (acres)	* 0.27	* 6.12	*	0.70	*	

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: Flamingo Wash
REACH: 1 RS: 5449.23*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1910.89	0	1901.84	37.5	1901.09	75	1901.84	75	1910.89

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	75	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	75	.12	.12	.05	.2

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1909.81	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 2.24	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1907.57	* Reach Len. (ft)	* 0.12	* 0.12	* 0.12 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	* 457.65	* *
* E.G. Slope (ft/ft)	*0.001199	* Area (sq ft)	*	* 457.65	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 75.00	* Top Width (ft)	*	* 75.00	* *
* Vel Total (ft/s)	* 12.02	* Avg. Vel. (ft/s)	*	* 12.02	* *
* Max Chl Dpth (ft)	* 6.48	* Hydr. Depth (ft)	*	* 6.10	* *
* Conv. Total (cfs)	*158869.2	* Conv. (cfs)	*	*158869.2	* *
* Length Wtd. (ft)	* 0.12	* Wetted Per. (ft)	*	* 86.47	* *
* Min Ch El (ft)	* 1901.09	* Shear (lb/sq ft)	*	* 0.40	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.76	* *
* Frctn Loss (ft)	* 0.00	* Cum Volume (acre-ft)	* 0.43	* 46.37	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 5.95	* 0.70 *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5449.11

INPUT
Description: 54+49.11 PC
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1910.89	0	1901.84	37.5	1901.09	75	1901.84	75	1910.89

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	75	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	75	3.33	3.33	.05	.2

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1909.81	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 2.24	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1907.57	* Reach Len. (ft)	* 3.33	* 3.33	* 3.33 *
* Crit W.S. (ft)	* 1906.97	* Flow Area (sq ft)	*	* 457.64	* *
* E.G. Slope (ft/ft)	*0.001199	* Area (sq ft)	*	* 457.64	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 75.00	* Top Width (ft)	*	* 75.00	* *
* Vel Total (ft/s)	* 12.02	* Avg. Vel. (ft/s)	*	* 12.02	* *
* Max Chl Dpth (ft)	* 6.48	* Hydr. Depth (ft)	*	* 6.10	* *
* Conv. Total (cfs)	*158859.2	* Conv. (cfs)	*	*158859.2	* *
* Length Wtd. (ft)	* 3.33	* Wetted Per. (ft)	*	* 86.47	* *
* Min Ch El (ft)	* 1901.09	* Shear (lb/sq ft)	*	* 0.40	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.76	* *
* Frctn Loss (ft)	* 0.00	* Cum Volume (acre-ft)	* 0.43	* 46.37	* 1.09 *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.27	* 5.95	* 0.70 *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5445.78

INPUT
Description: 54+45.78 begin 75' channel. End Transition

```
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1910.84       0 1901.79    37.5 1901.04      75 1901.79      75 1910.84

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      75    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      75             82.93   82.93   82.93            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1909.79  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.17  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1907.62  * Reach Len. (ft)        *   82.93  *   82.93  *   82.93  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          *  465.62  *          *
* E.G. Slope (ft/ft)     *0.001135  * Area (sq ft)           *          *  465.62  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   75.00  * Top Width (ft)         *          *   75.00  *          *
* Vel Total (ft/s)       *   11.81  * Avg. Vel. (ft/s)       *          *   11.81  *          *
* Max Chl Dpth (ft)      *    6.58  * Hydr. Depth (ft)       *          *    6.21  *          *
* Conv. Total (cfs)      *163237.0  * Conv. (cfs)            *          *163237.0  *          *
* Length Wtd. (ft)       *   82.93  * Wetted Per. (ft)       *          *   86.68  *          *
* Min Ch El (ft)         * 1901.04  * Shear (lb/sq ft)       *          *    0.38  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.50  *          *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   *    0.43  *   46.33  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    5.94  *    0.70  *
*****************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 5362.85*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1909.54       0 1900.37   31.25 1899.74    62.5 1900.37    62.5 1909.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013    62.5    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0    62.5             82.93   82.93   82.93            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1909.70  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.13  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1907.58  * Reach Len. (ft)        *   82.93  *   82.93  *   82.93  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          *  470.12  *          *
* E.G. Slope (ft/ft)     *0.000938  * Area (sq ft)           *          *  470.12  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   62.50  * Top Width (ft)         *          *   62.50  *          *
* Vel Total (ft/s)       *   11.70  * Avg. Vel. (ft/s)       *          *   11.70  *          *
* Max Chl Dpth (ft)      *    7.84  * Hydr. Depth (ft)       *          *    7.52  *          *
* Conv. Total (cfs)      *179617.3  * Conv. (cfs)            *          *179617.3  *          *
* Length Wtd. (ft)       *   82.93  * Wetted Per. (ft)       *          *   76.93  *          *
* Min Ch El (ft)         * 1899.74  * Shear (lb/sq ft)       *          *    0.36  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    4.19  *          *
* Frctn Loss (ft)        *    0.10  * Cum Volume (acre-ft)   *    0.43  *   45.44  *    1.09  *
* C & E Loss (ft)        *    0.07  * Cum SA (acres)         *    0.27  *    5.81  *    0.70  *
*****************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 5279.92

INPUT
Description: 52+79.92 begin transition from 50' to 75' and PT
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1908.25       0 1898.95      25 1898.45      50 1898.95      50 1908.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50             93.25   93.25   93.25            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1909.52  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1905.91  * Reach Len. (ft)        *   93.25  *   93.25  *   93.25  *
* Crit W.S. (ft)         * 1905.91  * Flow Area (sq ft)      *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)           *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)       *          *   15.25  *          *
```

* Max Chl Dpth (ft)	* 7.46	* Hydr. Depth (ft)	*	* 7.21	*						
* Conv. Total (cfs)	*130583.3	* Conv. (cfs)	*	*130583.3	*						
* Length Wtd. (ft)	* 93.25	* Wetted Per. (ft)	*	* 63.93	*						
* Min Ch El (ft)	* 1898.45	* Shear (lb/sq ft)	*	* 0.62	*						
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.53	*						
* Frctn Loss (ft)	* 0.17	* Cum Volume (acre-ft)	*	0.43	*	* 44.65	*	1.09	*		
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	* 5.70	*	0.70	*		

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: Flamingo Wash
REACH: 1 RS: 5186.67

INPUT
Description: 51+86.67 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1906.8	0	1897.5	25	1897	50	1897.5	50	1906.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.89	86.89	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1908.07	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.61	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1904.46	* Reach Len. (ft)	* 86.89	* 86.89	* 86.89 *
* Crit W.S. (ft)	* 1904.46	* Flow Area (sq ft)	*	* 360.57	* *
* E.G. Slope (ft/ft)	*0.001774	* Area (sq ft)	*	* 360.57	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 15.25	* Avg. Vel. (ft/s)	*	* 15.25	* *
* Max Chl Dpth (ft)	* 7.46	* Hydr. Depth (ft)	*	* 7.21	* *
* Conv. Total (cfs)	*130583.3	* Conv. (cfs)	*	*130583.3	* *
* Length Wtd. (ft)	* 86.89	* Wetted Per. (ft)	*	* 63.93	* *
* Min Ch El (ft)	* 1897.00	* Shear (lb/sq ft)	*	* 0.62	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.53	* *
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 0.43	* 43.88	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 5.59	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 5099.78*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1906.12	0	1896.82	25	1896.32	50	1896.82	50	1906.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.89	86.89	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1907.39	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.61	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1903.78	* Reach Len. (ft)	* 86.89	* 86.89	* 86.89 *
* Crit W.S. (ft)	* 1903.78	* Flow Area (sq ft)	*	* 360.57	* *
* E.G. Slope (ft/ft)	*0.001774	* Area (sq ft)	*	* 360.57	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 15.25	* Avg. Vel. (ft/s)	*	* 15.25	* *
* Max Chl Dpth (ft)	* 7.46	* Hydr. Depth (ft)	*	* 7.21	* *
* Conv. Total (cfs)	*130583.3	* Conv. (cfs)	*	*130583.3	* *
* Length Wtd. (ft)	* 86.89	* Wetted Per. (ft)	*	* 63.93	* *
* Min Ch El (ft)	* 1896.32	* Shear (lb/sq ft)	*	* 0.62	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.53	* *
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 0.43	* 43.16	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 5.50	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 5012.89*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1905.44	0	1896.14	25	1895.64	50	1896.14	50	1905.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
0	50	.01	.01	.01	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1906.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.		0.013	
W.S. Elev (ft)	1903.10	Reach Len. (ft)	0.01	0.01	0.01
Crit W.S. (ft)	1903.10	Flow Area (sq ft)		360.57	
E.G. Slope (ft/ft)	*0.001774	Area (sq ft)		360.57	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.25	Avg. Vel. (ft/s)		15.25	
Max Chl Dpth (ft)	7.46	Hydr. Depth (ft)		7.21	
Conv. Total (cfs)	*130583.3	Conv. (cfs)		*130583.3	
Length Wtd. (ft)	0.01	Wetted Per. (ft)		63.93	
Min Ch El (ft)	1895.64	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		9.53	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.43	42.44	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	5.40	0.70

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5012.88

INPUT
Description: 50+12.88 PC
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1905.44	0	1896.14	25	1895.64	50	1896.14	50	1905.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
0	50	67.84	67.84	67.84	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1906.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.		0.013	
W.S. Elev (ft)	1903.10	Reach Len. (ft)	67.84	67.84	67.84
Crit W.S. (ft)	1903.10	Flow Area (sq ft)		360.57	
E.G. Slope (ft/ft)	*0.001774	Area (sq ft)		360.57	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.25	Avg. Vel. (ft/s)		15.25	
Max Chl Dpth (ft)	7.46	Hydr. Depth (ft)		7.21	
Conv. Total (cfs)	*130583.3	Conv. (cfs)		*130583.3	
Length Wtd. (ft)	67.84	Wetted Per. (ft)		63.93	
Min Ch El (ft)	1895.64	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		9.53	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	0.43	42.44	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	5.40	0.70

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: Flamingo Wash
REACH: 1 RS: 4945.04

INPUT
Description: 49+45.04 PT
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1904.91	0	1895.61	25	1895.11	50	1895.61	50	1904.91

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.5    86.5    86.5            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1906.18  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1902.57  * Reach Len. (ft)        *   86.50  *   86.50  *   86.50  *
* Crit W.S. (ft)         * 1902.57  * Flow Area (sq ft)      *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)           *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)       *          *   15.25  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)       *          *    7.21  *          *
* Conv. Total (cfs)      *130583.3  * Conv. (cfs)            *          *130583.3  *          *
* Length Wtd. (ft)       *   86.50  * Wetted Per. (ft)       *          *   63.93  *          *
* Min Ch El (ft)         * 1895.11  * Shear (lb/sq ft)       *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.53  *          *
* Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)   *    0.43  *   41.88  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    5.32  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 4858.54*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1904.23       0 1894.93      25 1894.43      50 1894.93      50 1904.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.5    86.5    86.5            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1905.50  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1901.89  * Reach Len. (ft)        *   86.50  *   86.50  *   86.50  *
* Crit W.S. (ft)         * 1901.89  * Flow Area (sq ft)      *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)           *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)       *          *   15.25  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)       *          *    7.21  *          *
* Conv. Total (cfs)      *130583.3  * Conv. (cfs)            *          *130583.3  *          *
* Length Wtd. (ft)       *   86.50  * Wetted Per. (ft)       *          *   63.93  *          *
* Min Ch El (ft)         * 1894.43  * Shear (lb/sq ft)       *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.53  *          *
* Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)   *    0.43  *   41.17  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    5.22  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 4772.04*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1903.56       0 1894.26      25 1893.76      50 1894.26      50 1903.56

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.5    86.5    86.5            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1904.83  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1901.22  * Reach Len. (ft)        *   86.50  *   86.50  *   86.50  *
* Crit W.S. (ft)         * 1901.22  * Flow Area (sq ft)      *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)           *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)       *          *   15.25  *          *
```

* Max Chl Dpth (ft)	* 7.46	* Hydr. Depth (ft)	*	* 7.21	*	*		
* Conv. Total (cfs)	*130583.3	* Conv. (cfs)	*	*130583.3	*	*		
* Length Wtd. (ft)	* 86.50	* Wetted Per. (ft)	*	* 63.93	*	*		
* Min Ch El (ft)	* 1893.76	* Shear (lb/sq ft)	*	* 0.62	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.53	*	*		
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	*	0.43	*	* 40.45	*	1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	* 5.12	*	0.70 *

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: Flamingo Wash
REACH: 1 RS: 4685.54*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1902.88	0	1893.58	25	1893.08	50	1893.58	50	1902.88

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.5	86.5	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1904.15	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (ft)	* 3.61	* Wt. n-Val.	*		*	0.013	*	*
* W.S. Elev (ft)	* 1900.54	* Reach Len. (ft)	*	86.50	*	86.50	*	86.50 *
* Crit W.S. (ft)	* 1900.54	* Flow Area (sq ft)	*		*	360.57	*	*
* E.G. Slope (ft/ft)	*0.001774	* Area (sq ft)	*		*	360.57	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*		*	5500.00	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*		*	50.00	*	*
* Vel Total (ft/s)	* 15.25	* Avg. Vel. (ft/s)	*		*	15.25	*	*
* Max Chl Dpth (ft)	* 7.46	* Hydr. Depth (ft)	*		*	7.21	*	*
* Conv. Total (cfs)	*130583.3	* Conv. (cfs)	*		*	*130583.3	*	*
* Length Wtd. (ft)	* 86.50	* Wetted Per. (ft)	*		*	63.93	*	*
* Min Ch El (ft)	* 1893.08	* Shear (lb/sq ft)	*		*	0.62	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	9.53	*	*
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	*	0.43	*	39.73	*	1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	5.02	*	0.70 *

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: Flamingo Wash
REACH: 1 RS: 4599.04*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1902.21	0	1892.91	25	1892.41	50	1892.91	50	1902.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.5	86.5	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1903.48	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (ft)	* 3.61	* Wt. n-Val.	*		*	0.013	*	*
* W.S. Elev (ft)	* 1899.87	* Reach Len. (ft)	*	86.50	*	86.50	*	86.50 *
* Crit W.S. (ft)	* 1899.87	* Flow Area (sq ft)	*		*	360.57	*	*
* E.G. Slope (ft/ft)	*0.001774	* Area (sq ft)	*		*	360.57	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*		*	5500.00	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*		*	50.00	*	*
* Vel Total (ft/s)	* 15.25	* Avg. Vel. (ft/s)	*		*	15.25	*	*
* Max Chl Dpth (ft)	* 7.46	* Hydr. Depth (ft)	*		*	7.21	*	*
* Conv. Total (cfs)	*130583.3	* Conv. (cfs)	*		*	*130583.3	*	*
* Length Wtd. (ft)	* 86.50	* Wetted Per. (ft)	*		*	63.93	*	*
* Min Ch El (ft)	* 1892.41	* Shear (lb/sq ft)	*		*	0.62	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	9.53	*	*
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	*	0.43	*	39.02	*	1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	4.92	*	0.70 *

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: Flamingo Wash
REACH: 1 RS: 4512.54*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1901.53	0	1892.23	25	1891.73	50	1892.23	50	1901.53

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.5	86.5	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1902.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.		0.013	
W.S. Elev (ft)	1899.19	Reach Len. (ft)	86.50	86.50	86.50
Crit W.S. (ft)	1899.19	Flow Area (sq ft)		360.57	
E.G. Slope (ft/ft)	0.001774	Area (sq ft)		360.57	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.25	Avg. Vel. (ft/s)		15.25	
Max Chl Dpth (ft)	7.46	Hydr. Depth (ft)		7.21	
Conv. Total (cfs)	130583.3	Conv. (cfs)		130583.3	
Length Wtd. (ft)	86.50	Wetted Per. (ft)		63.93	
Min Ch El (ft)	1891.73	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		9.53	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.43	38.30	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	4.82	0.70

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: Flamingo Wash
REACH: 1 RS: 4426.04*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1900.85	0	1891.55	25	1891.05	50	1891.55	50	1900.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	.35	.35	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1902.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.		0.013	
W.S. Elev (ft)	1898.52	Reach Len. (ft)	0.35	0.35	0.35
Crit W.S. (ft)	1898.51	Flow Area (sq ft)		360.88	
E.G. Slope (ft/ft)	0.001769	Area (sq ft)		360.88	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.24	Avg. Vel. (ft/s)		15.24	
Max Chl Dpth (ft)	7.47	Hydr. Depth (ft)		7.22	
Conv. Total (cfs)	130750.9	Conv. (cfs)		130750.9	
Length Wtd. (ft)	0.35	Wetted Per. (ft)		63.95	
Min Ch El (ft)	1891.05	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		9.50	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.43	37.58	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	4.72	0.70

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4425.69

INPUT
Description: 44+25.69 PC
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1900.85	0	1891.55	25	1891.05	50	1891.55	50	1900.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

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

```
            0      50            75.69   75.69   75.69            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1902.12  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 1898.51  * Reach Len. (ft)       *   75.69  *   75.69  *   75.69  *
* Crit W.S. (ft)         * 1898.51  * Flow Area (sq ft)     *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)          *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)       *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)     *          *   15.25  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)     *          *    7.21  *          *
* Conv. Total (cfs)      *130583.3  * Conv. (cfs)          *          *130583.3  *          *
* Length Wtd. (ft)       *   75.69  * Wetted Per. (ft)     *          *   63.93  *          *
* Min Ch El (ft)         * 1891.05  * Shear (lb/sq ft)     *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.53  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *    0.43  *   37.58  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    4.72  *    0.70  *
*********************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 4350

INPUT
Description: 43+50 grade break
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1900.26       0 1890.96      25 1890.46      50 1890.96      50 1900.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50               75      75      75            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1901.53  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1897.92  * Reach Len. (ft)       *   75.00  *   75.00  *   75.00  *
* Crit W.S. (ft)         * 1897.92  * Flow Area (sq ft)     *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)          *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)       *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)     *          *   15.25  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)     *          *    7.21  *          *
* Conv. Total (cfs)      *130583.3  * Conv. (cfs)          *          *130583.3  *          *
* Length Wtd. (ft)       *   75.00  * Wetted Per. (ft)     *          *   63.93  *          *
* Min Ch El (ft)         * 1890.46  * Shear (lb/sq ft)     *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.53  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)  *    0.43  *   36.96  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    4.63  *    0.70  *
*********************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 4275.*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1899.51       0 1890.21      25 1889.71      50 1890.21      50 1899.51

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50               75      75      75            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1900.78  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1897.17  * Reach Len. (ft)       *   75.00  *   75.00  *   75.00  *
* Crit W.S. (ft)         * 1897.17  * Flow Area (sq ft)     *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)          *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)       *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)     *          *   15.25  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)     *          *    7.21  *          *
* Conv. Total (cfs)      *130583.3  * Conv. (cfs)          *          *130583.3  *          *
```

```
* Length Wtd. (ft)       *   75.00  * Wetted Per. (ft)       *          *   63.93  *          *
* Min Ch El (ft)         * 1889.71  * Shear (lb/sq ft)       *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.53  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *    0.43  *   36.33  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    4.55  *    0.70  *
*********************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 4200.00

INPUT
Description: 42+00 grade break
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1898.76       0 1889.46      25 1888.96      50 1889.46      50 1898.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50             72.75   72.75   72.75            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1900.03  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1896.42  * Reach Len. (ft)        *   72.75  *   72.75  *   72.75  *
* Crit W.S. (ft)         * 1896.42  * Flow Area (sq ft)      *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)           *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)       *          *   15.25  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)       *          *    7.21  *          *
* Conv. Total (cfs)      *130583.3  * Conv. (cfs)            *          *130583.3  *          *
* Length Wtd. (ft)       *   72.75  * Wetted Per. (ft)       *          *   63.93  *          *
* Min Ch El (ft)         * 1888.96  * Shear (lb/sq ft)       *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.53  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *    0.43  *   35.71  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    4.46  *    0.70  *
*********************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 4127.25*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0  1898.4       0  1889.1      25  1888.6      50  1889.1      50  1898.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50             72.75   72.75   72.75            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1899.67  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1896.06  * Reach Len. (ft)        *   72.75  *   72.75  *   72.75  *
* Crit W.S. (ft)         * 1896.06  * Flow Area (sq ft)      *          *  360.57  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)           *          *  360.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)       *          *   15.25  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)       *          *    7.21  *          *
* Conv. Total (cfs)      *130583.3  * Conv. (cfs)            *          *130583.3  *          *
* Length Wtd. (ft)       *   72.75  * Wetted Per. (ft)       *          *   63.93  *          *
* Min Ch El (ft)         * 1888.60  * Shear (lb/sq ft)       *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.53  *          *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *    0.43  *   35.11  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    4.38  *    0.70  *
*********************************************************************************************

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: Flamingo Wash
REACH: 1 RS: 4054.5*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1898.03	0	1888.73	25	1888.23	50	1888.73	50	1898.03

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	72.74	72.74	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1899.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.		0.013	
W.S. Elev (ft)	1895.69	Reach Len. (ft)	72.74	72.74	72.74
Crit W.S. (ft)	1895.69	Flow Area (sq ft)		360.57	
E.G. Slope (ft/ft)	0.001774	Area (sq ft)		360.57	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.25	Avg. Vel. (ft/s)		15.25	
Max Chl Dpth (ft)	7.46	Hydr. Depth (ft)		7.21	
Conv. Total (cfs)	130583.3	Conv. (cfs)		130583.3	
Length Wtd. (ft)	72.74	Wetted Per. (ft)		63.93	
Min Ch El (ft)	1888.23	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		9.53	
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	0.43	34.51	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	4.30	0.70

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: Flamingo Wash
REACH: 1 RS: 3981.76

INPUT
Description: 39+81.76 PT
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1897.67	0	1888.37	25	1887.87	50	1888.37	50	1897.67

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	90.88	90.88	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1898.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.		0.013	
W.S. Elev (ft)	1895.33	Reach Len. (ft)	90.88	90.88	90.88
Crit W.S. (ft)	1895.33	Flow Area (sq ft)		360.57	
E.G. Slope (ft/ft)	0.001774	Area (sq ft)		360.57	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.25	Avg. Vel. (ft/s)		15.25	
Max Chl Dpth (ft)	7.46	Hydr. Depth (ft)		7.21	
Conv. Total (cfs)	130583.3	Conv. (cfs)		130583.3	
Length Wtd. (ft)	90.88	Wetted Per. (ft)		63.93	
Min Ch El (ft)	1887.87	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		9.53	
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	0.43	33.91	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	4.21	0.70

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: Flamingo Wash
REACH: 1 RS: 3890.88*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0 1897.22       0 1887.92      25 1887.42      50 1887.92      50 1897.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50            90.88   90.88   90.88            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1898.49  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 1894.88  * Reach Len. (ft)       *   90.88  *   90.88  *   90.88  *
* Crit W.S. (ft)         * 1894.88  * Flow Area (sq ft)     *          *  360.55  *          *
* E.G. Slope (ft/ft)     *0.001774  * Area (sq ft)          *          *  360.55  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)       *          *   50.00  *          *
* Vel Total (ft/s)       *   15.25  * Avg. Vel. (ft/s)     *          *   15.25  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)     *          *    7.21  *          *
* Conv. Total (cfs)      *130569.9  * Conv. (cfs)          *          *130569.9  *          *
* Length Wtd. (ft)       *   90.88  * Wetted Per. (ft)     *          *   63.93  *          *
* Min Ch El (ft)         * 1887.42  * Shear (lb/sq ft)     *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    9.53  *          *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)  *    0.43  *   33.15  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    4.11  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 3800

INPUT
Description: 38+00 grade break
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1896.76       0 1887.46      25 1886.96      50 1887.46      50 1896.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50              100     100     100            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1898.03  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.61  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1894.42  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1894.42  * Flow Area (sq ft)     *          *  360.49  *          *
* E.G. Slope (ft/ft)     *0.001775  * Area (sq ft)          *          *  360.49  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)       *          *   50.00  *          *
* Vel Total (ft/s)       *   15.26  * Avg. Vel. (ft/s)     *          *   15.26  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)     *          *    7.21  *          *
* Conv. Total (cfs)      *130536.4  * Conv. (cfs)          *          *130536.4  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   63.93  *          *
* Min Ch El (ft)         * 1886.96  * Shear (lb/sq ft)     *          *    0.62  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *    9.53  *          *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)  *    0.43  *   32.40  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    4.00  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 3700.*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1895.76       0 1886.46      25 1885.96      50 1886.46      50 1895.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50              100     100     100            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1897.03  * Element               *  Left OB *  Channel * Right OB *
```

```
* Vel Head (ft)          *    3.62  * Wt. n-Val.              *          *   0.013  *          *
* W.S. Elev (ft)         * 1893.42  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1893.42  * Flow Area (sq ft)      *          *  360.39  *          *
* E.G. Slope (ft/ft)     *0.001777  * Area (sq ft)           *          *  360.39  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   15.26  * Avg. Vel. (ft/s)      *          *   15.26  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)      *          *    7.21  *          *
* Conv. Total (cfs)      *130486.1  * Conv. (cfs)           *          *130486.1  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   63.93  *          *
* Min Ch El (ft)         * 1885.96  * Shear (lb/sq ft)      *          *    0.63  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.54  *          *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)   *    0.43  *   31.58  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    3.89  *    0.70  *
*****************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 3600

INPUT
Description: 36+00 grade break.End Transition
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1894.76       0 1885.46      25 1884.96      50 1885.46      50 1894.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             100     100     100            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1896.03  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.62  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1892.42  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1892.42  * Flow Area (sq ft)     *          *  360.28  *          *
* E.G. Slope (ft/ft)     *0.001778  * Area (sq ft)          *          *  360.28  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)       *          *   50.00  *          *
* Vel Total (ft/s)       *   15.27  * Avg. Vel. (ft/s)     *          *   15.27  *          *
* Max Chl Dpth (ft)      *    7.46  * Hydr. Depth (ft)     *          *    7.21  *          *
* Conv. Total (cfs)      *130425.8  * Conv. (cfs)          *          *130425.8  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   63.92  *          *
* Min Ch El (ft)         * 1884.96  * Shear (lb/sq ft)     *          *    0.63  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.55  *          *
* Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)  *    0.43  *   30.75  *    1.09  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)        *    0.27  *    3.77  *    0.70  *
*****************************************************************************************************

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 velocity head has changed by more than 0.5 ft (0.15 m).  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: Flamingo Wash
REACH: 1                 RS: 3500.*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1893.61       0 1883.38   20.75 1882.96    41.5 1883.38    41.5 1893.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0    .013       0    .013    41.5    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0    41.5             100     100     100            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1895.66  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.09  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1892.57  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         *         * Flow Area (sq ft)      *          *  390.08  *          *
* E.G. Slope (ft/ft)     *0.001251  * Area (sq ft)          *          *  390.08  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   41.50  * Top Width (ft)       *          *   41.50  *          *
* Vel Total (ft/s)       *   14.10  * Avg. Vel. (ft/s)     *          *   14.10  *          *
* Max Chl Dpth (ft)      *    9.61  * Hydr. Depth (ft)     *          *    9.40  *          *
* Conv. Total (cfs)      *155506.2  * Conv. (cfs)          *          *155506.2  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   59.89  *          *
* Min Ch El (ft)         * 1882.96  * Shear (lb/sq ft)     *          *    0.51  *          *
```

* Alpha	*	1.00	* Stream Power (lb/ft s)	*		*	7.17	*			*
* Frctn Loss (ft)	*	0.16	* Cum Volume (acre-ft)	*	0.43	*	29.89	*	1.09		*
* C & E Loss (ft)	*	0.09	* Cum SA (acres)	*	0.27	*	3.67	*	0.70		*

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: Flamingo Wash
REACH: 1 RS: 3400

INPUT
Description: 34+00 grade break. Begin Transition from 33' to 50'
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1892.46	0	1881.29	16.5	1880.96	33	1881.29	33	1892.46

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	33	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	33	100	100	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	*	1895.40	* Element	*	Left OB	*	Channel	*	Right OB		*
* Vel Head (ft)	*	4.79	* Wt. n-Val.	*		*	0.013	*			*
* W.S. Elev (ft)	*	1890.62	* Reach Len. (ft)	*	100.00	*	100.00	*	100.00		*
* Crit W.S. (ft)	*	1890.62	* Flow Area (sq ft)	*		*	313.21	*			*
* E.G. Slope (ft/ft)	*	0.002135	* Area (sq ft)	*		*	313.21	*			*
* Q Total (cfs)	*	5500.00	* Flow (cfs)	*		*	5500.00	*			*
* Top Width (ft)	*	33.00	* Top Width (ft)	*		*	33.00	*			*
* Vel Total (ft/s)	*	17.56	* Avg. Vel. (ft/s)	*		*	17.56	*			*
* Max Chl Dpth (ft)	*	9.66	* Hydr. Depth (ft)	*		*	9.49	*			*
* Conv. Total (cfs)	*	119034.5	* Conv. (cfs)	*		*	119034.5	*			*
* Length Wtd. (ft)	*	100.00	* Wetted Per. (ft)	*		*	51.66	*			*
* Min Ch El (ft)	*	1880.96	* Shear (lb/sq ft)	*		*	0.81	*			*
* Alpha	*	1.00	* Stream Power (lb/ft s)	*		*	14.19	*			*
* Frctn Loss (ft)	*	0.21	* Cum Volume (acre-ft)	*	0.43	*	29.08	*	1.09		*
* C & E Loss (ft)	*	0.00	* Cum SA (acres)	*	0.27	*	3.58	*	0.70		*

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: Flamingo Wash
REACH: 1 RS: 3300.*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1891.46	0	1880.29	16.5	1879.96	33	1880.29	33	1891.46

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	33	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	33	100	100	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	*	1894.40	* Element	*	Left OB	*	Channel	*	Right OB		*
* Vel Head (ft)	*	4.79	* Wt. n-Val.	*		*	0.013	*			*
* W.S. Elev (ft)	*	1889.62	* Reach Len. (ft)	*	100.00	*	100.00	*	100.00		*
* Crit W.S. (ft)	*	1889.62	* Flow Area (sq ft)	*		*	313.16	*			*
* E.G. Slope (ft/ft)	*	0.002136	* Area (sq ft)	*		*	313.16	*			*
* Q Total (cfs)	*	5500.00	* Flow (cfs)	*		*	5500.00	*			*
* Top Width (ft)	*	33.00	* Top Width (ft)	*		*	33.00	*			*
* Vel Total (ft/s)	*	17.56	* Avg. Vel. (ft/s)	*		*	17.56	*			*
* Max Chl Dpth (ft)	*	9.65	* Hydr. Depth (ft)	*		*	9.49	*			*
* Conv. Total (cfs)	*	119010.5	* Conv. (cfs)	*		*	119010.5	*			*
* Length Wtd. (ft)	*	100.00	* Wetted Per. (ft)	*		*	51.66	*			*
* Min Ch El (ft)	*	1879.96	* Shear (lb/sq ft)	*		*	0.81	*			*
* Alpha	*	1.00	* Stream Power (lb/ft s)	*		*	14.20	*			*
* Frctn Loss (ft)	*	0.21	* Cum Volume (acre-ft)	*	0.43	*	28.36	*	1.09		*
* C & E Loss (ft)	*	0.00	* Cum SA (acres)	*	0.27	*	3.51	*	0.70		*

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: Flamingo Wash
REACH: 1 RS: 3200.*

```
INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1890.46       0 1879.29    16.5 1878.96      33 1879.29      33 1890.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      33            99.16   99.16   99.16            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1893.40  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.79  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1888.62  * Reach Len. (ft)        *   99.16  *   99.16  *   99.16  *
* Crit W.S. (ft)         * 1888.62  * Flow Area (sq ft)      *          *  313.17  *          *
* E.G. Slope (ft/ft)     *0.002136  * Area (sq ft)           *          *  313.17  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)         *          *   33.00  *          *
* Vel Total (ft/s)       *   17.56  * Avg. Vel. (ft/s)       *          *   17.56  *          *
* Max Chl Dpth (ft)      *    9.65  * Hydr. Depth (ft)       *          *    9.49  *          *
* Conv. Total (cfs)      *119012.7  * Conv. (cfs)            *          *119012.7  *          *
* Length Wtd. (ft)       *   99.16  * Wetted Per. (ft)       *          *   51.66  *          *
* Min Ch El (ft)         * 1878.96  * Shear (lb/sq ft)       *          *    0.81  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   14.20  *          *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)   *    0.43  *   27.64  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    3.43  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                RS: 3100.84

INPUT
Description: 31+00.84 PT
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1889.47       0  1878.3    16.5 1877.97      33  1878.3      33 1889.47

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      33            68.31   68.31   68.31            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1892.41  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.79  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1887.63  * Reach Len. (ft)        *   68.31  *   68.31  *   68.31  *
* Crit W.S. (ft)         * 1887.63  * Flow Area (sq ft)      *          *  313.17  *          *
* E.G. Slope (ft/ft)     *0.002136  * Area (sq ft)           *          *  313.17  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)         *          *   33.00  *          *
* Vel Total (ft/s)       *   17.56  * Avg. Vel. (ft/s)       *          *   17.56  *          *
* Max Chl Dpth (ft)      *    9.66  * Hydr. Depth (ft)       *          *    9.49  *          *
* Conv. Total (cfs)      *119014.9  * Conv. (cfs)            *          *119014.9  *          *
* Length Wtd. (ft)       *   68.31  * Wetted Per. (ft)       *          *   51.66  *          *
* Min Ch El (ft)         * 1877.97  * Shear (lb/sq ft)       *          *    0.81  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   14.20  *          *
* Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)   *    0.43  *   26.93  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    3.36  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                RS: 3032.53*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1888.79       0 1877.62    16.5 1877.29      33 1877.62      33 1888.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      33            68.31   68.31   68.31            .05       .1
```

```
CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1891.73  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.79  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1886.95  * Reach Len. (ft)       *   68.31  *   68.31  *   68.31  *
* Crit W.S. (ft)         * 1886.95  * Flow Area (sq ft)     *          *  313.21  *          *
* E.G. Slope (ft/ft)     *0.002135  * Area (sq ft)          *          *  313.21  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)       *          *   33.00  *          *
* Vel Total (ft/s)       *   17.56  * Avg. Vel. (ft/s)     *          *   17.56  *          *
* Max Chl Dpth (ft)      *    9.66  * Hydr. Depth (ft)     *          *    9.49  *          *
* Conv. Total (cfs)      *119035.4  * Conv. (cfs)          *          *119035.4  *          *
* Length Wtd. (ft)       *   68.31  * Wetted Per. (ft)     *          *   51.66  *          *
* Min Ch El (ft)         * 1877.29  * Shear (lb/sq ft)     *          *    0.81  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *   14.19  *          *
* Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)  *    0.43  *   26.44  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    3.30  *    0.70  *
*********************************************************************************************

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: Flamingo Wash
REACH: 1                RS: 2964.22*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0  1888.1       0 1876.93    16.5  1876.6      33 1876.93      33  1888.1

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      33              .01     .01     .01            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1891.04  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.79  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1886.26  * Reach Len. (ft)       *    0.01  *    0.01  *    0.01  *
* Crit W.S. (ft)         * 1886.26  * Flow Area (sq ft)     *          *  313.17  *          *
* E.G. Slope (ft/ft)     *0.002136  * Area (sq ft)          *          *  313.17  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)       *          *   33.00  *          *
* Vel Total (ft/s)       *   17.56  * Avg. Vel. (ft/s)     *          *   17.56  *          *
* Max Chl Dpth (ft)      *    9.65  * Hydr. Depth (ft)     *          *    9.49  *          *
* Conv. Total (cfs)      *119012.7  * Conv. (cfs)          *          *119012.7  *          *
* Length Wtd. (ft)       *    0.01  * Wetted Per. (ft)     *          *   51.66  *          *
* Min Ch El (ft)         * 1876.60  * Shear (lb/sq ft)     *          *    0.81  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *   14.20  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    0.43  *   25.95  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    3.25  *    0.70  *
*********************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 2964.21

INPUT
Description: 29+64.21 PC
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0  1888.1       0 1876.93    16.5  1876.6      33 1876.93      33  1888.1

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      33            42.33   42.33   42.33            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. Elev (ft)         * 1891.04  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.79  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1886.26  * Reach Len. (ft)       *   42.33  *   42.33  *   42.33  *
* Crit W.S. (ft)         * 1886.26  * Flow Area (sq ft)     *          *  313.17  *          *
* E.G. Slope (ft/ft)     *0.002136  * Area (sq ft)          *          *  313.17  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)       *          *   33.00  *          *
* Vel Total (ft/s)       *   17.56  * Avg. Vel. (ft/s)     *          *   17.56  *          *
* Max Chl Dpth (ft)      *    9.65  * Hydr. Depth (ft)     *          *    9.49  *          *
* Conv. Total (cfs)      *119012.7  * Conv. (cfs)          *          *119012.7  *          *
* Length Wtd. (ft)       *   42.33  * Wetted Per. (ft)     *          *   51.66  *          *
* Min Ch El (ft)         * 1876.60  * Shear (lb/sq ft)     *          *    0.81  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *        *   14.20  *          *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)  *    0.43  *   25.95  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    3.25  *    0.70  *
*********************************************************************************************
```

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: Flamingo Wash
REACH: 1 RS: 2921.88

INPUT
Description: 29+21.88 PT
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1887.68	0	1876.51	16.5	1876.18	33	1876.51	33	1887.68

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	33	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	33	84.01	84.01	84.01	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1890.62	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 4.79	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1885.84	* Reach Len. (ft)	* 84.01	* 84.01	* 84.01 *
* Crit W.S. (ft)	* 1885.84	* Flow Area (sq ft)	*	* 313.24	* *
* E.G. Slope (ft/ft)	*0.002134	* Area (sq ft)	*	* 313.24	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 33.00	* Top Width (ft)	*	* 33.00	* *
* Vel Total (ft/s)	* 17.56	* Avg. Vel. (ft/s)	*	* 17.56	* *
* Max Chl Dpth (ft)	* 9.66	* Hydr. Depth (ft)	*	* 9.49	* *
* Conv. Total (cfs)	*119050.6	* Conv. (cfs)	*	*119050.6	* *
* Length Wtd. (ft)	* 84.01	* Wetted Per. (ft)	*	* 51.66	* *
* Min Ch El (ft)	* 1876.18	* Shear (lb/sq ft)	*	* 0.81	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 14.19	* *
* Frctn Loss (ft)	* 0.18	* Cum Volume (acre-ft)	* 0.43	* 25.64	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 3.22	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 2837.87*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1886.84	0	1875.67	16.5	1875.34	33	1875.67	33	1886.84

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	33	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	33	84.01	84.01	84.01	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1889.78	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 4.79	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1885.00	* Reach Len. (ft)	* 84.01	* 84.01	* 84.01 *
* Crit W.S. (ft)	* 1885.00	* Flow Area (sq ft)	*	* 313.17	* *
* E.G. Slope (ft/ft)	*0.002136	* Area (sq ft)	*	* 313.17	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 33.00	* Top Width (ft)	*	* 33.00	* *
* Vel Total (ft/s)	* 17.56	* Avg. Vel. (ft/s)	*	* 17.56	* *
* Max Chl Dpth (ft)	* 9.66	* Hydr. Depth (ft)	*	* 9.49	* *
* Conv. Total (cfs)	*119017.1	* Conv. (cfs)	*	*119017.1	* *
* Length Wtd. (ft)	* 84.01	* Wetted Per. (ft)	*	* 51.66	* *
* Min Ch El (ft)	* 1875.34	* Shear (lb/sq ft)	*	* 0.81	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 14.20	* *
* Frctn Loss (ft)	* 0.18	* Cum Volume (acre-ft)	* 0.43	* 25.04	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 3.16	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 2753.87

INPUT
Description: 27+03.87 Van Buskirk confluence / begin 33' channel

```
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1886       0 1874.83    16.5  1874.5      33 1874.83      33    1886

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      33               50      50      50            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1888.94  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.79  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1884.16  * Reach Len. (ft)       *   50.00  *   50.00  *   50.00  *
* Crit W.S. (ft)         * 1884.16  * Flow Area (sq ft)     *          *  313.21  *          *
* E.G. Slope (ft/ft)     *0.002135  * Area (sq ft)          *          *  313.21  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)       *          *   33.00  *          *
* Vel Total (ft/s)       *   17.56  * Avg. Vel. (ft/s)     *          *   17.56  *          *
* Max Chl Dpth (ft)      *    9.66  * Hydr. Depth (ft)     *          *    9.49  *          *
* Conv. Total (cfs)      *119037.6  * Conv. (cfs)          *          *119037.6  *          *
* Length Wtd. (ft)       *   50.00  * Wetted Per. (ft)     *          *   51.66  *          *
* Min Ch El (ft)         * 1874.50  * Shear (lb/sq ft)     *          *    0.81  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   14.19  *          *
* Frctn Loss (ft)        *    0.11  * Cum Volume (acre-ft)  *    0.43  *   24.43  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    3.09  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 2703.87

INPUT
Description: 27+03.87 Van Buskirk confluence / begin 33' channel
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0  1885.5       0 1874.33    16.5    1874      25    1874      33 1874.16
      33  1885.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      33                 1       1       1              .1       .2

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1888.38  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.77  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1883.62  * Reach Len. (ft)       *    1.00  *    1.00  *    1.00  *
* Crit W.S. (ft)         * 1883.62  * Flow Area (sq ft)     *          *  313.94  *          *
* E.G. Slope (ft/ft)     *0.002123  * Area (sq ft)          *          *  313.94  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)       *          *   33.00  *          *
* Vel Total (ft/s)       *   17.52  * Avg. Vel. (ft/s)     *          *   17.52  *          *
* Max Chl Dpth (ft)      *    9.62  * Hydr. Depth (ft)     *          *    9.51  *          *
* Conv. Total (cfs)      *119366.6  * Conv. (cfs)          *          *119366.6  *          *
* Length Wtd. (ft)       *    1.00  * Wetted Per. (ft)     *          *   51.75  *          *
* Min Ch El (ft)         * 1874.00  * Shear (lb/sq ft)     *          *    0.80  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   14.09  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    0.43  *   24.07  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    3.06  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 2702.87

INPUT
Description: 27+02.87 Van Buskirk confluence
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1885.49       0 1874.32    16.5 1873.99      25 1873.99   51.89 1874.53
   51.89 1885.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013   51.89    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0   51.89             54.35   54.35   54.35              .1       .2
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
```

33 51.89 1885.49 T

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1888.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.76	Wt. n-Val.		0.013	
W.S. Elev (ft)	1883.61	Reach Len. (ft)	54.35	54.35	54.35
Crit W.S. (ft)	1883.61	Flow Area (sq ft)		314.01	
E.G. Slope (ft/ft)	*0.001621	Area (sq ft)		489.07	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	51.89	Top Width (ft)		51.89	
Vel Total (ft/s)	17.52	Avg. Vel. (ft/s)		17.52	
Max Chl Dpth (ft)	9.62	Hydr. Depth (ft)		9.52	
Conv. Total (cfs)	*136602.6	Conv. (cfs)		*136602.6	
Length Wtd. (ft)	54.35	Wetted Per. (ft)		42.29	
Min Ch El (ft)	1873.99	Shear (lb/sq ft)		0.75	
Alpha	1.00	Stream Power (lb/ft s)		13.16	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	0.43	24.06	1.09
C & E Loss (ft)	0.23	Cum SA (acres)	0.27	3.05	0.70

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: Flamingo Wash
REACH: 1 RS: 2648.52

INPUT
Description: 26+48.52 end 50' channel / begin transition to confluence
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1883.72	0	1874.22	25	1873.72	50	1874.22	50	1883.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	52.38	52.38	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1884.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	1881.16	Reach Len. (ft)	52.38	52.38	52.38
Crit W.S. (ft)	1881.16	Flow Area (sq ft)		359.61	
E.G. Slope (ft/ft)	*0.001788	Area (sq ft)		359.61	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.29	Avg. Vel. (ft/s)		15.29	
Max Chl Dpth (ft)	7.44	Hydr. Depth (ft)		7.19	
Conv. Total (cfs)	*130057.4	Conv. (cfs)		*130057.4	
Length Wtd. (ft)	52.38	Wetted Per. (ft)		63.89	
Min Ch El (ft)	1873.72	Shear (lb/sq ft)		0.63	
Alpha	1.00	Stream Power (lb/ft s)		9.61	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	0.43	23.54	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	2.99	0.70

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: Flamingo Wash
REACH: 1 RS: 2596.14

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1883.46	0	1873.96	25	1873.46	50	1873.96	50	1883.46

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	19.7	19.7	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1884.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	1880.90	Reach Len. (ft)	19.70	19.70	19.70
Crit W.S. (ft)	1880.90	Flow Area (sq ft)		359.61	
E.G. Slope (ft/ft)	*0.001788	Area (sq ft)		359.61	

* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	*	*	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	*	*	*	*
* Vel Total (ft/s)	* 15.29	* Avg. Vel. (ft/s)	*	* 15.29	*	*	*	*
* Max Chl Dpth (ft)	* 7.44	* Hydr. Depth (ft)	*	* 7.19	*	*	*	*
* Conv. Total (cfs)	*130057.4	* Conv. (cfs)	*	*130057.4	*	*	*	*
* Length Wtd. (ft)	* 19.70	* Wetted Per. (ft)	*	* 63.89	*	*	*	*
* Min Ch El (ft)	* 1873.46	* Shear (lb/sq ft)	*	* 0.63	*	*	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.61	*	*	*	*
* Frctn Loss (ft)	* 0.04	* Cum Volume (acre-ft)	*	0.43	*	23.10	*	1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	2.93	*	0.70 *

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: Flamingo Wash
REACH: 1 RS: 2576.44*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1883.36	0	1873.86	25	1873.36	50	1873.86	50	1883.36

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	72.07	72.07	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1884.43	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.63	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1880.80	* Reach Len. (ft)	* 72.07	* 72.07	* 72.07 *
* Crit W.S. (ft)	* 1880.80	* Flow Area (sq ft)	*	* 359.61	* *
* E.G. Slope (ft/ft)	*0.001788	* Area (sq ft)	*	* 359.61	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 15.29	* Avg. Vel. (ft/s)	*	* 15.29	* *
* Max Chl Dpth (ft)	* 7.44	* Hydr. Depth (ft)	*	* 7.19	* *
* Conv. Total (cfs)	*130057.4	* Conv. (cfs)	*	*130057.4	* *
* Length Wtd. (ft)	* 72.07	* Wetted Per. (ft)	*	* 63.89	* *
* Min Ch El (ft)	* 1873.36	* Shear (lb/sq ft)	*	* 0.63	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.61	* *
* Frctn Loss (ft)	* 0.13	* Cum Volume (acre-ft)	* 0.43	* 22.94	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 2.91	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 2504.37*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1882.99	0	1873.49	25	1872.99	50	1873.49	50	1882.99

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	61.31	61.31	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1884.06	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.63	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1880.43	* Reach Len. (ft)	* 61.31	* 61.31	* 61.31 *
* Crit W.S. (ft)	* 1880.43	* Flow Area (sq ft)	*	* 359.61	* *
* E.G. Slope (ft/ft)	*0.001788	* Area (sq ft)	*	* 359.61	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 15.29	* Avg. Vel. (ft/s)	*	* 15.29	* *
* Max Chl Dpth (ft)	* 7.44	* Hydr. Depth (ft)	*	* 7.19	* *
* Conv. Total (cfs)	*130057.4	* Conv. (cfs)	*	*130057.4	* *
* Length Wtd. (ft)	* 61.31	* Wetted Per. (ft)	*	* 63.89	* *
* Min Ch El (ft)	* 1872.99	* Shear (lb/sq ft)	*	* 0.63	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.61	* *
* Frctn Loss (ft)	* 0.11	* Cum Volume (acre-ft)	* 0.43	* 22.35	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 2.83	* 0.70 *

```
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: Flamingo Wash
REACH: 1                 RS: 2443.06

INPUT
Description: 24+32.30 grade break
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1882.68       0 1873.18      25 1872.68      50 1873.18      50 1882.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             10.76   10.76   10.76            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1883.76  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.63  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1880.12  * Reach Len. (ft)        *   10.76  *   10.76  *   10.76  *
* Crit W.S. (ft)         * 1880.12  * Flow Area (sq ft)      *          *  359.61  *          *
* E.G. Slope (ft/ft)     *0.001788  * Area (sq ft)           *          *  359.61  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   15.29  * Avg. Vel. (ft/s)       *          *   15.29  *          *
* Max Chl Dpth (ft)      *    7.44  * Hydr. Depth (ft)       *          *    7.19  *          *
* Conv. Total (cfs)      *130057.4  * Conv. (cfs)            *          *130057.4  *          *
* Length Wtd. (ft)       *   10.76  * Wetted Per. (ft)       *          *   63.89  *          *
* Min Ch El (ft)         * 1872.68  * Shear (lb/sq ft)       *          *    0.63  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.61  *          *
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)   *    0.43  *   21.84  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    2.76  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 2432.30

INPUT
Description: 24+32.30 grade break
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1882.63       0 1873.13      25 1872.63      50 1873.13      50 1882.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             98.19   98.19   98.19            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1883.70  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.63  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1880.07  * Reach Len. (ft)        *   98.19  *   98.19  *   98.19  *
* Crit W.S. (ft)         * 1880.07  * Flow Area (sq ft)      *          *  359.61  *          *
* E.G. Slope (ft/ft)     *0.001788  * Area (sq ft)           *          *  359.61  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   15.29  * Avg. Vel. (ft/s)       *          *   15.29  *          *
* Max Chl Dpth (ft)      *    7.44  * Hydr. Depth (ft)       *          *    7.19  *          *
* Conv. Total (cfs)      *130057.4  * Conv. (cfs)            *          *130057.4  *          *
* Length Wtd. (ft)       *   98.19  * Wetted Per. (ft)       *          *   63.89  *          *
* Min Ch El (ft)         * 1872.63  * Shear (lb/sq ft)       *          *    0.63  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.61  *          *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)   *    0.43  *   21.75  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.27  *    2.74  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 2334.09*
```

```
INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
********************************************************************************
       0 1881.85       0 1872.35      25 1871.85      50 1872.35      50 1881.85

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50            98.19   98.19   98.19            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1882.92  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.63  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1879.29  * Reach Len. (ft)       *   98.19  *   98.19  *   98.19  *
* Crit W.S. (ft)         * 1879.29  * Flow Area (sq ft)     *          *  359.61  *          *
* E.G. Slope (ft/ft)     *0.001788  * Area (sq ft)          *          *  359.61  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)       *          *   50.00  *          *
* Vel Total (ft/s)       *   15.29  * Avg. Vel. (ft/s)     *          *   15.29  *          *
* Max Chl Dpth (ft)      *    7.44  * Hydr. Depth (ft)     *          *    7.19  *          *
* Conv. Total (cfs)      *130057.4  * Conv. (cfs)          *          *130057.4  *          *
* Length Wtd. (ft)       *   98.19  * Wetted Per. (ft)     *          *   63.89  *          *
* Min Ch El (ft)         * 1871.85  * Shear (lb/sq ft)     *          *    0.63  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.61  *          *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)  *    0.43  *   20.94  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    2.63  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 2235.88*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
********************************************************************************
       0 1881.06       0 1871.56      25 1871.06      50 1871.56      50 1881.06

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50            98.19   98.19   98.19            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1882.14  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.63  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1878.50  * Reach Len. (ft)       *   98.19  *   98.19  *   98.19  *
* Crit W.S. (ft)         * 1878.50  * Flow Area (sq ft)     *          *  359.61  *          *
* E.G. Slope (ft/ft)     *0.001788  * Area (sq ft)          *          *  359.61  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)       *          *   50.00  *          *
* Vel Total (ft/s)       *   15.29  * Avg. Vel. (ft/s)     *          *   15.29  *          *
* Max Chl Dpth (ft)      *    7.44  * Hydr. Depth (ft)     *          *    7.19  *          *
* Conv. Total (cfs)      *130057.4  * Conv. (cfs)          *          *130057.4  *          *
* Length Wtd. (ft)       *   98.19  * Wetted Per. (ft)     *          *   63.89  *          *
* Min Ch El (ft)         * 1871.06  * Shear (lb/sq ft)     *          *    0.63  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    9.61  *          *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)  *    0.43  *   20.13  *    1.09  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.27  *    2.52  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 2137.68

INPUT
Description: 21+37.68 grade break
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
********************************************************************************
       0 1880.28       0 1870.78      25 1870.28      50 1870.78      50 1880.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50             78.1    78.1    78.1            .05       .1
```

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1881.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	1877.72	Reach Len. (ft)	78.10	78.10	78.10
Crit W.S. (ft)	1877.72	Flow Area (sq ft)		359.61	
E.G. Slope (ft/ft)	*0.001788	Area (sq ft)		359.61	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.29	Avg. Vel. (ft/s)		15.29	
Max Chl Dpth (ft)	7.44	Hydr. Depth (ft)		7.19	
Conv. Total (cfs)	*130057.4	Conv. (cfs)		*130057.4	
Length Wtd. (ft)	78.10	Wetted Per. (ft)		63.89	
Min Ch El (ft)	1870.28	Shear (lb/sq ft)		0.63	
Alpha	1.00	Stream Power (lb/ft s)		9.61	
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	0.43	19.32	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	2.40	0.70

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: Flamingo Wash
REACH: 1 RS: 2059.60*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1878.57	0	1869.24	25	1868.74	50	1869.24	50	1878.57

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	39.44	39.44	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1879.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	1876.18	Reach Len. (ft)	39.44	39.44	39.44
Crit W.S. (ft)	1876.18	Flow Area (sq ft)		359.61	
E.G. Slope (ft/ft)	*0.001788	Area (sq ft)		359.61	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.29	Avg. Vel. (ft/s)		15.29	
Max Chl Dpth (ft)	7.44	Hydr. Depth (ft)		7.19	
Conv. Total (cfs)	*130057.4	Conv. (cfs)		*130057.4	
Length Wtd. (ft)	39.44	Wetted Per. (ft)		63.89	
Min Ch El (ft)	1868.74	Shear (lb/sq ft)		0.63	
Alpha	1.00	Stream Power (lb/ft s)		9.61	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.43	18.67	1.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.27	2.32	0.70

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: Flamingo Wash
REACH: 1 RS: 2020.16

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1877.63	0	1868.46	25	1867.96	50	1868.46	50	1877.63

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	38.63	38.63	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1879.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	1875.40	Reach Len. (ft)	38.63	38.63	38.63
Crit W.S. (ft)	1875.40	Flow Area (sq ft)		359.61	
E.G. Slope (ft/ft)	*0.001788	Area (sq ft)		359.61	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	15.29	Avg. Vel. (ft/s)		15.29	
Max Chl Dpth (ft)	7.44	Hydr. Depth (ft)		7.19	

* Conv. Total (cfs)	*130057.4	* Conv. (cfs)	*	*130057.4	*			*
* Length Wtd. (ft)	* 38.63	* Wetted Per. (ft)	*	* 63.89	*			*
* Min Ch El (ft)	* 1867.96	* Shear (lb/sq ft)	*	* 0.63	*			*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.61	*			*
* Frctn Loss (ft)	* 0.07	* Cum Volume (acre-ft)	*	0.43	*	18.35	*	1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	2.27	*	0.70 *

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: Flamingo Wash
REACH: 1 RS: 1981.53*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1876.86	0	1867.69	25	1867.19	50	1867.69	50	1876.86

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	78.1	78.1	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1878.26	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (ft)	* 3.63	* Wt. n-Val.	*		*	0.013	*	*
* W.S. Elev (ft)	* 1874.63	* Reach Len. (ft)	*	78.10	*	78.10	*	78.10 *
* Crit W.S. (ft)	* 1874.63	* Flow Area (sq ft)	*		*	359.61	*	*
* E.G. Slope (ft/ft)	*0.001788	* Area (sq ft)	*		*	359.61	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*		*	5500.00	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*		*	50.00	*	*
* Vel Total (ft/s)	* 15.29	* Avg. Vel. (ft/s)	*		*	15.29	*	*
* Max Chl Dpth (ft)	* 7.44	* Hydr. Depth (ft)	*		*	7.19	*	*
* Conv. Total (cfs)	*130057.4	* Conv. (cfs)	*		*	*130057.4	*	*
* Length Wtd. (ft)	* 78.10	* Wetted Per. (ft)	*		*	63.89	*	*
* Min Ch El (ft)	* 1867.19	* Shear (lb/sq ft)	*		*	0.63	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	9.61	*	*
* Frctn Loss (ft)	* 0.14	* Cum Volume (acre-ft)	*	0.43	*	18.03	*	1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	2.23	*	0.70 *

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: Flamingo Wash
REACH: 1 RS: 1903.46

INPUT
Description: 19+03.46 grade break
19+03.46 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1875.15	0	1866.15	25	1865.65	50	1866.15	50	1875.15

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.15	86.15	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1876.72	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (ft)	* 3.63	* Wt. n-Val.	*		*	0.013	*	*
* W.S. Elev (ft)	* 1873.09	* Reach Len. (ft)	*	86.15	*	86.15	*	86.15 *
* Crit W.S. (ft)	* 1873.09	* Flow Area (sq ft)	*		*	359.61	*	*
* E.G. Slope (ft/ft)	*0.001788	* Area (sq ft)	*		*	359.61	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*		*	5500.00	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*		*	50.00	*	*
* Vel Total (ft/s)	* 15.29	* Avg. Vel. (ft/s)	*		*	15.29	*	*
* Max Chl Dpth (ft)	* 7.44	* Hydr. Depth (ft)	*		*	7.19	*	*
* Conv. Total (cfs)	*130057.4	* Conv. (cfs)	*		*	*130057.4	*	*
* Length Wtd. (ft)	* 86.15	* Wetted Per. (ft)	*		*	63.89	*	*
* Min Ch El (ft)	* 1865.65	* Shear (lb/sq ft)	*		*	0.63	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	9.61	*	*
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	*	0.43	*	17.38	*	1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	2.14	*	0.70 *

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: Flamingo Wash
REACH: 1 RS: 1817.25*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1874.45	0	1865.45	25	1864.95	50	1865.45	50	1874.45

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 86.15 86.15 86.15 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1876.02	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.63	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1872.39	* Reach Len. (ft)	* 86.15	* 86.15	* 86.15 *
* Crit W.S. (ft)	* 1872.39	* Flow Area (sq ft)	*	* 359.61	* *
* E.G. Slope (ft/ft)	*0.001788	* Area (sq ft)	*	* 359.61	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 15.29	* Avg. Vel. (ft/s)	*	* 15.29	* *
* Max Chl Dpth (ft)	* 7.44	* Hydr. Depth (ft)	*	* 7.19	* *
* Conv. Total (cfs)	*130057.4	* Conv. (cfs)	*	*130057.4	* *
* Length Wtd. (ft)	* 86.15	* Wetted Per. (ft)	*	* 63.89	* *
* Min Ch El (ft)	* 1864.95	* Shear (lb/sq ft)	*	* 0.63	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.61	* *
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 0.43	* 16.67	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 2.04	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 1731.04*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1873.74	0	1864.74	25	1864.24	50	1864.74	50	1873.74

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 86.15 86.15 86.15 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1875.31	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.63	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1871.68	* Reach Len. (ft)	* 86.15	* 86.15	* 86.15 *
* Crit W.S. (ft)	* 1871.68	* Flow Area (sq ft)	*	* 359.61	* *
* E.G. Slope (ft/ft)	*0.001788	* Area (sq ft)	*	* 359.61	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 15.29	* Avg. Vel. (ft/s)	*	* 15.29	* *
* Max Chl Dpth (ft)	* 7.44	* Hydr. Depth (ft)	*	* 7.19	* *
* Conv. Total (cfs)	*130057.4	* Conv. (cfs)	*	*130057.4	* *
* Length Wtd. (ft)	* 86.15	* Wetted Per. (ft)	*	* 63.89	* *
* Min Ch El (ft)	* 1864.24	* Shear (lb/sq ft)	*	* 0.63	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.61	* *
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 0.43	* 15.96	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 1.94	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 1644.83*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0 1873.04       0 1864.04      25 1863.54      50 1864.04      50 1873.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50            86.15   86.15   86.15            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1874.61  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    3.62  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)          * 1871.00  * Reach Len. (ft)        *   86.15  *   86.15  *   86.15  *
* Crit W.S. (ft)          * 1870.98  * Flow Area (sq ft)      *          *  360.41  *          *
* E.G. Slope (ft/ft)      *0.001776  * Area (sq ft)           *          *  360.41  *          *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)          *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)        *   15.26  * Avg. Vel. (ft/s)       *          *   15.26  *          *
* Max Chl Dpth (ft)       *    7.46  * Hydr. Depth (ft)       *          *    7.21  *          *
* Conv. Total (cfs)       *130496.2  * Conv. (cfs)            *          *130496.2  *          *
* Length Wtd. (ft)        *   86.15  * Wetted Per. (ft)       *          *   63.93  *          *
* Min Ch El (ft)          * 1863.54  * Shear (lb/sq ft)       *          *    0.63  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    9.54  *          *
* Frctn Loss (ft)         *    0.11  * Cum Volume (acre-ft)   *    0.43  *   15.25  *    1.09  *
* C & E Loss (ft)         *    0.13  * Cum SA (acres)         *    0.27  *    1.84  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 1558.63*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1872.34       0 1863.34      25 1862.84      50 1863.34      50 1872.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50                 .01     .01     .01            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1874.38  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    2.35  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)          * 1872.02  * Reach Len. (ft)        *    0.01  *    0.01  *    0.01  *
* Crit W.S. (ft)          * 1870.28  * Flow Area (sq ft)      *          *  446.69  *          *
* E.G. Slope (ft/ft)      *0.000932  * Area (sq ft)           *          *  446.69  *          *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)          *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)        *   12.31  * Avg. Vel. (ft/s)       *          *   12.31  *          *
* Max Chl Dpth (ft)       *    9.18  * Hydr. Depth (ft)       *          *    8.93  *          *
* Conv. Total (cfs)       *180186.1  * Conv. (cfs)            *          *180186.1  *          *
* Length Wtd. (ft)        *    0.01  * Wetted Per. (ft)       *          *   67.38  *          *
* Min Ch El (ft)          * 1862.84  * Shear (lb/sq ft)       *          *    0.39  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    4.75  *          *
* Frctn Loss (ft)         *    0.00  * Cum Volume (acre-ft)   *    0.43  *   14.45  *    1.09  *
* C & E Loss (ft)         *    0.07  * Cum SA (acres)         *    0.27  *    1.74  *    0.70  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 1558.62

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1872.34       0 1863.34      25 1862.84      50 1863.34      50 1872.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50            86.24   86.24   86.24            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1874.30  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    3.74  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)          * 1870.56  * Reach Len. (ft)        *   86.24  *   86.24  *   86.24  *
* Crit W.S. (ft)          * 1870.56  * Flow Area (sq ft)      *          *  373.62  *          *
* E.G. Slope (ft/ft)      *0.001771  * Area (sq ft)           *          *  373.62  *          *
* Q Total (cfs)           * 5800.00  * Flow (cfs)             *          * 5800.00  *          *
* Top Width (ft)          *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)        *   15.52  * Avg. Vel. (ft/s)       *          *   15.52  *          *
```

* Max Chl Dpth (ft)	* 7.72	* Hydr. Depth (ft)	*	* 7.47	*	*		
* Conv. Total (cfs)	*137805.4	* Conv. (cfs)	*	*137805.4	*	*		
* Length Wtd. (ft)	* 86.24	* Wetted Per. (ft)	*	* 64.45	*	*		
* Min Ch El (ft)	* 1862.84	* Shear (lb/sq ft)	*	* 0.64	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.95	*	*		
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	*	0.43	*	14.45	*	1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.27	*	1.74	*	0.70 *

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: Flamingo Wash
REACH: 1 RS: 1472.6*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1871.64	0	1862.64	25	1862.14	50	1862.64	50	1871.64

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.24	86.24	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1873.60	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.74	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1869.86	* Reach Len. (ft)	* 86.24	* 86.24	* 86.24 *
* Crit W.S. (ft)	* 1869.86	* Flow Area (sq ft)	*	* 373.63	* *
* E.G. Slope (ft/ft)	*0.001771	* Area (sq ft)	*	* 373.63	* *
* Q Total (cfs)	* 5800.00	* Flow (cfs)	*	* 5800.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 15.52	* Avg. Vel. (ft/s)	*	* 15.52	* *
* Max Chl Dpth (ft)	* 7.72	* Hydr. Depth (ft)	*	* 7.47	* *
* Conv. Total (cfs)	*137808.8	* Conv. (cfs)	*	*137808.8	* *
* Length Wtd. (ft)	* 86.24	* Wetted Per. (ft)	*	* 64.46	* *
* Min Ch El (ft)	* 1862.14	* Shear (lb/sq ft)	*	* 0.64	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.95	* *
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 0.43	* 13.71	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 1.64	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 1386.58*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1870.94	0	1861.94	25	1861.44	50	1861.94	50	1870.94

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.24	86.24	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1872.90	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.74	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1869.16	* Reach Len. (ft)	* 86.24	* 86.24	* 86.24 *
* Crit W.S. (ft)	* 1869.16	* Flow Area (sq ft)	*	* 373.63	* *
* E.G. Slope (ft/ft)	*0.001771	* Area (sq ft)	*	* 373.63	* *
* Q Total (cfs)	* 5800.00	* Flow (cfs)	*	* 5800.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 15.52	* Avg. Vel. (ft/s)	*	* 15.52	* *
* Max Chl Dpth (ft)	* 7.72	* Hydr. Depth (ft)	*	* 7.47	* *
* Conv. Total (cfs)	*137812.2	* Conv. (cfs)	*	*137812.2	* *
* Length Wtd. (ft)	* 86.24	* Wetted Per. (ft)	*	* 64.46	* *
* Min Ch El (ft)	* 1861.44	* Shear (lb/sq ft)	*	* 0.64	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 9.95	* *
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 0.43	* 12.97	* 1.09 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.27	* 1.54	* 0.70 *

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: Flamingo Wash
REACH: 1 RS: 1300.56*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1870.23	0	1861.23	25	1860.73	50	1861.23	50	1870.23

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 86.24 86.24 86.24 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1872.19	Element	Left OB	Channel / Right OB
Vel Head (ft)	3.74	Wt. n-Val.		0.013 /
W.S. Elev (ft)	1868.45	Reach Len. (ft)	86.24	86.24 / 86.24
Crit W.S. (ft)	1868.45	Flow Area (sq ft)		373.68 /
E.G. Slope (ft/ft)	0.001771	Area (sq ft)		373.68 /
Q Total (cfs)	5800.00	Flow (cfs)		5800.00 /
Top Width (ft)	50.00	Top Width (ft)		50.00 /
Vel Total (ft/s)	15.52	Avg. Vel. (ft/s)		15.52 /
Max Chl Dpth (ft)	7.72	Hydr. Depth (ft)		7.47 /
Conv. Total (cfs)	137839.4	Conv. (cfs)		137839.4 /
Length Wtd. (ft)	86.24	Wetted Per. (ft)		64.46 /
Min Ch El (ft)	1860.73	Shear (lb/sq ft)		0.64 /
Alpha	1.00	Stream Power (lb/ft s)		9.95 /
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	0.43	12.23 / 1.09
C & E Loss (ft)	0.03	Cum SA (acres)	0.27	1.44 / 0.70

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: Flamingo Wash
REACH: 1 RS: 1214.54

INPUT
Description: 12+14.54 end transition / begin 50' channel
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1869.53	0	1860.53	25	1860.03	50	1860.53	50	1869.53

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 114.54 114.54 114.54 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1871.51	Element	Left OB	Channel / Right OB
Vel Head (ft)	3.47	Wt. n-Val.		0.013 /
W.S. Elev (ft)	1868.04	Reach Len. (ft)	114.54	114.54 / 114.54
Crit W.S. (ft)	1867.75	Flow Area (sq ft)		388.20 /
E.G. Slope (ft/ft)	0.001578	Area (sq ft)		388.20 /
Q Total (cfs)	5800.00	Flow (cfs)		5800.00 /
Top Width (ft)	50.00	Top Width (ft)		50.00 /
Vel Total (ft/s)	14.94	Avg. Vel. (ft/s)		14.94 /
Max Chl Dpth (ft)	8.01	Hydr. Depth (ft)		7.76 /
Conv. Total (cfs)	146005.6	Conv. (cfs)		146005.6 /
Length Wtd. (ft)	114.54	Wetted Per. (ft)		65.04 /
Min Ch El (ft)	1860.03	Shear (lb/sq ft)		0.59 /
Alpha	1.00	Stream Power (lb/ft s)		8.79 /
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	0.43	11.48 / 1.09
C & E Loss (ft)	0.17	Cum SA (acres)	0.27	1.34 / 0.70

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: Flamingo Wash
REACH: 1 RS: 1100

INPUT
Description: 10+87.79 begin channel improvements
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
74.58	1874.05	81.76	1873.87	83.101	1873.79	84.89	1873.76	91.809	1872.99
95.599	1872.91	99.44	1872.85	102.9	1872.82	105.09	1872.79	106.25	1872.75
107.24	1872.22	107.301	1872.22	107.97	1872.2	108.22	1872.2	108.409	1871.76

```
   112.1 1868.81 134.601  1868.6 134.601 1859.11 160.619  1859.1 186.639 1859.11
 186.639  1868.6 219.569 1870.43  220.33  1870.4  224.17 1870.54  231.16 1870.54
 231.939 1870.54 238.849 1870.96 239.539    1871  243.53 1870.79 248.409 1870.52
 251.241 1870.45  252.83  1870.6  260.02 1870.91 269.379 1870.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
   74.58    .013 134.601    .013 186.639    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       134.601 186.639               174     174     174            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1871.24  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.74  * Wt. n-Val.             *   0.013  *   0.013  *   0.013  *
* W.S. Elev (ft)         * 1869.50  * Reach Len. (ft)        *   26.90  *   26.90  *   26.90  *
* Crit W.S. (ft)         * 1866.38  * Flow Area (sq ft)      *   18.07  *  540.67  *    7.21  *
* E.G. Slope (ft/ft)     *0.000577  * Area (sq ft)           *   18.07  *  540.67  *    7.21  *
* Q Total (cfs)          * 5800.00  * Flow (cfs)             *   41.52  * 5746.91  *   11.57  *
* Top Width (ft)         *   91.50  * Top Width (ft)        *   23.36  *   52.04  *   16.10  *
* Vel Total (ft/s)       *   10.25  * Avg. Vel. (ft/s)      *    2.30  *   10.63  *    1.61  *
* Max Chl Dpth (ft)      *   10.39  * Hydr. Depth (ft)      *    0.77  *   10.39  *    0.45  *
* Conv. Total (cfs)      *241371.5  * Conv. (cfs)           *  1728.1  *239162.1  *   481.3  *
* Length Wtd. (ft)       *   26.90  * Wetted Per. (ft)      *   23.60  *   71.02  *   16.13  *
* Min Ch El (ft)         * 1859.10  * Shear (lb/sq ft)      *    0.03  *    0.27  *    0.02  *
* Alpha                  *    1.07  * Stream Power (lb/ft s) *    0.06  *    2.92  *    0.03  *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)  *    0.41  *   10.26  *    1.08  *
* C & E Loss (ft)        *          * Cum SA (acres)        *    0.24  *    1.21  *    0.67  *
*************************************************************************************************

BRIDGE


RIVER: Flamingo Wash
REACH: 1                  RS: 1000

INPUT
Description: Desert Inn Rd
Distance from Upstream XS =    26.9
Deck/Roadway Width        =     140
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      19
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
*****************************************************************************
       01874.432           8.6131874.273          56.3921873.321
  64.8431873.184         114.2841872.349         120.3921872.248
 134.601    1872 1866.97   189.3  1871.2 1866.97 220.1461870.842
 224.5061870.766         277.4061869.719         281.1921869.662
 338.9371868.818         347.8651868.643         397.6781868.255
 401.555 1868.25         448.627 1867.71         452.199 1867.68
 469.342 1867.71

Upstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       01878.392   2.7721878.027   8.1841877.637  24.2831875.318  25.1931875.363
  31.3281875.098  34.3311875.065  36.1541875.018  38.7921874.989  41.4921874.895
  52.684 1875.01  55.3541875.266  59.1231875.431  62.3721875.445  62.9421875.452
  66.6521875.281   70.181875.144  70.4771875.131  75.2841874.616  78.0171874.315
  80.8581874.058  82.7161873.832   83.891873.698  89.7211872.911  90.2641872.737
  93.8781871.624 102.4631870.291 104.4451869.983 105.8281869.768 110.6881869.684
 116.569  1869.6 134.601    1867 134.601 1858.97   189.3 1858.97   189.3    1867
 199.1471869.218 211.7021869.356  211.811869.364 211.8391869.366 212.5351869.419
 212.7591869.436 212.7611869.436 212.775 1869.43 213.8041869.006 214.125 1869.55
 216.1461869.746 218.628 1870.27 224.9991870.598 228.7151870.595  231.711870.759
 232.8391870.827 234.0521870.759 250.733 1870.37  256.131870.886 256.5741870.999
 259.3221870.907 260.0161870.858 263.7011870.682 276.6221870.018  277.451869.924
 294.598 1870.91 297.0681871.061 314.9141871.908 315.5051871.939 315.6851871.946
 316.6211871.974 326.9921872.171 339.4481872.205 351.9911872.189 384.7521872.277

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .04 134.601    .015 199.147     .04

Bank Sta: Left   Right    Coeff Contr.   Expan.
       134.601   189.3            .05       .1

Downstream  Deck/Roadway Coordinates
    num=      19
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
*****************************************************************************
       01874.432           8.6131874.273          56.3921873.321
  64.8431873.184         114.2841872.349         120.3921872.248
 170.4641871.576         175.1981871.507         220.1461870.842
 224.5061870.766         264.599  1870.1  1863.1   319.3  1869.2  1863.1
 338.9371868.818         347.8651868.643         397.6781868.255
 401.555 1868.25         448.627 1867.71         452.199 1867.68
 469.342 1867.71

Downstream Bridge Cross Section Data
Station Elevation Data    num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1873.63    8.065 1873.41  18.183 1873.36  39.113 1873.34  45.473  1873.4
  47.947 1873.25  52.794 1873.36  58.448 1873.37  63.644 1873.42  69.726 1873.41
  73.125 1873.41  84.455 1873.39  90.759 1873.49  94.498 1873.45  100.57 1873.41
 106.193 1873.38 110.925  1873.3 115.428 1873.23 120.244 1873.13 124.212 1873.09
 128.155 1873.07 133.572 1872.54  136.46 1872.61 137.494 1872.02 143.908 1872.02
 163.038  1871.7 167.632 1871.89 168.911  1871.9 169.317 1871.89 169.339 1871.88
 169.559 1871.85 170.213 1871.76 182.581 1872.04 183.088 1872.05 190.475 1871.88
 192.217 1871.89  195.83 1871.77 199.012 1871.82 200.393 1871.83  202.37 1871.62
```

```
 202.695  1871.6 203.231 1871.55 206.093 1871.25 207.237 1871.16 209.186 1870.99
  209.91 1870.75 210.677  1870.5 211.514 1870.42 233.365 1869.96 234.318 1869.95
 236.441 1869.72 238.968 1869.63 243.202 1869.53 244.279 1869.24 245.233 1869.05
 246.148 1869.08 249.821 1868.27 250.674 1868.16 252.061 1867.95  252.32  1864.9
 264.599  1863.1 264.599  1855.1   319.3  1855.1   319.3  1863.1  328.96  1866.2
 330.796 1866.29 332.006 1866.61 336.306 1866.57 349.997 1867.01 354.697 1866.89
 371.242 1866.49 380.126 1866.39 388.769 1866.21 404.854 1866.27 420.758 1865.68
 422.706 1865.71 423.358 1865.73 433.326 1866.31 444.178 1866.41 454.863  1866.4
 464.508 1866.32 469.342  1866.1

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
*********************************************
       0     .04 264.599    .015  328.96     .04

Bank Sta: Left   Right    Coeff Contr.   Expan.
       264.599   319.3            .05       .1
Right Levee     Station=  349.94      Elevation= 1867.14

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        =    1890
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Piers =  4

Pier Data
Pier Station     Upstream= 145.441    Downstream= 275.439
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
     1.5       0     1.5    1870
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
     1.5       0     1.5    1870
Debris Width  =        3
Debris Height =        8

Pier Data
Pier Station     Upstream= 156.691    Downstream= 286.689
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
     .83       0     .83    1870
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
     .83       0     .83    1870
Debris Width  =     1.67
Debris Height =        8

Pier Data
Pier Station     Upstream= 167.521    Downstream= 297.519
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
     .83       0     .83    1870
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
     .83       0     .83    1870
Debris Width  =     1.67
Debris Height =        8

Pier Data
Pier Station     Upstream= 178.769    Downstream= 308.769
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
     1.5       0     1.5    1870
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
     1.5       0     1.5    1870
Debris Width  =        3
Debris Height =        8

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Momentum              Cd   =    1.33
Selected Low Flow Methods = Momentum

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream water surface

BRIDGE OUTPUT  Profile #100-yr FIS
*********************************************************************************************
* E.G. US. (ft)          *    1871.24  * Element               *Inside BR US *Inside BR DS *
* W.S. US. (ft)          *    1869.50  * E.G. Elev (ft)        *    1871.23  *    1866.77  *
* Q Total (cfs)          *    5800.00  * W.S. Elev (ft)        *    1866.97  *    1863.10  *
* Q Bridge (cfs)         *    5800.00  * Crit W.S. (ft)        *    1872.99  *    1862.59  *
```

* Q Weir (cfs)	*	* Max Chl Dpth (ft)	* 8.00	* 8.00	*
* Weir Sta Lft (ft)	*	* Vel Total (ft/s)	* 15.98	* 14.49	*
* Weir Sta Rgt (ft)	*	* Flow Area (sq ft)	* 362.87	* 400.33	*
* Weir Submerg	*	* Froude # Chl	* 1.00	* 0.90	*
* Weir Max Depth (ft)	*	* Specif Force (cu ft)	* 4330.52	* 4210.97	*
* Min El Weir Flow (ft)	* 1890.00	* Hydr Depth (ft)	* 90080.18	* 8.00	*
* Min El Prs (ft)	* 1866.97	* W.P. Total (ft)	* 202.71	* 130.04	*
* Delta EG (ft)	* 4.48	* Conv. Total (cfs)	* 52995.3	* 83922.2	*
* Delta WS (ft)	* 4.45	* Top Width (ft)	*	* 50.04	*
* BR Open Area (sq ft)	* 362.87	* Frctn Loss (ft)	*	*	*
* BR Open Vel (ft/s)	* 15.98	* C & E Loss (ft)	*	*	*
* Coef of Q	*	* Shear Total (lb/sq ft)	* 1.34	* 0.92	*
* Br Sel Method	* Press Only	* Power Total (lb/ft s)	* 21.40	* 13.30	*

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation was used for pressure flow.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 926

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1873.63	8.065	1873.41	18.183	1873.36	39.113	1873.34	45.473	1873.4
47.947	1873.25	52.794	1873.36	58.448	1873.37	63.644	1873.42	69.726	1873.41
73.125	1873.41	84.455	1873.39	90.759	1873.49	94.498	1873.45	100.57	1873.41
106.193	1873.38	110.925	1873.3	115.428	1873.23	120.244	1873.13	124.212	1873.09
128.155	1873.07	133.572	1872.54	136.46	1872.61	137.494	1872.02	143.908	1872.02
163.038	1871.7	167.632	1871.89	168.911	1871.9	169.317	1871.89	169.339	1871.88
169.559	1871.85	170.213	1871.76	182.581	1872.04	183.088	1872.05	190.475	1871.88
192.217	1871.89	195.83	1871.77	199.012	1871.82	200.393	1871.83	202.37	1871.62
202.695	1871.6	203.231	1871.55	206.093	1871.25	207.237	1871.16	209.186	1870.99
209.91	1870.75	210.677	1870.5	211.514	1870.42	233.365	1869.96	234.318	1869.95
236.441	1869.72	238.968	1869.63	243.202	1869.53	244.279	1869.24	245.233	1869.05
246.148	1869.08	249.821	1868.27	250.674	1868.16	252.061	1867.95	252.32	1864.9
264.599	1863.1	264.599	1855.1	319.3	1855.1	319.3	1863.1	328.96	1866.2
330.796	1866.29	332.006	1866.61	336.306	1866.57	349.997	1867.01	354.697	1866.89
371.242	1866.49	380.126	1866.39	388.769	1866.21	404.854	1866.27	420.758	1865.68
422.706	1865.71	423.358	1865.73	433.326	1866.31	444.178	1866.41	454.863	1866.4
464.508	1866.32	469.342	1866.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	264.599	.013	319.3	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
264.599 319.3 11.98 11.98 11.98 .05 .1
Right Levee Station= 349.94 Elevation= 1867.14

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1866.77	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.72	* Wt. n-Val.	* 0.013	* 0.013	* 0.013 *
* W.S. Elev (ft)	* 1865.04	* Reach Len. (ft)	* 11.98	* 11.98	* 11.98 *
* Crit W.S. (ft)	* 1862.16	* Flow Area (sq ft)	* 12.82	* 543.97	* 5.89 *
* E.G. Slope (ft/ft)	*0.000563	* Area (sq ft)	* 12.82	* 543.97	* 5.89 *
* Q Total (cfs)	* 5800.00	* Flow (cfs)	* 35.27	* 5749.55	* 15.17 *
* Top Width (ft)	* 73.05	* Top Width (ft)	* 12.29	* 54.70	* 6.06 *
* Vel Total (ft/s)	* 10.31	* Avg. Vel. (ft/s)	* 2.75	* 10.57	* 2.58 *
* Max Chl Dpth (ft)	* 9.94	* Hydr. Depth (ft)	* 1.04	* 9.94	* 0.97 *
* Conv. Total (cfs)	*244444.5	* Conv. (cfs)	* 1486.7	*242318.4	* 639.5 *
* Length Wtd. (ft)	* 11.98	* Wetted Per. (ft)	* 12.56	* 70.70	* 6.36 *
* Min Ch El (ft)	* 1855.10	* Shear (lb/sq ft)	* 0.04	* 0.27	* 0.03 *
* Alpha	* 1.04	* Stream Power (lb/ft s)	* 0.10	* 2.86	* 0.08 *
* Frctn Loss (ft)	* 0.01	* Cum Volume (acre-ft)	* 0.40	* 8.67	* 1.08 *
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	* 0.23	* 1.11	* 0.67 *

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, energy was used.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 914.02*

INPUT
Description:
Station Elevation Data num= 129

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1871.39	6.93	1871.29	7.99	1871.3	15.63	1871.28	23.95	1871.28
33.62	1871.28	39.09	1871.32	41.22	1871.21	41.63	1871.22	45.38	1871.29
50.25	1871.28	54.71	1871.31	59.57	1871.3	59.94	1871.29	62.86	1871.26
72.6	1871.15	76.07	1871.16	77.14	1871.17	78.02	1871.18	80.36	1871.15
81.24	1871.15	86.46	1871.15	91.29	1871.16	95.36	1871.13	99.23	1871.11
103.37	1871.07	106.67	1871.06	106.78	1871.06	110.17	1871.04	114.83	1870.66
117.31	1870.71	118.2	1870.29	123.71	1870.29	133.28	1870.15	140.16	1870.08
144.11	1870.23	145.21	1870.24	145.55	1870.24	145.57	1870.23	145.76	1870.21
146.33	1870.15	147.57	1870.18	156.96	1870.37	157.39	1870.38	162.27	1870.3

163.74	1870.27	165.24	1870.29	168.35	1870.22	171.08	1870.26	172.27	1870.27
173.97	1870.13	174.25	1870.12	174.71	1870.09	177.17	1869.88	178.15	1869.83
179.83	1869.71	180.45	1869.54	181.11	1869.37	181.83	1869.32	189.64	1869.22
197.42	1869.12	200.61	1869.04	201.43	1869.03	203.26	1868.86	205.43	1868.78
209.07	1868.69	209.97	1868.49	210	1868.48	210.82	1868.33	211.6	1868.34
214.76	1867.73	215.49	1867.64	216.69	1867.47	216.91	1865.31	223.57	1864.41
226.01	1864.09	227.46	1863.32	227.85	1855.12	229.57	1855.13	230.09	1854.95
268.81	1854.95	280.51	1860.68	280.78	1862.35	280.81	1862.45	281.01	1862.55
282.62	1863.21	288.36	1864.72	291.24	1865.48	292.87	1865.56	293.74	1865.75
293.95	1865.8	296.74	1865.87	297.78	1865.94	308.18	1866.98	309.99	1867.14
312.75	1867.26	314.18	1867.3	316.12	1867.36	319.08	1867.45	328.93	1867.17
336.85	1867.02	337.14	1867.02	341.47	1866.9	343.41	1866.86	343.77	1866.85
343.99	1866.84	344.36	1866.84	344.56	1866.83	345.3	1866.83	358.89	1866.81
373.07	1866.32	374.81	1866.34	375.04	1866.34	375.39	1866.35	380.16	1866.53
384.28	1866.68	388.32	1866.67	393.45	1866.71	393.95	1866.71	394.47	1866.71
395.77	1866.7	398.86	1866.73	401.74	1866.75	403.48	1866.77	410.13	1866.78
412.08	1866.77	414.74	1866.69	415.86	1866.64	416.38	1866.61		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	227.46	.013	282.62	.013

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
227.46	282.62	397.98	413.98	419.98	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1866.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.41	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	1864.31	Reach Len. (ft)	397.98	413.98	419.98
Crit W.S. (ft)		Flow Area (sq ft)	1.06	464.42	2.29
E.G. Slope (ft/ft)	0.000883	Area (sq ft)	1.06	464.42	2.29
Q Total (cfs)	5800.00	Flow (cfs)	1.67	5793.21	5.11
Top Width (ft)	62.45	Top Width (ft)	3.12	55.16	4.18
Vel Total (ft/s)	12.40	Avg. Vel. (ft/s)	1.58	12.47	2.23
Max Chl Dpth (ft)	9.36	Hydr. Depth (ft)	0.34	8.42	0.55
Conv. Total (cfs)	195183.1	Conv. (cfs)	56.4	194954.7	172.0
Length Wtd. (ft)	413.79	Wetted Per. (ft)	3.32	65.99	4.32
Min Ch El (ft)	1854.95	Shear (lb/sq ft)	0.02	0.39	0.03
Alpha	1.01	Stream Power (lb/ft s)	0.03	4.84	0.07
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	0.40	8.54	1.08
C & E Loss (ft)	0.04	Cum SA (acres)	0.23	1.09	0.67

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: Flamingo Wash
REACH: 1 RS: 702.71

INPUT
Description: X-section 640 from Case no. 04-09-0166P LOMR
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1866.76	1004.77	1866.42	1005.12	1866.26	1009.4	1864.26	1013.41	1862.26
1016.12	1860.86	1026.88	1860.35	1027.05	1860.26	1030.75	1858.26	1034.43	1856.26
1038.12	1854.26	1039.25	1853.65	1067.22	1853.63	1068.01	1854.26	1070.51	1856.26
1073	1858.26	1075.48	1860.26	1077.94	1862.26	1079.43	1863.49		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1026.88	.015	1079.43	.02

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
1026.88	1079.43	251.59	258.21	262.14	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1866.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.28	Wt. n-Val.	0.020	0.015	
W.S. Elev (ft)	1862.90	Reach Len. (ft)	251.59	258.21	262.14
Crit W.S. (ft)	1862.90	Flow Area (sq ft)	28.77	385.61	
E.G. Slope (ft/ft)	0.001711	Area (sq ft)	28.77	385.61	
Q Total (cfs)	5800.00	Flow (cfs)	134.94	5665.06	
Top Width (ft)	66.60	Top Width (ft)	14.76	51.84	
Vel Total (ft/s)	14.00	Avg. Vel. (ft/s)	4.69	14.69	
Max Chl Dpth (ft)	9.27	Hydr. Depth (ft)	1.95	7.44	
Conv. Total (cfs)	140207.4	Conv. (cfs)	3262.1	136945.3	
Length Wtd. (ft)	258.24	Wetted Per. (ft)	15.26	56.81	
Min Ch El (ft)	1853.63	Shear (lb/sq ft)	0.20	0.73	
Alpha	1.08	Stream Power (lb/ft s)	0.94	10.65	
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	0.26	4.50	1.06
C & E Loss (ft)	0.34	Cum SA (acres)	0.15	0.58	0.65

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: Flamingo Wash
REACH: 1 RS: 444.5

```
INPUT
Description: X-section 630 from Case no. 04-09-0166P LOMR
Station Elevation Data    num=      18
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**********************************************************************************
    1000 1863.46 1004.03 1862.26 1009.63 1860.53 1010.62 1860.26 1018.67 1858.26
 1018.82 1858.16    1031 1857.32 1032.96 1856.26 1036.68 1854.26 1040.45 1852.26
 1044.02 1850.36  1071.6 1850.54 1074.89 1852.26 1078.71 1854.26 1082.53 1856.26
 1084.55 1857.26 1129.14 1858.26 1165.99 1859.26

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
***********************************************
    1000     .02    1031    .015 1084.55     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1031 1084.55           229.09  221.03  213.86             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1862.09  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.15  * Wt. n-Val.             *   0.020  *   0.015  *   0.020  *
* W.S. Elev (ft)         * 1859.94  * Reach Len. (ft)        *  229.09  *  221.03  *  213.86  *
* Crit W.S. (ft)         * 1859.94  * Flow Area (sq ft)      *   32.69  *  419.11  *  140.51  *
* E.G. Slope (ft/ft)     *0.001092  * Area (sq ft)           *   32.69  *  419.11  *  140.51  *
* Q Total (cfs)          * 5800.00  * Flow (cfs)            *  113.90  * 5192.58  *  493.52  *
* Top Width (ft)         *  154.07  * Top Width (ft)        *   19.08  *   53.55  *   81.44  *
* Vel Total (ft/s)       *    9.79  * Avg. Vel. (ft/s)      *    3.48  *   12.39  *    3.51  *
* Max Chl Dpth (ft)      *    9.58  * Hydr. Depth (ft)      *    1.71  *    7.83  *    1.73  *
* Conv. Total (cfs)      *175488.0  * Conv. (cfs)           *  3446.2  *157109.6  * 14932.1  *
* Length Wtd. (ft)       *  220.55  * Wetted Per. (ft)      *   19.35  *   56.93  *   82.14  *
* Min Ch El (ft)         * 1850.36  * Shear (lb/sq ft)      *    0.12  *    0.50  *    0.12  *
* Alpha                  *    1.45  * Stream Power (lb/ft s) *    0.40  *    6.22  *    0.41  *
* Frctn Loss (ft)        *    0.26  * Cum Volume (acre-ft)  *    0.09  *    2.11  *    0.64  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.05  *    0.27  *    0.40  *
*****************************************************************************************************

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 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.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 223.47

INPUT
Description: X-section 620 from Case no. 04-09-0166P LOMR
Station Elevation Data    num=      20
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**********************************************************************************
    1000 1861.56  1007.7 1860.26 1012.48 1859.42 1018.28 1858.26 1022.06 1857.51
 1033.45 1857.66 1035.35 1856.26  1037.9 1854.26 1040.44 1852.26 1042.97 1850.26
 1045.49 1848.26 1046.14 1847.74 1075.97 1847.92 1076.49 1848.26 1079.51 1850.26
 1082.53 1852.26 1085.57 1854.26 1086.27 1854.72 1135.67 1856.26 1176.03 1857.79

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
***********************************************
    1000     .02 1033.45    .015 1086.27     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1033.45 1086.27                 0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1859.98  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.46  * Wt. n-Val.             *   0.000  *   0.015  *   0.020  *
* W.S. Elev (ft)         * 1857.52  * Reach Len. (ft)        *          *          *          *
* Crit W.S. (ft)         * 1857.52  * Flow Area (sq ft)      *    0.00  *  413.28  *  121.06  *
* E.G. Slope (ft/ft)     *0.001264  * Area (sq ft)           *    0.00  *  413.28  *  121.06  *
* Q Total (cfs)          * 5800.00  * Flow (cfs)            *    0.00  * 5387.48  *  412.52  *
* Top Width (ft)         *  135.87  * Top Width (ft)        *    0.65  *   52.63  *   82.59  *
* Vel Total (ft/s)       *   10.85  * Avg. Vel. (ft/s)      *    0.07  *   13.04  *    3.41  *
* Max Chl Dpth (ft)      *    9.78  * Hydr. Depth (ft)      *    0.00  *    7.85  *    1.47  *
* Conv. Total (cfs)      *163125.4  * Conv. (cfs)           *     0.0  *151523.2  * 11602.2  *
* Length Wtd. (ft)       *          * Wetted Per. (ft)      *    0.65  *   58.04  *   82.63  *
* Min Ch El (ft)         * 1847.74  * Shear (lb/sq ft)      *          *    0.56  *    0.12  *
* Alpha                  *    1.35  * Stream Power (lb/ft s) *          *    7.33  *    0.39  *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)  *          *          *          *
* C & E Loss (ft)        *          * Cum SA (acres)        *          *          *          *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
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:Flamingo Wash
**********************************************************************************
*     Reach      *   River Sta.   *   n1    *   n2    *   n3    *   n4    *   n5    *
**********************************************************************************
*1               *    8837.78     *     .025*     .025*     .025*         *         *
*1               *    8807.78     *     .025*     .025*     .025*         *         *
*1               *    8687.78     *     .025*     .025*     .025*         *         *
*1               *    8320        *     .035*      .03*     .035*         *         *
```

