06-09-B663P

LOMR

Mission Drive Conveyance System

FEMA

LETTER OF MAP REVISION APPLICATION

MARCH 2006

vtn nevada

2727 S. Rainbow Boulevard, Las Vegas, Nevada 89146

Request for Letter of Map Revision
Mission Drive Conveyance System
Clark County, Nevada

Prepared for:

CITY OF HENDERSON
240 Water Street
Henderson, Nevada 89009

Prepared by:

VTN Nevada
2727 S. Rainbow Boulevard
Las Vegas, Nevada 89146
(702) 247-4020

vtn nevada

March 2006

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1.0 INTRODUCTION

The purpose of this Letter of Map Revision (LOMR) is to analyze and address a needed revision to the C-1 Channel Watershed flood zone, in City of Henderson, Nevada, Clark County Zone A. This analysis provides documentation that demonstrates that the post-improvement conditions no longer warrants some of the flood zone delineations shown on the existing FIRM Panel 2615 dated, September 27, 2002. Due to the expanding development in this area for both residential and commercial sectors, necessary flood control facilities have been installed to accommodate the expanding growth. The flood control facility now in place is a 6'x6' RCB along Greenway Road from Paradise Hills to Mission Drive. The RCB outlets into the existing flood control channel along I-515. Flood control facilities along Greenway Road can be found in Mission Drive/Greenway Road Improvements (Paradise Hills to Greenway Road to College Drive), by VTN Nevada Final Drainage Design February 2004. With new flood control facilities in place current flood zone and floodplain areas are no longer current with today's urbanization.

Refer to Figure 1.0 Area/Vicinity Map for an overall view of the project area.

This LOMR request will analyze a portion of the Mission Drive flood zone, and will demonstrate that the future conditions no longer require certain flood zone delineations that are shown on the current effective FEMA FIRM Panel 2615 dated, September 27, 2002.

2.0 HYDROLOGY

The *HEC-1 Flood Hydrograph Computer Model* was developed by the U.S. Army Corps of Engineers Hydrologic Engineering Center in the late 1970's, and then adopted by the *CCRFCD Hydrologic Criteria and Drainage Design Manual* in 1999 for rainfall and runoff predictions. The model is used to simulate the surface runoff response of a watershed to a design rainfall event. Each subbasin in the watershed is described by a set of parameters that specify the subbasin drainage and storm characteristics. These basin parameters include precipitation, basin area, curve number, and lag time.

To use the HEC-1 computer model, the drainage system in a watershed is converted into a node-link type of system. A node is placed at the subbasin outlet or at the design point along the water course. Links between nodes represent conveyance elements in the drainage system. Hydrographs are computed for each subbasin and are placed at the subbasin outlet node. These hydrographs are then routed and/or combined according to the drainage basin network configuration through links. The DARF (Depth Area Reduction Factor) is known at each design point and is used to determine the peak flow at the design point depending on the contributing area.

Pre-Project Conditions – HEC-1

Prior to Mission Drive/Greenway Road Improvements, during a 100-yr storm runoff contributing flow from subbasins, C1G2B1, C1G2B2, & C1G2A (see Figure 1.1) would flow down the natural channel into what is now the current FEMA flood zone. Design flows for Mission Drive Pre-Project conditions (Effective/Corrective Model), was modeled after the C1 Channel FIS Hydrology Study by Carter Burgess and was used for the Pre-Project Condition HEC-RAS.

Since there are three contributing subbasins to the Pre-Project condition there are three flow design points that are used to model the Pre-Project HEC-RAS condition taken from C1 Channel FIS Hydrology Study by Carter Burgess , HEC-1 design point C1G2B1 (286 cfs) which contains the flow from its respective subbasin, design point CP7B (490 cfs) which includes subbasin C1G2B2 routed & combined with subbasin C1G2B1, and finally CP7C (799 cfs) which includes subbasins C1G2B1, C1G2B2 & C1G2A.

Post-Project Conditions – HEC-1

Design flows that was used for modeling was derived from C1 Channel FIS Hydrology Study, but was modified to meet Post-Project Conditions. Subbasins C1G2B1, & C1G2B2 were delineated to account for Mission Drive Improvements Post-Project Conditions. C1G2B1 was split up into two subbasins C1G2B0 & C1G2B1, since all of the flow from C1G2B1, is collected within the Mission Drive/Greenway Road System, the remaining area east of Greenway Road becomes subbasin C1G2B0. Subbasin C1G2B2 was delineated based on inspection of 5-foot contours which resulted in subbasins C1G2B2, C1G2B3, C1G2B4, & C1G2B5 (see Figure 1.2). New areas, CN & Lag times were calculated for all new subbasin delineations which are included in Appendix C.