*1	*	8200	*	.03*	.04*	.03*	*	*
*1	*	8100.*	*	.03*	.04*	.03*	*	*
*1	*	8000	*	.03*	.04*	.03*	*	*
*1	*	7900.*	*	.03*	.04*	.03*	*	*
*1	*	7800	*	.03*	.04*	.03*	*	*
*1	*	7700.*	*	.03*	.04*	.03*	*	*
*1	*	7600	*	.03*	.04*	.03*	*	*
*1	*	7500.*	*	.03*	.04*	.03*	*	*
*1	*	7400	*	.03*	.04*	.03*	*	*
*1	*	7300.*	*	.03*	.04*	.03*	*	*
*1	*	7200	*	.03*	.04*	.03*	*	*
*1	*	7100.*	*	.03*	.04*	.03*	*	*
*1	*	7000	*	.03*	.04*	.03*	*	*
*1	*	6868.*	*	.03*	.04*	.03*	*	*
*1	*	6736	*	.03*	.04*	.03*	*	*
*1	*	6702.04	*	.03*	.04*	.03*	*	*
*1	*	6701.94	*	.03*	.03*	.013*	.03*	.03*
*1	*	6577	*	.03*	.03*	.013*	.03*	.03*
*1	*	6500	*Culvert	*	*	*	*	*
*1	*	6469	*	.03*	.03*	.013*	.03*	.03*
*1	*	6350	*	.03*	.03*	.013*	.03*	.03*
*1	*	6349.9	*	.03*	.04*	.013*	.04*	.03*
*1	*	6250	*	.03*	.04*	.013*	.04*	.03*
*1	*	6100	*	.03*	.04*	.013*	.04*	.03*
*1	*	5991.58	*	.03*	.04*	.013*	.04*	.03*
*1	*	5991.48	*	.03*	.025*	.013*	.025*	.03*
*1	*	5905	*	.025*	.013*	.025*	*	*
*1	*	5800	*Culvert	*	*	*	*	*
*1	*	5790	*	.013*	.013*	.013*	*	*
*1	*	5737.74	*	.013*	.013*	.013*	*	*
*1	*	5648.42	*	.013*	.013*	.013*	*	*
*1	*	5548.82*	*	.013*	.013*	.013*	*	*
*1	*	5449.23*	*	.013*	.013*	.013*	*	*
*1	*	5449.11	*	.013*	.013*	.013*	*	*
*1	*	5445.78	*	.013*	.013*	.013*	*	*
*1	*	5362.85*	*	.013*	.013*	.013*	*	*
*1	*	5279.92	*	.013*	.013*	.013*	*	*
*1	*	5186.67	*	.013*	.013*	.013*	*	*
*1	*	5099.78*	*	.013*	.013*	.013*	*	*
*1	*	5012.89*	*	.013*	.013*	.013*	*	*
*1	*	5012.88	*	.013*	.013*	.013*	*	*
*1	*	4945.04	*	.013*	.013*	.013*	*	*
*1	*	4858.54*	*	.013*	.013*	.013*	*	*
*1	*	4772.04*	*	.013*	.013*	.013*	*	*
*1	*	4685.54*	*	.013*	.013*	.013*	*	*
*1	*	4599.04*	*	.013*	.013*	.013*	*	*
*1	*	4512.54*	*	.013*	.013*	.013*	*	*
*1	*	4426.04*	*	.013*	.013*	.013*	*	*
*1	*	4425.69	*	.013*	.013*	.013*	*	*
*1	*	4350	*	.013*	.013*	.013*	*	*
*1	*	4275.*	*	.013*	.013*	.013*	*	*
*1	*	4200.00	*	.013*	.013*	.013*	*	*
*1	*	4127.25*	*	.013*	.013*	.013*	*	*
*1	*	4054.5*	*	.013*	.013*	.013*	*	*
*1	*	3981.76	*	.013*	.013*	.013*	*	*
*1	*	3890.88*	*	.013*	.013*	.013*	*	*
*1	*	3800	*	.013*	.013*	.013*	*	*
*1	*	3700.*	*	.013*	.013*	.013*	*	*
*1	*	3600	*	.013*	.013*	.013*	*	*
*1	*	3500.*	*	.013*	.013*	.013*	*	*
*1	*	3400	*	.013*	.013*	.013*	*	*
*1	*	3300.*	*	.013*	.013*	.013*	*	*
*1	*	3200.*	*	.013*	.013*	.013*	*	*
*1	*	3100.84	*	.013*	.013*	.013*	*	*
*1	*	3032.53*	*	.013*	.013*	.013*	*	*
*1	*	2964.22*	*	.013*	.013*	.013*	*	*
*1	*	2964.21	*	.013*	.013*	.013*	*	*
*1	*	2921.88	*	.013*	.013*	.013*	*	*
*1	*	2837.87*	*	.013*	.013*	.013*	*	*
*1	*	2753.87	*	.013*	.013*	.013*	*	*
*1	*	2703.87	*	.013*	.013*	.013*	*	*
*1	*	2702.87	*	.013*	.013*	.013*	*	*
*1	*	2648.52	*	.013*	.013*	.013*	*	*
*1	*	2596.14	*	.013*	.013*	.013*	*	*
*1	*	2576.44*	*	.013*	.013*	.013*	*	*
*1	*	2504.37*	*	.013*	.013*	.013*	*	*
*1	*	2443.06	*	.013*	.013*	.013*	*	*
*1	*	2432.30	*	.013*	.013*	.013*	*	*
*1	*	2334.09*	*	.013*	.013*	.013*	*	*
*1	*	2235.88*	*	.013*	.013*	.013*	*	*
*1	*	2137.68	*	.013*	.013*	.013*	*	*
*1	*	2059.60*	*	.013*	.013*	.013*	*	*
*1	*	2020.16	*	.013*	.013*	.013*	*	*
*1	*	1981.53*	*	.013*	.013*	.013*	*	*
*1	*	1903.46	*	.013*	.013*	.013*	*	*
*1	*	1817.25*	*	.013*	.013*	.013*	*	*
*1	*	1731.04*	*	.013*	.013*	.013*	*	*
*1	*	1644.83*	*	.013*	.013*	.013*	*	*
*1	*	1558.63*	*	.013*	.013*	.013*	*	*
*1	*	1558.62	*	.013*	.013*	.013*	*	*
*1	*	1472.6*	*	.013*	.013*	.013*	*	*
*1	*	1386.58*	*	.013*	.013*	.013*	*	*
*1	*	1300.56*	*	.013*	.013*	.013*	*	*
*1	*	1214.54	*	.013*	.013*	.013*	*	*
*1	*	1100	*	.013*	.013*	.013*	*	*
*1	*	1000	*Bridge	*	*	*	*	*
*1	*	926	*	.013*	.013*	.013*	*	*
*1	*	914.02*	*	.013*	.013*	.013*	*	*
*1	*	702.71	*	.02*	.015*	.02*	*	*
*1	*	444.5	*	.02*	.015*	.02*	*	*
*1	*	223.47	*	.02*	.015*	.02*	*	*

****

****

SUMMARY OF REACH LENGTHS

River: Flamingo Wash

Reach	River Sta.	Left	Channel	Right
1	8837.78	30	30	30
1	8807.78	120	120	120
1	8687.78	382.58	367.78	346.32
1	8320	120	120	120
1	8200	100	100	100
1	8100.*	100	100	100
1	8000	100	100	100
1	7900.*	100	100	100
1	7800	100	100	100
1	7700.*	100	100	100
1	7600	100	100	100
1	7500.*	100	100	100
1	7400	77.52	100	117
1	7300.*	77.52	100	117
1	7200	69	100	115.52
1	7100.*	69	100	115.52
1	7000	100	100	100
1	6868.*	100	100	100
1	6736	41	33.96	23
1	6702.04	.1	.1	.1
1	6701.94	124.94	124.94	124.94
1	6577	108	108	108
1	6500	Culvert		
1	6469	67	119	153
1	6350	.1	.1	.1
1	6349.9	103	99.99	96
1	6250	158	150	140
1	6100	130	108.42	102
1	5991.58	.1	.1	.1
1	5991.48	95	86.48	80
1	5905	115	115	115
1	5800	Culvert		
1	5790	52.26	52.26	52.26
1	5737.74	89.32	89.32	89.32
1	5648.42	99.6	99.6	99.6
1	5548.82*	99.6	99.6	99.6
1	5449.23*	.12	.12	.12
1	5449.11	3.33	3.33	3.33
1	5445.78	82.93	82.93	82.93
1	5362.85*	82.93	82.93	82.93
1	5279.92	93.25	93.25	93.25
1	5186.67	86.89	86.89	86.89
1	5099.78*	86.89	86.89	86.89
1	5012.89*	.01	.01	.01
1	5012.88	67.84	67.84	67.84
1	4945.04	86.5	86.5	86.5
1	4858.54*	86.5	86.5	86.5
1	4772.04*	86.5	86.5	86.5
1	4685.54*	86.5	86.5	86.5
1	4599.04*	86.5	86.5	86.5
1	4512.54*	86.5	86.5	86.5
1	4426.04*	.35	.35	.35
1	4425.69	75.69	75.69	75.69
1	4350	75	75	75
1	4275.*	75	75	75
1	4200.00	72.75	72.75	72.75
1	4127.25*	72.75	72.75	72.75
1	4054.5*	72.74	72.74	72.74
1	3981.76	90.88	90.88	90.88
1	3890.88*	90.88	90.88	90.88
1	3800	100	100	100
1	3700.*	100	100	100
1	3600	100	100	100
1	3500.*	100	100	100
1	3400	100	100	100
1	3300.*	100	100	100
1	3200.*	99.16	99.16	99.16
1	3100.84	68.31	68.31	68.31
1	3032.53*	68.31	68.31	68.31
1	2964.22*	.01	.01	.01
1	2964.21	42.33	42.33	42.33
1	2921.88	84.01	84.01	84.01
1	2837.87*	84.01	84.01	84.01
1	2753.87	50	50	50
1	2703.87	1	1	1
1	2702.87	54.35	54.35	54.35
1	2648.52	52.38	52.38	52.38
1	2596.14	19.7	19.7	19.7
1	2576.44*	72.07	72.07	72.07
1	2504.37*	61.31	61.31	61.31
1	2443.06	10.76	10.76	10.76
1	2432.30	98.19	98.19	98.19
1	2334.09*	98.19	98.19	98.19
1	2235.88*	98.19	98.19	98.19
1	2137.68	78.1	78.1	78.1
1	2059.60*	39.44	39.44	39.44
1	2020.16	38.63	38.63	38.63
1	1981.53*	78.1	78.1	78.1
1	1903.46	86.15	86.15	86.15
1	1817.25*	86.15	86.15	86.15
1	1731.04*	86.15	86.15	86.15
1	1644.83*	86.15	86.15	86.15
1	1558.63*	.01	.01	.01
1	1558.62	86.24	86.24	86.24
1	1472.6*	86.24	86.24	86.24
1	1386.58*	86.24	86.24	86.24
1	1300.56*	86.24	86.24	86.24
1	1214.54	114.54	114.54	114.54
1	1100	174	174	174
1	1000	Bridge		
1	926	11.98	11.98	11.98

*1	*	914.02*	* 397.98*	413.98*	419.98*
*1	*	702.71	* 251.59*	258.21*	262.14*
*1	*	444.5	* 229.09*	221.03*	213.86*
*1	*	223.47	* 0*	0*	0*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Flamingo Wash

Reach	River Sta.	Contr.	Expan.
*1	* 8837.78 *	.1*	.3*
*1	* 8807.78 *	.1*	.3*
*1	* 8687.78 *	.1*	.3*
*1	* 8320 *	.1*	.3*
*1	* 8200 *	.1*	.3*
*1	* 8100.* *	.1*	.3*
*1	* 8000 *	.1*	.3*
*1	* 7900.* *	.1*	.3*
*1	* 7800 *	.1*	.3*
*1	* 7700.* *	.1*	.3*
*1	* 7600 *	.1*	.3*
*1	* 7500.* *	.1*	.3*
*1	* 7400 *	.1*	.3*
*1	* 7300.* *	.1*	.3*
*1	* 7200 *	.1*	.3*
*1	* 7100.* *	.1*	.3*
*1	* 7000 *	.1*	.3*
*1	* 6868.* *	.1*	.3*
*1	* 6736 *	.1*	.3*
*1	* 6702.04 *	.1*	.3*
*1	* 6701.94 *	.1*	.3*
*1	* 6577 *	.1*	.3*
*1	* 6500 *Culvert *		*
*1	* 6469 *	.1*	.3*
*1	* 6350 *	.1*	.3*
*1	* 6349.9 *	.1*	.3*
*1	* 6250 *	.1*	.3*
*1	* 6100 *	.1*	.3*
*1	* 5991.58 *	.1*	.3*
*1	* 5991.48 *	.1*	.3*
*1	* 5905 *	.3*	.5*
*1	* 5800 *Culvert *		*
*1	* 5790 *	.3*	.5*
*1	* 5737.74 *	.3*	.5*
*1	* 5648.42 *	.05*	.2*
*1	* 5548.82**	.05*	.2*
*1	* 5449.23**	.05*	.2*
*1	* 5449.11 *	.05*	.2*
*1	* 5445.78 *	.05*	.1*
*1	* 5362.85**	.05*	.1*
*1	* 5279.92 *	.05*	.1*
*1	* 5186.67 *	.05*	.1*
*1	* 5099.78**	.05*	.1*
*1	* 5012.89**	.05*	.1*
*1	* 5012.88 *	.05*	.1*
*1	* 4945.04 *	.05*	.1*
*1	* 4858.54**	.05*	.1*
*1	* 4772.04**	.05*	.1*
*1	* 4685.54**	.05*	.1*
*1	* 4599.04**	.05*	.1*
*1	* 4512.54**	.05*	.1*
*1	* 4426.04**	.05*	.1*
*1	* 4425.69 *	.05*	.1*
*1	* 4350 *	.05*	.1*
*1	* 4275.* *	.05*	.1*
*1	* 4200.00 *	.05*	.1*
*1	* 4127.25**	.05*	.1*
*1	* 4054.5* *	.05*	.1*
*1	* 3981.76 *	.05*	.1*
*1	* 3890.88**	.05*	.1*
*1	* 3800 *	.05*	.1*
*1	* 3700.* *	.05*	.1*
*1	* 3600 *	.05*	.1*
*1	* 3500.* *	.05*	.1*
*1	* 3400 *	.05*	.1*
*1	* 3300.* *	.05*	.1*
*1	* 3200.* *	.05*	.1*
*1	* 3100.84 *	.05*	.1*
*1	* 3032.53**	.05*	.1*
*1	* 2964.22**	.05*	.1*
*1	* 2964.21 *	.05*	.1*
*1	* 2921.88 *	.05*	.1*
*1	* 2837.87**	.05*	.1*
*1	* 2753.87 *	.05*	.1*
*1	* 2703.87 *	.1*	.2*
*1	* 2702.87 *	.1*	.2*
*1	* 2648.52 *	.05*	.1*
*1	* 2596.14 *	.05*	.1*
*1	* 2576.44**	.05*	.1*
*1	* 2504.37**	.05*	.1*
*1	* 2443.06 *	.05*	.1*
*1	* 2432.30 *	.05*	.1*
*1	* 2334.09**	.05*	.1*
*1	* 2235.88**	.05*	.1*
*1	* 2137.68 *	.05*	.1*
*1	* 2059.60**	.05*	.1*
*1	* 2020.16 *	.05*	.1*
*1	* 1981.53**	.05*	.1*
*1	* 1903.46 *	.05*	.1*
*1	* 1817.25**	.05*	.1*
*1	* 1731.04**	.05*	.1*
*1	* 1644.83**	.05*	.1*

```
*1                *    1558.63**      .05*       .1*
*1                *    1558.62 *      .05*       .1*
*1                *    1472.6* *      .05*       .1*
*1                *    1386.58**      .05*       .1*
*1                *    1300.56**      .05*       .1*
*1                *    1214.54 *      .05*       .1*
*1                *    1100    *      .05*       .1*
*1                *    1000    *Bridge   *         *
*1                *    926     *      .05*       .1*
*1                *    914.02* *      .05*       .1*
*1                *    702.71  *       .1*       .3*
*1                *    444.5   *       .1*       .3*
*1                *    223.47  *       .1*       .3*
*********************************************************

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

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : 70p0.013

River: Flamingo Wash  Reach: 1     RS: 8837.78     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 8807.78     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 8687.78     Profile: 100-yr FIS
     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 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.
River: Flamingo Wash  Reach: 1     RS: 8320     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 8200     Profile: 100-yr FIS
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
River: Flamingo Wash  Reach: 1     RS: 8100.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 8000     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7800     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7700.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7600     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7300.*     Profile: 100-yr FIS
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
River: Flamingo Wash  Reach: 1     RS: 7200     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7100.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7000     Profile: 100-yr FIS
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
River: Flamingo Wash  Reach: 1     RS: 6736     Profile: 100-yr FIS
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water surface was
             used.
River: Flamingo Wash  Reach: 1     RS: 6702.04     Profile: 100-yr FIS
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
River: Flamingo Wash  Reach: 1     RS: 6701.94     Profile: 100-yr FIS
     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: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: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 6469 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 6350 Profile: 100-yr FIS
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.
Note: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 6349.9 Profile: 100-yr FIS
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 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.
Note: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 6250 Profile: 100-yr FIS
Note: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 6100 Profile: 100-yr FIS
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: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 5991.58 Profile: 100-yr FIS
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: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 5991.48 Profile: 100-yr FIS
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 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.
Note: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 5905 Profile: 100-yr FIS
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Flamingo Wash Reach: 1 RS: 5800 Profile: 100-yr FIS Culv: Culvert #2
Note: The flow in the culvert is entirely supercritical.
River: Flamingo Wash Reach: 1 RS: 5800 Profile: 100-yr FIS Culv: Culvert #1
Note: The flow in the culvert is entirely supercritical.
River: Flamingo Wash Reach: 1 RS: 5790 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 5737.74 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 5648.42 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 5548.82* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 5362.85* Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 5279.92 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 5186.67 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1   RS: 5099.78*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 5012.88   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4945.04   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4858.54*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4772.04*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4685.54*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4599.04*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4512.54*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4425.69   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4350   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4275.*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4200.00   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4127.25*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 4054.5*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 3981.76   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 3890.88*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 3800   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 3700.*   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1 RS: 3600 Profile: 100-yr FIS
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 velocity head has changed by more than 0.5 ft (0.15 m). 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.
River: Flamingo Wash Reach: 1 RS: 3500.* Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 3400 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 3300.* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 3200.* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 3100.84 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 3032.53* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2964.21 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2921.88 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2837.87* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2753.87 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2703.87 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2702.87 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2648.52 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2596.14 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2576.44* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2504.37* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2443.06 Profile: 100-yr FIS
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.

River: Flamingo Wash Reach: 1 RS: 2432.30 Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 2334.09* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 2235.88* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 2137.68 Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 2059.60* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 2020.16 Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1981.53* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1903.46 Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1817.25* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1731.04* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1644.83* Profile: 100-yr FIS

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

River: Flamingo Wash Reach: 1 RS: 1558.63* Profile: 100-yr FIS

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

River: Flamingo Wash Reach: 1 RS: 1558.62 Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1472.6* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1386.58* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1300.56* Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1214.54 Profile: 100-yr FIS

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.

River: Flamingo Wash Reach: 1 RS: 1000 Profile: 100-yr FIS

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.

Note: The downstream water surface is above the minimum elevation required for orifice flow. The orifice flow equation was used for pressure flow.

River: Flamingo Wash Reach: 1 RS: 1000 Profile: 100-yr FIS Upstream

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

River: Flamingo Wash Reach: 1   RS: 1000   Profile: 100-yr FIS Downstream
     Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Flamingo Wash Reach: 1   RS: 926   Profile: 100-yr FIS
     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, energy was used.
River: Flamingo Wash Reach: 1   RS: 914.02*   Profile: 100-yr FIS
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1   RS: 702.71   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 444.5   Profile: 100-yr FIS
     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 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.
River: Flamingo Wash Reach: 1   RS: 223.47   Profile: 100-yr FIS
     Warning:Divided flow computed for this cross-section.
     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.

HEC-RAS Plan: 70p0.013 River: Flamingo Wash Reach: 1 Profile: 100-yr FIS

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
1	8837.78	100-yr FIS	1938.82	1937.64	1.19	0.07	0.21		5500.00		50.00
1	8807.78	100-yr FIS	1938.54	1935.21	3.33	0.65	0.04		5500.00		56.89
1	8687.78	100-yr FIS	1936.73	1933.54	3.20	2.00	0.41		5500.00		60.40
1	8320	100-yr FIS	1934.25	1932.43	1.82	0.71	0.05	274.31	5164.19	61.51	183.61
1	8200	100-yr FIS	1933.39	1931.73	1.66	0.51	0.18	126.58	4852.37	521.05	188.40
1	8100.*	100-yr FIS	1932.69	1931.65	1.04	0.28	0.15	708.81	3956.79	834.40	219.41
1	8000	100-yr FIS	1932.26	1931.73	0.53	0.27	0.05	1443.52	3012.36	1044.12	254.63
1	7900.*	100-yr FIS	1931.94	1930.90	1.04	0.50	0.05	626.69	3716.01	1157.30	264.66
1	7800	100-yr FIS	1931.39	1929.88	1.51	0.57	0.11	10.96	3848.43	1640.61	194.90
1	7700.*	100-yr FIS	1930.04	1928.90	1.14	0.54	0.00	298.21	3452.97	1748.83	304.92
1	7600	100-yr FIS	1928.59	1927.45	1.14	0.42	0.13	387.04	3261.98	1850.98	284.06
1	7500.*	100-yr FIS	1927.89	1927.20	0.69	0.24	0.08	431.98	2697.05	2370.97	292.20
1	7400	100-yr FIS	1927.57	1927.14	0.43	0.25	0.04	541.66	2238.58	2719.76	312.05
1	7300.*	100-yr FIS	1927.27	1926.48	0.80	0.45	0.06	723.56	3630.05	1146.39	282.88
1	7200	100-yr FIS	1926.76	1925.32	1.45	0.67	0.03	563.58	4782.43	153.99	228.94
1	7100.*	100-yr FIS	1925.89	1924.15	1.74	0.75	0.02	738.69	4692.79	68.53	167.56
1	7000	100-yr FIS	1924.69	1923.02	1.66	0.55	0.22	1239.31	4183.86	76.83	130.45
1	6868.*	100-yr FIS	1923.91	1922.98	0.93	0.30	0.12	1451.95	3928.20	119.85	196.30
1	6736	100-yr FIS	1923.49	1922.96	0.52	0.08	0.00	1709.86	3454.75	335.39	248.00
1	6702.04	100-yr FIS	1923.41	1922.86	0.54	0.00	0.10	1735.83	2925.27	838.90	265.94
1	6701.94	100-yr FIS	1923.31	1921.81	1.50	0.09	0.35	856.82	4165.03	478.15	244.37
1	6577	100-yr FIS	1922.41	1922.06	0.35			2.18	5431.77	66.06	254.19
1	6500		Culvert								
1	6469	100-yr FIS	1921.19	1920.74	0.45	0.11	0.14	63.27	5436.73		195.72
1	6350	100-yr FIS	1920.94	1919.08	1.86	0.00	0.04	612.28	4455.47	432.25	168.10
1	6349.9	100-yr FIS	1920.72	1918.99	1.73	0.38	0.25	726.18	4263.02	510.80	166.13
1	6250	100-yr FIS	1919.25	1918.35	0.90	0.30	0.13	1647.56	3143.41	709.03	233.90
1	6100	100-yr FIS	1918.82	1918.34	0.48	0.22	0.04	333.19	3067.28	2099.53	324.55
1	5991.58	100-yr FIS	1918.57	1917.73	0.84	0.00	0.10	102.67	4288.00	1109.33	269.60
1	5991.48	100-yr FIS	1918.46	1916.60	1.86	0.07	0.29	5.55	5148.67	345.78	203.25
1	5905	100-yr FIS	1917.37	1916.49	0.88				5500.00		91.00
1	5800		Culvert								
1	5790	100-yr FIS	1914.22	1911.59	2.63	0.09	0.01		5500.00		81.27
1	5737.74	100-yr FIS	1913.93	1911.27	2.66	0.15	0.03		5500.00		79.77
1	5648.42	100-yr FIS	1912.84	1910.08	2.75	0.17	0.00		5500.00		75.00
1	5548.82*	100-yr FIS	1911.29	1908.53	2.75	0.14	0.10		5500.00		75.00
1	5449.23*	100-yr FIS	1909.81	1907.57	2.24	0.00	0.00		5500.00		75.00
1	5449.11	100-yr FIS	1909.81	1907.57	2.24	0.00	0.02		5500.00		75.00
1	5445.78	100-yr FIS	1909.79	1907.62	2.17	0.09	0.00		5500.00		75.00
1	5362.85*	100-yr FIS	1909.70	1907.58	2.13	0.10	0.07		5500.00		62.50
1	5279.92	100-yr FIS	1909.52	1905.91	3.61	0.17	0.00		5500.00		50.00
1	5186.67	100-yr FIS	1908.07	1904.46	3.61	0.15	0.00		5500.00		50.00
1	5099.78*	100-yr FIS	1907.39	1903.78	3.61	0.15	0.00		5500.00		50.00
1	5012.89*	100-yr FIS	1906.71	1903.10	3.61	0.00	0.00		5500.00		50.00
1	5012.88	100-yr FIS	1906.71	1903.10	3.61	0.12	0.00		5500.00		50.00
1	4945.04	100-yr FIS	1906.18	1902.57	3.61	0.15	0.00		5500.00		50.00
1	4858.54*	100-yr FIS	1905.50	1901.89	3.61	0.15	0.00		5500.00		50.00
1	4772.04*	100-yr FIS	1904.83	1901.22	3.61	0.15	0.00		5500.00		50.00
1	4685.54*	100-yr FIS	1904.15	1900.54	3.61	0.15	0.00		5500.00		50.00
1	4599.04*	100-yr FIS	1903.48	1899.87	3.61	0.15	0.00		5500.00		50.00
1	4512.54*	100-yr FIS	1902.80	1899.19	3.61	0.15	0.00		5500.00		50.00
1	4426.04*	100-yr FIS	1902.12	1898.52	3.61	0.00	0.00		5500.00		50.00
1	4425.69	100-yr FIS	1902.12	1898.51	3.61	0.13	0.00		5500.00		50.00
1	4350	100-yr FIS	1901.53	1897.92	3.61	0.13	0.00		5500.00		50.00
1	4275.*	100-yr FIS	1900.78	1897.17	3.61	0.13	0.00		5500.00		50.00
1	4200.00	100-yr FIS	1900.03	1896.42	3.61	0.13	0.00		5500.00		50.00
1	4127.25*	100-yr FIS	1899.67	1896.06	3.61	0.13	0.00		5500.00		50.00
1	4054.5*	100-yr FIS	1899.30	1895.69	3.61	0.13	0.00		5500.00		50.00
1	3981.76	100-yr FIS	1898.94	1895.33	3.61	0.16	0.00		5500.00		50.00
1	3890.88*	100-yr FIS	1898.49	1894.88	3.61	0.16	0.00		5500.00		50.00
1	3800	100-yr FIS	1898.03	1894.42	3.61	0.18	0.00		5500.00		50.00
1	3700.*	100-yr FIS	1897.03	1893.42	3.62	0.18	0.00		5500.00		50.00
1	3600	100-yr FIS	1896.03	1892.42	3.62	0.15	0.05		5500.00		50.00
1	3500.*	100-yr FIS	1895.66	1892.57	3.09	0.16	0.09		5500.00		41.50
1	3400	100-yr FIS	1895.40	1890.62	4.79	0.21	0.00		5500.00		33.00
1	3300.*	100-yr FIS	1894.40	1889.62	4.79	0.21	0.00		5500.00		33.00
1	3200.*	100-yr FIS	1893.40	1888.62	4.79	0.21	0.00		5500.00		33.00
1	3100.84	100-yr FIS	1892.41	1887.63	4.79	0.15	0.00		5500.00		33.00
1	3032.53*	100-yr FIS	1891.73	1886.95	4.79	0.15	0.00		5500.00		33.00

HEC-RAS Plan: 70p0.013 River: Flamingo Wash Reach: 1 Profile: 100-yr FIS (Continued)

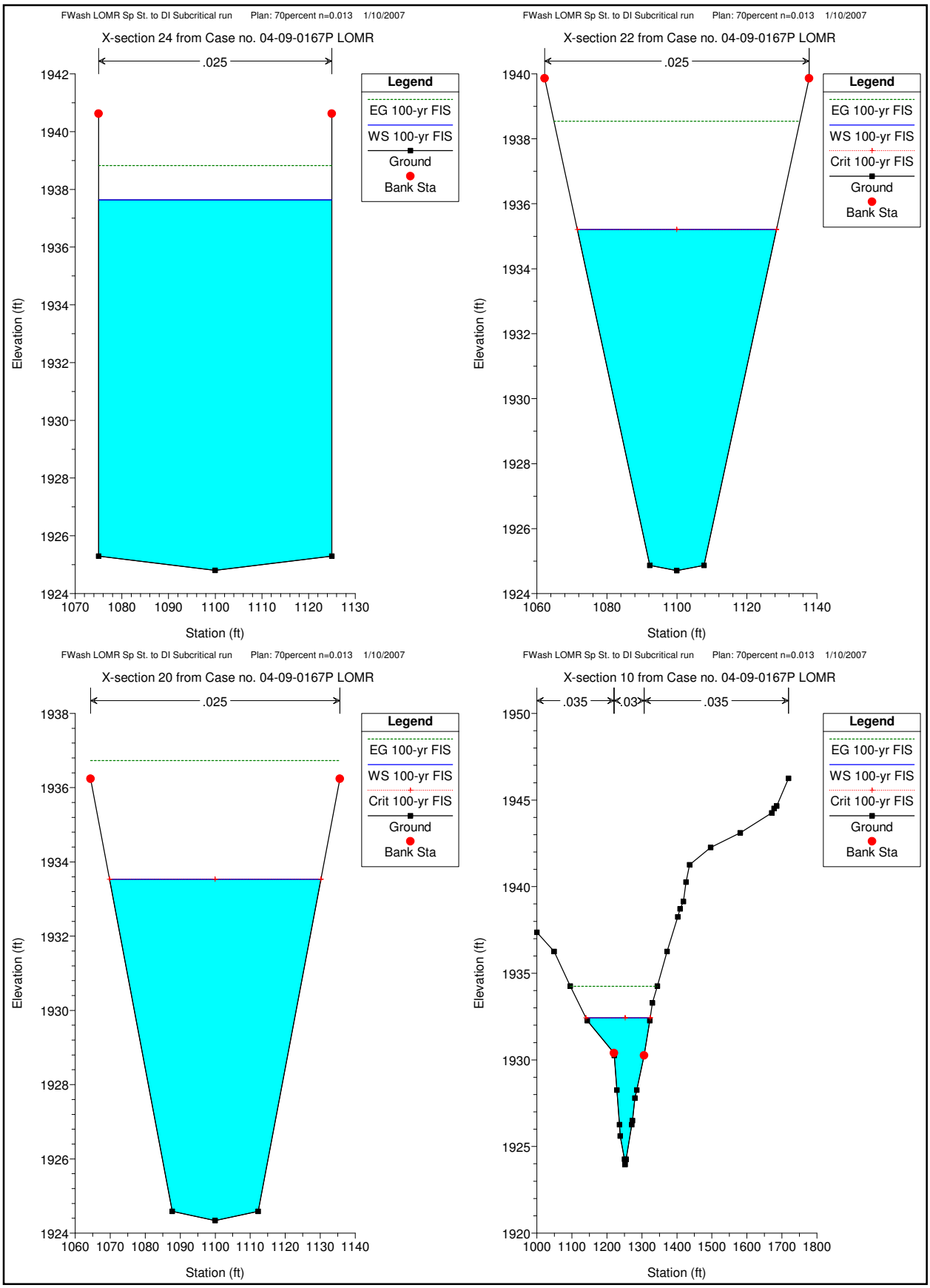
Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
1	2964.22*	100-yr FIS	1891.04	1886.26	4.79	0.00	0.00		5500.00		33.00
1	2964.21	100-yr FIS	1891.04	1886.26	4.79	0.09	0.00		5500.00		33.00
1	2921.88	100-yr FIS	1890.62	1885.84	4.79	0.18	0.00		5500.00		33.00
1	2837.87*	100-yr FIS	1889.78	1885.00	4.79	0.18	0.00		5500.00		33.00
1	2753.87	100-yr FIS	1888.94	1884.16	4.79	0.11	0.00		5500.00		33.00
1	2703.87	100-yr FIS	1888.38	1883.62	4.77	0.00	0.00		5500.00		33.00
1	2702.87	100-yr FIS	1888.37	1883.61	4.76	0.09	0.23		5500.00		51.89
1	2648.52	100-yr FIS	1884.79	1881.16	3.63	0.09	0.00		5500.00		50.00
1	2596.14	100-yr FIS	1884.53	1880.90	3.63	0.04	0.00		5500.00		50.00
1	2576.44*	100-yr FIS	1884.43	1880.80	3.63	0.13	0.00		5500.00		50.00
1	2504.37*	100-yr FIS	1884.06	1880.43	3.63	0.11	0.00		5500.00		50.00
1	2443.06	100-yr FIS	1883.76	1880.12	3.63	0.02	0.00		5500.00		50.00
1	2432.30	100-yr FIS	1883.70	1880.07	3.63	0.18	0.00		5500.00		50.00
1	2334.09*	100-yr FIS	1882.92	1879.29	3.63	0.18	0.00		5500.00		50.00
1	2235.88*	100-yr FIS	1882.14	1878.50	3.63	0.18	0.00		5500.00		50.00
1	2137.68	100-yr FIS	1881.35	1877.72	3.63	0.14	0.00		5500.00		50.00
1	2059.60*	100-yr FIS	1879.81	1876.18	3.63	0.07	0.00		5500.00		50.00
1	2020.16	100-yr FIS	1879.03	1875.40	3.63	0.07	0.00		5500.00		50.00
1	1981.53*	100-yr FIS	1878.26	1874.63	3.63	0.14	0.00		5500.00		50.00
1	1903.46	100-yr FIS	1876.72	1873.09	3.63	0.15	0.00		5500.00		50.00
1	1817.25*	100-yr FIS	1876.02	1872.39	3.63	0.15	0.00		5500.00		50.00
1	1731.04*	100-yr FIS	1875.31	1871.68	3.63	0.15	0.00		5500.00		50.00
1	1644.83*	100-yr FIS	1874.61	1871.00	3.62	0.11	0.13		5500.00		50.00
1	1558.63*	100-yr FIS	1874.38	1872.02	2.35	0.00	0.07		5500.00		50.00
1	1558.62	100-yr FIS	1874.30	1870.56	3.74	0.15	0.00		5800.00		50.00
1	1472.6*	100-yr FIS	1873.60	1869.86	3.74	0.15	0.00		5800.00		50.00
1	1386.58*	100-yr FIS	1872.90	1869.16	3.74	0.15	0.00		5800.00		50.00
1	1300.56*	100-yr FIS	1872.19	1868.45	3.74	0.14	0.03		5800.00		50.00
1	1214.54	100-yr FIS	1871.51	1868.04	3.47	0.10	0.17		5800.00		50.00
1	1100	100-yr FIS	1871.24	1869.50	1.74			41.52	5746.91	11.57	91.50
1	1000		Bridge								
1	926	100-yr FIS	1866.77	1865.04	1.72	0.01	0.03	35.27	5749.55	15.17	73.05
1	914.02*	100-yr FIS	1866.72	1864.31	2.41	0.49	0.04	1.67	5793.21	5.11	62.45
1	702.71	100-yr FIS	1866.18	1862.90	3.28	0.35	0.34	134.94	5665.06		66.60
1	444.5	100-yr FIS	1862.09	1859.94	2.15	0.26	0.03	113.90	5192.58	493.52	154.07
1	223.47	100-yr FIS	1859.98	1857.52	2.46			0.00	5387.48	412.52	135.87

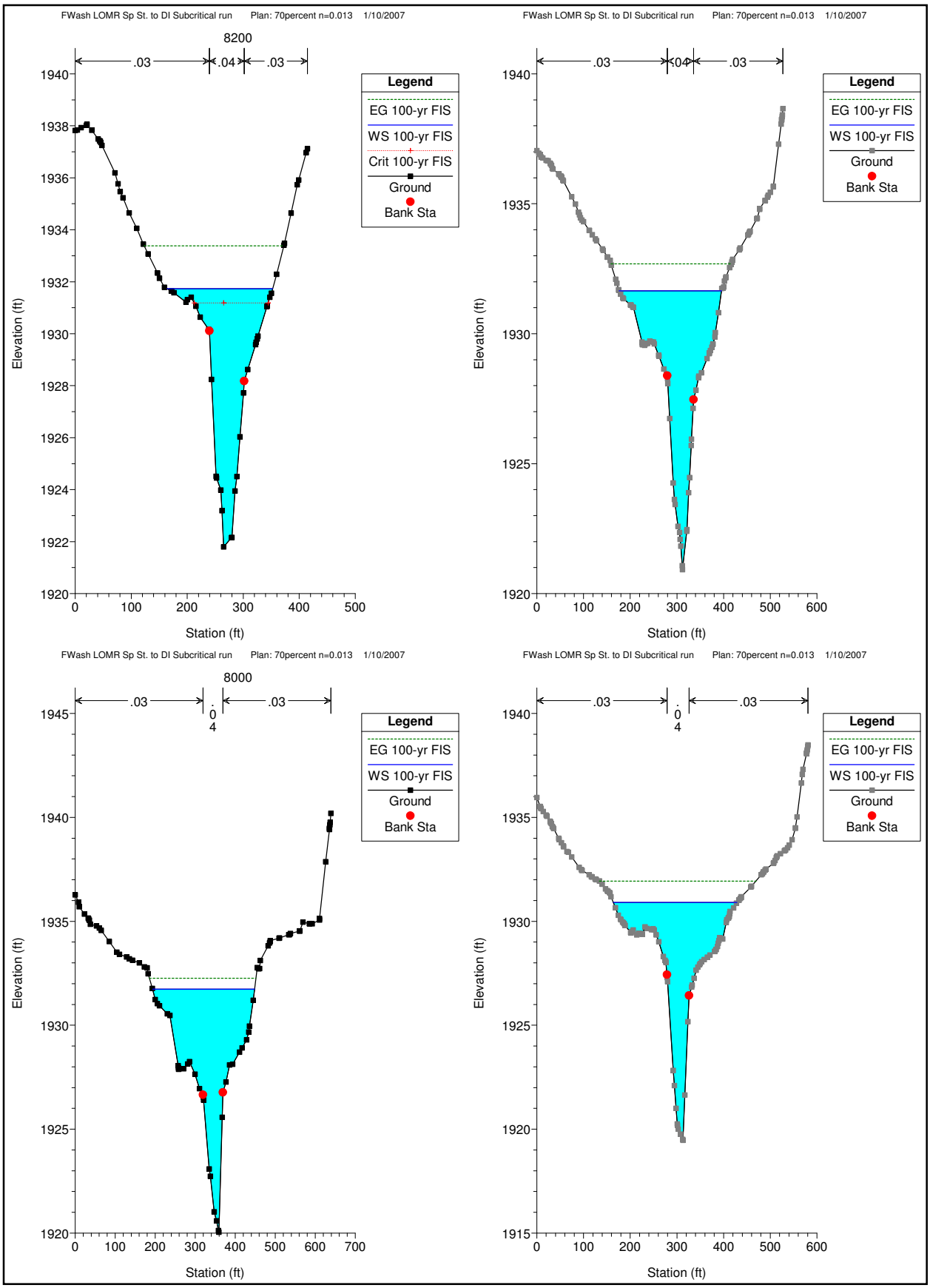
HEC-RAS Plan: 70p0.013 River: Flamingo Wash Reach: 1 Profile: 100-yr FIS

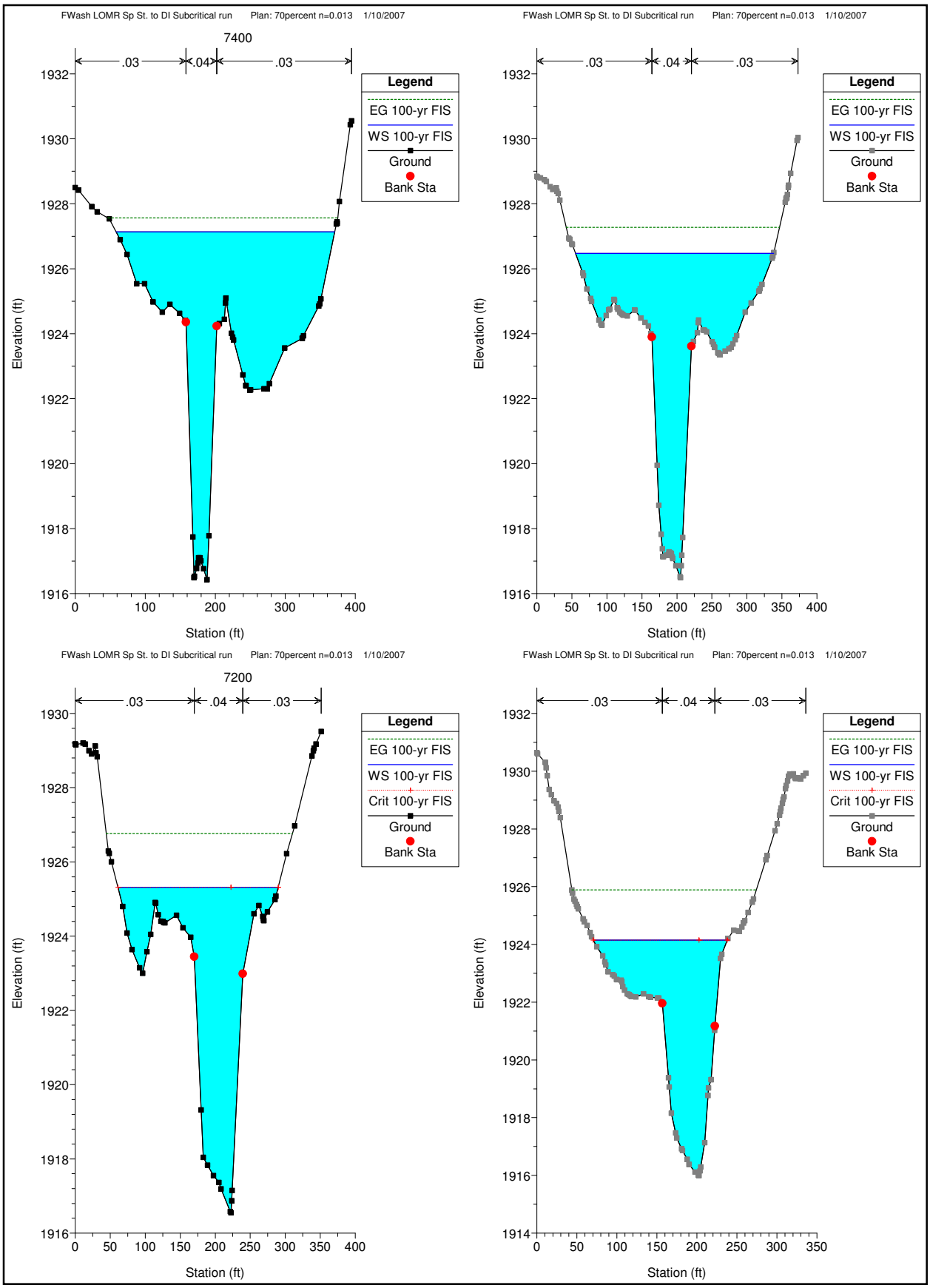
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	8837.78	100-yr FIS	5500.00	1924.80	1937.64		1938.82	0.001261	8.74	629.31	50.00	0.43
1	8807.78	100-yr FIS	5500.00	1924.71	1935.21	1935.21	1938.54	0.005466	14.64	375.66	56.89	1.00
1	8687.78	100-yr FIS	5500.00	1924.34	1933.54	1933.54	1936.73	0.005425	14.35	383.39	60.40	1.00
1	8320	100-yr FIS	5500.00	1923.96	1932.43	1932.43	1934.25	0.005458	11.14	566.77	183.61	0.85
1	8200	100-yr FIS	5500.00	1921.80	1931.73	1931.18	1933.39	0.006424	10.82	583.20	188.40	0.71
1	8100.*	100-yr FIS	5500.00	1920.92	1931.65		1932.69	0.004116	9.12	743.48	219.41	0.58
1	8000	100-yr FIS	5500.00	1920.05	1931.73		1932.26	0.001973	6.83	1012.16	254.63	0.40
1	7900.*	100-yr FIS	5500.00	1919.47	1930.90		1931.94	0.004020	9.36	778.17	264.66	0.57
1	7800	100-yr FIS	5500.00	1918.88	1929.88	1929.88	1931.39	0.006421	11.09	620.75	194.90	0.70
1	7700.*	100-yr FIS	5500.00	1918.01	1928.90	1928.90	1930.04	0.005176	10.06	753.41	304.92	0.63
1	7600	100-yr FIS	5500.00	1917.14	1927.45	1927.45	1928.59	0.005662	10.19	736.16	284.06	0.65
1	7500.*	100-yr FIS	5500.00	1916.78	1927.20		1927.89	0.003301	7.97	897.79	292.20	0.50
1	7400	100-yr FIS	5500.00	1916.43	1927.14		1927.57	0.001857	6.14	1106.70	312.05	0.38
1	7300.*	100-yr FIS	5500.00	1916.49	1926.48		1927.27	0.003400	8.23	864.82	282.88	0.52
1	7200	100-yr FIS	5500.00	1916.55	1925.32	1925.32	1926.76	0.006186	10.22	640.80	228.94	0.69
1	7100.*	100-yr FIS	5500.00	1915.99	1924.15	1924.15	1925.89	0.007923	11.21	562.95	167.56	0.78
1	7000	100-yr FIS	5500.00	1915.44	1923.02	1922.74	1924.69	0.007992	10.99	546.36	130.45	0.78
1	6868.*	100-yr FIS	5500.00	1914.40	1922.98		1923.91	0.004060	8.38	749.74	196.30	0.57
1	6736	100-yr FIS	5500.00	1913.37	1922.96	1921.50	1923.49	0.002298	6.42	987.56	248.00	0.43
1	6702.04	100-yr FIS	5500.00	1914.00	1922.86		1923.41	0.002380	6.84	983.68	265.94	0.44
1	6701.94	100-yr FIS	5500.00	1913.50	1921.81	1921.81	1923.31	0.002624	11.07	724.20	244.37	0.76
1	6577	100-yr FIS	5500.00	1911.73	1922.06	1917.15	1922.41	0.000335	4.75	1217.05	254.19	0.30
1	6500		Culvert									
1	6469	100-yr FIS	5500.00	1910.98	1920.74		1921.19	0.000453	5.41	1068.97	195.72	0.33
1	6350	100-yr FIS	5500.00	1910.57	1919.08	1919.08	1920.94	0.003269	11.95	599.44	168.10	0.82
1	6349.9	100-yr FIS	5500.00	1910.57	1918.99	1918.99	1920.72	0.005197	11.58	585.06	166.13	0.80
1	6250	100-yr FIS	5500.00	1909.99	1918.35		1919.25	0.002948	9.08	813.90	233.90	0.62
1	6100	100-yr FIS	5500.00	1908.92	1918.34		1918.82	0.001466	6.09	1040.08	324.55	0.41
1	5991.58	100-yr FIS	5500.00	1908.50	1917.73	1916.78	1918.57	0.002981	8.06	844.49	269.60	0.55
1	5991.48	100-yr FIS	5500.00	1908.50	1916.60	1916.60	1918.46	0.002445	11.29	587.52	203.25	0.83
1	5905	100-yr FIS	5500.00	1907.80	1916.49	1913.09	1917.37	0.000373	7.53	730.64	91.00	0.46
1	5800		Culvert									
1	5790	100-yr FIS	5500.00	1906.30	1911.59	1911.59	1914.22	0.001686	13.00	423.00	81.27	1.00
1	5737.74	100-yr FIS	5500.00	1905.60	1911.27	1911.27	1913.93	0.001670	13.09	420.06	79.77	1.01
1	5648.42	100-yr FIS	5500.00	1904.20	1910.08	1910.08	1912.84	0.001657	13.32	412.98	75.00	1.00
1	5548.82*	100-yr FIS	5500.00	1902.65	1908.53	1908.53	1911.29	0.001657	13.32	412.96	75.00	1.00
1	5449.23*	100-yr FIS	5500.00	1901.09	1907.57		1909.81	0.001199	12.02	457.65	75.00	0.86
1	5449.11	100-yr FIS	5500.00	1901.09	1907.57	1906.97	1909.81	0.001199	12.02	457.64	75.00	0.86
1	5445.78	100-yr FIS	5500.00	1901.04	1907.62		1909.79	0.001135	11.81	465.62	75.00	0.84
1	5362.85*	100-yr FIS	5500.00	1899.74	1907.58		1909.70	0.000938	11.70	470.12	62.50	0.75
1	5279.92	100-yr FIS	5500.00	1898.45	1905.91	1905.91	1909.52	0.001774	15.25	360.57	50.00	1.00
1	5186.67	100-yr FIS	5500.00	1897.00	1904.46	1904.46	1908.07	0.001774	15.25	360.57	50.00	1.00
1	5099.78*	100-yr FIS	5500.00	1896.32	1903.78	1903.78	1907.39	0.001774	15.25	360.57	50.00	1.00
1	5012.89*	100-yr FIS	5500.00	1895.64	1903.10	1903.10	1906.71	0.001774	15.25	360.57	50.00	1.00
1	5012.88	100-yr FIS	5500.00	1895.64	1903.10	1903.10	1906.71	0.001774	15.25	360.57	50.00	1.00
1	4945.04	100-yr FIS	5500.00	1895.11	1902.57	1902.57	1906.18	0.001774	15.25	360.57	50.00	1.00
1	4858.54*	100-yr FIS	5500.00	1894.43	1901.89	1901.89	1905.50	0.001774	15.25	360.57	50.00	1.00
1	4772.04*	100-yr FIS	5500.00	1893.76	1901.22	1901.22	1904.83	0.001774	15.25	360.57	50.00	1.00
1	4685.54*	100-yr FIS	5500.00	1893.08	1900.54	1900.54	1904.15	0.001774	15.25	360.57	50.00	1.00
1	4599.04*	100-yr FIS	5500.00	1892.41	1899.87	1899.87	1903.48	0.001774	15.25	360.57	50.00	1.00
1	4512.54*	100-yr FIS	5500.00	1891.73	1899.19	1899.19	1902.80	0.001774	15.25	360.57	50.00	1.00
1	4426.04*	100-yr FIS	5500.00	1891.05	1898.52	1898.51	1902.12	0.001769	15.24	360.88	50.00	1.00
1	4425.69	100-yr FIS	5500.00	1891.05	1898.51	1898.51	1902.12	0.001774	15.25	360.57	50.00	1.00
1	4350	100-yr FIS	5500.00	1890.46	1897.92	1897.92	1901.53	0.001774	15.25	360.57	50.00	1.00
1	4275.*	100-yr FIS	5500.00	1889.71	1897.17	1897.17	1900.78	0.001774	15.25	360.57	50.00	1.00
1	4200.00	100-yr FIS	5500.00	1888.96	1896.42	1896.42	1900.03	0.001774	15.25	360.57	50.00	1.00
1	4127.25*	100-yr FIS	5500.00	1888.60	1896.06	1896.06	1899.67	0.001774	15.25	360.57	50.00	1.00
1	4054.5*	100-yr FIS	5500.00	1888.23	1895.69	1895.69	1899.30	0.001774	15.25	360.57	50.00	1.00
1	3981.76	100-yr FIS	5500.00	1887.87	1895.33	1895.33	1898.94	0.001774	15.25	360.57	50.00	1.00
1	3890.88*	100-yr FIS	5500.00	1887.42	1894.88	1894.88	1898.49	0.001774	15.25	360.55	50.00	1.00
1	3800	100-yr FIS	5500.00	1886.96	1894.42	1894.42	1898.03	0.001775	15.26	360.49	50.00	1.00
1	3700.*	100-yr FIS	5500.00	1885.96	1893.42	1893.42	1897.03	0.001777	15.26	360.39	50.00	1.00
1	3600	100-yr FIS	5500.00	1884.96	1892.42	1892.42	1896.03	0.001778	15.27	360.28	50.00	1.00
1	3500.*	100-yr FIS	5500.00	1882.96	1892.57		1895.66	0.001251	14.10	390.08	41.50	0.81
1	3400	100-yr FIS	5500.00	1880.96	1890.62	1890.62	1895.40	0.002135	17.56	313.21	33.00	1.00
1	3300.*	100-yr FIS	5500.00	1879.96	1889.62	1889.62	1894.40	0.002136	17.56	313.16	33.00	1.00
1	3200.*	100-yr FIS	5500.00	1878.96	1888.62	1888.62	1893.40	0.002136	17.56	313.17	33.00	1.00
1	3100.84	100-yr FIS	5500.00	1877.97	1887.63	1887.63	1892.41	0.002136	17.56	313.17	33.00	1.00
1	3032.53*	100-yr FIS	5500.00	1877.29	1886.95	1886.95	1891.73	0.002135	17.56	313.21	33.00	1.00
1	2964.22*	100-yr FIS	5500.00	1876.60	1886.26	1886.26	1891.04	0.002136	17.56	313.17	33.00	1.00
1	2964.21	100-yr FIS	5500.00	1876.60	1886.26	1886.26	1891.04	0.002136	17.56	313.17	33.00	1.00
1	2921.88	100-yr FIS	5500.00	1876.18	1885.84	1885.84	1890.62	0.002134	17.56	313.24	33.00	1.00
1	2837.87*	100-yr FIS	5500.00	1875.34	1885.00	1885.00	1889.78	0.002136	17.56	313.17	33.00	1.00
1	2753.87	100-yr FIS	5500.00	1874.50	1884.16	1884.16	1888.94	0.002135	17.56	313.21	33.00	1.00
1	2703.87	100-yr FIS	5500.00	1874.00	1883.62	1883.62	1888.38	0.002123	17.52	313.94	33.00	1.00
1	2702.87	100-yr FIS	5500.00	1873.99	1883.61	1883.61	1888.37	0.001621	17.52	314.01	51.89	1.00
1	2648.52	100-yr FIS	5500.00	1873.72	1881.16	1881.16	1884.79	0.001788	15.29	359.61	50.00	1.01
1	2596.14	100-yr FIS	5500.00	1873.46	1880.90	1880.90	1884.53	0.001788	15.29	359.61	50.00	1.01
1	2576.44*	100-yr FIS	5500.00	1873.36	1880.80	1880.80	1884.43	0.001788	15.29	359.61	50.00	1.01

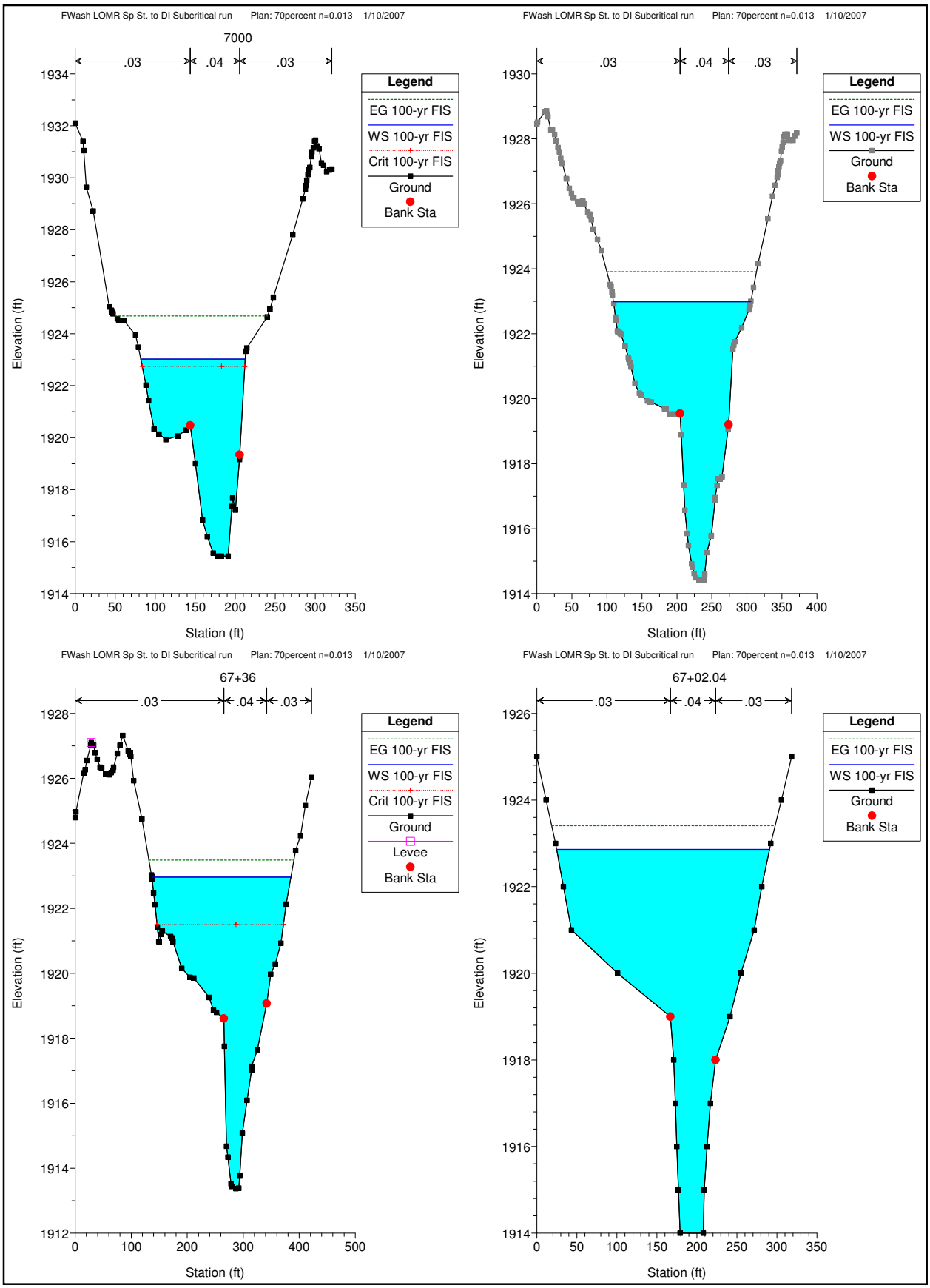
HEC-RAS Plan: 70p0.013 River: Flamingo Wash Reach: 1 Profile: 100-yr FIS (Continued)

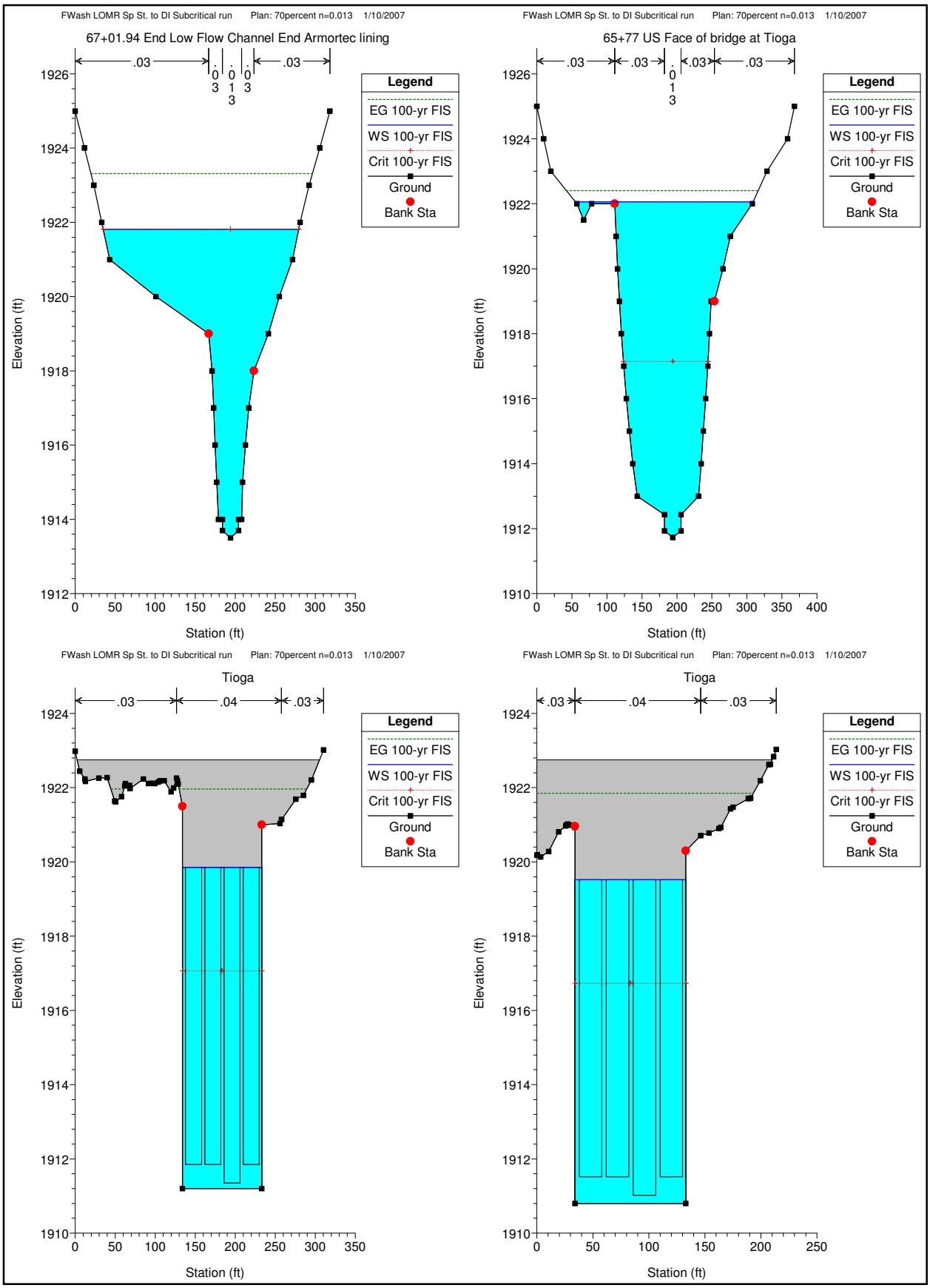
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	2504.37*	100-yr FIS	5500.00	1872.99	1880.43	1880.43	1884.06	0.001788	15.29	359.61	50.00	1.01
1	2443.06	100-yr FIS	5500.00	1872.68	1880.12	1880.12	1883.76	0.001788	15.29	359.61	50.00	1.01
1	2432.30	100-yr FIS	5500.00	1872.63	1880.07	1880.07	1883.70	0.001788	15.29	359.61	50.00	1.01
1	2334.09*	100-yr FIS	5500.00	1871.85	1879.29	1879.29	1882.92	0.001788	15.29	359.61	50.00	1.01
1	2235.88*	100-yr FIS	5500.00	1871.06	1878.50	1878.50	1882.14	0.001788	15.29	359.61	50.00	1.01
1	2137.68	100-yr FIS	5500.00	1870.28	1877.72	1877.72	1881.35	0.001788	15.29	359.61	50.00	1.01
1	2059.60*	100-yr FIS	5500.00	1868.74	1876.18	1876.18	1879.81	0.001788	15.29	359.61	50.00	1.01
1	2020.16	100-yr FIS	5500.00	1867.96	1875.40	1875.40	1879.03	0.001788	15.29	359.61	50.00	1.01
1	1981.53*	100-yr FIS	5500.00	1867.19	1874.63	1874.63	1878.26	0.001788	15.29	359.61	50.00	1.01
1	1903.46	100-yr FIS	5500.00	1865.65	1873.09	1873.09	1876.72	0.001788	15.29	359.61	50.00	1.01
1	1817.25*	100-yr FIS	5500.00	1864.95	1872.39	1872.39	1876.02	0.001788	15.29	359.61	50.00	1.01
1	1731.04*	100-yr FIS	5500.00	1864.24	1871.68	1871.68	1875.31	0.001788	15.29	359.61	50.00	1.01
1	1644.83*	100-yr FIS	5500.00	1863.54	1871.00	1870.98	1874.61	0.001776	15.26	360.41	50.00	1.00
1	1558.63*	100-yr FIS	5500.00	1862.84	1872.02	1870.28	1874.38	0.000932	12.31	446.69	50.00	0.73
1	1558.62	100-yr FIS	5800.00	1862.84	1870.56	1870.56	1874.30	0.001771	15.52	373.62	50.00	1.00
1	1472.6*	100-yr FIS	5800.00	1862.14	1869.86	1869.86	1873.60	0.001771	15.52	373.63	50.00	1.00
1	1386.58*	100-yr FIS	5800.00	1861.44	1869.16	1869.16	1872.90	0.001771	15.52	373.63	50.00	1.00
1	1300.56*	100-yr FIS	5800.00	1860.73	1868.45	1868.45	1872.19	0.001771	15.52	373.68	50.00	1.00
1	1214.54	100-yr FIS	5800.00	1860.03	1868.04	1867.75	1871.51	0.001578	14.94	388.20	50.00	0.94
1	1100	100-yr FIS	5800.00	1859.10	1869.50	1866.38	1871.24	0.000577	10.63	565.94	91.50	0.58
1	1000		Bridge									
1	926	100-yr FIS	5800.00	1855.10	1865.04	1862.16	1866.77	0.000563	10.57	562.68	73.05	0.59
1	914.02*	100-yr FIS	5800.00	1854.95	1864.31		1866.72	0.000883	12.47	467.77	62.45	0.76
1	702.71	100-yr FIS	5800.00	1853.63	1862.90	1862.90	1866.18	0.001711	14.69	414.39	66.60	0.95
1	444.5	100-yr FIS	5800.00	1850.36	1859.94	1859.94	1862.09	0.001092	12.39	592.32	154.07	0.78
1	223.47	100-yr FIS	5800.00	1847.74	1857.52	1857.52	1859.98	0.001264	13.04	534.34	135.87	0.82

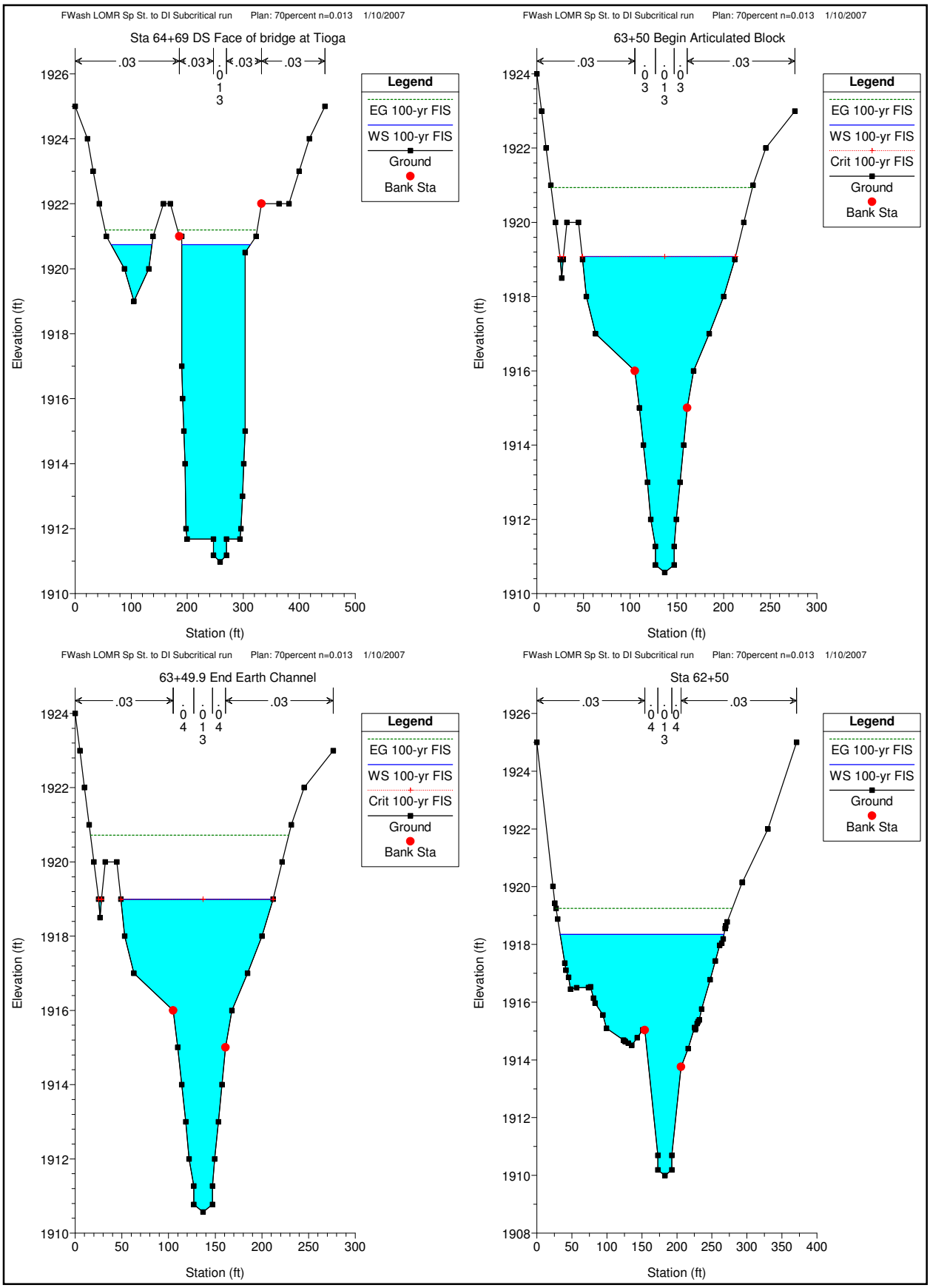

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
X-section 24 from Case no. 04-09-0167P LOMR
.025
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
X-section 22 from Case no. 04-09-0167P LOMR
.025
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
X-section 20 from Case no. 04-09-0167P LOMR
.025
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
X-section 10 from Case no. 04-09-0167P LOMR
.035
.03
.035
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

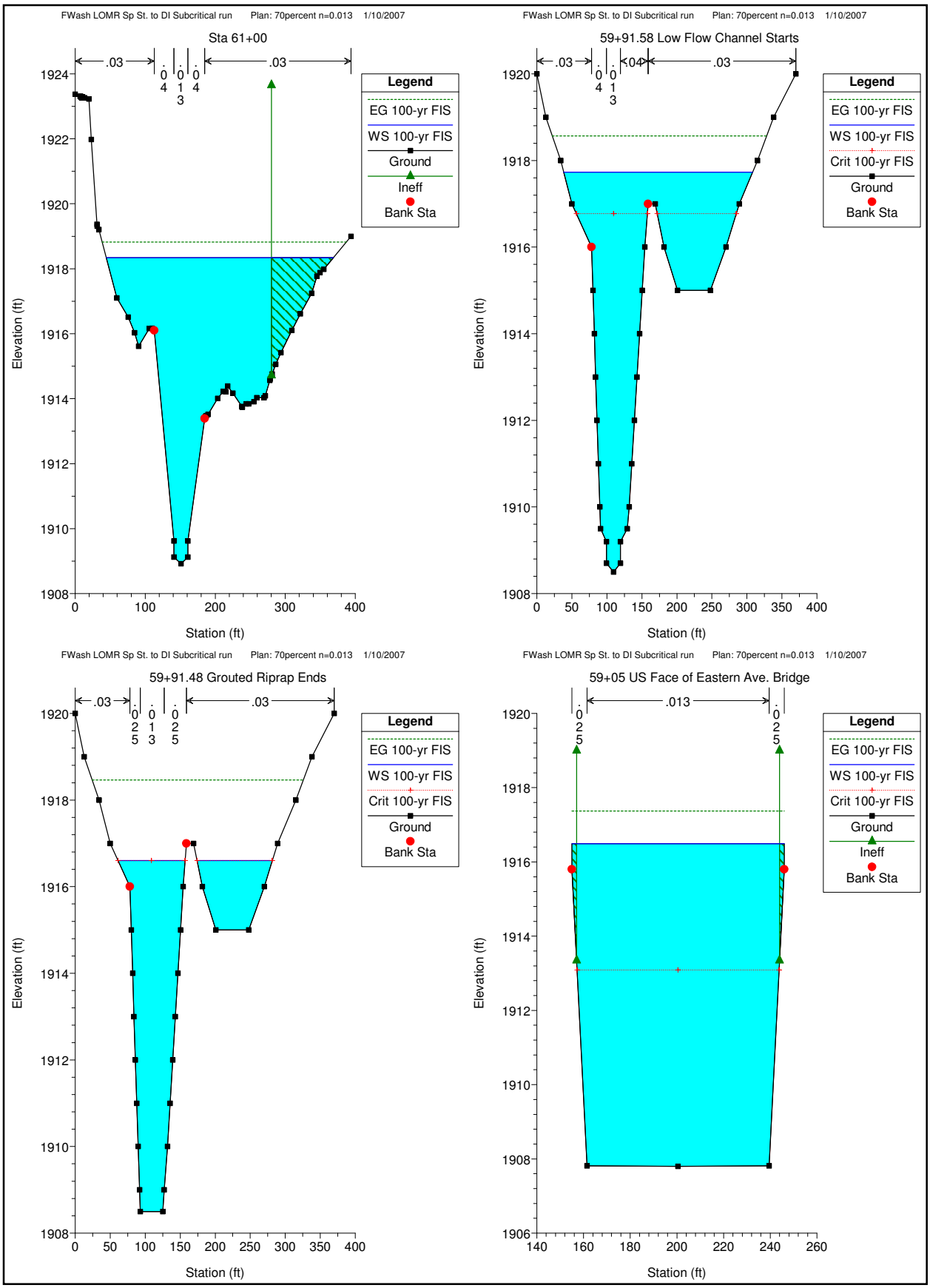

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
8200
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
8000
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

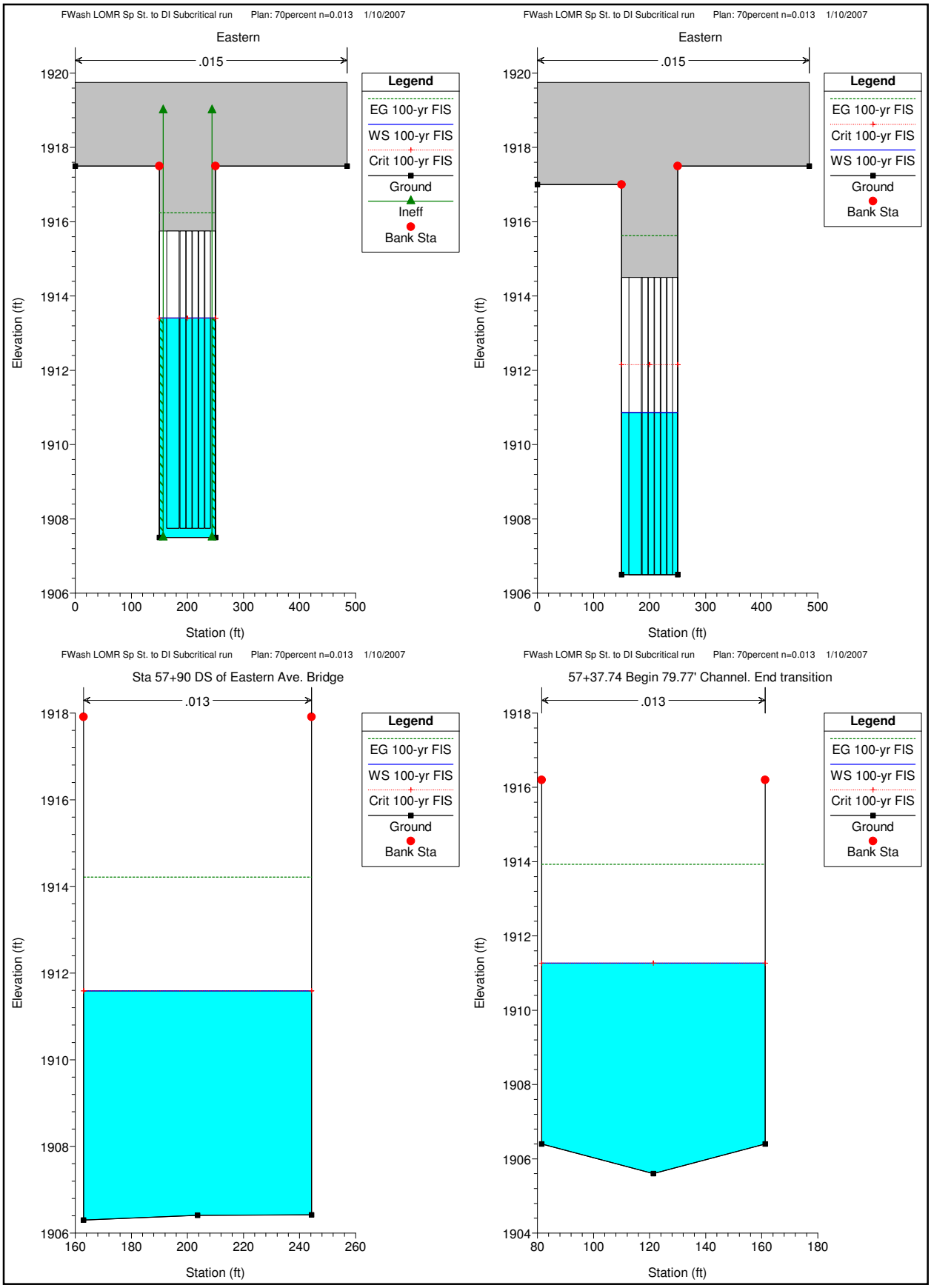

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
7400
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
7200
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

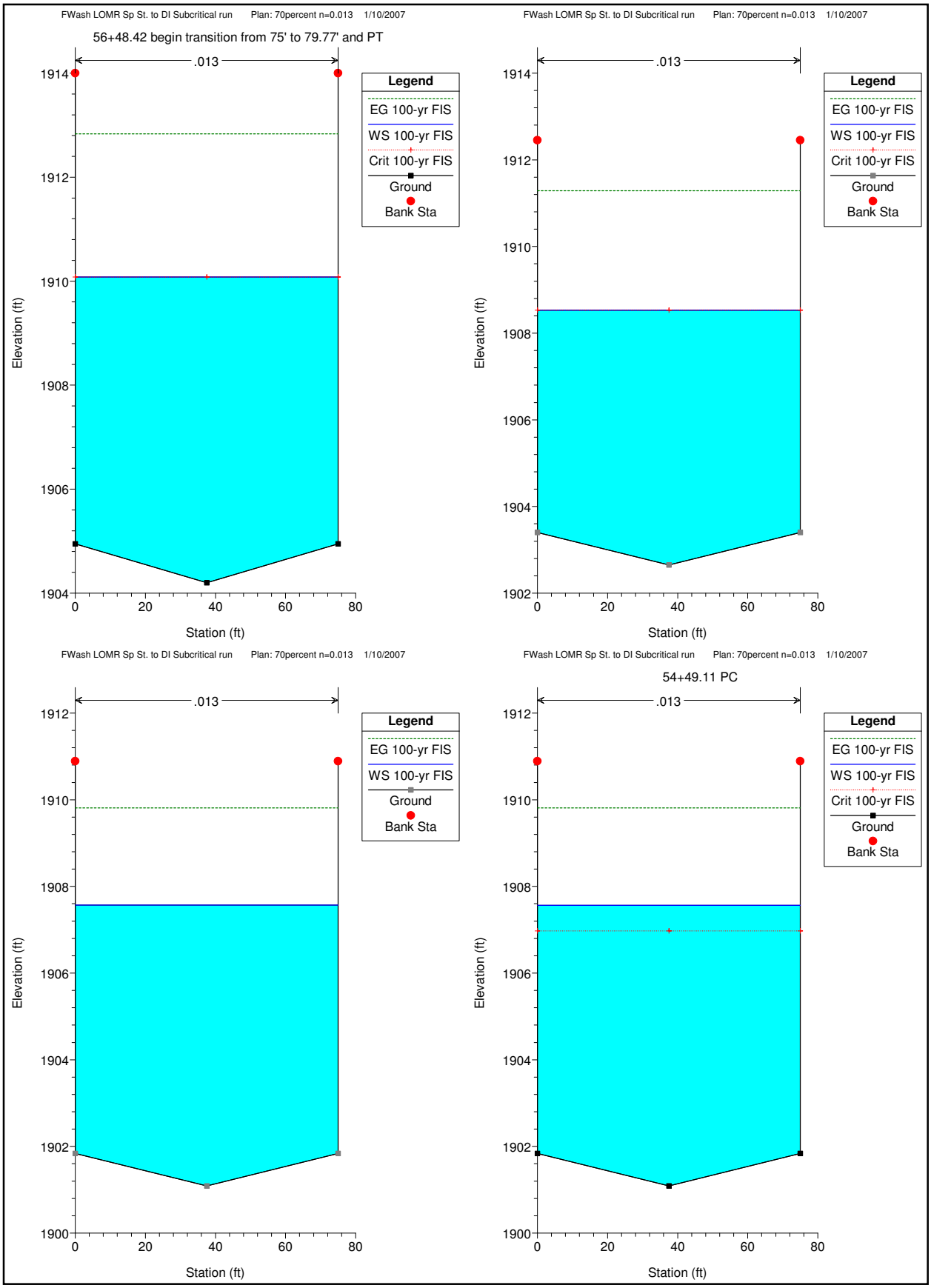

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
7000
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
67+36
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
67+02.04
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

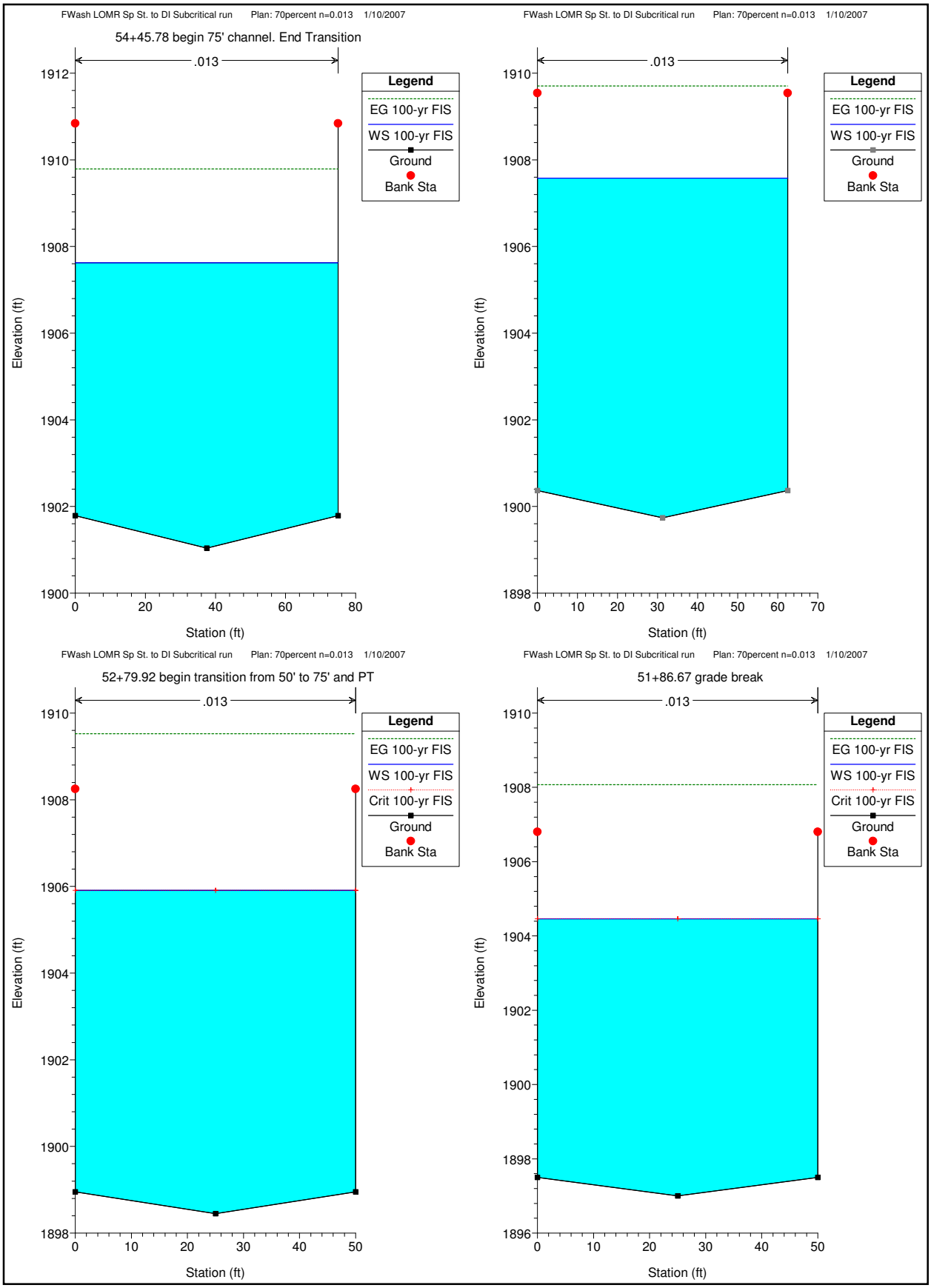

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
67+01.94 End Low Flow Channel End Armortec lining
.03
.03
.03
.03
.03
.03
.03
.03
.03
.03
.03
.03
.04
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
65+77 US Face of bridge at Tioga
Tioga
Tioga

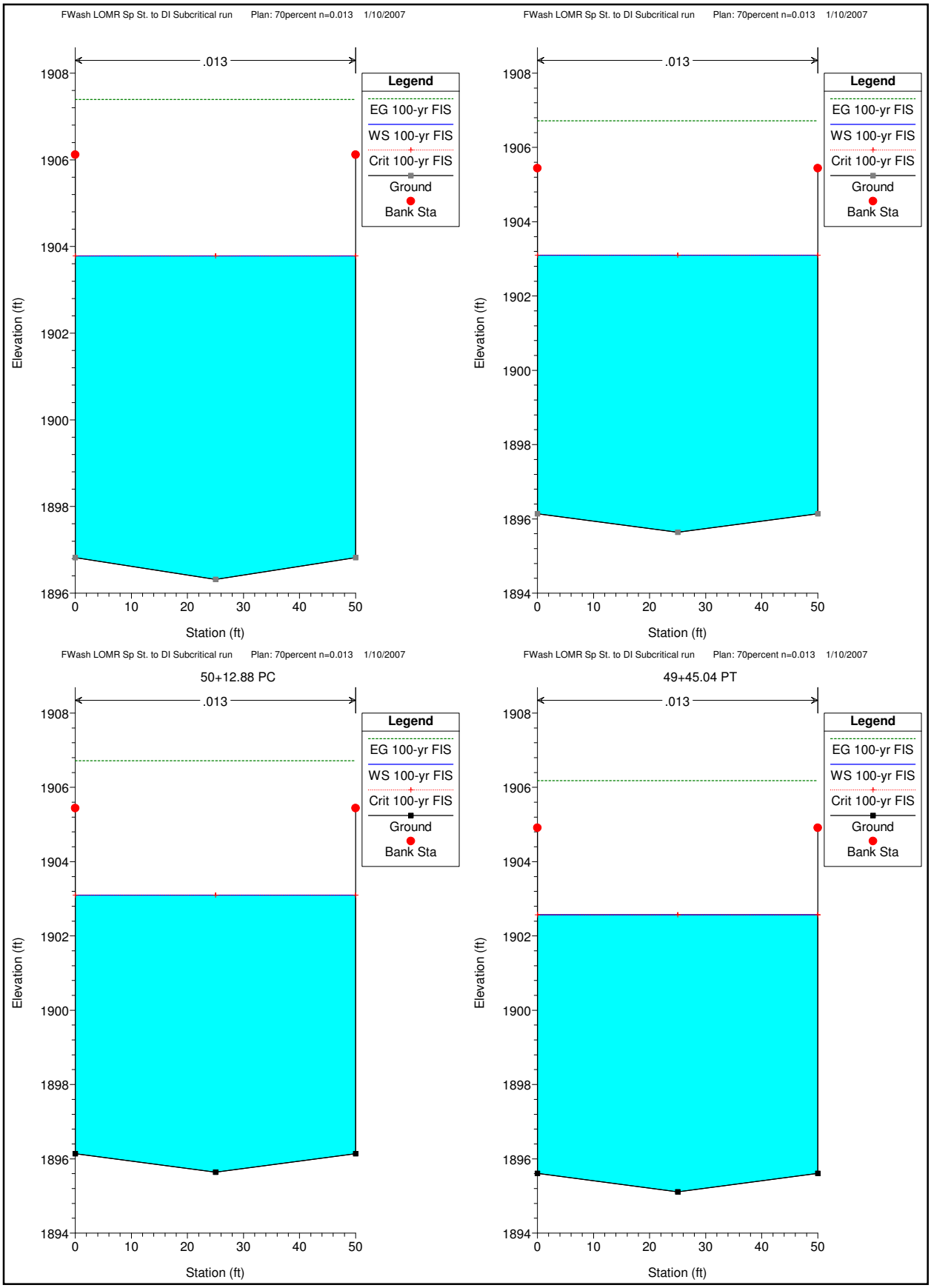

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
Sta 64+69 DS Face of bridge at Tioga
.03
.03
.013
.03
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
63+50 Begin Articulated Block
.03
.03
.013
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
63+49.9 End Earth Channel
.03
.04
.013
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
Sta 62+50
.03
.04
.013
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

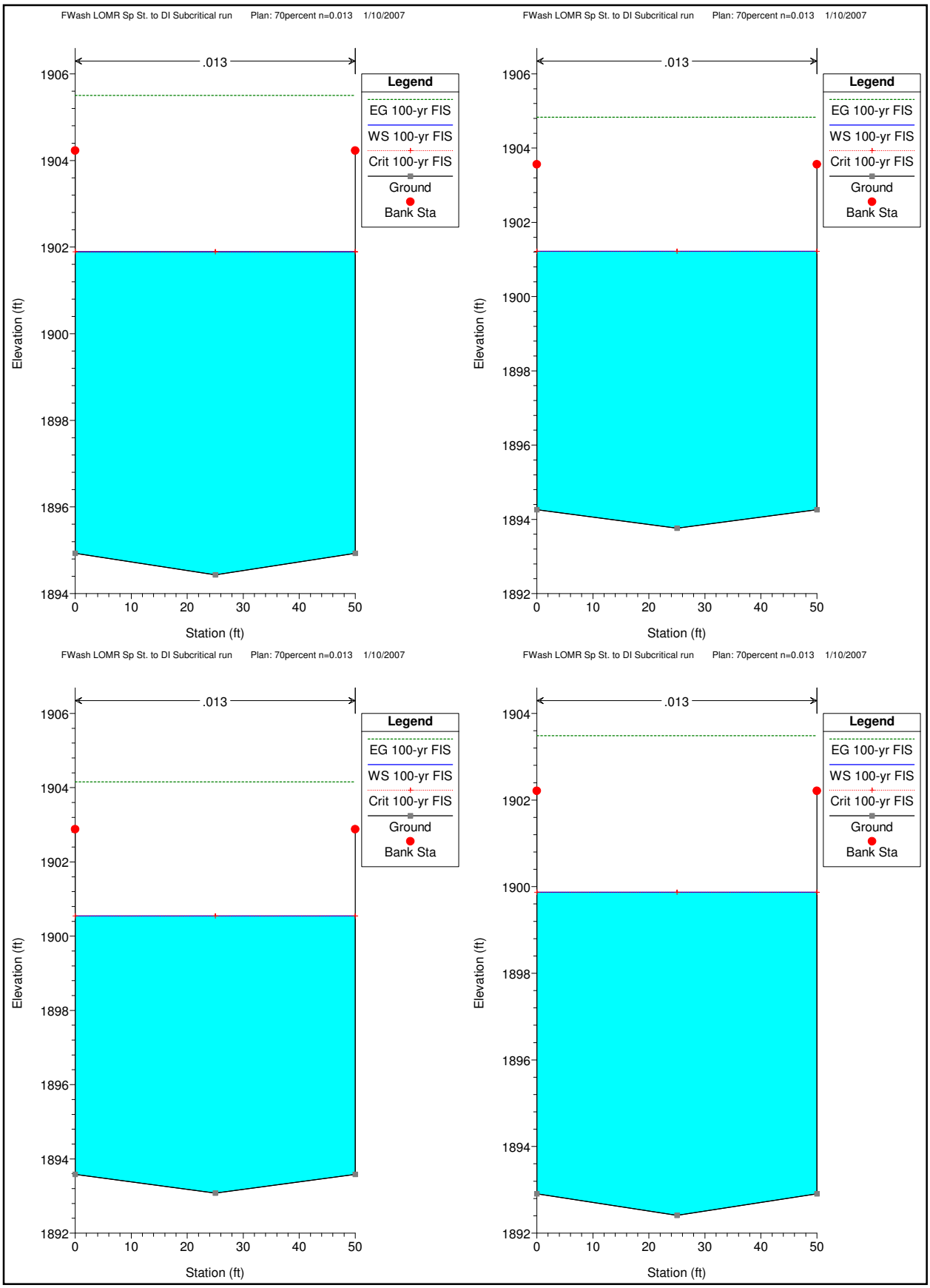

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
Sta 61+00
.03
.04
.013
.03
.04
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
59+91.58 Low Flow Channel Starts
.03
.04
.013
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
59+91.48 Grouted Riprap Ends
.03
.025
.013
.025
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
59+05 US Face of Eastern Ave. Bridge
.025
.013
.025
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

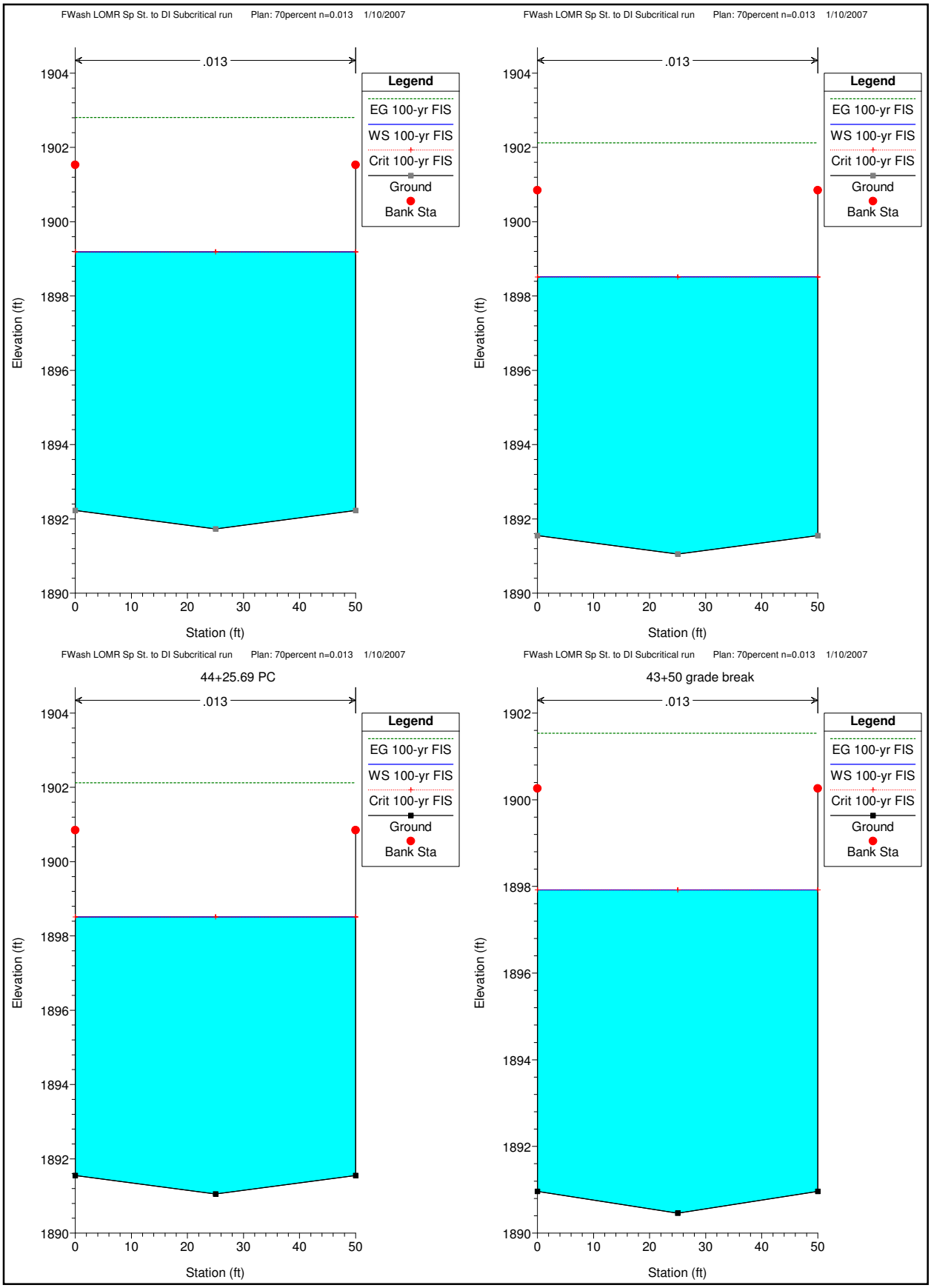

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
Eastern
.015
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
Eastern
.015
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
Sta 57+90 DS of Eastern Ave. Bridge
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
57+37.74 Begin 79.77' Channel. End transition
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

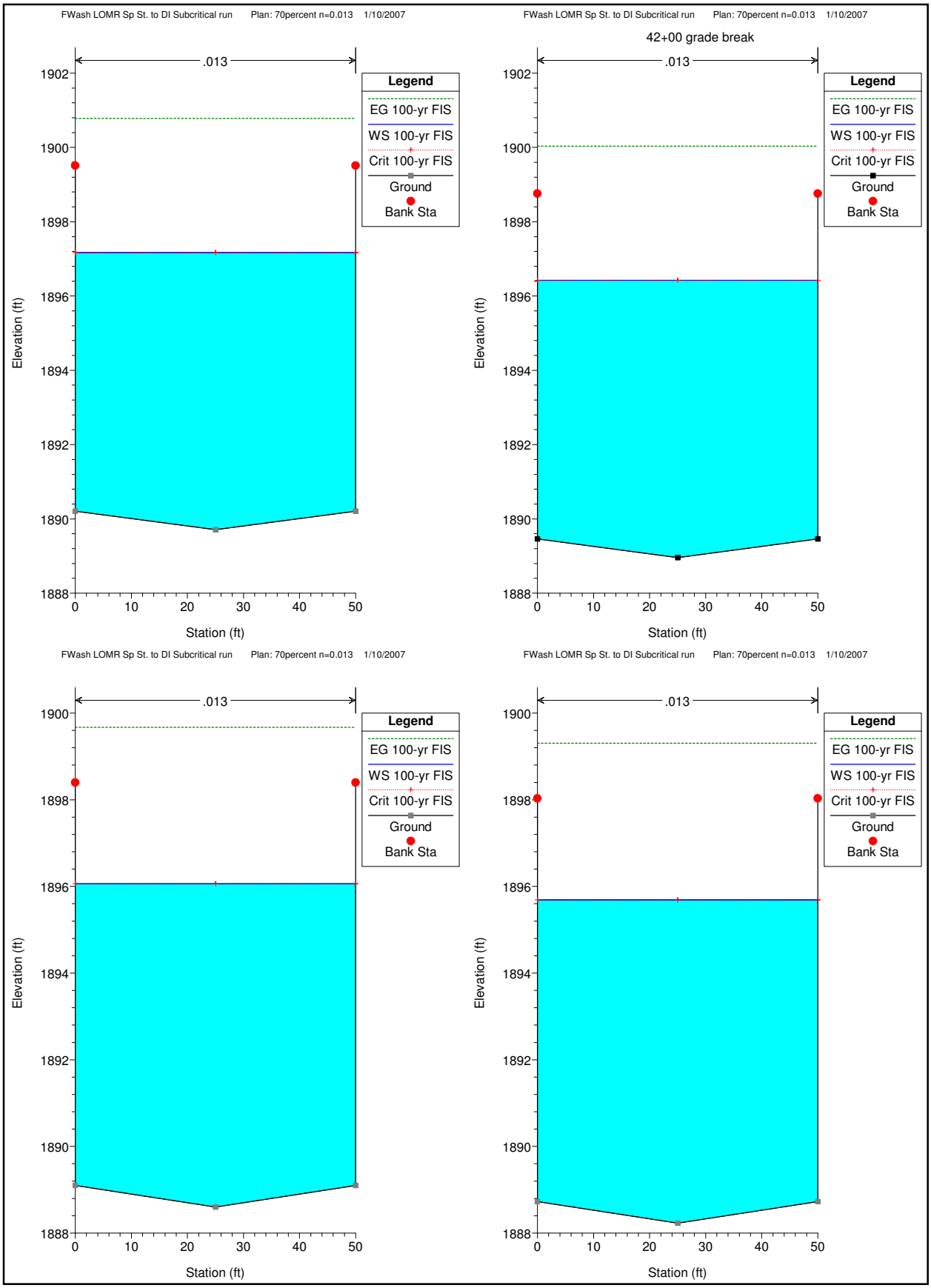

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
56+48.42 begin transition from 75' to 79.77' and PT
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1914
1912
1910
1908
1906
1904
0
20
40
60
80
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1914
1912
1910
1908
1906
1904
1902
0
20
40
60
80
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1912
1910
1908
1906
1904
1902
1900
0
20
40
60
80
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
54+49.11 PC
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1912
1910
1908
1906
1904
1902
1900
0
20
40
60
80

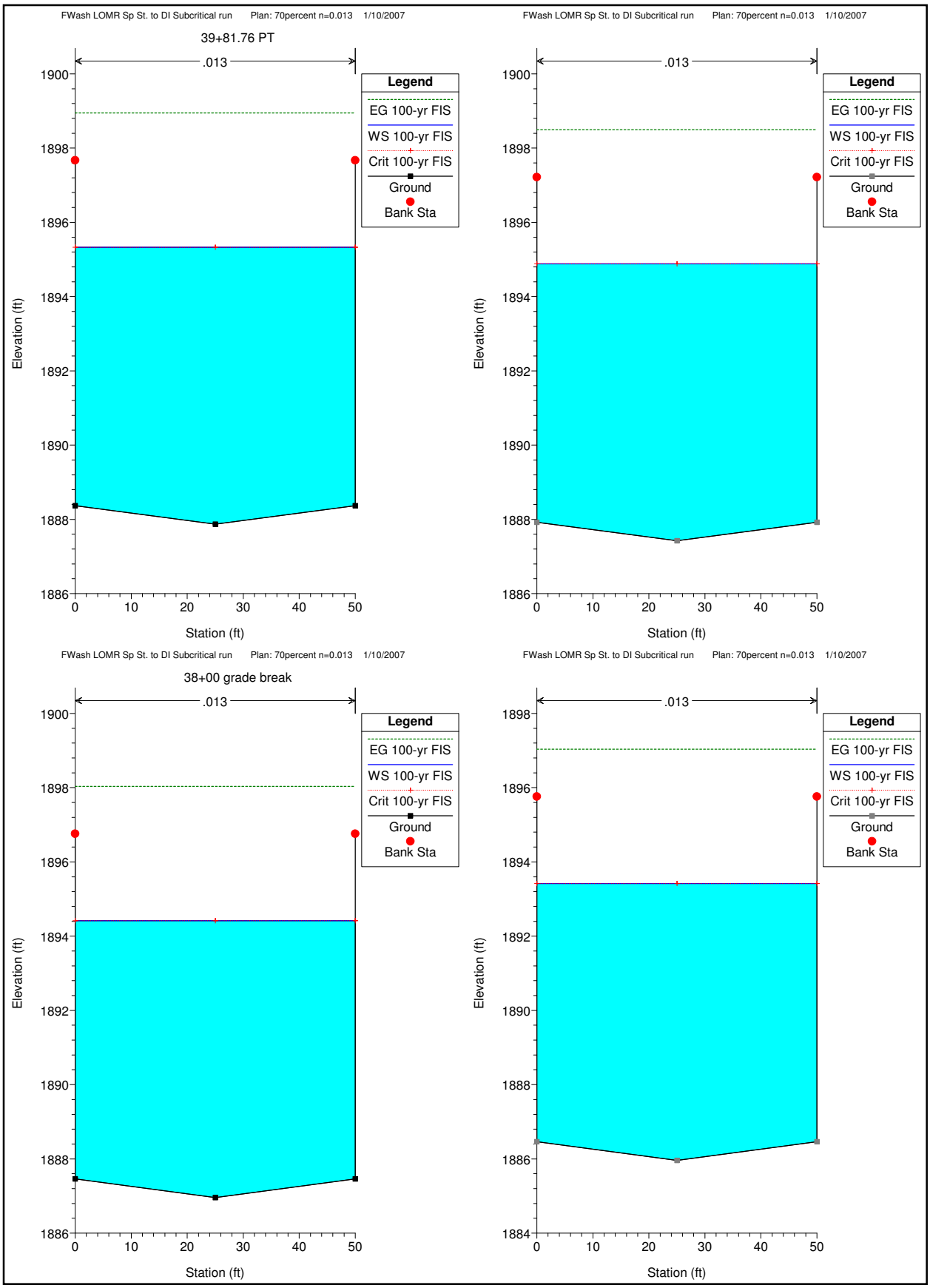

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
54+45.78 begin 75' channel. End Transition
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
52+79.92 begin transition from 50' to 75' and PT
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
51+86.67 grade break
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

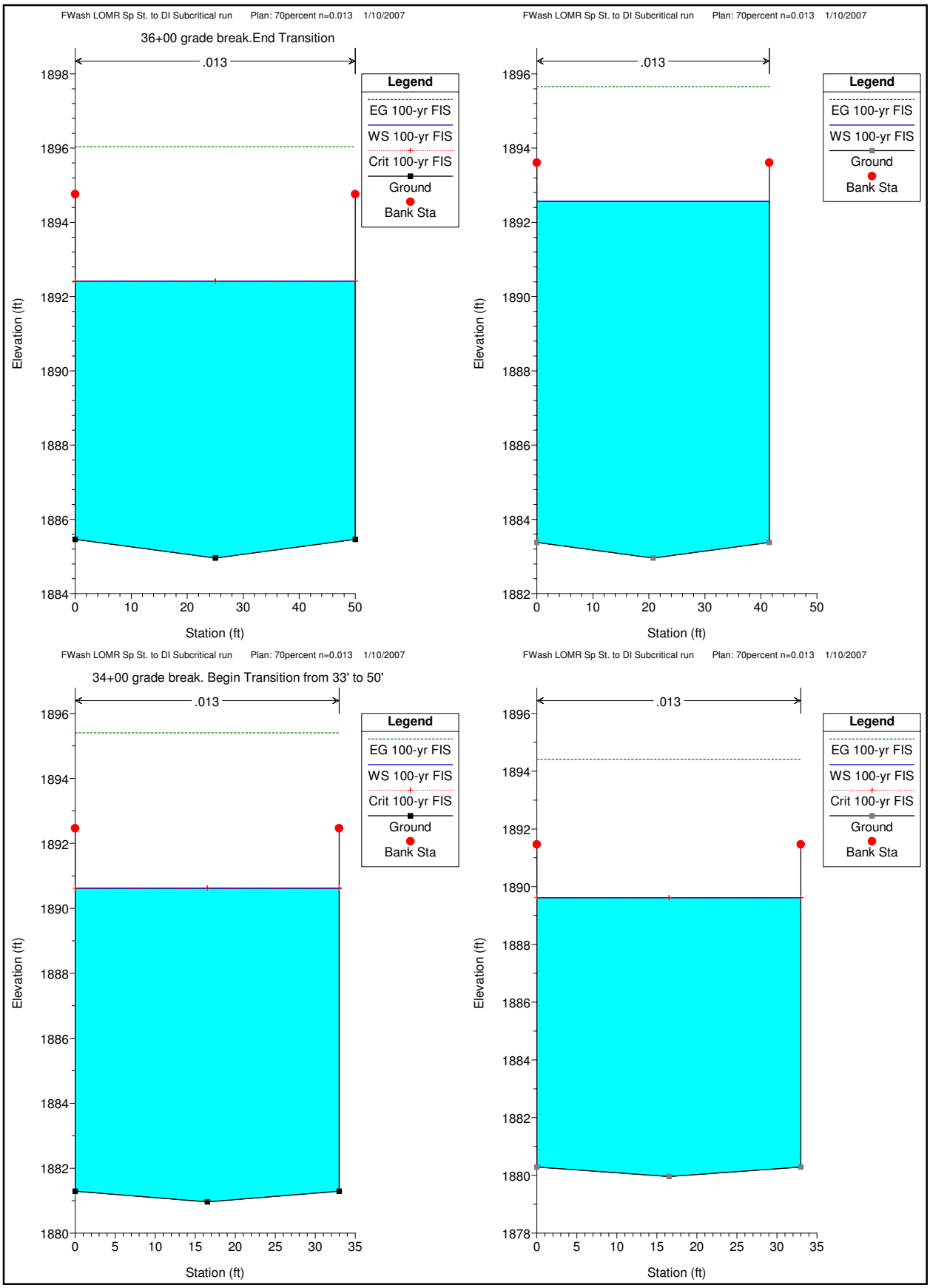

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
50+12.88 PC
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
49+45.04 PT
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

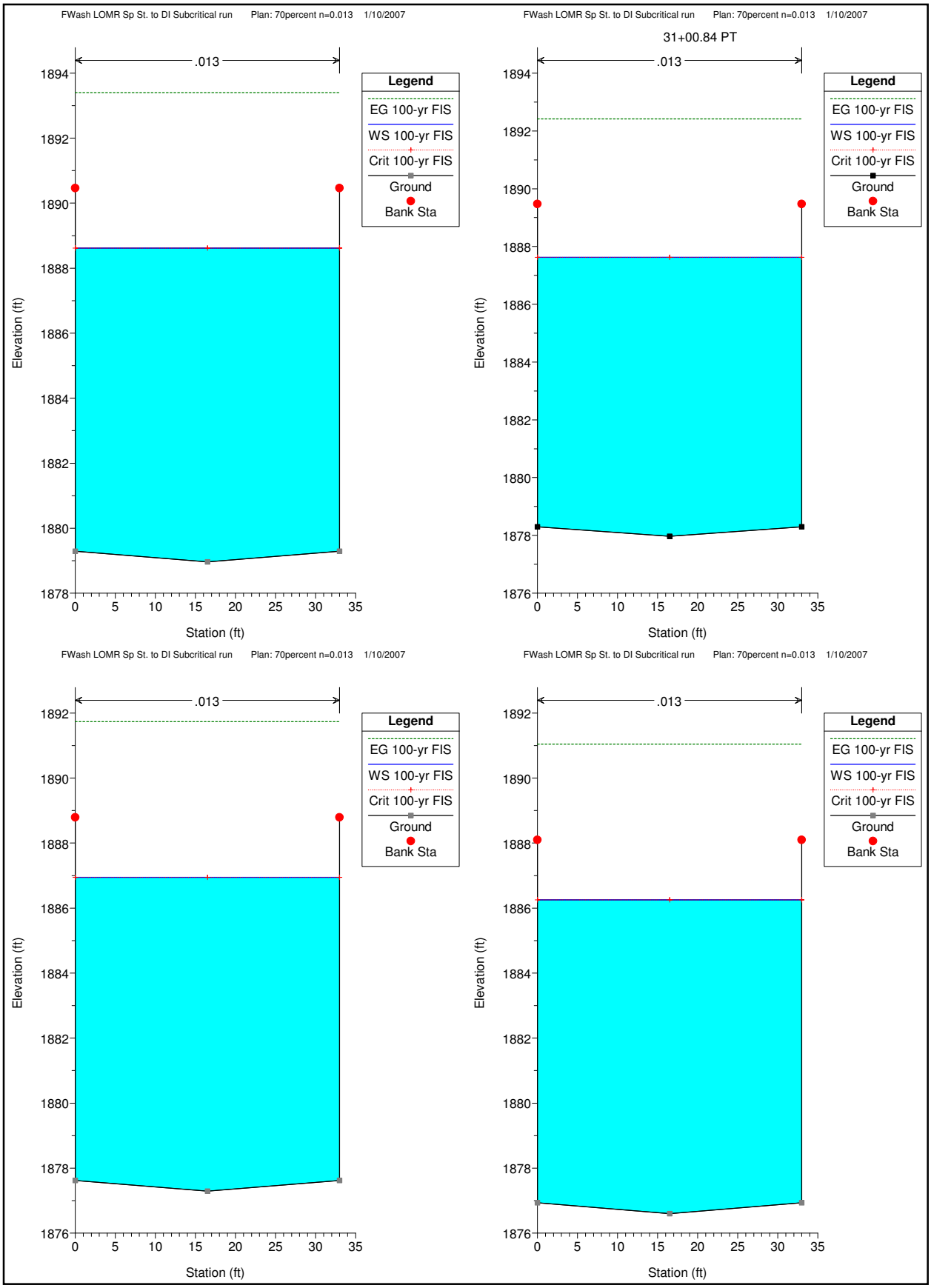

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1906
1904
1902
1900
1898
1896
1894
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1906
1904
1902
1900
1898
1896
1894
1892
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1906
1904
1902
1900
1898
1896
1894
1892
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1904
1902
1900
1898
1896
1894
1892
0
10
20
30
40
50

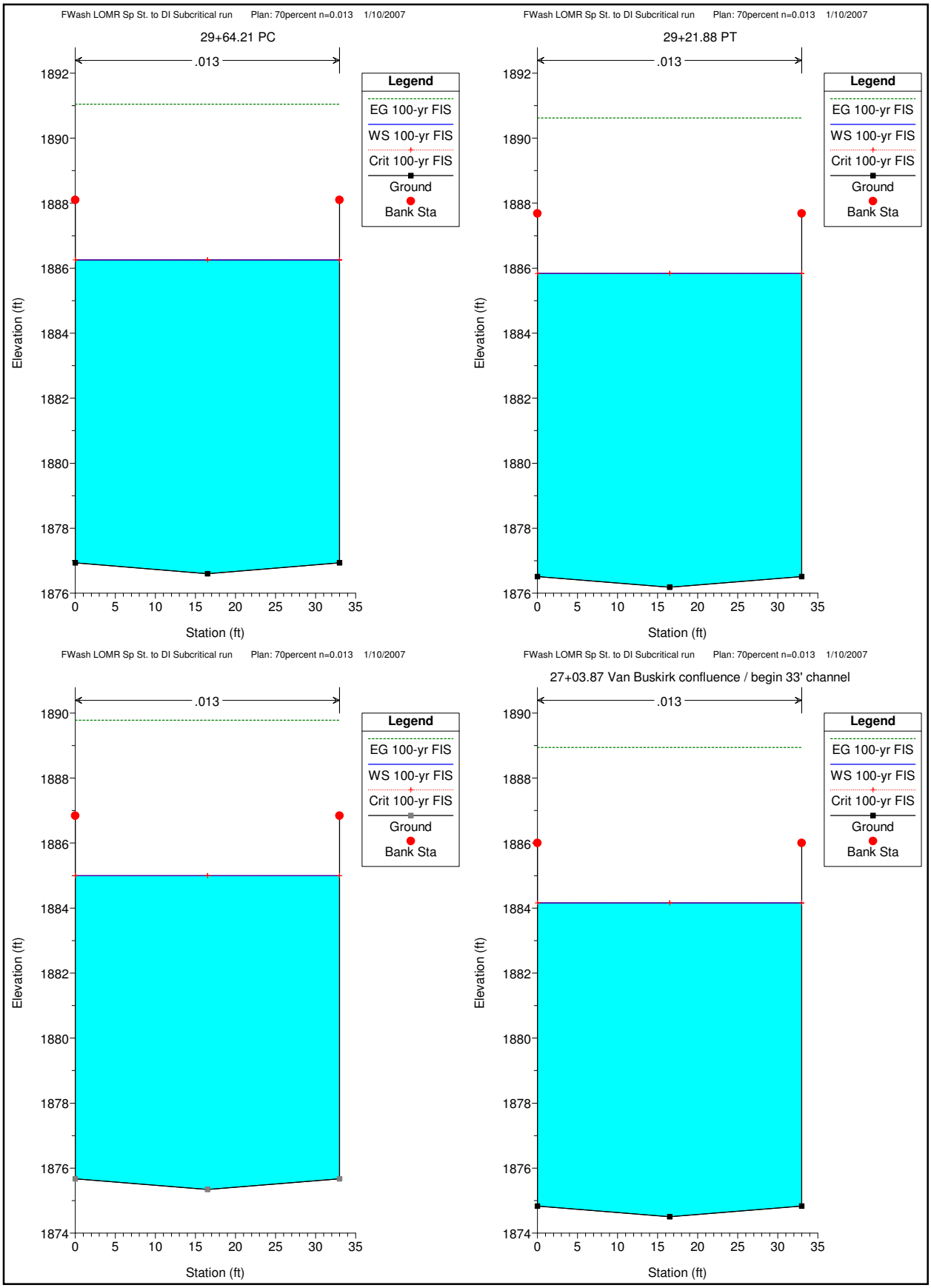

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1904
1902
1900
1898
1896
1894
1892
1890
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1904
1902
1900
1898
1896
1894
1892
1890
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
44+25.69 PC
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1904
1902
1900
1898
1896
1894
1892
1890
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
43+50 grade break
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1902
1900
1898
1896
1894
1892
1890
0
10
20
30
40
50

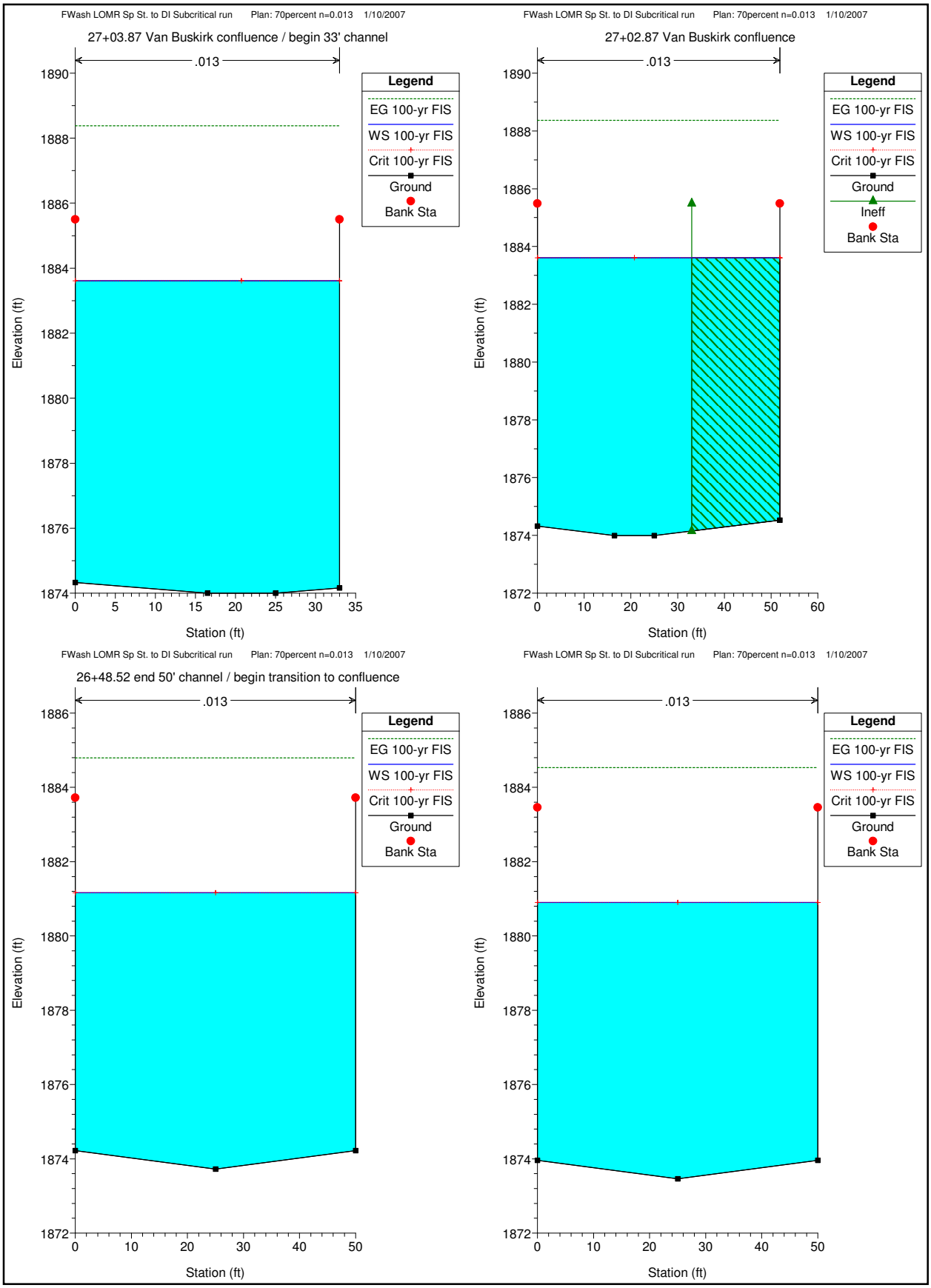

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1902
1900
1898
1896
1894
1892
1890
1888
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
42+00 grade break
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1902
1900
1898
1896
1894
1892
1890
1888
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1900
1898
1896
1894
1892
1890
1888
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1900
1898
1896
1894
1892
1890
1888
0
10
20
30
40
50

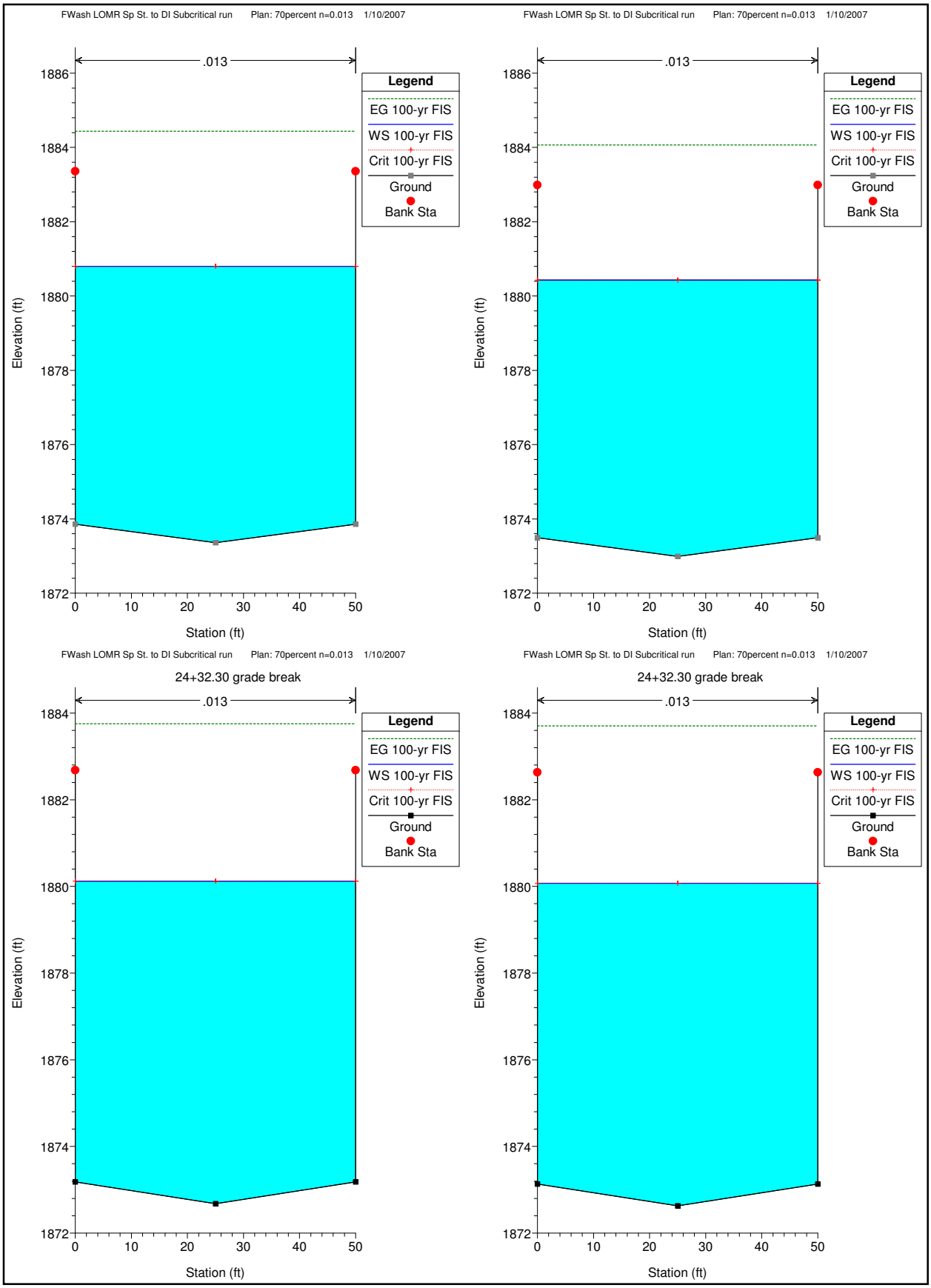

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
39+81.76 PT
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
38+00 grade break
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

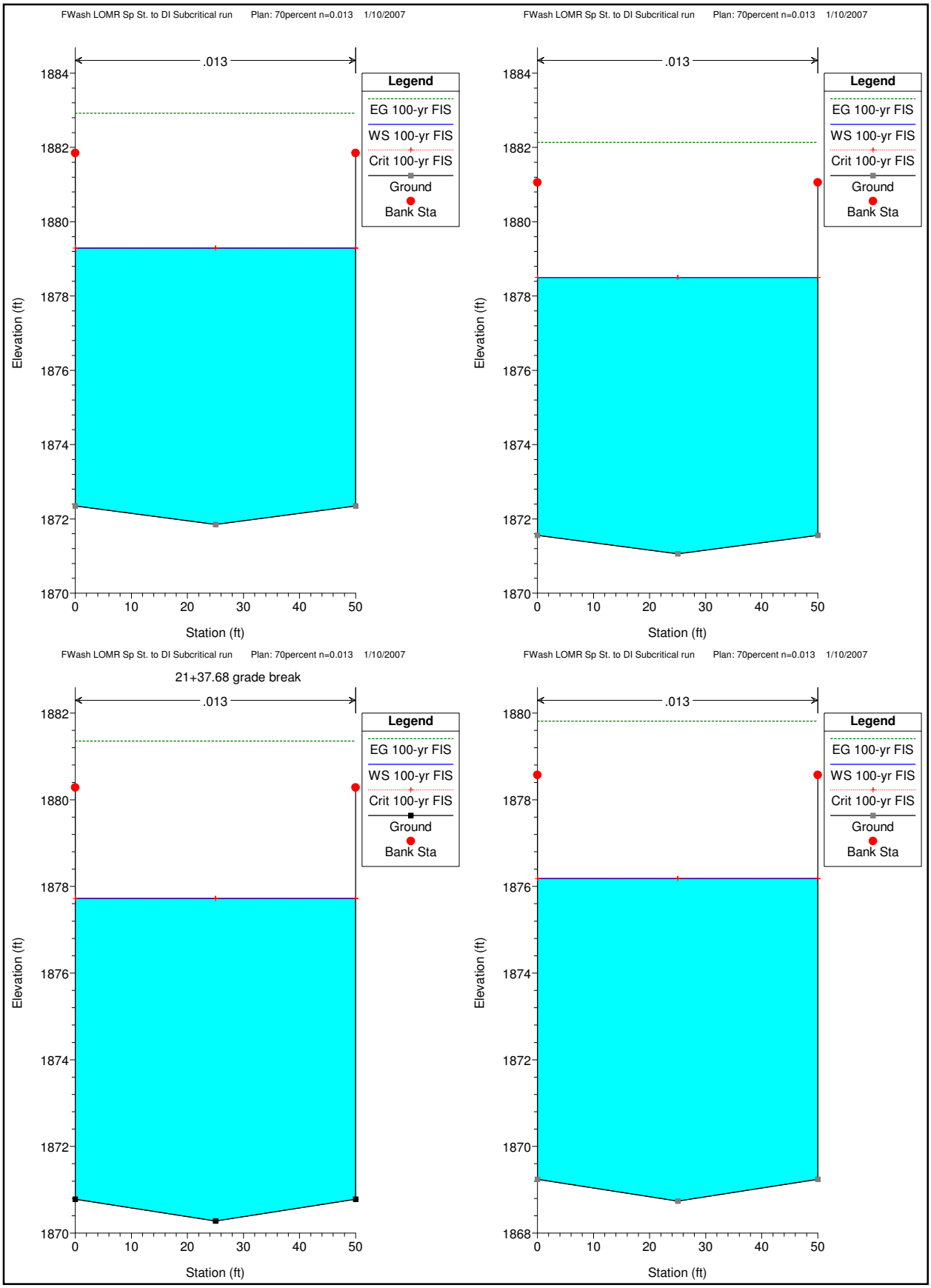

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
36+00 grade break.End Transition
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
34+00 grade break. Begin Transition from 33' to 50'
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

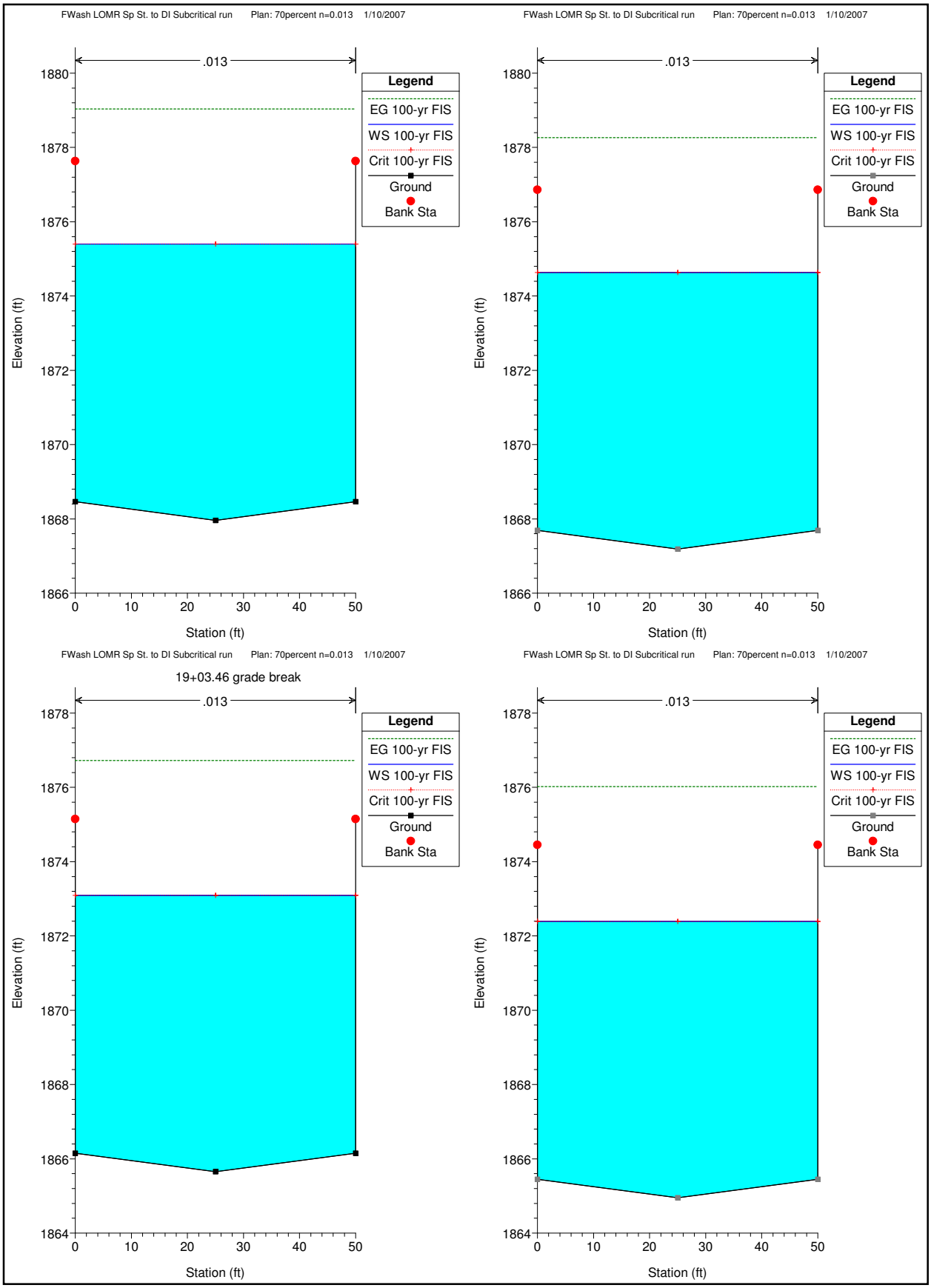

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
31+00.84 PT
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

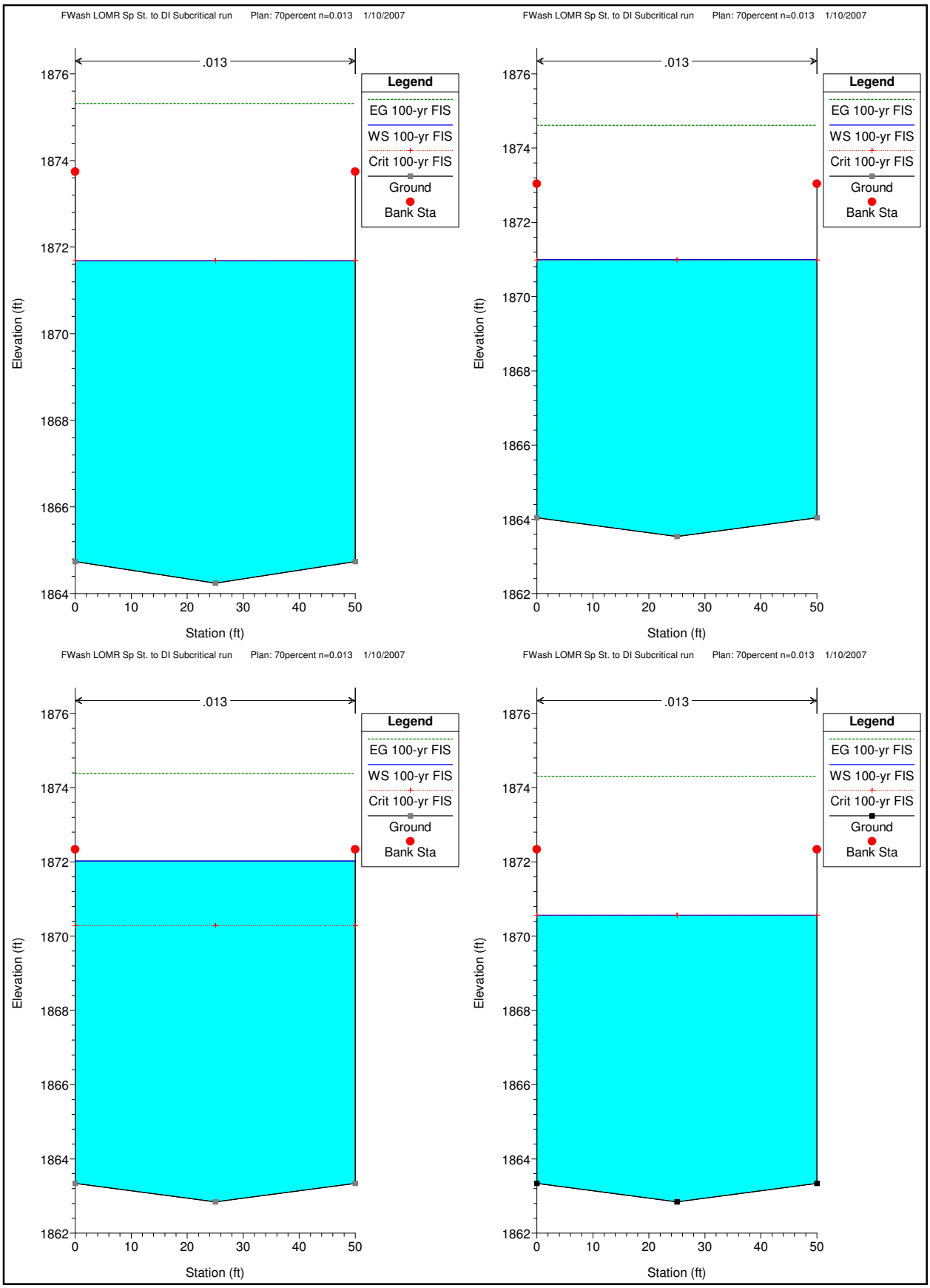

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
29+64.21 PC
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
29+21.88 PT
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
27+03.87 Van Buskirk confluence / begin 33' channel
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

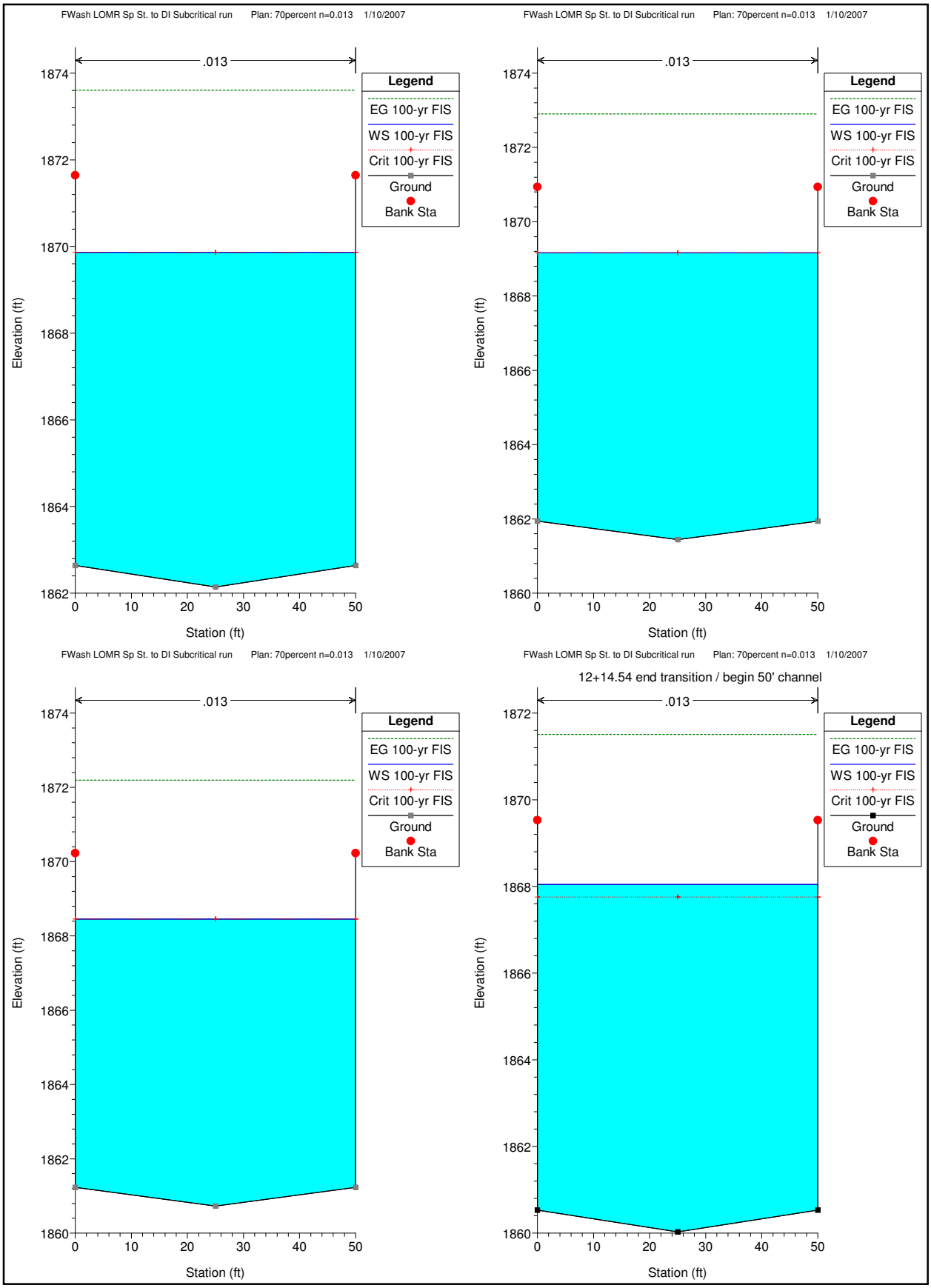

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
27+03.87 Van Buskirk confluence / begin 33' channel
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
27+02.87 Van Buskirk confluence
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
26+48.52 end 50' channel / begin transition to confluence
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

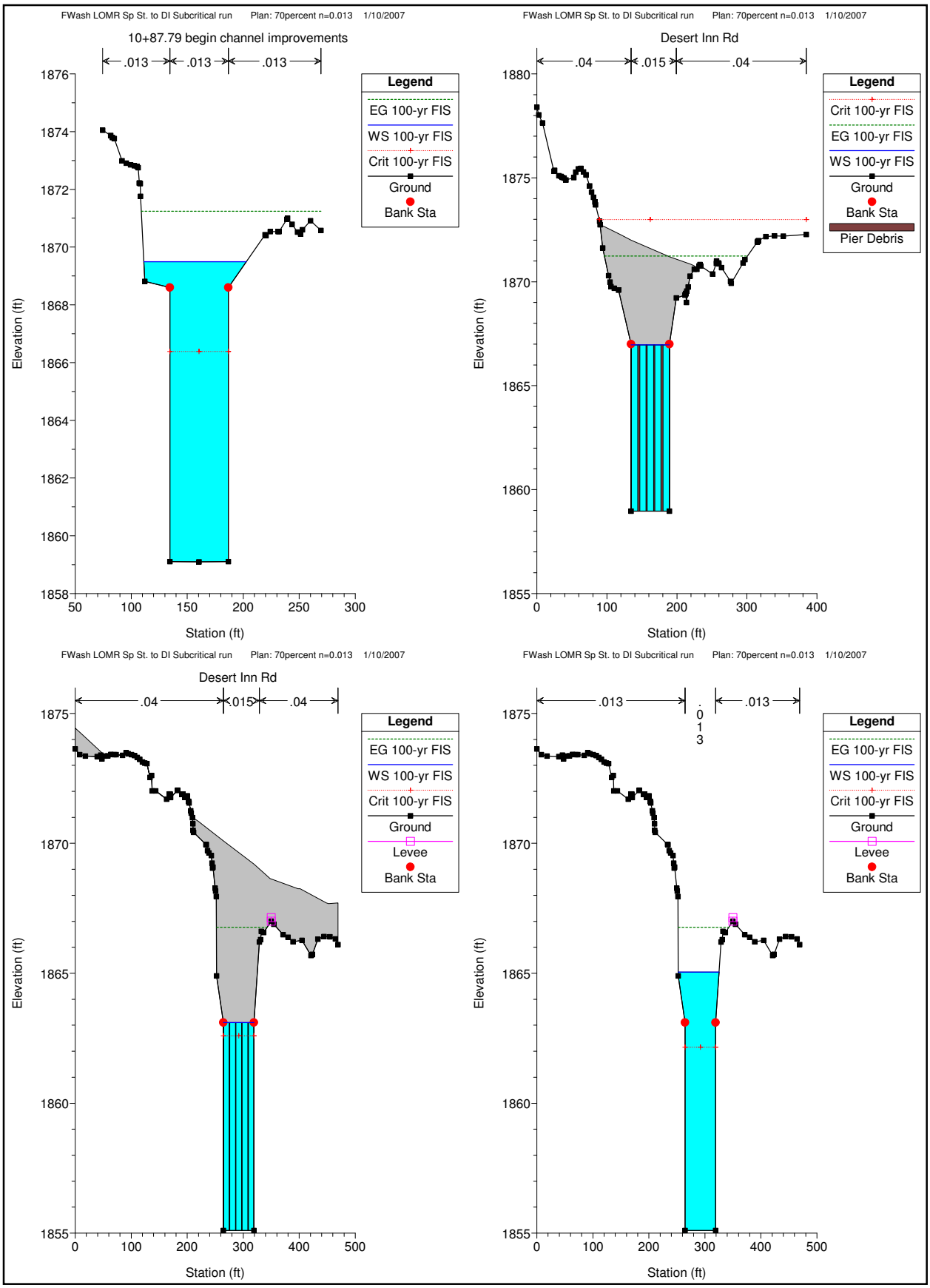

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1872
1874
1876
1878
1880
1882
1884
1886
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
24+32.30 grade break
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
24+32.30 grade break
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

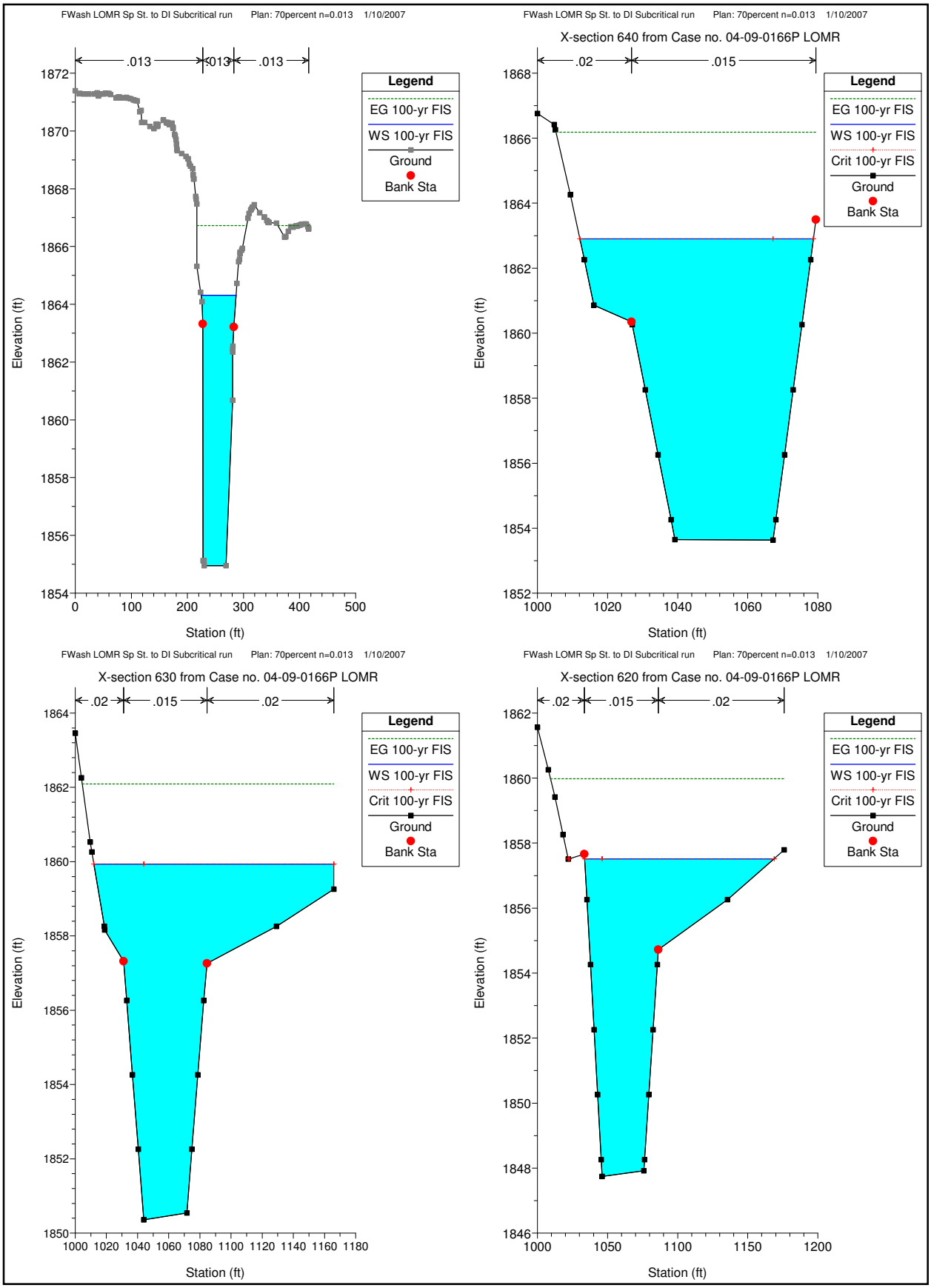

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1884
1882
1880
1878
1876
1874
1872
1870
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1884
1882
1880
1878
1876
1874
1872
1870
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
21+37.68 grade break
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1882
1880
1878
1876
1874
1872
1870
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1880
1878
1876
1874
1872
1870
1868
0
10
20
30
40
50


FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1880
1878
1876
1874
1872
1870
1868
1866
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1880
1878
1876
1874
1872
1870
1868
1866
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
19+03.46 grade break
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1878
1876
1874
1872
1870
1868
1866
1864
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1878
1876
1874
1872
1870
1868
1866
1864
0
10
20
30
40
50


FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1876
1874
1872
1870
1868
1866
1864
1862
0
10
20
30
40
50

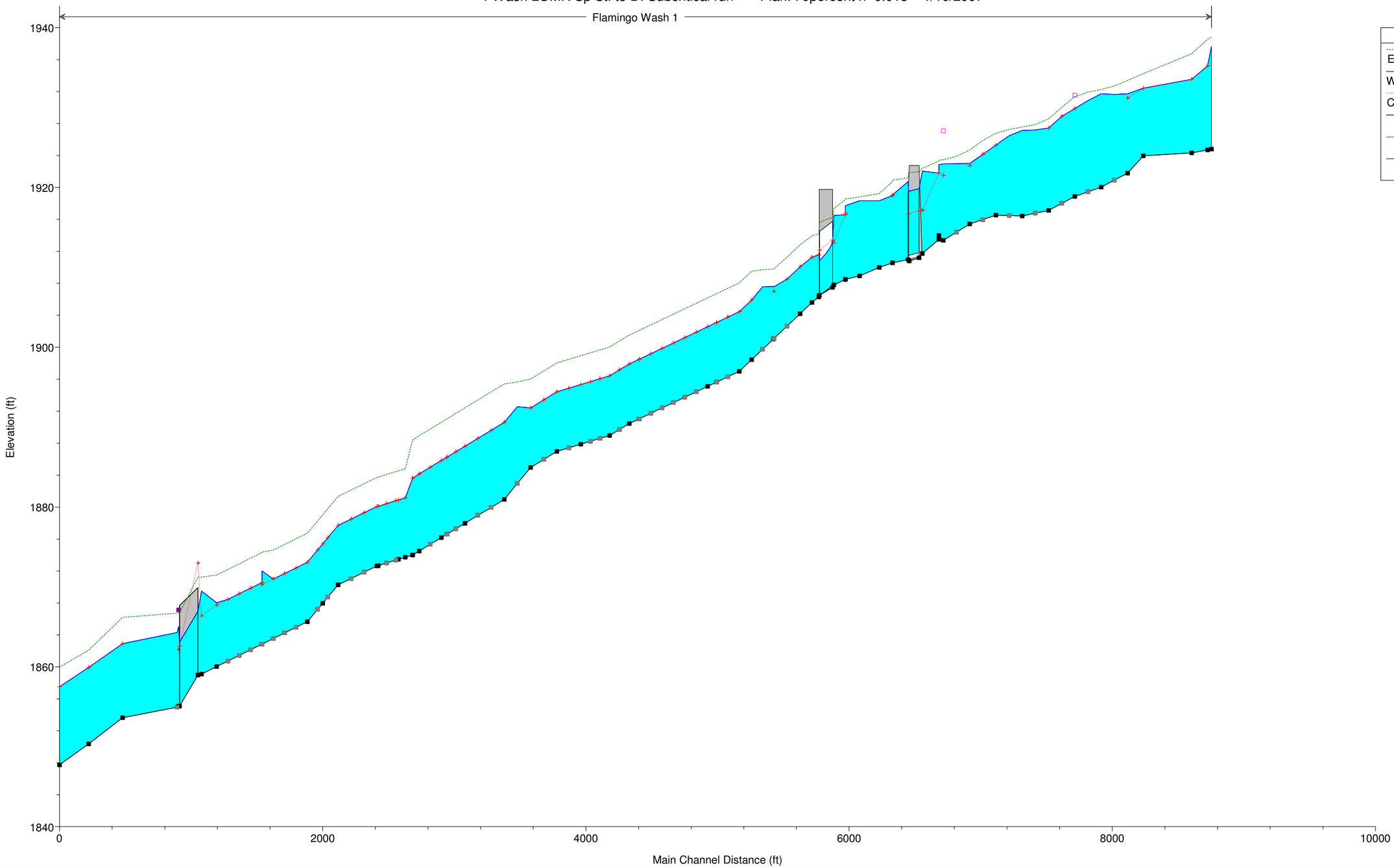

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1874
1872
1870
1868
1866
1864
1862
1860
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1874
1872
1870
1868
1866
1864
1862
1860
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1874
1872
1870
1868
1866
1864
1862
1860
0
10
20
30
40
50
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
12+14.54 end transition / begin 50' channel
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1872
1870
1868
1866
1864
1862
1860
0
10
20
30
40
50


FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
10+87.79 begin channel improvements
.013
.013
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
Desert Inn Rd
.04
.015
.04
Legend
Crit 100-yr FIS
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Pier Debris
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
Desert Inn Rd
.04
.015
.04
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
.013
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
.013
.013
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
X-section 640 from Case no. 04-09-0166P LOMR
.02
.015
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
X-section 630 from Case no. 04-09-0166P LOMR
.02
.015
.02
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007
X-section 620 from Case no. 04-09-0166P LOMR
.02
.015
.02
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

FWash LOMR Sp St. to DI Subcritical run Plan: 70percent n=0.013 1/10/2007

Flamingo Wash 1



Proposed supercritical HECRAS Model

Appendix C.2

HEC-RAS Version 3.1.3 May 2005
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: FWash LOMR Sp St. to DI Supcritical run
Project File : FWLomr_sup.prj
Run Date and Time: 1/2/2007 9:50:54 AM

Project in English units

Project Description:
FWash LOMR Sp St. to DI Supercritical run

****

PLAN DATA

Plan Title: 70percent n=0.013
Plan File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Supercritical HECRAS Model\FWLomr_sup.p01

Geometry Title: FMWash LOMR Geometry
Geometry File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Supercritical HECRAS Model\FWLomr_sup.g02

Flow Title : 100-yr +
Flow File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Supercritical HECRAS Model\FWLomr_sup.f04

Plan Summary Information:
Number of: Cross Sections = 102 Multiple Openings = 0
Culverts = 2 Inline Structures = 0
Bridges = 1 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: Supercritical Flow

****

FLOW DATA

Flow Title: 100-yr +
Flow File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Supercritical HECRAS Model\FWLomr_sup.f04

Flow Data (cfs)

River	Reach	RS	100-yr FIS
Flamingo Wash	1	8837.78	5500
Flamingo Wash	1	2702.87	5500
Flamingo Wash	1	1558.62	5800
Flamingo Wash	1	926	5800
Flamingo Wash	1	702.71	5800
Flamingo Wash	1	223.47	5800

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Flamingo Wash	1	100-yr FIS	Normal S = 0.0087	Normal S = 0.01

****

GEOMETRY DATA

Geometry Title: FMWash LOMR Geometry
Geometry File : e:\cb1004 LOMR_CLOMR Requests\Report\CD\Proposed Hydraulic Model\Proposed Supercritical HECRAS Model\FWLomr_sup.g02

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 8837.78

INPUT
Description: X-section 24 from Case no. 04-09-0167P LOMR
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
*******************************************************************************
    1075 1940.62    1075  1925.3    1100  1924.8    1125  1925.3    1125 1940.62

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
***********************************************
    1075    .025    1075    .025    1125    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1075    1125              30      30       30             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1935.97  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    4.35  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 1931.62  * Reach Len. (ft)        *   30.00  *   30.00  *   30.00  *
* Crit W.S. (ft)         * 1932.26  * Flow Area (sq ft)      *          *  328.61  *          *
* E.G. Slope (ft/ft)     *0.008702  * Area (sq ft)           *          *  328.61  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   16.74  * Avg. Vel. (ft/s)      *          *   16.74  *          *
* Max Chl Dpth (ft)      *    6.82  * Hydr. Depth (ft)      *          *    6.57  *          *
* Conv. Total (cfs)      * 58958.9  * Conv. (cfs)           *          * 58958.9  *          *
* Length Wtd. (ft)       *   30.00  * Wetted Per. (ft)      *          *   62.65  *          *
* Min Ch El (ft)         * 1924.80  * Shear (lb/sq ft)      *          *    2.85  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   47.69  *          *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)  *    4.14  *   54.41  *    6.14  *
* C & E Loss (ft)        *          * Cum SA (acres)        *    3.45  *   10.83  *    3.97  *
*****************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 8807.78

INPUT
Description: X-section 22 from Case no. 04-09-0167P LOMR
Station Elevation Data    num=       5
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*******************************************************************************
 1062.251939.865 1092.251924.865    1100 1924.71 1107.751924.865 1137.751939.865

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 1062.25    .025 1062.25    .025 1137.75    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1062.25 1137.75              120     120     120             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1938.54  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.33  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 1935.21  * Reach Len. (ft)        *  120.00  *  120.00  *  120.00  *
* Crit W.S. (ft)         * 1935.21  * Flow Area (sq ft)      *          *  375.61  *          *
* E.G. Slope (ft/ft)     *0.005468  * Area (sq ft)           *          *  375.61  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   56.88  * Top Width (ft)        *          *   56.88  *          *
* Vel Total (ft/s)       *   14.64  * Avg. Vel. (ft/s)      *          *   14.64  *          *
* Max Chl Dpth (ft)      *   10.50  * Hydr. Depth (ft)      *          *    6.60  *          *
* Conv. Total (cfs)      * 74377.4  * Conv. (cfs)           *          * 74377.4  *          *
* Length Wtd. (ft)       *  120.00  * Wetted Per. (ft)      *          *   61.77  *          *
* Min Ch El (ft)         * 1924.71  * Shear (lb/sq ft)      *          *    2.08  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   30.40  *          *
* Frctn Loss (ft)        *    0.20  * Cum Volume (acre-ft)  *    4.14  *   54.17  *    6.14  *
* C & E Loss (ft)        *    0.31  * Cum SA (acres)        *    3.45  *   10.79  *    3.97  *
*****************************************************************************************************

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.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 8687.78

INPUT
Description: X-section 20 from Case no. 04-09-0167P LOMR
Station Elevation Data    num=       5
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*******************************************************************************
  1064.41936.236  1087.71924.586    1100 1924.34  1112.31924.586  1135.61936.236

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
  1064.4    .025  1064.4    .025  1135.6    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        1064.4  1135.6            382.58  367.78  346.32             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1937.42  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    5.45  * Wt. n-Val.             *          *   0.025  *          *
* W.S. Elev (ft)         * 1931.97  * Reach Len. (ft)        *  382.58  *  367.78  *  346.32  *
* Crit W.S. (ft)         * 1933.52  * Flow Area (sq ft)      *          *  293.55  *          *
* E.G. Slope (ft/ft)     *0.011334  * Area (sq ft)           *          *  293.55  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
```

* Top Width (ft)	*	54.12	* Top Width (ft)	*		*	54.12	*			*
* Vel Total (ft/s)	*	18.74	* Avg. Vel. (ft/s)	*		*	18.74	*			*
* Max Chl Dpth (ft)	*	7.63	* Hydr. Depth (ft)	*		*	5.42	*			*
* Conv. Total (cfs)	*	51661.5	* Conv. (cfs)	*		*	51661.5	*			*
* Length Wtd. (ft)	*		* Wetted Per. (ft)	*		*	57.61	*			*
* Min Ch El (ft)	*	1924.34	* Shear (lb/sq ft)	*		*	3.61	*			*
* Alpha	*	1.00	* Stream Power (lb/ft s)	*		*	67.55	*			*
* Frctn Loss (ft)	*	0.91	* Cum Volume (acre-ft)	*	4.14	*	53.25	*	6.14	*	
* C & E Loss (ft)	*	0.21	* Cum SA (acres)	*	3.45	*	10.64	*	3.97	*	

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: Flamingo Wash
REACH: 1 RS: 8320

INPUT
Description: X-section 10 from Case no. 04-09-0167P LOMR
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1937.36	1049.49	1936.26	1095.06	1934.26	1144.27	1932.26	1220.49	1930.39
1220.83	1930.26	1228.41	1928.26	1235.7	1926.26	1237.99	1925.61	1249.9	1924.26
1252.38	1923.96	1254.61	1924.26	1271.01	1926.26	1272.95	1926.49	1279.8	1927.8
1285.65	1928.26	1306.65	1930.26	1322.46	1932.26	1329.96	1933.29	1344.12	1934.26
1372.27	1936.26	1402.27	1938.26	1409.32	1938.72	1418.36	1939.14	1426.01	1940.26
1436.49	1941.26	1496.07	1942.26	1580.86	1943.11	1671.03	1944.26	1677.54	1944.52
1685.16	1944.66	1718.9	1946.26						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	1220.49	.03	1306.65	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
1220.49 1306.65 120 120 120 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1934.25	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.82	* Wt. n-Val.	* 0.035	* 0.030	* 0.035 *
* W.S. Elev (ft)	* 1932.43	* Reach Len. (ft)	* 120.00	* 120.00	* 120.00 *
* Crit W.S. (ft)	* 1932.43	* Flow Area (sq ft)	* 84.57	* 463.60	* 18.60 *
* E.G. Slope (ft/ft)	*0.005458	* Area (sq ft)	* 84.57	* 463.60	* 18.60 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 274.31	* 5164.19	* 61.51 *
* Top Width (ft)	* 183.61	* Top Width (ft)	* 80.40	* 86.16	* 17.05 *
* Vel Total (ft/s)	* 9.70	* Avg. Vel. (ft/s)	* 3.24	* 11.14	* 3.31 *
* Max Chl Dpth (ft)	* 8.47	* Hydr. Depth (ft)	* 1.05	* 5.38	* 1.09 *
* Conv. Total (cfs)	* 74444.3	* Conv. (cfs)	* 3712.8	* 69898.9	* 832.5 *
* Length Wtd. (ft)	* 120.00	* Wetted Per. (ft)	* 80.43	* 87.29	* 17.18 *
* Min Ch El (ft)	* 1923.96	* Shear (lb/sq ft)	* 0.36	* 1.81	* 0.37 *
* Alpha	* 1.24	* Stream Power (lb/ft s)	* 1.16	* 20.16	* 1.22 *
* Frctn Loss (ft)	*	* Cum Volume (acre-ft)	* 3.77	* 50.05	* 6.07 *
* C & E Loss (ft)	*	* Cum SA (acres)	* 3.10	* 10.04	* 3.90 *

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.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 8200

INPUT
Description: 8200
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1937.82	3.6581	937.838	10.6881	937.934	19.7231	938.023	20.9691	938.058
29.6781	937.831	41.0151	937.492	43.7331	937.428	44.6641	937.407	45.484	1937.36
47.7651	937.247	70.8731	936.194	76.421	935.774	80.1531	935.466	85.5271	935.228
96.2841	934.653	109.7221	934.061	121.6841	933.445	129.993	1933.07	147.0811	932.337
150.484	1932.13	159.1321	931.786	171.7981	931.641	172.4861	931.644	176.2051	931.575
197.891	931.208	200.14	1931.31	207.2751	931.405	215.4191	931.054	223.2911	930.635
238.404	1930.16	239.6571	930.113	243.561	928.243	251.3841	924.516	252.5161	924.447
260.111	923.987	262.0981	923.188	264.9271	921.795	279.1551	922.147	279.7531	922.158
285.4441	923.947	288.8411	924.505	293.9851	926.031	300.481	927.722	301.7351	928.178
308.1061	928.621	321.971	929.582	323.1111	929.671	324.8981	929.797	326.1821	929.909
342.5171	931.044	342.9141	931.073	347.3781	931.407	350.2991	931.558	359.656	1932.29
372.8841	933.413	373.621	933.478	385.3711	934.642	396.29	1935.73	398.941	935.916
412.717	1936.97	414.8221	937.122						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	239.657	.04	301.735	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
239.657 301.735 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1933.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.30	Wt. n-Val.	0.030	0.040	0.030
W.S. Elev (ft)	1931.06	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1931.18	Flow Area (sq ft)	12.75	406.49	59.00
E.G. Slope (ft/ft)	*0.009801	Area (sq ft)	12.75	406.49	59.00
Q Total (cfs)	5500.00	Flow (cfs)	40.71	5090.75	368.54
Top Width (ft)	127.29	Top Width (ft)	24.27	62.08	40.94
Vel Total (ft/s)	11.50	Avg. Vel. (ft/s)	3.19	12.52	6.25
Max Chl Dpth (ft)	9.26	Hydr. Depth (ft)	0.53	6.55	1.44
Conv. Total (cfs)	55556.6	Conv. (cfs)	411.2	51422.7	3722.7
Length Wtd. (ft)		Wetted Per. (ft)	24.29	64.68	41.04
Min Ch El (ft)	1921.80	Shear (lb/sq ft)	0.32	3.85	0.88
Alpha	1.12	Stream Power (lb/ft s)	1.03	48.15	5.49
Frctn Loss (ft)	0.86	Cum Volume (acre-ft)	3.64	48.85	5.96
C & E Loss (ft)	0.05	Cum SA (acres)	2.95	9.84	3.82

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 8100.*

INPUT
Description:
Station Elevation Data num= 142

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1937.05	4.27	1936.95	7	1936.89	9.01	1936.8	12.47	1936.76
19.96	1936.67	23.01	1936.65	24.47	1936.65	28.4	1936.56	29.58	1936.53
31.21	1936.48	33.18	1936.36	34.63	1936.34	46.76	1936.15	47.86	1936.13
51.03	1936.07	52.12	1936.05	52.84	1936.03	53.07	1936.02	55.74	1935.92
56.96	1935.88	74.73	1935.27	82.7	1934.99	89.17	1934.68	91.16	1934.58
93.53	1934.47	96.61	1934.38	99.8	1934.31	112.25	1933.97	112.35	1933.97
118.5	1933.81	125.25	1933.65	128.03	1933.58	140.38	1933.26	141.99	1933.21
151.17	1932.95	151.69	1932.94	157.16	1932.82	159.24	1932.64	168.92	1932.1
171.63	1931.94	174.99	1931.7	175.6	1931.67	179.66	1931.52	184.16	1931.39
185.69	1931.35	200.47	1931.11	201.27	1931.1	201.63	1931.09	205.61	1931.03
206.98	1931.01	225.06	1929.68	225.71	1929.63	226.32	1929.58	226.33	1929.58
230.92	1929.55	233.54	1929.61	237.15	1929.63	241.87	1929.72	246.15	1929.69
249.85	1929.68	251.37	1929.61	260.56	1929.17	261.75	1929.13	271.71	1928.64
278.19	1928.44	279.52	1928.39	279.65	1928.39	279.97	1928.27	280.55	1928.09
284.64	1926.74	292.17	1924.26	294.63	1923.62	296.08	1923.43	302.29	1922.59
305.78	1922.35	307.07	1922.09	308.32	1921.82	311.29	1921.08	311.93	1920.92
321.07	1922.4	321.46	1922.46	325.11	1923.88	327.29	1924.47	330.6	1925.7
331.28	1925.94	334.77	1927.13	335.58	1927.47	340.83	1927.83	346.35	1928.31
347.09	1928.37	352.54	1928.5	364.85	1929.04	369.34	1929.23	369.8	1929.26
371.73	1929.35	374.75	1929.48	376.92	1929.59	377.35	1929.61	381.29	1929.88
382.6	1930.05	389.11	1930.81	396.28	1931.74	398.67	1931.76	400.41	1931.8
401.64	1932.02	404.55	1932.15	405.22	1932.19	412.77	1932.54	415.65	1932.66
417.71	1932.75	418.13	1932.77	419.3	1932.83	419.54	1932.86	433.54	1933.23
434.95	1933.27	435.88	1933.3	452.01	1933.79	453.65	1933.83	455.14	1933.89
455.91	1933.92	457.15	1933.95	471.41	1934.42	472.12	1934.45	477.03	1934.79
477.42	1934.81	489.05	1935.12	489.16	1935.12	489.34	1935.13	493.91	1935.26
495.49	1935.32	499.98	1935.44	506.75	1935.65	506.78	1935.68	517.8	1937.29
523.28	1938.07	524.34	1938.22	524.58	1938.25	524.65	1938.25	525.24	1938.35
525.74	1938.42	526.84	1938.66						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	279.65	.04	335.58	.03

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
279.65	335.58	100	100	100	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1932.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.64	Wt. n-Val.	0.030	0.040	0.030
W.S. Elev (ft)	1930.88	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1930.88	Flow Area (sq ft)	96.71	390.65	101.74
E.G. Slope (ft/ft)	*0.007081	Area (sq ft)	96.71	390.65	101.74
Q Total (cfs)	5500.00	Flow (cfs)	495.40	4359.30	645.30
Top Width (ft)	180.88	Top Width (ft)	70.89	55.93	54.06
Vel Total (ft/s)	9.34	Avg. Vel. (ft/s)	5.12	11.16	6.34
Max Chl Dpth (ft)	9.96	Hydr. Depth (ft)	1.36	6.98	1.88
Conv. Total (cfs)	65362.7	Conv. (cfs)	5887.4	51806.4	7668.9
Length Wtd. (ft)	100.00	Wetted Per. (ft)	70.97	57.91	54.19
Min Ch El (ft)	1920.92	Shear (lb/sq ft)	0.60	2.98	0.83
Alpha	1.21	Stream Power (lb/ft s)	3.09	33.27	5.26
Frctn Loss (ft)		Cum Volume (acre-ft)	3.51	47.94	5.78
C & E Loss (ft)		Cum SA (acres)	2.84	9.70	3.72

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.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 8000

INPUT
Description: 8000
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1936.271	8.003	1935.919	10.303	1935.706	22.819	1935.348	32.457	1935.15
33.816	1935.121	35.672	1935.05	37.926	1934.857	53.443	1934.78	60.394	1934.681
65.106	1934.56	85.414	1934.03	104.201	1933.517	110.424	1933.416	128.305	1933.289

```
 135.451933.197 143.1661933.131 160.4631933.004 172.7951932.809 179.6421932.766
 182.0131932.482 193.0821931.772 200.0141931.239  205.35 1931.04 210.4981930.941
 230.465 1930.55 236.5791930.467 257.2511928.058 257.996 1927.97 258.6891927.886
 258.7011927.888 271.0631927.907 281.3521928.135 285.5831928.248 299.1831927.651
 310.5761926.955 319.4991926.665  319.651926.659 320.0371926.556 320.7391926.409
 334.8821923.083 337.886 1922.73 347.2011921.022 353.0181920.591 358.1561920.121
 358.935 1920.05 367.5151925.568 369.4211926.765 376.8141927.267 385.6331928.094
 393.3091928.122 410.651  1928.7 416.9781928.906 428.2631929.295  433.821929.675
 435.662 1929.96 444.8351931.204 454.9351932.777 458.2931932.715 460.7481932.733
 462.4781933.119 482.2271933.824 485.7111933.962 487.3681934.028 487.693 1934.07
 509.4111934.187 510.7131934.201  533.441934.354 535.7461934.362 537.8571934.413
 560.7671934.526 561.7751934.544 569.2421934.961 585.6221934.885 585.7821934.884
 586.029 1934.89 592.461 1934.88 610.5511935.068 610.5991935.136 626.1251937.862
 635.3341939.415 635.6681939.479 635.772 1939.47 636.5991939.648  637.311939.764
  638.851940.195

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
       0     .03  319.65     .04 369.421     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        319.65 369.421              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1931.63  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    2.13  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1929.50  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 1930.04  * Flow Area (sq ft)      *  122.18  *  329.90  *   73.15  *
* E.G. Slope (ft/ft)      *0.010284  * Area (sq ft)           *  122.18  *  329.90  *   73.15  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *  850.36  * 4239.01  *  410.63  *
* Top Width (ft)          *  186.36  * Top Width (ft)         *   74.76  *   49.77  *   61.82  *
* Vel Total (ft/s)        *   10.47  * Avg. Vel. (ft/s)       *    6.96  *   12.85  *    5.61  *
* Max Chl Dpth (ft)       *    9.45  * Hydr. Depth (ft)       *    1.63  *    6.63  *    1.18  *
* Conv. Total (cfs)       * 54236.1  * Conv. (cfs)            *  8385.5  * 41801.3  *  4049.2  *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)       *   74.90  *   52.37  *   61.91  *
* Min Ch El (ft)          * 1920.05  * Shear (lb/sq ft)       *    1.05  *    4.04  *    0.76  *
* Alpha                   *    1.25  * Stream Power (lb/ft s) *    7.29  *   51.97  *    4.26  *
* Frctn Loss (ft)         *    0.85  * Cum Volume (acre-ft)   *    3.26  *   47.11  *    5.58  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)         *    2.68  *    9.58  *    3.58  *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 7900.*

INPUT
Description:
Station Elevation Data    num=     164
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1935.96    6.88 1935.52    6.98 1935.52    8.32 1935.47    8.99 1935.42
   13.66 1935.28    19.9 1935.11   21.52 1935.07   21.91 1935.06   28.31 1934.81
   29.48 1934.76   29.49 1934.76   31.11  1934.7   33.08 1934.56   34.56 1934.52
    36.2 1934.46   46.61    1934   47.77 1933.94   52.68 1933.78   56.79 1933.62
   57.43 1933.59   64.63 1933.36    67.4 1933.32    74.5  1933.1   90.88 1932.59
   95.23 1932.48   96.31 1932.46   96.79 1932.45  111.91 1932.24  116.81 1932.15
  118.14 1932.13  124.87 1932.04  126.15 1932.02  126.45 1932.01  127.17    1932
   133.8 1931.94  139.96 1931.78  147.28 1931.56  150.71 1931.48  152.71 1931.44
  155.52 1931.38  156.68 1931.35  158.75 1931.18  168.41 1930.66  174.45 1930.29
  179.11 1930.11   180.3 1930.07   183.6 1929.97  184.88 1929.93  187.23 1929.88
  189.27  1929.8  201.01 1929.46  201.63 1929.44  203.32 1929.49  206.34 1929.58
  214.25 1929.35  218.59 1929.43  223.37 1929.41  224.37  1929.4  225.02 1929.39
  225.63 1929.38  225.64 1929.38  231.97 1929.73  236.42 1929.65   245.4 1929.61
   246.1  1929.6  249.09 1929.64     251 1929.59  255.63 1929.35  260.95 1929.02
  270.88 1928.31  274.27 1928.13  275.88 1928.07  276.27 1928.02  278.67 1927.46
   278.8 1927.43  279.14  1927.3  279.75  1927.1   292.1 1922.83  294.72  1922.1
  298.19 1921.01  300.58 1920.25  301.23 1920.18  302.86    1920  307.94 1919.76
  312.43 1919.51  313.11 1919.47  317.18 1921.64   323.6 1925.17  325.93 1926.43
  331.71 1926.84  332.93 1926.93  336.76 1927.26  341.27 1927.65  345.09  1927.8
  348.53 1927.91  349.78 1927.97  352.88 1928.06  358.37 1928.16  364.93 1928.28
  370.91 1928.38   380.9 1928.55  381.59 1928.56  383.92 1928.64  384.12 1928.65
  386.84 1928.79  388.59 1928.95  389.92 1929.07   391.7 1929.21  394.12 1929.18
  397.26 1929.15  398.37 1929.15  405.71 1929.95  406.81 1930.08  409.99 1930.15
  410.66 1930.17  412.31 1930.24  413.05 1930.36  413.95 1930.47  421.43 1930.64
  427.36 1930.87  432.63 1931.01  433.01 1931.02  435.92  1931.1  437.49 1931.15
  437.51 1931.15   437.8 1931.18  458.34 1931.65  459.52 1931.68  459.57 1931.68
  481.06 1932.24  483.25 1932.29   485.1 1932.36  485.24 1932.36  486.19 1932.39
  489.14 1932.47  491.11 1932.51  506.91 1932.79  507.86 1932.82  510.11 1932.92
  513.01 1933.06  513.73 1933.09  514.93 1933.15  521.69 1933.25  530.42 1933.39
  530.57 1933.39   530.8  1933.4   532.9 1933.44  536.89 1933.54  540.88 1933.67
  546.93 1933.93     554 1934.47  554.04  1934.5  557.21 1935.02  566.57 1936.65
  568.73 1937.07     570 1937.31  577.44 1938.06  577.75  1938.1  577.85 1938.09
  578.63 1938.19   579.3 1938.26  580.29 1938.41  580.76 1938.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
       0     .03   278.8     .04  325.93     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         278.8  325.93              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1931.88  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.43  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1930.44  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 1930.44  * Flow Area (sq ft)      *  109.29  *  375.29  *  177.27  *
* E.G. Slope (ft/ft)      *0.005694  * Area (sq ft)           *  109.29  *  375.29  *  177.27  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *  414.29  * 4028.51  * 1057.20  *
* Top Width (ft)          *  241.78  * Top Width (ft)         *  106.85  *   47.13  *   87.80  *
* Vel Total (ft/s)        *    8.31  * Avg. Vel. (ft/s)       *    3.79  *   10.73  *    5.96  *
```

* Max Chl Dpth (ft)	* 10.97	* Hydr. Depth (ft)	* 1.02	* 7.96	* 2.02	*		
* Conv. Total (cfs)	* 72885.2	* Conv. (cfs)	* 5490.1	* 53385.3	* 14009.9	*		
* Length Wtd. (ft)	*	* Wetted Per. (ft)	* 107.01	* 50.08	* 87.95	*		
* Min Ch El (ft)	* 1919.47	* Shear (lb/sq ft)	* 0.36	* 2.66	* 0.72	*		
* Alpha	* 1.34	* Stream Power (lb/ft s)	* 1.38	* 28.60	* 4.27	*		
* Frctn Loss (ft)	* 0.75	* Cum Volume (acre-ft)	* 2.99	* 46.30	* 5.29	*		
* C & E Loss (ft)	* 0.21	* Cum SA (acres)	* 2.47	* 9.47	* 3.41	*		

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.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 7800

INPUT
Description: 7800
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
01935.645	5.869	1935.12	7.11935.155	11.6611934.999	18.371934.832				
18.697 1934.82	25.1591934.408	29.4921934.198	30.8971934.073	40.7721933.118					
49.0151932.649	55.1591932.392	57.5251932.401	81.2761931.532	82.6061931.478					
99.6931931.087	107.6651930.921	107.921930.912	108.5371930.887	114.1961930.817					
125.7031930.251	130.331930.085	132.7331929.981	153.8821929.132	157.7941928.957					
159.7951928.894	161.5331928.778	172.0871928.339	173.531928.466	182.8561929.286					
186.5581930.022	190.641930.636	197.9761931.558	210.036 1931.05	214.221931.029					
218.1741930.777	234.079 1929.43	235.454 1929.37	235.7891929.287	237.9471928.194					
254.5241920.011	256.571 1919	257.1211918.993	267.2781918.883	272.0971921.083					
282.4491926.098	287.8891926.502	292.654 1926.87	300.5111927.487	304.9321927.767					
307.8541927.841	313.0231927.857	334.2621927.839	337.1141927.813	337.2991927.821					
342.7691927.987	344.445 1928.02	346.731927.601	350.7331926.911	357.6511927.314					
362.3151927.625	364.5741927.809	372.4681927.884	378.0591928.118	383.3851928.205					
387.633 1928.27	408.3821929.155	432.4941930.306	433.52 1930.36	436.305 1930.5					
438.161930.573	456.0711931.156	458.8081931.262	459.4811931.288	466.9891931.571					
477.5521931.984	485.0781932.415	490.783 1932.87	500.471934.315	509.291 1935.84					
512.5271936.536	522.227 1936.77	522.673 1936.78							

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	237.947	.04	282.449	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
237.947	282.449	100	100	.1	.3

Left Levee Station= 197.98 Elevation= 1931.56

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1931.39	* Element	* Left OB	* Channel	* Right OB	*		
* Vel Head (ft)	* 1.51	* Wt. n-Val.	* 0.030	* 0.040	* 0.030	*		
* W.S. Elev (ft)	* 1929.88	* Reach Len. (ft)	* 100.00	* 100.00	* 100.00	*		
* Crit W.S. (ft)	* 1929.88	* Flow Area (sq ft)	* 4.53	* 347.07	* 269.15	*		
* E.G. Slope (ft/ft)	*0.006421	* Area (sq ft)	* 4.53	* 347.07	* 269.15	*		
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 10.96	* 3848.43	* 1640.61	*		
* Top Width (ft)	* 194.90	* Top Width (ft)	* 9.22	* 44.50	* 141.18	*		
* Vel Total (ft/s)	* 8.86	* Avg. Vel. (ft/s)	* 2.42	* 11.09	* 6.10	*		
* Max Chl Dpth (ft)	* 11.00	* Hydr. Depth (ft)	* 0.49	* 7.80	* 1.91	*		
* Conv. Total (cfs)	* 68635.7	* Conv. (cfs)	* 136.7	* 48025.4	* 20473.6	*		
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	* 9.51	* 48.28	* 141.42	*		
* Min Ch El (ft)	* 1918.88	* Shear (lb/sq ft)	* 0.19	* 2.88	* 0.76	*		
* Alpha	* 1.24	* Stream Power (lb/ft s)	* 0.46	* 31.96	* 4.65	*		
* Frctn Loss (ft)	*	* Cum Volume (acre-ft)	* 2.86	* 45.47	* 4.78	*		
* C & E Loss (ft)	*	* Cum SA (acres)	* 2.33	* 9.37	* 3.15	*		