There are seven contributing subbasins to the Post-Project condition, there are four HEC-1 flow design points, design point C1G2B0 (157 cfs) which contains the flow from its respective subbasin, design point CP1 (166 cfs) which includes subbasin C1G2B0 routed & combined with subbasin C1G2B4, design point CP2 (204 cfs) which includes subbasin C1G2B0, & C1G2B4 routed & combined with subbasin C1G2B3, and finally CP7C (602 cfs) which includes design point CP2 & subbasins C1G2B5, C1G2B1, C1G2B2 & C1G2A.

3.0 HYDRAULICS

Pre-Project Conditions – HEC-RAS

Pre-Project conditions analysis was modeled using HEC-RAS, which determined flood zone conditions before Mission Drive Improvements. Design flows that was used for modeling was taken from Mission Drive Pre-Development Conditions, HEC-1 run that was modeled after the C1 Channel FIS Hydrology Study. Cross sections that was used were based on 2-foot contours & grading plans, that were cut at 100-foot stations for analysis purposes. See Appendix D for Pre-Project HEC-RAS input & output conditions.

Post-Project Conditions – WSPG

Hydraulic modeling for Mission Drive was calculated using WSPG, in conformance with local standards as CCRFCD Hydrologic Criteria & Drainage Design Manual. The WSPG model input & output that was used, was taken from Mission Drive/Greenway Road Improvements; Final Drainage Report, February 2004, submitted by VTN Nevada which can be found in Appendix D, where 606 cfs was used in designing the storm drain facilities on Greenway Road. The flow cut-off in the Post-Project conditions that is used for this LOMR is only 224 cfs. Storm Drain Plan & Profiles from Mission Drive/Greenway Road Improvements can also be found in Appendix D.

Post-development Conditions – HEC-RAS

Post development conditions analysis was modeled using HEC-RAS, which determined that supercritical flow is maintained within the specified project length. Design flows that was used for modeling was derived from C1 Channel FIS Hydrology Study, but was modified to meet Post-Development Conditions. Cross sections that was used were based on 2-foot contours & grading plans, that were cut at 200-foot stations for analysis purposes. See Appendix D for Post-Development HEC-RAS input & output conditions.

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4.0 RESULTS

Mission Drive LOMR HEC-RAS Results Plan: 022606
Post-Project

River Sta.	Cross Section Sta.	Q Total (cfs)	W.S. Elev (ft)	Hydr Depth (ft)
48	0+100	157	2383.5	0.91
46	0+300	157	2375.17	0.74
44	0+500	157	2363.31	0.74
42	0+700	157	2355.5	1.01*
40	0+900	157	2351.26	0.89
37	1+200	157	2344.78	1.1*
36	1+300	157	2341.02	0.95
34	1+500	157	2336.62	0.56
32	1+700	157	2330.63	0.57
30	1+900	157	2325.52	0.76
28	2+100	157	2320.99	0.76
26	2+300	166	2314.76	0.82
24	2+500	166	2308.93	0.82
22	2+700	166	2304.34	0.73
20	2+900	166	2298.67	0.54
19	3+000	204	2292.39	0.4
18	3+100	204	2287.56	1.07*
17	Culvert	Culvert		
16	3+300	204	2284.64	1.11*
15	3+400	204	2281.07	0.61
14	3+500	204	2277.39	1.03*
12	3+700	602	2267.97	1.38*
10	3+900	602	2266.85	1.03*
8	4+100	602	2263.19	1.1*
6	4+300	602	2259.8	1.03*
4	4+500	602	2256.24	1.92*
2	4+700	602	2255.94	2.18*
1	4+729	602	2255.07	1.58*

*Note: Stations with Hydraulic Depth > 1'

5.0 CONCLUSION

Based on the data and calculations shows that the existing FEMA FIRM Panel 2615 dated, September 27, 2002 needs to be revised to meet current effective flood zone delineations. See Figure 2.3, Appendix A to view the annotated FEMA flood zone map. Figure 2.5, shows the proposed revision to the existing flood zone delineations.