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 7700.*

INPUT
Description:
Station Elevation Data num= 126

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1932.42	4.3	1932.11	5.2	1932.12	8.54	1932	10.77	1931.94
13.46	1931.88	13.7	1931.87	18.43	1931.64	21.61	1931.51	22.64	1931.44
23.44	1931.38	29.87	1930.91	35.91	1930.62	40.41	1930.46	42.15	1930.45
50.15	1930.19	59.55	1929.8	60.52	1929.76	63.6	1929.66	73.04	1929.39
78.88	1929.24	79.07	1929.23	79.52	1929.21	83.67	1929.12	89.5	1928.85
92.1	1928.72	95.49	1928.57	97.25	1928.48	103.76	1928.18	112.74	1927.79
115.61	1927.66	117.08	1927.6	118.35	1927.52	126.08	1927.18	127.14	1927.23
128.88	1927.31	133.97	1927.55	136.68	1927.88	139.68	1928.15	145.05	1928.55
153.89	1928.18	156.95	1928.13	157.35	1928.11	159.85	1927.97	171.5	1927.14
171.57	1927.13	172.51	1927.09	172.75	1927.04	174.34	1926.47	187.5	1920.76
191.53	1918.99	192.64	1918.5	193.65	1918.25	194.22	1918.23	195.8	1918.2
204.76	1918.01	208.82	1920.15	208.89	1920.19	213.62	1922.74	215.56	1924.02
217.76	1925.3	222.2	1925.78	223.11	1925.87	223.65	1925.92	225.4	1926.01
227.79	1926.13	235.52	1926.53	239.87	1926.71	242.75	1926.78	247.15	1926.83
247.83	1926.84	259.24	1926.9	261.5	1926.89	268.72	1926.71	271.53	1926.63
271.71	1926.63	276.4	1926.6	277.09	1926.59	278.74	1926.57	280.99	1926.31
281.56	1926.25	282.01	1926.2	282.21	1926.19	283.12	1926.1	284.92	1925.93
287.96	1926.01	290.66	1926.16	291.73	1926.22	296.32	1926.49	297.9	1926.59
298.54	1926.62	306.3	1926.66	310.57	1926.75	311.8	1926.78	317.04	1926.83

```
  321.22 1926.87  323.34 1926.92  335.62 1927.25  341.63 1927.43  348.78 1927.65
  360.45 1927.86  365.35 1927.95  366.36 1927.97   369.1 1928.02  370.92 1928.04
  374.09 1928.08  388.54 1928.69  391.23 1928.81  391.89 1928.84  396.48 1929.05
  399.28 1929.13  401.68  1929.2  406.61 1929.91  409.67  1930.3  417.07 1931.32
  422.68 1932.16  425.39 1932.66  432.21  1933.9  439.22 1935.26  439.45  1935.3
   439.6 1935.32  440.89  1935.5  444.07    1936  448.12 1936.25  453.61 1936.31
  454.05 1936.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .03  174.34     .04  217.76     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        174.34  217.76              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1930.48  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.35  * Wt. n-Val.            *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1928.13  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1928.90  * Flow Area (sq ft)     *   27.75  *  309.64  *  196.14  *
* E.G. Slope (ft/ft)     *0.010951  * Area (sq ft)          *   27.75  *  309.64  *  196.14  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *   94.97  * 4228.61  * 1176.42  *
* Top Width (ft)         *  252.66  * Top Width (ft)        *   51.79  *   43.42  *  157.45  *
* Vel Total (ft/s)       *   10.31  * Avg. Vel. (ft/s)      *    3.42  *   13.66  *    6.00  *
* Max Chl Dpth (ft)      *   10.12  * Hydr. Depth (ft)      *    0.54  *    7.13  *    1.25  *
* Conv. Total (cfs)      * 52557.5  * Conv. (cfs)           *   907.5  * 40408.2  * 11241.8  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *   51.99  *   47.03  *  157.58  *
* Min Ch El (ft)         * 1918.01  * Shear (lb/sq ft)      *    0.36  *    4.50  *    0.85  *
* Alpha                  *    1.42  * Stream Power (lb/ft s) *    1.25  *   61.48  *    5.10  *
* Frctn Loss (ft)        *    0.82  * Cum Volume (acre-ft)  *    2.83  *   44.72  *    4.24  *
* C & E Loss (ft)        *    0.08  * Cum SA (acres)        *    2.26  *    9.27  *    2.80  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 7600

INPUT
Description: 7600
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       01929.193   6.8381928.963  14.885  1928.8   31.851928.374  40.3951927.939
  56.8421927.284  65.8991926.732  81.8551925.937  99.9391925.227 108.9671924.843
 110.7251924.744 124.3591919.593  129.691917.526 132.9551917.427 142.2421917.137
 145.619 1919.26 149.6191921.725 151.2371923.188 153.0641924.508 157.4341925.128
 158.8611925.301 160.5781925.348 181.9691925.815 193.8591925.947  196.081925.929
 210.7281925.227 215.8031924.989 216.2481924.979 216.4471924.984 217.3391924.969
 222.1031924.931 224.7531925.071  231.881925.428 244.3351925.444 256.8881925.479
 268.9681925.607 281.9091925.802 293.3811925.651 306.7981925.473 328.8141926.627
 333.9291926.725 338.7761927.957 357.2471932.032  370.851934.972 371.0681935.017
 371.2241935.029 379.6031935.866 385.4321935.859

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .03 110.725     .04 153.064     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       110.725 153.064              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1929.25  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.61  * Wt. n-Val.            *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1926.64  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1927.45  * Flow Area (sq ft)     *   41.78  *  285.78  *  186.54  *
* E.G. Slope (ft/ft)     *0.013403  * Area (sq ft)          *   41.78  *  285.78  *  186.54  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *  234.99  * 4155.18  * 1109.83  *
* Top Width (ft)         *  261.66  * Top Width (ft)        *   42.95  *   42.34  *  176.37  *
* Vel Total (ft/s)       *   10.70  * Avg. Vel. (ft/s)      *    5.63  *   14.54  *    5.95  *
* Max Chl Dpth (ft)      *    9.50  * Hydr. Depth (ft)      *    0.97  *    6.75  *    1.06  *
* Conv. Total (cfs)      * 47508.2  * Conv. (cfs)           *  2029.8  * 35891.8  *  9586.6  *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *   43.00  *   45.97  *  176.50  *
* Min Ch El (ft)         * 1917.14  * Shear (lb/sq ft)      *    0.81  *    5.20  *    0.88  *
* Alpha                  *    1.47  * Stream Power (lb/ft s) *    4.57  *   75.63  *    5.26  *
* Frctn Loss (ft)        *    1.21  * Cum Volume (acre-ft)  *    2.75  *   44.04  *    3.80  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    2.15  *    9.17  *    2.42  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 7500.*

INPUT
Description:
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1928.85     4.1 1928.75     8.3 1928.62   18.08 1928.39   20.22 1928.34
   26.79 1928.19   38.68 1927.98   41.52  1927.9   49.06 1927.55   54.59 1927.33
    62.8 1926.96   69.03 1926.63   74.75 1926.27   80.03 1926.14   84.08 1926.05
   94.58 1925.56    99.4 1925.39  105.77  1925.2  114.95 1925.17  121.37 1924.99
```

```
  126.66 1924.83  132.33 1924.64  133.46  1924.6  134.46 1924.55  144.41 1919.32
  146.28 1918.33  146.38 1918.32  147.05 1918.21  147.79 1918.09  149.98 1917.75
   152.2 1917.39   152.9 1917.34  153.01 1917.31  153.94  1917.3  155.09 1917.28
   156.2 1917.23  156.43 1917.21  160.03 1917.03  165.28 1916.78  167.65 1918.11
  169.12    1919  173.67 1921.71   175.5 1923.04  177.58 1924.37  181.58 1924.72
  181.63 1924.72  182.88 1924.82  184.45 1924.85  189.57 1924.96  191.46 1925.23
  191.74 1925.31  200.95 1924.88  202.82 1924.84     204 1924.82  204.15 1924.81
  214.86 1924.48  216.89  1924.4  218.75 1924.28  223.31    1924  224.03 1923.98
  229.94 1923.75  230.28 1923.74   231.1 1923.73  234.92 1923.63  235.33 1923.63
  235.51 1923.63  236.32 1923.62  240.68 1923.61   243.1 1923.68  249.61 1923.86
  252.28 1923.87  257.21 1923.87  260.41 1923.95  260.99 1923.96  272.47 1924.24
  283.51 1924.55  284.86 1924.59  295.33 1924.74  305.82 1924.72  312.39 1924.71
  312.52 1924.71  314.46 1924.73  318.08 1924.77   338.2 1925.73  338.68 1925.74
  340.11 1925.79  341.81 1925.89  342.87 1925.95   347.3 1926.78  364.19 1929.61
  366.13 1929.94  366.79 1930.03  367.18 1930.09  367.58 1930.12  370.96 1930.85
  376.62 1931.91  376.82 1931.95  376.96 1931.96  384.62 1932.91   388.1 1933.15
  389.94 1933.21

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
*********************************************
       0     .03  134.46     .04  177.58     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        134.46  177.58              100     100     100             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1927.86  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.73  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1926.14  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 1926.56  * Flow Area (sq ft)      *   45.38  *  292.74  *  264.43  *
* E.G. Slope (ft/ft)      *0.009413  * Area (sq ft)           *   45.38  *  292.74  *  264.43  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *  193.59  * 3576.18  * 1730.23  *
* Top Width (ft)          *  263.64  * Top Width (ft)         *   54.24  *   43.12  *  166.28  *
* Vel Total (ft/s)        *    9.13  * Avg. Vel. (ft/s)       *    4.27  *   12.22  *    6.54  *
* Max Chl Dpth (ft)       *    9.36  * Hydr. Depth (ft)       *    0.84  *    6.79  *    1.59  *
* Conv. Total (cfs)       * 56688.4  * Conv. (cfs)            *  1995.3  * 36859.6  * 17833.4  *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)       *   54.27  *   46.91  *  166.43  *
* Min Ch El (ft)          * 1916.78  * Shear (lb/sq ft)       *    0.49  *    3.67  *    0.93  *
* Alpha                   *    1.33  * Stream Power (lb/ft s) *    2.10  *   44.80  *    6.11  *
* Frctn Loss (ft)         *    1.11  * Cum Volume (acre-ft)   *    2.65  *   43.37  *    3.29  *
* C & E Loss (ft)         *    0.27  * Cum SA (acres)         *    2.04  *    9.07  *    2.03  *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 7400

INPUT
Description: 7400
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       01928.499   4.8291928.416  23.7941927.916  31.5251927.758  48.8481927.536
   64.231926.897   73.89 1926.44  87.9481925.541  98.921 1925.54 111.2741924.977
 124.4471924.663 135.2411924.905 149.0171924.624 157.0171924.411 158.202 1924.36
 167.926 1917.74 169.7531916.485  169.851916.496 170.4971916.529 173.3681916.773
 175.5361916.944 176.2141917.104 177.2311917.103 178.3581917.104 179.6661917.007
 183.1871916.763 188.3151916.429  190.971917.781   202.11924.231 205.7691924.312
 212.9571924.446 214.668 1924.95 214.9221925.093 223.2651924.013 224.9591923.897
 226.1691923.811 239.3881922.731 243.5231922.408 244.1691922.399 249.5271922.259
 250.5721922.272 269.7631922.306 274.228  1922.3 277.1251922.459 299.273 1923.56
 324.2071923.856 324.3221923.859 326.0791923.931 348.0181924.852 349.3161924.917
  350.861925.073 372.887 1927.38 373.4851927.406 373.8321927.445 374.1991927.401
 377.2581928.066 392.7841930.429 394.4551930.557

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
*********************************************
       0     .03 158.202     .04   202.1     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       158.202   202.1              77.52     100     117             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)          * 1926.91  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.40  * Wt. n-Val.             *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1925.51  * Reach Len. (ft)        *   77.52  *  100.00  *  117.00  *
* Crit W.S. (ft)          * 1925.68  * Flow Area (sq ft)      *   39.56  *  292.94  *  306.55  *
* E.G. Slope (ft/ft)      *0.007938  * Area (sq ft)           *   39.56  *  292.94  *  306.55  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *  134.31  * 3218.12  * 2147.57  *
* Top Width (ft)          *  255.44  * Top Width (ft)         *   58.61  *   43.90  *  152.93  *
* Vel Total (ft/s)        *    8.61  * Avg. Vel. (ft/s)       *    3.39  *   10.99  *    7.01  *
* Max Chl Dpth (ft)       *    9.08  * Hydr. Depth (ft)       *    0.67  *    6.67  *    2.00  *
* Conv. Total (cfs)       * 61730.5  * Conv. (cfs)            *  1507.4  * 36119.3  * 24103.8  *
* Length Wtd. (ft)        *  103.46  * Wetted Per. (ft)       *   58.64  *   48.45  *  153.26  *
* Min Ch El (ft)          * 1916.43  * Shear (lb/sq ft)       *    0.33  *    3.00  *    0.99  *
* Alpha                   *    1.22  * Stream Power (lb/ft s) *    1.14  *   32.92  *    6.94  *
* Frctn Loss (ft)         *    0.86  * Cum Volume (acre-ft)   *    2.55  *   42.70  *    2.63  *
* C & E Loss (ft)         *    0.10  * Cum SA (acres)         *    1.91  *    8.97  *    1.66  *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 7300.*
```

```
INPUT
Description:
Station Elevation Data    num=     111
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
**********************************************************************************
       0 1928.84      .03 1928.84      .89 1928.82     5.01  1928.8    10.84 1928.74
   13.59 1928.69    18.79 1928.53    22.56 1928.44    24.69 1928.46    27.71 1928.49
   28.66 1928.39     30.5 1928.32    32.71 1928.11    45.73 1926.94    46.85 1926.91
   49.92 1926.77    50.69 1926.74    65.68 1925.87    66.65 1925.79    71.41 1925.38
   76.68 1925.09    78.23 1924.99    88.75 1924.42    91.26  1924.3    93.06 1924.27
   98.92 1924.56   102.65 1924.73   104.05 1924.76    110.3 1925.06   110.98 1925.03
  114.49  1924.8   115.47 1924.75   118.19 1924.66   120.75 1924.63   122.16 1924.59
  123.59 1924.57   129.14 1924.55    139.7 1924.73   140.34 1924.72   148.46 1924.48
  154.64 1924.35   159.28 1924.24   162.94    1924   164.17  1923.9   171.74 1919.95
  174.12 1918.72   177.47 1917.82    179.1 1917.38   179.97 1917.14    180.1 1917.14
  180.99 1917.14   184.92 1917.18   185.61 1917.18   187.88 1917.21   188.81 1917.28
   190.2 1917.26   191.74 1917.24   191.96 1917.23   193.53 1917.13   194.17 1917.08
  198.35 1916.86   204.71 1916.52   205.37 1916.49   206.29 1916.86   207.07 1917.18
  208.32 1917.73   220.68 1923.61   223.58 1923.76   229.27 1924.03   230.62 1924.34
  230.82 1924.42   237.43 1924.12   238.77 1924.11   239.73  1924.1   242.45 1924.06
  250.19 1923.75   252.29 1923.67   253.46 1923.59   253.97 1923.58   258.21 1923.42
  259.04 1923.41   259.45  1923.4   260.61 1923.38   260.99 1923.35    261.6 1923.35
   268.7 1923.47   274.23 1923.54   277.76 1923.58   280.06 1923.69    283.3 1923.82
  285.33 1923.94   297.58 1924.66   305.98 1924.95   317.32 1925.31   317.41 1925.32
   318.8 1925.39   321.46 1925.52   336.16 1926.33   337.19 1926.39   338.41  1926.5
  354.71 1928.05   355.85 1928.15   356.32 1928.17   356.59 1928.19   356.89 1928.18
  357.59 1928.29   358.93 1928.51   359.31 1928.57   362.63 1928.94   371.59 1929.95
  372.92 1930.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .03  164.17     .04  220.68     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        164.17  220.68            77.52     100     117             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
**********************************************************************************************
* E.G. Elev (ft)          * 1927.14  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.29  * Wt. n-Val.            *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1925.85  * Reach Len. (ft)       *   77.52  *  100.00  *  117.00  *
* Crit W.S. (ft)          * 1925.85  * Flow Area (sq ft)     *  114.80  *  405.80  *  173.66  *
* E.G. Slope (ft/ft)      *0.005779  * Area (sq ft)          *  114.80  *  405.80  *  173.66  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)           *  479.26  * 4117.12  *  903.62  *
* Top Width (ft)          *  261.49  * Top Width (ft)       *   98.23  *   56.51  *  106.75  *
* Vel Total (ft/s)        *    7.92  * Avg. Vel. (ft/s)     *    4.17  *   10.15  *    5.20  *
* Max Chl Dpth (ft)       *    9.36  * Hydr. Depth (ft)     *    1.17  *    7.18  *    1.63  *
* Conv. Total (cfs)       * 72351.6  * Conv. (cfs)          *  6304.6  * 54160.0  * 11887.0  *
* Length Wtd. (ft)        *          * Wetted Per. (ft)     *   98.33  *   59.59  *  106.89  *
* Min Ch El (ft)          * 1916.49  * Shear (lb/sq ft)     *    0.42  *    2.46  *    0.59  *
* Alpha                   *    1.32  * Stream Power (lb/ft s) *    1.76  *   24.93  *    3.05  *
* Frctn Loss (ft)         *    0.70  * Cum Volume (acre-ft)  *    2.41  *   41.90  *    1.99  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)        *    1.77  *    8.85  *    1.31  *
**********************************************************************************************

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.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 7200

INPUT
Description: 7200
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
       01929.176    .0281929.178    .9211929.159  11.2291929.203  14.0881929.178
  19.4741928.997  23.3761928.912  28.722 1929.12  29.7031928.938  31.604 1928.83
  47.397 1926.29  48.5541926.229  51.7361926.003  68.0721924.799   74.011924.083
  81.0681923.637  91.9711923.146  96.4431922.998 102.5111923.578 107.8321924.048
 114.3071924.907 115.0081924.887  118.651924.575 122.4831924.406 125.1361924.397
 126.5951924.363 128.0781924.357 144.7771924.561 153.8571924.224 165.0681923.971
 170.1341923.448 179.7481919.317 182.7671918.042 189.0791917.829 197.3491917.551
 205.4031917.365 208.2061917.195 221.5881916.581 222.4181916.548 223.4291916.876
 224.2871917.148 239.2531922.987 255.292  1924.6 262.5371924.824 267.8121924.532
 268.6641924.481 268.9431924.428  269.391924.419 274.622 1924.65 285.3731924.986
 286.8721925.082 302.0821926.222 313.4821926.972 337.9671928.861 340.0921928.989
 341.0811929.064 343.7991929.174 351.3791929.518

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .03 170.134     .04 239.253     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       170.134 239.253              69     100  115.52             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
**********************************************************************************************
* E.G. Elev (ft)          * 1926.76  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.45  * Wt. n-Val.            *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)          * 1925.32  * Reach Len. (ft)       *   69.00  *  100.00  *  115.52  *
* Crit W.S. (ft)          * 1925.32  * Flow Area (sq ft)     *  129.33  *  467.74  *   43.72  *
* E.G. Slope (ft/ft)      *0.006186  * Area (sq ft)          *  129.33  *  467.74  *   43.72  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)           *  563.58  * 4782.43  *  153.99  *
* Top Width (ft)          *  228.94  * Top Width (ft)       *  109.08  *   69.12  *   50.74  *
* Vel Total (ft/s)        *    8.58  * Avg. Vel. (ft/s)     *    4.36  *   10.22  *    3.52  *
* Max Chl Dpth (ft)       *    8.77  * Hydr. Depth (ft)     *    1.19  *    6.77  *    0.86  *
* Conv. Total (cfs)       * 69928.7  * Conv. (cfs)          *  7165.5  * 60805.4  *  1957.9  *
* Length Wtd. (ft)        *   97.07  * Wetted Per. (ft)     *  109.33  *   71.45  *   50.86  *
* Min Ch El (ft)          * 1916.55  * Shear (lb/sq ft)     *    0.46  *    2.53  *    0.33  *
```

* Alpha	* 1.27	* Stream Power (lb/ft s)	* 1.99	* 25.85	* 1.17	*		
* Frctn Loss (ft)	*	* Cum Volume (acre-ft)	* 2.19	* 40.89	* 1.69	*		
* C & E Loss (ft)	*	* Cum SA (acres)	* 1.59	* 8.71	* 1.10	*		

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.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 7100.*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1930.64	.03	1930.64	.85	1930.6	10.36	1930.31	10.74	1930.3
11.59	1930.12	13	1929.84	15.29	1929.37	17.96	1929.19	21.56	1928.97
24.61	1928.88	26.49	1928.76	27.4	1928.6	29.15	1928.39	43.72	1925.89
44.79	1925.77	46.45	1925.56	47.72	1925.49	49.4	1925.39	50.42	1925.31
51.64	1925.23	57.61	1924.89	59.55	1924.79	62.79	1924.66	66.5	1924.41
68.27	1924.26	74.78	1923.92	82.31	1923.61	84.84	1923.39	86.22	1923.29
88.96	1923.05	94.56	1922.95	96.68	1922.9	99.47	1922.79	100.02	1922.78
105.44	1922.76	106.09	1922.71	107.46	1922.54	109.45	1922.42	112.98	1922.29
114.37	1922.27	115.43	1922.25	116.77	1922.22	118.14	1922.2	123.67	1922.18
133.55	1922.29	139.83	1922.19	141.92	1922.17	150.71	1922.15	152.26	1922.15
156.93	1921.96	164.45	1919.38	165.34	1919.06	167.98	1918.15	173.5	1917.47
174.87	1917.3	180.73	1916.92	181.83	1916.86	187.77	1916.56	190.22	1916.38
190.37	1916.38	197.64	1916.12	201.92	1916.01	202.65	1915.99	203.83	1916.16
204.84	1916.29	209.84	1917.13	213.96	1918.77	214.6	1919.03	217.69	1919.32
217.71	1919.32	222.08	1921.02	222.29	1921.11	222.42	1921.17	229.72	1923.52
231.19	1923.66	238.67	1924.21	246.02	1924.49	251.37	1924.47	252.23	1924.47
252.51	1924.45	252.97	1924.45	256.3	1924.61	258.27	1924.74	259.7	1924.82
263.9	1925.11	269.17	1925.46	270.69	1925.58	286.11	1926.93	287.92	1927.08
297.66	1927.94	300.2	1928.18	303.36	1928.48	304.48	1928.6	305.09	1928.72
306.66	1928.89	307.73	1929.02	308.73	1929.11	310.62	1929.39	311.53	1929.51
313.24	1929.66	314.59	1929.83	315.85	1929.9	317.39	1929.85	318.58	1929.89
320.34	1929.91	322.48	1929.78	323.17	1929.74	324.64	1929.75	325.64	1929.77
325.69	1929.77	328.4	1929.74	329.64	1929.73	332.99	1929.84	336.08	1929.93

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	156.93	.04	222.42	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
156.93 222.42 69 100 115.52 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1925.94	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 2.14	* Wt. n-Val.	* 0.030	* 0.040	* 0.030 *
* W.S. Elev (ft)	* 1923.80	* Reach Len. (ft)	* 69.00	* 100.00	* 115.52 *
* Crit W.S. (ft)	* 1924.15	* Flow Area (sq ft)	* 99.28	* 395.36	* 11.04 *
* E.G. Slope (ft/ft)	*0.010296	* Area (sq ft)	* 99.28	* 395.36	* 11.04 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 579.82	* 4864.63	* 55.55 *
* Top Width (ft)	* 155.33	* Top Width (ft)	* 79.19	* 65.49	* 10.65 *
* Vel Total (ft/s)	* 10.88	* Avg. Vel. (ft/s)	* 5.84	* 12.30	* 5.03 *
* Max Chl Dpth (ft)	* 7.81	* Hydr. Depth (ft)	* 1.25	* 6.04	* 1.04 *
* Conv. Total (cfs)	* 54204.7	* Conv. (cfs)	* 5714.3	* 47942.9	* 547.5 *
* Length Wtd. (ft)	* 95.77	* Wetted Per. (ft)	* 79.25	* 67.04	* 11.03 *
* Min Ch El (ft)	* 1915.99	* Shear (lb/sq ft)	* 0.81	* 3.79	* 0.64 *
* Alpha	* 1.16	* Stream Power (lb/ft s)	* 4.70	* 46.64	* 3.24 *
* Frctn Loss (ft)	* 0.76	* Cum Volume (acre-ft)	* 2.01	* 39.90	* 1.62 *
* C & E Loss (ft)	* 0.07	* Cum SA (acres)	* 1.44	* 8.55	* 1.02 *

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: Flamingo Wash
REACH: 1 RS: 7000

INPUT
Description: 7000
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1932.104	9.841	931.401	10.612	1931.044	14.002	1929.636	22.544	1928.726
42.545	1925.027	45.248	1924.907	46.181	1924.823	47.301	1924.769	52.766	1924.574
54.541	1924.522	60.909	1924.507	75.383	1923.943	78.973	1923.478	88.545	1922.018
91.607	1921.424	98.423	1920.323	104.753	1920.131	113.266	1919.927	128.069	1920.065
138.034	1920.294	143.736	1920.473	150.169	1918.996	159.094	1916.826	165.055	1916.195
172.365	1915.563	178.591	1915.443	182.877	1915.437	191.135	1915.443	195.869	1917.353
196.607	1917.676	200.149	1917.215	200.174	1917.225	205.192	1919.158	205.436	1919.266
205.578	1919.344	212.984	1923.321	214.474	1923.457	239.92	1924.647	243.37	1924.947
247.629	1925.405	271.973	1927.823	284.418	1929.191	287.622	1929.555	288.754	1929.705
289.37	1929.91	290.962	1930.125	292.053	1930.302	293.057	1930.4	294.977	1930.818
295.895	1931.002	297.636	1931.153	298.996	1931.404	300.275	1931.447	301.843	1931.226
303.051	1931.215	304.833	1931.115	307.699	1930.572	310.256	1930.479	314.254	1930.233
317.653	1930.297	320.783	1930.339						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	143.736	.04	205.578	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
143.736 205.578 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1924.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.49	Wt. n-Val.	0.030	0.040	0.030
W.S. Elev (ft)	1922.26	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1922.74	Flow Area (sq ft)	108.22	333.74	7.93
E.G. Slope (ft/ft)	*0.014123	Area (sq ft)	108.22	333.74	7.93
Q Total (cfs)	5500.00	Flow (cfs)	977.10	4467.72	55.17
Top Width (ft)	124.07	Top Width (ft)	56.79	61.84	5.43
Vel Total (ft/s)	12.23	Avg. Vel. (ft/s)	9.03	13.39	6.96
Max Chl Dpth (ft)	6.83	Hydr. Depth (ft)	1.91	5.40	1.46
Conv. Total (cfs)	46280.1	Conv. (cfs)	8221.9	37593.9	464.3
Length Wtd. (ft)		Wetted Per. (ft)	56.97	63.20	6.17
Min Ch El (ft)	1915.44	Shear (lb/sq ft)	1.68	4.66	1.13
Alpha	1.07	Stream Power (lb/ft s)	15.12	62.33	7.89
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	1.85	39.07	1.60
C & E Loss (ft)	0.04	Cum SA (acres)	1.33	8.41	1.00

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: Flamingo Wash
REACH: 1 RS: 6868.*

INPUT
Description:
Station Elevation Data num= 130

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1928.45	1.04	1928.51	11.75	1928.84	13.6	1928.84	14	1928.86
15.1	1928.75	15.87	1928.68	19.93	1928.27	21.44	1928.28	22.3	1928.28
25.3	1928.13	27.34	1927.94	30.14	1927.73	32.08	1927.6	34.16	1927.4
36.17	1927.26	36.54	1927.24	42.09	1926.78	42.49	1926.76	46.43	1926.48
49.52	1926.32	52.08	1926.19	52.68	1926.19	58.14	1926.06	60.54	1925.98
61.61	1926	64.39	1926.07	65.54	1926.08	65.72	1926.07	67.31	1925.99
72.86	1925.74	74.78	1925.66	75.09	1925.67	75.39	1925.68	75.94	1925.67
76.62	1925.61	77.61	1925.51	80.54	1925.22	86.68	1924.9	91.95	1924.56
104.9	1923.52	105.58	1923.48	105.6	1923.47	105.77	1923.45	107.27	1923.28
107.95	1923.18	109.73	1922.92	112.38	1922.51	112.96	1922.41	114.86	1922.09
115.58	1922.05	118.36	1922.02	119.65	1922	119.98	1921.98	126	1921.61
130.36	1921.28	131.36	1921.22	132.85	1921.11	134.43	1920.97	140.06	1920.46
146.48	1920.17	149.07	1920.11	157.94	1919.93	161.18	1919.89	163.16	1919.9
182.25	1919.69	184.27	1919.68	190.33	1919.53	194.55	1919.53	196.43	1919.53
204.54	1919.54	206.12	1918.88	209.55	1917.35	211.26	1916.57	214.78	1915.85
216.5	1915.49	221.15	1914.91	222.09	1914.81	224.65	1914.62	226.84	1914.49
231.69	1914.42	235.03	1914.4	238.54	1914.41	239.66	1914.6	242.89	1915.26
248.87	1915.77	249.13	1915.79	254.52	1916.87	254.75	1916.95	257.21	1917.33
258.48	1917.54	261.64	1917.53	264.52	1917.59	264.57	1917.6	273.13	1919.07
273.55	1919.15	273.79	1919.2	280.06	1921.52	281.32	1921.65	282.58	1921.75
292.35	1922.18	302.85	1922.74	304.68	1922.88	305.77	1923	309.38	1923.42
315.9	1924.15	329.98	1925.54	336.52	1926.23	340.51	1926.57	343.22	1926.81
344.18	1926.9	344.7	1927.02	346.05	1927.15	346.97	1927.26	347.43	1927.3
347.82	1927.34	349.44	1927.62	350.22	1927.75	351.69	1927.89	352.84	1928.06
353.93	1928.14	355.25	1928.08	356.27	1928.12	357.71	1928.14	357.78	1928.14
360.21	1927.95	362.37	1927.97	365.76	1927.95	368.63	1928.08	371.28	1928.18

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.03	204.54	.04	273.79	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.54	273.79	100	100	100	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1923.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.71	Wt. n-Val.	0.030	0.040	0.030
W.S. Elev (ft)	1921.92	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	1921.92	Flow Area (sq ft)	148.19	395.50	10.82
E.G. Slope (ft/ft)	*0.009110	Area (sq ft)	148.19	395.50	10.82
Q Total (cfs)	5500.00	Flow (cfs)	1025.58	4429.41	45.01
Top Width (ft)	165.51	Top Width (ft)	83.59	69.25	12.66
Vel Total (ft/s)	9.92	Avg. Vel. (ft/s)	6.92	11.20	4.16
Max Chl Dpth (ft)	7.52	Hydr. Depth (ft)	1.77	5.71	0.85
Conv. Total (cfs)	57623.3	Conv. (cfs)	10744.9	46406.8	471.6
Length Wtd. (ft)		Wetted Per. (ft)	83.66	70.45	13.09
Min Ch El (ft)	1914.40	Shear (lb/sq ft)	1.01	3.19	0.47
Alpha	1.12	Stream Power (lb/ft s)	6.97	35.76	1.96
Frctn Loss (ft)		Cum Volume (acre-ft)	1.55	38.23	1.58
C & E Loss (ft)		Cum SA (acres)	1.17	8.26	0.98

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.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 6736

INPUT
Description: 67+36
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1924.794	1.34	61924.969	15.24	61926.171	17.643	1926.264	20.587	1926.55

```
  27.8161927.031  28.9281927.102  32.8221927.026  35.4641926.789  39.106 1926.59
  44.3171926.342  46.9251926.321  47.4031926.328  54.5981926.138  55.1231926.138
  60.2341926.109   64.241926.177  67.561 1926.25  68.3421926.341  75.4191926.773
  79.9261927.012  85.0291927.325  94.5141926.848  97.0131926.729  97.7981926.798
  98.513 1926.79  99.3991926.683  104.481925.931 119.2861924.754 136.0831923.027
 136.9611922.978 136.9961922.959 137.2131922.907 140.0441922.479  142.351922.123
 146.5371921.412 149.0021920.975 149.9341920.958 153.5441921.199 155.2181921.303
 155.6451921.298 170.4091921.127 172.3411921.088 174.396 1920.97 190.0271920.154
 204.8871919.874 211.6581919.854 239.0451919.256 246.9151918.865 252.3911918.797
 265.345 1918.61 266.4791917.755  270.161914.676 272.6791914.343 277.9141913.526
 279.7461913.435 287.1841913.371 292.1461913.386 293.735 1913.76 298.3051915.076
 306.7591916.089 314.7481917.017 315.0681917.136 324.818 1917.63 342.0091919.063
 349.1981919.973 357.1971920.288 367.2851920.927 376.4651922.128 393.3391923.782
 402.2611924.237 410.6731925.164 421.7781926.029

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0     .03 265.345     .04 342.009     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       265.345 342.009               41   33.96      23             .1       .3
Left Levee      Station=   28.93      Elevation=  1927.1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1922.84  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.34  * Wt. n-Val.           *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1921.50  * Reach Len. (ft)       *   41.00  *   33.96  *   23.00  *
* Crit W.S. (ft)         * 1921.50  * Flow Area (sq ft)     *  180.52  *  426.00  *   35.49  *
* E.G. Slope (ft/ft)     *0.007724  * Area (sq ft)          *  180.52  *  426.00  *   35.49  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           * 1034.89  * 4291.47  *  173.64  *
* Top Width (ft)         *  225.66  * Top Width (ft)       *  119.33  *   76.66  *   29.66  *
* Vel Total (ft/s)       *    8.57  * Avg. Vel. (ft/s)     *    5.73  *   10.07  *    4.89  *
* Max Chl Dpth (ft)      *    8.13  * Hydr. Depth (ft)     *    1.51  *    5.56  *    1.20  *
* Conv. Total (cfs)      * 62581.5  * Conv. (cfs)          * 11775.4  * 48830.3  *  1975.8  *
* Length Wtd. (ft)       *   34.52  * Wetted Per. (ft)     *  119.44  *   78.59  *   29.78  *
* Min Ch El (ft)         * 1913.37  * Shear (lb/sq ft)     *    0.73  *    2.61  *    0.57  *
* Alpha                  *    1.17  * Stream Power (lb/ft s) *    4.18  *   26.33  *    2.81  *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)  *    1.18  *   37.29  *    1.52  *
* C & E Loss (ft)        *          * Cum SA (acres)        *    0.94  *    8.09  *    0.93  *
*************************************************************************************************

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.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 6702.04

INPUT
Description: 67+02.04
Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1925    11.5    1924    23.5    1923      33    1922    43.2    1921
     101    1920     167    1919     171    1918     173    1917     175    1916
     177    1915     179    1914     208    1914   209.2    1915   212.8    1916
     217    1917   223.5    1918   241.5    1919     255    1920   271.7    1921
     281    1922   292.3    1923   305.6    1924   318.4    1925

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0     .03     167     .04   223.5     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          167   223.5               .1      .1      .1             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1922.90  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.27  * Wt. n-Val.           *   0.030  *   0.040  *   0.030  *
* W.S. Elev (ft)         * 1921.62  * Reach Len. (ft)       *    0.10  *    0.10  *    0.10  *
* Crit W.S. (ft)         * 1921.62  * Flow Area (sq ft)     *  207.04  *  357.47  *  105.45  *
* E.G. Slope (ft/ft)     *0.006815  * Area (sq ft)          *  207.04  *  357.47  *  105.45  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           * 1153.35  * 3674.06  *  672.59  *
* Top Width (ft)         *  240.65  * Top Width (ft)       *  130.16  *   56.50  *   54.00  *
* Vel Total (ft/s)       *    8.21  * Avg. Vel. (ft/s)     *    5.57  *   10.28  *    6.38  *
* Max Chl Dpth (ft)      *    7.62  * Hydr. Depth (ft)     *    1.59  *    6.33  *    1.95  *
* Conv. Total (cfs)      * 66624.0  * Conv. (cfs)          * 13971.1  * 44505.6  *  8147.3  *
* Length Wtd. (ft)       *    0.10  * Wetted Per. (ft)     *  130.20  *   58.26  *   54.12  *
* Min Ch El (ft)         * 1914.00  * Shear (lb/sq ft)     *    0.68  *    2.61  *    0.83  *
* Alpha                  *    1.22  * Stream Power (lb/ft s) *    3.77  *   26.83  *    5.29  *
* Frctn Loss (ft)        *    0.25  * Cum Volume (acre-ft)  *    0.99  *   36.98  *    1.48  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.82  *    8.04  *    0.91  *
*************************************************************************************************

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.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 6701.94

INPUT
Description: 67+01.94 End Low Flow Channel End Armortec lining
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
```

0	1925	11.5	1924	23.5	1923	33	1922	43.2	1921
101	1920	167	1919	171	1918	173	1917	175	1916
177	1915	179	1914	184	1914	184	1913.7	194	1913.5
204	1913.7	204	1914	208	1914	209.2	1915	212.8	1916
217	1917	223.5	1918	241.5	1919	255	1920	271.7	1921
281	1922	292.3	1923	305.6	1924	318.4	1925		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	167	.03	184	.013	208	.03	223.5	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
167	223.5	124.94	124.94	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1923.31	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.50	* Wt. n-Val.	* 0.030	* 0.024	* 0.030 *
* W.S. Elev (ft)	* 1921.81	* Reach Len. (ft)	* 124.94	* 124.94	* 124.94 *
* Crit W.S. (ft)	* 1921.81	* Flow Area (sq ft)	* 232.05	* 376.24	* 115.91 *
* E.G. Slope (ft/ft)	*0.002624	* Area (sq ft)	* 232.05	* 376.24	* 115.91 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	* 856.82	* 4165.03	* 478.15 *
* Top Width (ft)	* 244.37	* Top Width (ft)	* 132.10	* 56.50	* 55.77 *
* Vel Total (ft/s)	* 7.59	* Avg. Vel. (ft/s)	* 3.69	* 11.07	* 4.13 *
* Max Chl Dpth (ft)	* 8.31	* Hydr. Depth (ft)	* 1.76	* 6.66	* 2.08 *
* Conv. Total (cfs)	*107377.5	* Conv. (cfs)	* 16727.8	* 81314.6	* 9335.0 *
* Length Wtd. (ft)	* 124.94	* Wetted Per. (ft)	* 132.16	* 58.86	* 55.91 *
* Min Ch El (ft)	* 1913.50	* Shear (lb/sq ft)	* 0.29	* 1.05	* 0.34 *
* Alpha	* 1.67	* Stream Power (lb/ft s)	* 1.06	* 11.59	* 1.40 *
* Frctn Loss (ft)	* 0.00	* Cum Volume (acre-ft)	* 0.99	* 36.98	* 1.48 *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.82	* 8.04	* 0.91 *

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.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 6577

INPUT
Description: 65+77 US Face of bridge at Tioga
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1925	9.8	1924	20	1923	57	1922	67	1921.5
78	1922	111.2	1922	113.3	1921	115.4	1920	118	1919
120.8	1918	124	1917	127.7	1916	132.1	1915	137	1914
143.42	1913	182.4	1912.43	182.4	1911.93	194	1911.73	206	1911.93
206	1912.43	231	1913	234.7	1914	237.85	1915	241	1916
244	1917	246.6	1918	248.9	1919	253.5	1919	265.75	1920
276.3	1921	307.8	1922	328.7	1923	358	1924	368	1925

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	111.2	.03	182.4	.013	206	.03	253.5	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.2	253.5	108	108	.1	.3

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1922.03	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 6.83	* Wt. n-Val.	*	* 0.020	* *
* W.S. Elev (ft)	* 1915.21	* Reach Len. (ft)	* 108.00	* 108.00	* 108.00 *
* Crit W.S. (ft)	* 1917.15	* Flow Area (sq ft)	*	* 262.32	* *
* E.G. Slope (ft/ft)	*0.024558	* Area (sq ft)	*	* 262.32	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 107.32	* Top Width (ft)	*	* 107.32	* *
* Vel Total (ft/s)	* 20.97	* Avg. Vel. (ft/s)	*	* 20.97	* *
* Max Chl Dpth (ft)	* 3.48	* Hydr. Depth (ft)	*	* 2.44	* *
* Conv. Total (cfs)	* 35096.4	* Conv. (cfs)	*	* 35096.4	* *
* Length Wtd. (ft)	* 108.00	* Wetted Per. (ft)	*	* 108.85	* *
* Min Ch El (ft)	* 1911.73	* Shear (lb/sq ft)	*	* 3.69	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 77.47	* *
* Frctn Loss (ft)	* 0.74	* Cum Volume (acre-ft)	* 0.66	* 36.06	* 1.32 *
* C & E Loss (ft)	* 0.53	* Cum SA (acres)	* 0.63	* 7.80	* 0.83 *

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.

CULVERT

RIVER: Flamingo Wash
REACH: 1 RS: 6500

INPUT
Description: Tioga
Distance from Upstream XS = 25.2
Deck/Roadway Width = 75
Weir Coefficient = 2.6
Bridge Deck/Roadway Skew = 30
Upstream Deck/Roadway Coordinates

```
    num=        2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
************************************************
       0 1922.75 1919.85  310.31 1922.75 1919.85

Upstream Bridge Cross Section Data
Station Elevation Data    num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1922.98    5.58 1922.44   12.18 1922.23   12.75 1922.17   29.47 1922.26
   40.08 1922.27   49.54 1921.64   49.65 1921.63   50.58 1921.62   57.95 1921.76
   62.06 1922.05   62.82 1922.11   63.91 1922.06   68.07 1922.06   68.52 1921.98
   85.17 1922.23   91.86 1922.11   95.83 1922.12   99.37 1922.11  103.76 1922.15
  105.84 1922.18  111.24 1922.19  119.87 1921.89  123.12 1921.99  126.69 1922.26
  127.74 1922.19  128.75  1922.1     134  1921.5     134  1911.2     233  1911.2
     233    1921  255.92 1921.03  257.73 1921.14  257.89 1921.14   275.6 1921.69
  285.11 1921.79  295.36 1922.21  310.31 1923.02

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .03  126.69     .04  257.73     .03

Bank Sta: Left   Right    Coeff Contr.   Expan.
           134     233             .1       .3

Downstream  Deck/Roadway Coordinates
    num=        2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
************************************************
       0 1922.75 1919.52  213.59 1922.75 1919.52

Downstream Bridge Cross Section Data
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1920.18     .34 1920.19     3.35 1920.13   10.52 1920.28   19.47 1920.81
   25.83 1920.97   26.55    1921   27.58 1921.02   29.78 1920.99   33.87 1920.93
      34 1920.96      34  1910.8     133  1910.8     133  1920.3  146.25 1920.71
  153.72 1920.78  162.49  1920.9  164.22 1920.93   172.9 1921.43  175.13 1921.47
  188.62  1921.7  189.89 1921.71  190.79 1921.72  199.46 1922.19  207.05 1922.62
  207.59 1922.63  208.29 1922.63  211.28 1922.84  213.59 1923.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .03      34     .04  146.25     .03

Bank Sta: Left   Right    Coeff Contr.   Expan.
            34     133             .1       .3
Skew Angle = 30

Upstream Embankment side slope              =       2 horiz. to 1.0 vertical
Downstream Embankment side slope            =       2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         = 1922.75
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  4

Culvert Name     Shape      Rise    Span
Culvert #1           Box       8      20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
            25.2      80     .013     .013        0                    .4               1
Upstream   Elevation =  1911.85
           Centerline Station =  148
Downstream Elevation =  1911.52
           Centerline Station =  48

Culvert Name     Shape      Rise    Span
Culvert #2           Box       8      20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
            25.2      80     .013     .013        0                    .4               1
Upstream   Elevation =  1911.85
           Centerline Station =  172
Downstream Elevation =  1911.52
           Centerline Station =  72

Culvert Name     Shape      Rise    Span
Culvert #3           Box     8.5      20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
            25.2      80     .013     .013        0                    .4               1
Upstream   Elevation =  1911.35
           Centerline Station =  196
Downstream Elevation =  1911.02
           Centerline Station =  96

Culvert Name     Shape      Rise    Span
Culvert #4           Box       8      20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
            25.2      80     .013     .013        0                    .4               1
Upstream   Elevation =  1911.85
```

Centerline Station = 220
Downstream Elevation = 1911.52
Centerline Station = 120

CULVERT OUTPUT Profile #100-yr FIS Culv Group: Culvert #1

Q Culv Group (cfs)		Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	
Q Barrel (cfs)		Culv Vel DS (ft/s)	
E.G. US. (ft)		Culv Inv El Up (ft)	1911.85
W.S. US. (ft)		Culv Inv El Dn (ft)	1911.52
E.G. DS (ft)		Culv Frctn Ls (ft)	
W.S. DS (ft)		Culv Exit Loss (ft)	
Delta EG (ft)		Culv Entr Loss (ft)	
Delta WS (ft)		Q Weir (cfs)	
E.G. IC (ft)		Weir Sta Lft (ft)	
E.G. OC (ft)		Weir Sta Rgt (ft)	
Culvert Control		Weir Submerg	
Culv WS Inlet (ft)		Weir Max Depth (ft)	
Culv WS Outlet (ft)		Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)		Min El Weir Flow (ft)	1922.76

Warning: The program cannot perform supercritical flow through multiple culverts. The program sets the water surface to critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.

CULVERT OUTPUT Profile #100-yr FIS Culv Group: Culvert #2

Q Culv Group (cfs)		Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	
Q Barrel (cfs)		Culv Vel DS (ft/s)	
E.G. US. (ft)		Culv Inv El Up (ft)	1911.85
W.S. US. (ft)		Culv Inv El Dn (ft)	1911.52
E.G. DS (ft)		Culv Frctn Ls (ft)	
W.S. DS (ft)		Culv Exit Loss (ft)	
Delta EG (ft)		Culv Entr Loss (ft)	
Delta WS (ft)		Q Weir (cfs)	
E.G. IC (ft)		Weir Sta Lft (ft)	
E.G. OC (ft)		Weir Sta Rgt (ft)	
Culvert Control		Weir Submerg	
Culv WS Inlet (ft)		Weir Max Depth (ft)	
Culv WS Outlet (ft)		Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)		Min El Weir Flow (ft)	1922.76

Warning: The program cannot perform supercritical flow through multiple culverts. The program sets the water surface to critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.

CULVERT OUTPUT Profile #100-yr FIS Culv Group: Culvert #3

Q Culv Group (cfs)		Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	
Q Barrel (cfs)		Culv Vel DS (ft/s)	
E.G. US. (ft)		Culv Inv El Up (ft)	1911.35
W.S. US. (ft)		Culv Inv El Dn (ft)	1911.02
E.G. DS (ft)		Culv Frctn Ls (ft)	
W.S. DS (ft)		Culv Exit Loss (ft)	
Delta EG (ft)		Culv Entr Loss (ft)	
Delta WS (ft)		Q Weir (cfs)	
E.G. IC (ft)		Weir Sta Lft (ft)	
E.G. OC (ft)		Weir Sta Rgt (ft)	
Culvert Control		Weir Submerg	
Culv WS Inlet (ft)		Weir Max Depth (ft)	
Culv WS Outlet (ft)		Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)		Min El Weir Flow (ft)	1922.76

Warning: The program cannot perform supercritical flow through multiple culverts. The program sets the water surface to critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.

CULVERT OUTPUT Profile #100-yr FIS Culv Group: Culvert #4

Q Culv Group (cfs)		Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	
Q Barrel (cfs)		Culv Vel DS (ft/s)	
E.G. US. (ft)		Culv Inv El Up (ft)	1911.85
W.S. US. (ft)		Culv Inv El Dn (ft)	1911.52
E.G. DS (ft)		Culv Frctn Ls (ft)	
W.S. DS (ft)		Culv Exit Loss (ft)	
Delta EG (ft)		Culv Entr Loss (ft)	
Delta WS (ft)		Q Weir (cfs)	
E.G. IC (ft)		Weir Sta Lft (ft)	
E.G. OC (ft)		Weir Sta Rgt (ft)	
Culvert Control		Weir Submerg	
Culv WS Inlet (ft)		Weir Max Depth (ft)	
Culv WS Outlet (ft)		Weir Avg Depth (ft)	
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	
Culv Crt Depth (ft)		Min El Weir Flow (ft)	1922.76

Warning: The program cannot perform supercritical flow through multiple culverts. The program sets the water surface to critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 6469

```
INPUT
Description: Sta 64+69 DS Face of bridge at Tioga
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1925      22    1924    32.2    1923    43.3    1922      56    1921
      88    1920     105    1919   131.5    1920     139    1921   157.7    1922
     170    1922     186    1921     190    1921     190    1917     192    1916
     194    1915     196    1914     198    1912     200 1911.68     247 1911.68
     247 1911.18   258.6 1910.98     270 1911.18     270 1911.68     294 1911.68
     296    1912     299    1913     301    1914   303.5    1915   303.5  1920.5
     323    1921   332.7    1922     364    1922   381.8    1922     400    1923
     418    1924     446    1925

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************************************************
       0     .03     186     .03     247    .013     270     .03   332.7     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          186   332.7               67     119     153             .1       .3
Skew Angle = 30

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)          * 1918.16  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    2.11  * Wt. n-Val.             *          *    0.022  *          *
* W.S. Elev (ft)          * 1916.05  * Reach Len. (ft)        *   67.00  *  119.00  *  153.00  *
* Crit W.S. (ft)          *         * Flow Area (sq ft)       *          *  471.39  *          *
* E.G. Slope (ft/ft)      *0.004633  * Area (sq ft)           *          *  471.39  *          *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)          *  111.60  * Top Width (ft)         *          *  111.60  *          *
* Vel Total (ft/s)        *   11.67  * Avg. Vel. (ft/s)       *          *   11.67  *          *
* Max Chl Dpth (ft)       *    5.07  * Hydr. Depth (ft)       *          *    4.22  *          *
* Conv. Total (cfs)       * 80806.6  * Conv. (cfs)            *          * 80806.6  *          *
* Length Wtd. (ft)        *  117.44  * Wetted Per. (ft)       *          *  115.61  *          *
* Min Ch El (ft)          * 1910.98  * Shear (lb/sq ft)       *          *    1.18  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *   13.76  *          *
* Frctn Loss (ft)         *          * Cum Volume (acre-ft)   *    0.66  *   35.15  *    1.32  *
* C & E Loss (ft)         *          * Cum SA (acres)         *    0.63  *    7.53  *    0.83  *
*****************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 6350

INPUT
Description: 63+50 Begin Articulated Block
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1924       5    1923      10    1922      15    1921      20    1920
      25    1919    26.7  1918.5    28.2    1919    32.2    1920    44.6    1920
    48.9    1919    53.1    1918      63    1917     105    1916   109.8    1915
     114    1914  118.32    1913     122    1912     127 1911.27     127 1910.77
     137 1910.57     147 1910.77     147 1911.27  149.34    1912  153.32    1913
  157.29    1914     161    1915     168    1916  184.65    1917     200    1918
     212    1919   221.7    1920   231.6    1921   245.3    1922  276.41    1923

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************************************************
       0     .03     105     .03     127    .013     147     .03     161     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          105     161               .1      .1      .1             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)          * 1920.94  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.86  * Wt. n-Val.             *   0.030  *   0.025  *   0.030  *
* W.S. Elev (ft)          * 1919.08  * Reach Len. (ft)        *    0.10  *    0.10  *    0.10  *
* Crit W.S. (ft)          * 1919.08  * Flow Area (sq ft)      *  127.44  *  372.83  *   99.18  *
* E.G. Slope (ft/ft)      *0.003269  * Area (sq ft)           *  127.44  *  372.83  *   99.18  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *  612.28  * 4455.47  *  432.25  *
* Top Width (ft)          *  168.10  * Top Width (ft)         *   60.34  *   56.00  *   51.76  *
* Vel Total (ft/s)        *    9.18  * Avg. Vel. (ft/s)       *    4.80  *   11.95  *    4.36  *
* Max Chl Dpth (ft)       *    8.51  * Hydr. Depth (ft)       *    2.11  *    6.66  *    1.92  *
* Conv. Total (cfs)       * 96202.2  * Conv. (cfs)            * 10709.6  * 77932.0  *  7560.6  *
* Length Wtd. (ft)        *    0.10  * Wetted Per. (ft)       *   60.70  *   58.02  *   51.94  *
* Min Ch El (ft)          * 1910.57  * Shear (lb/sq ft)       *    0.43  *    1.31  *    0.39  *
* Alpha                   *    1.42  * Stream Power (lb/ft s) *    2.06  *   15.67  *    1.70  *
* Frctn Loss (ft)         *    0.45  * Cum Volume (acre-ft)   *    0.56  *   34.00  *    1.14  *
* C & E Loss (ft)         *    0.08  * Cum SA (acres)         *    0.59  *    7.30  *    0.74  *
*****************************************************************************************************

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.
Note:    Manning's n values were composited to a single value in the main channel.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 6349.9

INPUT
Description: 63+49.9 End Earth Channel
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
```

```
       0    1924       5    1923      10    1922      15    1921      20    1920
      25    1919    26.7  1918.5    28.2    1919    32.2    1920    44.6    1920
    48.9    1919    53.1    1918      63    1917     105    1916   109.8    1915
     114    1914  118.32    1913     122    1912     127 1911.27     127 1910.77
     137 1910.57     147 1910.77     147 1911.27  149.34    1912  153.32    1913
  157.29    1914     161    1915     168    1916  184.65    1917     200    1918
     212    1919   221.7    1920  231.6    1921   245.3    1922  276.41    1923

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************************************************
       0     .03     105     .04     127    .013     147     .04     161     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           105     161              103   99.99      96             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1920.88  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.48  * Wt. n-Val.            *   0.030  *   0.032  *   0.030  *
* W.S. Elev (ft)         * 1918.39  * Reach Len. (ft)       *  103.00  *   99.99  *   96.00  *
* Crit W.S. (ft)         * 1918.99  * Flow Area (sq ft)     *   88.72  *  334.50  *   66.44  *
* E.G. Slope (ft/ft)     *0.008151  * Area (sq ft)          *   88.72  *  334.50  *   66.44  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *  554.70  * 4553.49  *  391.81  *
* Top Width (ft)         *  153.28  * Top Width (ft)        *   53.55  *   56.00  *   43.73  *
* Vel Total (ft/s)       *   11.23  * Avg. Vel. (ft/s)      *    6.25  *   13.61  *    5.90  *
* Max Chl Dpth (ft)      *    7.82  * Hydr. Depth (ft)      *    1.66  *    5.97  *    1.52  *
* Conv. Total (cfs)      * 60921.0  * Conv. (cfs)           *  6144.2  * 50436.9  *  4339.9  *
* Length Wtd. (ft)       *  100.06  * Wetted Per. (ft)      *   53.66  *   58.02  *   43.88  *
* Min Ch El (ft)         * 1910.57  * Shear (lb/sq ft)      *    0.84  *    2.93  *    0.77  *
* Alpha                  *    1.27  * Stream Power (lb/ft s) *    5.26  *   39.94  *    4.54  *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    0.56  *   34.00  *    1.14  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *    0.59  *    7.30  *    0.74  *
*****************************************************************************************************

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:    Manning's n values were composited to a single value in the main channel.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 6250

INPUT
Description: Sta 62+50
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1925      23 1920.01   25.64 1919.43   27.22 1919.25   29.82 1918.88
   39.78 1917.35   41.73 1917.11   45.19 1916.86   48.06 1916.45   56.64  1916.5
   73.56 1916.51   76.88 1916.53   80.73 1916.14   83.25 1915.97   94.32 1915.56
   99.51  1915.1  123.59 1914.69  125.29 1914.65  126.36 1914.63  130.67 1914.58
  135.65 1914.51  143.22 1914.77  151.01 1915.04   154.3 1915.03  172.88 1910.69
  172.88 1910.19  182.88 1909.99  192.88 1910.19  192.88 1910.69  205.77 1913.76
  205.87 1913.75  216.03 1914.39  225.05 1915.12  226.26 1915.05  226.99  1915.1
  228.95 1915.26  230.39 1915.33  231.83 1915.38  235.19 1915.76  247.57 1916.78
  254.91 1917.43  261.07 1917.97  264.16 1918.04  265.94 1918.19  268.74 1918.55
  269.77 1918.64  271.73 1918.78  293.17 1920.14   293.4 1920.15     330    1922
     371    1925

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************************************************
       0     .03   154.3     .04  172.88    .013  192.88     .04  205.77     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          154.3  205.77              158     150     140             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1919.81  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.07  * Wt. n-Val.            *   0.030  *   0.031  *   0.030  *
* W.S. Elev (ft)         * 1916.74  * Reach Len. (ft)       *  158.00  *  150.00  *  140.00  *
* Crit W.S. (ft)         * 1917.72  * Flow Area (sq ft)     *  134.39  *  263.09  *   65.28  *
* E.G. Slope (ft/ft)     *0.012743  * Area (sq ft)          *  134.39  *  263.09  *   65.28  *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *  867.53  * 4137.89  *  494.58  *
* Top Width (ft)         *  200.98  * Top Width (ft)        *  108.24  *   51.47  *   41.27  *
* Vel Total (ft/s)       *   11.89  * Avg. Vel. (ft/s)      *    6.46  *   15.73  *    7.58  *
* Max Chl Dpth (ft)      *    6.75  * Hydr. Depth (ft)      *    1.24  *    5.11  *    1.58  *
* Conv. Total (cfs)      * 48721.6  * Conv. (cfs)           *  7685.0  * 36655.4  *  4381.3  *
* Length Wtd. (ft)       *  148.80  * Wetted Per. (ft)      *  108.33  *   53.33  *   41.39  *
* Min Ch El (ft)         * 1909.99  * Shear (lb/sq ft)      *    0.99  *    3.92  *    1.25  *
* Alpha                  *    1.40  * Stream Power (lb/ft s) *    6.37  *   61.72  *    9.51  *
* Frctn Loss (ft)        *    1.01  * Cum Volume (acre-ft)  *    0.30  *   33.32  *    1.00  *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *    0.39  *    7.18  *    0.64  *
*****************************************************************************************************

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:    Manning's n values were composited to a single value in the main channel.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 6100

INPUT
Description: Sta 61+00
Station Elevation Data    num=      55
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1923.37	6.96	1923.31	7.58	1923.31	7.85	1923.31	8.24	1923.3
8.57	1923.28	9.38	1923.26	10.48	1923.29	13.39	1923.26	19.45	1923.23
23.16	1921.98	30.94	1919.37	31.29	1919.31	33.93	1919.21	59.45	1917.1
75.89	1916.51	84.88	1916.03	90.66	1915.61	105.99	1916.16	109.89	1916.17
112.85	1916.1	141	1909.62	141	1909.12	151	1908.92	161	1909.12
161	1909.62	184.85	1913.39	186.29	1913.45	187.29	1913.48	189.57	1913.51
203.51	1914.01	211.31	1914.22	214.95	1914.21	217.82	1914.39	225.32	1914.17
238.1	1913.76	238.58	1913.74	244.29	1913.84	247.69	1913.84	255.31	1913.91
259.31	1914.03	269.71	1914.03	271.66	1914.09	277.97	1914.56	278.58	1914.61
281.27	1914.76	286.32	1915.06	293.82	1915.42	309.45	1916.1	321.67	1916.61
337.69	1917.25	345.31	1917.77	349.7	1917.88	355.14	1917.98	394	1919

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	112.85	.04	141	.013	161	.04	184.85	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
112.85 184.85 130 108.42 102 .1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
280.43	394	1923.65	T

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1917.85	Element	Left OB	Channel / Right OB
Vel Head (ft)	1.76	Wt. n-Val.	0.030	0.034 / 0.030
W.S. Elev (ft)	1916.09	Reach Len. (ft)	130.00	108.42 / 102.00
Crit W.S. (ft)	1916.32	Flow Area (sq ft)	4.71	341.32 / 199.84
E.G. Slope (ft/ft)	*0.008947	Area (sq ft)	4.71	341.32 / 218.33
Q Total (cfs)	5500.00	Flow (cfs)	8.38	3961.38 / 1530.24
Top Width (ft)	216.25	Top Width (ft)	20.05	71.94 / 124.26
Vel Total (ft/s)	10.08	Avg. Vel. (ft/s)	1.78	11.61 / 7.66
Max Chl Dpth (ft)	7.17	Hydr. Depth (ft)	0.23	4.74 / 2.09
Conv. Total (cfs)	58148.1	Conv. (cfs)	88.6	41881.2 / 16178.3
Length Wtd. (ft)	107.18	Wetted Per. (ft)	20.08	73.97 / 95.64
Min Ch El (ft)	1908.92	Shear (lb/sq ft)	0.13	2.58 / 1.17
Alpha	1.12	Stream Power (lb/ft s)	0.23	29.91 / 8.94
Frctn Loss (ft)	1.58	Cum Volume (acre-ft)	0.05	32.27 / 0.54
C & E Loss (ft)	0.39	Cum SA (acres)	0.16	6.97 / 0.38

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.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5991.58

INPUT
Description: 59+91.58 Low Flow Channel Starts
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1920	13	1919	34	1918	50	1917	78	1916
80	1915	82	1914	84	1913	86	1912	88	1911
90	1910	91	1909.5	99.5	1909.2	99.5	1908.7	109.5	1908.5
119.5	1908.7	119.5	1909.2	129	1909.5	132	1910	135.6	1911
139.2	1912	142.9	1913	146.7	1914	150.4	1915	154.3	1916
158.8	1917	169	1917	181.5	1916	201	1915	248	1915
270	1916	289	1917	315	1918	338	1919	370	1920

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	78	.04	99.5	.013	119.5	.04	158.8	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
78 158.8 .1 .1 .1 .1 .3

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1918.33	Element	Left OB	Channel / Right OB
Vel Head (ft)	1.56	Wt. n-Val.	0.030	0.034 / 0.030
W.S. Elev (ft)	1916.78	Reach Len. (ft)	0.10	0.10 / 0.10
Crit W.S. (ft)	1916.78	Flow Area (sq ft)	8.41	455.14 / 145.80
E.G. Slope (ft/ft)	*0.006183	Area (sq ft)	8.41	455.14 / 145.80
Q Total (cfs)	5500.00	Flow (cfs)	17.40	4809.65 / 672.95
Top Width (ft)	214.40	Top Width (ft)	21.70	79.79 / 112.91
Vel Total (ft/s)	9.03	Avg. Vel. (ft/s)	2.07	10.57 / 4.62
Max Chl Dpth (ft)	8.28	Hydr. Depth (ft)	0.39	5.70 / 1.29
Conv. Total (cfs)	69945.9	Conv. (cfs)	221.3	61166.3 / 8558.2
Length Wtd. (ft)	0.10	Wetted Per. (ft)	21.71	83.26 / 113.01
Min Ch El (ft)	1908.50	Shear (lb/sq ft)	0.15	2.11 / 0.50
Alpha	1.23	Stream Power (lb/ft s)	0.31	22.30 / 2.30
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	0.03	31.28 / 0.12
C & E Loss (ft)	0.06	Cum SA (acres)	0.10	6.78 / 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: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Flamingo Wash

```
REACH: 1                  RS: 5991.48

INPUT
Description: 59+91.48 Grouted Riprap Ends
Station Elevation Data     num=       32
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************************
       0     1920       13     1919       34     1918       50     1917       78     1916
      80     1915       82     1914       84     1913       86     1912       88     1911
      90     1910       92     1909       93  1908.5      125  1908.5      127     1909
     132     1910   135.6     1911   139.2     1912   142.9     1913   146.7     1914
   150.4     1915   154.3     1916   158.8     1917      169     1917   181.5     1916
     201     1915      248     1915      270     1916      289     1917      315     1918
     338     1919      370     1920

Manning's n Values         num=       5
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
*********************************************************************************************
       0     .03       78    .025       93    .013      127    .025   158.8     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            78   158.8               95   86.48       80              .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************************
* E.G. Elev (ft)          * 1918.46  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.86  * Wt. n-Val.             *   0.030  *   0.020  *   0.030  *
* W.S. Elev (ft)          * 1916.60  * Reach Len. (ft)        *   95.00  *   86.48  *   80.00  *
* Crit W.S. (ft)          * 1916.60  * Flow Area (sq ft)      *    5.10  *  456.07  *  126.90  *
* E.G. Slope (ft/ft)      *0.002441  * Area (sq ft)           *    5.10  *  456.07  *  126.90  *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *    5.61  * 5147.76  *  346.63  *
* Top Width (ft)          *  203.43  * Top Width (ft)         *   16.90  *   79.02  *  107.51  *
* Vel Total (ft/s)        *    9.35  * Avg. Vel. (ft/s)       *    1.10  *   11.29  *    2.73  *
* Max Chl Dpth (ft)       *    8.10  * Hydr. Depth (ft)       *    0.30  *    5.77  *    1.18  *
* Conv. Total (cfs)       *111325.3  * Conv. (cfs)            *   113.6  *104195.7  *  7016.0  *
* Length Wtd. (ft)        *   86.28  * Wetted Per. (ft)       *   16.91  *   81.81  *  107.60  *
* Min Ch El (ft)          * 1908.50  * Shear (lb/sq ft)       *    0.05  *    0.85  *    0.18  *
* Alpha                   *    1.37  * Stream Power (lb/ft s) *    0.05  *    9.59  *    0.49  *
* Frctn Loss (ft)         *    0.00  * Cum Volume (acre-ft)   *    0.03  *   31.28  *    0.12  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)         *    0.10  *    6.78  *    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: 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.
Note:    Manning's n values were composited to a single value in the main channel.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 5905

INPUT
Description: 59+05 US Face of Eastern Ave. Bridge
Station Elevation Data     num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************************
     155  1915.8   161.5 1907.81   200.5  1907.8   239.5 1907.81     246  1915.8

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*************************************************
     155    .025   161.5    .013   239.5    .025

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            155     246              115     115     115              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
     155     157    1919       F
     244     246    1919       F

CROSS SECTION OUTPUT  Profile #100-yr FIS
*********************************************************************************************************
* E.G. Elev (ft)          * 1917.63  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    6.50  * Wt. n-Val.             *          *   0.014  *          *
* W.S. Elev (ft)          * 1911.14  * Reach Len. (ft)        *  115.00  *  115.00  *  115.00  *
* Crit W.S. (ft)          * 1913.09  * Flow Area (sq ft)      *          *  268.92  *          *
* E.G. Slope (ft/ft)      *0.008661  * Area (sq ft)           *          *  268.92  *          *
* Q Total (cfs)           * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)          *   83.41  * Top Width (ft)         *          *   83.41  *          *
* Vel Total (ft/s)        *   20.45  * Avg. Vel. (ft/s)       *          *   20.45  *          *
* Max Chl Dpth (ft)       *    3.34  * Hydr. Depth (ft)       *          *    3.22  *          *
* Conv. Total (cfs)       * 59097.8  * Conv. (cfs)            *          * 59097.8  *          *
* Length Wtd. (ft)        *  115.00  * Wetted Per. (ft)       *          *   86.58  *          *
* Min Ch El (ft)          * 1907.80  * Shear (lb/sq ft)       *          *    1.68  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *   34.35  *          *
* Frctn Loss (ft)         *    0.36  * Cum Volume (acre-ft)   *    0.02  *   30.56  *          *
* C & E Loss (ft)         *    0.46  * Cum SA (acres)         *    0.08  *    6.62  *          *
*********************************************************************************************************

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:    Manning's n values were composited to a single value in the main channel.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         energy was used.

CULVERT


RIVER: Flamingo Wash
REACH: 1                  RS: 5800
```

```
INPUT
Description: Eastern
Distance from Upstream XS =    10.9
Deck/Roadway Width        =     100
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
************************************************
       0 1919.75 1915.75   484.7 1919.75 1915.75

Upstream Bridge Cross Section Data
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0  1917.5     150  1917.5     150  1907.5     250  1907.5     250  1917.5
   484.7  1917.5

Manning's n Values        num=       1
     Sta   n Val
****************
       0    .015

Bank Sta: Left   Right    Coeff Contr.   Expan.
          150     250            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     157    1919       F
     244   484.7    1919       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
************************************************
       0 1919.75  1914.5 493.275 1919.75  1914.5

Downstream Bridge Cross Section Data
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1917     150    1917     150  1906.5     250  1906.5     250  1917.5
   484.7  1917.5

Manning's n Values        num=       1
     Sta   n Val
****************
       0    .015

Bank Sta: Left   Right    Coeff Contr.   Expan.
          150     250            .3       .5

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         = 1919.75
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name     Shape      Rise    Span
Culvert #2          Box        8      22
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
           10.9      98     .013     .013        0                    .4                1
Upstream   Elevation =  1907.75
           Centerline Station =  174
Downstream Elevation =  1906.5
           Centerline Station =  174

Culvert Name     Shape      Rise    Span
Culvert #1          Box        8      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
           10.9      98     .013     .013        0                    .4                1
Number of Barrels =  5
Upstream   Elevation =  1907.75
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
     192     203     214     225     236
Downstream Elevation =  1906.5
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
     192     203     214     225     236

CULVERT OUTPUT  Profile #100-yr FIS  Culv Group:  Culvert #2
*********************************************************************************
* Q Culv Group (cfs)     *          * Culv Full Len (ft)     *          *
* # Barrels              *       1  * Culv Vel US (ft/s)     *          *
* Q Barrel (cfs)         *          * Culv Vel DS (ft/s)     *          *
* E.G. US. (ft)          *          * Culv Inv El Up (ft)    * 1907.75  *
* W.S. US. (ft)          *          * Culv Inv El Dn (ft)    * 1906.50  *
* E.G. DS (ft)           *          * Culv Frctn Ls (ft)     *          *
* W.S. DS (ft)           *          * Culv Exit Loss (ft)    *          *
* Delta EG (ft)          *          * Culv Entr Loss (ft)    *          *
* Delta WS (ft)          *          * Q Weir (cfs)           *          *
* E.G. IC (ft)           *          * Weir Sta Lft (ft)      *          *
* E.G. OC (ft)           *          * Weir Sta Rgt (ft)      *          *
* Culvert Control        *          * Weir Submerg           *          *
* Culv WS Inlet (ft)     *          * Weir Max Depth (ft)    *          *
```

```
* Culv WS Outlet (ft)    *          * Weir Avg Depth (ft)    *          *
* Culv Nml Depth (ft)    *          * Weir Flow Area (sq ft) *          *
* Culv Crt Depth (ft)    *          * Min El Weir Flow (ft)  * 1919.76  *
*********************************************************************

Warning: The program cannot perform supercritical flow through multiple culverts.  The program sets the
         water surface to critical depth at the downstream end of the culverts and continues on.
Note:    For this profile, the culvert does not have any flow.

CULVERT OUTPUT  Profile #100-yr FIS  Culv Group:  Culvert #1
*********************************************************************
* Q Culv Group (cfs)     *          * Culv Full Len (ft)     *          *
* # Barrels              *       5  * Culv Vel US (ft/s)     *          *
* Q Barrel (cfs)         *          * Culv Vel DS (ft/s)     *          *
* E.G. US. (ft)          *          * Culv Inv El Up (ft)    * 1907.75  *
* W.S. US. (ft)          *          * Culv Inv El Dn (ft)    * 1906.50  *
* E.G. DS (ft)           *          * Culv Frctn Ls (ft)     *          *
* W.S. DS (ft)           *          * Culv Exit Loss (ft)    *          *
* Delta EG (ft)          *          * Culv Entr Loss (ft)    *          *
* Delta WS (ft)          *          * Q Weir (cfs)           *          *
* E.G. IC (ft)           *          * Weir Sta Lft (ft)      *          *
* E.G. OC (ft)           *          * Weir Sta Rgt (ft)      *          *
* Culvert Control        *          * Weir Submerg           *          *
* Culv WS Inlet (ft)     *          * Weir Max Depth (ft)    *          *
* Culv WS Outlet (ft)    *          * Weir Avg Depth (ft)    *          *
* Culv Nml Depth (ft)    *          * Weir Flow Area (sq ft) *          *
* Culv Crt Depth (ft)    *          * Min El Weir Flow (ft)  * 1919.76  *
*********************************************************************

Warning: The program cannot perform supercritical flow through multiple culverts.  The program sets the
         water surface to critical depth at the downstream end of the culverts and continues on.
Note:    For this profile, the culvert does not have any flow.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 5790

INPUT
Description: Sta 57+90 DS of Eastern Ave. Bridge
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
     163 1917.91     163  1906.3  203.64 1906.41  244.27 1906.42  244.27 1917.91

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
     163    .013     163    .013  244.27    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          163  244.27            52.26   52.26   52.26             .3       .5

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1914.22  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.63  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1911.59  * Reach Len. (ft)        *   52.26  *   52.26  *   52.26  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          *  422.96  *          *
* E.G. Slope (ft/ft)     *0.001686  * Area (sq ft)           *          *  422.96  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   81.27  * Top Width (ft)         *          *   81.27  *          *
* Vel Total (ft/s)       *   13.00  * Avg. Vel. (ft/s)       *          *   13.00  *          *
* Max Chl Dpth (ft)      *    5.29  * Hydr. Depth (ft)       *          *    5.20  *          *
* Conv. Total (cfs)      *133933.1  * Conv. (cfs)            *          *133933.1  *          *
* Length Wtd. (ft)       *   52.26  * Wetted Per. (ft)       *          *   91.73  *          *
* Min Ch El (ft)         * 1906.30  * Shear (lb/sq ft)       *          *    0.49  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.31  *          *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)   *    0.02  *   29.65  *          *
* C & E Loss (ft)        *          * Cum SA (acres)         *    0.08  *    6.40  *          *
*****************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 5737.74

INPUT
Description: 57+37.74 Begin 79.77' Channel. End transition
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    81.5  1916.2    81.5  1906.4  121.34  1905.6  161.27  1906.4  161.27  1916.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
    81.5    .013    81.5    .013  161.27    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          81.5  161.27            89.32   89.32   89.32             .3       .5

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1913.98  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    3.10  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1910.88  * Reach Len. (ft)        *   89.32  *   89.32  *   89.32  *
* Crit W.S. (ft)         * 1911.28  * Flow Area (sq ft)      *          *  389.50  *          *
* E.G. Slope (ft/ft)     *0.002124  * Area (sq ft)           *          *  389.50  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   79.77  * Top Width (ft)         *          *   79.77  *          *
* Vel Total (ft/s)       *   14.12  * Avg. Vel. (ft/s)       *          *   14.12  *          *
* Max Chl Dpth (ft)      *    5.28  * Hydr. Depth (ft)       *          *    4.88  *          *
* Conv. Total (cfs)      *119339.4  * Conv. (cfs)            *          *119339.4  *          *
```

* Length Wtd. (ft)	* 89.32	* Wetted Per. (ft)	*	* 88.75	*
* Min Ch El (ft)	* 1905.60	* Shear (lb/sq ft)	*	* 0.58	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 8.22	*
* Frctn Loss (ft)	* 0.10	* Cum Volume (acre-ft)	* 0.02	* 29.16	*
* C & E Loss (ft)	* 0.14	* Cum SA (acres)	* 0.08	* 6.30	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5648.42

INPUT
Description: 56+48.42 begin transition from 75' to 79.77' and PT
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1914	0	1904.95	37.5	1904.2	75	1904.95	75	1914

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	75	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 75 99.6 99.6 99.6 .05 .2

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1913.34	* Element	* Left OB	* Channel * Right OB *
* Vel Head (ft)	* 4.41	* Wt. n-Val.	*	* 0.013 *
* W.S. Elev (ft)	* 1908.93	* Reach Len. (ft)	* 99.60	* 99.60 * 99.60 *
* Crit W.S. (ft)	* 1910.08	* Flow Area (sq ft)	*	* 326.27 *
* E.G. Slope (ft/ft)	*0.003504	* Area (sq ft)	*	* 326.27 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00 *
* Top Width (ft)	* 75.00	* Top Width (ft)	*	* 75.00 *
* Vel Total (ft/s)	* 16.86	* Avg. Vel. (ft/s)	*	* 16.86 *
* Max Chl Dpth (ft)	* 4.73	* Hydr. Depth (ft)	*	* 4.35 *
* Conv. Total (cfs)	* 92912.6	* Conv. (cfs)	*	* 92912.6 *
* Length Wtd. (ft)	* 99.60	* Wetted Per. (ft)	*	* 82.97 *
* Min Ch El (ft)	* 1904.20	* Shear (lb/sq ft)	*	* 0.86 *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 14.50 *
* Frctn Loss (ft)	* 0.24	* Cum Volume (acre-ft)	* 0.02	* 28.43 *
* C & E Loss (ft)	* 0.39	* Cum SA (acres)	* 0.08	* 6.14 *

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: Flamingo Wash
REACH: 1 RS: 5548.82*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1912.45	0	1903.4	37.5	1902.65	75	1903.4	75	1912.45

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	75	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 75 99.6 99.6 99.6 .05 .2

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1912.82	* Element	* Left OB	* Channel * Right OB *
* Vel Head (ft)	* 6.09	* Wt. n-Val.	*	* 0.013 *
* W.S. Elev (ft)	* 1906.73	* Reach Len. (ft)	* 99.60	* 99.60 * 99.60 *
* Crit W.S. (ft)	* 1908.53	* Flow Area (sq ft)	*	* 277.69 *
* E.G. Slope (ft/ft)	*0.005873	* Area (sq ft)	*	* 277.69 *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00 *
* Top Width (ft)	* 75.00	* Top Width (ft)	*	* 75.00 *
* Vel Total (ft/s)	* 19.81	* Avg. Vel. (ft/s)	*	* 19.81 *
* Max Chl Dpth (ft)	* 4.08	* Hydr. Depth (ft)	*	* 3.70 *
* Conv. Total (cfs)	* 71769.5	* Conv. (cfs)	*	* 71769.5 *
* Length Wtd. (ft)	* 99.60	* Wetted Per. (ft)	*	* 81.67 *
* Min Ch El (ft)	* 1902.65	* Shear (lb/sq ft)	*	* 1.25 *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 24.69 *
* Frctn Loss (ft)	* 0.44	* Cum Volume (acre-ft)	* 0.02	* 27.74 *
* C & E Loss (ft)	* 0.08	* Cum SA (acres)	* 0.08	* 5.97 *

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: Flamingo Wash
REACH: 1 RS: 5449.23*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1910.89	0	1901.84	37.5	1901.09	75	1901.84	75	1910.89

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      75    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      75              .12     .12     .12            .05       .2

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1912.10  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    7.24  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1904.86  * Reach Len. (ft)       *    0.12  *    0.12  *    0.12  *
* Crit W.S. (ft)         * 1906.97  * Flow Area (sq ft)     *          *  254.80  *          *
* E.G. Slope (ft/ft)     *0.007745  * Area (sq ft)          *          *  254.80  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   75.00  * Top Width (ft)       *          *   75.00  *          *
* Vel Total (ft/s)       *   21.59  * Avg. Vel. (ft/s)     *          *   21.59  *          *
* Max Chl Dpth (ft)      *    3.77  * Hydr. Depth (ft)     *          *    3.40  *          *
* Conv. Total (cfs)      * 62495.5  * Conv. (cfs)          *          * 62495.5  *          *
* Length Wtd. (ft)       *    0.12  * Wetted Per. (ft)     *          *   81.06  *          *
* Min Ch El (ft)         * 1901.09  * Shear (lb/sq ft)     *          *    1.52  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   32.81  *          *
* Frctn Loss (ft)        *    0.67  * Cum Volume (acre-ft)  *    0.02  *   27.13  *          *
* C & E Loss (ft)        *    0.06  * Cum SA (acres)        *    0.08  *    5.80  *          *
************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 5449.11

INPUT
Description: 54+49.11 PC
Station Elevation Data    num=       5
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************
       0 1910.89       0 1901.84    37.5 1901.09      75 1901.84      75 1910.89

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      75    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      75             3.33    3.33    3.33            .05       .2

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1912.10  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    7.23  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1904.86  * Reach Len. (ft)       *    3.33  *    3.33  *    3.33  *
* Crit W.S. (ft)         * 1906.97  * Flow Area (sq ft)     *          *  254.82  *          *
* E.G. Slope (ft/ft)     *0.007743  * Area (sq ft)          *          *  254.82  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   75.00  * Top Width (ft)       *          *   75.00  *          *
* Vel Total (ft/s)       *   21.58  * Avg. Vel. (ft/s)     *          *   21.58  *          *
* Max Chl Dpth (ft)      *    3.77  * Hydr. Depth (ft)     *          *    3.40  *          *
* Conv. Total (cfs)      * 62502.7  * Conv. (cfs)          *          * 62502.7  *          *
* Length Wtd. (ft)       *    3.33  * Wetted Per. (ft)     *          *   81.06  *          *
* Min Ch El (ft)         * 1901.09  * Shear (lb/sq ft)     *          *    1.52  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   32.80  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    0.02  *   27.13  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.08  *    5.80  *          *
************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 5445.78

INPUT
Description: 54+45.78 begin 75' channel. End Transition
Station Elevation Data    num=       5
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************
       0 1910.84       0 1901.79    37.5 1901.04      75 1901.79      75 1910.84

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      75    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      75            82.93   82.93   82.93            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1912.06  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    7.25  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1904.81  * Reach Len. (ft)       *   82.93  *   82.93  *   82.93  *
* Crit W.S. (ft)         * 1906.92  * Flow Area (sq ft)     *          *  254.46  *          *
* E.G. Slope (ft/ft)     *0.007778  * Area (sq ft)          *          *  254.46  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   75.00  * Top Width (ft)       *          *   75.00  *          *
* Vel Total (ft/s)       *   21.61  * Avg. Vel. (ft/s)     *          *   21.61  *          *
* Max Chl Dpth (ft)      *    3.77  * Hydr. Depth (ft)     *          *    3.39  *          *
* Conv. Total (cfs)      * 62361.7  * Conv. (cfs)          *          * 62361.7  *          *
* Length Wtd. (ft)       *   82.93  * Wetted Per. (ft)     *          *   81.05  *          *
* Min Ch El (ft)         * 1901.04  * Shear (lb/sq ft)     *          *    1.52  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   32.95  *          *
```

* Frctn Loss (ft)	* 0.03	* Cum Volume (acre-ft)	* 0.02	* 27.11	*			
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.08	* 5.80	*			

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5362.85*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1909.54	0	1900.37	31.25	1899.74	62.5	1900.37	62.5	1909.54

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	62.5	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	62.5	82.93	82.93	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1911.47	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 7.37	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1904.09	* Reach Len. (ft)	* 82.93	* 82.93	* 82.93 *
* Crit W.S. (ft)	* 1906.26	* Flow Area (sq ft)	*	* 252.45	* *
* E.G. Slope (ft/ft)	*0.006565	* Area (sq ft)	*	* 252.45	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 62.50	* Top Width (ft)	*	* 62.50	* *
* Vel Total (ft/s)	* 21.79	* Avg. Vel. (ft/s)	*	* 21.79	* *
* Max Chl Dpth (ft)	* 4.35	* Hydr. Depth (ft)	*	* 4.04	* *
* Conv. Total (cfs)	* 67882.8	* Conv. (cfs)	*	* 67882.8	* *
* Length Wtd. (ft)	* 82.93	* Wetted Per. (ft)	*	* 69.96	* *
* Min Ch El (ft)	* 1899.74	* Shear (lb/sq ft)	*	* 1.48	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 32.22	* *
* Frctn Loss (ft)	* 0.59	* Cum Volume (acre-ft)	* 0.02	* 26.63	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 5.66	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5279.92

INPUT
Description: 52+79.92 begin transition from 50' to 75' and PT
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1908.25	0	1898.95	25	1898.45	50	1898.95	50	1908.25

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	93.25	93.25	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1910.97	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 7.13	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1903.83	* Reach Len. (ft)	* 93.25	* 93.25	* 93.25 *
* Crit W.S. (ft)	* 1905.89	* Flow Area (sq ft)	*	* 256.59	* *
* E.G. Slope (ft/ft)	*0.005041	* Area (sq ft)	*	* 256.59	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 21.44	* Avg. Vel. (ft/s)	*	* 21.44	* *
* Max Chl Dpth (ft)	* 5.38	* Hydr. Depth (ft)	*	* 5.13	* *
* Conv. Total (cfs)	* 77464.1	* Conv. (cfs)	*	* 77464.1	* *
* Length Wtd. (ft)	* 93.25	* Wetted Per. (ft)	*	* 59.77	* *
* Min Ch El (ft)	* 1898.45	* Shear (lb/sq ft)	*	* 1.35	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 28.96	* *
* Frctn Loss (ft)	* 0.47	* Cum Volume (acre-ft)	* 0.02	* 26.14	* *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.08	* 5.56	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5186.67

INPUT
Description: 51+86.67 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1906.8	0	1897.5	25	1897	50	1897.5	50	1906.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.89	86.89	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1910.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.40	Wt. n-Val.		0.013	
W.S. Elev (ft)	1901.98	Reach Len. (ft)	86.89	86.89	86.89
Crit W.S. (ft)	1904.44	Flow Area (sq ft)		236.49	
E.G. Slope (ft/ft)	*0.006498	Area (sq ft)		236.49	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	23.26	Avg. Vel. (ft/s)		23.26	
Max Chl Dpth (ft)	4.98	Hydr. Depth (ft)		4.73	
Conv. Total (cfs)	68230.5	Conv. (cfs)		68230.5	
Length Wtd. (ft)	86.89	Wetted Per. (ft)		58.97	
Min Ch El (ft)	1897.00	Shear (lb/sq ft)		1.63	
Alpha	1.00	Stream Power (lb/ft s)		37.84	
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	0.02	25.61	
C & E Loss (ft)	0.06	Cum SA (acres)	0.08	5.45	

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: Flamingo Wash
REACH: 1 RS: 5099.78*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1906.12	0	1896.82	25	1896.32	50	1896.82	50	1906.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
0	50	86.89	86.89	86.89	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1909.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.53	Wt. n-Val.		0.013	
W.S. Elev (ft)	1901.26	Reach Len. (ft)	86.89	86.89	86.89
Crit W.S. (ft)	1903.76	Flow Area (sq ft)		234.60	
E.G. Slope (ft/ft)	*0.006662	Area (sq ft)		234.60	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	23.44	Avg. Vel. (ft/s)		23.44	
Max Chl Dpth (ft)	4.94	Hydr. Depth (ft)		4.69	
Conv. Total (cfs)	67383.5	Conv. (cfs)		67383.5	
Length Wtd. (ft)	86.89	Wetted Per. (ft)		58.89	
Min Ch El (ft)	1896.32	Shear (lb/sq ft)		1.66	
Alpha	1.00	Stream Power (lb/ft s)		38.84	
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	0.02	25.14	
C & E Loss (ft)	0.01	Cum SA (acres)	0.08	5.35	

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5012.89*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1905.44	0	1896.14	25	1895.64	50	1896.14	50	1905.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
0	50	.01	.01	.01	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1909.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.66	Wt. n-Val.		0.013	
W.S. Elev (ft)	1900.55	Reach Len. (ft)	0.01	0.01	0.01
Crit W.S. (ft)	1903.08	Flow Area (sq ft)		232.96	
E.G. Slope (ft/ft)	*0.006810	Area (sq ft)		232.96	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	23.61	Avg. Vel. (ft/s)		23.61	
Max Chl Dpth (ft)	4.91	Hydr. Depth (ft)		4.66	
Conv. Total (cfs)	66648.9	Conv. (cfs)		66648.9	
Length Wtd. (ft)	0.01	Wetted Per. (ft)		58.83	
Min Ch El (ft)	1895.64	Shear (lb/sq ft)		1.68	
Alpha	1.00	Stream Power (lb/ft s)		39.75	
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	0.02	24.68	
C & E Loss (ft)	0.01	Cum SA (acres)	0.08	5.25	

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 5012.88

```
INPUT
Description: 50+12.88 PC
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1905.44       0 1896.14      25 1895.64      50 1896.14      50 1905.44

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50            67.84   67.84   67.84            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************************
* E.G. Elev (ft)         * 1909.21  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    8.66  * Wt. n-Val.             *          *    0.013  *          *
* W.S. Elev (ft)         * 1900.55  * Reach Len. (ft)        *   67.84  *   67.84  *   67.84  *
* Crit W.S. (ft)         * 1903.08  * Flow Area (sq ft)      *          *  232.90  *          *
* E.G. Slope (ft/ft)     *0.006815  * Area (sq ft)           *          *  232.90  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   23.61  * Avg. Vel. (ft/s)       *          *   23.61  *          *
* Max Chl Dpth (ft)      *    4.91  * Hydr. Depth (ft)       *          *    4.66  *          *
* Conv. Total (cfs)      * 66624.4  * Conv. (cfs)            *          * 66624.4  *          *
* Length Wtd. (ft)       *   67.84  * Wetted Per. (ft)       *          *   58.83  *          *
* Min Ch El (ft)         * 1895.64  * Shear (lb/sq ft)       *          *    1.68  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   39.78  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)   *    0.02  *   24.68  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.08  *    5.25  *          *
*************************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 4945.04

INPUT
Description: 49+45.04 PT
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1904.91       0 1895.61      25 1895.11      50 1895.61      50 1904.91

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.5    86.5    86.5            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************************
* E.G. Elev (ft)         * 1908.74  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    8.74  * Wt. n-Val.             *          *    0.013  *          *
* W.S. Elev (ft)         * 1900.00  * Reach Len. (ft)        *   86.50  *   86.50  *   86.50  *
* Crit W.S. (ft)         * 1902.55  * Flow Area (sq ft)      *          *  231.81  *          *
* E.G. Slope (ft/ft)     *0.006916  * Area (sq ft)           *          *  231.81  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   23.73  * Avg. Vel. (ft/s)       *          *   23.73  *          *
* Max Chl Dpth (ft)      *    4.89  * Hydr. Depth (ft)       *          *    4.64  *          *
* Conv. Total (cfs)      * 66137.1  * Conv. (cfs)            *          * 66137.1  *          *
* Length Wtd. (ft)       *   86.50  * Wetted Per. (ft)       *          *   58.78  *          *
* Min Ch El (ft)         * 1895.11  * Shear (lb/sq ft)       *          *    1.70  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   40.40  *          *
* Frctn Loss (ft)        *    0.47  * Cum Volume (acre-ft)   *    0.02  *   24.32  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.08  *    5.17  *          *
*************************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 4858.54*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1904.23       0 1894.93      25 1894.43      50 1894.93      50 1904.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.5    86.5    86.5            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************************
* E.G. Elev (ft)         * 1908.13  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    8.84  * Wt. n-Val.             *          *    0.013  *          *
* W.S. Elev (ft)         * 1899.29  * Reach Len. (ft)        *   86.50  *   86.50  *   86.50  *
* Crit W.S. (ft)         * 1901.87  * Flow Area (sq ft)      *          *  230.54  *          *
* E.G. Slope (ft/ft)     *0.007036  * Area (sq ft)           *          *  230.54  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)         *          *   50.00  *          *
* Vel Total (ft/s)       *   23.86  * Avg. Vel. (ft/s)       *          *   23.86  *          *
```

* Max Chl Dpth (ft)	* 4.86	* Hydr. Depth (ft)	*	* 4.61	*
* Conv. Total (cfs)	* 65569.6	* Conv. (cfs)	*	* 65569.6	*
* Length Wtd. (ft)	* 86.50	* Wetted Per. (ft)	*	* 58.73	*
* Min Ch El (ft)	* 1894.43	* Shear (lb/sq ft)	*	* 1.72	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 41.13	*
* Frctn Loss (ft)	* 0.60	* Cum Volume (acre-ft)	* 0.02	* 23.86	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.08	* 5.07	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4772.04*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1903.56	0	1894.26	25	1893.76	50	1894.26	50	1903.56

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 86.5 86.5 86.5 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1907.51	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 8.91	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1898.60	* Reach Len. (ft)	* 86.50	* 86.50	* 86.50 *
* Crit W.S. (ft)	* 1901.20	* Flow Area (sq ft)	*	* 229.60	* *
* E.G. Slope (ft/ft)	*0.007126	* Area (sq ft)	*	* 229.60	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 23.96	* Avg. Vel. (ft/s)	*	* 23.96	* *
* Max Chl Dpth (ft)	* 4.84	* Hydr. Depth (ft)	*	* 4.59	* *
* Conv. Total (cfs)	* 65152.4	* Conv. (cfs)	*	* 65152.4	* *
* Length Wtd. (ft)	* 86.50	* Wetted Per. (ft)	*	* 58.69	* *
* Min Ch El (ft)	* 1893.76	* Shear (lb/sq ft)	*	* 1.74	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 41.69	* *
* Frctn Loss (ft)	* 0.61	* Cum Volume (acre-ft)	* 0.02	* 23.40	* *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.08	* 4.97	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4685.54*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1902.88	0	1893.58	25	1893.08	50	1893.58	50	1902.88

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 86.5 86.5 86.5 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1906.89	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 8.99	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1897.90	* Reach Len. (ft)	* 86.50	* 86.50	* 86.50 *
* Crit W.S. (ft)	* 1900.52	* Flow Area (sq ft)	*	* 228.64	* *
* E.G. Slope (ft/ft)	*0.007220	* Area (sq ft)	*	* 228.64	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 24.06	* Avg. Vel. (ft/s)	*	* 24.06	* *
* Max Chl Dpth (ft)	* 4.82	* Hydr. Depth (ft)	*	* 4.57	* *
* Conv. Total (cfs)	* 64728.0	* Conv. (cfs)	*	* 64728.0	* *
* Length Wtd. (ft)	* 86.50	* Wetted Per. (ft)	*	* 58.66	* *
* Min Ch El (ft)	* 1893.08	* Shear (lb/sq ft)	*	* 1.76	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 42.27	* *
* Frctn Loss (ft)	* 0.62	* Cum Volume (acre-ft)	* 0.02	* 22.94	* *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.08	* 4.88	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4599.04*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1902.21	0	1892.91	25	1892.41	50	1892.91	50	1902.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.5    86.5    86.5            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1906.25  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    9.03  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1897.22  * Reach Len. (ft)        *   86.50  *   86.50  *   86.50  *
* Crit W.S. (ft)         * 1899.85  * Flow Area (sq ft)      *          *  228.08  *          *
* E.G. Slope (ft/ft)     *0.007275  * Area (sq ft)           *          *  228.08  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   24.11  * Avg. Vel. (ft/s)      *          *   24.11  *          *
* Max Chl Dpth (ft)      *    4.81  * Hydr. Depth (ft)      *          *    4.56  *          *
* Conv. Total (cfs)      * 64482.5  * Conv. (cfs)           *          * 64482.5  *          *
* Length Wtd. (ft)       *   86.50  * Wetted Per. (ft)      *          *   58.63  *          *
* Min Ch El (ft)         * 1892.41  * Shear (lb/sq ft)      *          *    1.77  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   42.60  *          *
* Frctn Loss (ft)        *    0.63  * Cum Volume (acre-ft)   *    0.02  *   22.49  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.08  *    4.78  *          *
************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 4512.54*

INPUT
Description:
Station Elevation Data    num=       5
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************
       0 1901.53       0 1892.23      25 1891.73      50 1892.23      50 1901.53

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.5    86.5    86.5            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1905.61  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    9.08  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1896.53  * Reach Len. (ft)        *   86.50  *   86.50  *   86.50  *
* Crit W.S. (ft)         * 1899.17  * Flow Area (sq ft)      *          *  227.48  *          *
* E.G. Slope (ft/ft)     *0.007336  * Area (sq ft)           *          *  227.48  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   24.18  * Avg. Vel. (ft/s)      *          *   24.18  *          *
* Max Chl Dpth (ft)      *    4.80  * Hydr. Depth (ft)      *          *    4.55  *          *
* Conv. Total (cfs)      * 64215.6  * Conv. (cfs)           *          * 64215.6  *          *
* Length Wtd. (ft)       *   86.50  * Wetted Per. (ft)      *          *   58.61  *          *
* Min Ch El (ft)         * 1891.73  * Shear (lb/sq ft)      *          *    1.78  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   42.98  *          *
* Frctn Loss (ft)        *    0.63  * Cum Volume (acre-ft)   *    0.02  *   22.04  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.08  *    4.68  *          *
************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 4426.04*

INPUT
Description:
Station Elevation Data    num=       5
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************
       0 1900.85       0 1891.55      25 1891.05      50 1891.55      50 1900.85

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50              .35     .35     .35            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1904.96  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    9.12  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1895.84  * Reach Len. (ft)        *    0.35  *    0.35  *    0.35  *
* Crit W.S. (ft)         * 1898.49  * Flow Area (sq ft)      *          *  226.93  *          *
* E.G. Slope (ft/ft)     *0.007391  * Area (sq ft)           *          *  226.93  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   24.24  * Avg. Vel. (ft/s)      *          *   24.24  *          *
* Max Chl Dpth (ft)      *    4.79  * Hydr. Depth (ft)      *          *    4.54  *          *
* Conv. Total (cfs)      * 63973.4  * Conv. (cfs)           *          * 63973.4  *          *
* Length Wtd. (ft)       *    0.35  * Wetted Per. (ft)      *          *   58.59  *          *
* Min Ch El (ft)         * 1891.05  * Shear (lb/sq ft)      *          *    1.79  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   43.32  *          *
* Frctn Loss (ft)        *    0.64  * Cum Volume (acre-ft)   *    0.02  *   21.59  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.08  *    4.58  *          *
************************************************************************************************