6.0 REFERENCES

1. Clark County Regional Flood Control District, *Hydraulic Criteria and Drainage Design manual*, August 1999.
2. Clark County Regional Flood Control District, *Flood Control Master Plan Update of the Las Vegas Valley*, 2002. – by PBS&J, G.C. Wallace, and Louis Berger Group
3. Flood Hydrograph Package (HEC-1) User Manual, Sept 1990
4. Water Surface and Pressure Gradient Hydraulic Analysis System (WSPG) User Manual, Apr 1979
5. Drainage Study of Paradise Hills Development, Pentacore, 1995 – 2000
6. Mission Drive/Greenway Road : Roadway Improvements / Final Drainage Report, VTN Nevada, Feb 2004
7. C-1 Channel System Flood Insurance Restudy, Carter & Burgess & Southwest Fluvial System, Nov 2002

APPENDIX A

FEMA FORMS

FEMA 'OVERVIEW & CONCURRENCE FORM'

– MT-2 FORM 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

OVERVIEW & CONCURRENCE FORM

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

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

A. REQUESTED RESPONSE FROM FEMA

This request is for a (check one):

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

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

B. OVERVIEW

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

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301 480287	City of Katy Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 09/28/90
320005	CITY OF HENDERSON CLARK COUNTY, UNINCORPORATED AREAS	NV	32003C	2955E	11/06/03
320003	CITY OF HENDERSON CLARK COUNTY				

2. Flooding Source: C1 CHANNEL / C1 DETENTION BASIN

3. Project Name/Identifier: MISSION DRIVE

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

5. Basis for Request and Type of Revision:

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

   ☒ Physical Change ☒ Improved Methodology/Data

   ☐ Regulatory Floodway Revision ☐ Other (Attach Description)

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

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

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

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☒ Yes Fee amount: $4,400

☐ 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: Jeremy Leavitt, P.E.	Company: VTN Nevada	
Mailing Address: 2727 S. Rainbow Blvd. Las Vegas, Nevada 89146	Daytime Telephone No.: 702 253-2359	Fax No.: 702 247-4262
	E-Mail Address: jeremyl@vtnnv.com	
Signature of Requester (required):		Date: 02/27/06

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: JOSEPH DAMIANI, P.E. PROJECT MANAGER		Telephone No.: 702 267-3050
Community Name: City of Henderson	Community Official's Signature (required): Joseph V. Damiani	Date: 3-01-2006

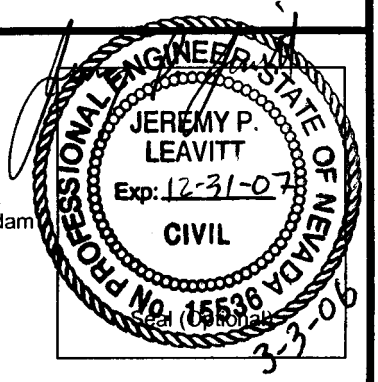
CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

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: Jeremy Leavitt, P.E.	License No.: NV 15536	Expiration Date: 12-31-07
Company Name: VTN Nevada	Telephone No.: 702 253-2359	Fax No.: 702 247-4262
Signature:		Date: 02/27/06

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



FEMA 'RIVERINE HYDROLOGY & HYDRAULICS FORM'

– MT-2 FORM 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

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

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: C-1 WATERSHED
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)
MISSION GREENWAY FLOOD ZONE A	1.15	799	602

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	Existing Wash	3+900	2267.52	2266.85
Upstream Limit	Existing Channel	0+500	2363.42	2363.19

2. Hydraulic Method Used

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

B. HYDRAULICS (CONTINUED)

3. Pre-Submittal Review of Hydraulic Models

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

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

4. Models Submitted

Duplicate Effective Model*	Natural File Name: N/A		Floodway File Name:
Corrected Effective Model*	Natural File Name: N/A		Floodway File Name:
Existing or Pre-Project Conditions Model	Natural File Name: SDN3.dat,022206.prj		Floodway File Name:
Revised or Post-Project Conditions Model	Natural File Name: missiond.dat, 022606 .prj		Floodway File Name:
Other - (attach description)	Natural File Name: VTN3.dat		Floodway File Name:

(WSPG) Mission Drive/Greenway Rd Improvements

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

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

C. MAPPING REQUIREMENTS

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

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

D. COMMON REGULATORY REQUIREMENTS

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

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:
- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

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

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

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

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

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

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

FEMA 'HYDRAULIC STRUCTURES FORM'
– MT-2 FORM 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

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

PAPERWORK REDUCTION ACT

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Flooding Source: C-1 WATERSHED
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: Mission Drive 7'x4' RCB**