CROSS SECTION
```

RIVER: Flamingo Wash
REACH: 1 RS: 4425.69

INPUT
Description: 44+25.69 PC
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1900.85	0	1891.55	25	1891.05	50	1891.55	50	1900.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 75.69 75.69 75.69 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1904.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.12	Wt. n-Val.		0.013	
W.S. Elev (ft)	1895.84	Reach Len. (ft)	75.69	75.69	75.69
Crit W.S. (ft)	1898.49	Flow Area (sq ft)		226.93	
E.G. Slope (ft/ft)	*0.007391	Area (sq ft)		226.93	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	24.24	Avg. Vel. (ft/s)		24.24	
Max Chl Dpth (ft)	4.79	Hydr. Depth (ft)		4.54	
Conv. Total (cfs)	63973.4	Conv. (cfs)		63973.4	
Length Wtd. (ft)	75.69	Wetted Per. (ft)		58.59	
Min Ch El (ft)	1891.05	Shear (lb/sq ft)		1.79	
Alpha	1.00	Stream Power (lb/ft s)		43.32	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.02	21.59	
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	4.58	

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4350

INPUT
Description: 43+50 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1900.26	0	1890.96	25	1890.46	50	1890.96	50	1900.26

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 75 75 75 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1904.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.15	Wt. n-Val.		0.013	
W.S. Elev (ft)	1895.24	Reach Len. (ft)	75.00	75.00	75.00
Crit W.S. (ft)	1897.90	Flow Area (sq ft)		226.54	
E.G. Slope (ft/ft)	*0.007431	Area (sq ft)		226.54	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	24.28	Avg. Vel. (ft/s)		24.28	
Max Chl Dpth (ft)	4.78	Hydr. Depth (ft)		4.53	
Conv. Total (cfs)	63801.3	Conv. (cfs)		63801.3	
Length Wtd. (ft)	75.00	Wetted Per. (ft)		58.57	
Min Ch El (ft)	1890.46	Shear (lb/sq ft)		1.79	
Alpha	1.00	Stream Power (lb/ft s)		43.56	
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	0.02	21.19	
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	4.49	

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4275.*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1899.51	0	1890.21	25	1889.71	50	1890.21	50	1899.51

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 75 75 75 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1903.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.38	Wt. n-Val.		0.013	
W.S. Elev (ft)	1894.44	Reach Len. (ft)	75.00	75.00	75.00
Crit W.S. (ft)	1897.15	Flow Area (sq ft)		223.79	
E.G. Slope (ft/ft)	*0.007721	Area (sq ft)		223.79	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	

* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	*
* Vel Total (ft/s)	* 24.58	* Avg. Vel. (ft/s)	*	* 24.58	*
* Max Chl Dpth (ft)	* 4.73	* Hydr. Depth (ft)	*	* 4.48	*
* Conv. Total (cfs)	* 62592.9	* Conv. (cfs)	*	* 62592.9	*
* Length Wtd. (ft)	* 75.00	* Wetted Per. (ft)	*	* 58.46	*
* Min Ch El (ft)	* 1889.71	* Shear (lb/sq ft)	*	* 1.85	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 45.35	*
* Frctn Loss (ft)	* 0.57	* Cum Volume (acre-ft)	* 0.02	* 20.80	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 4.40	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4200.00

INPUT
Description: 42+00 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1898.76	0	1889.46	25	1888.96	50	1889.46	50	1898.76

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	72.75	72.75	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1903.21	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 9.57	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1893.64	* Reach Len. (ft)	* 72.75	* 72.75	* 72.75 *
* Crit W.S. (ft)	* 1896.40	* Flow Area (sq ft)	*	* 221.59	* *
* E.G. Slope (ft/ft)	*0.007963	* Area (sq ft)	*	* 221.59	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 24.82	* Avg. Vel. (ft/s)	*	* 24.82	* *
* Max Chl Dpth (ft)	* 4.68	* Hydr. Depth (ft)	*	* 4.43	* *
* Conv. Total (cfs)	* 61633.8	* Conv. (cfs)	*	* 61633.8	* *
* Length Wtd. (ft)	* 72.75	* Wetted Per. (ft)	*	* 58.37	* *
* Min Ch El (ft)	* 1888.96	* Shear (lb/sq ft)	*	* 1.89	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 46.84	* *
* Frctn Loss (ft)	* 0.59	* Cum Volume (acre-ft)	* 0.02	* 20.42	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 4.32	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4127.25*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1898.4	0	1889.1	25	1888.6	50	1889.1	50	1898.4

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	72.75	72.75	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1902.61	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 9.26	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1893.36	* Reach Len. (ft)	* 72.75	* 72.75	* 72.75 *
* Crit W.S. (ft)	* 1896.04	* Flow Area (sq ft)	*	* 225.25	* *
* E.G. Slope (ft/ft)	*0.007565	* Area (sq ft)	*	* 225.25	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 24.42	* Avg. Vel. (ft/s)	*	* 24.42	* *
* Max Chl Dpth (ft)	* 4.76	* Hydr. Depth (ft)	*	* 4.51	* *
* Conv. Total (cfs)	* 63235.0	* Conv. (cfs)	*	* 63235.0	* *
* Length Wtd. (ft)	* 72.75	* Wetted Per. (ft)	*	* 58.52	* *
* Min Ch El (ft)	* 1888.60	* Shear (lb/sq ft)	*	* 1.82	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 44.39	* *
* Frctn Loss (ft)	* 0.56	* Cum Volume (acre-ft)	* 0.02	* 20.05	* *
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	* 0.08	* 4.23	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 4054.5*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1898.03	0	1888.73	25	1888.23	50	1888.73	50	1898.03

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50              72.74   72.74   72.74            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1902.06  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    9.01  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1893.05  * Reach Len. (ft)        *   72.74  *   72.74  *   72.74  *
* Crit W.S. (ft)         * 1895.67  * Flow Area (sq ft)      *          *  228.30  *          *
* E.G. Slope (ft/ft)     *0.007253  * Area (sq ft)           *          *  228.30  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   24.09  * Avg. Vel. (ft/s)      *          *   24.09  *          *
* Max Chl Dpth (ft)      *    4.82  * Hydr. Depth (ft)      *          *    4.57  *          *
* Conv. Total (cfs)      * 64579.6  * Conv. (cfs)           *          * 64579.6  *          *
* Length Wtd. (ft)       *   72.74  * Wetted Per. (ft)      *          *   58.64  *          *
* Min Ch El (ft)         * 1888.23  * Shear (lb/sq ft)      *          *    1.76  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   42.47  *          *
* Frctn Loss (ft)        *    0.54  * Cum Volume (acre-ft)   *    0.02  *   19.67  *          *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *    0.08  *    4.15  *          *
*****************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 3981.76

INPUT
Description: 39+81.76 PT
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       0 1897.67       0 1888.37      25 1887.87      50 1888.37      50 1897.67

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             90.88   90.88   90.88            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1901.53  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    8.78  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1892.75  * Reach Len. (ft)        *   90.88  *   90.88  *   90.88  *
* Crit W.S. (ft)         * 1895.31  * Flow Area (sq ft)      *          *  231.30  *          *
* E.G. Slope (ft/ft)     *0.006963  * Area (sq ft)           *          *  231.30  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   23.78  * Avg. Vel. (ft/s)      *          *   23.78  *          *
* Max Chl Dpth (ft)      *    4.88  * Hydr. Depth (ft)      *          *    4.63  *          *
* Conv. Total (cfs)      * 65911.5  * Conv. (cfs)           *          * 65911.5  *          *
* Length Wtd. (ft)       *   90.88  * Wetted Per. (ft)      *          *   58.76  *          *
* Min Ch El (ft)         * 1887.87  * Shear (lb/sq ft)      *          *    1.71  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   40.69  *          *
* Frctn Loss (ft)        *    0.52  * Cum Volume (acre-ft)   *    0.02  *   19.29  *          *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *    0.08  *    4.07  *          *
*****************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 3890.88*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       0 1897.22       0 1887.92      25 1887.42      50 1887.92      50 1897.22

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             90.88   90.88   90.88            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*****************************************************************************************************
* E.G. Elev (ft)         * 1900.89  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    8.53  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1892.36  * Reach Len. (ft)        *   90.88  *   90.88  *   90.88  *
* Crit W.S. (ft)         * 1894.86  * Flow Area (sq ft)      *          *  234.71  *          *
* E.G. Slope (ft/ft)     *0.006652  * Area (sq ft)           *          *  234.71  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)             *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   23.43  * Avg. Vel. (ft/s)      *          *   23.43  *          *
* Max Chl Dpth (ft)      *    4.94  * Hydr. Depth (ft)      *          *    4.69  *          *
* Conv. Total (cfs)      * 67432.7  * Conv. (cfs)           *          * 67432.7  *          *
* Length Wtd. (ft)       *   90.88  * Wetted Per. (ft)      *          *   58.90  *          *
* Min Ch El (ft)         * 1887.42  * Shear (lb/sq ft)      *          *    1.66  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   38.78  *          *
* Frctn Loss (ft)        *    0.62  * Cum Volume (acre-ft)   *    0.02  *   18.80  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *    0.08  *    3.96  *          *
*****************************************************************************************************

CROSS SECTION
```

```
RIVER: Flamingo Wash
REACH: 1                  RS: 3800

INPUT
Description: 38+00 grade break
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1896.76       0 1887.46      25 1886.96      50 1887.46      50 1896.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50             100     100     100            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1900.28  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    8.32  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1891.96  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1894.40  * Flow Area (sq ft)      *          *  237.57  *          *
* E.G. Slope (ft/ft)     *0.006406  * Area (sq ft)           *          *  237.57  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   23.15  * Avg. Vel. (ft/s)      *          *   23.15  *          *
* Max Chl Dpth (ft)      *    5.00  * Hydr. Depth (ft)      *          *    4.75  *          *
* Conv. Total (cfs)      * 68720.0  * Conv. (cfs)           *          * 68720.0  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   59.01  *          *
* Min Ch El (ft)         * 1886.96  * Shear (lb/sq ft)      *          *    1.61  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   37.27  *          *
* Frctn Loss (ft)        *    0.59  * Cum Volume (acre-ft)   *    0.02  *   18.31  *          *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *    0.08  *    3.86  *          *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 3700.*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1895.76       0 1886.46      25 1885.96      50 1886.46      50 1895.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50             100     100     100            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1899.60  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    8.75  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1890.84  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1893.40  * Flow Area (sq ft)      *          *  231.68  *          *
* E.G. Slope (ft/ft)     *0.006928  * Area (sq ft)           *          *  231.68  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *          * 5500.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   23.74  * Avg. Vel. (ft/s)      *          *   23.74  *          *
* Max Chl Dpth (ft)      *    4.88  * Hydr. Depth (ft)      *          *    4.63  *          *
* Conv. Total (cfs)      * 66077.3  * Conv. (cfs)           *          * 66077.3  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *          *   58.78  *          *
* Min Ch El (ft)         * 1885.96  * Shear (lb/sq ft)      *          *    1.70  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   40.47  *          *
* Frctn Loss (ft)        *    0.67  * Cum Volume (acre-ft)   *    0.02  *   17.77  *          *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *    0.08  *    3.74  *          *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 3600

INPUT
Description: 36+00 grade break.End Transition
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1894.76       0 1885.46      25 1884.96      50 1885.46      50 1894.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      50             100     100     100            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1898.86  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    9.11  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1889.75  * Reach Len. (ft)        *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1892.40  * Flow Area (sq ft)      *          *  227.08  *          *
```

* E.G. Slope (ft/ft)	*0.007377	* Area (sq ft)	*	* 227.08	*	*	
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	*	*	
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	*	*	
* Vel Total (ft/s)	* 24.22	* Avg. Vel. (ft/s)	*	* 24.22	*	*	
* Max Chl Dpth (ft)	* 4.79	* Hydr. Depth (ft)	*	* 4.54	*	*	
* Conv. Total (cfs)	* 64038.0	* Conv. (cfs)	*	* 64038.0	*	*	
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	* 58.59	*	*	
* Min Ch El (ft)	* 1884.96	* Shear (lb/sq ft)	*	* 1.78	*	*	
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 43.23	*	*	
* Frctn Loss (ft)	* 0.71	* Cum Volume (acre-ft)	*	0.02	*	* 17.24	*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	0.08	*	* 3.63	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 3500.*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1893.61	0	1883.38	20.75	1882.96	41.5	1883.38	41.5	1893.61

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	41.5	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	41.5	100	100	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1898.12	* Element	*	Left OB *	Channel	* Right OB	*
* Vel Head (ft)	* 9.63	* Wt. n-Val.	*	*	0.013	*	*
* W.S. Elev (ft)	* 1888.49	* Reach Len. (ft)	*	100.00 *	100.00	* 100.00	*
* Crit W.S. (ft)	* 1891.32	* Flow Area (sq ft)	*	*	220.85	*	*
* E.G. Slope (ft/ft)	*0.006854	* Area (sq ft)	*	*	220.85	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	*	5500.00	*	*
* Top Width (ft)	* 41.50	* Top Width (ft)	*	*	41.50	*	*
* Vel Total (ft/s)	* 24.90	* Avg. Vel. (ft/s)	*	*	24.90	*	*
* Max Chl Dpth (ft)	* 5.53	* Hydr. Depth (ft)	*	*	5.32	*	*
* Conv. Total (cfs)	* 66432.3	* Conv. (cfs)	*	*	66432.3	*	*
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	*	51.73	*	*
* Min Ch El (ft)	* 1882.96	* Shear (lb/sq ft)	*	*	1.83	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	45.50	*	*
* Frctn Loss (ft)	* 0.71	* Cum Volume (acre-ft)	*	0.02	* 16.73	*	*
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	*	0.08	* 3.52	*	*

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: Flamingo Wash
REACH: 1 RS: 3400

INPUT
Description: 34+00 grade break. Begin Transition from 33' to 50'
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1892.46	0	1881.29	16.5	1880.96	33	1881.29	33	1892.46

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	33	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	33	100	100	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1897.48	* Element	*	Left OB *	Channel	* Right OB	*
* Vel Head (ft)	* 9.68	* Wt. n-Val.	*	*	0.013	*	*
* W.S. Elev (ft)	* 1887.80	* Reach Len. (ft)	*	100.00 *	100.00	* 100.00	*
* Crit W.S. (ft)	* 1890.63	* Flow Area (sq ft)	*	*	220.23	*	*
* E.G. Slope (ft/ft)	*0.005920	* Area (sq ft)	*	*	220.23	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	*	5500.00	*	*
* Top Width (ft)	* 33.00	* Top Width (ft)	*	*	33.00	*	*
* Vel Total (ft/s)	* 24.97	* Avg. Vel. (ft/s)	*	*	24.97	*	*
* Max Chl Dpth (ft)	* 6.84	* Hydr. Depth (ft)	*	*	6.67	*	*
* Conv. Total (cfs)	* 71480.2	* Conv. (cfs)	*	*	71480.2	*	*
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	*	46.02	*	*
* Min Ch El (ft)	* 1880.96	* Shear (lb/sq ft)	*	*	1.77	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	44.17	*	*
* Frctn Loss (ft)	* 0.64	* Cum Volume (acre-ft)	*	0.02	* 16.22	*	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	0.08	* 3.44	*	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 3300.*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
*****************************************************************************
       0 1891.46       0 1880.29    16.5 1879.96      33 1880.29      33 1891.46

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      33             100     100     100            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1896.84  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   10.22  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1886.62  * Reach Len. (ft)       *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)         * 1889.63  * Flow Area (sq ft)     *          *  214.40  *          *
* E.G. Slope (ft/ft)     *0.006408  * Area (sq ft)          *          *  214.40  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)       *          *   33.00  *          *
* Vel Total (ft/s)       *   25.65  * Avg. Vel. (ft/s)     *          *   25.65  *          *
* Max Chl Dpth (ft)      *    6.66  * Hydr. Depth (ft)     *          *    6.50  *          *
* Conv. Total (cfs)      * 68705.1  * Conv. (cfs)          *          * 68705.1  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)     *          *   45.67  *          *
* Min Ch El (ft)         * 1879.96  * Shear (lb/sq ft)     *          *    1.88  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   48.18  *          *
* Frctn Loss (ft)        *    0.62  * Cum Volume (acre-ft)  *    0.02  *   15.72  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.08  *    3.36  *          *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                RS: 3200.*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       0 1890.46       0 1879.29    16.5 1878.96      33 1879.29      33 1890.46

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      33           99.16   99.16   99.16            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1896.16  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   10.67  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1885.48  * Reach Len. (ft)       *   99.16  *   99.16  *   99.16  *
* Crit W.S. (ft)         * 1888.63  * Flow Area (sq ft)     *          *  209.77  *          *
* E.G. Slope (ft/ft)     *0.006835  * Area (sq ft)          *          *  209.77  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)       *          *   33.00  *          *
* Vel Total (ft/s)       *   26.22  * Avg. Vel. (ft/s)     *          *   26.22  *          *
* Max Chl Dpth (ft)      *    6.52  * Hydr. Depth (ft)     *          *    6.36  *          *
* Conv. Total (cfs)      * 66525.4  * Conv. (cfs)          *          * 66525.4  *          *
* Length Wtd. (ft)       *   99.16  * Wetted Per. (ft)     *          *   45.39  *          *
* Min Ch El (ft)         * 1878.96  * Shear (lb/sq ft)     *          *    1.97  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   51.71  *          *
* Frctn Loss (ft)        *    0.66  * Cum Volume (acre-ft)  *    0.02  *   15.24  *          *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.08  *    3.29  *          *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                RS: 3100.84

INPUT
Description: 31+00.84 PT
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       0 1889.47       0  1878.3    16.5 1877.97      33  1878.3      33 1889.47

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
*********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      33           68.31   68.31   68.31            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1895.45  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   11.07  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1884.38  * Reach Len. (ft)       *   68.31  *   68.31  *   68.31  *
* Crit W.S. (ft)         * 1887.64  * Flow Area (sq ft)     *          *  206.01  *          *
* E.G. Slope (ft/ft)     *0.007212  * Area (sq ft)          *          *  206.01  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)           *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)       *          *   33.00  *          *
* Vel Total (ft/s)       *   26.70  * Avg. Vel. (ft/s)     *          *   26.70  *          *
* Max Chl Dpth (ft)      *    6.41  * Hydr. Depth (ft)     *          *    6.24  *          *
* Conv. Total (cfs)      * 64765.7  * Conv. (cfs)          *          * 64765.7  *          *
```

* Length Wtd. (ft)	* 68.31	* Wetted Per. (ft)	*	* 45.16	*
* Min Ch El (ft)	* 1877.97	* Shear (lb/sq ft)	*	* 2.05	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 54.83	*
* Frctn Loss (ft)	* 0.70	* Cum Volume (acre-ft)	* 0.02	* 14.76	*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.08	* 3.21	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 3032.53*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1888.79	0	1877.62	16.5	1877.29	33	1877.62	33	1888.79

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	33	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	33	68.31	68.31	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1894.93	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 11.30	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1883.63	* Reach Len. (ft)	* 68.31	* 68.31	* 68.31 *
* Crit W.S. (ft)	* 1886.96	* Flow Area (sq ft)	*	* 203.92	* *
* E.G. Slope (ft/ft)	*0.007433	* Area (sq ft)	*	* 203.92	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 33.00	* Top Width (ft)	*	* 33.00	* *
* Vel Total (ft/s)	* 26.97	* Avg. Vel. (ft/s)	*	* 26.97	* *
* Max Chl Dpth (ft)	* 6.34	* Hydr. Depth (ft)	*	* 6.18	* *
* Conv. Total (cfs)	* 63792.3	* Conv. (cfs)	*	* 63792.3	* *
* Length Wtd. (ft)	* 68.31	* Wetted Per. (ft)	*	* 45.04	* *
* Min Ch El (ft)	* 1877.29	* Shear (lb/sq ft)	*	* 2.10	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 56.68	* *
* Frctn Loss (ft)	* 0.50	* Cum Volume (acre-ft)	* 0.02	* 14.44	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 3.16	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 2964.22*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1888.1	0	1876.93	16.5	1876.6	33	1876.93	33	1888.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	33	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	33	.01	.01	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1894.40	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 11.52	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1882.89	* Reach Len. (ft)	* 0.01	* 0.01	* 0.01 *
* Crit W.S. (ft)	* 1886.28	* Flow Area (sq ft)	*	* 201.96	* *
* E.G. Slope (ft/ft)	*0.007650	* Area (sq ft)	*	* 201.96	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 33.00	* Top Width (ft)	*	* 33.00	* *
* Vel Total (ft/s)	* 27.23	* Avg. Vel. (ft/s)	*	* 27.23	* *
* Max Chl Dpth (ft)	* 6.28	* Hydr. Depth (ft)	*	* 6.12	* *
* Conv. Total (cfs)	* 62884.5	* Conv. (cfs)	*	* 62884.5	* *
* Length Wtd. (ft)	* 0.01	* Wetted Per. (ft)	*	* 44.92	* *
* Min Ch El (ft)	* 1876.60	* Shear (lb/sq ft)	*	* 2.15	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 58.48	* *
* Frctn Loss (ft)	* 0.52	* Cum Volume (acre-ft)	* 0.02	* 14.12	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 3.11	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 2964.21

INPUT
Description: 29+64.21 PC
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1888.1	0	1876.93	16.5	1876.6	33	1876.93	33	1888.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	33	.013

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

```
             0      33            42.33   42.33   42.33            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1894.41  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   11.52  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 1882.88  * Reach Len. (ft)       *   42.33  *   42.33  *   42.33  *
* Crit W.S. (ft)         * 1886.28  * Flow Area (sq ft)     *          *  201.91  *          *
* E.G. Slope (ft/ft)     *0.007655  * Area (sq ft)          *          *  201.91  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)        *          *   33.00  *          *
* Vel Total (ft/s)       *   27.24  * Avg. Vel. (ft/s)      *          *   27.24  *          *
* Max Chl Dpth (ft)      *    6.28  * Hydr. Depth (ft)      *          *    6.12  *          *
* Conv. Total (cfs)      * 62862.1  * Conv. (cfs)           *          * 62862.1  *          *
* Length Wtd. (ft)       *   42.33  * Wetted Per. (ft)      *          *   44.91  *          *
* Min Ch El (ft)         * 1876.60  * Shear (lb/sq ft)      *          *    2.15  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   58.52  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    0.02  *   14.12  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.08  *    3.11  *          *
************************************************************************************************

Warning: During the supercritical standard step calculations, the final energy answer that was computed
         is greater than the upstream energy.  This is not physically possible.  Please check your data.

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 2921.88

INPUT
Description: 29+21.88 PT
Station Elevation Data    num=       5
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
*********************************************************************************
       0 1887.68       0 1876.51    16.5 1876.18      33 1876.51      33 1887.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      33            84.01   84.01   84.01            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1894.07  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   11.64  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 1882.43  * Reach Len. (ft)       *   84.01  *   84.01  *   84.01  *
* Crit W.S. (ft)         * 1885.85  * Flow Area (sq ft)     *          *  200.87  *          *
* E.G. Slope (ft/ft)     *0.007773  * Area (sq ft)          *          *  200.87  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)        *          *   33.00  *          *
* Vel Total (ft/s)       *   27.38  * Avg. Vel. (ft/s)      *          *   27.38  *          *
* Max Chl Dpth (ft)      *    6.25  * Hydr. Depth (ft)      *          *    6.09  *          *
* Conv. Total (cfs)      * 62384.7  * Conv. (cfs)           *          * 62384.7  *          *
* Length Wtd. (ft)       *   84.01  * Wetted Per. (ft)      *          *   44.85  *          *
* Min Ch El (ft)         * 1876.18  * Shear (lb/sq ft)      *          *    2.17  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   59.51  *          *
* Frctn Loss (ft)        *    0.33  * Cum Volume (acre-ft)  *    0.02  *   13.93  *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.08  *    3.08  *          *
************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 2837.87*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
*********************************************************************************
       0 1886.84       0 1875.67    16.5 1875.34      33 1875.67      33 1886.84

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      33            84.01   84.01   84.01            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
************************************************************************************************
* E.G. Elev (ft)         * 1893.40  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   11.86  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 1881.54  * Reach Len. (ft)       *   84.01  *   84.01  *   84.01  *
* Crit W.S. (ft)         * 1885.02  * Flow Area (sq ft)     *          *  199.00  *          *
* E.G. Slope (ft/ft)     *0.007992  * Area (sq ft)          *          *  199.00  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)        *          *   33.00  *          *
* Vel Total (ft/s)       *   27.64  * Avg. Vel. (ft/s)      *          *   27.64  *          *
* Max Chl Dpth (ft)      *    6.20  * Hydr. Depth (ft)      *          *    6.03  *          *
* Conv. Total (cfs)      * 61521.2  * Conv. (cfs)           *          * 61521.2  *          *
* Length Wtd. (ft)       *   84.01  * Wetted Per. (ft)      *          *   44.74  *          *
* Min Ch El (ft)         * 1875.34  * Shear (lb/sq ft)      *          *    2.22  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   61.34  *          *
* Frctn Loss (ft)        *    0.66  * Cum Volume (acre-ft)  *    0.02  *   13.54  *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.08  *    3.01  *          *
************************************************************************************************

CROSS SECTION
```

```
RIVER: Flamingo Wash
REACH: 1                  RS: 2753.87

INPUT
Description: 27+03.87 Van Buskirk confluence / begin 33' channel
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0    1886       0 1874.83    16.5  1874.5      33 1874.83      33    1886

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      33               50      50      50             .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1892.71  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   12.06  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1880.65  * Reach Len. (ft)        *   50.00  *   50.00  *   50.00  *
* Crit W.S. (ft)         * 1884.18  * Flow Area (sq ft)      *          *  197.36  *          *
* E.G. Slope (ft/ft)     *0.008191  * Area (sq ft)           *          *  197.36  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)        *          *   33.00  *          *
* Vel Total (ft/s)       *   27.87  * Avg. Vel. (ft/s)      *          *   27.87  *          *
* Max Chl Dpth (ft)      *    6.15  * Hydr. Depth (ft)      *          *    5.98  *          *
* Conv. Total (cfs)      * 60769.6  * Conv. (cfs)           *          * 60769.6  *          *
* Length Wtd. (ft)       *   50.00  * Wetted Per. (ft)      *          *   44.64  *          *
* Min Ch El (ft)         * 1874.50  * Shear (lb/sq ft)      *          *    2.26  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   63.01  *          *
* Frctn Loss (ft)        *    0.68  * Cum Volume (acre-ft)   *    0.02  *   13.16  *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *    0.08  *    2.95  *          *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 2703.87

INPUT
Description: 27+03.87 Van Buskirk confluence / begin 33' channel
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0  1885.5       0 1874.33    16.5    1874      25    1874      33 1874.16
      33  1885.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013      33    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0      33                 1       1       1              .1       .2

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1892.28  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   12.24  * Wt. n-Val.             *          *   0.013  *          *
* W.S. Elev (ft)         * 1880.04  * Reach Len. (ft)        *    1.00  *    1.00  *    1.00  *
* Crit W.S. (ft)         * 1883.59  * Flow Area (sq ft)      *          *  195.88  *          *
* E.G. Slope (ft/ft)     *0.008387  * Area (sq ft)           *          *  195.88  *          *
* Q Total (cfs)          * 5500.00  * Flow (cfs)            *          * 5500.00  *          *
* Top Width (ft)         *   33.00  * Top Width (ft)        *          *   33.00  *          *
* Vel Total (ft/s)       *   28.08  * Avg. Vel. (ft/s)      *          *   28.08  *          *
* Max Chl Dpth (ft)      *    6.04  * Hydr. Depth (ft)      *          *    5.94  *          *
* Conv. Total (cfs)      * 60055.2  * Conv. (cfs)           *          * 60055.2  *          *
* Length Wtd. (ft)       *    1.00  * Wetted Per. (ft)      *          *   44.59  *          *
* Min Ch El (ft)         * 1874.00  * Shear (lb/sq ft)      *          *    2.30  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   64.59  *          *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)   *    0.02  *   12.93  *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *    0.08  *    2.91  *          *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                  RS: 2702.87

INPUT
Description: 27+02.87 Van Buskirk confluence
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1885.49       0 1874.32    16.5 1873.99      25 1873.99   51.89 1874.53
   51.89 1885.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0    .013       0    .013   51.89    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            0   51.89           54.35   54.35   54.35              .1       .2
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
      33   51.89 1885.49       T

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
```

* E.G. Elev (ft)	* 1892.27	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 12.24	* Wt. n-Val.	*	* 0.013	*	*
* W.S. Elev (ft)	* 1880.03	* Reach Len. (ft)	* 54.35	* 54.35	* 54.35	*
* Crit W.S. (ft)	* 1883.58	* Flow Area (sq ft)	*	* 195.94	*	*
* E.G. Slope (ft/ft)	*0.006941	* Area (sq ft)	*	* 303.40	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	*	*
* Top Width (ft)	* 51.89	* Top Width (ft)	*	* 51.89	*	*
* Vel Total (ft/s)	* 28.07	* Avg. Vel. (ft/s)	*	* 28.07	*	*
* Max Chl Dpth (ft)	* 6.04	* Hydr. Depth (ft)	*	* 5.94	*	*
* Conv. Total (cfs)	* 66018.0	* Conv. (cfs)	*	* 66018.0	*	*
* Length Wtd. (ft)	* 54.35	* Wetted Per. (ft)	*	* 38.71	*	*
* Min Ch El (ft)	* 1873.99	* Shear (lb/sq ft)	*	* 2.19	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 61.56	*	*
* Frctn Loss (ft)	* 0.01	* Cum Volume (acre-ft)	* 0.02	* 12.93	*	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.08	* 2.91	*	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 2648.52

INPUT
Description: 26+48.52 end 50' channel / begin transition to confluence
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1883.72	0	1874.22	25	1873.72	50	1874.22	50	1883.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	52.38	52.38	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1891.57	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 13.93	* Wt. n-Val.	*	* 0.013	*	*
* W.S. Elev (ft)	* 1877.64	* Reach Len. (ft)	* 52.38	* 52.38	* 52.38	*
* Crit W.S. (ft)	* 1881.19	* Flow Area (sq ft)	*	* 183.65	*	*
* E.G. Slope (ft/ft)	*0.014378	* Area (sq ft)	*	* 183.65	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	*	*
* Vel Total (ft/s)	* 29.95	* Avg. Vel. (ft/s)	*	* 29.95	*	*
* Max Chl Dpth (ft)	* 3.92	* Hydr. Depth (ft)	*	* 3.67	*	*
* Conv. Total (cfs)	* 45868.5	* Conv. (cfs)	*	* 45868.5	*	*
* Length Wtd. (ft)	* 52.38	* Wetted Per. (ft)	*	* 56.86	*	*
* Min Ch El (ft)	* 1873.72	* Shear (lb/sq ft)	*	* 2.90	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 86.83	*	*
* Frctn Loss (ft)	* 0.53	* Cum Volume (acre-ft)	* 0.02	* 12.62	*	*
* C & E Loss (ft)	* 0.17	* Cum SA (acres)	* 0.08	* 2.85	*	*

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: Flamingo Wash
REACH: 1 RS: 2596.14

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1883.46	0	1873.96	25	1873.46	50	1873.96	50	1883.46

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	19.7	19.7	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1890.78	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 13.32	* Wt. n-Val.	*	* 0.013	*	*
* W.S. Elev (ft)	* 1877.47	* Reach Len. (ft)	* 19.70	* 19.70	* 19.70	*
* Crit W.S. (ft)	* 1880.92	* Flow Area (sq ft)	*	* 187.82	*	*
* E.G. Slope (ft/ft)	*0.013394	* Area (sq ft)	*	* 187.82	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	*	*
* Vel Total (ft/s)	* 29.28	* Avg. Vel. (ft/s)	*	* 29.28	*	*
* Max Chl Dpth (ft)	* 4.01	* Hydr. Depth (ft)	*	* 3.76	*	*
* Conv. Total (cfs)	* 47524.0	* Conv. (cfs)	*	* 47524.0	*	*
* Length Wtd. (ft)	* 19.70	* Wetted Per. (ft)	*	* 57.02	*	*
* Min Ch El (ft)	* 1873.46	* Shear (lb/sq ft)	*	* 2.75	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 80.65	*	*
* Frctn Loss (ft)	* 0.73	* Cum Volume (acre-ft)	* 0.02	* 12.40	*	*
* C & E Loss (ft)	* 0.06	* Cum SA (acres)	* 0.08	* 2.79	*	*

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: Flamingo Wash
REACH: 1 RS: 2576.44*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1883.36	0	1873.86	25	1873.36	50	1873.86	50	1883.36

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 72.07 72.07 72.07 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1890.50	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 13.10	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1877.40	* Reach Len. (ft)	* 72.07	* 72.07	* 72.07 *
* Crit W.S. (ft)	* 1880.82	* Flow Area (sq ft)	*	* 189.34	* *
* E.G. Slope (ft/ft)	*0.013056	* Area (sq ft)	*	* 189.34	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 29.05	* Avg. Vel. (ft/s)	*	* 29.05	* *
* Max Chl Dpth (ft)	* 4.04	* Hydr. Depth (ft)	*	* 3.79	* *
* Conv. Total (cfs)	* 48134.9	* Conv. (cfs)	*	* 48134.9	* *
* Length Wtd. (ft)	* 72.07	* Wetted Per. (ft)	*	* 57.08	* *
* Min Ch El (ft)	* 1873.36	* Shear (lb/sq ft)	*	* 2.70	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 78.53	* *
* Frctn Loss (ft)	* 0.26	* Cum Volume (acre-ft)	* 0.02	* 12.31	* *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.08	* 2.76	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 2504.37*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1882.99	0	1873.49	25	1872.99	50	1873.49	50	1882.99

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 61.31 61.31 61.31 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1889.53	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 12.39	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1877.13	* Reach Len. (ft)	* 61.31	* 61.31	* 61.31 *
* Crit W.S. (ft)	* 1880.45	* Flow Area (sq ft)	*	* 194.68	* *
* E.G. Slope (ft/ft)	*0.011960	* Area (sq ft)	*	* 194.68	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 28.25	* Avg. Vel. (ft/s)	*	* 28.25	* *
* Max Chl Dpth (ft)	* 4.14	* Hydr. Depth (ft)	*	* 3.89	* *
* Conv. Total (cfs)	* 50291.0	* Conv. (cfs)	*	* 50291.0	* *
* Length Wtd. (ft)	* 61.31	* Wetted Per. (ft)	*	* 57.30	* *
* Min Ch El (ft)	* 1872.99	* Shear (lb/sq ft)	*	* 2.54	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 71.68	* *
* Frctn Loss (ft)	* 0.90	* Cum Volume (acre-ft)	* 0.02	* 12.00	* *
* C & E Loss (ft)	* 0.07	* Cum SA (acres)	* 0.08	* 2.68	* *

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: Flamingo Wash
REACH: 1 RS: 2443.06

INPUT
Description: 24+32.30 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1882.68	0	1873.18	25	1872.68	50	1873.18	50	1882.68

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 50 10.76 10.76 10.76 .05 .1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1888.77	* Element	* Left OB	* Channel	* Right OB *

* Vel Head (ft)	* 11.86	* Wt. n-Val.	*	* 0.013	*	*	*	*
* W.S. Elev (ft)	* 1876.91	* Reach Len. (ft)	* 10.76	* 10.76	* 10.76	*	*	*
* Crit W.S. (ft)	* 1880.14	* Flow Area (sq ft)	*	* 199.02	*	*	*	*
* E.G. Slope (ft/ft)	*0.011158	* Area (sq ft)	*	* 199.02	*	*	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	*	*	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	*	*	*	*
* Vel Total (ft/s)	* 27.64	* Avg. Vel. (ft/s)	*	* 27.64	*	*	*	*
* Max Chl Dpth (ft)	* 4.23	* Hydr. Depth (ft)	*	* 3.98	*	*	*	*
* Conv. Total (cfs)	* 52068.2	* Conv. (cfs)	*	* 52068.2	*	*	*	*
* Length Wtd. (ft)	* 10.76	* Wetted Per. (ft)	*	* 57.47	*	*	*	*
* Min Ch El (ft)	* 1872.68	* Shear (lb/sq ft)	*	* 2.41	*	*	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 66.66	*	*	*	*
* Frctn Loss (ft)	* 0.71	* Cum Volume (acre-ft)	* 0.02	* 11.72	*	*	*	*
* C & E Loss (ft)	* 0.05	* Cum SA (acres)	* 0.08	* 2.61	*	*	*	*

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: Flamingo Wash
REACH: 1 RS: 2432.30

INPUT
Description: 24+32.30 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1882.63	0	1873.13	25	1872.63	50	1873.13	50	1882.63

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
0	50	98.19	98.19	98.19	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1888.65	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 11.77	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1876.88	* Reach Len. (ft)	* 98.19	* 98.19	* 98.19 *
* Crit W.S. (ft)	* 1880.09	* Flow Area (sq ft)	*	* 199.76	* *
* E.G. Slope (ft/ft)	*0.011027	* Area (sq ft)	*	* 199.76	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 27.53	* Avg. Vel. (ft/s)	*	* 27.53	* *
* Max Chl Dpth (ft)	* 4.25	* Hydr. Depth (ft)	*	* 4.00	* *
* Conv. Total (cfs)	* 52375.2	* Conv. (cfs)	*	* 52375.2	* *
* Length Wtd. (ft)	* 98.19	* Wetted Per. (ft)	*	* 57.50	* *
* Min Ch El (ft)	* 1872.63	* Shear (lb/sq ft)	*	* 2.39	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 65.85	* *
* Frctn Loss (ft)	* 0.12	* Cum Volume (acre-ft)	* 0.02	* 11.67	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 2.60	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 2334.09*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1881.85	0	1872.35	25	1871.85	50	1872.35	50	1881.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
0	50	98.19	98.19	98.19	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1887.55	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 11.39	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1876.16	* Reach Len. (ft)	* 98.19	* 98.19	* 98.19 *
* Crit W.S. (ft)	* 1879.31	* Flow Area (sq ft)	*	* 203.05	* *
* E.G. Slope (ft/ft)	*0.010476	* Area (sq ft)	*	* 203.05	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 27.09	* Avg. Vel. (ft/s)	*	* 27.09	* *
* Max Chl Dpth (ft)	* 4.31	* Hydr. Depth (ft)	*	* 4.06	* *
* Conv. Total (cfs)	* 53736.1	* Conv. (cfs)	*	* 53736.1	* *
* Length Wtd. (ft)	* 98.19	* Wetted Per. (ft)	*	* 57.63	* *
* Min Ch El (ft)	* 1871.85	* Shear (lb/sq ft)	*	* 2.30	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 62.41	* *
* Frctn Loss (ft)	* 1.06	* Cum Volume (acre-ft)	* 0.02	* 11.22	* *
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 0.08	* 2.49	* *

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: Flamingo Wash

REACH: 1 RS: 2235.88*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1881.06	0	1871.56	25	1871.06	50	1871.56	50	1881.06

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	98.19	98.19	98.19	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

			Left OB	Channel	Right OB
E.G. Elev (ft)	1886.52	Element			
Vel Head (ft)	11.09	Wt. n-Val.		0.013	
W.S. Elev (ft)	1875.43	Reach Len. (ft)	98.19	98.19	98.19
Crit W.S. (ft)	1878.52	Flow Area (sq ft)		205.79	
E.G. Slope (ft/ft)	*0.010043	Area (sq ft)		205.79	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	26.73	Avg. Vel. (ft/s)		26.73	
Max Chl Dpth (ft)	4.37	Hydr. Depth (ft)		4.12	
Conv. Total (cfs)	54883.3	Conv. (cfs)		54883.3	
Length Wtd. (ft)	98.19	Wetted Per. (ft)		57.74	
Min Ch El (ft)	1871.06	Shear (lb/sq ft)		2.23	
Alpha	1.00	Stream Power (lb/ft s)		59.72	
Frctn Loss (ft)	1.01	Cum Volume (acre-ft)	0.02	10.76	
C & E Loss (ft)	0.03	Cum SA (acres)	0.08	2.37	

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: Flamingo Wash
REACH: 1 RS: 2137.68

INPUT
Description: 21+37.68 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1880.28	0	1870.78	25	1870.28	50	1870.78	50	1880.28

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	78.1	78.1	78.1	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

			Left OB	Channel	Right OB
E.G. Elev (ft)	1885.52	Element			
Vel Head (ft)	10.83	Wt. n-Val.		0.013	
W.S. Elev (ft)	1874.70	Reach Len. (ft)	78.10	78.10	78.10
Crit W.S. (ft)	1877.74	Flow Area (sq ft)		208.28	
E.G. Slope (ft/ft)	*0.009670	Area (sq ft)		208.28	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	26.41	Avg. Vel. (ft/s)		26.41	
Max Chl Dpth (ft)	4.42	Hydr. Depth (ft)		4.17	
Conv. Total (cfs)	55930.4	Conv. (cfs)		55930.4	
Length Wtd. (ft)	78.10	Wetted Per. (ft)		57.84	
Min Ch El (ft)	1870.28	Shear (lb/sq ft)		2.17	
Alpha	1.00	Stream Power (lb/ft s)		57.40	
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	0.02	10.29	
C & E Loss (ft)	0.03	Cum SA (acres)	0.08	2.26	

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 2059.60*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1878.57	0	1869.24	25	1868.74	50	1869.24	50	1878.57

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	39.44	39.44	39.44	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

			Left OB	Channel	Right OB
E.G. Elev (ft)	1884.69	Element			
Vel Head (ft)	11.69	Wt. n-Val.		0.013	
W.S. Elev (ft)	1873.00	Reach Len. (ft)	39.44	39.44	39.44
Crit W.S. (ft)	1876.20	Flow Area (sq ft)		200.48	

* E.G. Slope (ft/ft)	*0.010904	* Area (sq ft)	*	*	200.48	*	*
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	*	5500.00	*	*
* Top Width (ft)	* 50.00	* Top Width (ft)	*	*	50.00	*	*
* Vel Total (ft/s)	* 27.43	* Avg. Vel. (ft/s)	*	*	27.43	*	*
* Max Chl Dpth (ft)	* 4.26	* Hydr. Depth (ft)	*	*	4.01	*	*
* Conv. Total (cfs)	* 52670.2	* Conv. (cfs)	*	*	52670.2	*	*
* Length Wtd. (ft)	* 39.44	* Wetted Per. (ft)	*	*	57.53	*	*
* Min Ch El (ft)	* 1868.74	* Shear (lb/sq ft)	*	*	2.37	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	65.08	*	*
* Frctn Loss (ft)	* 0.80	* Cum Volume (acre-ft)	*	0.02	* 9.92	*	*
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	*	0.08	* 2.17	*	*

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: Flamingo Wash
REACH: 1 RS: 2020.16

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1877.63	0	1868.46	25	1867.96	50	1868.46	50	1877.63

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	38.63	38.63	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1884.23	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 12.07	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1872.16	* Reach Len. (ft)	* 38.63	* 38.63	* 38.63 *
* Crit W.S. (ft)	* 1875.42	* Flow Area (sq ft)	*	* 197.27	* *
* E.G. Slope (ft/ft)	*0.011472	* Area (sq ft)	*	* 197.27	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 27.88	* Avg. Vel. (ft/s)	*	* 27.88	* *
* Max Chl Dpth (ft)	* 4.20	* Hydr. Depth (ft)	*	* 3.95	* *
* Conv. Total (cfs)	* 51350.8	* Conv. (cfs)	*	* 51350.8	* *
* Length Wtd. (ft)	* 38.63	* Wetted Per. (ft)	*	* 57.40	* *
* Min Ch El (ft)	* 1867.96	* Shear (lb/sq ft)	*	* 2.46	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 68.62	* *
* Frctn Loss (ft)	* 0.44	* Cum Volume (acre-ft)	* 0.02	* 9.74	* *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.08	* 2.13	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 1981.53*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1876.86	0	1867.69	25	1867.19	50	1867.69	50	1876.86

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	78.1	78.1	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1883.75	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 12.43	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1871.33	* Reach Len. (ft)	* 78.10	* 78.10	* 78.10 *
* Crit W.S. (ft)	* 1874.65	* Flow Area (sq ft)	*	* 194.43	* *
* E.G. Slope (ft/ft)	*0.012009	* Area (sq ft)	*	* 194.43	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 28.29	* Avg. Vel. (ft/s)	*	* 28.29	* *
* Max Chl Dpth (ft)	* 4.14	* Hydr. Depth (ft)	*	* 3.89	* *
* Conv. Total (cfs)	* 50189.2	* Conv. (cfs)	*	* 50189.2	* *
* Length Wtd. (ft)	* 78.10	* Wetted Per. (ft)	*	* 57.29	* *
* Min Ch El (ft)	* 1867.19	* Shear (lb/sq ft)	*	* 2.54	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 71.98	* *
* Frctn Loss (ft)	* 0.45	* Cum Volume (acre-ft)	* 0.02	* 9.57	* *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 0.08	* 2.08	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 1903.46

INPUT
Description: 19+03.46 grade break
19+03.46 grade break
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1875.15	0	1866.15	25	1865.65	50	1866.15	50	1875.15

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.15	86.15	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1882.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	13.05	Wt. n-Val.		0.013	
W.S. Elev (ft)	1869.70	Reach Len. (ft)	86.15	86.15	86.15
Crit W.S. (ft)	1873.11	Flow Area (sq ft)		189.73	
E.G. Slope (ft/ft)	*0.012971	Area (sq ft)		189.73	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	28.99	Avg. Vel. (ft/s)		28.99	
Max Chl Dpth (ft)	4.04	Hydr. Depth (ft)		3.79	
Conv. Total (cfs)	48291.7	Conv. (cfs)		48291.7	
Length Wtd. (ft)	86.15	Wetted Per. (ft)		57.10	
Min Ch El (ft)	1865.65	Shear (lb/sq ft)		2.69	
Alpha	1.00	Stream Power (lb/ft s)		78.00	
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	0.02	9.22	
C & E Loss (ft)	0.03	Cum SA (acres)	0.08	1.99	

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: Flamingo Wash
REACH: 1 RS: 1817.25*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1874.45	0	1865.45	25	1864.95	50	1865.45	50	1874.45

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.15	86.15	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1881.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	12.53	Wt. n-Val.		0.013	
W.S. Elev (ft)	1869.07	Reach Len. (ft)	86.15	86.15	86.15
Crit W.S. (ft)	1872.41	Flow Area (sq ft)		193.64	
E.G. Slope (ft/ft)	*0.012164	Area (sq ft)		193.64	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	50.00	Top Width (ft)		50.00	
Vel Total (ft/s)	28.40	Avg. Vel. (ft/s)		28.40	
Max Chl Dpth (ft)	4.12	Hydr. Depth (ft)		3.87	
Conv. Total (cfs)	49869.2	Conv. (cfs)		49869.2	
Length Wtd. (ft)	86.15	Wetted Per. (ft)		57.26	
Min Ch El (ft)	1864.95	Shear (lb/sq ft)		2.57	
Alpha	1.00	Stream Power (lb/ft s)		72.95	
Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	0.02	8.85	
C & E Loss (ft)	0.05	Cum SA (acres)	0.08	1.89	

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: Flamingo Wash
REACH: 1 RS: 1731.04*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1873.74	0	1864.74	25	1864.24	50	1864.74	50	1873.74

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.15	86.15	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

E.G. Elev (ft)	1880.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	12.11	Wt. n-Val.		0.013	

* W.S. Elev (ft)	* 1868.43	* Reach Len. (ft)	* 86.15	* 86.15	* 86.15	*		
* Crit W.S. (ft)	* 1871.70	* Flow Area (sq ft)	*	* 196.94	*	*		
* E.G. Slope (ft/ft)	*0.011533	* Area (sq ft)	*	* 196.94	*	*		
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	*	*		
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	*	*		
* Vel Total (ft/s)	* 27.93	* Avg. Vel. (ft/s)	*	* 27.93	*	*		
* Max Chl Dpth (ft)	* 4.19	* Hydr. Depth (ft)	*	* 3.94	*	*		
* Conv. Total (cfs)	* 51213.3	* Conv. (cfs)	*	* 51213.3	*	*		
* Length Wtd. (ft)	* 86.15	* Wetted Per. (ft)	*	* 57.39	*	*		
* Min Ch El (ft)	* 1864.24	* Shear (lb/sq ft)	*	* 2.47	*	*		
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 69.01	*	*		
* Frctn Loss (ft)	* 1.02	* Cum Volume (acre-ft)	* 0.02	* 8.46	*	*		
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 0.08	* 1.79	*	*		

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: Flamingo Wash
REACH: 1 RS: 1644.83*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1873.04	0	1864.04	25	1863.54	50	1864.04	50	1873.04

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.15	86.15	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1879.53	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 11.74	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1867.79	* Reach Len. (ft)	* 86.15	* 86.15	* 86.15 *
* Crit W.S. (ft)	* 1871.00	* Flow Area (sq ft)	*	* 199.99	* *
* E.G. Slope (ft/ft)	*0.010988	* Area (sq ft)	*	* 199.99	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 27.50	* Avg. Vel. (ft/s)	*	* 27.50	* *
* Max Chl Dpth (ft)	* 4.25	* Hydr. Depth (ft)	*	* 4.00	* *
* Conv. Total (cfs)	* 52468.4	* Conv. (cfs)	*	* 52468.4	* *
* Length Wtd. (ft)	* 86.15	* Wetted Per. (ft)	*	* 57.51	* *
* Min Ch El (ft)	* 1863.54	* Shear (lb/sq ft)	*	* 2.39	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 65.61	* *
* Frctn Loss (ft)	* 0.97	* Cum Volume (acre-ft)	* 0.02	* 8.07	* *
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 0.08	* 1.70	* *

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: Flamingo Wash
REACH: 1 RS: 1558.63*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1872.34	0	1863.34	25	1862.84	50	1863.34	50	1872.34

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	.01	.01	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1878.58	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 11.43	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1867.14	* Reach Len. (ft)	* 0.01	* 0.01	* 0.01 *
* Crit W.S. (ft)	* 1870.30	* Flow Area (sq ft)	*	* 202.69	* *
* E.G. Slope (ft/ft)	*0.010534	* Area (sq ft)	*	* 202.69	* *
* Q Total (cfs)	* 5500.00	* Flow (cfs)	*	* 5500.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 27.13	* Avg. Vel. (ft/s)	*	* 27.13	* *
* Max Chl Dpth (ft)	* 4.30	* Hydr. Depth (ft)	*	* 4.05	* *
* Conv. Total (cfs)	* 53588.9	* Conv. (cfs)	*	* 53588.9	* *
* Length Wtd. (ft)	* 0.01	* Wetted Per. (ft)	*	* 57.62	* *
* Min Ch El (ft)	* 1862.84	* Shear (lb/sq ft)	*	* 2.31	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 62.77	* *
* Frctn Loss (ft)	* 0.93	* Cum Volume (acre-ft)	* 0.02	* 7.67	* *
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	* 0.08	* 1.60	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 1558.62

```
INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1872.34       0 1863.34      25 1862.84      50 1863.34      50 1872.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.24   86.24   86.24            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1878.55  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   11.12  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 1867.42  * Reach Len. (ft)       *   86.24  *   86.24  *   86.24  *
* Crit W.S. (ft)         * 1870.56  * Flow Area (sq ft)     *          *  216.69  *          *
* E.G. Slope (ft/ft)     *0.009498  * Area (sq ft)          *          *  216.69  *          *
* Q Total (cfs)          * 5800.00  * Flow (cfs)            *          * 5800.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   26.77  * Avg. Vel. (ft/s)      *          *   26.77  *          *
* Max Chl Dpth (ft)      *    4.58  * Hydr. Depth (ft)      *          *    4.33  *          *
* Conv. Total (cfs)      * 59514.5  * Conv. (cfs)           *          * 59514.5  *          *
* Length Wtd. (ft)       *   86.24  * Wetted Per. (ft)      *          *   58.18  *          *
* Min Ch El (ft)         * 1862.84  * Shear (lb/sq ft)      *          *    2.21  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   59.11  *          *
* Frctn Loss (ft)        *    0.00  * Cum Volume (acre-ft)  *    0.02  *    7.67  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.08  *    1.60  *          *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 1472.6*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1871.64       0 1862.64      25 1862.14      50 1862.64      50 1871.64

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.24   86.24   86.24            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1877.72  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   10.96  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 1866.76  * Reach Len. (ft)       *   86.24  *   86.24  *   86.24  *
* Crit W.S. (ft)         * 1869.86  * Flow Area (sq ft)     *          *  218.31  *          *
* E.G. Slope (ft/ft)     *0.009279  * Area (sq ft)          *          *  218.31  *          *
* Q Total (cfs)          * 5800.00  * Flow (cfs)            *          * 5800.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   26.57  * Avg. Vel. (ft/s)      *          *   26.57  *          *
* Max Chl Dpth (ft)      *    4.62  * Hydr. Depth (ft)      *          *    4.37  *          *
* Conv. Total (cfs)      * 60212.0  * Conv. (cfs)           *          * 60212.0  *          *
* Length Wtd. (ft)       *   86.24  * Wetted Per. (ft)      *          *   58.24  *          *
* Min Ch El (ft)         * 1862.14  * Shear (lb/sq ft)      *          *    2.17  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   57.69  *          *
* Frctn Loss (ft)        *    0.81  * Cum Volume (acre-ft)  *    0.02  *    7.24  *          *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.08  *    1.50  *          *
*************************************************************************************************

CROSS SECTION


RIVER: Flamingo Wash
REACH: 1                 RS: 1386.58*

INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1870.94       0 1861.94      25 1861.44      50 1861.94      50 1870.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0    .013       0    .013      50    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0      50             86.24   86.24   86.24            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1876.91  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   10.82  * Wt. n-Val.            *          *    0.013  *          *
* W.S. Elev (ft)         * 1866.08  * Reach Len. (ft)       *   86.24  *   86.24  *   86.24  *
* Crit W.S. (ft)         * 1869.16  * Flow Area (sq ft)     *          *  219.70  *          *
* E.G. Slope (ft/ft)     *0.009096  * Area (sq ft)          *          *  219.70  *          *
* Q Total (cfs)          * 5800.00  * Flow (cfs)            *          * 5800.00  *          *
* Top Width (ft)         *   50.00  * Top Width (ft)        *          *   50.00  *          *
* Vel Total (ft/s)       *   26.40  * Avg. Vel. (ft/s)      *          *   26.40  *          *
```

* Max Chl Dpth (ft)	* 4.64	* Hydr. Depth (ft)	*	* 4.39	*
* Conv. Total (cfs)	* 60814.4	* Conv. (cfs)	*	* 60814.4	*
* Length Wtd. (ft)	* 86.24	* Wetted Per. (ft)	*	* 58.30	*
* Min Ch El (ft)	* 1861.44	* Shear (lb/sq ft)	*	* 2.14	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 56.50	*
* Frctn Loss (ft)	* 0.79	* Cum Volume (acre-ft)	* 0.02	* 6.80	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 1.40	*

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 1300.56*

INPUT
Description:
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1870.23	0	1861.23	25	1860.73	50	1861.23	50	1870.23

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	86.24	86.24	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1876.11	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 10.72	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1865.40	* Reach Len. (ft)	* 86.24	* 86.24	* 86.24 *
* Crit W.S. (ft)	* 1868.45	* Flow Area (sq ft)	*	* 220.75	* *
* E.G. Slope (ft/ft)	*0.008961	* Area (sq ft)	*	* 220.75	* *
* Q Total (cfs)	* 5800.00	* Flow (cfs)	*	* 5800.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 26.27	* Avg. Vel. (ft/s)	*	* 26.27	* *
* Max Chl Dpth (ft)	* 4.67	* Hydr. Depth (ft)	*	* 4.42	* *
* Conv. Total (cfs)	* 61270.0	* Conv. (cfs)	*	* 61270.0	* *
* Length Wtd. (ft)	* 86.24	* Wetted Per. (ft)	*	* 58.34	* *
* Min Ch El (ft)	* 1860.73	* Shear (lb/sq ft)	*	* 2.12	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 55.62	* *
* Frctn Loss (ft)	* 0.78	* Cum Volume (acre-ft)	* 0.02	* 6.37	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 1.30	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 1214.54

INPUT
Description: 12+14.54 end transition / begin 50' channel
Station Elevation Data num= 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1869.53	0	1860.53	25	1860.03	50	1860.53	50	1869.53

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	0	.013	50	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
0	50	114.54	114.54	.05	.1

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1875.33	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 10.62	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1864.72	* Reach Len. (ft)	* 114.54	* 114.54	* 114.54 *
* Crit W.S. (ft)	* 1867.75	* Flow Area (sq ft)	*	* 221.80	* *
* E.G. Slope (ft/ft)	*0.008830	* Area (sq ft)	*	* 221.80	* *
* Q Total (cfs)	* 5800.00	* Flow (cfs)	*	* 5800.00	* *
* Top Width (ft)	* 50.00	* Top Width (ft)	*	* 50.00	* *
* Vel Total (ft/s)	* 26.15	* Avg. Vel. (ft/s)	*	* 26.15	* *
* Max Chl Dpth (ft)	* 4.69	* Hydr. Depth (ft)	*	* 4.44	* *
* Conv. Total (cfs)	* 61724.1	* Conv. (cfs)	*	* 61724.1	* *
* Length Wtd. (ft)	* 114.54	* Wetted Per. (ft)	*	* 58.38	* *
* Min Ch El (ft)	* 1860.03	* Shear (lb/sq ft)	*	* 2.09	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 54.76	* *
* Frctn Loss (ft)	* 0.77	* Cum Volume (acre-ft)	* 0.02	* 5.93	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 1.20	* *

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 1100

INPUT
Description: 10+87.79 begin channel improvements
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
74.58	1874.05	81.76	1873.87	83.101	1873.79	84.89	1873.76	91.809	1872.99
95.599	1872.91	99.44	1872.85	102.9	1872.82	105.09	1872.79	106.25	1872.75
107.24	1872.22	107.301	1872.22	107.97	1872.2	108.22	1872.2	108.409	1871.76
112.1	1868.81	134.601	1868.6	134.601	1859.11	160.619	1859.1	186.639	1859.11
186.639	1868.6	219.569	1870.43	220.33	1870.4	224.17	1870.54	231.16	1870.54
231.939	1870.54	238.849	1870.96	239.539	1871	243.53	1870.79	248.409	1870.52

```
 251.241 1870.45  252.83  1870.6  260.02 1870.91 269.379 1870.58

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
   74.58    .013 134.601    .013 186.639    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       134.601 186.639              174     174     174            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1874.26  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   10.95  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1863.30  * Reach Len. (ft)       *   26.90  *   26.90  *   26.90  *
* Crit W.S. (ft)         * 1866.38  * Flow Area (sq ft)     *          *  218.37  *          *
* E.G. Slope (ft/ft)     *0.009736  * Area (sq ft)          *          *  218.37  *          *
* Q Total (cfs)          * 5800.00  * Flow (cfs)           *          * 5800.00  *          *
* Top Width (ft)         *   52.04  * Top Width (ft)       *          *   52.04  *          *
* Vel Total (ft/s)       *   26.56  * Avg. Vel. (ft/s)     *          *   26.56  *          *
* Max Chl Dpth (ft)      *    4.20  * Hydr. Depth (ft)     *          *    4.20  *          *
* Conv. Total (cfs)      * 58781.2  * Conv. (cfs)          *          * 58781.2  *          *
* Length Wtd. (ft)       *   26.90  * Wetted Per. (ft)     *          *   60.42  *          *
* Min Ch El (ft)         * 1859.10  * Shear (lb/sq ft)     *          *    2.20  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   58.35  *          *
* Frctn Loss (ft)        *    1.06  * Cum Volume (acre-ft)  *    0.02  *    5.35  *          *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *    0.08  *    1.07  *          *
*************************************************************************************************

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.

BRIDGE


RIVER: Flamingo Wash
REACH: 1                  RS: 1000

INPUT
Description: Desert Inn Rd.
Distance from Upstream XS =    26.9
Deck/Roadway Width        =     140
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      19
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
*****************************************************************************
       01874.432           8.6131874.273          56.3921873.321
  64.8431873.184         114.2841872.349         120.3921872.248
 134.601    1872 1866.97   189.3  1871.2 1866.97 220.1461870.842
 224.5061870.766         277.4061869.719         281.1921869.662
 338.9371868.818         347.8651868.643         397.6781868.255
 401.555 1868.25         448.627 1867.71         452.199 1867.68
 469.342 1867.71

Upstream Bridge Cross Section Data
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       01878.392   2.7721878.027   8.1841877.637  24.2831875.318  25.1931875.363
  31.3281875.098  34.3311875.065  36.1541875.018  38.7921874.989  41.4921874.895
  52.684 1875.01  55.3541875.266  59.1231875.431  62.3721875.445  62.9421875.452
  66.6521875.281   70.181875.144  70.4771875.131  75.2841874.616  78.0171874.315
  80.8581874.058  82.7161873.832   83.891873.698  89.7211872.911  90.2641872.737
  93.8781871.624 102.4631870.291 104.4451869.983 105.8281869.768 110.6881869.684
 116.569  1869.6 134.601    1867 134.601 1858.97   189.3 1858.97   189.3    1867
 199.1471869.218 211.7021869.356  211.811869.364 211.8391869.366 212.5351869.419
 212.7591869.436 212.7611869.436 212.775 1869.43 213.8041869.006 214.125 1869.55
 216.1461869.746 218.628 1870.27 224.9991870.598 228.7151870.595  231.711870.759
 232.8391870.827 234.0521870.759 250.733 1870.37  256.131870.886 256.5741870.999
 259.3221870.907 260.0161870.858 263.7011870.682 276.6221870.018  277.451869.924
 294.598 1870.91 297.0681871.061 314.9141871.908 315.5051871.939 315.6851871.946
 316.6211871.974 326.9921872.171 339.4481872.205 351.9911872.189 384.7521872.277

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0     .04 134.601    .015 199.147     .04

Bank Sta: Left   Right    Coeff Contr.   Expan.
       134.601   189.3            .05       .1

Downstream  Deck/Roadway Coordinates
    num=      19
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
*****************************************************************************
       01874.432           8.6131874.273          56.3921873.321
  64.8431873.184         114.2841872.349         120.3921872.248
 170.4641871.576         175.1981871.507         220.1461870.842
 224.5061870.766         264.599  1870.1  1863.1   319.3  1869.2  1863.1
 338.9371868.818         347.8651868.643         397.6781868.255
 401.555 1868.25         448.627 1867.71         452.199 1867.68
 469.342 1867.71

Downstream Bridge Cross Section Data
Station Elevation Data    num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0 1873.63   8.065 1873.41  18.183 1873.36  39.113 1873.34  45.473  1873.4
  47.947 1873.25  52.794 1873.36  58.448 1873.37  63.644 1873.42  69.726 1873.41
  73.125 1873.41  84.455 1873.39  90.759 1873.49  94.498 1873.45  100.57 1873.41
 106.193 1873.38 110.925  1873.3 115.428 1873.23 120.244 1873.13 124.212 1873.09
 128.155 1873.07 133.572 1872.54  136.46 1872.61 137.494 1872.02 143.908 1872.02
 163.038  1871.7 167.632 1871.89 168.911  1871.9 169.317 1871.89 169.339 1871.88
 169.559 1871.85 170.213 1871.76 182.581 1872.04 183.088 1872.05 190.475 1871.88
 192.217 1871.89  195.83 1871.77 199.012 1871.82 200.393 1871.83  202.37 1871.62
```

```
 202.695  1871.6 203.231 1871.55 206.093 1871.25 207.237 1871.16 209.186 1870.99
  209.91 1870.75 210.677  1870.5 211.514 1870.42 233.365 1869.96 234.318 1869.95
 236.441 1869.72 238.968 1869.63 243.202 1869.53 244.279 1869.24 245.233 1869.05
 246.148 1869.08 249.821 1868.27 250.674 1868.16 252.061 1867.95  252.32  1864.9
 264.599  1863.1 264.599  1855.1   319.3  1855.1   319.3  1863.1  328.96  1866.2
 330.796 1866.29 332.006 1866.61 336.306 1866.57 349.997 1867.01 354.697 1866.89
 371.242 1866.49 380.126 1866.39 388.769 1866.21 404.854 1866.27 420.758 1865.68
 422.706 1865.71 423.358 1865.73 433.326 1866.31 444.178 1866.41 454.863  1866.4
 464.508 1866.32 469.342  1866.1

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
**********************************************
       0     .04 264.599    .015  328.96     .04

Bank Sta: Left   Right    Coeff Contr.   Expan.
       264.599   319.3            .05       .1
Right Levee     Station=  349.94      Elevation= 1867.14

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        =    1890
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Piers =  4

Pier Data
Pier Station     Upstream= 145.441    Downstream= 275.439
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
     1.5       0     1.5    1870
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
     1.5       0     1.5    1870
Debris Width  =        3
Debris Height =        8

Pier Data
Pier Station     Upstream= 156.691    Downstream= 286.689
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
     .83       0     .83    1870
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
     .83       0     .83    1870
Debris Width  =     1.67
Debris Height =        8

Pier Data
Pier Station     Upstream= 167.521    Downstream= 297.519
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
     .83       0     .83    1870
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
     .83       0     .83    1870
Debris Width  =     1.67
Debris Height =        8

Pier Data
Pier Station     Upstream= 178.769    Downstream= 308.769
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
     1.5       0     1.5    1870
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
     1.5       0     1.5    1870
Debris Width  =        3
Debris Height =        8

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Momentum              Cd   =    1.33
Selected Low Flow Methods = Momentum

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream water surface

BRIDGE OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. US. (ft)          *    1874.26  * Element               *Inside BR US *Inside BR DS *
* W.S. US. (ft)          *    1863.30  * E.G. Elev (ft)        *    1873.77  *    1870.65  *
* Q Total (cfs)          *    5800.00  * W.S. Elev (ft)        *    1864.09  *    1859.41  *
* Q Bridge (cfs)         *    5800.00  * Crit W.S. (ft)        *    1872.99  *    1862.59  *
```

* Q Weir (cfs)	*	* Max Chl Dpth (ft)	* 5.12	* 4.31 *
* Weir Sta Lft (ft)	*	* Vel Total (ft/s)	* 24.97	* 26.91 *
* Weir Sta Rgt (ft)	*	* Flow Area (sq ft)	* 232.30	* 215.54 *
* Weir Submerg	*	* Froude # Chl	* 1.94	* 2.28 *
* Weir Max Depth (ft)	*	* Specif Force (cu ft)	* 5092.08	* 5311.20 *
* Min El Weir Flow (ft)	* 1890.00	* Hydr Depth (ft)	* 5.12	* 4.31 *
* Min El Prs (ft)	* 1866.97	* W.P. Total (ft)	* 96.57	* 93.11 *
* Delta EG (ft)	* 3.73	* Conv. Total (cfs)	* 41313.6	* 37362.8 *
* Delta WS (ft)	* 4.31	* Top Width (ft)	* 45.36	* 50.04 *
* BR Open Area (sq ft)	* 362.87	* Frctn Loss (ft)	* 0.36	* 3.04 *
* BR Open Vel (ft/s)	* 26.91	* C & E Loss (ft)	* 0.13	* 0.08 *
* Coef of Q	*	* Shear Total (lb/sq ft)	* 2.96	* 3.48 *
* Br Sel Method	*Energy only	* Power Total (lb/ft s)	* 73.90	* 93.71 *

Warning: There was not enough momentum to compute a supercritical answer through the bridge. The momentum answer has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.
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, energy was used.
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, energy was used.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 926

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1873.63	8.065	1873.41	18.183	1873.36	39.113	1873.34	45.473	1873.4
47.947	1873.25	52.794	1873.36	58.448	1873.37	63.644	1873.42	69.726	1873.41
73.125	1873.41	84.455	1873.39	90.759	1873.49	94.498	1873.45	100.57	1873.41
106.193	1873.38	110.925	1873.3	115.428	1873.23	120.244	1873.13	124.212	1873.09
128.155	1873.07	133.572	1872.54	136.46	1872.61	137.494	1872.02	143.908	1872.02
163.038	1871.7	167.632	1871.89	168.911	1871.9	169.317	1871.89	169.339	1871.88
169.559	1871.85	170.213	1871.76	182.581	1872.04	183.088	1872.05	190.475	1871.88
192.217	1871.89	195.83	1871.77	199.012	1871.82	200.393	1871.83	202.37	1871.62
202.695	1871.6	203.231	1871.55	206.093	1871.25	207.237	1871.16	209.186	1870.99
209.91	1870.75	210.677	1870.5	211.514	1870.42	233.365	1869.96	234.318	1869.95
236.441	1869.72	238.968	1869.63	243.202	1869.53	244.279	1869.24	245.233	1869.05
246.148	1869.08	249.821	1868.27	250.674	1868.16	252.061	1867.95	252.32	1864.9
264.599	1863.1	264.599	1855.1	319.3	1855.1	319.3	1863.1	328.96	1866.2
330.796	1866.29	332.006	1866.61	336.306	1866.57	349.997	1867.01	354.697	1866.89
371.242	1866.49	380.126	1866.39	388.769	1866.21	404.854	1866.27	420.758	1865.68
422.706	1865.71	423.358	1865.73	433.326	1866.31	444.178	1866.41	454.863	1866.4
464.508	1866.32	469.342	1866.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	264.599	.013	319.3	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
264.599	319.3	11.98	11.98	.05	.1

Right Levee Station= 349.94 Elevation= 1867.14

CROSS SECTION OUTPUT Profile #100-yr FIS

* E.G. Elev (ft)	* 1870.52	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 11.53	* Wt. n-Val.	*	* 0.013	* *
* W.S. Elev (ft)	* 1858.99	* Reach Len. (ft)	* 11.98	* 11.98	* 11.98 *
* Crit W.S. (ft)	* 1862.16	* Flow Area (sq ft)	*	* 212.81	* *
* E.G. Slope (ft/ft)	*0.011094	* Area (sq ft)	*	* 212.81	* *
* Q Total (cfs)	* 5800.00	* Flow (cfs)	*	* 5800.00	* *
* Top Width (ft)	* 54.70	* Top Width (ft)	*	* 54.70	* *
* Vel Total (ft/s)	* 27.25	* Avg. Vel. (ft/s)	*	* 27.25	* *
* Max Chl Dpth (ft)	* 3.89	* Hydr. Depth (ft)	*	* 3.89	* *
* Conv. Total (cfs)	* 55066.0	* Conv. (cfs)	*	* 55066.0	* *
* Length Wtd. (ft)	* 11.98	* Wetted Per. (ft)	*	* 62.48	* *
* Min Ch El (ft)	* 1855.10	* Shear (lb/sq ft)	*	* 2.36	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 64.29	* *
* Frctn Loss (ft)	* 0.11	* Cum Volume (acre-ft)	* 0.02	* 5.21	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.08	* 1.04	* *

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, energy was used.

CROSS SECTION

RIVER: Flamingo Wash
REACH: 1 RS: 914.02*

INPUT
Description:
Station Elevation Data num= 129

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1871.39	6.93	1871.29	7.99	1871.3	15.63	1871.28	23.95	1871.28

```
   33.62 1871.28   39.09 1871.32   41.22 1871.21   41.63 1871.22   45.38 1871.29
   50.25 1871.28   54.71 1871.31   59.57  1871.3   59.94 1871.29   62.86 1871.26
    72.6 1871.15   76.07 1871.16   77.14 1871.17   78.02 1871.18   80.36 1871.15
   81.24 1871.15   86.46 1871.15   91.29 1871.16   95.36 1871.13   99.23 1871.11
  103.37 1871.07  106.67 1871.06  106.78 1871.06  110.17 1871.04  114.83 1870.66
  117.31 1870.71   118.2 1870.29  123.71 1870.29  133.28 1870.15  140.16 1870.08
  144.11 1870.23  145.21 1870.24  145.55 1870.24  145.57 1870.23  145.76 1870.21
  146.33 1870.15  147.57 1870.18  156.96 1870.37  157.39 1870.38  162.27  1870.3
  163.74 1870.27  165.24 1870.29  168.35 1870.22  171.08 1870.26  172.27 1870.27
  173.97 1870.13  174.25 1870.12  174.71 1870.09  177.17 1869.88  178.15 1869.83
  179.83 1869.71  180.45 1869.54  181.11 1869.37  181.83 1869.32  189.64 1869.22
  197.42 1869.12  200.61 1869.04  201.43 1869.03  203.26 1868.86  205.43 1868.78
  209.07 1868.69  209.97 1868.49     210 1868.48  210.82 1868.33   211.6 1868.34
  214.76 1867.73  215.49 1867.64  216.69 1867.47  216.91 1865.31  223.57 1864.41
  226.01 1864.09  227.46 1863.32  227.85 1855.12  229.57 1855.13  230.09 1854.95
  268.81 1854.95  280.51 1860.68  280.78 1862.35  280.81 1862.45  281.01 1862.55
  282.62 1863.21  288.36 1864.72  291.24 1865.48  292.87 1865.56  293.74 1865.75
  293.95  1865.8  296.74 1865.87  297.78 1865.94  308.18 1866.98  309.99 1867.14
  312.75 1867.26  314.18  1867.3  316.12 1867.36  319.08 1867.45  328.93 1867.17
  336.85 1867.02  337.14 1867.02  341.47  1866.9  343.41 1866.86  343.77 1866.85
  343.99 1866.84  344.36 1866.84  344.56 1866.83   345.3 1866.83  358.89 1866.81
  373.07 1866.32  374.81 1866.34  375.04 1866.34  375.39 1866.35  380.16 1866.53
  384.28 1866.68  388.32 1866.67  393.45 1866.71  393.95 1866.71  394.47 1866.71
  395.77  1866.7  398.86 1866.73  401.74 1866.75  403.48 1866.77  410.13 1866.78
  412.08 1866.77  414.74 1866.69  415.86 1866.64  416.38 1866.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0    .013  227.46    .013  282.62    .013

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        227.46  282.62           397.98  413.98  419.98            .05       .1

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1870.31  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *   10.50  * Wt. n-Val.            *          *   0.013  *          *
* W.S. Elev (ft)         * 1859.80  * Reach Len. (ft)       *  397.98  *  413.98  *  419.98  *
* Crit W.S. (ft)         * 1862.84  * Flow Area (sq ft)     *          *  223.00  *          *
* E.G. Slope (ft/ft)     *0.008343  * Area (sq ft)          *          *  223.00  *          *
* Q Total (cfs)          * 5800.00  * Flow (cfs)           *          * 5800.00  *          *
* Top Width (ft)         *   51.09  * Top Width (ft)       *          *   51.09  *          *
* Vel Total (ft/s)       *   26.01  * Avg. Vel. (ft/s)     *          *   26.01  *          *
* Max Chl Dpth (ft)      *    4.85  * Hydr. Depth (ft)     *          *    4.36  *          *
* Conv. Total (cfs)      * 63499.4  * Conv. (cfs)          *          * 63499.4  *          *
* Length Wtd. (ft)       *  413.97  * Wetted Per. (ft)     *          *   56.71  *          *
* Min Ch El (ft)         * 1854.95  * Shear (lb/sq ft)     *          *    2.05  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   53.27  *          *
* Frctn Loss (ft)        *    0.11  * Cum Volume (acre-ft)  *    0.02  *    5.15  *          *
* C & E Loss (ft)        *    0.10  * Cum SA (acres)        *    0.08  *    1.02  *          *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                 RS: 702.71

INPUT
Description: X-section 640 from Case no. 04-09-0166P LOMR
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    1000 1866.76 1004.77 1866.42 1005.12 1866.26  1009.4 1864.26 1013.41 1862.26
 1016.12 1860.86 1026.88 1860.35 1027.05 1860.26 1030.75 1858.26 1034.43 1856.26
 1038.12 1854.26 1039.25 1853.65 1067.22 1853.63 1068.01 1854.26 1070.51 1856.26
    1073 1858.26 1075.48 1860.26 1077.94 1862.26 1079.43 1863.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    1000     .02 1026.88    .015 1079.43     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1026.88 1079.43           251.59  258.21  262.14             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1867.38  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    6.51  * Wt. n-Val.            *   0.020  *   0.015  *          *
* W.S. Elev (ft)         * 1860.87  * Reach Len. (ft)       *  251.59  *  258.21  *  262.14  *
* Crit W.S. (ft)         * 1862.90  * Flow Area (sq ft)     *    2.85  *  282.77  *          *
* E.G. Slope (ft/ft)     *0.004658  * Area (sq ft)          *    2.85  *  282.77  *          *
* Q Total (cfs)          * 5800.00  * Flow (cfs)           *    5.94  * 5794.06  *          *
* Top Width (ft)         *   60.13  * Top Width (ft)       *   10.78  *   49.35  *          *
* Vel Total (ft/s)       *   20.31  * Avg. Vel. (ft/s)     *    2.09  *   20.49  *          *
* Max Chl Dpth (ft)      *    7.24  * Hydr. Depth (ft)     *    0.26  *    5.73  *          *
* Conv. Total (cfs)      * 84979.2  * Conv. (cfs)          *    87.1  * 84892.1  *          *
* Length Wtd. (ft)       *  258.21  * Wetted Per. (ft)     *   10.79  *   53.60  *          *
* Min Ch El (ft)         * 1853.63  * Shear (lb/sq ft)     *    0.08  *    1.53  *          *
* Alpha                  *    1.02  * Stream Power (lb/ft s) *    0.16  *   31.44  *          *
* Frctn Loss (ft)        *    2.53  * Cum Volume (acre-ft)  *    0.01  *    2.75  *          *
* C & E Loss (ft)        *    0.40  * Cum SA (acres)        *    0.03  *    0.54  *          *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 444.5

INPUT
Description: X-section 630 from Case no. 04-09-0166P LOMR
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    1000 1863.46 1004.03 1862.26 1009.63 1860.53 1010.62 1860.26 1018.67 1858.26
 1018.82 1858.16    1031 1857.32 1032.96 1856.26 1036.68 1854.26 1040.45 1852.26
 1044.02 1850.36  1071.6 1850.54 1074.89 1852.26 1078.71 1854.26 1082.53 1856.26
 1084.55 1857.26 1129.14 1858.26 1165.99 1859.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    1000     .02    1031    .015 1084.55     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          1031 1084.55           229.09  221.03  213.86             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1865.59  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    8.99  * Wt. n-Val.             *          *   0.015  *          *
* W.S. Elev (ft)         * 1856.59  * Reach Len. (ft)        *  229.09  *  221.03  *  213.86  *
* Crit W.S. (ft)         * 1859.94  * Flow Area (sq ft)      *          *  241.00  *          *
* E.G. Slope (ft/ft)     *0.008014  * Area (sq ft)           *          *  241.00  *          *
* Q Total (cfs)          * 5800.00  * Flow (cfs)             *          * 5800.00  *          *
* Top Width (ft)         *   50.86  * Top Width (ft)         *          *   50.86  *          *
* Vel Total (ft/s)       *   24.07  * Avg. Vel. (ft/s)       *          *   24.07  *          *
* Max Chl Dpth (ft)      *    6.23  * Hydr. Depth (ft)       *          *    4.74  *          *
* Conv. Total (cfs)      * 64788.0  * Conv. (cfs)            *          * 64788.0  *          *
* Length Wtd. (ft)       *  221.03  * Wetted Per. (ft)       *          *   53.91  *          *
* Min Ch El (ft)         * 1850.36  * Shear (lb/sq ft)       *          *    2.24  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   53.83  *          *
* Frctn Loss (ft)        *    1.55  * Cum Volume (acre-ft)   *          *    1.20  *          *
* C & E Loss (ft)        *    0.25  * Cum SA (acres)         *          *    0.25  *          *
*************************************************************************************************

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: Flamingo Wash
REACH: 1                  RS: 223.47

INPUT
Description: X-section 620 from Case no. 04-09-0166P LOMR
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    1000 1861.56  1007.7 1860.26 1012.48 1859.42 1018.28 1858.26 1022.06 1857.51
 1033.45 1857.66 1035.35 1856.26  1037.9 1854.26 1040.44 1852.26 1042.97 1850.26
 1045.49 1848.26 1046.14 1847.74 1075.97 1847.92 1076.49 1848.26 1079.51 1850.26
 1082.53 1852.26 1085.57 1854.26 1086.27 1854.72 1135.67 1856.26 1176.03 1857.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    1000     .02 1033.45    .015 1086.27     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1033.45 1086.27                 0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr FIS
*************************************************************************************************
* E.G. Elev (ft)         * 1863.68  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    9.81  * Wt. n-Val.             *          *   0.015  *          *
* W.S. Elev (ft)         * 1853.87  * Reach Len. (ft)        *          *          *          *
* Crit W.S. (ft)         * 1857.57  * Flow Area (sq ft)      *          *  230.75  *          *
* E.G. Slope (ft/ft)     *0.008493  * Area (sq ft)           *          *  230.75  *          *
* Q Total (cfs)          * 5800.00  * Flow (cfs)             *          * 5800.00  *          *
* Top Width (ft)         *   46.59  * Top Width (ft)         *          *   46.59  *          *
* Vel Total (ft/s)       *   25.14  * Avg. Vel. (ft/s)       *          *   25.14  *          *
* Max Chl Dpth (ft)      *    6.13  * Hydr. Depth (ft)       *          *    4.95  *          *
* Conv. Total (cfs)      * 62935.1  * Conv. (cfs)            *          * 62935.1  *          *
* Length Wtd. (ft)       *          * Wetted Per. (ft)       *          *   50.51  *          *
* Min Ch El (ft)         * 1847.74  * Shear (lb/sq ft)       *          *    2.42  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *   60.88  *          *
* Frctn Loss (ft)        *    1.82  * Cum Volume (acre-ft)   *          *          *          *
* C & E Loss (ft)        *    0.08  * 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 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:Flamingo Wash
*********************************************************************************
*     Reach      *   River Sta.   *   n1    *   n2    *   n3    *   n4    *   n5    *
*********************************************************************************
*1                *    8837.78     *     .025*     .025*     .025*         *         *
*1                *    8807.78     *     .025*     .025*     .025*         *         *
*1                *    8687.78     *     .025*     .025*     .025*         *         *
*1                *    8320        *     .035*      .03*     .035*         *         *
```

*1	*	8200	*	.03*	.04*	.03*	*	*
*1	*	8100.*	*	.03*	.04*	.03*	*	*
*1	*	8000	*	.03*	.04*	.03*	*	*
*1	*	7900.*	*	.03*	.04*	.03*	*	*
*1	*	7800	*	.03*	.04*	.03*	*	*
*1	*	7700.*	*	.03*	.04*	.03*	*	*
*1	*	7600	*	.03*	.04*	.03*	*	*
*1	*	7500.*	*	.03*	.04*	.03*	*	*
*1	*	7400	*	.03*	.04*	.03*	*	*
*1	*	7300.*	*	.03*	.04*	.03*	*	*
*1	*	7200	*	.03*	.04*	.03*	*	*
*1	*	7100.*	*	.03*	.04*	.03*	*	*
*1	*	7000	*	.03*	.04*	.03*	*	*
*1	*	6868.*	*	.03*	.04*	.03*	*	*
*1	*	6736	*	.03*	.04*	.03*	*	*
*1	*	6702.04	*	.03*	.04*	.03*	*	*
*1	*	6701.94	*	.03*	.03*	.013*	.03*	.03*
*1	*	6577	*	.03*	.03*	.013*	.03*	.03*
*1	*	6500	*Culvert	*	*	*	*	*
*1	*	6469	*	.03*	.03*	.013*	.03*	.03*
*1	*	6350	*	.03*	.03*	.013*	.03*	.03*
*1	*	6349.9	*	.03*	.04*	.013*	.04*	.03*
*1	*	6250	*	.03*	.04*	.013*	.04*	.03*
*1	*	6100	*	.03*	.04*	.013*	.04*	.03*
*1	*	5991.58	*	.03*	.04*	.013*	.04*	.03*
*1	*	5991.48	*	.03*	.025*	.013*	.025*	.03*
*1	*	5905	*	.025*	.013*	.025*	*	*
*1	*	5800	*Culvert	*	*	*	*	*
*1	*	5790	*	.013*	.013*	.013*	*	*
*1	*	5737.74	*	.013*	.013*	.013*	*	*
*1	*	5648.42	*	.013*	.013*	.013*	*	*
*1	*	5548.82*	*	.013*	.013*	.013*	*	*
*1	*	5449.23*	*	.013*	.013*	.013*	*	*
*1	*	5449.11	*	.013*	.013*	.013*	*	*
*1	*	5445.78	*	.013*	.013*	.013*	*	*
*1	*	5362.85*	*	.013*	.013*	.013*	*	*
*1	*	5279.92	*	.013*	.013*	.013*	*	*
*1	*	5186.67	*	.013*	.013*	.013*	*	*
*1	*	5099.78*	*	.013*	.013*	.013*	*	*
*1	*	5012.89*	*	.013*	.013*	.013*	*	*
*1	*	5012.88	*	.013*	.013*	.013*	*	*
*1	*	4945.04	*	.013*	.013*	.013*	*	*
*1	*	4858.54*	*	.013*	.013*	.013*	*	*
*1	*	4772.04*	*	.013*	.013*	.013*	*	*
*1	*	4685.54*	*	.013*	.013*	.013*	*	*
*1	*	4599.04*	*	.013*	.013*	.013*	*	*
*1	*	4512.54*	*	.013*	.013*	.013*	*	*
*1	*	4426.04*	*	.013*	.013*	.013*	*	*
*1	*	4425.69	*	.013*	.013*	.013*	*	*
*1	*	4350	*	.013*	.013*	.013*	*	*
*1	*	4275.*	*	.013*	.013*	.013*	*	*
*1	*	4200.00	*	.013*	.013*	.013*	*	*
*1	*	4127.25*	*	.013*	.013*	.013*	*	*
*1	*	4054.5*	*	.013*	.013*	.013*	*	*
*1	*	3981.76	*	.013*	.013*	.013*	*	*
*1	*	3890.88*	*	.013*	.013*	.013*	*	*
*1	*	3800	*	.013*	.013*	.013*	*	*
*1	*	3700.*	*	.013*	.013*	.013*	*	*
*1	*	3600	*	.013*	.013*	.013*	*	*
*1	*	3500.*	*	.013*	.013*	.013*	*	*
*1	*	3400	*	.013*	.013*	.013*	*	*
*1	*	3300.*	*	.013*	.013*	.013*	*	*
*1	*	3200.*	*	.013*	.013*	.013*	*	*
*1	*	3100.84	*	.013*	.013*	.013*	*	*
*1	*	3032.53*	*	.013*	.013*	.013*	*	*
*1	*	2964.22*	*	.013*	.013*	.013*	*	*
*1	*	2964.21	*	.013*	.013*	.013*	*	*
*1	*	2921.88	*	.013*	.013*	.013*	*	*
*1	*	2837.87*	*	.013*	.013*	.013*	*	*
*1	*	2753.87	*	.013*	.013*	.013*	*	*
*1	*	2703.87	*	.013*	.013*	.013*	*	*
*1	*	2702.87	*	.013*	.013*	.013*	*	*
*1	*	2648.52	*	.013*	.013*	.013*	*	*
*1	*	2596.14	*	.013*	.013*	.013*	*	*
*1	*	2576.44*	*	.013*	.013*	.013*	*	*
*1	*	2504.37*	*	.013*	.013*	.013*	*	*
*1	*	2443.06	*	.013*	.013*	.013*	*	*
*1	*	2432.30	*	.013*	.013*	.013*	*	*
*1	*	2334.09*	*	.013*	.013*	.013*	*	*
*1	*	2235.88*	*	.013*	.013*	.013*	*	*
*1	*	2137.68	*	.013*	.013*	.013*	*	*
*1	*	2059.60*	*	.013*	.013*	.013*	*	*
*1	*	2020.16	*	.013*	.013*	.013*	*	*
*1	*	1981.53*	*	.013*	.013*	.013*	*	*
*1	*	1903.46	*	.013*	.013*	.013*	*	*
*1	*	1817.25*	*	.013*	.013*	.013*	*	*
*1	*	1731.04*	*	.013*	.013*	.013*	*	*
*1	*	1644.83*	*	.013*	.013*	.013*	*	*
*1	*	1558.63*	*	.013*	.013*	.013*	*	*
*1	*	1558.62	*	.013*	.013*	.013*	*	*
*1	*	1472.6*	*	.013*	.013*	.013*	*	*
*1	*	1386.58*	*	.013*	.013*	.013*	*	*
*1	*	1300.56*	*	.013*	.013*	.013*	*	*
*1	*	1214.54	*	.013*	.013*	.013*	*	*
*1	*	1100	*	.013*	.013*	.013*	*	*
*1	*	1000	*Bridge	*	*	*	*	*
*1	*	926	*	.013*	.013*	.013*	*	*
*1	*	914.02*	*	.013*	.013*	.013*	*	*
*1	*	702.71	*	.02*	.015*	.02*	*	*
*1	*	444.5	*	.02*	.015*	.02*	*	*
*1	*	223.47	*	.02*	.015*	.02*	*	*

****

****

SUMMARY OF REACH LENGTHS

River: Flamingo Wash

Reach	River Sta.	Left	Channel	Right
*1	8837.78	30*	30*	30*
*1	8807.78	120*	120*	120*
*1	8687.78	382.58*	367.78*	346.32*
*1	8320	120*	120*	120*
*1	8200	100*	100*	100*
*1	8100.*	100*	100*	100*
*1	8000	100*	100*	100*
*1	7900.*	100*	100*	100*
*1	7800	100*	100*	100*
*1	7700.*	100*	100*	100*
*1	7600	100*	100*	100*
*1	7500.*	100*	100*	100*
*1	7400	77.52*	100*	117*
*1	7300.*	77.52*	100*	117*
*1	7200	69*	100*	115.52*
*1	7100.*	69*	100*	115.52*
*1	7000	100*	100*	100*
*1	6868.*	100*	100*	100*
*1	6736	41*	33.96*	23*
*1	6702.04	.1*	.1*	.1*
*1	6701.94	124.94*	124.94*	124.94*
*1	6577	108*	108*	108*
*1	6500	*Culvert *	*	*
*1	6469	67*	119*	153*
*1	6350	.1*	.1*	.1*
*1	6349.9	103*	99.99*	96*
*1	6250	158*	150*	140*
*1	6100	130*	108.42*	102*
*1	5991.58	.1*	.1*	.1*
*1	5991.48	95*	86.48*	80*
*1	5905	115*	115*	115*
*1	5800	*Culvert *	*	*
*1	5790	52.26*	52.26*	52.26*
*1	5737.74	89.32*	89.32*	89.32*
*1	5648.42	99.6*	99.6*	99.6*
*1	5548.82*	99.6*	99.6*	99.6*
*1	5449.23*	.12*	.12*	.12*
*1	5449.11	3.33*	3.33*	3.33*
*1	5445.78	82.93*	82.93*	82.93*
*1	5362.85*	82.93*	82.93*	82.93*
*1	5279.92	93.25*	93.25*	93.25*
*1	5186.67	86.89*	86.89*	86.89*
*1	5099.78*	86.89*	86.89*	86.89*
*1	5012.89*	.01*	.01*	.01*
*1	5012.88	67.84*	67.84*	67.84*
*1	4945.04	86.5*	86.5*	86.5*
*1	4858.54*	86.5*	86.5*	86.5*
*1	4772.04*	86.5*	86.5*	86.5*
*1	4685.54*	86.5*	86.5*	86.5*
*1	4599.04*	86.5*	86.5*	86.5*
*1	4512.54*	86.5*	86.5*	86.5*
*1	4426.04*	.35*	.35*	.35*
*1	4425.69	75.69*	75.69*	75.69*
*1	4350	75*	75*	75*
*1	4275.*	75*	75*	75*
*1	4200.00	72.75*	72.75*	72.75*
*1	4127.25*	72.75*	72.75*	72.75*
*1	4054.5*	72.74*	72.74*	72.74*
*1	3981.76	90.88*	90.88*	90.88*
*1	3890.88*	90.88*	90.88*	90.88*
*1	3800	100*	100*	100*
*1	3700.*	100*	100*	100*
*1	3600	100*	100*	100*
*1	3500.*	100*	100*	100*
*1	3400	100*	100*	100*
*1	3300.*	100*	100*	100*
*1	3200.*	99.16*	99.16*	99.16*
*1	3100.84	68.31*	68.31*	68.31*
*1	3032.53*	68.31*	68.31*	68.31*
*1	2964.22*	.01*	.01*	.01*
*1	2964.21	42.33*	42.33*	42.33*
*1	2921.88	84.01*	84.01*	84.01*
*1	2837.87*	84.01*	84.01*	84.01*
*1	2753.87	50*	50*	50*
*1	2703.87	1*	1*	1*
*1	2702.87	54.35*	54.35*	54.35*
*1	2648.52	52.38*	52.38*	52.38*
*1	2596.14	19.7*	19.7*	19.7*
*1	2576.44*	72.07*	72.07*	72.07*
*1	2504.37*	61.31*	61.31*	61.31*
*1	2443.06	10.76*	10.76*	10.76*
*1	2432.30	98.19*	98.19*	98.19*
*1	2334.09*	98.19*	98.19*	98.19*
*1	2235.88*	98.19*	98.19*	98.19*
*1	2137.68	78.1*	78.1*	78.1*
*1	2059.60*	39.44*	39.44*	39.44*
*1	2020.16	38.63*	38.63*	38.63*
*1	1981.53*	78.1*	78.1*	78.1*
*1	1903.46	86.15*	86.15*	86.15*
*1	1817.25*	86.15*	86.15*	86.15*
*1	1731.04*	86.15*	86.15*	86.15*
*1	1644.83*	86.15*	86.15*	86.15*
*1	1558.63*	.01*	.01*	.01*
*1	1558.62	86.24*	86.24*	86.24*
*1	1472.6*	86.24*	86.24*	86.24*
*1	1386.58*	86.24*	86.24*	86.24*
*1	1300.56*	86.24*	86.24*	86.24*
*1	1214.54	114.54*	114.54*	114.54*
*1	1100	174*	174*	174*
*1	1000	*Bridge *	*	*
*1	926	11.98*	11.98*	11.98*

*1	*	914.02*	*	397.98*	413.98*	419.98*
*1	*	702.71	*	251.59*	258.21*	262.14*
*1	*	444.5	*	229.09*	221.03*	213.86*
*1	*	223.47	*	0*	0*	0*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Flamingo Wash

* Reach	* River Sta.	* Contr.	* Expan. *
*1	* 8837.78 *	.1*	.3*
*1	* 8807.78 *	.1*	.3*
*1	* 8687.78 *	.1*	.3*
*1	* 8320 *	.1*	.3*
*1	* 8200 *	.1*	.3*
*1	* 8100.* *	.1*	.3*
*1	* 8000 *	.1*	.3*
*1	* 7900.* *	.1*	.3*
*1	* 7800 *	.1*	.3*
*1	* 7700.* *	.1*	.3*
*1	* 7600 *	.1*	.3*
*1	* 7500.* *	.1*	.3*
*1	* 7400 *	.1*	.3*
*1	* 7300.* *	.1*	.3*
*1	* 7200 *	.1*	.3*
*1	* 7100.* *	.1*	.3*
*1	* 7000 *	.1*	.3*
*1	* 6868.* *	.1*	.3*
*1	* 6736 *	.1*	.3*
*1	* 6702.04 *	.1*	.3*
*1	* 6701.94 *	.1*	.3*
*1	* 6577 *	.1*	.3*
*1	* 6500 *Culvert *		*
*1	* 6469 *	.1*	.3*
*1	* 6350 *	.1*	.3*
*1	* 6349.9 *	.1*	.3*
*1	* 6250 *	.1*	.3*
*1	* 6100 *	.1*	.3*
*1	* 5991.58 *	.1*	.3*
*1	* 5991.48 *	.1*	.3*
*1	* 5905 *	.3*	.5*
*1	* 5800 *Culvert *		*
*1	* 5790 *	.3*	.5*
*1	* 5737.74 *	.3*	.5*
*1	* 5648.42 *	.05*	.2*
*1	* 5548.82**	.05*	.2*
*1	* 5449.23**	.05*	.2*
*1	* 5449.11 *	.05*	.2*
*1	* 5445.78 *	.05*	.1*
*1	* 5362.85**	.05*	.1*
*1	* 5279.92 *	.05*	.1*
*1	* 5186.67 *	.05*	.1*
*1	* 5099.78**	.05*	.1*
*1	* 5012.89**	.05*	.1*
*1	* 5012.88 *	.05*	.1*
*1	* 4945.04 *	.05*	.1*
*1	* 4858.54**	.05*	.1*
*1	* 4772.04**	.05*	.1*
*1	* 4685.54**	.05*	.1*
*1	* 4599.04**	.05*	.1*
*1	* 4512.54**	.05*	.1*
*1	* 4426.04**	.05*	.1*
*1	* 4425.69 *	.05*	.1*
*1	* 4350 *	.05*	.1*
*1	* 4275.* *	.05*	.1*
*1	* 4200.00 *	.05*	.1*
*1	* 4127.25**	.05*	.1*
*1	* 4054.5* *	.05*	.1*
*1	* 3981.76 *	.05*	.1*
*1	* 3890.88**	.05*	.1*
*1	* 3800 *	.05*	.1*
*1	* 3700.* *	.05*	.1*
*1	* 3600 *	.05*	.1*
*1	* 3500.* *	.05*	.1*
*1	* 3400 *	.05*	.1*
*1	* 3300.* *	.05*	.1*
*1	* 3200.* *	.05*	.1*
*1	* 3100.84 *	.05*	.1*
*1	* 3032.53**	.05*	.1*
*1	* 2964.22**	.05*	.1*
*1	* 2964.21 *	.05*	.1*
*1	* 2921.88 *	.05*	.1*
*1	* 2837.87**	.05*	.1*
*1	* 2753.87 *	.05*	.1*
*1	* 2703.87 *	.1*	.2*
*1	* 2702.87 *	.1*	.2*
*1	* 2648.52 *	.05*	.1*
*1	* 2596.14 *	.05*	.1*
*1	* 2576.44**	.05*	.1*
*1	* 2504.37**	.05*	.1*
*1	* 2443.06 *	.05*	.1*
*1	* 2432.30 *	.05*	.1*
*1	* 2334.09**	.05*	.1*
*1	* 2235.88**	.05*	.1*
*1	* 2137.68 *	.05*	.1*
*1	* 2059.60**	.05*	.1*
*1	* 2020.16 *	.05*	.1*
*1	* 1981.53**	.05*	.1*
*1	* 1903.46 *	.05*	.1*
*1	* 1817.25**	.05*	.1*
*1	* 1731.04**	.05*	.1*
*1	* 1644.83**	.05*	.1*

```
*1                *    1558.63**      .05*       .1*
*1                *    1558.62 *      .05*       .1*
*1                *    1472.6* *      .05*       .1*
*1                *    1386.58**      .05*       .1*
*1                *    1300.56**      .05*       .1*
*1                *    1214.54 *      .05*       .1*
*1                *    1100    *      .05*       .1*
*1                *    1000    *Bridge   *         *
*1                *    926     *      .05*       .1*
*1                *    914.02* *      .05*       .1*
*1                *    702.71  *       .1*       .3*
*1                *    444.5   *       .1*       .3*
*1                *    223.47  *       .1*       .3*
*********************************************************

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

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : 70p0.013

River: Flamingo Wash  Reach: 1     RS: 8807.78     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 8687.78     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 8320     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 8100.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7900.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7800     Profile: 100-yr FIS
     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water surface was
             used.
River: Flamingo Wash  Reach: 1     RS: 7700.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7600     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7500.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7300.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7200     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 7100.*     Profile: 100-yr FIS
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
River: Flamingo Wash  Reach: 1     RS: 7000     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 6868.*     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 6736     Profile: 100-yr FIS
     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water surface was
             used.
River: Flamingo Wash  Reach: 1     RS: 6702.04     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 6701.94     Profile: 100-yr FIS
     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.
     Note:   Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash  Reach: 1     RS: 6577     Profile: 100-yr FIS
     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.
River: Flamingo Wash  Reach: 1     RS: 6500     Profile: 100-yr FIS     Culv: Culvert #1
     Warning:The program cannot perform supercritical flow through multiple culverts.  The program sets the water surface to
             critical depth at the downstream end of the culverts and continues on.
     Note:   For this profile, the culvert does not have any flow.
River: Flamingo Wash  Reach: 1     RS: 6500     Profile: 100-yr FIS     Culv: Culvert #2
     Warning:The program cannot perform supercritical flow through multiple culverts.  The program sets the water surface to
```

critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.
River: Flamingo Wash Reach: 1 RS: 6500 Profile: 100-yr FIS Culv: Culvert #3
Warning:The program cannot perform supercritical flow through multiple culverts. The program sets the water surface to critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.
River: Flamingo Wash Reach: 1 RS: 6500 Profile: 100-yr FIS Culv: Culvert #4
Warning:The program cannot perform supercritical flow through multiple culverts. The program sets the water surface to critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.
River: Flamingo Wash Reach: 1 RS: 6350 Profile: 100-yr FIS
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.
Note: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 6349.9 Profile: 100-yr FIS
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: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 6250 Profile: 100-yr FIS
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: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 6100 Profile: 100-yr FIS
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.
Note: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 5991.58 Profile: 100-yr FIS
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.
Note: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 5991.48 Profile: 100-yr FIS
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.
Note: Manning's n values were composited to a single value in the main channel.
River: Flamingo Wash Reach: 1 RS: 5905 Profile: 100-yr FIS
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: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: Flamingo Wash Reach: 1 RS: 5800 Profile: 100-yr FIS Culv: Culvert #2
Warning:The program cannot perform supercritical flow through multiple culverts. The program sets the water surface to critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.
River: Flamingo Wash Reach: 1 RS: 5800 Profile: 100-yr FIS Culv: Culvert #1
Warning:The program cannot perform supercritical flow through multiple culverts. The program sets the water surface to critical depth at the downstream end of the culverts and continues on.
Note: For this profile, the culvert does not have any flow.
River: Flamingo Wash Reach: 1 RS: 5648.42 Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 5548.82* Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 5449.23* Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 5186.67 Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 3500.* Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 3300.* Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 2964.21 Profile: 100-yr FIS
Warning:During the supercritical standard step calculations, the final energy answer that was computed is greater than the upstream energy. This is not physically possible. Please check your data.
River: Flamingo Wash Reach: 1 RS: 2648.52 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2596.14 Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 2504.37* Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 2443.06 Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 2334.09* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2235.88* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 2059.60* Profile: 100-yr FIS
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1 RS: 1903.46 Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 1817.25* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 1731.04* Profile: 100-yr FIS
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.
River: Flamingo Wash Reach: 1 RS: 1644.83* Profile: 100-yr FIS
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.

River: Flamingo Wash Reach: 1   RS: 1100   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 1000   Profile: 100-yr FIS
     Warning:There was not enough momentum to compute a supercritical answer through the bridge. The momentum answer has been
             disregarded.
     Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
             answer has been disregarded.
River: Flamingo Wash Reach: 1   RS: 1000   Profile: 100-yr FIS Upstream
     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, energy was used.
River: Flamingo Wash Reach: 1   RS: 1000   Profile: 100-yr FIS Downstream
     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, energy was used.
River: Flamingo Wash Reach: 1   RS: 926   Profile: 100-yr FIS
     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, energy was used.
River: Flamingo Wash Reach: 1   RS: 914.02*   Profile: 100-yr FIS
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Flamingo Wash Reach: 1   RS: 702.71   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 444.5   Profile: 100-yr FIS
     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.
River: Flamingo Wash Reach: 1   RS: 223.47   Profile: 100-yr FIS
     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.

HEC-RAS Plan: 70p0.013 River: Flamingo Wash Reach: 1 Profile: 100-yr FIS

Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
1	8837.78	100-yr FIS	1935.97	1931.62	4.35				5500.00		50.00
1	8807.78	100-yr FIS	1938.54	1935.21	3.33	0.20	0.31		5500.00		56.88
1	8687.78	100-yr FIS	1937.42	1931.97	5.45	0.91	0.21		5500.00		54.12
1	8320	100-yr FIS	1934.25	1932.43	1.82			274.31	5164.19	61.51	183.61
1	8200	100-yr FIS	1933.35	1931.06	2.30	0.86	0.05	40.71	5090.75	368.54	127.29
1	8100.*	100-yr FIS	1932.52	1930.88	1.64			495.40	4359.30	645.30	180.88
1	8000	100-yr FIS	1931.63	1929.50	2.13	0.85	0.05	850.36	4239.01	410.63	186.36
1	7900.*	100-yr FIS	1931.88	1930.44	1.43	0.75	0.21	414.29	4028.51	1057.20	241.78
1	7800	100-yr FIS	1931.39	1929.88	1.51			10.96	3848.43	1640.61	194.90
1	7700.*	100-yr FIS	1930.48	1928.13	2.35	0.82	0.08	94.97	4228.61	1176.42	252.66
1	7600	100-yr FIS	1929.25	1926.64	2.61	1.21	0.03	234.99	4155.18	1109.83	261.66
1	7500.*	100-yr FIS	1927.86	1926.14	1.73	1.11	0.27	193.59	3576.18	1730.23	263.64
1	7400	100-yr FIS	1926.91	1925.51	1.40	0.86	0.10	134.31	3218.12	2147.57	255.44
1	7300.*	100-yr FIS	1927.14	1925.85	1.29	0.70	0.03	479.26	4117.12	903.62	261.49
1	7200	100-yr FIS	1926.76	1925.32	1.45			563.58	4782.43	153.99	228.94
1	7100.*	100-yr FIS	1925.94	1923.80	2.14	0.76	0.07	579.82	4864.63	55.55	155.33
1	7000	100-yr FIS	1924.76	1922.26	2.49	1.15	0.04	977.10	4467.72	55.17	124.07
1	6868.*	100-yr FIS	1923.63	1921.92	1.71			1025.58	4429.41	45.01	165.51
1	6736	100-yr FIS	1922.84	1921.50	1.34			1034.89	4291.47	173.64	225.66
1	6702.04	100-yr FIS	1922.90	1921.62	1.27	0.25	0.02	1153.35	3674.06	672.59	240.65
1	6701.94	100-yr FIS	1923.31	1921.81	1.50	0.00	0.02	856.82	4165.03	478.15	244.37
1	6577	100-yr FIS	1922.03	1915.21	6.83	0.74	0.53		5500.00		107.32
1	6500		Culvert								
1	6469	100-yr FIS	1918.16	1916.05	2.11				5500.00		111.60
1	6350	100-yr FIS	1920.94	1919.08	1.86	0.45	0.08	612.28	4455.47	432.25	168.10
1	6349.9	100-yr FIS	1920.88	1918.39	2.48	0.00	0.06	554.70	4553.49	391.81	153.28
1	6250	100-yr FIS	1919.81	1916.74	3.07	1.01	0.06	867.53	4137.89	494.58	200.98
1	6100	100-yr FIS	1917.85	1916.09	1.76	1.58	0.39	8.38	3961.38	1530.24	216.25
1	5991.58	100-yr FIS	1918.33	1916.78	1.56	0.79	0.06	17.40	4809.65	672.95	214.40
1	5991.48	100-yr FIS	1918.46	1916.60	1.86	0.00	0.03	5.61	5147.76	346.63	203.43
1	5905	100-yr FIS	1917.63	1911.14	6.50	0.36	0.46		5500.00		83.41
1	5800		Culvert								
1	5790	100-yr FIS	1914.22	1911.59	2.63				5500.00		81.27
1	5737.74	100-yr FIS	1913.98	1910.88	3.10	0.10	0.14		5500.00		79.77
1	5648.42	100-yr FIS	1913.34	1908.93	4.41	0.24	0.39		5500.00		75.00
1	5548.82*	100-yr FIS	1912.82	1906.73	6.09	0.44	0.08		5500.00		75.00
1	5449.23*	100-yr FIS	1912.10	1904.86	7.24	0.67	0.06		5500.00		75.00
1	5449.11	100-yr FIS	1912.10	1904.86	7.23	0.00	0.00		5500.00		75.00
1	5445.78	100-yr FIS	1912.06	1904.81	7.25	0.03	0.00		5500.00		75.00
1	5362.85*	100-yr FIS	1911.47	1904.09	7.37	0.59	0.01		5500.00		62.50
1	5279.92	100-yr FIS	1910.97	1903.83	7.13	0.47	0.02		5500.00		50.00
1	5186.67	100-yr FIS	1910.38	1901.98	8.40	0.53	0.06		5500.00		50.00
1	5099.78*	100-yr FIS	1909.80	1901.26	8.53	0.57	0.01		5500.00		50.00
1	5012.89*	100-yr FIS	1909.20	1900.55	8.66	0.59	0.01		5500.00		50.00
1	5012.88	100-yr FIS	1909.21	1900.55	8.66	0.00	0.00		5500.00		50.00
1	4945.04	100-yr FIS	1908.74	1900.00	8.74	0.47	0.00		5500.00		50.00
1	4858.54*	100-yr FIS	1908.13	1899.29	8.84	0.60	0.00		5500.00		50.00
1	4772.04*	100-yr FIS	1907.51	1898.60	8.91	0.61	0.00		5500.00		50.00
1	4685.54*	100-yr FIS	1906.89	1897.90	8.99	0.62	0.00		5500.00		50.00
1	4599.04*	100-yr FIS	1906.25	1897.22	9.03	0.63	0.00		5500.00		50.00
1	4512.54*	100-yr FIS	1905.61	1896.53	9.08	0.63	0.00		5500.00		50.00
1	4426.04*	100-yr FIS	1904.96	1895.84	9.12	0.64	0.00		5500.00		50.00
1	4425.69	100-yr FIS	1904.96	1895.84	9.12	0.00	0.00		5500.00		50.00
1	4350	100-yr FIS	1904.39	1895.24	9.15	0.56	0.00		5500.00		50.00
1	4275.*	100-yr FIS	1903.82	1894.44	9.38	0.57	0.01		5500.00		50.00
1	4200.00	100-yr FIS	1903.21	1893.64	9.57	0.59	0.01		5500.00		50.00
1	4127.25*	100-yr FIS	1902.61	1893.36	9.26	0.56	0.03		5500.00		50.00
1	4054.5*	100-yr FIS	1902.06	1893.05	9.01	0.54	0.02		5500.00		50.00
1	3981.76	100-yr FIS	1901.53	1892.75	8.78	0.52	0.02		5500.00		50.00
1	3890.88*	100-yr FIS	1900.89	1892.36	8.53	0.62	0.03		5500.00		50.00
1	3800	100-yr FIS	1900.28	1891.96	8.32	0.59	0.02		5500.00		50.00
1	3700.*	100-yr FIS	1899.60	1890.84	8.75	0.67	0.02		5500.00		50.00
1	3600	100-yr FIS	1898.86	1889.75	9.11	0.71	0.02		5500.00		50.00
1	3500.*	100-yr FIS	1898.12	1888.49	9.63	0.71	0.03		5500.00		41.50
1	3400	100-yr FIS	1897.48	1887.80	9.68	0.64	0.00		5500.00		33.00
1	3300.*	100-yr FIS	1896.84	1886.62	10.22	0.62	0.03		5500.00		33.00
1	3200.*	100-yr FIS	1896.16	1885.48	10.67	0.66	0.02		5500.00		33.00
1	3100.84	100-yr FIS	1895.45	1884.38	11.07	0.70	0.02		5500.00		33.00
1	3032.53*	100-yr FIS	1894.93	1883.63	11.30	0.50	0.01		5500.00		33.00

HEC-RAS Plan: 70p0.013 River: Flamingo Wash Reach: 1 Profile: 100-yr FIS (Continued)

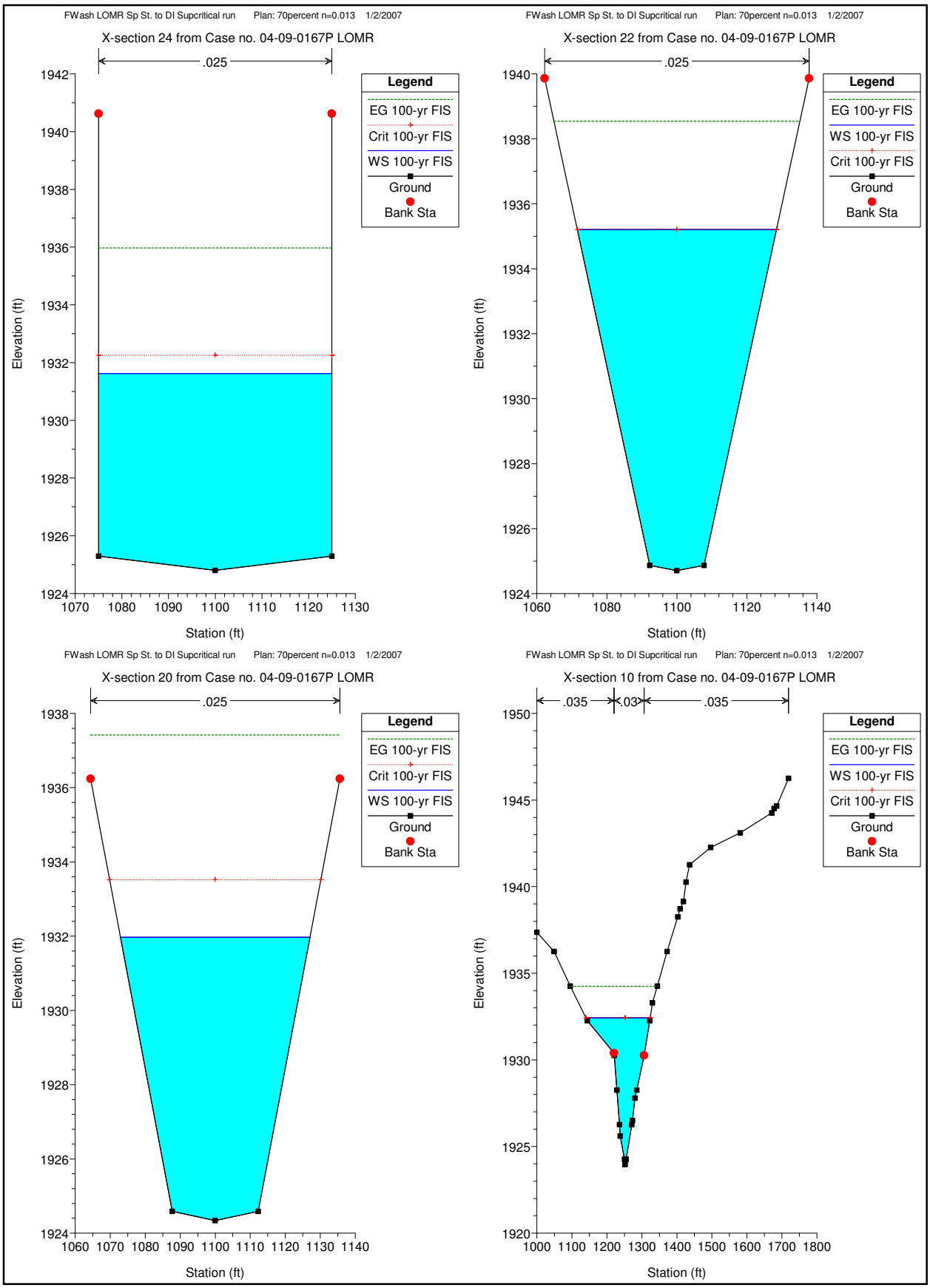
Reach	River Sta	Profile	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
			(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
1	2964.22*	100-yr FIS	1894.40	1882.89	11.52	0.52	0.01		5500.00		33.00
1	2964.21	100-yr FIS	1894.41	1882.88	11.52	0.00	0.00		5500.00		33.00
1	2921.88	100-yr FIS	1894.07	1882.43	11.64	0.33	0.01		5500.00		33.00
1	2837.87*	100-yr FIS	1893.40	1881.54	11.86	0.66	0.01		5500.00		33.00
1	2753.87	100-yr FIS	1892.71	1880.65	12.06	0.68	0.01		5500.00		33.00
1	2703.87	100-yr FIS	1892.28	1880.04	12.24	0.41	0.01		5500.00		33.00
1	2702.87	100-yr FIS	1892.27	1880.03	12.24	0.01	0.00		5500.00		51.89
1	2648.52	100-yr FIS	1891.57	1877.64	13.93	0.53	0.17		5500.00		50.00
1	2596.14	100-yr FIS	1890.78	1877.47	13.32	0.73	0.06		5500.00		50.00
1	2576.44*	100-yr FIS	1890.50	1877.40	13.10	0.26	0.02		5500.00		50.00
1	2504.37*	100-yr FIS	1889.53	1877.13	12.39	0.90	0.07		5500.00		50.00
1	2443.06	100-yr FIS	1888.77	1876.91	11.86	0.71	0.05		5500.00		50.00
1	2432.30	100-yr FIS	1888.65	1876.88	11.77	0.12	0.01		5500.00		50.00
1	2334.09*	100-yr FIS	1887.55	1876.16	11.39	1.06	0.04		5500.00		50.00
1	2235.88*	100-yr FIS	1886.52	1875.43	11.09	1.01	0.03		5500.00		50.00
1	2137.68	100-yr FIS	1885.52	1874.70	10.83	0.97	0.03		5500.00		50.00
1	2059.60*	100-yr FIS	1884.69	1873.00	11.69	0.80	0.04		5500.00		50.00
1	2020.16	100-yr FIS	1884.23	1872.16	12.07	0.44	0.02		5500.00		50.00
1	1981.53*	100-yr FIS	1883.75	1871.33	12.43	0.45	0.02		5500.00		50.00
1	1903.46	100-yr FIS	1882.74	1869.70	13.05	0.97	0.03		5500.00		50.00
1	1817.25*	100-yr FIS	1881.60	1869.07	12.53	1.08	0.05		5500.00		50.00
1	1731.04*	100-yr FIS	1880.54	1868.43	12.11	1.02	0.04		5500.00		50.00
1	1644.83*	100-yr FIS	1879.53	1867.79	11.74	0.97	0.04		5500.00		50.00
1	1558.63*	100-yr FIS	1878.58	1867.14	11.43	0.93	0.03		5500.00		50.00
1	1558.62	100-yr FIS	1878.55	1867.42	11.12	0.00	0.03		5800.00		50.00
1	1472.6*	100-yr FIS	1877.72	1866.76	10.96	0.81	0.02		5800.00		50.00
1	1386.58*	100-yr FIS	1876.91	1866.08	10.82	0.79	0.01		5800.00		50.00
1	1300.56*	100-yr FIS	1876.11	1865.40	10.72	0.78	0.01		5800.00		50.00
1	1214.54	100-yr FIS	1875.33	1864.72	10.62	0.77	0.01		5800.00		50.00
1	1100	100-yr FIS	1874.26	1863.30	10.95	1.06	0.02		5800.00		52.04
1	1000		Bridge								
1	926	100-yr FIS	1870.52	1858.99	11.53	0.11	0.01		5800.00		54.70
1	914.02*	100-yr FIS	1870.31	1859.80	10.50	0.11	0.10		5800.00		51.09
1	702.71	100-yr FIS	1867.38	1860.87	6.51	2.53	0.40	5.94	5794.06		60.13
1	444.5	100-yr FIS	1865.59	1856.59	8.99	1.55	0.25		5800.00		50.86
1	223.47	100-yr FIS	1863.68	1853.87	9.81	1.82	0.08		5800.00		46.59

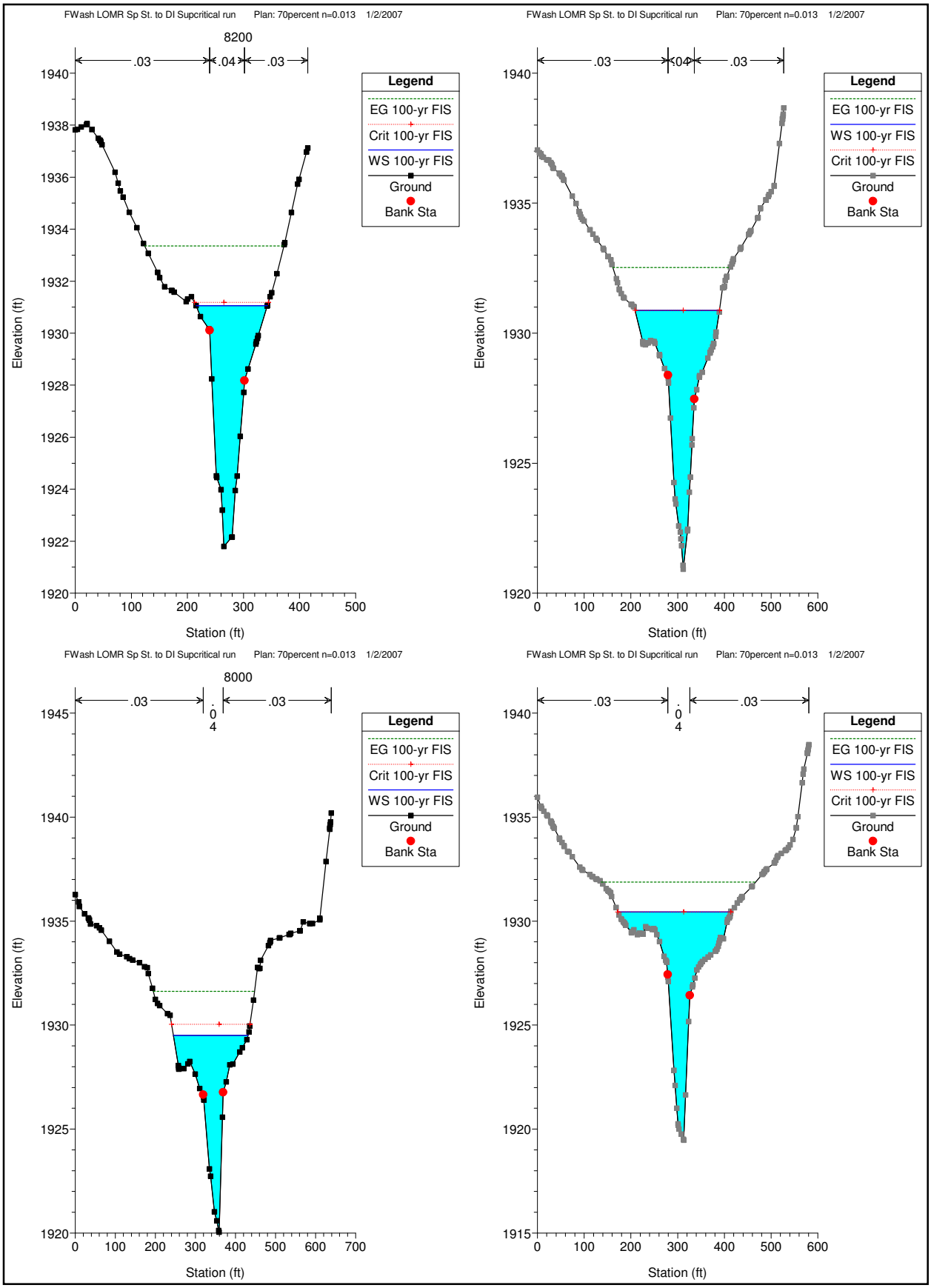
HEC-RAS Plan: 70p0.013 River: Flamingo Wash Reach: 1 Profile: 100-yr FIS

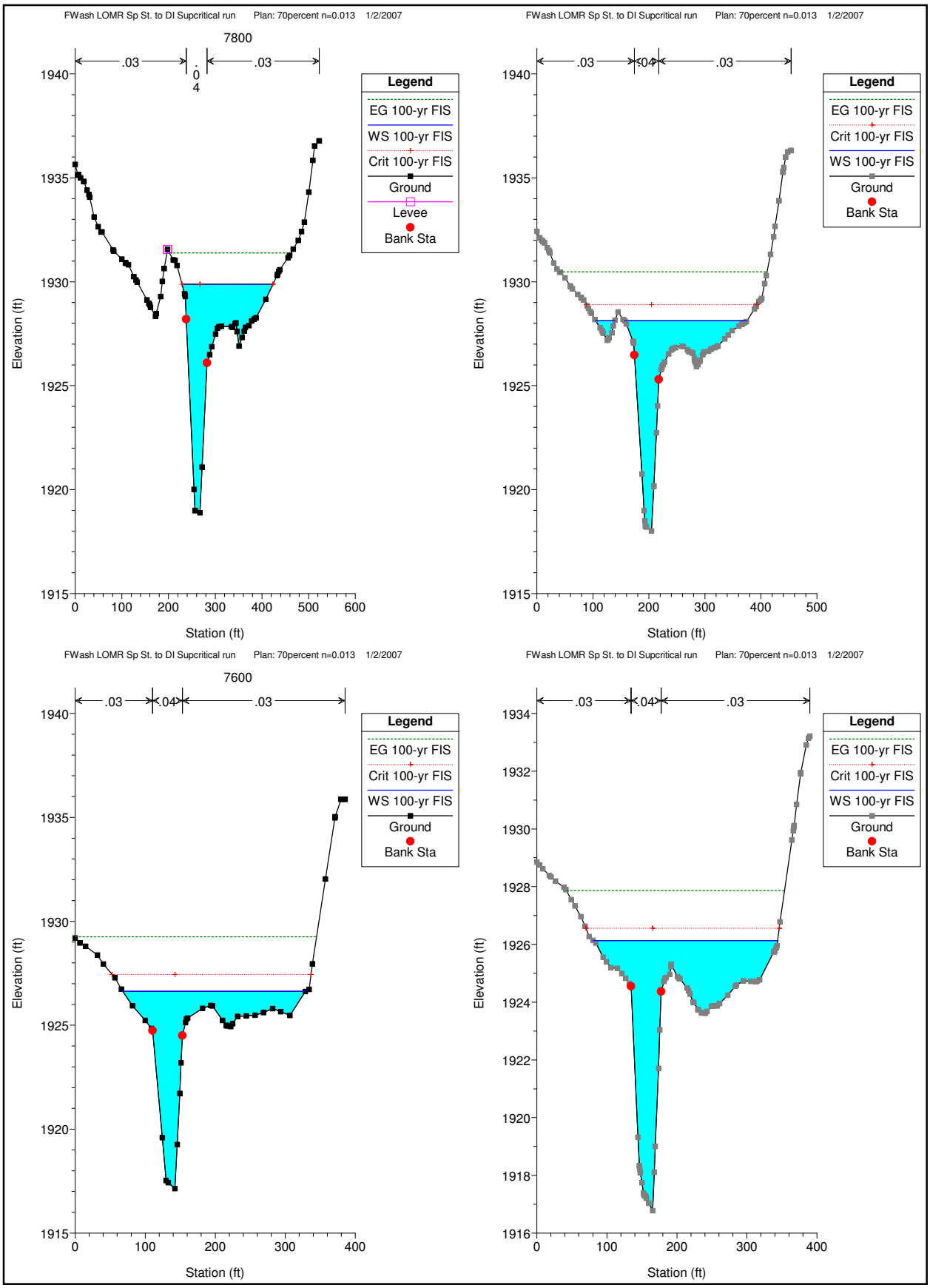
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	8837.78	100-yr FIS	5500.00	1924.80	1931.62	1932.26	1935.97	0.008702	16.74	328.61	50.00	1.15
1	8807.78	100-yr FIS	5500.00	1924.71	1935.21	1935.21	1938.54	0.005468	14.64	375.61	56.88	1.00
1	8687.78	100-yr FIS	5500.00	1924.34	1931.97	1933.52	1937.42	0.011334	18.74	293.55	54.12	1.42
1	8320	100-yr FIS	5500.00	1923.96	1932.43	1932.43	1934.25	0.005458	11.14	566.77	183.61	0.85
1	8200	100-yr FIS	5500.00	1921.80	1931.06	1931.18	1933.35	0.009801	12.52	478.25	127.29	0.86
1	8100.*	100-yr FIS	5500.00	1920.92	1930.88	1930.88	1932.52	0.007081	11.16	589.10	180.88	0.74
1	8000	100-yr FIS	5500.00	1920.05	1929.50	1930.04	1931.63	0.010284	12.85	525.22	186.36	0.88
1	7900.*	100-yr FIS	5500.00	1919.47	1930.44	1930.44	1931.88	0.005694	10.73	661.85	241.78	0.67
1	7800	100-yr FIS	5500.00	1918.88	1929.88	1929.88	1931.39	0.006421	11.09	620.75	194.90	0.70
1	7700.*	100-yr FIS	5500.00	1918.01	1928.13	1928.90	1930.48	0.010951	13.66	533.54	252.66	0.90
1	7600	100-yr FIS	5500.00	1917.14	1926.64	1927.45	1929.25	0.013403	14.54	514.10	261.66	0.99
1	7500.*	100-yr FIS	5500.00	1916.78	1926.14	1926.56	1927.86	0.009413	12.22	602.55	263.64	0.83
1	7400	100-yr FIS	5500.00	1916.43	1925.51	1925.68	1926.91	0.007938	10.99	639.06	255.44	0.75
1	7300.*	100-yr FIS	5500.00	1916.49	1925.85	1925.85	1927.14	0.005779	10.15	694.26	261.49	0.67
1	7200	100-yr FIS	5500.00	1916.55	1925.32	1925.32	1926.76	0.006186	10.22	640.80	228.94	0.69
1	7100.*	100-yr FIS	5500.00	1915.99	1923.80	1924.15	1925.94	0.010296	12.30	505.68	155.33	0.88
1	7000	100-yr FIS	5500.00	1915.44	1922.26	1922.74	1924.76	0.014123	13.39	449.89	124.07	1.02
1	6868.*	100-yr FIS	5500.00	1914.40	1921.92	1921.92	1923.63	0.009110	11.20	554.50	165.51	0.83
1	6736	100-yr FIS	5500.00	1913.37	1921.50	1921.50	1922.84	0.007724	10.07	642.00	225.66	0.75
1	6702.04	100-yr FIS	5500.00	1914.00	1921.62	1921.62	1922.90	0.006815	10.28	669.96	240.65	0.72
1	6701.94	100-yr FIS	5500.00	1913.50	1921.81	1921.81	1923.31	0.002624	11.07	724.20	244.37	0.76
1	6577	100-yr FIS	5500.00	1911.73	1915.21	1917.15	1922.03	0.024558	20.97	262.32	107.32	2.36
1	6500		Culvert									
1	6469	100-yr FIS	5500.00	1910.98	1916.05		1918.16	0.004633	11.67	471.39	111.60	2.36
1	6350	100-yr FIS	5500.00	1910.57	1919.08	1919.08	1920.94	0.003269	11.95	599.44	168.10	0.82
1	6349.9	100-yr FIS	5500.00	1910.57	1918.39	1918.99	1920.88	0.008151	13.61	489.66	153.28	0.98
1	6250	100-yr FIS	5500.00	1909.99	1916.74	1917.72	1919.81	0.012743	15.73	462.77	200.98	1.23
1	6100	100-yr FIS	5500.00	1908.92	1916.09	1916.32	1917.85	0.008947	11.61	545.87	216.25	0.94
1	5991.58	100-yr FIS	5500.00	1908.50	1916.78	1916.78	1918.33	0.006183	10.57	609.35	214.40	0.78
1	5991.48	100-yr FIS	5500.00	1908.50	1916.60	1916.60	1918.46	0.002441	11.29	588.06	203.43	0.83
1	5905	100-yr FIS	5500.00	1907.80	1911.14	1913.09	1917.63	0.008661	20.45	268.92	83.41	2.01
1	5800		Culvert									
1	5790	100-yr FIS	5500.00	1906.30	1911.59		1914.22	0.001686	13.00	422.96	81.27	2.01
1	5737.74	100-yr FIS	5500.00	1905.60	1910.88	1911.28	1913.98	0.002124	14.12	389.50	79.77	1.13
1	5648.42	100-yr FIS	5500.00	1904.20	1908.93	1910.08	1913.34	0.003504	16.86	326.27	75.00	1.42
1	5548.82*	100-yr FIS	5500.00	1902.65	1906.73	1908.53	1912.82	0.005873	19.81	277.69	75.00	1.81
1	5449.23*	100-yr FIS	5500.00	1901.09	1904.86	1906.97	1912.10	0.007745	21.59	254.80	75.00	2.06
1	5449.11	100-yr FIS	5500.00	1901.09	1904.86	1906.97	1912.10	0.007743	21.58	254.82	75.00	2.06
1	5445.78	100-yr FIS	5500.00	1901.04	1904.81	1906.92	1912.06	0.007778	21.61	254.46	75.00	2.07
1	5362.85*	100-yr FIS	5500.00	1899.74	1904.09	1906.26	1911.47	0.006565	21.79	252.45	62.50	1.91
1	5279.92	100-yr FIS	5500.00	1898.45	1903.83	1905.89	1910.97	0.005041	21.44	256.59	50.00	1.67
1	5186.67	100-yr FIS	5500.00	1897.00	1901.98	1904.44	1910.38	0.006498	23.26	236.49	50.00	1.88
1	5099.78*	100-yr FIS	5500.00	1896.32	1901.26	1903.76	1909.80	0.006662	23.44	234.60	50.00	1.91
1	5012.89*	100-yr FIS	5500.00	1895.64	1900.55	1903.08	1909.20	0.006810	23.61	232.96	50.00	1.93
1	5012.88	100-yr FIS	5500.00	1895.64	1900.55	1903.08	1909.21	0.006815	23.61	232.90	50.00	1.93
1	4945.04	100-yr FIS	5500.00	1895.11	1900.00	1902.55	1908.74	0.006916	23.73	231.81	50.00	1.94
1	4858.54*	100-yr FIS	5500.00	1894.43	1899.29	1901.87	1908.13	0.007036	23.86	230.54	50.00	1.96
1	4772.04*	100-yr FIS	5500.00	1893.76	1898.60	1901.20	1907.51	0.007126	23.96	229.60	50.00	1.97
1	4685.54*	100-yr FIS	5500.00	1893.08	1897.90	1900.52	1906.89	0.007220	24.06	228.64	50.00	1.98
1	4599.04*	100-yr FIS	5500.00	1892.41	1897.22	1899.85	1906.25	0.007275	24.11	228.08	50.00	1.99
1	4512.54*	100-yr FIS	5500.00	1891.73	1896.53	1899.17	1905.61	0.007336	24.18	227.48	50.00	2.00
1	4426.04*	100-yr FIS	5500.00	1891.05	1895.84	1898.49	1904.96	0.007391	24.24	226.93	50.00	2.00
1	4425.69	100-yr FIS	5500.00	1891.05	1895.84	1898.49	1904.96	0.007391	24.24	226.93	50.00	2.00
1	4350	100-yr FIS	5500.00	1890.46	1895.24	1897.90	1904.39	0.007431	24.28	226.54	50.00	2.01
1	4275.*	100-yr FIS	5500.00	1889.71	1894.44	1897.15	1903.82	0.007721	24.58	223.79	50.00	2.05
1	4200.00	100-yr FIS	5500.00	1888.96	1893.64	1896.40	1903.21	0.007963	24.82	221.59	50.00	2.08
1	4127.25*	100-yr FIS	5500.00	1888.60	1893.36	1896.04	1902.61	0.007565	24.42	225.25	50.00	2.03
1	4054.5*	100-yr FIS	5500.00	1888.23	1893.05	1895.67	1902.06	0.007253	24.09	228.30	50.00	1.99
1	3981.76	100-yr FIS	5500.00	1887.87	1892.75	1895.31	1901.53	0.006963	23.78	231.30	50.00	1.95
1	3890.88*	100-yr FIS	5500.00	1887.42	1892.36	1894.86	1900.89	0.006652	23.43	234.71	50.00	1.91
1	3800	100-yr FIS	5500.00	1886.96	1891.96	1894.40	1900.28	0.006406	23.15	237.57	50.00	1.87
1	3700.*	100-yr FIS	5500.00	1885.96	1890.84	1893.40	1899.60	0.006928	23.74	231.68	50.00	1.94
1	3600	100-yr FIS	5500.00	1884.96	1889.75	1892.40	1898.86	0.007377	24.22	227.08	50.00	2.00
1	3500.*	100-yr FIS	5500.00	1882.96	1888.49	1891.32	1898.12	0.006854	24.90	220.85	41.50	1.90
1	3400	100-yr FIS	5500.00	1880.96	1887.80	1890.63	1897.48	0.005920	24.97	220.23	33.00	1.70
1	3300.*	100-yr FIS	5500.00	1879.96	1886.62	1889.63	1896.84	0.006408	25.65	214.40	33.00	1.77
1	3200.*	100-yr FIS	5500.00	1878.96	1885.48	1888.63	1896.16	0.006835	26.22	209.77	33.00	1.83
1	3100.84	100-yr FIS	5500.00	1877.97	1884.38	1887.64	1895.45	0.007212	26.70	206.01	33.00	1.88
1	3032.53*	100-yr FIS	5500.00	1877.29	1883.63	1886.96	1894.93	0.007433	26.97	203.92	33.00	1.91
1	2964.22*	100-yr FIS	5500.00	1876.60	1882.89	1886.28	1894.40	0.007650	27.23	201.96	33.00	1.94
1	2964.21	100-yr FIS	5500.00	1876.60	1882.88	1886.28	1894.41	0.007655	27.24	201.91	33.00	1.94
1	2921.88	100-yr FIS	5500.00	1876.18	1882.43	1885.85	1894.07	0.007773	27.38	200.87	33.00	1.96
1	2837.87*	100-yr FIS	5500.00	1875.34	1881.54	1885.02	1893.40	0.007992	27.64	199.00	33.00	1.98
1	2753.87	100-yr FIS	5500.00	1874.50	1880.65	1884.18	1892.71	0.008191	27.87	197.36	33.00	2.01
1	2703.87	100-yr FIS	5500.00	1874.00	1880.04	1883.59	1892.28	0.008387	28.08	195.88	33.00	2.03
1	2702.87	100-yr FIS	5500.00	1873.99	1880.03	1883.58	1892.27	0.006941	28.07	195.94	51.89	2.03
1	2648.52	100-yr FIS	5500.00	1873.72	1877.64	1881.19	1891.57	0.014378	29.95	183.65	50.00	2.75
1	2596.14	100-yr FIS	5500.00	1873.46	1877.47	1880.92	1890.78	0.013394	29.28	187.82	50.00	2.66
1	2576.44*	100-yr FIS	5500.00	1873.36	1877.40	1880.82	1890.50	0.013056	29.05	189.34	50.00	2.63

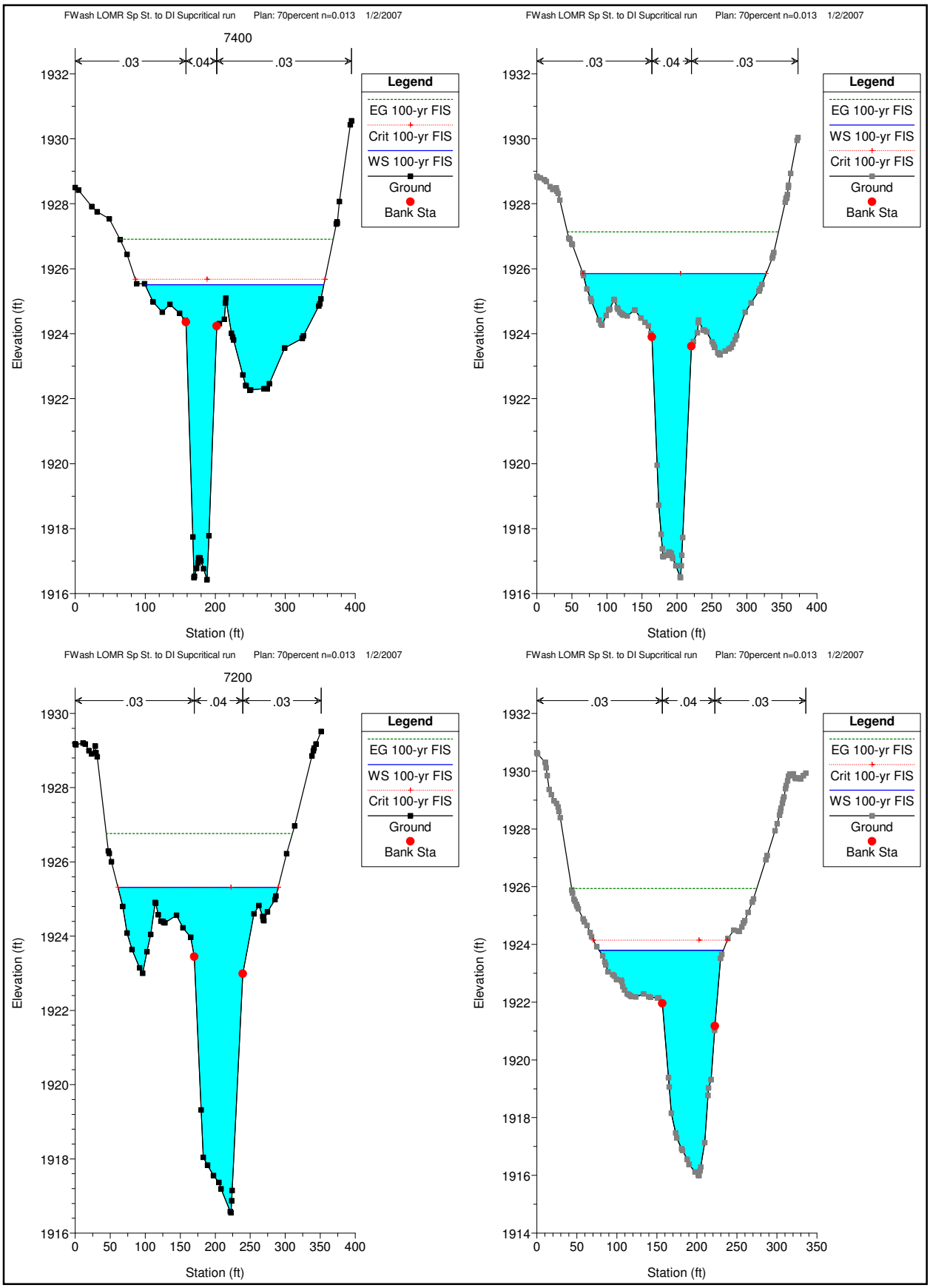
HEC-RAS Plan: 70p0.013 River: Flamingo Wash Reach: 1 Profile: 100-yr FIS (Continued)

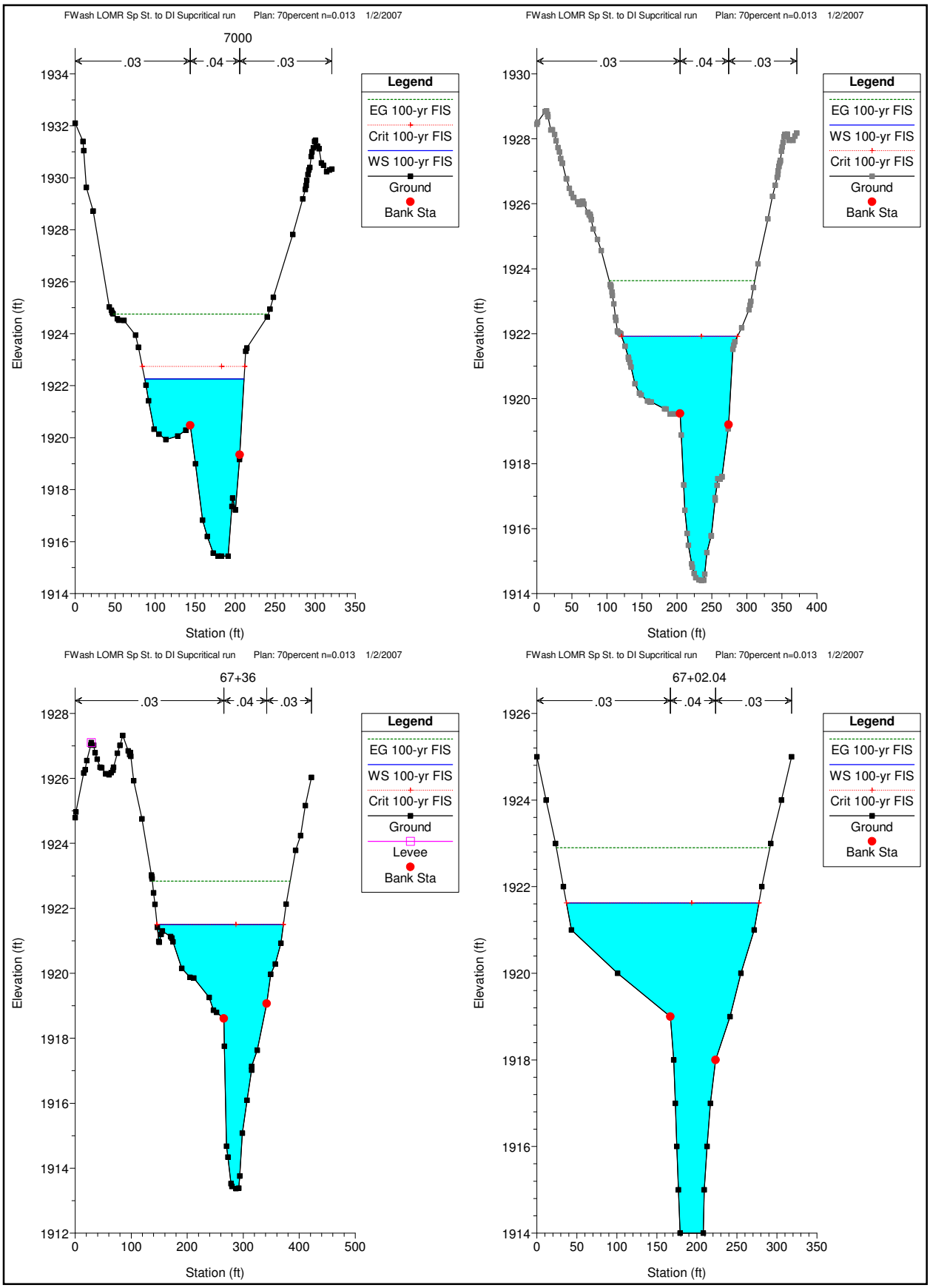
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	2504.37*	100-yr FIS	5500.00	1872.99	1877.13	1880.45	1889.53	0.011960	28.25	194.68	50.00	2.52
1	2443.06	100-yr FIS	5500.00	1872.68	1876.91	1880.14	1888.77	0.011158	27.64	199.02	50.00	2.44
1	2432.30	100-yr FIS	5500.00	1872.63	1876.88	1880.09	1888.65	0.011027	27.53	199.76	50.00	2.43
1	2334.09*	100-yr FIS	5500.00	1871.85	1876.16	1879.31	1887.55	0.010476	27.09	203.05	50.00	2.37
1	2235.88*	100-yr FIS	5500.00	1871.06	1875.43	1878.52	1886.52	0.010043	26.73	205.79	50.00	2.32
1	2137.68	100-yr FIS	5500.00	1870.28	1874.70	1877.74	1885.52	0.009670	26.41	208.28	50.00	2.28
1	2059.60*	100-yr FIS	5500.00	1868.74	1873.00	1876.20	1884.69	0.010904	27.43	200.48	50.00	2.41
1	2020.16	100-yr FIS	5500.00	1867.96	1872.16	1875.42	1884.23	0.011472	27.88	197.27	50.00	2.47
1	1981.53*	100-yr FIS	5500.00	1867.19	1871.33	1874.65	1883.75	0.012009	28.29	194.43	50.00	2.53
1	1903.46	100-yr FIS	5500.00	1865.65	1869.70	1873.11	1882.74	0.012971	28.99	189.73	50.00	2.62
1	1817.25*	100-yr FIS	5500.00	1864.95	1869.07	1872.41	1881.60	0.012164	28.40	193.64	50.00	2.54
1	1731.04*	100-yr FIS	5500.00	1864.24	1868.43	1871.70	1880.54	0.011533	27.93	196.94	50.00	2.48
1	1644.83*	100-yr FIS	5500.00	1863.54	1867.79	1871.00	1879.53	0.010988	27.50	199.99	50.00	2.42
1	1558.63*	100-yr FIS	5500.00	1862.84	1867.14	1870.30	1878.58	0.010534	27.13	202.69	50.00	2.38
1	1558.62	100-yr FIS	5800.00	1862.84	1867.42	1870.56	1878.55	0.009498	26.77	216.69	50.00	2.27
1	1472.6*	100-yr FIS	5800.00	1862.14	1866.76	1869.86	1877.72	0.009279	26.57	218.31	50.00	2.24
1	1386.58*	100-yr FIS	5800.00	1861.44	1866.08	1869.16	1876.91	0.009096	26.40	219.70	50.00	2.22
1	1300.56*	100-yr FIS	5800.00	1860.73	1865.40	1868.45	1876.11	0.008961	26.27	220.75	50.00	2.20
1	1214.54	100-yr FIS	5800.00	1860.03	1864.72	1867.75	1875.33	0.008830	26.15	221.80	50.00	2.19
1	1100	100-yr FIS	5800.00	1859.10	1863.30	1866.38	1874.26	0.009736	26.56	218.37	52.04	2.28
1	1000		Bridge									
1	926	100-yr FIS	5800.00	1855.10	1858.99	1862.16	1870.52	0.011094	27.25	212.81	54.70	2.43
1	914.02*	100-yr FIS	5800.00	1854.95	1859.80	1862.84	1870.31	0.008343	26.01	223.00	51.09	2.19
1	702.71	100-yr FIS	5800.00	1853.63	1860.87	1862.90	1867.38	0.004658	20.49	285.62	60.13	1.51
1	444.5	100-yr FIS	5800.00	1850.36	1856.59	1859.94	1865.59	0.008014	24.07	241.00	50.86	1.95
1	223.47	100-yr FIS	5800.00	1847.74	1853.87	1857.57	1863.68	0.008493	25.14	230.75	46.59	1.99

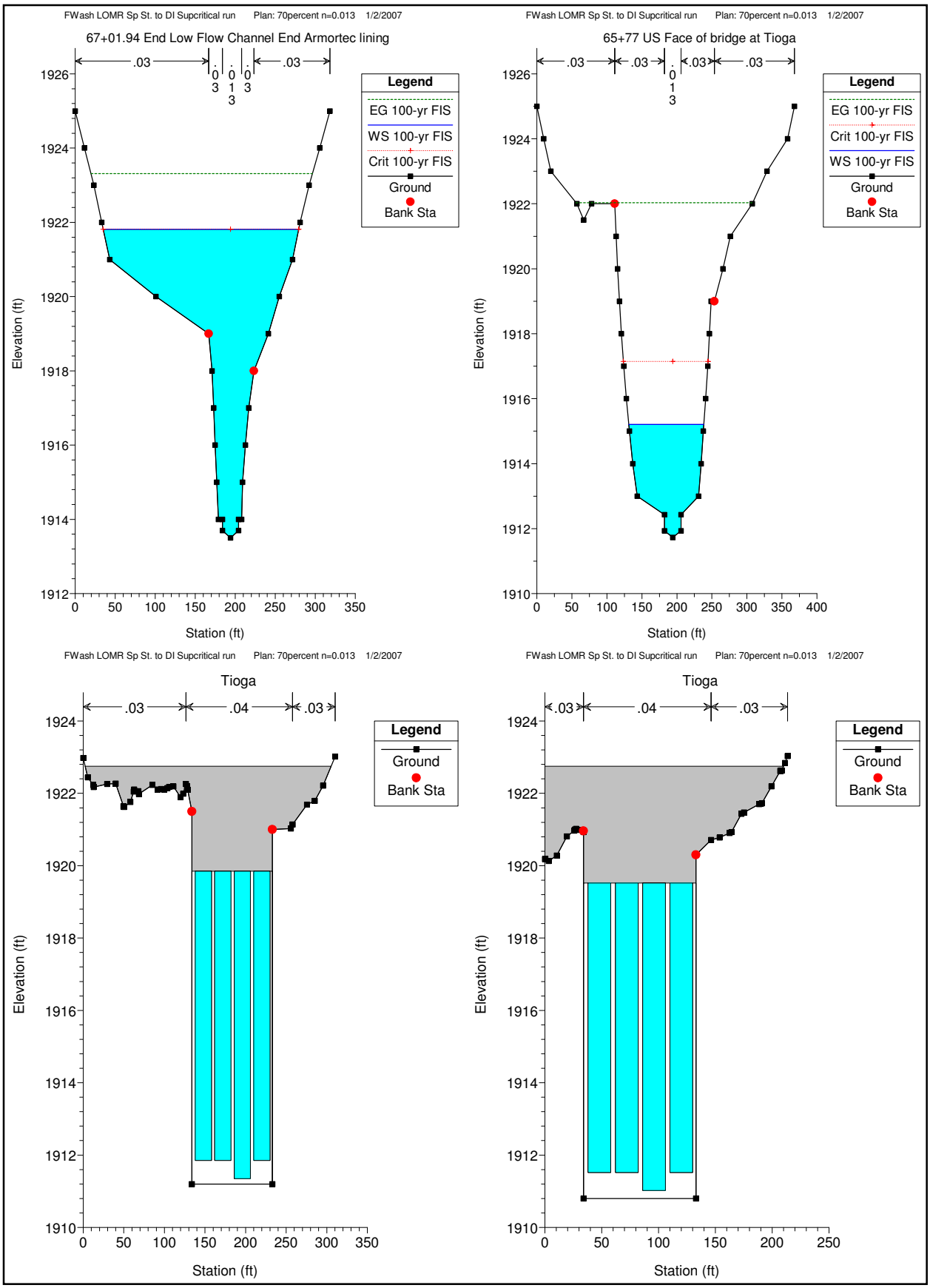

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
X-section 24 from Case no. 04-09-0167P LOMR
.025
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
X-section 22 from Case no. 04-09-0167P LOMR
.025
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
X-section 20 from Case no. 04-09-0167P LOMR
.025
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
X-section 10 from Case no. 04-09-0167P LOMR
.035
.03
.035
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

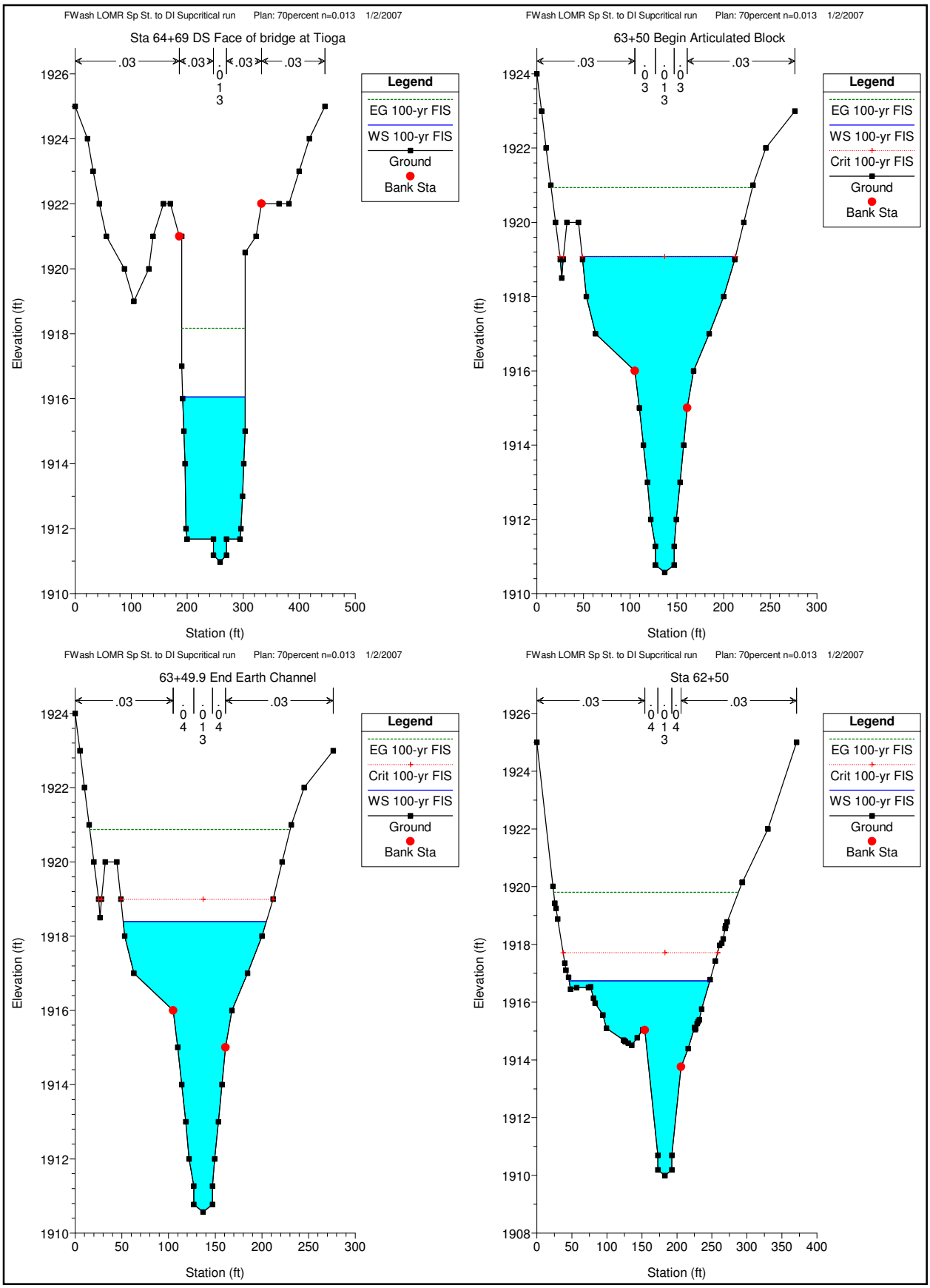

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
8200
.03
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
8000
.03
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

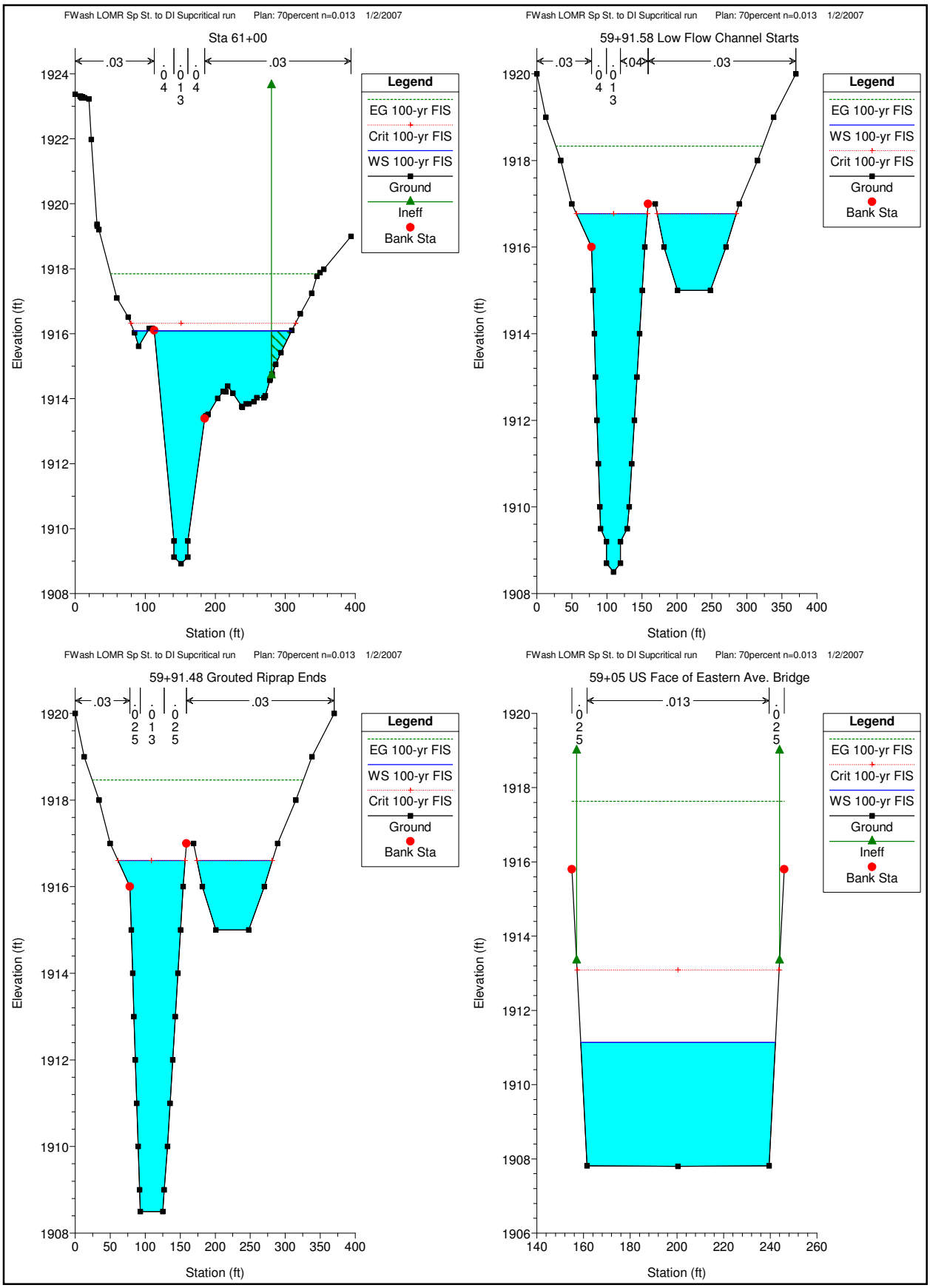

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
7800
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.03
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
7600
.03
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.03
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

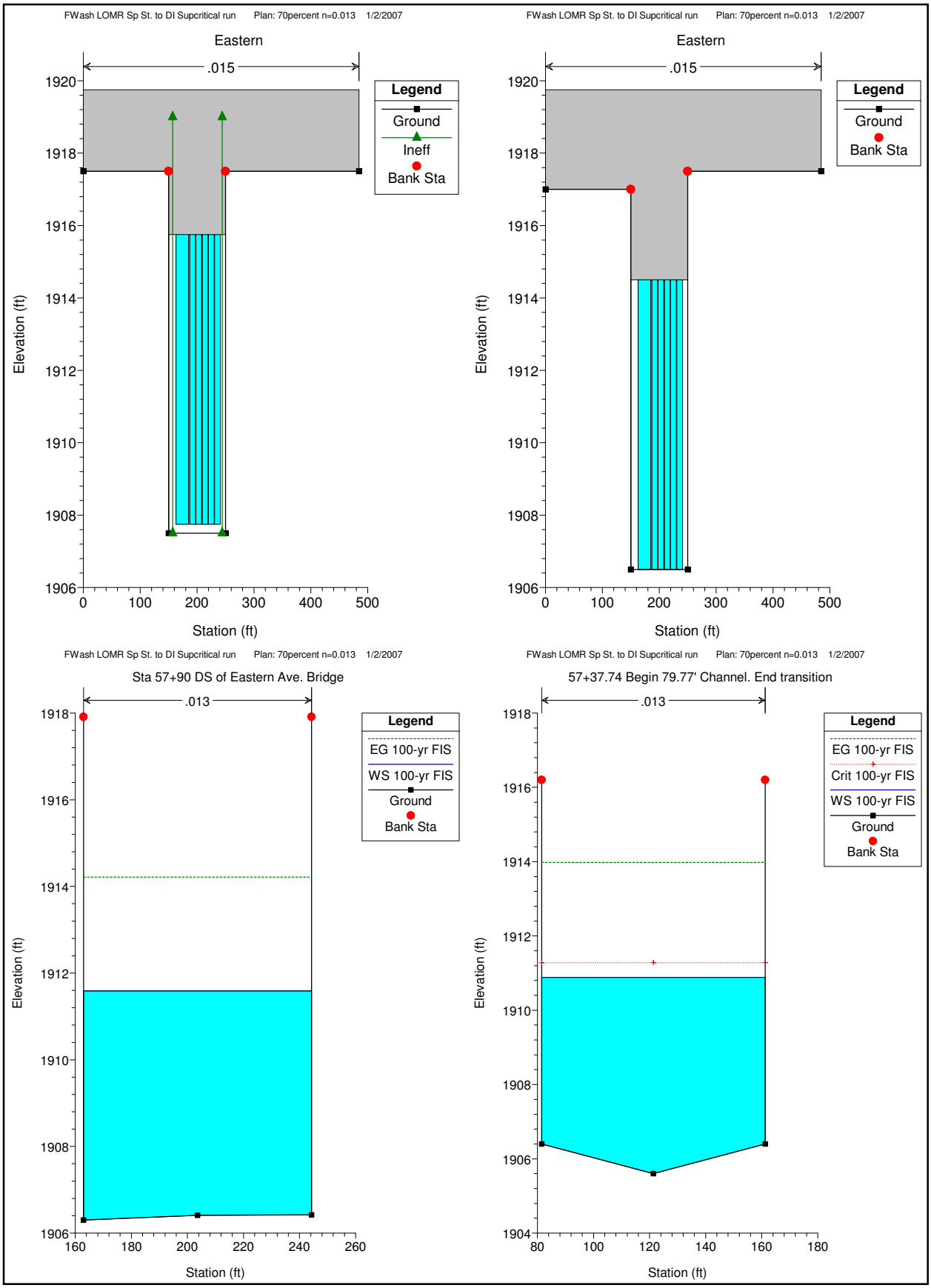

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
7400
.03
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
7200
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.03
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

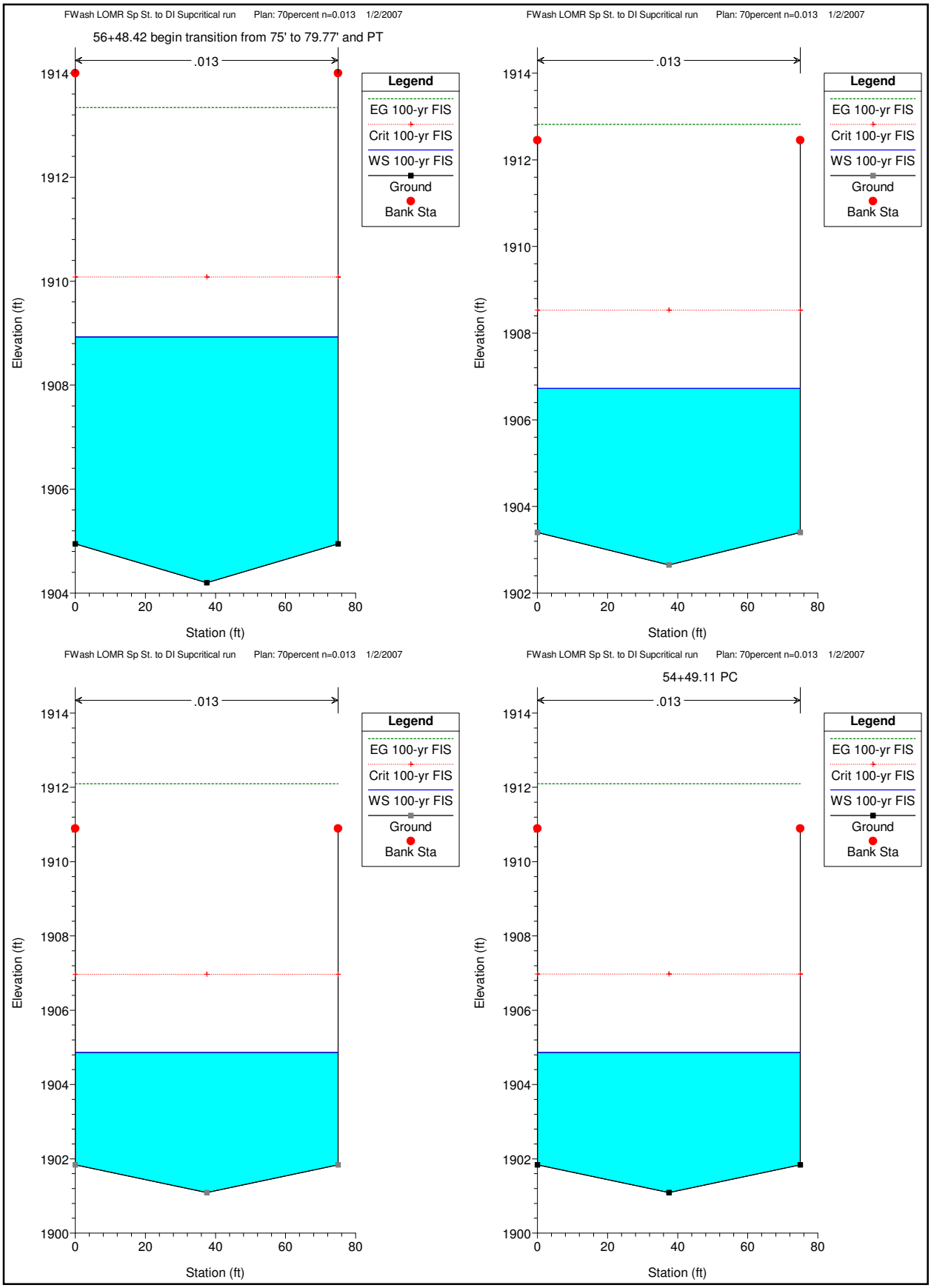

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
7000
.03
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
67+36
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
67+02.04
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

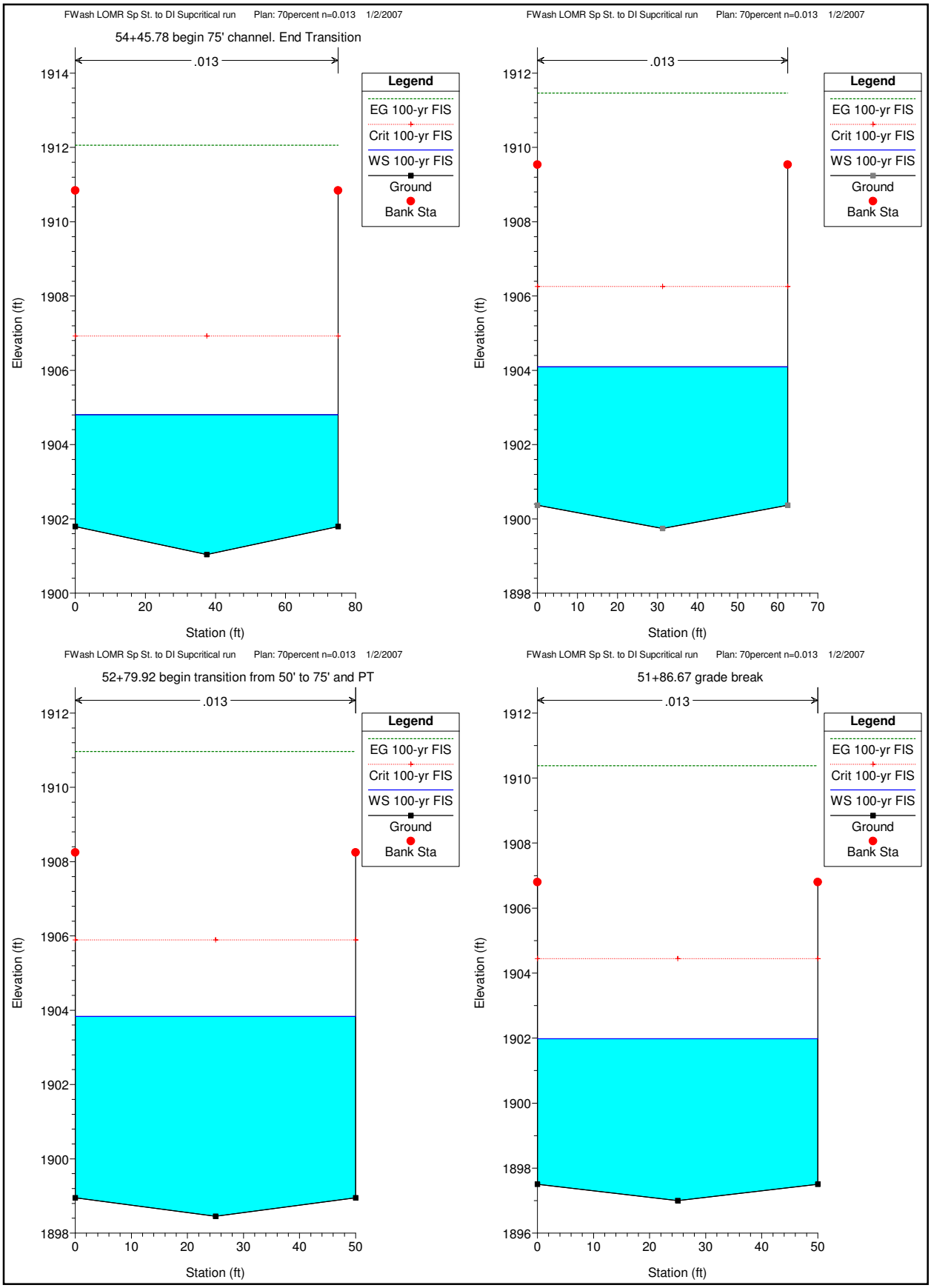

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
67+01.94 End Low Flow Channel End Armortec lining
.03
.03
.03
.03
.03
.03
.03
.03
.04
.03
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
65+77 US Face of bridge at Tioga
Tioga

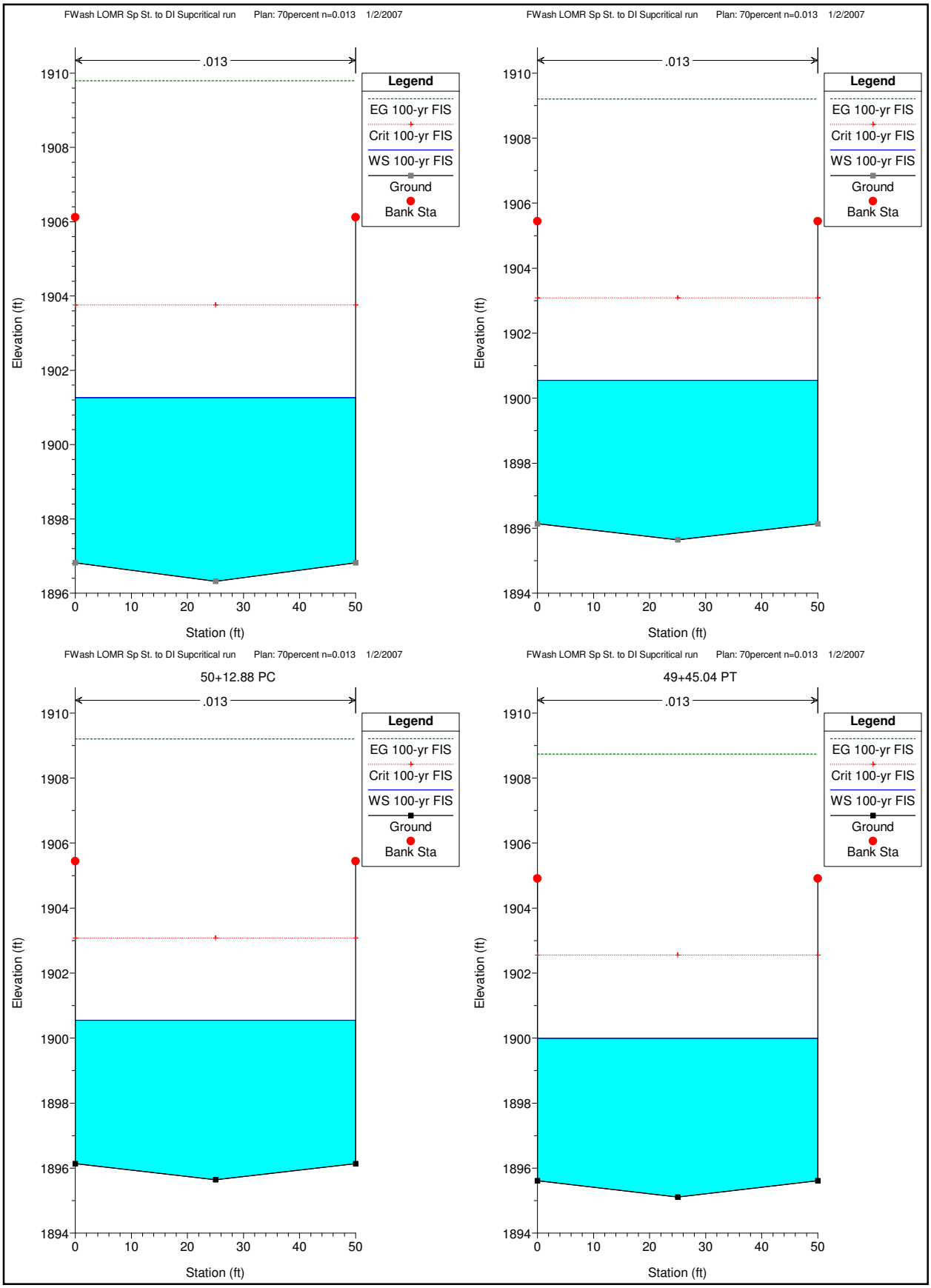

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
Sta 64+69 DS Face of bridge at Tioga
.03
.03
.013
.03
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
63+50 Begin Articulated Block
.03
.03
.013
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
63+49.9 End Earth Channel
.03
.04
.013
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
Sta 62+50
.03
.04
.013
.04
.03
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

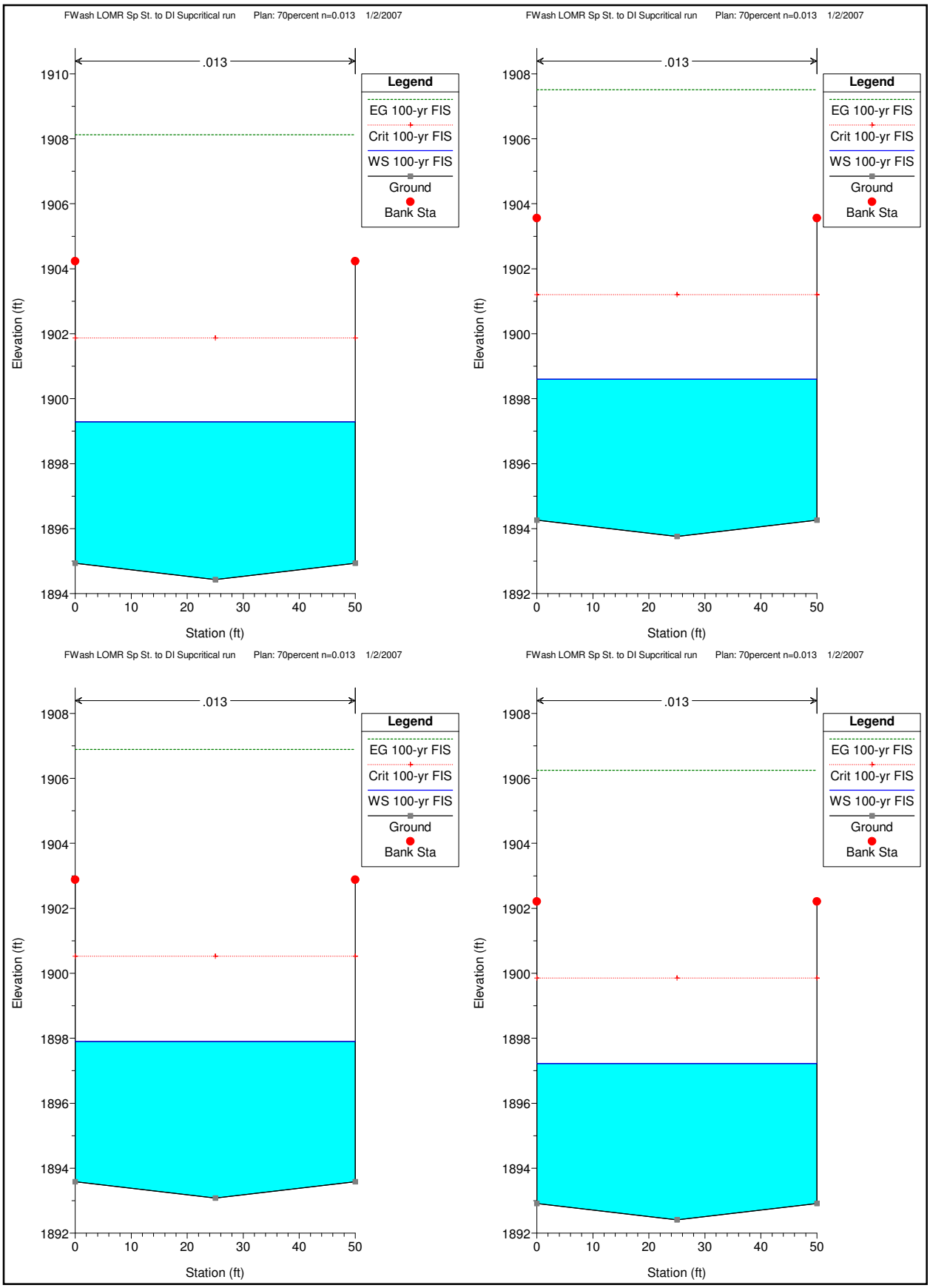

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
Sta 61+00
.03
.04
.013
.03
.04
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
59+91.58 Low Flow Channel Starts
.03
.04
.013
.04
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
59+91.48 Grouted Riprap Ends
.03
.025
.013
.025
.03
Legend
EG 100-yr FIS
WS 100-yr FIS
Crit 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
59+05 US Face of Eastern Ave. Bridge
.025
.013
.025
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

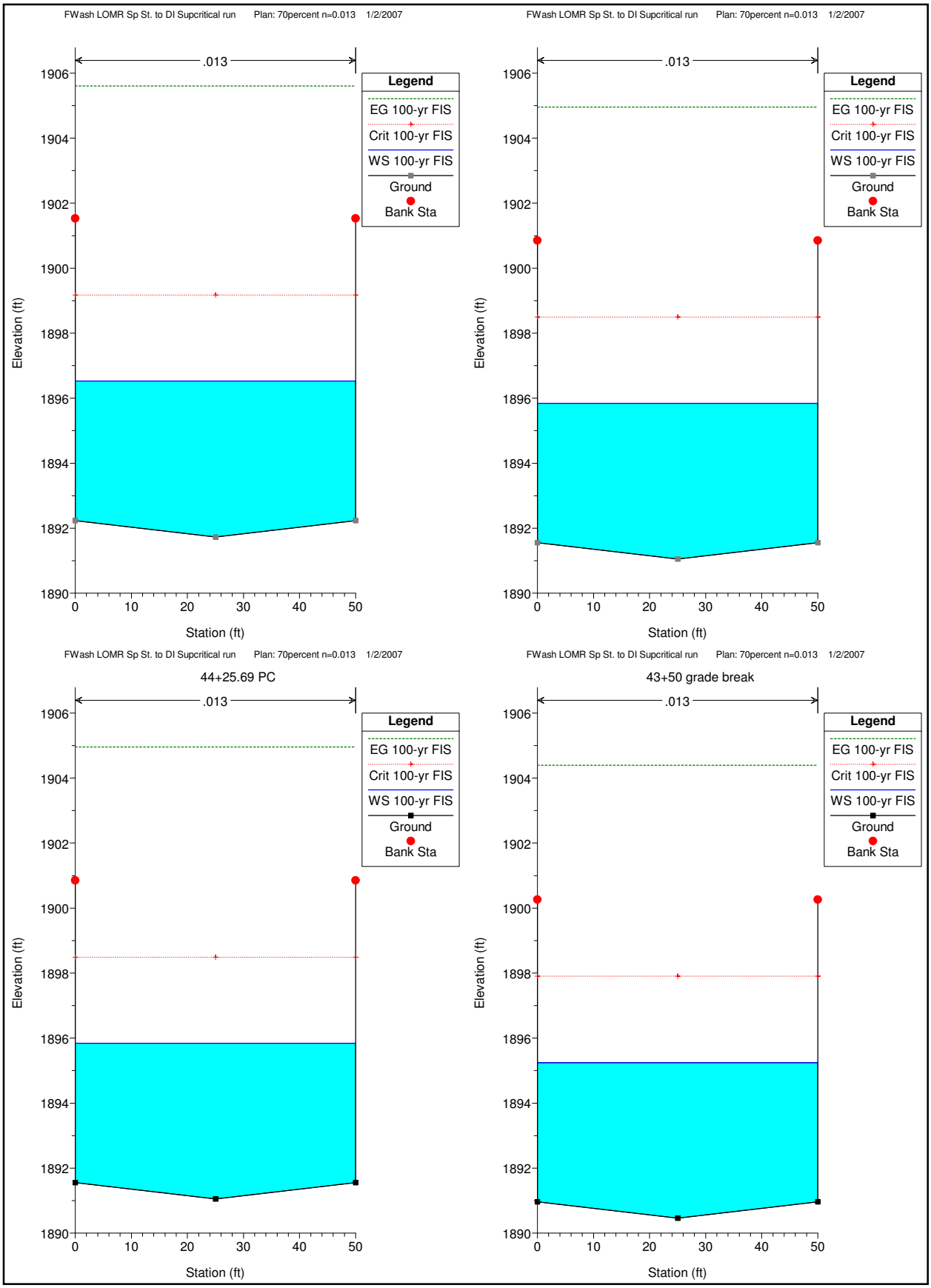

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
Eastern
.015
Legend
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
Eastern
.015
Legend
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
Sta 57+90 DS of Eastern Ave. Bridge
.013
Legend
EG 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
57+37.74 Begin 79.77' Channel. End transition
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

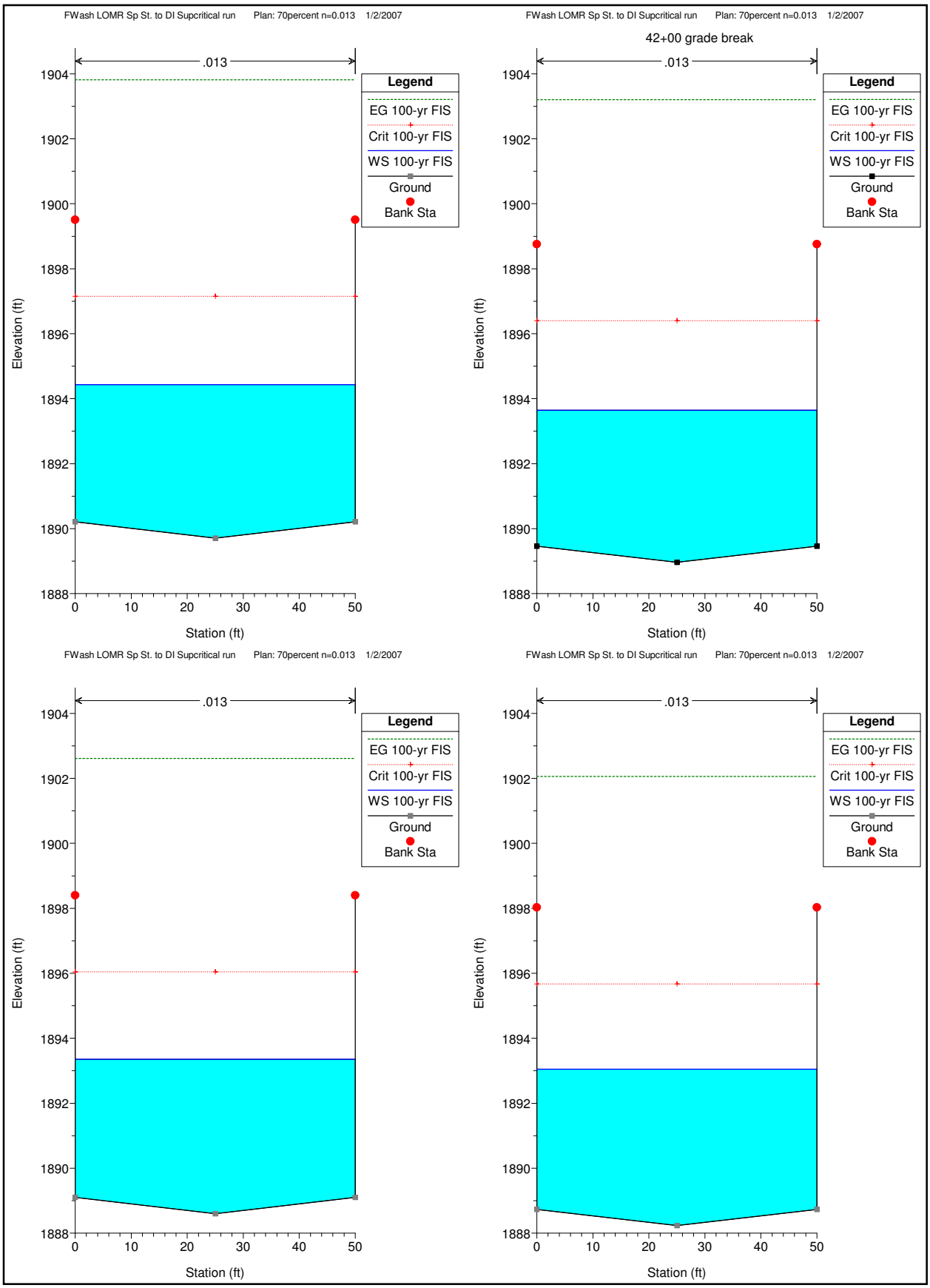

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
56+48.42 begin transition from 75' to 79.77' and PT
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1914
1912
1910
1908
1906
1904
0
20
40
60
80
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1914
1912
1910
1908
1906
1904
1902
0
20
40
60
80
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1914
1912
1910
1908
1906
1904
1902
1900
0
20
40
60
80
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
54+49.11 PC
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1914
1912
1910
1908
1906
1904
1902
1900
0
20
40
60
80

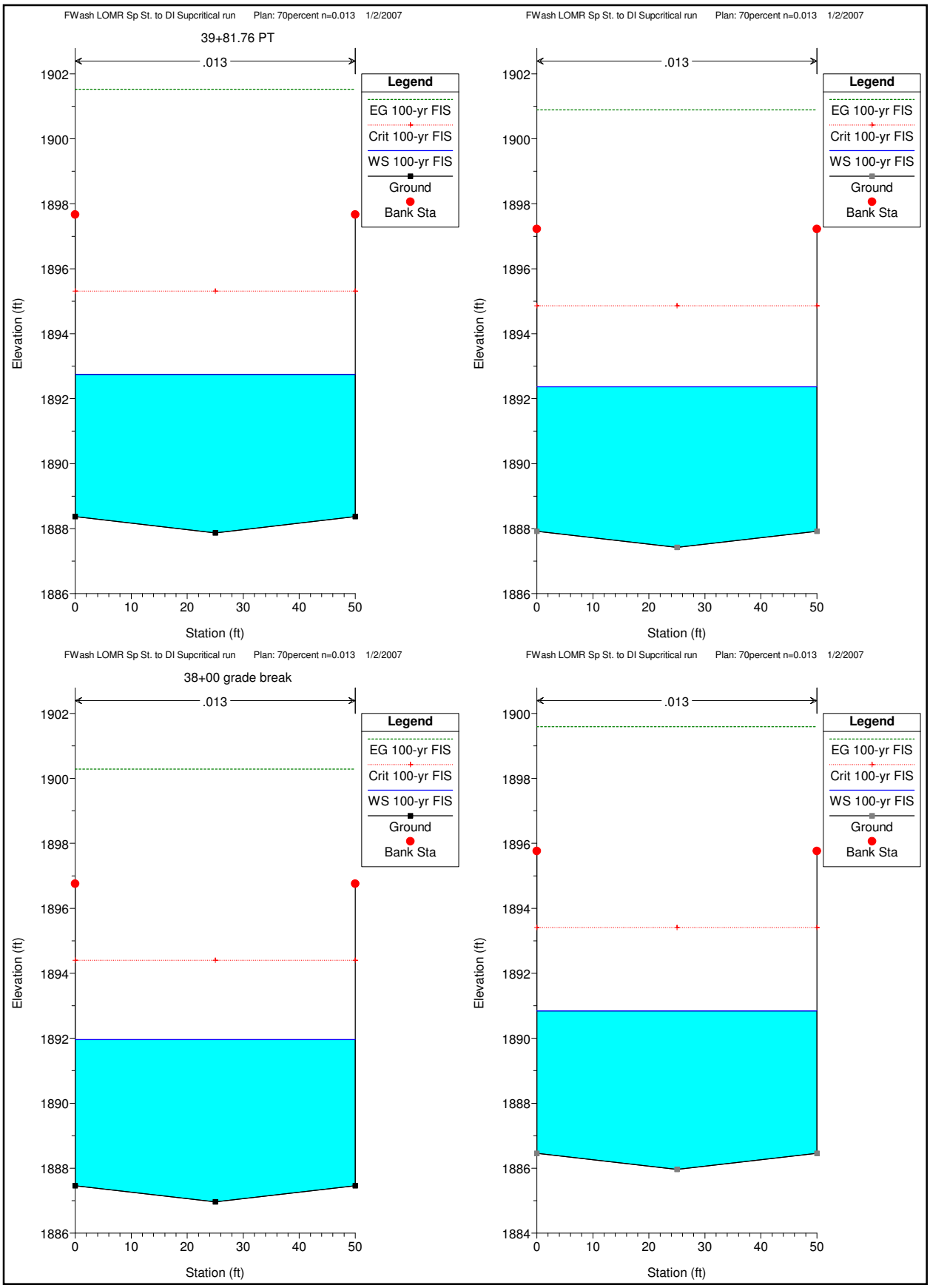

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
54+45.78 begin 75' channel. End Transition
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
52+79.92 begin transition from 50' to 75' and PT
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
51+86.67 grade break
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

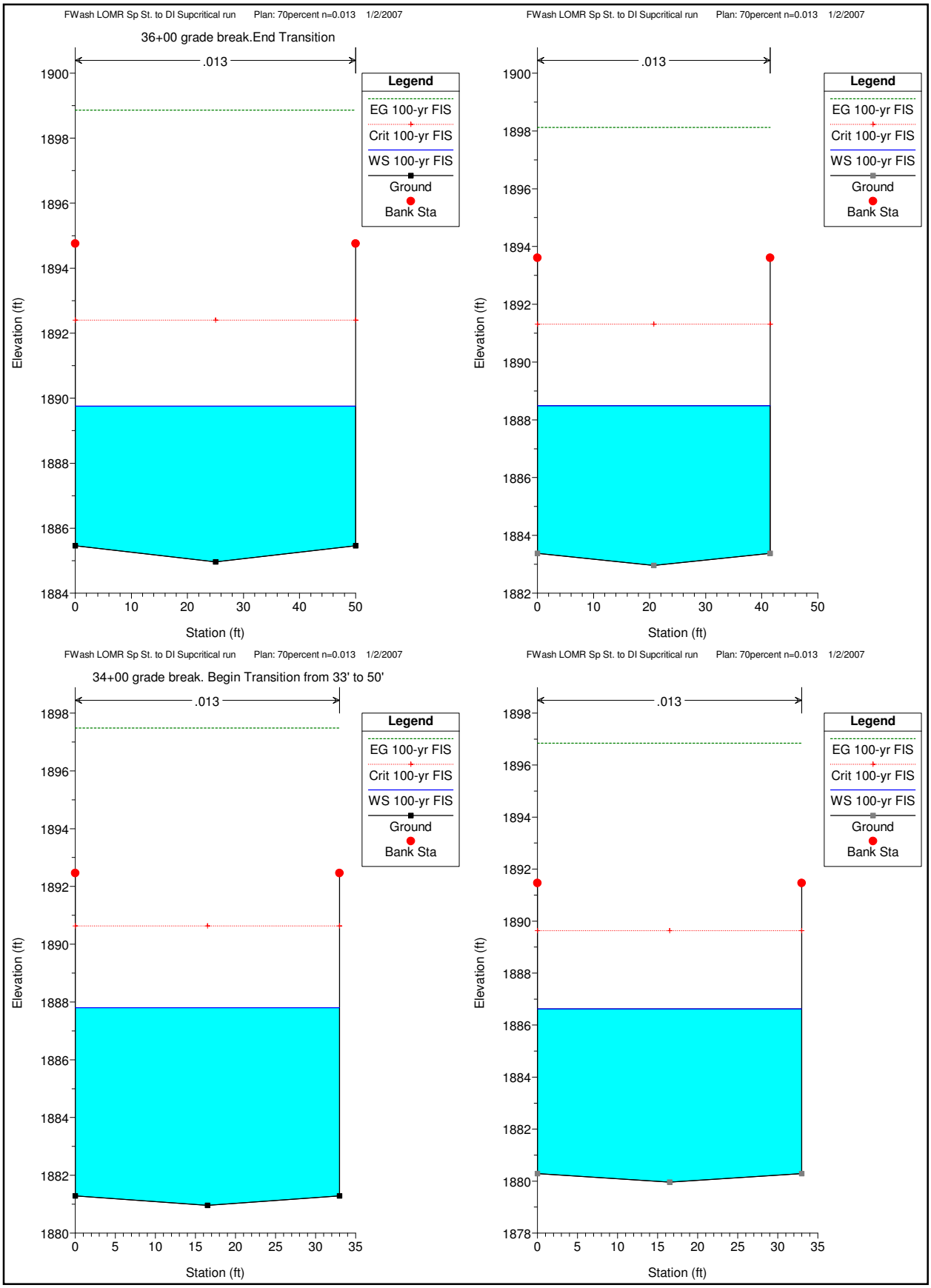

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1910
1908
1906
1904
1902
1900
1898
1896
1894
0
10
20
30
40
50
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
50+12.88 PC
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
49+45.04 PT
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

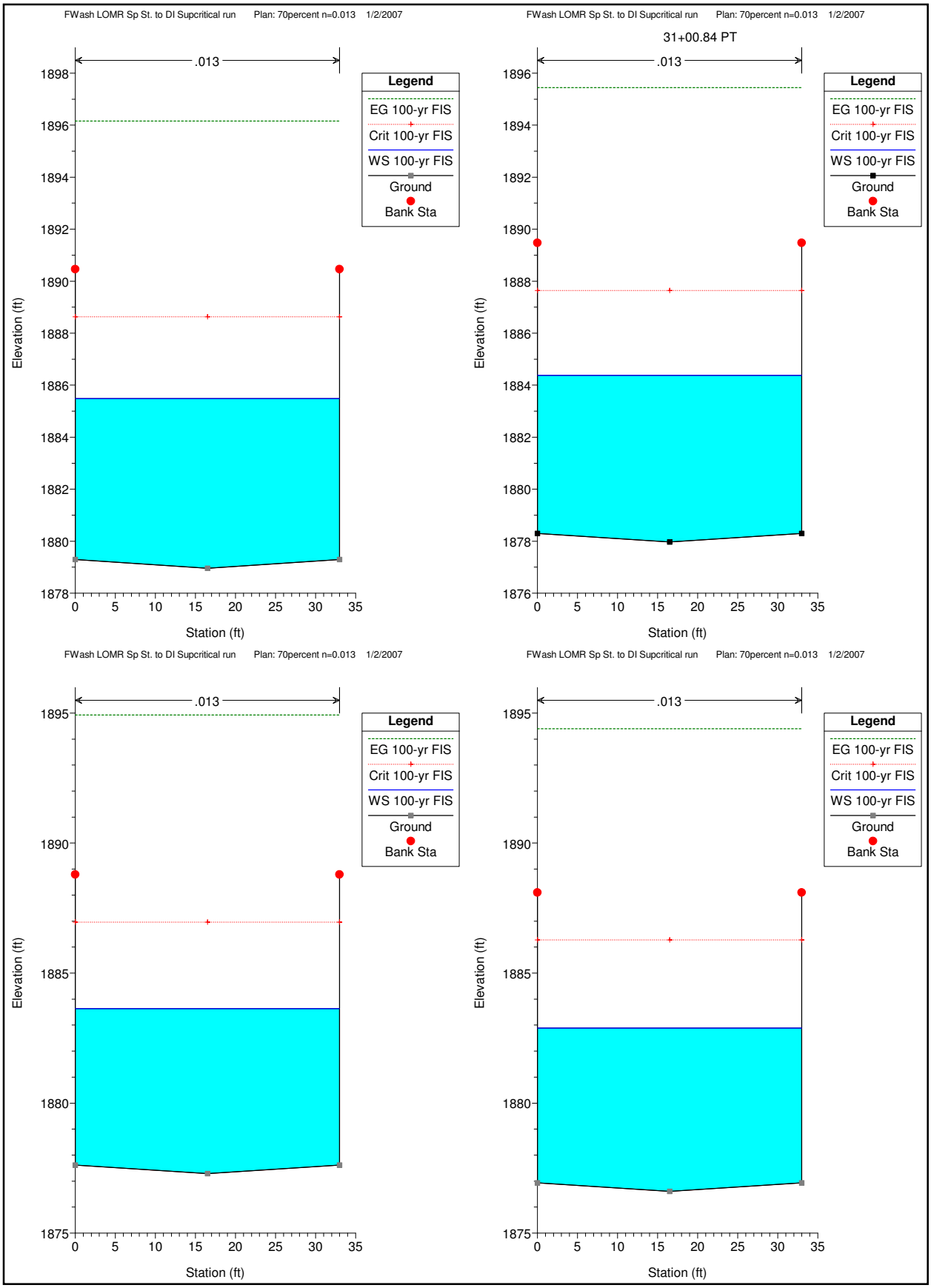

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1910
1908
1906
1904
1902
1900
1898
1896
1894
1892
0
10
20
30
40
50

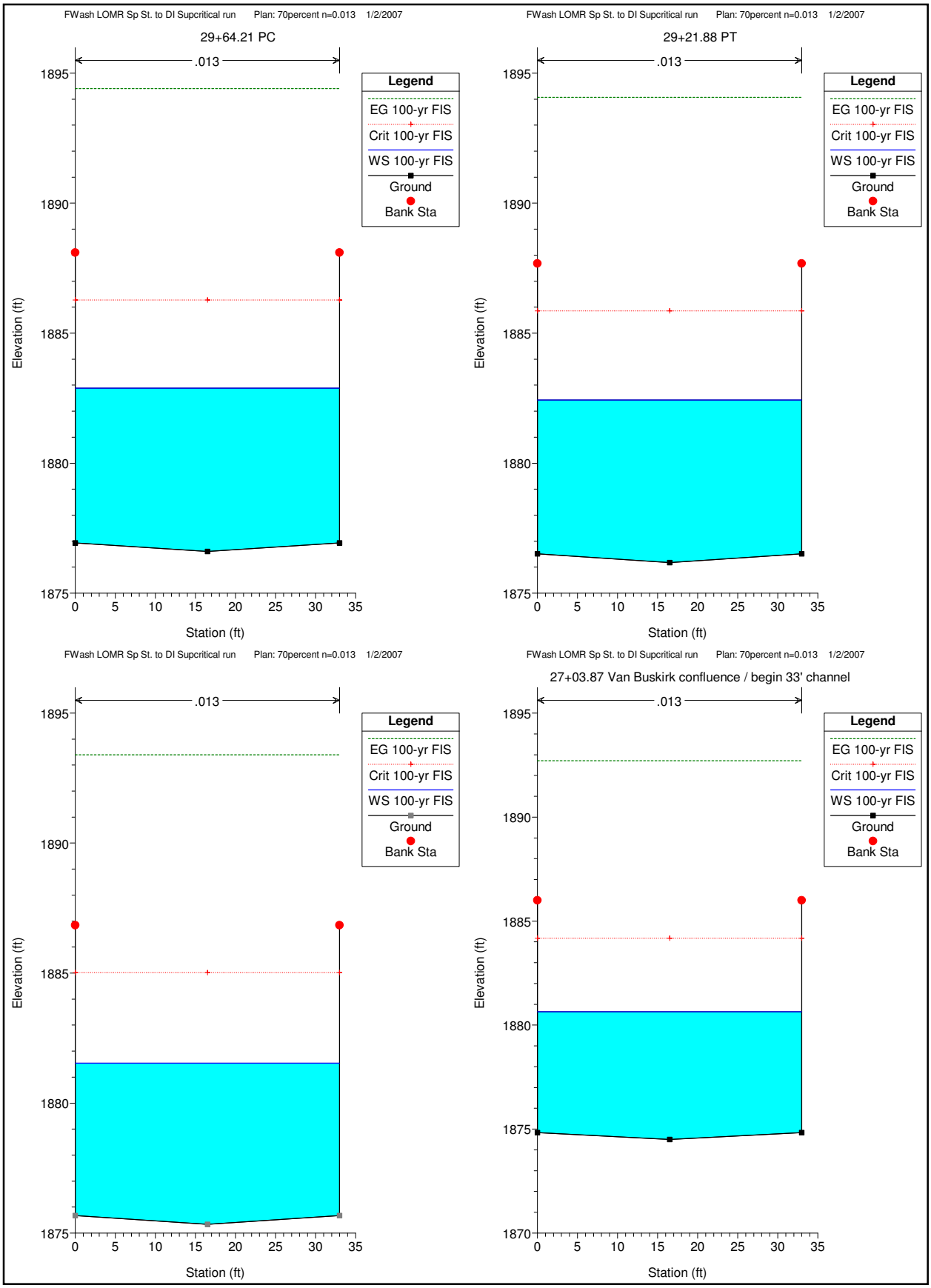

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1890
1892
1894
1896
1898
1900
1902
1904
1906
0
10
20
30
40
50
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
44+25.69 PC
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
43+50 grade break
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

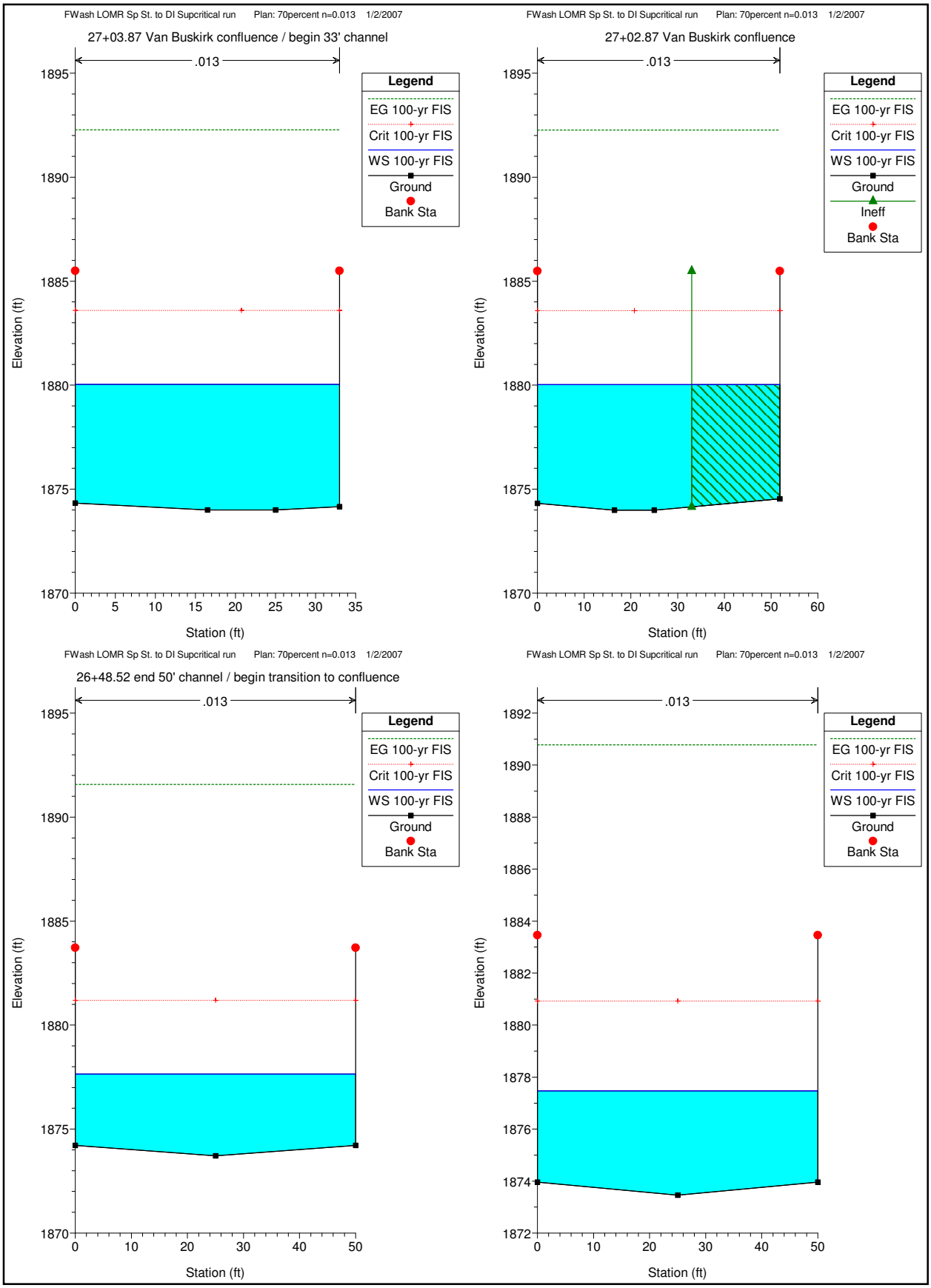

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1888
1890
1892
1894
1896
1898
1900
1902
1904
0
10
20
30
40
50
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
42+00 grade break
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

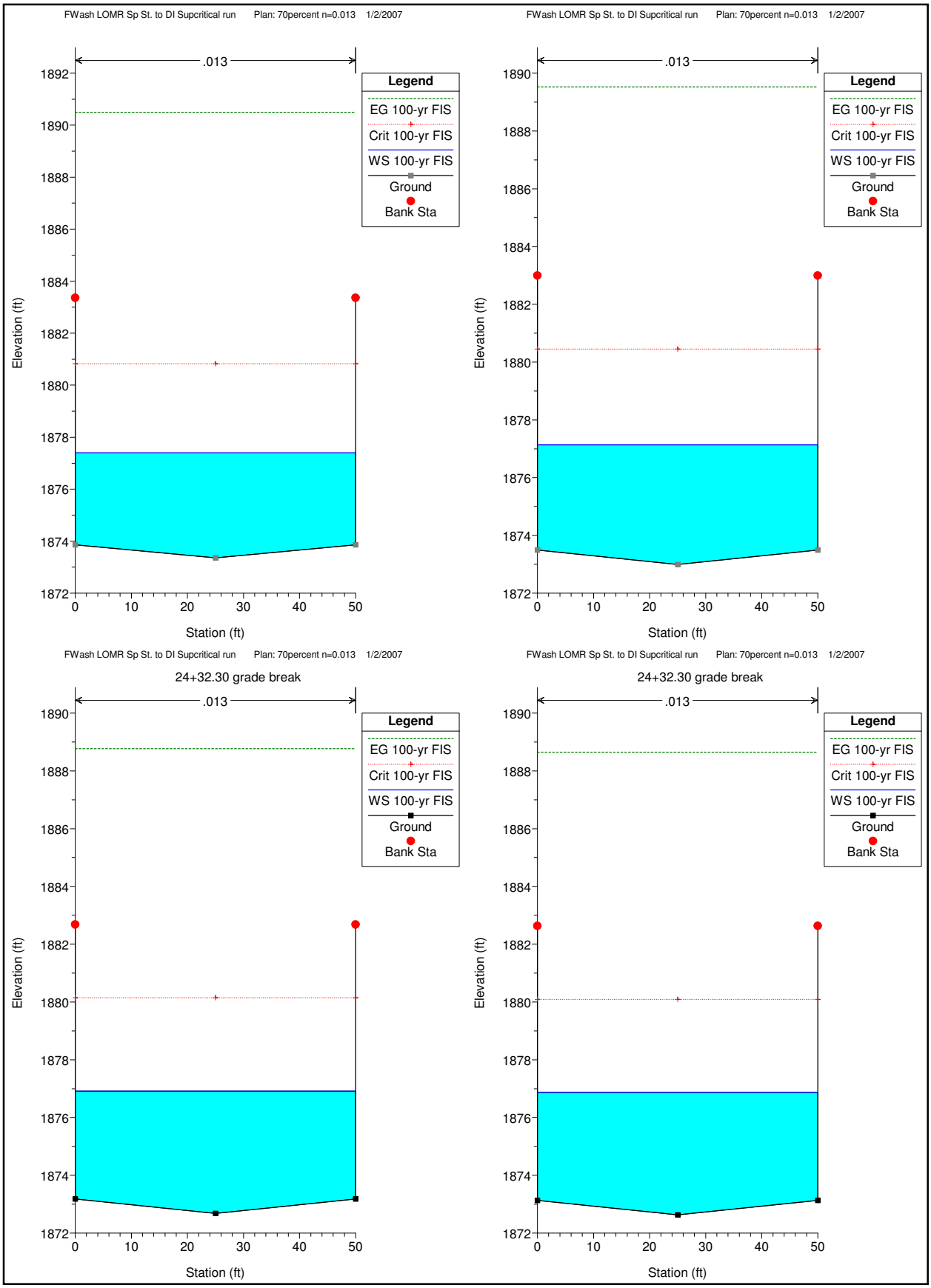

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
39+81.76 PT
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
38+00 grade break
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

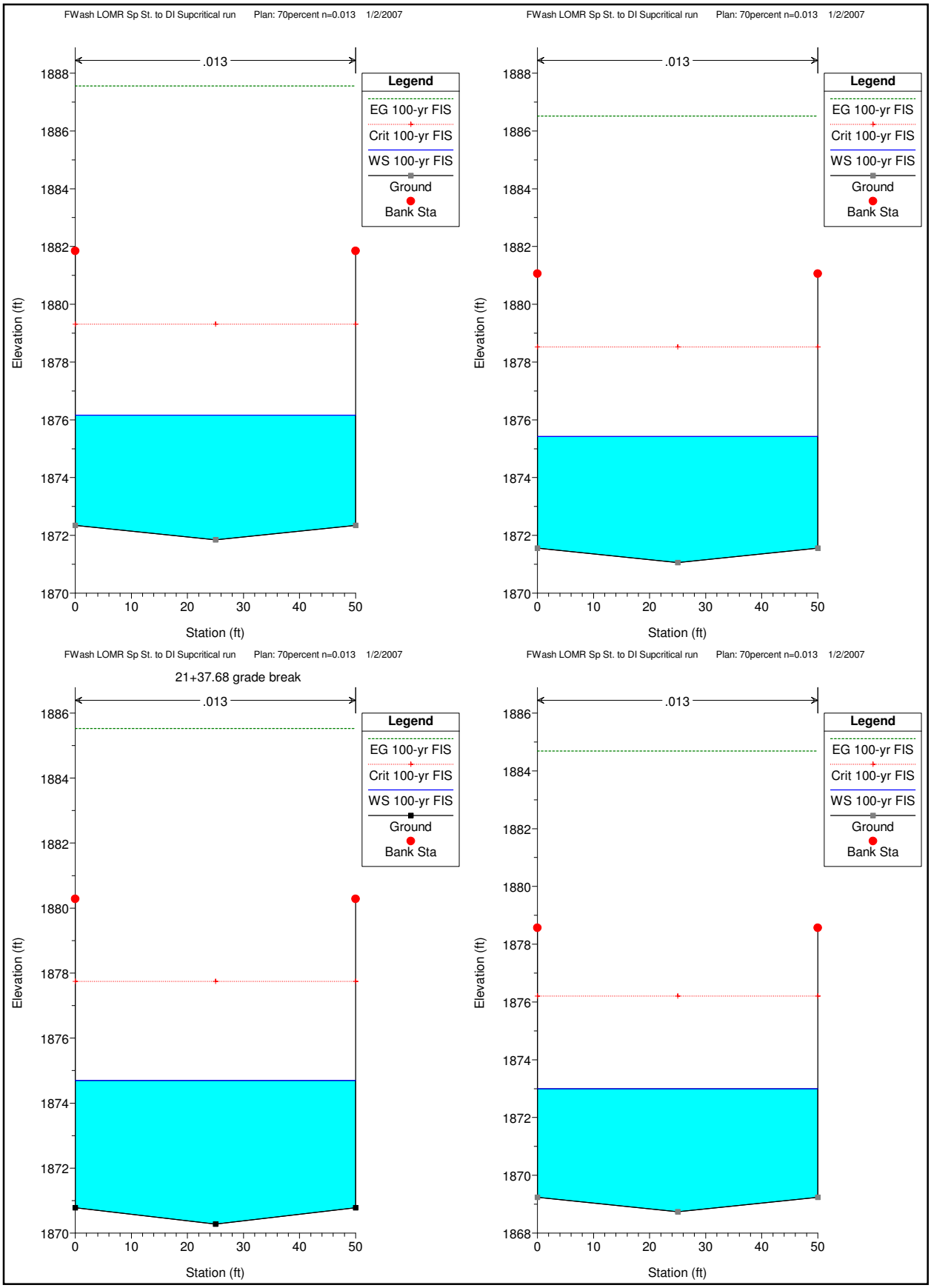

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
36+00 grade break.End Transition
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
34+00 grade break. Begin Transition from 33' to 50'
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

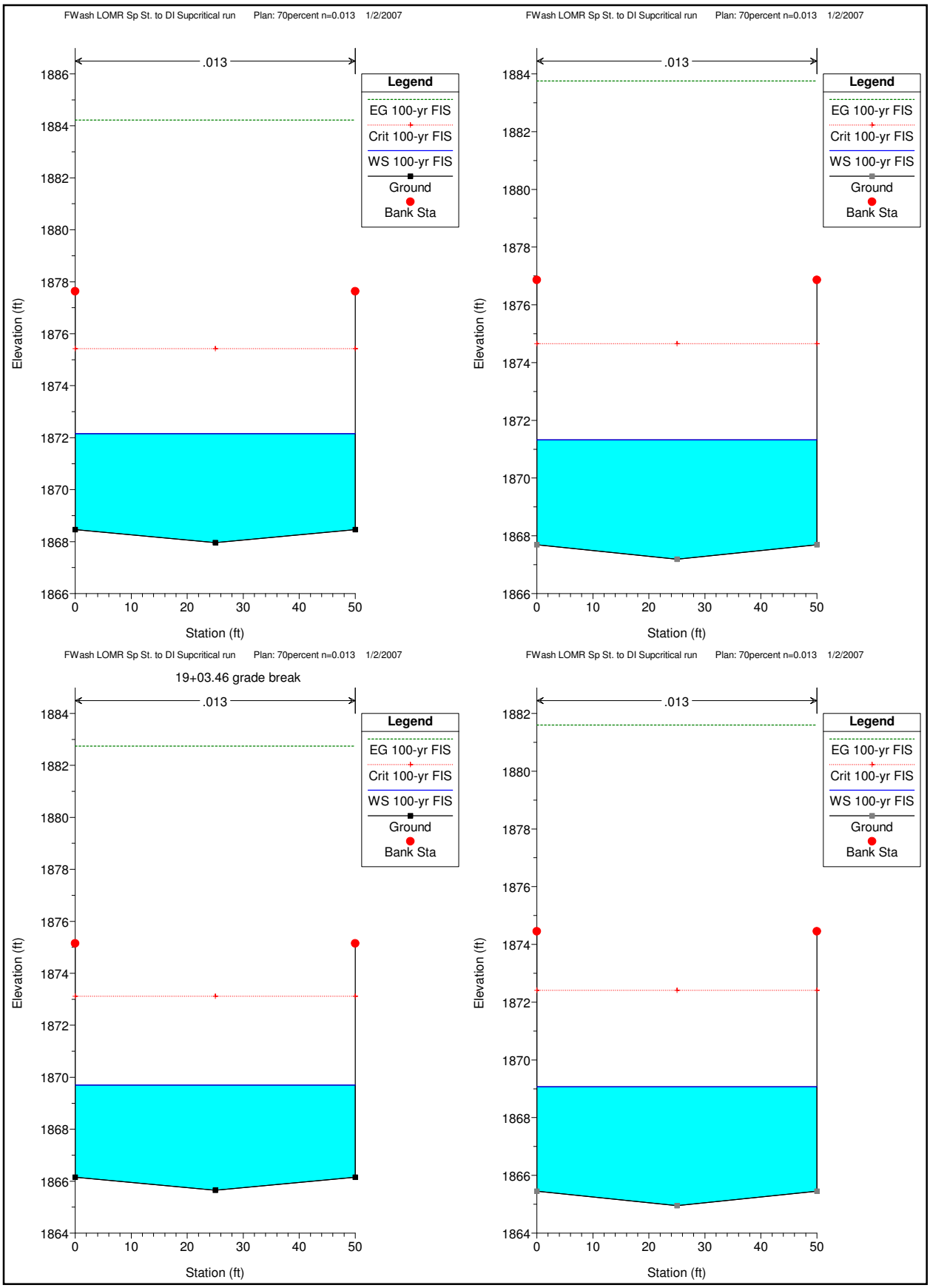

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
31+00.84 PT
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

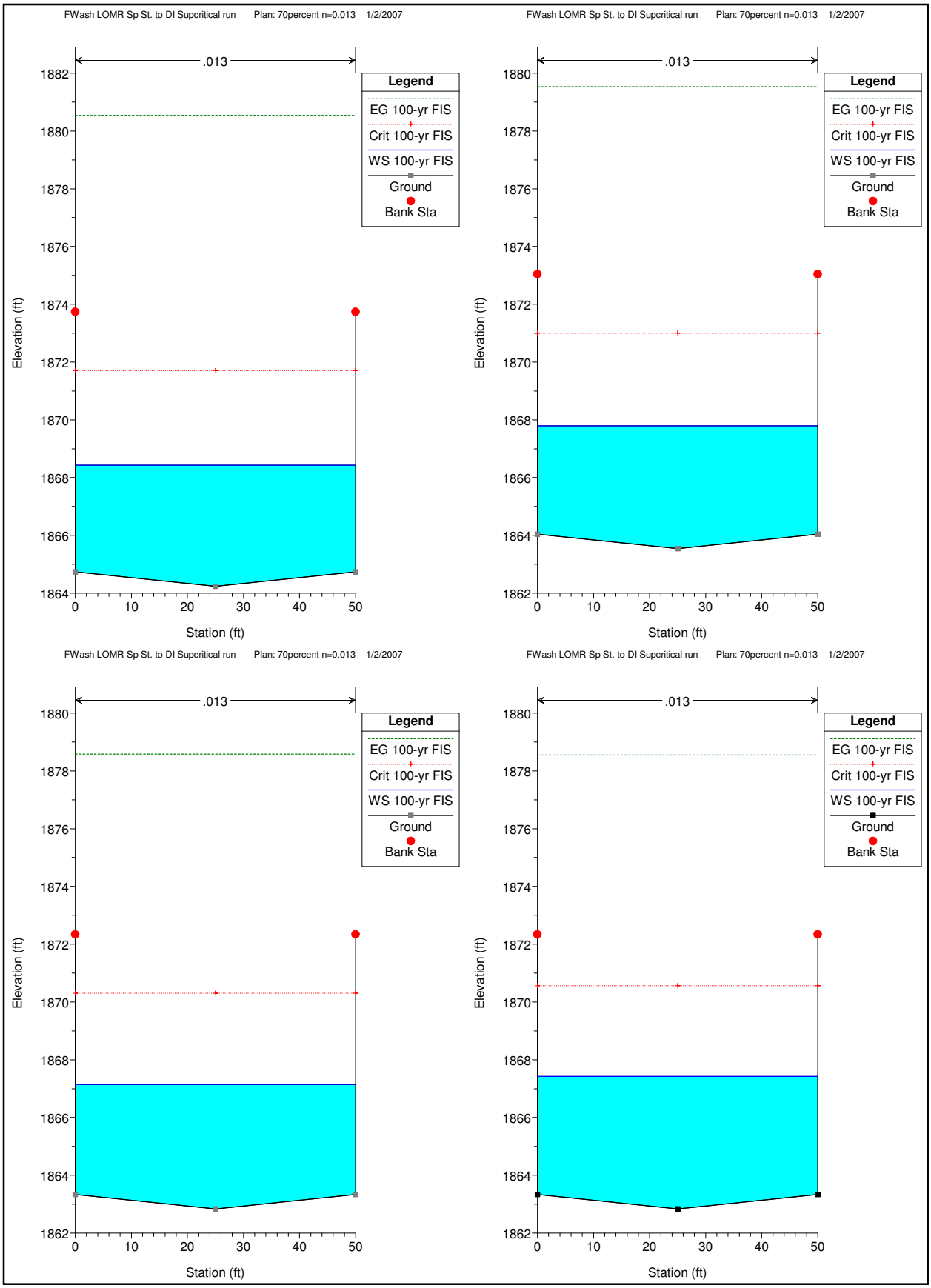

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
29+64.21 PC
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
29+21.88 PT
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
27+03.87 Van Buskirk confluence / begin 33' channel
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

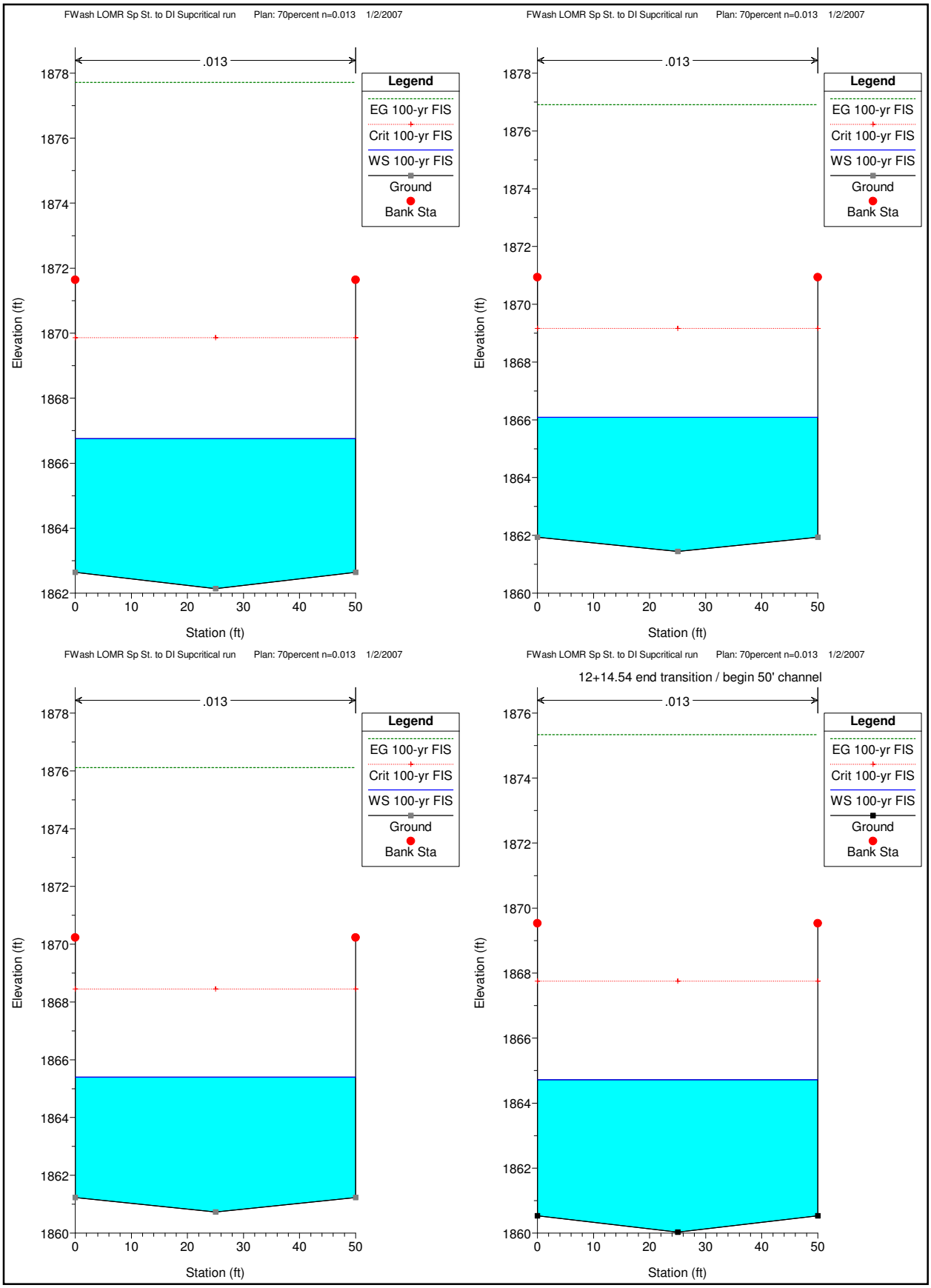

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
27+03.87 Van Buskirk confluence / begin 33' channel
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
27+02.87 Van Buskirk confluence
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
26+48.52 end 50' channel / begin transition to confluence
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

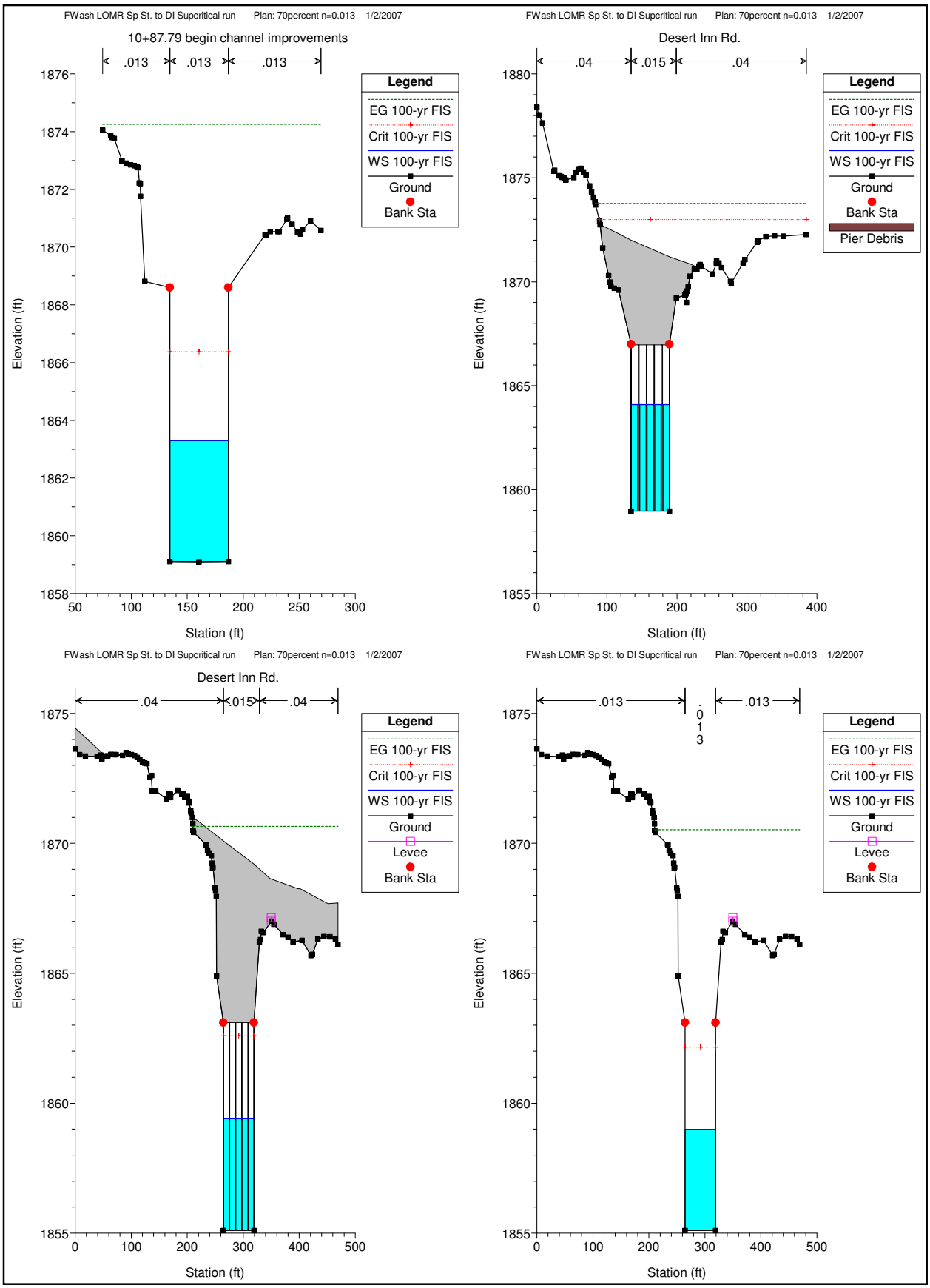

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1892
1890
1888
1886
1884
1882
1880
1878
1876
1874
1872
0
10
20
30
40
50
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1890
1888
1886
1884
1882
1880
1878
1876
1874
1872
0
10
20
30
40
50
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
24+32.30 grade break
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1890
1888
1886
1884
1882
1880
1878
1876
1874
1872
0
10
20
30
40
50
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
24+32.30 grade break
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1890
1888
1886
1884
1882
1880
1878
1876
1874
1872
0
10
20
30
40
50

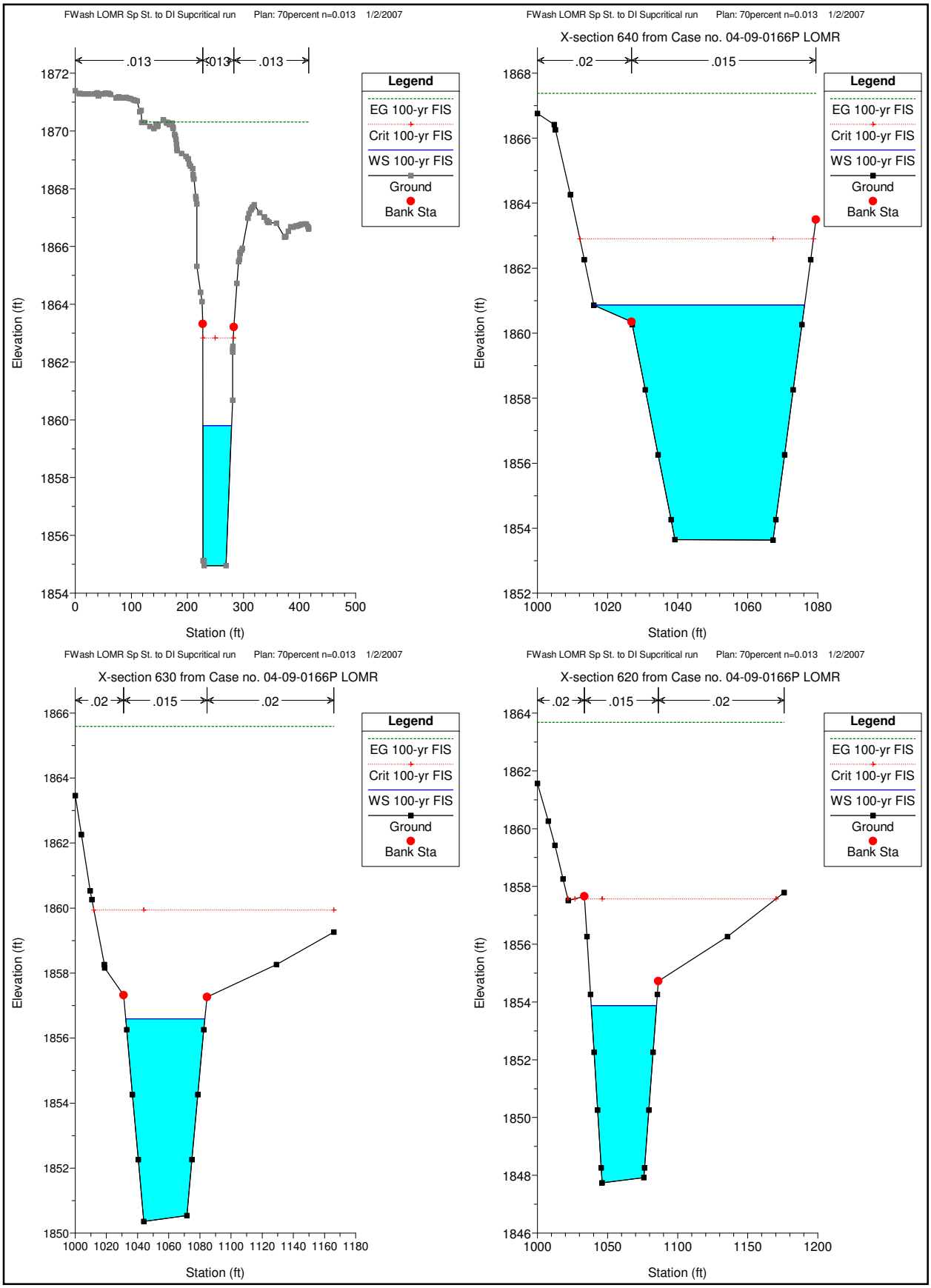

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
21+37.68 grade break
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)


FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
19+03.46 grade break
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)


FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
1882
1880
1878
1876
1874
1872
1870
1868
1866
1864
1862
0
10
20
30
40
50


FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
12+14.54 end transition / begin 50' channel
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

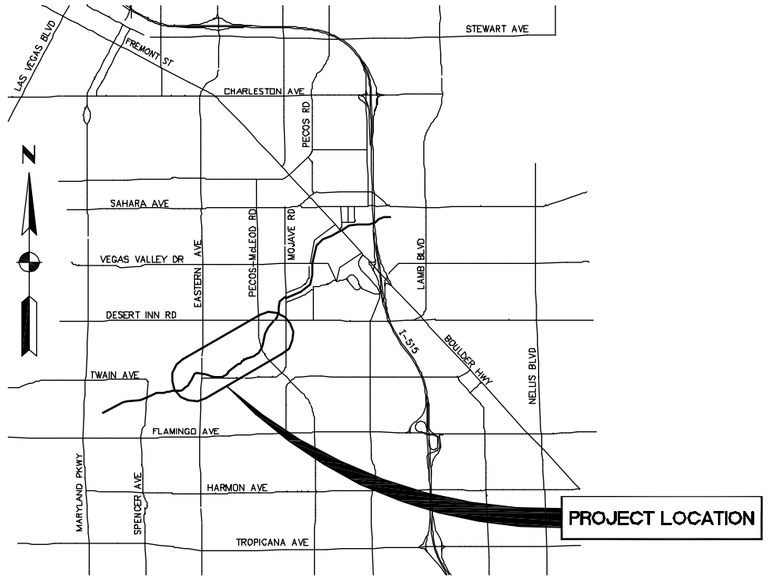

FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
10+87.79 begin channel improvements
.013
.013
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
Desert Inn Rd.
.04
.015
.04
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Pier Debris
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
Desert Inn Rd.
.04
.015
.04
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
.013
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
.013
.013
.013
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
X-section 640 from Case no. 04-09-0166P LOMR
.02
.015
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
X-section 630 from Case no. 04-09-0166P LOMR
.02
.015
.02
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)
FWash LOMR Sp St. to DI Supcritical run Plan: 70percent n=0.013 1/2/2007
X-section 620 from Case no. 04-09-0166P LOMR
.02
.015
.02
Legend
EG 100-yr FIS
Crit 100-yr FIS
WS 100-yr FIS
Ground
Bank Sta
Elevation (ft)
Station (ft)

Flamingo Wash Spencer Street to Desert Inn Road Improvement Plans

Appendix D

DEPARTMENT OF PUBLIC WORKS



Vicinity Map

NTS

"Progress as Promised"

2006

Index of Sheets

1	COVER SHEET
2	GENERAL NOTES, APPROVALS AND KEY MAP
3	LEGEND, ABBREVIATIONS AND SUMMARY OF QUANTITIES
4	RECORD OF SURVEY
CP-1 TO CP-2	HORIZONTAL CONTROL PLANS
SD-1 TO SD-9	GRADING AND DRAINAGE PLANS AND PROFILES
SD-10 TO SD-32	DRAINAGE DETAILS (SD-12 THRU SD-16 AND SD-31 OMITTED)
FN-1 TO FN-2	FENCE CONSTRUCTION PLANS

IMPROVEMENT PLANS FOR

FLAMINGO WASH

SPENCER STREET TO DESERT INN ROAD

Funded By:
CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT

Designed By:

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100
Las Vegas, Nevada 89119
Voice: (702) 736-6632
Fax: (702) 736-0704

County Commissioners

Bruce L. Woodbury
Tom Collins
Chip Maxfield
Yvonne Atkinson Gates
Myrna Williams, Vice Chair
Lynette Boggs McDonald
Rory Reid, Chair

County Manager

Virginia Valentine, P.E.

Director of Public Works

Approved:

Denis L. Cederburg, P.E.

Clark County Regional Flood Control District

Approved:

Gale Wm. Fraser, II P.E.
General Manager/Chief Engineer

AGENCY	PLANS REVIEWED BY	DATE
SPRINT		
LAS VEGAS VALLEY WATER DISTRICT		
SOUTHWEST GAS CORPORATION		
NEVADA POWER COMPANY (DISTRIBUTION)		
CLARK COUNTY SANITATION DISTRICT		
COX COMMUNICATIONS		
REGIONAL TRANSPORTATION COMMISSION		

DEPARTMENT OF PUBLIC WORKS	BY	DATE
DEPUTY DIRECTOR		
CONSTRUCTION MANAGEMENT DIVISION		
DESIGN ENGINEERING DIVISION		
MAINTENANCE MANAGEMENT DIVISION		
TRAFFIC MANAGEMENT DIVISION		
COUNTY SURVEYOR'S OFFICE		

REVISIONS		
NUMBER	DESCRIPTION	DATE

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

DESIGN ENGINEERING DIVISION

COVER SHEET

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

K:\Spencer Street to Desert Inn Rd\Flamingo Wash - Spencer Street to Desert Inn Rd\Plans\Cover Sheet.dgn, 2-2-2006 10:54:54 AM, Art

LAS VEGAS VALLEY WATER DISTRICT
STANDARD NOTES

LVVWD Project # 29262

1. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN APPROVED FOR CONSTRUCTION BY THE LAS VEGAS VALLEY WATER DISTRICT (LVVWD). FOLLOWING WATER PLAN APPROVAL, NOTICE SHALL BE GIVEN TO THE LVVWD COMMUNICATION SUPORT CENTER (258-7171) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. FOR FUTURE INSPECTIONS, NOTICE MUST BE GIVEN BY 2:00 PM THE BUSINESS DAY PRIOR TO THE REQUESTED LVVWD INSPECTION. WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE.
2. ALL WORK SHALL CONFORM TO LVVWD STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS, AND TO THE 2003 EDITION OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS (UDACS).
3. ALL WORK; EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2 ABOVE, SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT DRAFT OR EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENTS, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD.
5. ALL SERVICE LATERALS TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE TYPE K COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
6. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
7. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, VALLEY AND CURB GUTTERS.
8. ALL WATER AND STORM DRAIN OR SANITARY SEWER CROSSINGS SHALL CONFORM TO SECTION 2.19 OF THE 2003 EDITION OF THE UDACS.
9. ALL WATER FACILITIES SHALL BE FILLED, DISINFECTED, PRESSURE TESTED, FLUSHED, FILLED AND AN ACCEPTABLE WATER SAMPLE OBTAINED, PRIOR TO CONNECTION TO THE LAS VEGAS VALLEY WATER DISTRICTS DISTRIBUTION SYSTEM.
10. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES; TELEPHONE 258-3152 OR 258-3802, TWO (2) WORKING DAYS PRIOR TO METER PICKUP.
11. ANY INTERRUPTION OF SERVICE MUST BE APPROVED BY THE LVVWD INSPECTION DIVISION PRIOR TO SHUTDOWN. PRROPER WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
12. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LAS VEGAS VALLEY WATER DISTRICTS PRE-APPROVED MATERIALS AND MANUFACTURERS LISTING FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS.
13. TELEPHONE "CALL BEFORE YOU DIG" AT 1-800-227-2600.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLARK COUNTY PUBLIC WORKS
GENERAL NOTES

1. ALL REFERENCES TO STANDARD DRAWINGS ARE TO CCAUSD AND CLARK COUNTY DEPARTMENT OF PUBLIC WORKS SUPPLEMENT TO UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.
2. ALL WORK DONE WITHIN THE PUBLIC RIGHT OF WAY AND OUTSIDE OF THE PROJECT BOUNDARIES REQUIRES A SEPARATE ENCROACHMENT PERMIT ISSUED BY THE CLARK COUNTY DEPARTMENT OF PUBLIC WORKS. TRENCH AND PAVEMENT REPLACEMENT CONDITIONS SHALL BE AS PER THE PERMIT.
3. EXACT LOCATIONS OF ALL SAWCUT LINES SHALL BE DETERMINED IN THE FIELD BY A CLARK COUNTY INSPECTOR.
4. CURB AND GUTTER WITH A GRADE OF LESS THAN 4/10 OF ONE PERCENT SHALL BE CONSTRUCTED BY FORMING. EACH JOINT SHALL BE CHECKED FOR GRADE PRIOR TO CONSTRUCTION AND WATER TESTED AS SOON AS POSSIBLE AFTER CONSTRUCTION.
5. THE INSPECTION AND TESTING OF SOILS SHALL BE TO CLARK COUNTY STANDARDS AND IN ACCORDANCE WITH THE APPROVED QUALITY CONTROL PROGRAM.
6. PRIVATE STREETS AND/OR DRIVEWAYS REFLECTED ON THESE PLANS ARE TO BE INSPECTED BY A CLARK COUNTY INSPECTOR.
7. POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWN HEREON WILL BE RELOCATED AT NO EXPENSE TO THE COUNTY OF CLARK.
8. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED PUBLIC ENTITIES, THE PROJECT ENGINEER, THE SOILS ENGINEER, AND THE COUNTY OF CLARK AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
9. THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL DIMENSIONS, EXISTING CONDITIONS, AND POINTS OF CONNECTION WITH ADJOINING PROPERTY (PUBLIC AND PRIVATE). ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE PROJECT ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
10. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE, INGRESS, AND EGRESS TO THE PROJECT.
11. FINAL ASPHALTIC CONCRETE PAVEMENT SURFACES SHALL BE ONE-HALF INCH ABOVE THE LIP OF THE GUTTER. PAVEMENT SURFACES SHALL BE FLUSH WITH EDGES OF CROSS GUTTERS EXCEPT AT WHEELCHAIR RAMPS WHERE A.C. PAVEMENT SHALL BE FLUSH WITH CONCRETE RAMP.
12. THE CONTRACTOR SHALL MAINTAIN AN ON GOING PROCESS OF REMOVAL OF ALL SPILLAGE OF EXCAVATION MATERIAL ON ALL PAVED STREETS.
13. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL TRAFFIC SIGNS, NOT SPECIFICALLY NOTED ON DRAWINGS, WHICH ARE TO BE RELOCATED OR REMOVED.
14. THE FOLLOWING UNDERGROUND UTILITIES MAY BE LOCATED IN YOUR PROJECT AREA: STREET LIGHTING, TRAFFIC SIGNALS, AND INTERCONNECT CABLE. THE CONTRACTOR MUST CONTACT CLARK COUNTY DEPARTMENT OF PUBLIC WORKS (CCPW) FOR LOCATIONS AT LEAST 48 HOURS PRIOR TO WORKING IN THE AREA. CCPW IS NOT A MEMBER OF CALL BEFORE YOU DIG (UNDERGROUND SERVICE ALERT) AND A CALL TO THAT ORGANIZATION DOES NOT RELIEVE THE CONTRACTOR OF LIABILITY FOR THESE FACILITIES.
15. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE AFFECTED PROPERTY OWNER(S) AGENTS IN ORDER TO MINIMIZE CONSTRUCTION CONFLICTS AND DELAYS.
16. THE LAYOUT LINE FOR ALL "A" TYPE CURB IS AT THE BACK OF CURB UNLESS OTHERWISE NOTED.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", CLARK COUNTY AREA, NEVADA LATEST EDITION, AND THE "UNIFORM DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA, NEVADA" LATEST EDITION, UNLESS OTHERWISE SPECIFIED BY NOTE ON THE PLANS AND/OR SPECIAL PROVISIONS. THE IMPROVEMENT STANDARDS WILL HEREAFTER BE REFERRED TO AS "CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS."
2. 48 HOURS PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT

NEVADA POWER COMPANY	PHONE	1 (800) 227-2600
SPRINT-CENTRAL TELEPHONE COMPANY	PHONE	1 (800) 227-2600
SOUTHWEST GAS CORPORATION	PHONE	1 (800) 227-2600
COX COMMUNICATIONS LAS VEGAS, INC.	PHONE	384-8084
LAS VEGAS VALLEY WATER DISTRICT	PHONE	870-4194
CLARK COUNTY TRAFFIC MANAGEMENT DIVISION	PHONE	455-7511
CLARK COUNTY WATER RECLAMATION DISTRICT	PHONE	434-6000

3. LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM INFORMATION RECEIVED FROM THE APPLICABLE UTILITY COMPANIES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES OR STRUCTURES NOT SHOWN, OR FOR UTILITIES OR STRUCTURES NOT SHOWN AT ACTUAL LOCATIONS ON THE DRAWINGS. EXISTING SERVICE LATERALS ARE NOT SHOWN ON THESE DRAWINGS. CONTRACTOR TO VERIFY THE EXACT LOCATION OF UTILITIES PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR'S RESPONSIBILITY REGARDING UTILITIES SHALL BE AS REQUIRED UNDER SECTION 107.17 OF THE UNIFORM STANDARD SPECIFICATIONS FOR CLARK COUNTY AREA, NEVADA AND AS PROVIDED IN THE SPECIFICATIONS.
4. THE CONTRACTOR SHALL NOT REMOVE TREES, SHRUBS, LAWNS, WALLS, FENCES, SIGNS, STRUCTURES, LIGHTS, OR ANY EXISTING IMPROVEMENTS OUTSIDE OF STREET OR CHANNEL RIGHT OF WAY, EXCEPT WHERE REQUIRED TO DO SO BY THE CONTRACT DRAWINGS OR BY THE ENGINEER.
5. REPLACEMENT, RELOCATION OR RECONSTRUCTION OF ALL EXISTING IMPROVEMENTS INCLUDING SPRINKLER SYSTEMS, LAWNS, FENCES, WALLS, SIGNS, STEPS, SIDEWALKS, DRIVEWAYS, LAWN LIGHTS, AND ALL OTHER ITEMS APPLICABLE TO THIS CONTRACT SHALL BE AS REQUIRED BY THE ENGINEER.
6. THE CONTRACTOR SHALL BACKFILL AND FINE GRADE ALL CUT OR FILL SLOPES TO MATCH EXISTING CONDITIONS TO THE SATISFACTION OF THE ENGINEER. WHERE EXISTING LAWNS ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS THE CONTRACTOR SHALL SOD THE AFFECTED AREA TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.
7. ALL BARRICADING AND TEMPORARY TRAFFIC CONTROL DEVICES OR METHODS USED DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "NEVADA TRAFFIC CONTROL MANUAL", 1986 (OR LATEST REVISION), PUBLISHED BY THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", EXCEPT AS OTHERWISE PROVIDED IN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE ENGINEER.
8. REMOVAL OR RELOCATION OF POWER POLES, TELEPHONE POLES, JOINTLY-OWNED POLES, AND APPURTENANCES WHICH INTERFERE WITH IMPROVEMENTS REQUIRED TO BE CONSTRUCTED UNDER THIS CONTRACT, SHALL BE PERFORMED BY THE RESPECTIVE UTILITY COMPANY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH THE UTILITY COMPANIES FAR ENOUGH IN ADVANCE AS TO NOT IMPACT THE SCHEDULE.
9. CONTRACTOR SHALL USE SHORING OR OTHER APPROVED METHODS TO PREVENT SOIL FROM CAVING AWAY FROM OR OTHER WISE ENDANGERING THE STABILITY OF POWER POLES OR OTHER UTILITY FACILITIES LOCATED ADJACENT TO CONTRACTOR'S ACTIVITIES. THIS MAY INCLUDE BUT IS NOT LIMITED TO THE USE OF TRENCH BOXES.

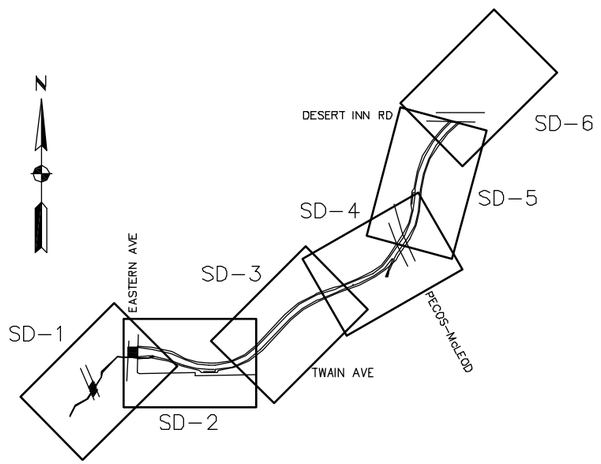
CLARK COUNTY WATER RECLAMATION DISTRICT
GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN & CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS AND UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS' CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS AMENDED. IN ALL CASES, THESE STANDARDS SHALL SUPERSEDE THE UNIFORM STANDARD SPECIFICATIONS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATION BOOKS.
2. THESE STANDARDS SHALL APPLY TO ALL CONSTRUCTION.
3. SEWER MAINS ONLY TO BE LAID IN SEWER TRENCHES.
4. ALL LATERALS TO BE LAID AT NOT LESS THAN MINIMUM SLOPES AS SHOWN IN THE ABOVE MENTIONED STANDARDS.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER PLANS. ANY ADDITIONS, DELETIONS, OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE CONTROLLING AGENCY.
6. SOIL TESTING SHALL BE IN ACCORDANCE WITH SECTION 3.11 OF THESE STANDARDS.
7. ALL EXFILTRATION, INFILTRATION, AIR TESTING AND TELEVISING OF LINES SHALL BE IN ACCORDANCE WITH THESE STANDARDS.
8. CUT SHEETS MUST BE SUBMITTED TO THE AGENCY BEFORE CONSTRUCTION WILL BE PERMITTED TO START.
9. ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CONTROLLING AGENCY MUST BE CLASS "A" CONTRACTORS.

CLARK COUNTY WATER RECLAMATION DISTRICT DATE

COWRD PROJECT CONTROL NUMBER IS _____.

SIGNATURE ON THESE PLANS WILL NOT BE CONSTRUED TO BE A PERMIT FOR OR AN APPROVAL OF ANY VIOLATION OF CLARK COUNTY SANITATION DISTRICT RULES, REGULATIONS, OR DESIGN AND CONSTRUCTION STANDARDS. THE APPROVAL OF THESE DRAWINGS DOES NOT GUARANTEE CAPACITY IN THE DISTRICT'S COLLECTION OR TREATMENT SYSTEM.



KEY MAP
NTS

REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
GENERAL NOTES, APPROVALS AND KEY MAP

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO 2
SHT OF
L-

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

X:\Projects\...\Flamingo_Wash_Spencer_Desert_Inn_Rd\...\...dwg, ... 1:5 ... PM, ...

LEGEND

CX	CURVE DATA NOTATION
①	CONSTRUCTION ITEM
[1]	REMOVAL ITEM
	SURVEY MONUMENT
8	POINT OF GRADE LINE W/STATION
	EXISTING RIGHT OF WAY
	PROPOSED RIGHT OF WAY
	100 YR HYDRAULIC GRADE LINE
	PROPERTY LINE
	EXISTING GROUND AT CENTERLINE
	MATCH LINE
	EASEMENT LINE
	GALVANIZED GUARDRAIL
	BARRIER RAIL
	"A" TYPE CURB
	SAWCUT LINE
O	2 CABLE FENCE
X	CHAIN LINK FENCE
	ORNAMENTAL FENCE
	SWING GATE
UG	UNDERGROUND UTILITY LINES
OHP	OVERHEAD UTILITY LINES
	ELECTRICAL CONDUIT
	STREET LIGHT ASSEMBLY
	PULL BOX
MH	MANHOLE
V	WATER OR GAS VALVE
P	TELEPHONE AND/OR POWER POLE
	SIGN MOUNTED ON METAL POST
1900	CONTOUR WITH ELEVATION
	INTERMEDIATE CONTOUR
(1900.00) 1900.00	ELEVATION
4:1	SCARP
	DIRECTION OF FLOW
FH	FIRE HYDRANT







SUMMARY OF APPROXIMATE QUANTITIES

ITEM NO	DESCRIPTION	UNIT	QUANTITY

ADDITIVE/DEDUCTIVE ITEMS

ITEM NO	DESCRIPTION	UNIT	QUANTITY

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS N 14°17'52" E BEING THE GRID BEARING BETWEEN LAS VEGAS VALLEY WATER DISTRICT STATION (LVVWD) AND CLARK COUNTY CORS STATION CARLTON WITH THE FOLLOWING NEVADA COORDINATE SYSTEM, EAST ZONE, VALUES BASED ON THE NORTH AMERICAN DATUM OF 1983/1994 HIGH ACCURACY REFERENCE NETWORK (NAD '83/'94-HARN):

LVVWD (GRID)	NORTHING	87794759.902 METERS	(26759896.338 U.S. SURVEY FOOT)
	EASTING	2532410.490 METERS	(771880.261 U.S. SURVEY FOOT)
CARLTON (GRID)	NORTHING	8786681.845 METERS	(26781879.150 U.S. SURVEY FOOT)
	EASTING	2550791.050 METERS	(777482.667 U.S SURVEY FOOT)

DISTANCES SHOWN FOR THIS SURVEY ARE GROUND EQUIVALENT VALUES, BASED ON A PROJECT SPECIFIC LOCAL PROJECTION COMBINED FACTOR OF 0.9998354581 DERIVED FROM GEODETIC OBSERVATIONS OBTAINED USING THE GLOBAL POSITIONING SYSTEM (GPS).

GEOTECHNICAL REPORT

GEOTECHNICAL REPORT PREPARED BY:
CONVERSE CONSULTANTS, MAY 10, 2005
PROJECT NUMBER 04-33372-01
ENTITLED: GEOTECHNICAL INVESTIGATION FLAMINGO WASH IMPROVEMENTS FROM SPENCER STREET TO DESERT INN ROAD
CLARK COUNTY, NEVADA

BENCHMARK

CLARK COUNTY BENCH MARK STATION 6C11 12SSE6. 2" DOME HEAD BRASS CAP REFERENCE MONUMENT IN TOP OF CURB, NORTHEAST CORNER OF DESERT INN RD. AND MOJAVE RD. NEAR THE PC OF DESERT INN RD. ELEVATION = 569.314 METERS (1867.82 FEET) NAVD 88.

CLARK COUNTY BENCH MARK STATION 8C11 13W4 1998. RIVET AND ROUND ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF EASTERN AVE. AND TWAIN AVE. NEAR THE PC OF EASTERN AVE. ELEVATION = 584.619 METERS (1918.04 FEET) NAVD 88.

CLARK COUNTY BENCH MARK STATION 7C11 14SSW6. RIVET AND SQUARE ALUMINUM PLATE IN TOP OF CURB, NORTHEAST CORNER OF FLAMINGO RD. AND TAMARUS ST – ALGONQUIN DR. NEAR PC OF FLAMINGO RD. ELEVATION = 604.305 METERS (1982.62 FEET) NAVD 88.

ABBREVIATIONS

AC	ASPHALT CONCRETE PAVEMENT
ACP	ASBESTOS CEMENT PIPE
AGG	AGGREGATE
BC	BACK OF CURB
BLVD	BOULEVARD
BOT	BOTTOM
BPE	BOTTOM OF PIER EXTENSION
BW	BOTTOM OF WALL
"FW"	FLAMINGO WASH POINT OF GRADE LINE
CC	CLARK COUNTY
CCAUSD	CLARK COUNTY AREA UNIFORM STANDARD DRAWING
C&G	CURB AND GUTTER
CL	CENTERLINE
CMP	CORREGATED METAL PIPE
CONC	CONCRETE
CONST	CONSTRUCTION
DCSWCS	DESIGN & CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS
DI	DROP INLET
Ø, DIA	DIAMETER
DWG	DRAWING
DWY	DRIVEWAY
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
FOC	FIBER OPTIC CONDUIT
GB	GRADE BREAK
H	CHANNEL HEIGHT FROM FLOW LINE
HGL	HYDRAULIC GRADE LINE
INV	INVERT
LF	LINEAR FEET
LT	LEFT
LVVWD	LAS VEGAS VALLEY WATER DISTRICT
MATL	MATERIAL
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
NTS	NOT TO SCALE
OC	ON CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PBS	PLANTMIX BITUMINOUS SURFACE
PC	POINT OF CURVATURE
PE	PERMANENT EASEMENT
PH	PIER HEIGHT FROM FLOW LINE
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
PPCBR	PORTABLE PRECASED CONCRETE BARRIER RAIL
PVMT	PAVEMENT
PVT	PRIVATE
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RT	RIGHT
R/W	RIGHT-OF-WAY
SD	STORM DRAIN
STD	STANDARD
S/W	SIDEWALK
T&B	TOP AND BOTTOM
TC	TOP OF CURB
TE	TEMPORARY EASEMENT
TPE	TOP OF PIER EXTENSION
TRANS	TRANSITION
TW	TOP OF WALL
TOP	TOP OF PIPE
(TYP)	TYPICAL
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VG	VALLEY GUTTER
VPI	VERTICAL POINT OF INTERSECTION
VPC	VERTICAL POINT OF CURVE
VPT	VERTICAL POINT OF TANGENCY
YR	YEAR

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

REV NO	DATE	DESCRIPTION	APPROVED

CLARK COUNTY NEVADA

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
LEGEND, SUMMARY OF QUANTITIES AND ABBREVIATIONS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO 3
SHT OF
L-

Call before you Dig Underground
1-702-455-7511
CLARK COUNTY STREET MAINTENANCE
AND
1-702-455-6300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE ALERT
CLARK COUNTY ROAD MAINTENANCE MANAGEMENT
702-455-7511
CLARK COUNTY TRAFFIC MANAGEMENT
702-455-2915

SAFETY ALERT
Call Before You Overhead
1-702-227-2929

NOTES:

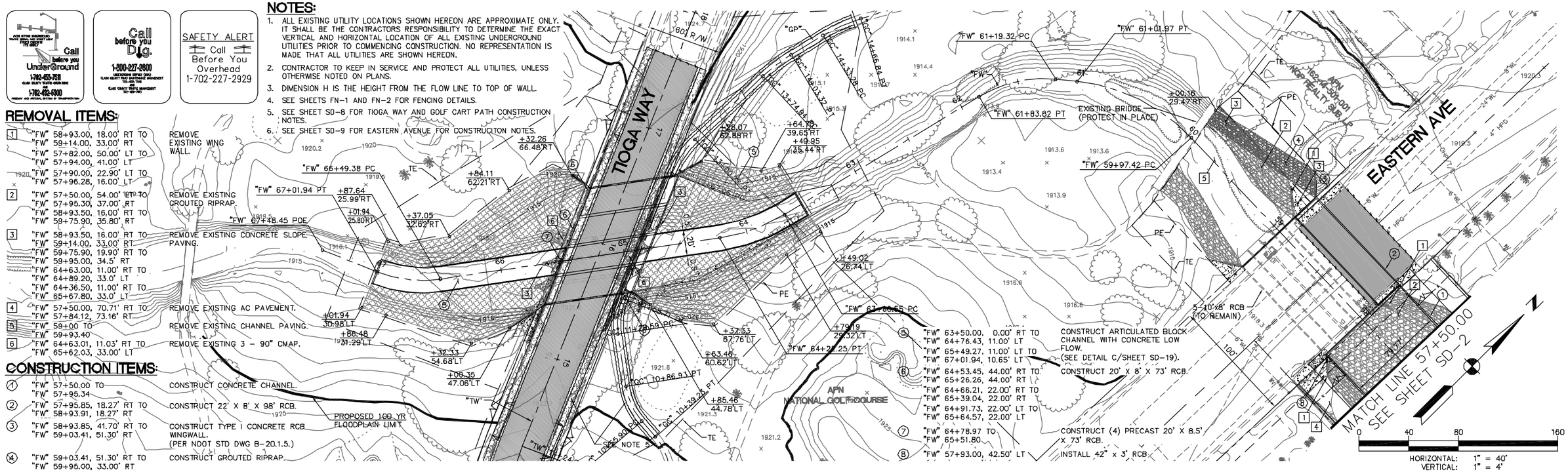
1. ALL EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL UTILITIES ARE SHOWN HEREON.
2. CONTRACTOR TO KEEP IN SERVICE AND PROTECT ALL UTILITIES, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEETS FN-1 AND FN-2 FOR FENCING DETAILS.
5. SEE SHEET SD-8 FOR TIOGA WAY AND GOLF CART PATH CONSTRUCTION NOTES.
6. SEE SHEET SD-9 FOR EASTERN AVENUE FOR CONSTRUCTION NOTES.

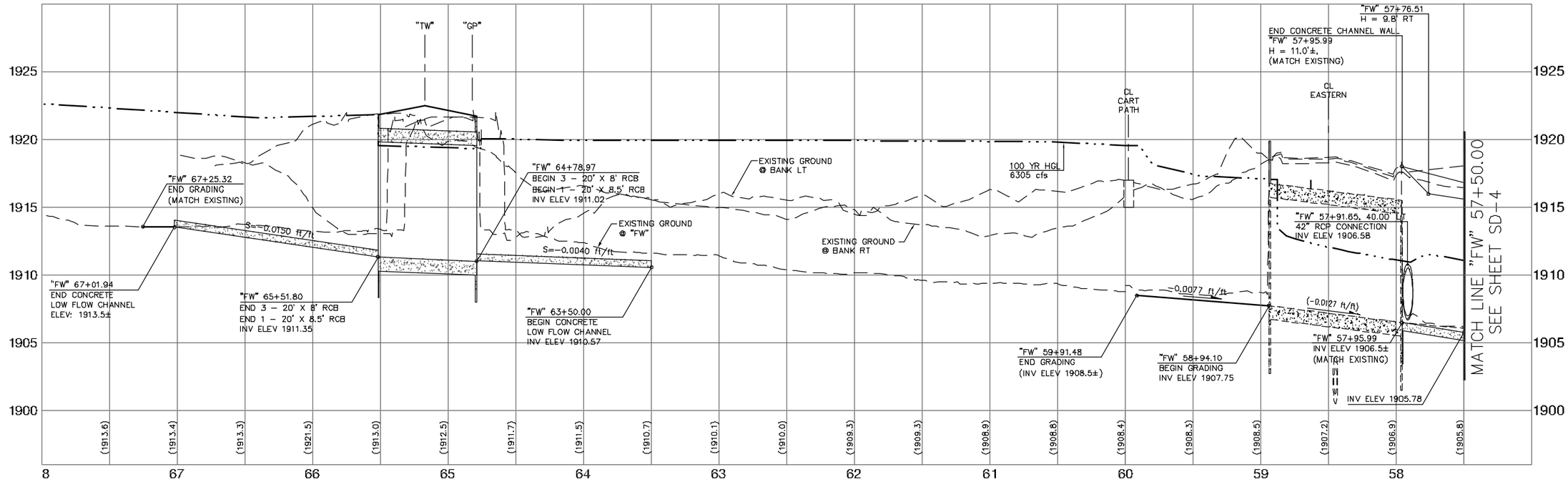
REMOVAL ITEMS:

1	"FW" 58+93.00, 18.00' RT TO "FW" 59+14.00, 33.00' RT "FW" 57+82.00, 50.00' LT TO "FW" 57+94.00, 41.00' LT "FW" 57+90.00, 22.90' LT TO "FW" 57+96.28, 16.00' LT	REMOVE EXISTING WING WALL.
2	"FW" 57+50.00, 54.00' RT TO "FW" 57+95.30, 37.00' RT "FW" 58+93.50, 16.00' RT TO "FW" 59+75.90, 35.80' RT	REMOVE EXISTING GROUTED RIPRAP.
3	"FW" 58+93.50, 16.00' RT TO "FW" 59+14.00, 33.00' RT "FW" 59+75.90, 19.90' RT TO "FW" 59+95.00, 34.5' RT "FW" 64+63.00, 11.00' RT TO "FW" 64+89.20, 33.0' LT "FW" 64+36.50, 11.00' RT TO "FW" 65+67.80, 33.0' LT	REMOVE EXISTING CONCRETE SLOPE PAVING.
4	"FW" 57+50.00, 70.71' RT TO "FW" 57+84.12, 73.16' RT	REMOVE EXISTING AC PAVEMENT.
5	"FW" 59+00 TO "FW" 59+93.40	REMOVE EXISTING CHANNEL PAVING.
6	"FW" 64+63.01, 11.03' RT TO "FW" 65+62.03, 33.00' LT	REMOVE EXISTING 3 – 90" CMAP.

CONSTRUCTION ITEMS:

1	"FW" 57+50.00 TO "FW" 57+95.34	CONSTRUCT CONCRETE CHANNEL.
2	"FW" 57+95.85, 18.27' RT TO "FW" 58+93.91, 18.27' RT	CONSTRUCT 22' X 8' X 98' RCB.
3	"FW" 58+93.85, 41.70' RT TO "FW" 59+03.41, 51.30' RT	CONSTRUCT TYPE I CONCRETE RCB WINGWALL. (PER NDOT STD DWG B-20.1.5.)
4	"FW" 59+03.41, 51.30' RT TO "FW" 59+95.00, 33.00' RT	CONSTRUCT GROUTED RIPRAP.
5	"FW" 63+50.00, 0.00' RT TO "FW" 64+76.43, 11.00' LT "FW" 65+49.27, 11.00' LT TO "FW" 67+01.94, 10.65' LT	CONSTRUCT ARTICULATED BLOCK CHANNEL WITH CONCRETE LOW FLOW. (SEE DETAIL C/SHEET SD-19).
6	"FW" 64+53.45, 44.00' RT TO "FW" 65+26.26, 44.00' RT "FW" 64+66.21, 22.00' RT TO "FW" 65+39.04, 22.00' RT	CONSTRUCT 20' X 8' X 73' RCB.
7	"FW" 64+78.97 TO "FW" 65+51.80	CONSTRUCT (4) PRECAST 20' X 8.5' X 73' RCB.
8	"FW" 57+93.00, 42.50' LT	INSTALL 42" X 3' RCB





REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
GRADING AND DRAINAGE PLAN AND PROFILE
"FW" 57+50.00 TO "FW" 67+50.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

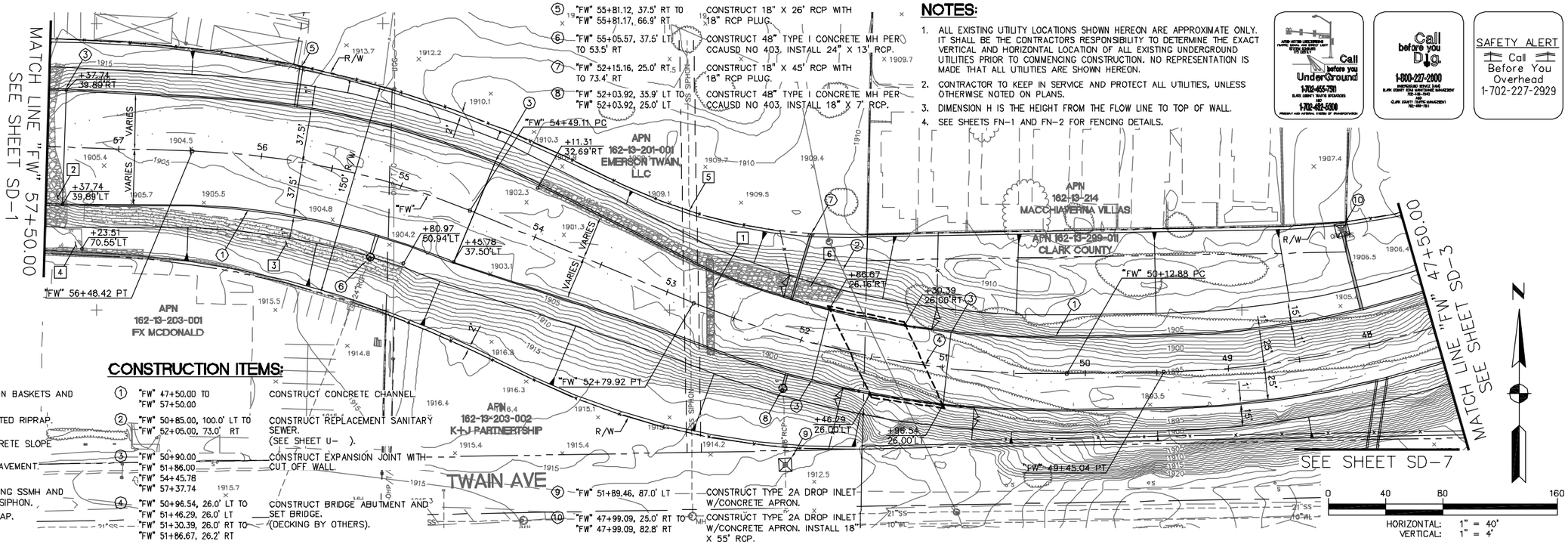
PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-1
SHT OF
1

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD



REMOVAL ITEMS:

1	"FW" 52+55.95, 29.2' LT TO "FW" 52+79.32, 27.7' RT	REMOVE GABION BASKETS AND CUTOFF WALL.
2	"FW" 57+35.00 TO "FW" 57+50.00	REMOVE GROUTED RIPRAP.
3	"FW" 54+81.30, 64.0' LT TO "FW" 57+24.00, 40.0' LT	REMOVE CONCRETE SLOPE PAVING.
4	"FW" 57+23.51, 70.55' LT TO "FW" 57+50.00, 70.0' LT	REMOVE AC PAVEMENT.
5	"FW" 55+35.00, 164.0' RT TO "FW" 57+24.00, 140.0' RT	REMOVE EXISTING SSMH AND 300'± OF SS SIPHON.
6	"FW" 51+85.00, 42.0' RT TO "FW" 54+11.31, 32.69' RT	REMOVE RIP RAP.

CONSTRUCTION ITEMS:

1	"FW" 47+50.00 TO "FW" 57+50.00	CONSTRUCT CONCRETE CHANNEL
2	"FW" 50+85.00, 100.0' LT TO "FW" 52+05.00, 73.0' RT	CONSTRUCT REPLACEMENT SANITARY SEWER. (SEE SHEET U-).
3	"FW" 50+90.00 "FW" 51+86.00 "FW" 54+45.78 "FW" 57+37.74	CONSTRUCT EXPANSION JOINT WITH CUT OFF WALL.
4	"FW" 50+96.54, 26.0' LT TO "FW" 51+46.29, 26.0' LT "FW" 51+30.39, 26.0' RT TO "FW" 51+86.67, 26.2' RT	CONSTRUCT BRIDGE ABUTMENT AND SET BRIDGE. (DECKING BY OTHERS).
5	"FW" 55+81.12, 37.5' RT TO "FW" 55+81.17, 66.9' RT	CONSTRUCT 18" X 26' RCP WITH 18" RCP PLUG.
6	"FW" 55+05.57, 37.5' LT TO 53.5' RT	CONSTRUCT 48" TYPE I CONCRETE MH PER CCAUSD NO 403, INSTALL 24" X 13' RCP.
7	"FW" 52+15.16, 25.0' RT TO 73.4' RT	CONSTRUCT 18" X 45' RCP WITH 18" RCP PLUG.
8	"FW" 52+03.92, 35.9' LT TO "FW" 52+03.92, 25.0' LT	CONSTRUCT 48" TYPE I CONCRETE MH PER CCAUSD NO 403, INSTALL 18" X 7' RCP.
9	"FW" 51+89.46, 87.0' LT	CONSTRUCT TYPE 2A DROP INLET W/CONCRETE APRON.
10	"FW" 47+99.09, 25.0' RT TO "FW" 47+99.09, 82.8' RT	CONSTRUCT TYPE 2A DROP INLET W/CONCRETE APRON. INSTALL 18" X 55' RCP.

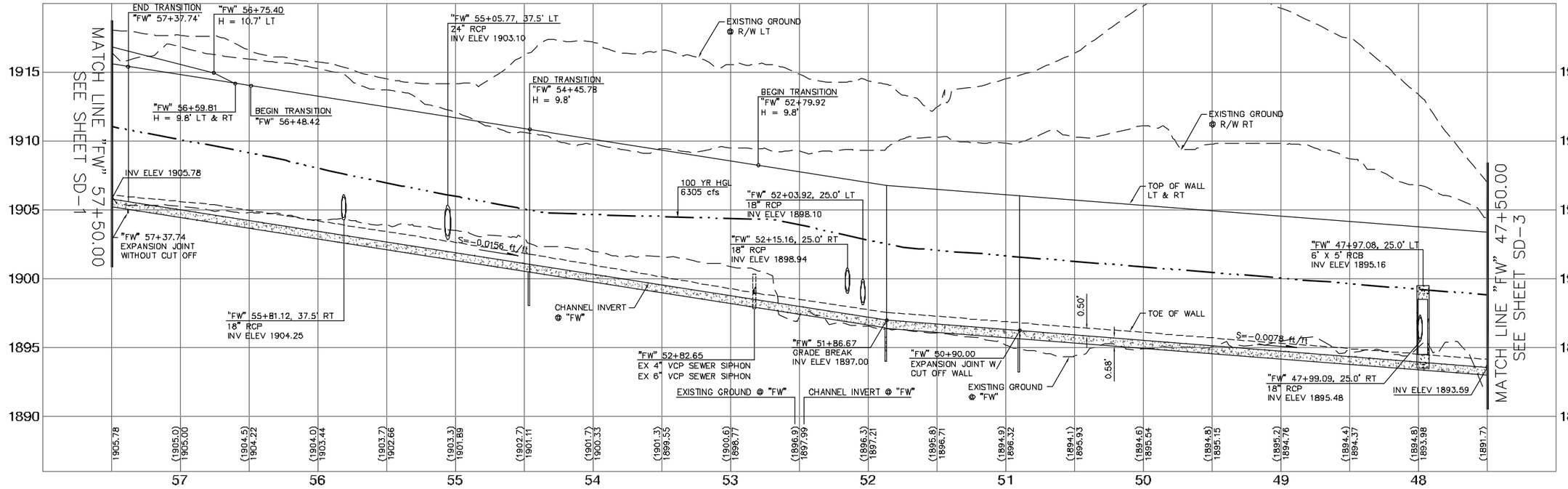
NOTES:

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, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEETS FN-1 AND FN-2 FOR FENCING DETAILS.

Call before you Dig Under Ground 1-702-455-7511 (CLARK COUNTY WATER RESOURCES) OR 1-702-402-8300 (REGIONAL SYSTEM OF INTERCONNECTION)

Call before you Dig 1-800-227-2600 (REPRESENTING SERVICE AREAS IN CLARK COUNTY, EDS MAINTENANCE MANAGEMENT DISTRICT AND CLARK COUNTY TRAFFIC MANAGEMENT) 702-385-7511

SAFETY ALERT
Call Before You Overhead 1-702-227-2929



REV NO	DATE	DESCRIPTION	APPROVED

CLARK COUNTY NEVADA

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
GRADING AND DRAINAGE PLAN AND PROFILE
"FW" 47+50.00 TO "FW" 57+50.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-2
SHT OF
L-

REMOVAL ITEMS:

1 "FW" 43+97.00, 20.84' RT TO "FW" 44+63.54, 43.62' LT — REMOVE 36" X 94' EXISTING RCP.

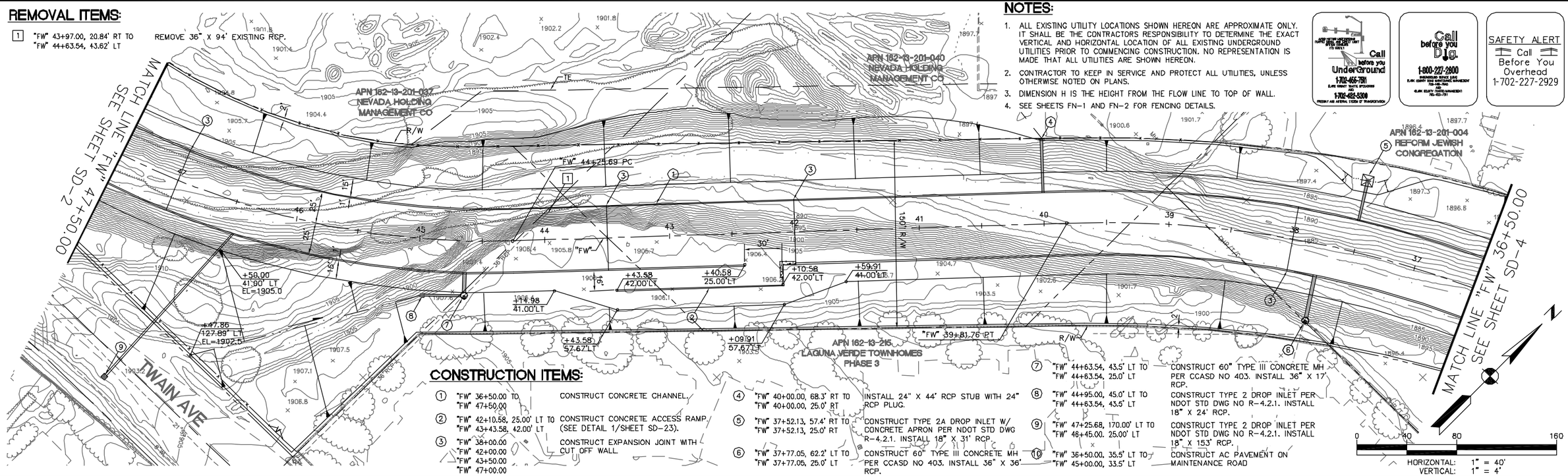
NOTES:

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, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEETS FN-1 AND FN-2 FOR FENCING DETAILS.

Call before you Underground 1-702-455-7511 (CLARK COUNTY WATER RECLAMATION DIST.) 1-702-455-5300 (CLARK COUNTY WATER RECLAMATION DIST.) PRESENT AND FUTURE SYSTEMS OF TRANSPORTATION

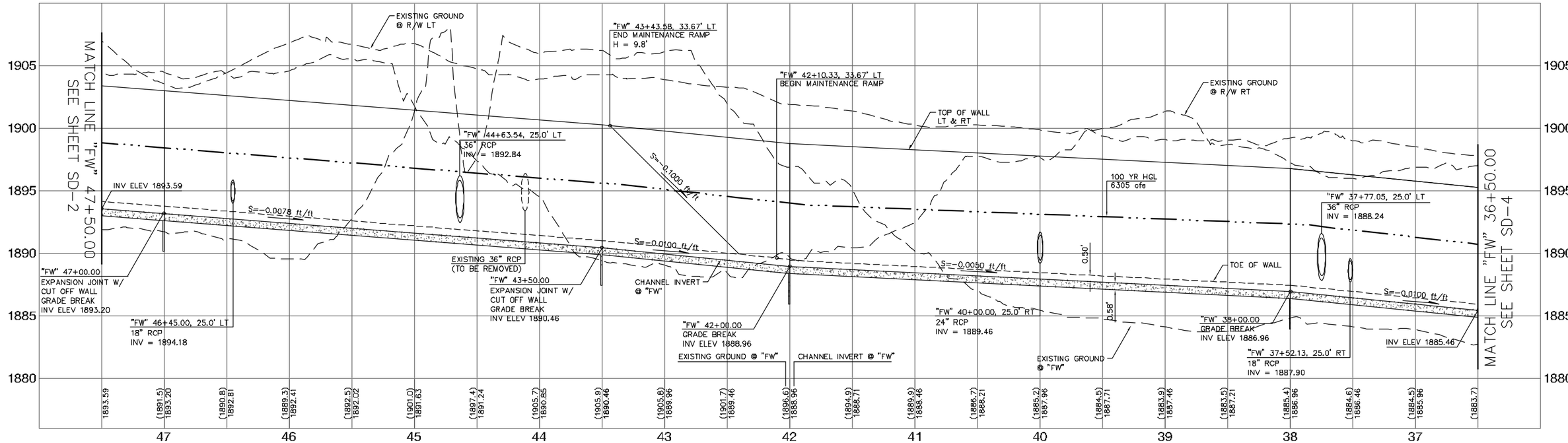
Call before you Dig 1-800-227-2600 (CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT 702-455-7060) (CLARK COUNTY WATER RECLAMATION DISTRICT 702-455-7511)

SAFETY ALERT — Call Before You Overhead 1-702-227-2929



CONSTRUCTION ITEMS:

1	"FW" 36+50.00 TO "FW" 47+50.00	CONSTRUCT CONCRETE CHANNEL.
2	"FW" 42+10.58, 25.00' LT TO "FW" 43+43.58, 42.00' LT	CONSTRUCT CONCRETE ACCESS RAMP. (SEE DETAIL 1/SHEET SD-23).
3	"FW" 38+00.00 "FW" 42+00.00 "FW" 43+50.00 "FW" 47+00.00	CONSTRUCT EXPANSION JOINT WITH CUT OFF WALL
4	"FW" 40+00.00, 68.3' RT TO "FW" 40+00.00, 25.0' RT	INSTALL 24" X 44' RCP STUB WITH 24" RCP PLUG.
5	"FW" 37+52.13, 57.4' RT TO "FW" 37+52.13, 25.0' RT	CONSTRUCT TYPE 2A DROP INLET W/ CONCRETE APRON PER NDOT STD DWG R-4.2.1. INSTALL 18" X 31' RCP.
6	"FW" 37+77.05, 62.2' LT TO "FW" 37+77.05, 25.0' LT	CONSTRUCT 60" TYPE III CONCRETE MH PER CCASD NO 403. INSTALL 36" X 36' RCP.
7	"FW" 44+63.54, 43.5' LT TO "FW" 44+63.54, 25.0' LT	CONSTRUCT 60" TYPE III CONCRETE MH PER CCASD NO 403. INSTALL 36" X 17' RCP.
8	"FW" 44+95.00, 45.0' LT TO "FW" 44+63.54, 43.5' LT	CONSTRUCT TYPE 2 DROP INLET PER NDOT STD DWG NO R-4.2.1. INSTALL 18" X 24' RCP.
9	"FW" 47+25.68, 170.00' LT TO "FW" 48+45.00, 25.00' LT	CONSTRUCT TYPE 2 DROP INLET PER NDOT STD DWG NO R-4.2.1. INSTALL 18" X 153' RCP.
10	"FW" 36+50.00, 35.5' LT TO "FW" 45+00.00, 33.5' LT	CONSTRUCT AC PAVEMENT ON MAINTENANCE ROAD



REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
GRADING AND DRAINAGE PLAN AND PROFILE
"FW" 36+50.00 TO "FW" 47+50.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO SD-3
SHT OF L-

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

Call before you UnderGround 1-702-455-7611 CLARK COUNTY WATER RECLAMATION DISTRICT 725-822-7300 and 1-702-692-8300 PRIVATELY OWNED SYSTEM OF TRANSPORTATION

Call before you Dig. 1-800-227-2600 LAS VEGAS VALLEY WATER DISTRICT 702-258-3182 CLARK COUNTY ROAD SYSTEM MANAGEMENT 702-455-7041 CLARK COUNTY TRAFFIC MANAGEMENT 702-455-7041

SAFETY ALERT
Call Before You Overhead
1-702-227-2929

NOTES:

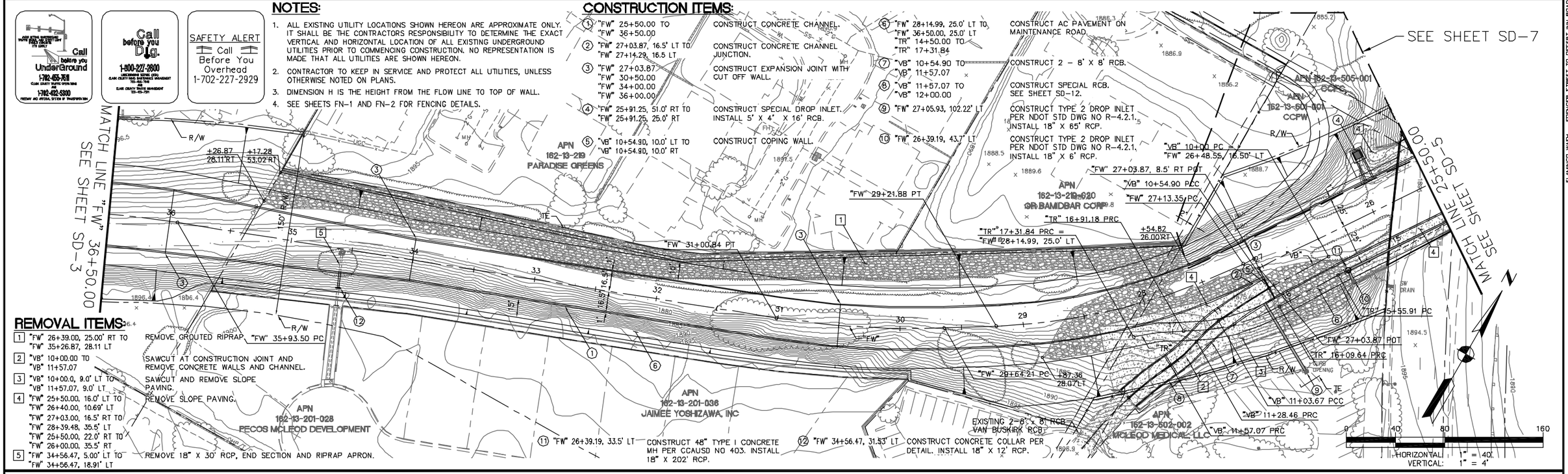
1. ALL EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL UTILITIES ARE SHOWN HEREON.
2. CONTRACTOR TO KEEP IN SERVICE AND PROTECT ALL UTILITIES, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEETS FN-1 AND FN-2 FOR FENCING DETAILS.

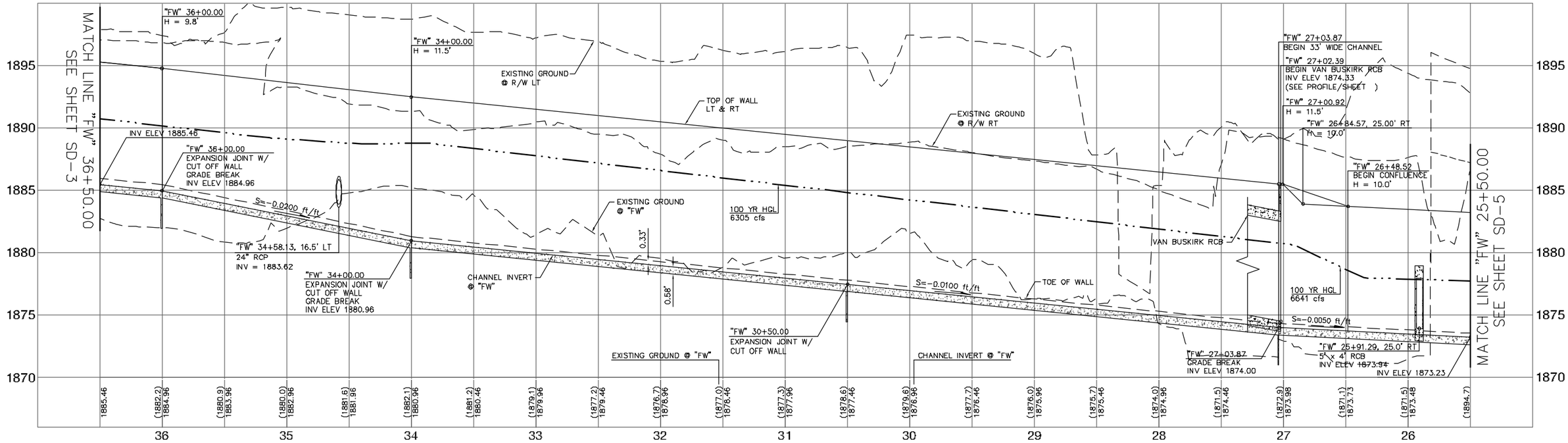
CONSTRUCTION ITEMS:

1. "FW" 25+50.00 TO "FW" 36+50.00 — CONSTRUCT CONCRETE CHANNEL.
2. "FW" 27+03.87, 16.5' LT TO "FW" 27+14.29, 16.5 LT — CONSTRUCT CONCRETE CHANNEL JUNCTION.
3. "FW" 27+03.87, "FW" 30+50.00, "FW" 34+00.00, "FW" 36+00.00 — CONSTRUCT EXPANSION JOINT WITH CUT OFF WALL.
4. "FW" 25+91.25, 51.0' RT TO "FW" 25+91.25, 25.0' RT — CONSTRUCT SPECIAL DROP INLET. INSTALL 5' X 4' X 16' RCB.
5. "VB" 10+54.90, 10.0' LT TO "VB" 10+54.90, 10.0' RT — CONSTRUCT COPING WALL.
6. "FW" 28+14.99, 25.0' LT TO "FW" 36+50.00, 25.0' LT, "TR" 14+50.00 TO "TR" 17+31.84 — CONSTRUCT AC PAVEMENT ON MAINTENANCE ROAD.
7. "VB" 10+54.90 TO "VB" 11+57.07 — CONSTRUCT 2 – 8' X 8' RCB.
8. "VB" 11+57.07 TO "VB" 12+00.00 — CONSTRUCT SPECIAL RCB. SEE SHEET SD-12.
9. "FW" 27+05.93, 102.22' LT — CONSTRUCT TYPE 2 DROP INLET PER NDOT STD DWG NO R-4.2.1. INSTALL 18" X 65' RCP.
10. "FW" 26+39.19, 43.7' LT — CONSTRUCT TYPE 2 DROP INLET PER NDOT STD DWG NO R-4.2.1. INSTALL 18" X 6' RCP.
11. "FW" 26+39.19, 33.5' LT — CONSTRUCT 48" TYPE I CONCRETE MH PER CCAUSD NO 403. INSTALL 18" X 202' RCP.
12. "FW" 34+56.47, 31.53' LT — CONSTRUCT CONCRETE COLLAR PER DETAIL. INSTALL 18" X 12' RCP.

REMOVAL ITEMS:

1. "FW" 26+39.00, 25.00' RT TO "FW" 35+26.87, 28.11 LT — REMOVE GROUTED RIPRAP "FW" 35+93.50 PC
2. "VB" 10+00.00 TO "VB" 11+57.07 — SAWCUT AT CONSTRUCTION JOINT AND REMOVE CONCRETE WALLS AND CHANNEL.
3. "VB" 10+00.0, 9.0' LT TO "VB" 11+57.07, 9.0' LT — SAWCUT AND REMOVE SLOPE PAVING.
4. "FW" 25+50.00, 16.0' LT TO "FW" 26+40.00, 10.69' LT; "FW" 27+03.00, 16.5' RT TO "FW" 28+39.48, 35.5' LT; "FW" 25+50.00, 22.0' RT TO "FW" 26+00.00, 35.5' RT — REMOVE SLOPE PAVING.
5. "FW" 34+56.47, 5.00' LT TO "FW" 34+56.47, 18.91' LT — REMOVE 18" X 30' RCP, END SECTION AND RIPRAP APRON.





REV NO	DATE	DESCRIPTION	APPROVED

CLARK COUNTY NEVADA

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
GRADING AND DRAINAGE PLAN AND PROFILE
"FW" 25+50.00 TO "FW" 36+50.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Las Vegas, Nevada 89119
Voice: 702-736-6632 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO SD-4
SHT OF L–

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

REMOVAL ITEMS:

1. "FW" 15+50.00, 25.0' RT TO "FW" 19+48.80, 51.7' RT — REMOVE EXISTING RIPRAP.
2. "FW" 23+80.00, 20.0' LT TO "FW" 24+75.00, 55.0' LT — REMOVE EXISTING GROUTED RIPRAP.
3. "FW" 17+97.50, 70.00' LT TO "FW" 18+02.90, 43.00' LT — REMOVE EXISTING CONCRETE.
4. "FW" 24+75.00, 16.00' LT TO "FW" 25+50.00, 40.00' LT; "FW" 24+32.00, 16.00' RT TO "FW" 25+50.00, 40.00' RT — REMOVE EXISTING CONCRETE SLOPE PAVING.
5. "FW" 24+30.00, 16.00' RT TO "FW" 25+50.00, 30.00' RT — SAWCUT AND REMOVE EXISTING CONCRETE SLOPE PAVING.
6. "FW" 23+94.40, 100.90' RT TO "FW" 24+33.60, 52.90' RT — REMOVE EXISTING GUARDRAIL.

CONSTRUCTION ITEMS:

1. "FW" 15+50.00 TO "FW" 25+50.00 — CONSTRUCT CONCRETE CHANNEL.
2. "FW" 19+49.90, 25.00' RT TO "FW" 20+44.90, 42.00' RT — CONSTRUCT CONCRETE ACCESS RAMP. (SEE DETAIL 1/SHEET SD-23).
3. "FW" 19+03.46 "FW" 21+37.68 "FW" 24+32.30 — CONSTRUCT EXPANSION JOINT WITH CUT OFF WALL.
4. "FW" 18+00.00, 86.0' LT TO "FW" 18+00.00, 25.0' LT — CONSTRUCT TYPE 2A DROP INLET W/CONCRETE APRON. INSTALL 18" X 40' RCP.
5. "FW" 18+06.34, 43.8' RT — CONSTRUCT 48" TYPE I CONCRETE MH PER CCAUSD NO 403. INSTALL 24" X 18" RCP.
6. "FW" 18+41.50, 73.0' RT TO "FW" 18+41.50, 25.0' RT — INSTALL 18" X 48' RCP STUB WITH 18" RCP PLUG.
7. "FW" 22+11.34, 55.10' LT TO "FW" 22+11.34, 36.00' LT — CONSTRUCT TYPE 2 DROP INLET W/ CONCRETE APRON INSTALL 18" X 18" RCP.
8. "FW" 23+33.55, 61.0' LT TO "FW" 23+33.55, 38.0' LT — INSTALL 18" X 25' RCP STUB WITH 18" RCP PLUG.
9. "FW" 24+47.00, 45.8' LT TO "FW" 24+56.86, 33.5' LT — CONSTRUCT TYPE 2 DROP INLET W/ CONCRETE APRON INSTALL 18" X 12" RCP.
10. "FW" 23+94.4, 100.9' RT TO "FW" 24+01.7, 87.8' RT — CONSTRUCT FLARED GUARDRAIL TERMINAL PER NDOT STD DWG R-8.2.4.1.
11. "FW" 20+73.00, 33.5' LT TO "FW" 20+73.00, 25.0' LT — CONSTRUCT 60" TYPE III CONCRETE MH PER CCAUSD NO 403. INSTALL 36" X 5' RCP.
12. "FW" 22+11.34, 33.5' LT TO "FW" 20+73.00, 33.5' LT — CONSTRUCT 60" TYPE III CONCRETE MH PER CCAUSD NO 403. INSTALL 36" X 138' RCP.
13. "FW" 23+33.53, 33.5' LT TO "FW" 22+11.34, 33.5' LT — CONSTRUCT 60" TYPE I CONCRETE MH PER CCAUSD NO 403. INSTALL 24" X 124' RCP.
14. "FW" 21+68.79, 26.0' RT TO "FW" 23+99.42, 82.67' RT — CONSTRUCT ACCESS ROAD. (SEE DETAIL A/SHEET SD-19).
15. "FW" 24+47.00, 26.0' RT TO "FW" 23+33.53, 33.5' LT — CONSTRUCT 48" TYPE I CONCRETE MH PER CCAUSD NO 403. INSTALL 18" X 124' RCP.
16. "FW" 18+99.00, 41.0' RT TO "FW" 21+41.00, 80.0' RT — INSTALL GRAVEL MULCH
17. "FW" 23+99.42, 82.67' RT TO "FW" 24+11.71, 69.39' LT — CONSTRUCT 20' COMMERCIAL DRIVEWAY APRON PER CCAUSD NO 224.
18. "FW" 15+50.00, 33.5' LT TO "FW" 25+50.00, 33.5' LT — CONSTRUCT AC PAVEMENT ON MAINTENANCE ROAD.

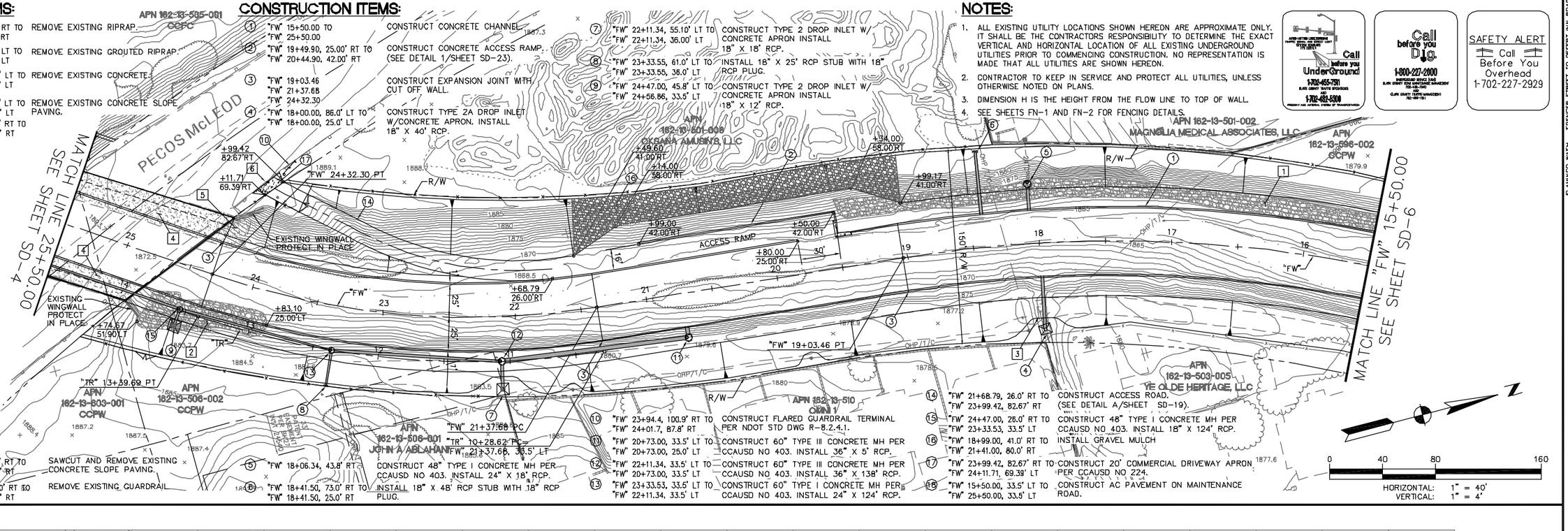
NOTES:

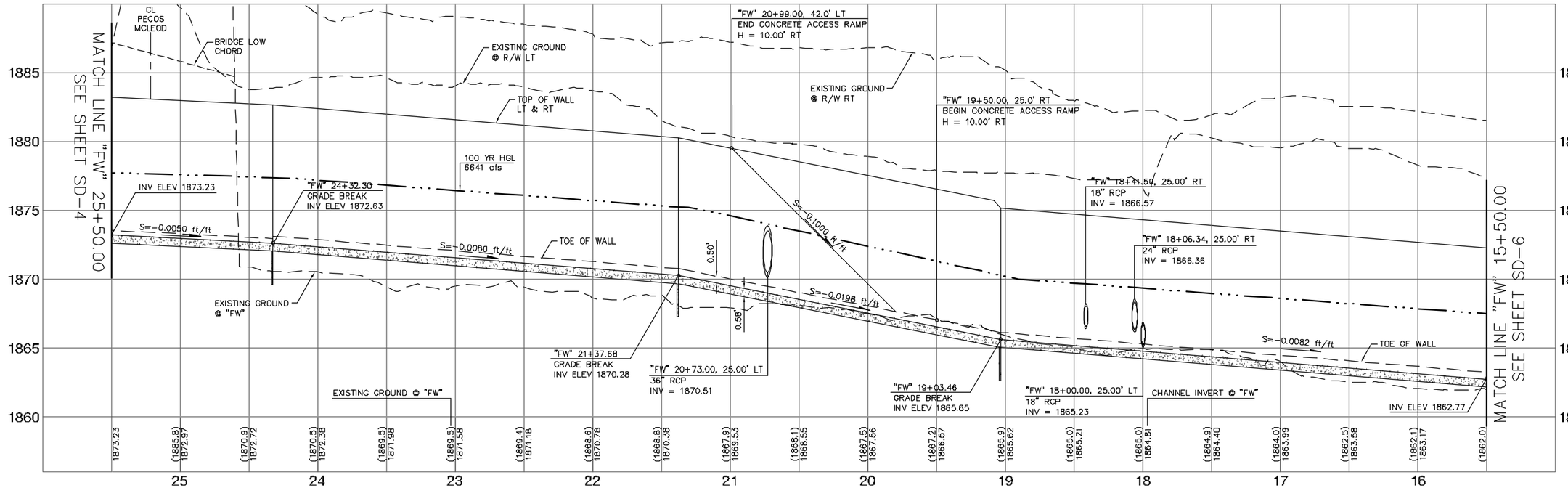
1. ALL EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL UTILITIES ARE SHOWN HEREON.
2. CONTRACTOR TO KEEP IN SERVICE AND PROTECT ALL UTILITIES, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEETS FN-1 AND FN-2 FOR FENCING DETAILS.

Call before you Dig — 1-800-227-2900 (CLARK COUNTY WATER RECLAMATION DISTRICT, CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT, CLARK COUNTY TRAFFIC MANAGEMENT)

Call before you UnderGround — 1-702-455-7511 (CLARK COUNTY WATER RECLAMATION DISTRICT); 1-702-402-5300 (PRESENT AND APPROVAL STATUS OF TRANSPORTATION)

SAFETY ALERT — Call Before You Overhead 1-702-227-2929





REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
GRADING AND DRAINAGE PLAN AND PROFILE
"FW" 15+50.00 TO "FW" 25+50.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO SD-5
SHT OF L-

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

REMOVAL ITEMS:

[1] "FW" 12+77.50, 44.16' RT TO "FW" 13+98.13, 32.48' RT
"FW" 15+30.00, 20.0' RT TO "FW" 15+50.00, 55.0' RT
REMOVE EXISTING RIPRAP.

[2] "FW" 10+99.94, 27.36 'RT TO "FW" 11+33.97, 46.0' RT
"FW" 10+46.04, 26.35' LT TO "FW" 10+72.79, 42.94' LT
REMOVE EXISTING WINGWALL.

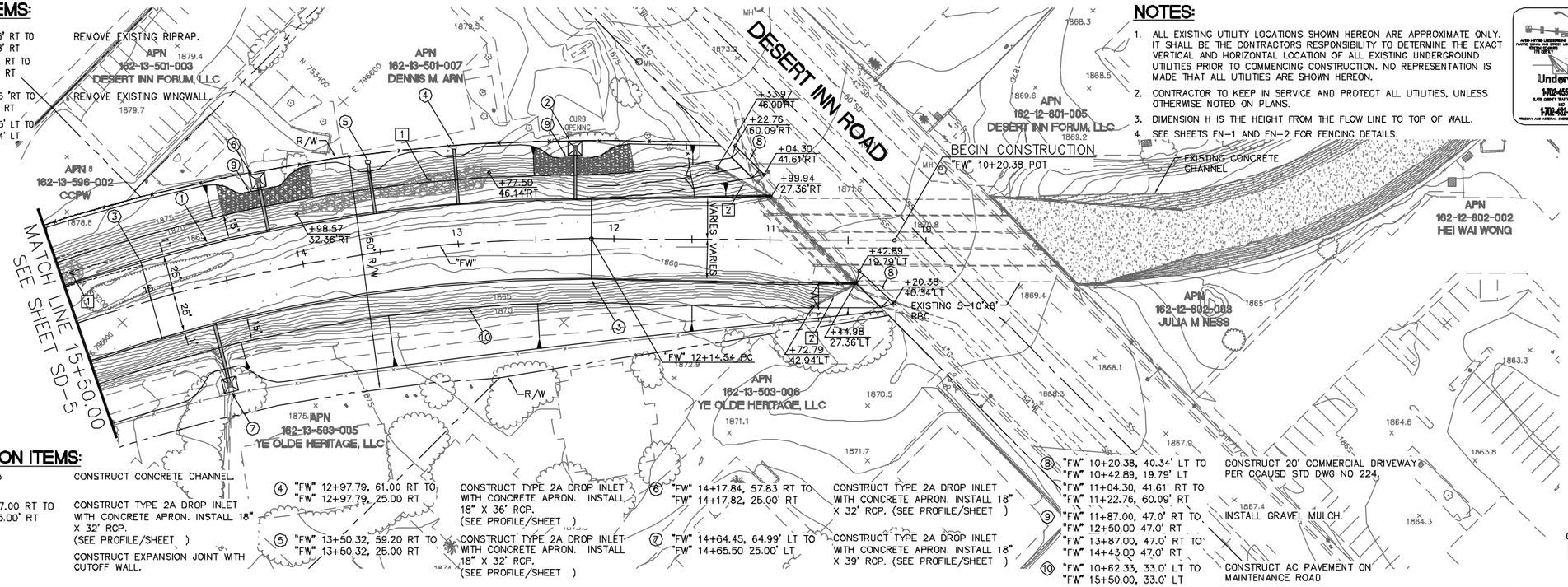
NOTES:

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, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEETS FN-1 AND FN-2 FOR FENCING DETAILS.

Call before you Dig Under Ground 1-702-455-7511 (CLARK COUNTY WATER RECORDS) OR 1-702-402-8300 (REGIONAL ROAD AND TRAFFIC SYSTEM OF TRANSPORTATION)

Call before you Dig 1-800-227-2600 (NEVADA ONE CALL MEMBERSHIP) OR (CLARK COUNTY TRAFFIC MANAGEMENT) 702-455-7511

SAFETY ALERT
Call Before You Overhead
1-702-227-2929



CONSTRUCTION ITEMS:

(1) "FW" 10+44.98 TO "FW" 15+50.00 — CONSTRUCT CONCRETE CHANNEL.

(2) "FW" 12+24.60, 57.00 RT TO "FW" 12+24.61, 25.00' RT — CONSTRUCT TYPE 2A DROP INLET WITH CONCRETE APRON. INSTALL 18" X 32' RCP. (SEE PROFILE/SHEET)

(3) "FW" 12+14.54 TO "FW" 15+00.00 TO "FW" 10+87.79 — CONSTRUCT EXPANSION JOINT WITH CUTOFF WALL.

(4) "FW" 12+97.79, 61.00 RT TO "FW" 12+97.79, 25.00 RT — CONSTRUCT TYPE 2A DROP INLET WITH CONCRETE APRON. INSTALL 18" X 36' RCP. (SEE PROFILE/SHEET)

(5) "FW" 13+50.32, 59.20 RT TO "FW" 13+50.32, 25.00 RT — CONSTRUCT TYPE 2A DROP INLET WITH CONCRETE APRON. INSTALL 18" X 32' RCP. (SEE PROFILE/SHEET)

(6) "FW" 14+17.84, 57.83 RT TO "FW" 14+17.82, 25.00' RT — CONSTRUCT TYPE 2A DROP INLET WITH CONCRETE APRON. INSTALL 18" X 32' RCP. (SEE PROFILE/SHEET)

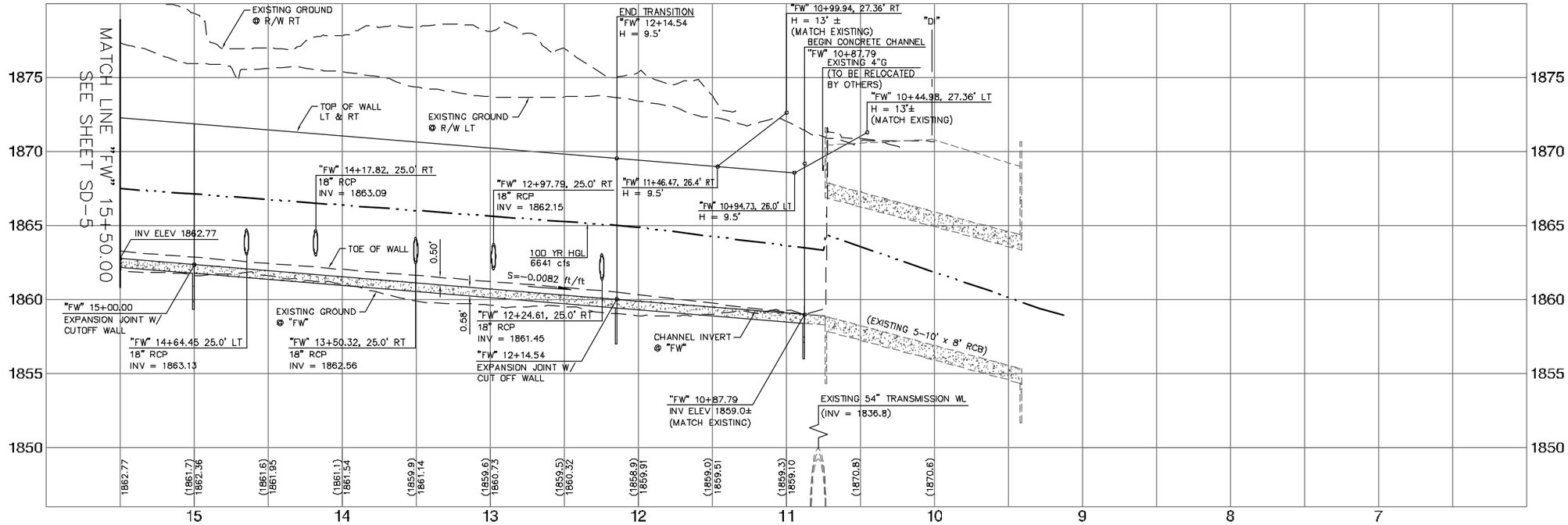
(7) "FW" 14+64.45, 64.99' LT TO "FW" 14+65.50 25.00' LT — CONSTRUCT TYPE 2A DROP INLET WITH CONCRETE APRON. INSTALL 18" X 39' RCP. (SEE PROFILE/SHEET)

(8) "FW" 10+20.38, 40.34' LT TO "FW" 10+42.89, 19.79' LT
"FW" 11+04.30, 41.61' RT TO "FW" 11+22.76, 60.09' RT — CONSTRUCT 20' COMMERCIAL DRIVEWAY PER CCAUSD STD DWG NO 224.

(9) "FW" 11+87.00, 47.0' RT TO "FW" 12+50.00 47.0' RT
"FW" 13+87.00, 47.0' RT TO "FW" 14+43.00 47.0' RT — INSTALL GRAVEL MULCH.

(10) "FW" 10+62.33, 33.0' LT TO "FW" 15+50.00, 33.0' LT — CONSTRUCT AC PAVEMENT ON MAINTENANCE ROAD

0 40 80 160
HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'



REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
GRADING AND DRAINAGE PLAN AND PROFILE
"FW" 10+00.00 TO "FW" 15+50.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-6
SHT OF
L-

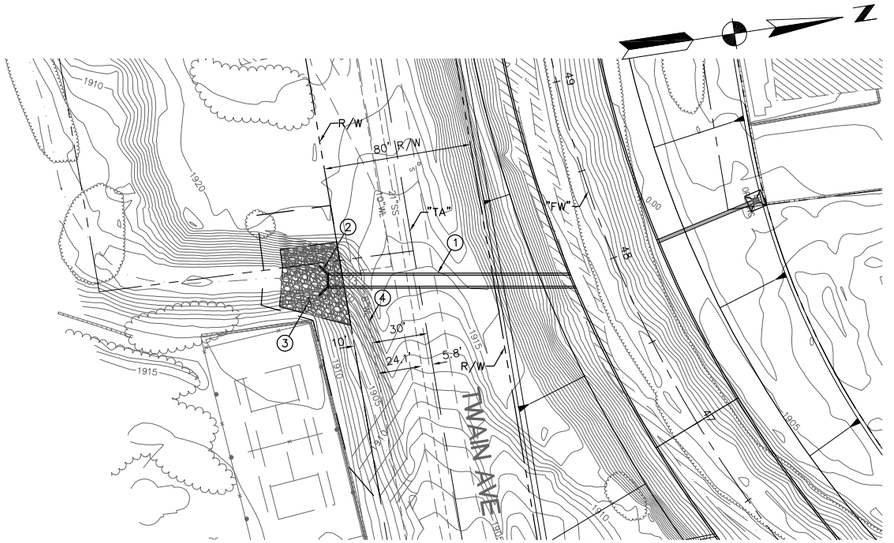
FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

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, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEET SD-2 FOR FLAMINGO WASH CONSTRUCTION NOTES.

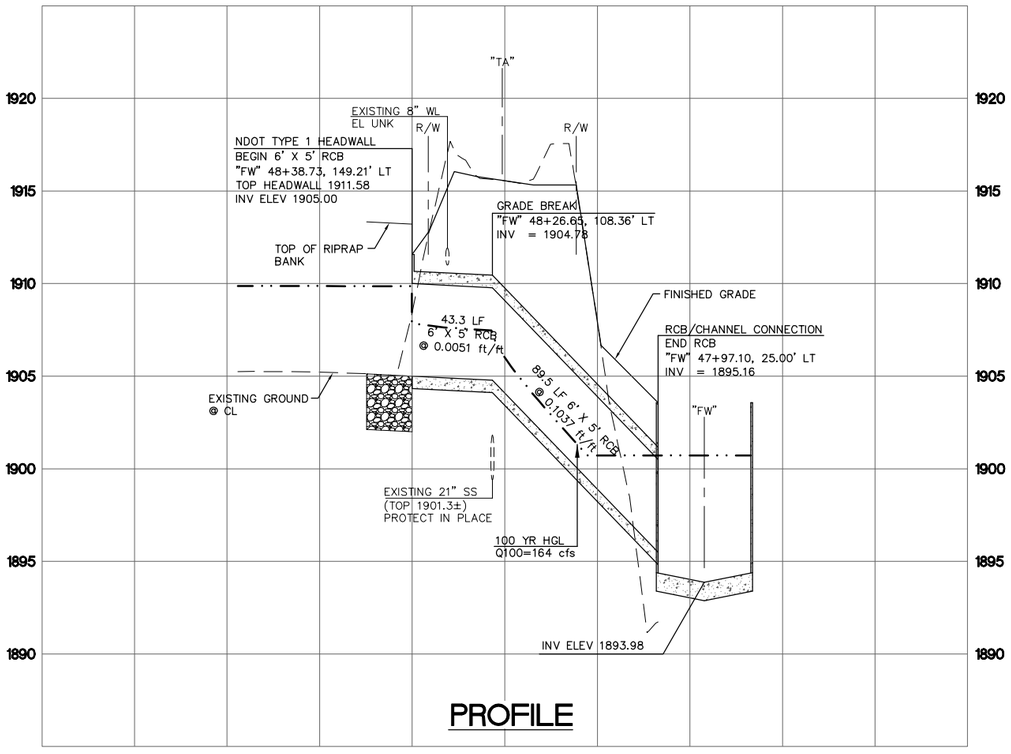
CONSTRUCTION ITEMS:

①	"FW" 48+38.71, 149.2' LT TO "FW" 49+97.08, 25.00' LT	CONSTRUCT 6' X 5' X 133' RCB.
②	"FW" 48+38.71, 149.2' LT	CONSTRUCT NDOT TYPE 1 CONCRETE HEADWALL.
③	"FW" 48+45.04, 172.5' LT TO "FW" 48+38.71, 149.2' LT	CONSTRUCT RIPRAP.
④	"FW" 48+28.24, 132.6' LT TO "FW" 48+38.19, 130.5' LT	RELOCATE 8" WATER LINE.



PLAN

HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'



PROFILE

Call before you UnderGround
1-702-405-7011
CLARK COUNTY TRAFFIC OPERATIONS
702-455-6503
1-702-452-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)
CLARK COUNTY ROAD MAINTENANCE MANAGEMENT
702-455-7041
CLARK COUNTY TRAFFIC MANAGEMENT
702-455-7011

SAFETY ALERT
Call Before You Overhead
1-702-227-2929

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
TWAIN AVENUE RCB
PLAN AND PROFILE
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: cb 882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-7
SHT OF

X:\882-Spencer\Construction\882-SD-09.dwg, 8/14/2006 2:56:15 PM, ARB

REMOVAL ITEMS:

1	"GC" 10+40.00, 3'RT TO "GC" 14+60.00, 3' LT	REMOVE EXISTING GOLF CART PATH AND BRIDGE.
2	"TW" 13+95.00, 19' RT TO "TW" 17+60.00, 19' LT	SAWCUT AND REMOVE AC.
3	"TW" 15+30.00 TO 16+54.00 25' RT "TW" 15+06.00 TO 16+03.00 25' LT	REMOVE GUARD RAIL.
4	"TW" 13+95.00, 20' RT TO "TW" 17+60.00, 25' RT "TW" 13+95.00, 20' LT TO "TW" 17+60.00, 25' LT	REMOVE EXISTING SIDEWALK AND DRIVEWAYS.
5	"TW" 13+95.00 TO 17+60.00 19' RT "TW" 13+95.00 TO 17+60.00 19' LT	REMOVE EXISTING CURB AND GUTTER.
6	"TW" 15+18.00 19' LT "TW" 15+18.00 19' RT	REMOVE EXISTING DROP INLET AND 24" RCP.

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, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEETS FN-1 AND FN-2 FOR FENCING DETAILS.
5. SEE SHEETS SD-1 FOR FLAMINGO WASH CONSTRUCTION NOTES.

Call before you UnderGround 1-702-486-7511 CLARK COUNTY TRAFFIC OPERATIONS 1-702-432-6300 FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig. 1-800-227-2600 NEVADA811.COM UNDERGROUND SERVICE (USA) CLARK COUNTY ROAD MAINTENANCE MANAGEMENT 702-455-7041 CLARK COUNTY TRAFFIC MANAGEMENT 702-455-7011

SAFETY ALERT — Call Before You Overhead 1-702-227-2929

FLAMINGO WASH

EXISTING GOLF CART PATH

GAS LINE TO BE RELOCATED (BY OTHERS)

"GP" "FW" "TW"

+60.00 18.50'RT | +95.00 18.50'RT | +60.00 18.50'LT | +08.21 18.50'LT | +81.11 18.50'LT | +03.40 24.22'LT | +05.09 24.27'LT | +95.00 18.50'LT

60' R/W

CONSTRUCTION ITEMS:

1	"TW" 13+95.00, 19.0' RT TO "TW" 17+60.00, 19.0' LT	CONSTRUCT AC PAVEMENT. (SEE DETAIL /SHEET).
2	"TW" 17+10.63, 25.65' LT	REMOVE AND RESET STREET LIGHT.
3	"TW" 16+81.11, 18.50' LT TO "TW" 17+08.23, 18.50' LT	RECONSTRUCT 20' COMMERCIAL DRIVEWAY APRON PER CCAUSD NO 224.
4	"TW" 13+95.00, 14.66' RT TO "TW" 17+60.00, 15.88' RT	RECONSTRUCT 6" WATERLINE. (SEE DETAIL /SHEET U-).
5	"TW" 15+05.09, 24.27' LT TO "TW" 16+03.40, 24.22' LT	REINSTALL GUARDRAIL PER NDOT STD DWG R-8.1.1.
6	"TW" 15+80.00, 20.50' LT "TW" 15+80.50, 20.50' RT	CONSTRUCT TYPE C DROP INLET. L = 4'. (SEE DETAIL /SHEET).
7	"TW" 13+95.00, 20.50' RT TO "TW" 17+60.00, 20.50' LT	CONSTRUCT "L"-TYPE C & G PER CCAUSD NO 216.
8	"TW" 13+95.00, 20.50' RT TO "TW" 17+60.00, 20.50' LT	CONSTRUCT CONCRETE BARRIER RAIL.
9	"TW" 13+95.00, 20.50' RT TO "TW" 17+60.00, 20.50' LT	RECONSTRUCT COMMERCIAL DRIVEWAY PER CCAUSD NO 224.
10	"TW" 13+95.00, 20.50' RT TO "TW" 17+60.00, 20.50' LT	RECONSTRUCT 20' COMMERCIAL DRIVEWAY PER CCAUSD NO 224.
11	"TW" 16+37.70, 26.50' LT TO "TW" 16+55.00, 26.50' LT	CONSTRUCT NDOT TYPE FA CONCRETE BARRIER RAIL PER NDOT STD DWG NO R-8.6.3.
12	"TW" 16+55.00, 26.50' LT TO "TW" 16+80.00, 25.50' LT	CONSTRUCT CONCRETE BARRIER RAIL TURNDOWN TRANSITION PER NDOT STD DWG NO R-8.6.5.

0 20 40 80
SCALE: 1" = 20'

REV NO	DATE	DESCRIPTION	APPROVED

CLARK COUNTY NEVADA

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
TIOGA WAY CONSTRUCTION PLAN
"TW" 13+00.00 TO "TW" 18+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Las Vegas, Nevada 89119
Voice: 702-736-6632 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-8
SHT OF
L-

X:\882-Spencer\Construction\882-sd-10.dwg, 8/14/2006 2:57:37 PM, ARB

REMOVAL ITEMS:

1	"FW" 57+93.99, 40' LT TO "FW" 58+01.99, 56' LT "FW" 57+93.0, 9.27' RT TO "FW" 58+02.14, 64.26' RT "FW" 58+83.58, 14.27' RT TO "FW" 58+90.08, 64.40' RT	SAWCUT AND REMOVE EXISTING CURB, GUTTER AND S/W.
2	"FW" 58+02.07, 14.27' RT TO "FW" 58+83.21, 64.40' RT	SAWCUT AND REMOVE EXISTING AC PAVING
3	"FW" 57+93.99, 42.00' LT TO "FW" 57+93.99, 42.00' RT "FW" 58+89.50, 42.00' LT TO "FW" 58+89.00, 42' RT	REMOVE EXISTING HANDRAIL

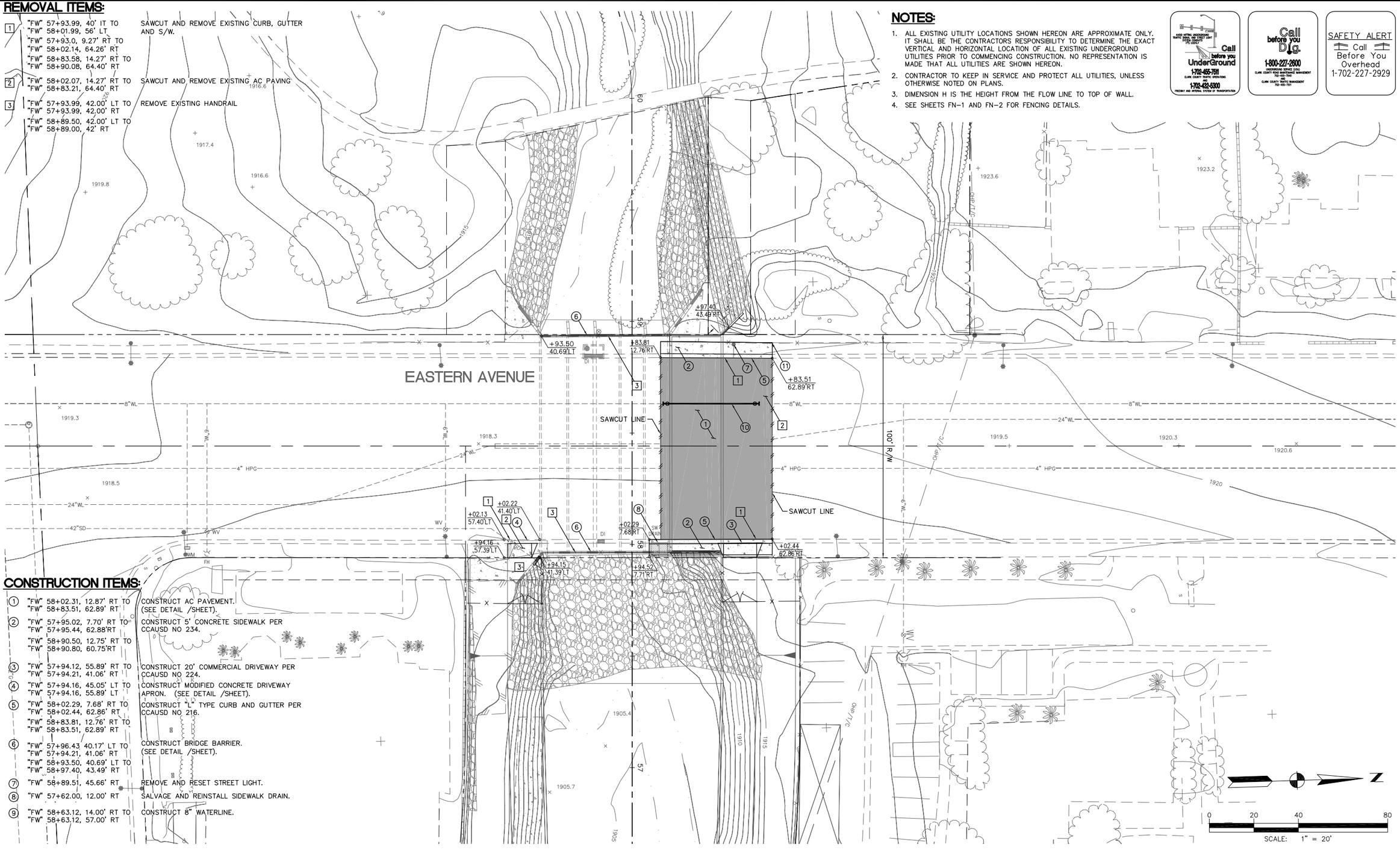
NOTES:

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, UNLESS OTHERWISE NOTED ON PLANS.
3. DIMENSION H IS THE HEIGHT FROM THE FLOW LINE TO TOP OF WALL.
4. SEE SHEETS FN-1 AND FN-2 FOR FENCING DETAILS.

Call before you UnderGround 1-702-486-7511 CLARK COUNTY TRAFFIC OPERATIONS 1-702-455-6300 FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig. 1-800-227-2600 (NEVADA ONE CALL) CLARK COUNTY ROAD MAINTENANCE MANAGEMENT 702-455-7041 CLARK COUNTY TRAFFIC MANAGEMENT 702-455-7511

SAFETY ALERT — Call Before You Overhead 1-702-227-2929



CONSTRUCTION ITEMS:

1	"FW" 58+02.31, 12.87' RT TO "FW" 58+83.51, 62.89' RT	CONSTRUCT AC PAVEMENT. (SEE DETAIL /SHEET).
2	"FW" 57+95.02, 7.70' RT TO "FW" 57+95.44, 62.88'RT "FW" 58+90.50, 12.75' RT TO "FW" 58+90.80, 60.75'RT	CONSTRUCT 5' CONCRETE SIDEWALK PER CCAUSD NO 234.
3	"FW" 57+94.12, 55.89' RT TO "FW" 57+94.21, 41.06' RT	CONSTRUCT 20' COMMERCIAL DRIVEWAY PER CCAUSD NO 224.
4	"FW" 57+94.16, 45.05' LT TO "FW" 57+94.16, 55.89' LT	CONSTRUCT MODIFIED CONCRETE DRIVEWAY APRON. (SEE DETAIL /SHEET).
5	"FW" 58+02.29, 7.68' RT TO "FW" 58+02.44, 62.86' RT "FW" 58+83.81, 12.76' RT TO "FW" 58+83.51, 62.89' RT	CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD NO 216.
6	"FW" 57+96.43 40.17' LT TO "FW" 57+94.21, 41.06' RT "FW" 58+93.50, 40.69' LT TO "FW" 58+97.40, 43.49' RT	CONSTRUCT BRIDGE BARRIER. (SEE DETAIL /SHEET).
7	"FW" 58+89.51, 45.66' RT	REMOVE AND RESET STREET LIGHT.
8	"FW" 57+62.00, 12.00' RT	SALVAGE AND REINSTALL SIDEWALK DRAIN.
9	"FW" 58+63.12, 14.00' RT TO "FW" 58+63.12, 57.00' RT	CONSTRUCT 8" WATERLINE.

REV NO	DATE	DESCRIPTION	APPROVED

CLARK COUNTY NEVADA

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD
EASTERN AVENUE CONSTRUCTION PLAN

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

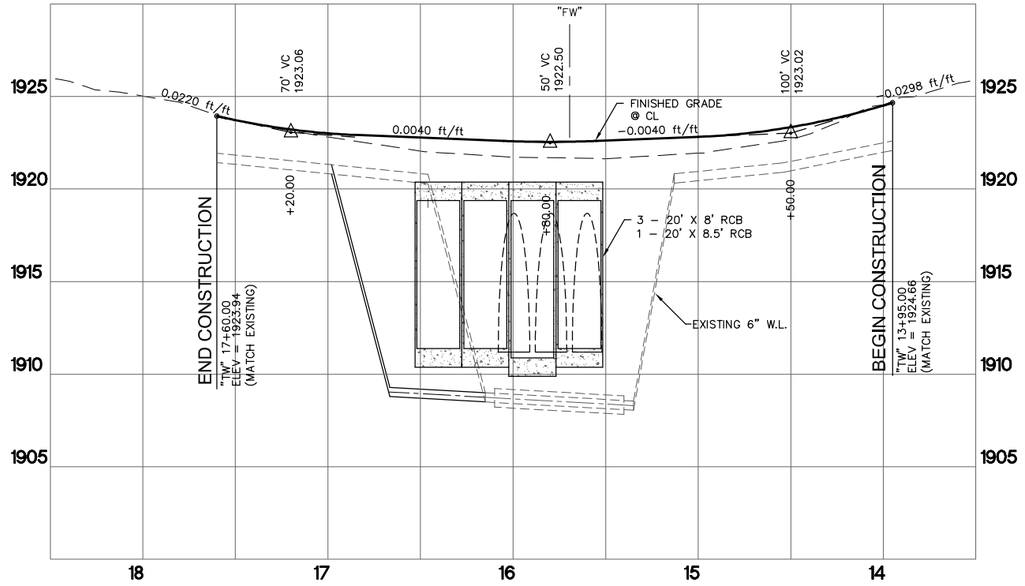
THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-9
SHT OF

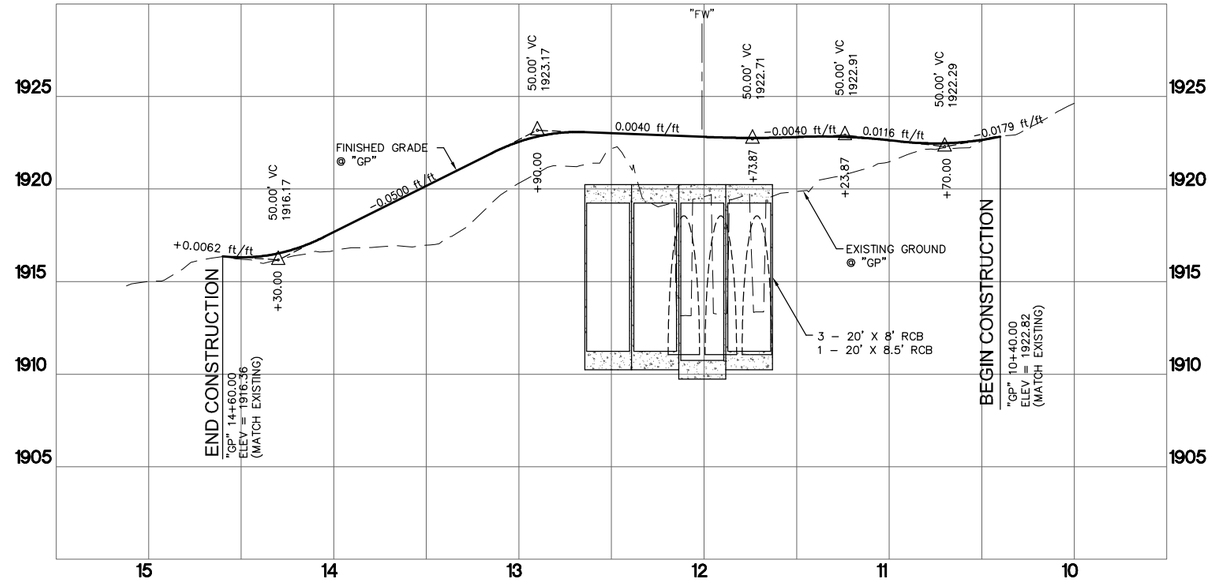
FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

X:\882-Spencer\Construction\882-sd-13.dwg, 8/14/2006 3:00:42 PM, ARB



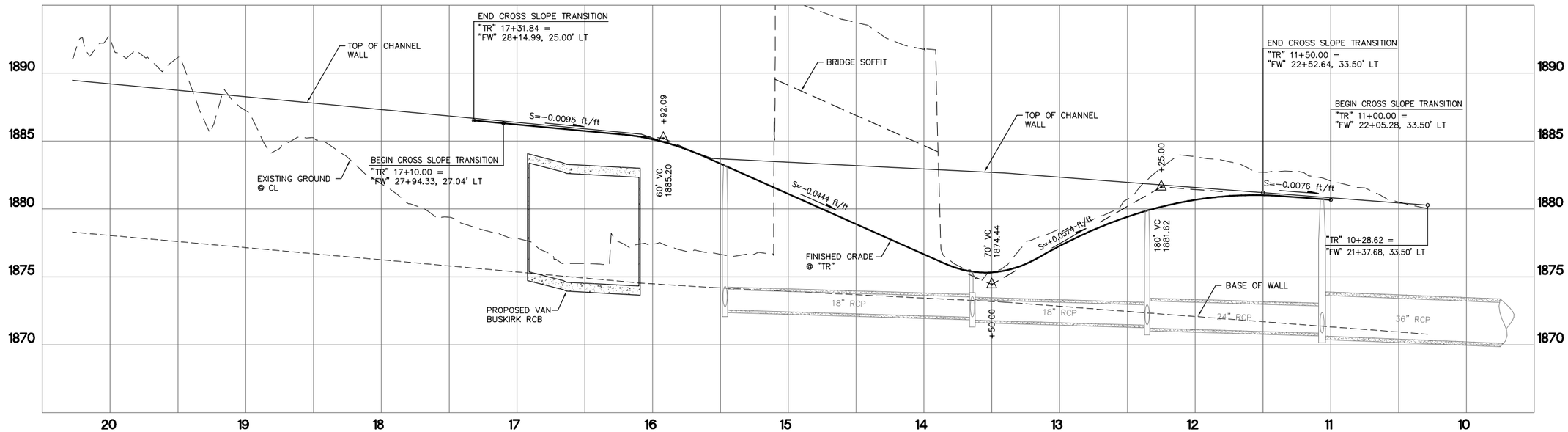
TIOGA WAY

"TW" 13+95.00 TO "TW" 17+60.00
(LOOKING DOWNSTREAM)



GOLF CART PATH

"GP" 10+40.00 TO "GP" 14+60.00
(LOOKING DOWNSTREAM)



BIKE TRAIL

"TR" 10+28.62 TO "TR" 20+30.65

REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

ROADWAY AND TRAIL PROFILES

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY
70% SUBMITTAL
NOT FOR CONSTRUCTION

PROJECT NO: cb 882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

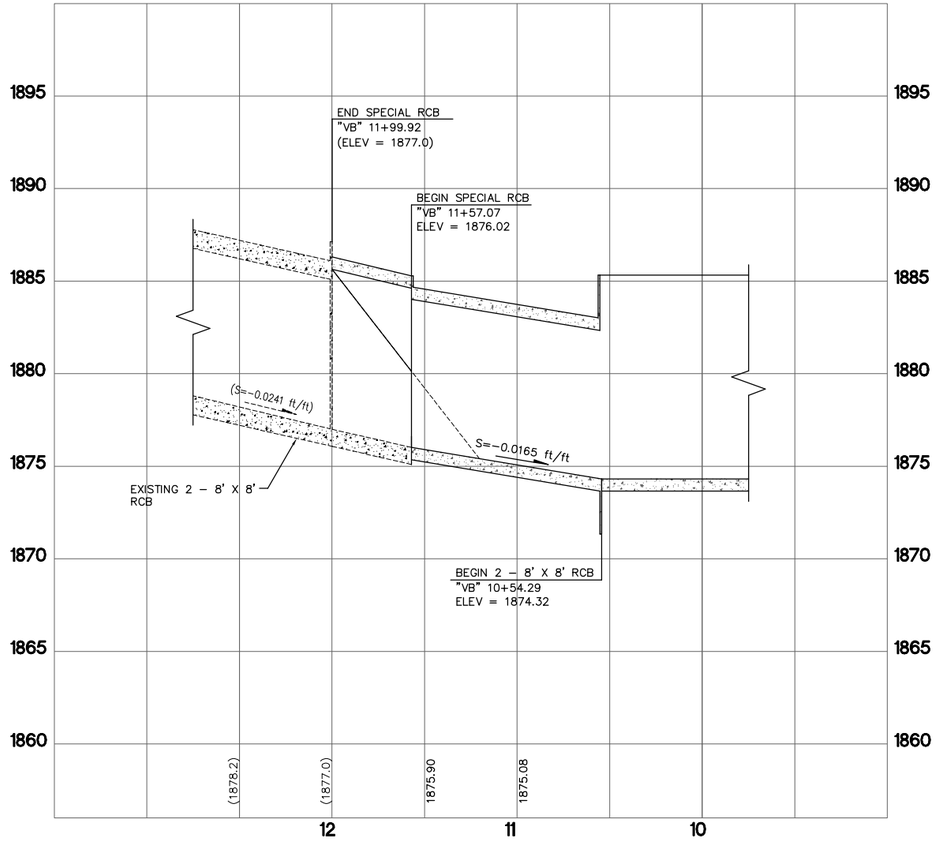
THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-10
SHT OF
L-

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

X:\882-Spencer\Construction\882-sd-11.dwg, 8/14/2006 2:58:40 PM, ARB



0 40 80 160

HORIZONTAL: 1" = 40'
VERTICAL: 1" = 4'

REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH – SPENCER STREET TO DESERT INN ROAD
VAN BUSKIRK BOX EXTENSION
"VB" 10+50.00 TO "VB" 12+00.00

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY
70% SUBMITTAL
NOT FOR CONSTRUCTION

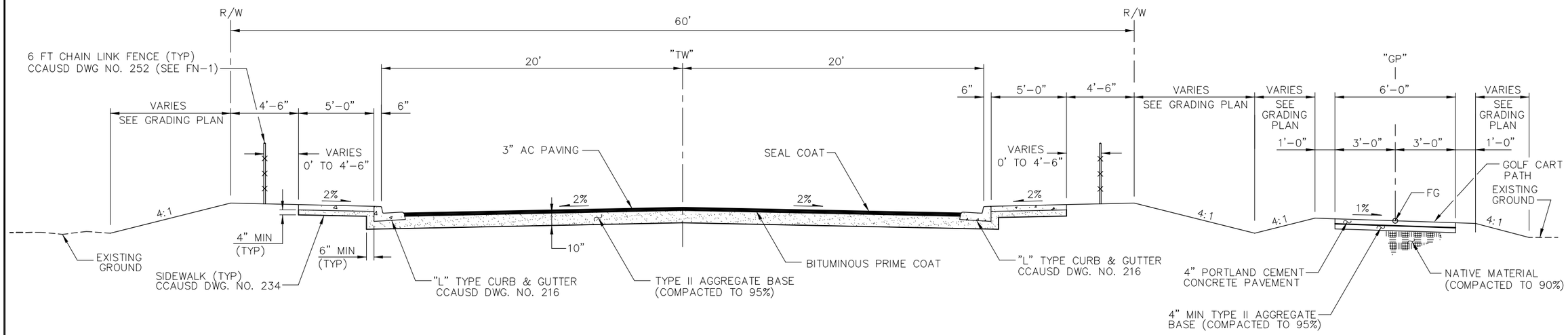
PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

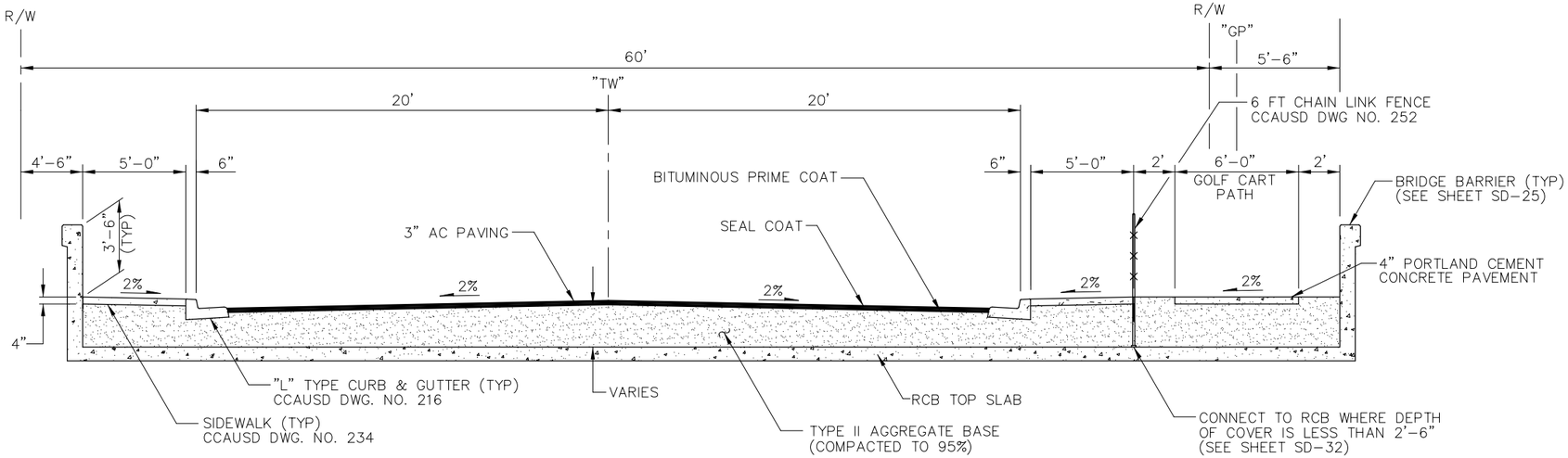
DRAWING NO
SD-11
SHT OF

X:\882-Spencer\Construction\882-sd-12.dwg, 8/14/2006 2:59:34 PM, ARB



A SD-XX **TIOGA TYPICAL ROADWAY SECTION**

NTS "TW" 13+95.00 TO "TW" 15+51.42
"TW" 16+53.16 TO "TW" 17+60.00



B SD-XX **TIOGA TYPICAL ROADWAY SECTION**

NTS "TW" 15+51.42 TO "TW" 16+53.16

REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

DRAINAGE DETAILS

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: WHW
DESIGNED BY: VS CHECKED BY: SJD
APPROVED BY TDL

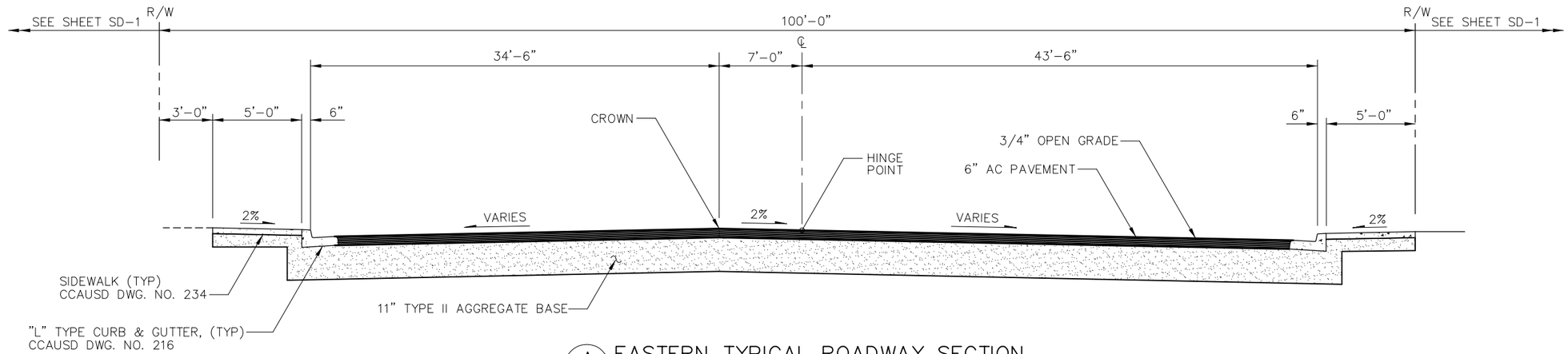
THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-17
SHT OF
L-

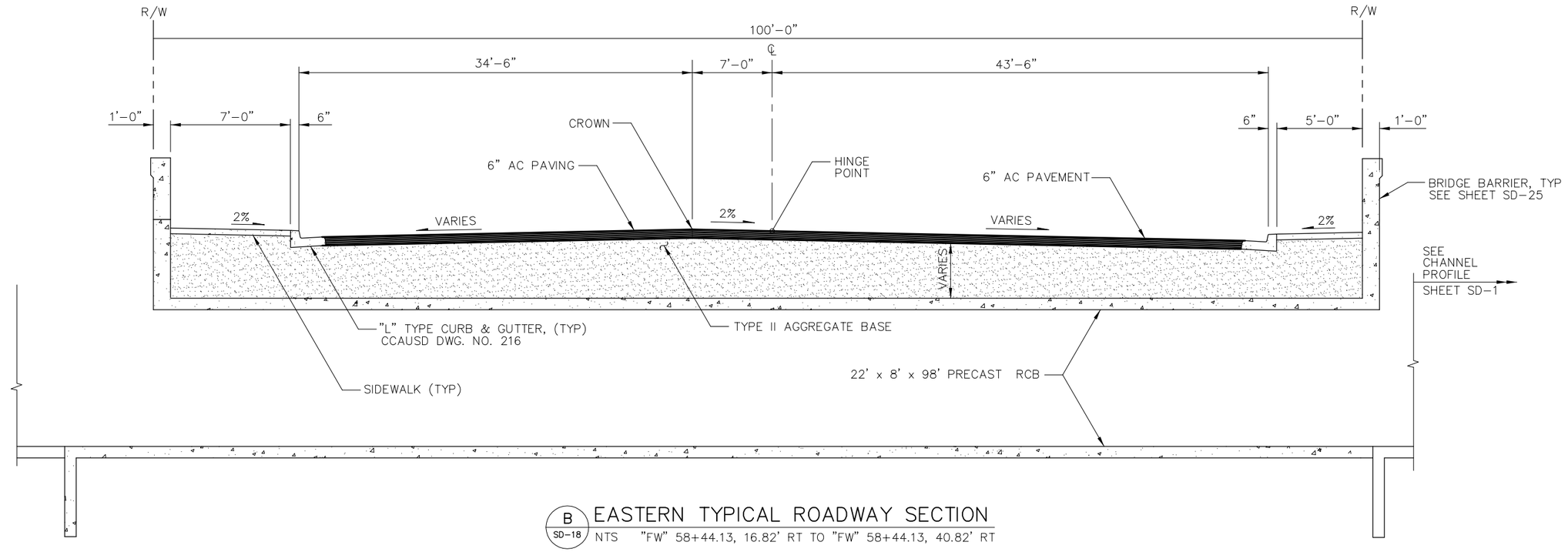
FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

X:\882-Spencer\Drainage\Details\882-DR-Z-17.dwg, 8/14/2006 3:02:14 PM, ARB



A SD-18 EASTERN TYPICAL ROADWAY SECTION

NTS "FW" 58+44.13, 12.82' RT TO "FW" 58+44.13, 16.82' RT
"FW" 58+44.13, 40.82' RT TO "FW" 58+44.13, 62.88' RT



B SD-18 EASTERN TYPICAL ROADWAY SECTION

NTS "FW" 58+44.13, 16.82' RT TO "FW" 58+44.13, 40.82' RT

REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

DRAINAGE DETAILS

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: WHW
DESIGNED BY: VS CHECKED BY: SJD
APPROVED BY TDL

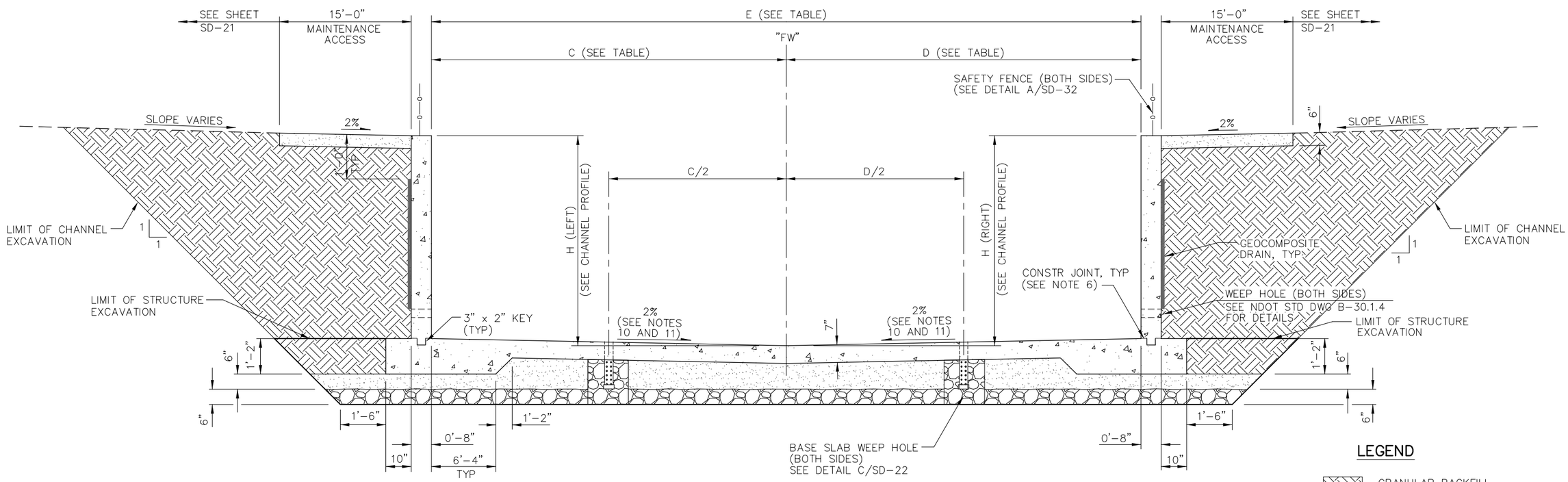
THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-18
SHT OF
L-

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

X:\882-Spencer\Drainage\Details\882-DR-DT-06.dwg, 8/14/2006 3:02:55 PM, ARB



LEGEND

- GRANULAR BACKFILL (COMPACTED TO 90%)
- TYPE II AGGREGATE BASE (COMPACTED TO 95%)
- 3/4" DRAIN BACKFILL

A SD-19 FLAMINGO WASH RECTANGULAR CONCRETE CHANNEL

NTS

NOTES:

1. GEOCOMPOSITE DRAIN SHALL BE CONTECH C-DRAIN 11K OR EQUIVALENT AND INSTALLATION WILL BE CONTINUOUS ALONG THE LENGTH OF THE VERTICAL WALL.
2. SEE GENERAL DRAINAGE NOTES SHEET SD-29.
3. DIMENSIONS H (LEFT) AND H (RIGHT) ARE THE HEIGHT FROM THE FLOW LINE TO THE TOP OF WALL FOR THE LEFT AND RIGHT WALLS OF THE CHANNEL, RESPECTIVELY.
4. CROSS SECTION IS SHOWN FACING UPSTREAM.
5. NO LONGITUDINAL JOINTS ARE TO BE CONSTRUCTED IN CHANNEL FLOOR SLAB.
6. THE CONTRACTOR MAY, AT HIS OPTION, CONSTRUCT A STEM WALL 6" ABOVE CHANNEL BOTTOM SLAB THAT IS POURED MONOLITHICALLY WITH CHANNEL BOTTOM SLAB. WEEPHOLE MAY THEN BE PLACED ABOVE KEYED CONSTRUCTION JOINT.
7. NO TRANSVERSE CONSTRUCTION JOINTS ARE TO BE PERMITTED IN THE CHANNEL FLOOR SLAB. END OF DAY POUR SHALL COINCIDE WITH AN EXPANSION JOINT LOCATION AS SHOWN ON THE CHANNEL PROFILE.
8. SEE SHEETS SD-24 AND SD-25 FOR JOINT DETAILS.
9. TRANSITION FROM 2% CROSS SLOPE TO FLAT BOTTOM FROM STATION "FW" 56+45.85 TO "FW" 57+95.99 TO MATCH EXISTING CULVERT.
10. TRANSITION FROM FLAT BOTTOM TO 2% CROSS SLOPE FROM STATION "FW" 10+99.94 TO "FW" 12+14.54 TO MATCH EXISTING CULVERT
11. ALL FILL AREAS OUTSIDE THE CHANNEL RIGHT-OF-WAY SHALL BE BACKFILLED WITH GRANULAR BACKFILL COMPACTED TO 95% OF THE FINISHED GRADES DEPICTED ON THE PLANS.
12. WEEPHOLES SHOULD BE INSTALLED ALONG BOTH SIDES OF THE CHANNEL 1' ABOVE THE INVERT AT 20' SPACING.

TABLE

STATION	C	D	E
"FW" 10+87.79 TO "FW" 10+99.94	27.36'	N/A	54.72'
"FW" 10+99.94 TO "FW" 12+14.54	VARIES	VARIES	VARIES
"FW" 12+14.54 TO "FW" 26+48.52	25.00'	25.00'	50.00'
"FW" 26+48.52 TO "FW" 27+03.87	VARIES	25.00'	VARIES
"FW" 27+03.87 TO "FW" 34+00.00	16.50'	16.50'	33.00'
"FW" 34+00.00 TO "FW" 36+00.00	VARIES	VARIES	VARIES
"FW" 36+00.00 TO "FW" 52+79.92	25.00'	25.00'	50.00'
"FW" 52+79.92 TO "FW" 54+45.78	VARIES	VARIES	VARIES
"FW" 54+45.78 TO "FW" 56+48.42	37.50'	37.50'	75.00'
"FW" 56+48.42 TO "FW" 57+37.74	VARIES	VARIES	VARIES
"FW" 57+37.74 TO "FW" 57+95.99	39.88'	39.88'	79.77'

REV NO	DATE	DESCRIPTION	APPROVED

CLARK COUNTY NEVADA

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

DRAINAGE DETAILS

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: WHW
DESIGNED BY: VS CHECKED BY: SJD
APPROVED BY TDL

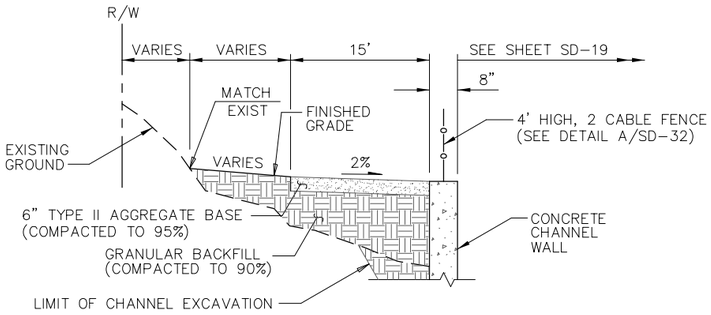
THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Las Vegas, Nevada 89119
Voice: 702-736-6632 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

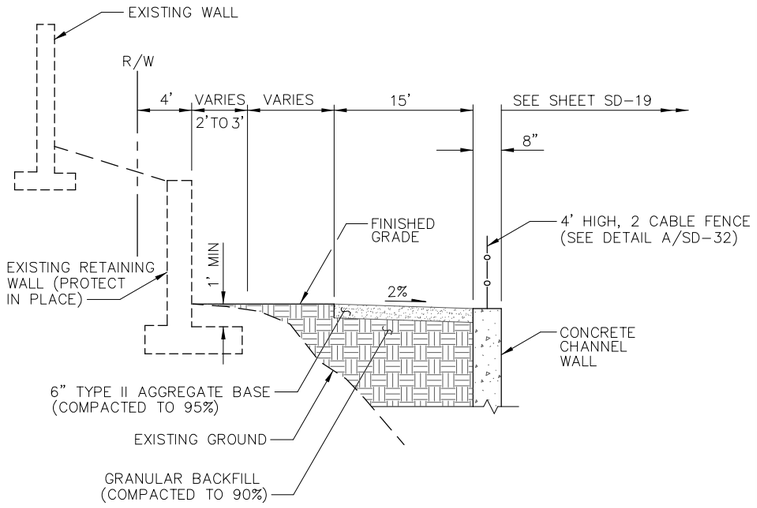
DRAWING NO
SD-19
SHT OF

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

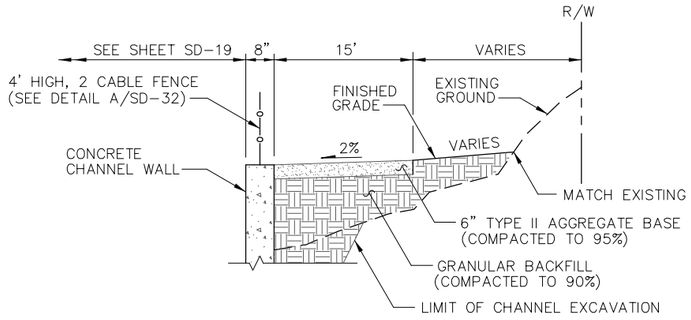
X:\882-Spencer\Drainage\Details\882-DR-DT-02.dwg, 8/14/2006 3:03:45 PM, ARB



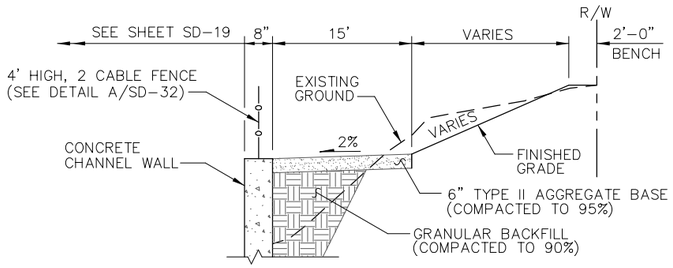
DETAIL 1
NTS
"FW" 28+40 TO "FW" 29+40
"FW" 10+38 TO "FW" 18+50



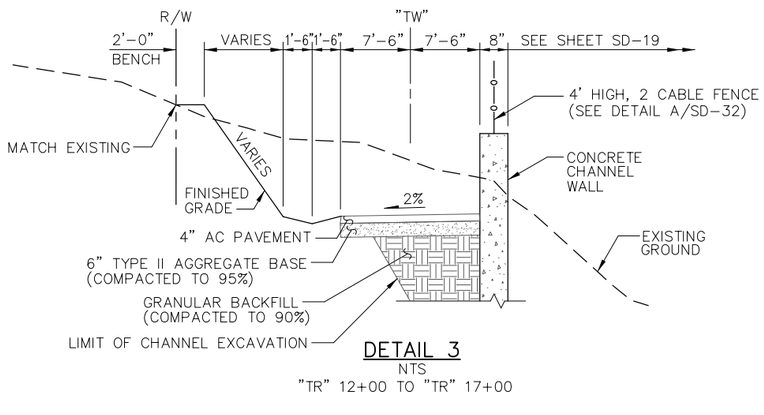
DETAIL 4
NTS
"FW" 29+90 TO "FW" 35+60



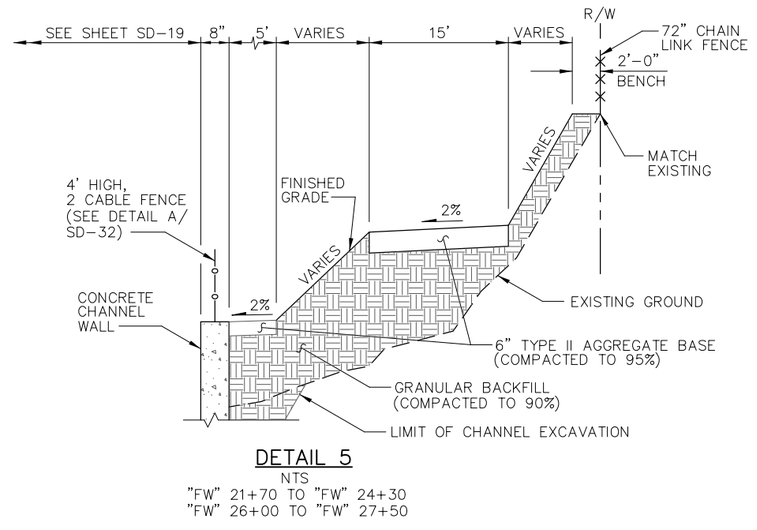
DETAIL 6
NTS
"FW" 25+50 TO "FW" 26+00



DETAIL 7
NTS
"FW" 12+00 TO "FW" 21+68
"FW" 35+15 TO "FW" 40+00
"FW" 45+25 TO "FW" 57+96



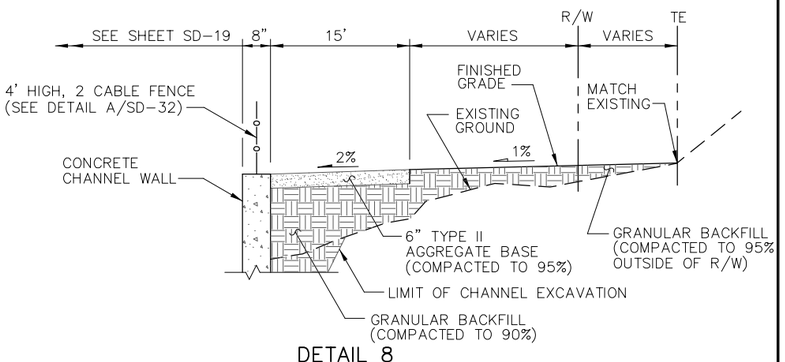
DETAIL 3
NTS
"TR" 12+00 TO "TR" 17+00



DETAIL 5
NTS
"FW" 21+70 TO "FW" 24+30
"FW" 26+00 TO "FW" 27+50

NOTE:

DETAILS 1 THROUGH 8 ARE SHOWN FACING UPSTREAM.



DETAIL 8
NTS
"FW" 27+50 TO "FW" 35+15
"FW" 40+00 TO "FW" 45+25

REV NO	DATE	DESCRIPTION	APPROVED

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

DRAINAGE DETAILS

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO:	CB882	DRAWN BY:	ARB
DESIGNED BY:	TWC	CHECKED BY:	FR
APPROVED BY	SJD		

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

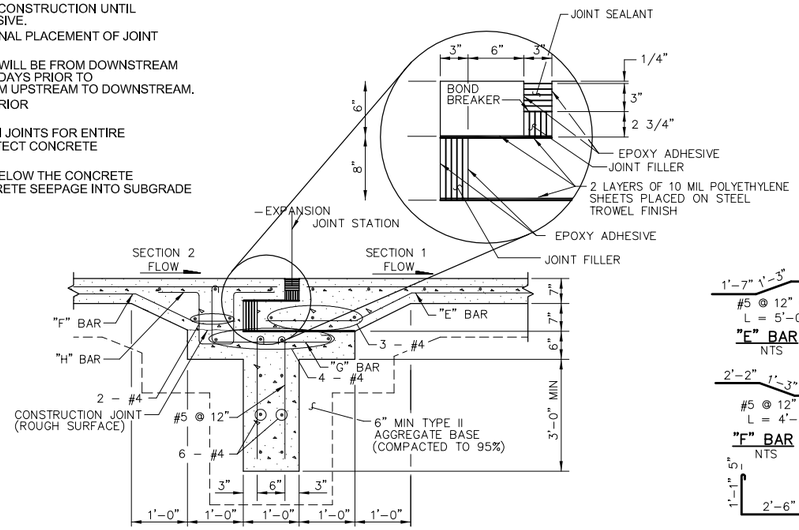
SCALE	
HORIZ: AS NOTED	
VERT: AS NOTED	
FIELD BOOK	

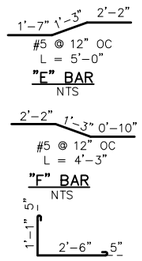
DRAWING NO
SD-20
SHT OF
L-

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

X:\882-Spencer\Drainage\Details\882-DR-DT-20.dwg, 8/14/2006 3:04:55 PM, ARB

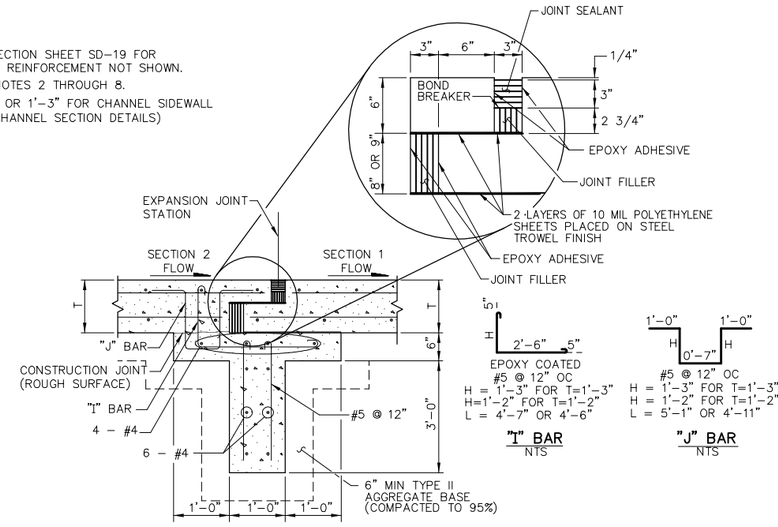
NOTES:
1. SEE CHANNEL SECTION DETAILS SD-X AND SD-X FOR DIMENSIONS AND REINFORCEMENT NOT SHOWN.
2. JOINT SHALL BE SANDBLASTED CLEAN AND DRY PRIOR TO JOINT SEALANT AND MATERIAL APPLICATION.
3. NO WATER SHALL DRAIN INTO JOINT BUILT OR UNDER CONSTRUCTION UNTIL FINAL PLACEMENT OF JOINT FILLER AND EPOXY ADHESIVE.
4. DEWATERING OPERATIONS SHALL CONTINUE UNTIL FINAL PLACEMENT OF JOINT SEALANT AND EPOXY ADHESIVE.
5. EXPANSION JOINT DESIGN ASSUMES CONSTRUCTION WILL BE FROM DOWNSTREAM TO UPSTREAM. THE ENGINEER SHALL BE NOTIFIED 30 DAYS PRIOR TO CONSTRUCTION IF CONSTRUCTION IS TO OCCUR FROM UPSTREAM TO DOWNSTREAM.
6. WIDTH OF JOINT SEALANT MATERIAL SHALL BE 3 3/4" PRIOR TO INSTALLATION INTO 3" WIDE OPENING.
7. STEEL PLATES SHALL BE PLACED ACROSS EXPANSION JOINTS FOR ENTIRE WIDTH OF CHANNEL DURING CONSTRUCTION TO PROTECT CONCRETE EDGES AND JOINT SEALANT.
8. CONTRACTOR SHALL ENSURE THAT THE SUBGRADE BELOW THE CONCRETE CHANNEL IS COMPACTED TO 95% TO PREVENT CONCRETE SEEPAGE INTO SUBGRADE NEAR THE JOINT.





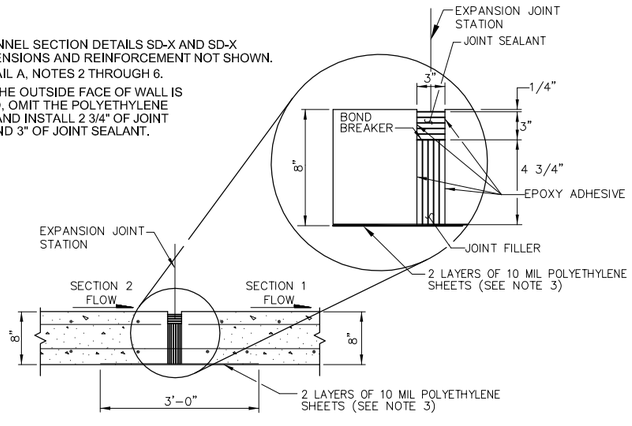
A SD-21 EXPANSION JOINT W/CUT-OFF FOR CHANNEL FLOOR SLAB
NTS

NOTES:
1. SEE CHANNEL SECTION SHEET SD-19 FOR DIMENSIONS AND REINFORCEMENT NOT SHOWN.
2. SEE DETAIL A, NOTES 2 THROUGH 8.
3. T EQUALS 1'-2" OR 1'-3" FOR CHANNEL SIDEWALL FOOTING. (SEE CHANNEL SECTION DETAILS)



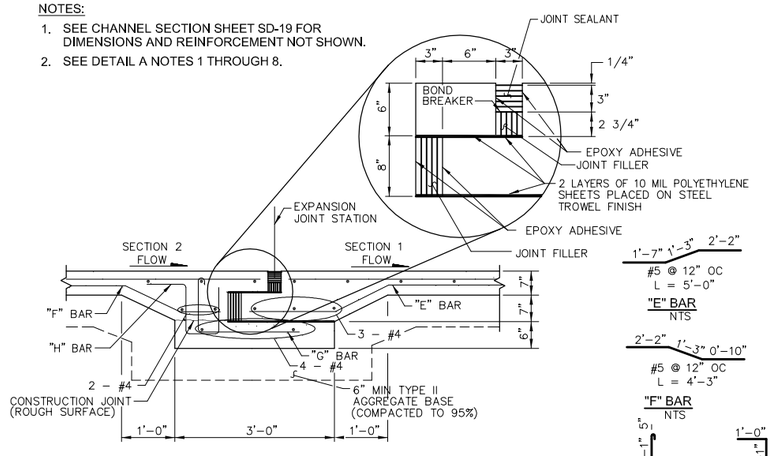
B SD-21 EXPANSION JOINT W/CUT-OFF FOR CHANNEL SIDE WALL FOOTINGS AND CENTER PIER FOOTINGS
NTS

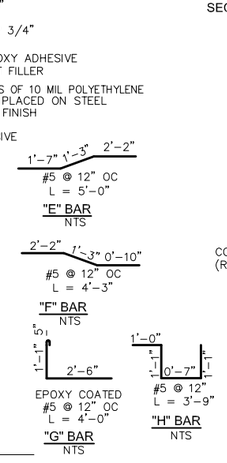
NOTES:
1. SEE CHANNEL SECTION DETAILS SD-X AND SD-X FOR DIMENSIONS AND REINFORCEMENT NOT SHOWN.
2. SEE DETAIL A, NOTES 2 THROUGH 6.
3. WHERE THE OUTSIDE FACE OF WALL IS EXPOSED, OMIT THE POLYETHYLENE SHEETS AND INSTALL 2 3/4" OF JOINT FILLER AND 3" OF JOINT SEALANT.



C SD-21 EXPANSION JOINT CHANNEL SIDE WALL
NTS

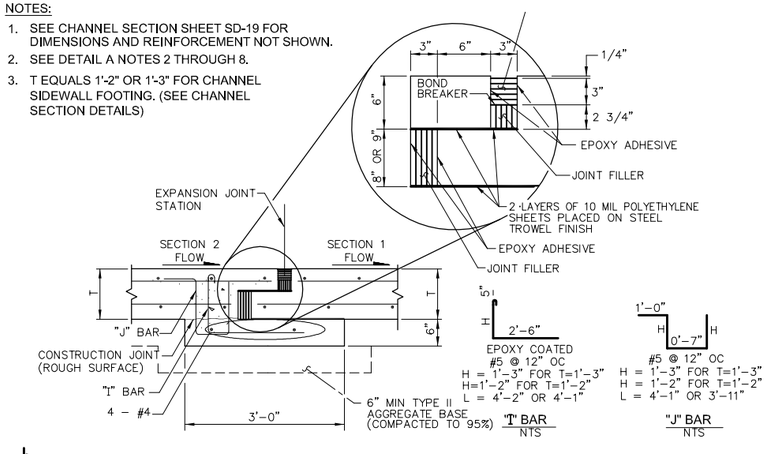
NOTES:
1. SEE CHANNEL SECTION SHEET SD-19 FOR DIMENSIONS AND REINFORCEMENT NOT SHOWN.
2. SEE DETAIL A NOTES 1 THROUGH 8.





D SD-21 EXPANSION JOINT WITHOUT CUTOFF FOR CHANNEL FLOOR SLAB
NTS

NOTES:
1. SEE CHANNEL SECTION SHEET SD-19 FOR DIMENSIONS AND REINFORCEMENT NOT SHOWN.
2. SEE DETAIL A, NOTES 2 THROUGH 8.
3. T EQUALS 1'-2" OR 1'-3" FOR CHANNEL SIDEWALL FOOTING. (SEE CHANNEL SECTION DETAILS)



E SD-21 EXPANSION JOINT WITHOUT CUTOFF FOR CHANNEL SIDE WALL FOOTINGS
NTS

REV NO	DATE	DESCRIPTION	APPROVED

CLARK COUNTY NEVADA

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

DRAINAGE DETAILS

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PRELIMINARY 70% SUBMITTAL NOT FOR CONSTRUCTION

PROJECT NO: CB882 DRAWN BY: ARB
DESIGNED BY: TWC CHECKED BY: FR
APPROVED BY SJD

THE Louis Berger Group, INC.
500 E. Amigo Court, Suite 100 Voice: 702-736-6632
Las Vegas, Nevada 89119 Fax: 702-736-0704

SCALE
HORIZ: AS NOTED
VERT: AS NOTED
FIELD BOOK

DRAWING NO
SD-21
SHT OF
L-

FLAMINGO WASH - SPENCER STREET TO DESERT INN ROAD

X:\882-Spencer\Drainage\Details\882-DR-DT-21.dwg, 8/14/2006 3:06:25 PM, ARB

CD ROM

Flamingo Wash at Spencer Street LOMR

- Flamingo Wash at Spencer Street LOMR Post Project Conditions HECRAS Model
- Flamingo Wash at Spencer Street LOMR Workmap

Flamingo Wash at Mojave Road to Boulder Highway LOMR

- Flamingo Wash at Mojave Road to Boulder Highway LOMR Post Project Conditions HECRAS Model
- Flamingo Wash at Mojave Road to Boulder Highway LOMR Workmap

Proposed Hydraulic Model

- Proposed Subcritical HECRAS Model
- Proposed Supercritical HECRAS Model
- CHECK-RAS Output Files
- Hydraulic Workmap

Appendix E