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

   Location of Structure: Crossing Mission Drive

   Downstream Limit/Cross Section: 3+100

   Upstream Limit/Cross Section: 3+300

2. **Name of Structure: Mission Drive / Greenway Road Improvements**

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

   Location of Structure: Greenway Road

   Downstream Limit/Cross Section: 10+00

   Upstream Limit/Cross Section: 40+00

3. **Name of Structure:**

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

   Location of Structure:

   Downstream Limit/Cross Section:

   Upstream Limit/Cross Section:

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

B. CHANNELIZATION

Flooding Source: C-1 WATERSHED

Name of Structure: Mission Drive / Greenway Road Improvements

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): RCB
- ☐ 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 630 (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. N/A

C. BRIDGE/CULVERT

Flooding Source: C-1 WATERSHED

Name of Structure: Mission Drive 7'x4' RCB

1. This revision reflects (check one):

- ☒ New bridge/culvert not modeled in the FIS
- ☐ Modified bridge/culvert previously modeled in the FIS
- ☐ New analysis of bridge/culvert previously modeled in the FIS

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

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

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

4. Sediment Transport Considerations

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

D. DAM

Flooding Source: PAGES 3-10 NOT APPLICABLE

Name of Structure:

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

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

   ☐ Private organization Name of the agency or organization:

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

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

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

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

5. Does the Base Flood Elevation behind the dam or downstream of the dam change?

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

Stillwater Elevation Behind the Dam

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

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

E. LEVEE/FLOODWALL

1. System Elements

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

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

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

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

c. Structural Type (check one):

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

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

☐ Yes ☐ No

If Yes, by which agency?

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

1. Plan of the levee embankment and floodwall structures. Sheet Numbers:

2. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system. Sheet Numbers:

3. A profile of the BFE, closure opening outlet and inlet invert elevations, type and size of opening, and kind of closure. Sheet Numbers:

4. A layout detail for the embankment protection measures. Sheet Numbers:

5. Location, layout, and size and shape of the levee embankment features, foundation treatment, floodwall structure, closure structures, and pump stations. Sheet Numbers:

2. Freeboard

a. The minimum freeboard provided above the BFE is:

Riverine

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

Coastal

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

2. Freeboard (continued)

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

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

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

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

3. Closures

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

If opening exists, list all closures:

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

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

Note: Geotechnical and geologic data

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

4. Embankment Protection

a. The maximum levee slope landside is:

b. The maximum levee slope floodside is:

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

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

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

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

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

4. Embankment Protection (continued)

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

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

Attach engineering analysis to support construction plans.

5. Embankment And Foundation Stability

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

☐ Overall height: Sta. ; height ft.

☐ Limiting foundation soil strength:

Sta. , depth to

strength ϕ = degrees, c = psf

slope: SS = (h) to (v)

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

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

c. Summary of stability analysis results:

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

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

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

If Yes, describe methodology used:

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

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

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

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

Attach engineering analysis to support construction plans.

E. LEVEE/FLOODWALL (CONTINUED)

6. Floodwall And Foundation Stability

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

☐ UBC (1988) or ☐ Other (specify):

b. Stability analysis submitted provides for:

☐ Overturning ☐ Sliding If not, explain:

c. Loading included in the analyses were:

☐ Lateral earth @ P_A = psf; P_p = psf

☐ Surcharge-Slope @ , ☐ surface psf

☐ Wind @ P_w = psf

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

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

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

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

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

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

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

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

e. Foundation bearing strength for each soil type:

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

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

Attach engineering analysis to support construction plans.

7. Settlement

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

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

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

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

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

Attach engineering analysis to support construction plans.

8. Interior Drainage

a. Specify size of each interior watershed:

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

b. Relationships Established

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

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

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

e. Which flooding conditions were analyzed?

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

If No for any of the above, attach explanation.

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

If No, attach explanation.

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

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

8. Interior Drainage (continued)

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

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

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

Will the operation be automatic? ☐ Yes ☐ No

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

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

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

9. Other Design Criteria

a. The following items have been addressed as stated:

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

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

Attach supporting documentation

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

Attach supporting documentation

d. Sediment Transport Considerations:

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

E. LEVEE/FLOODWALL (CONTINUED)

10. Operational Plan And Criteria

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

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

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

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

11. Maintenance Plan

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

12. Operations and Maintenance Plan

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

F. SEDIMENT TRANSPORT

Flooding Source:

Name of Structure:

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

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

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

Sediment transport rate (percent concentration by volume)

Method used to estimate sediment transport:

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

Method used to estimate scour and/or deposition:

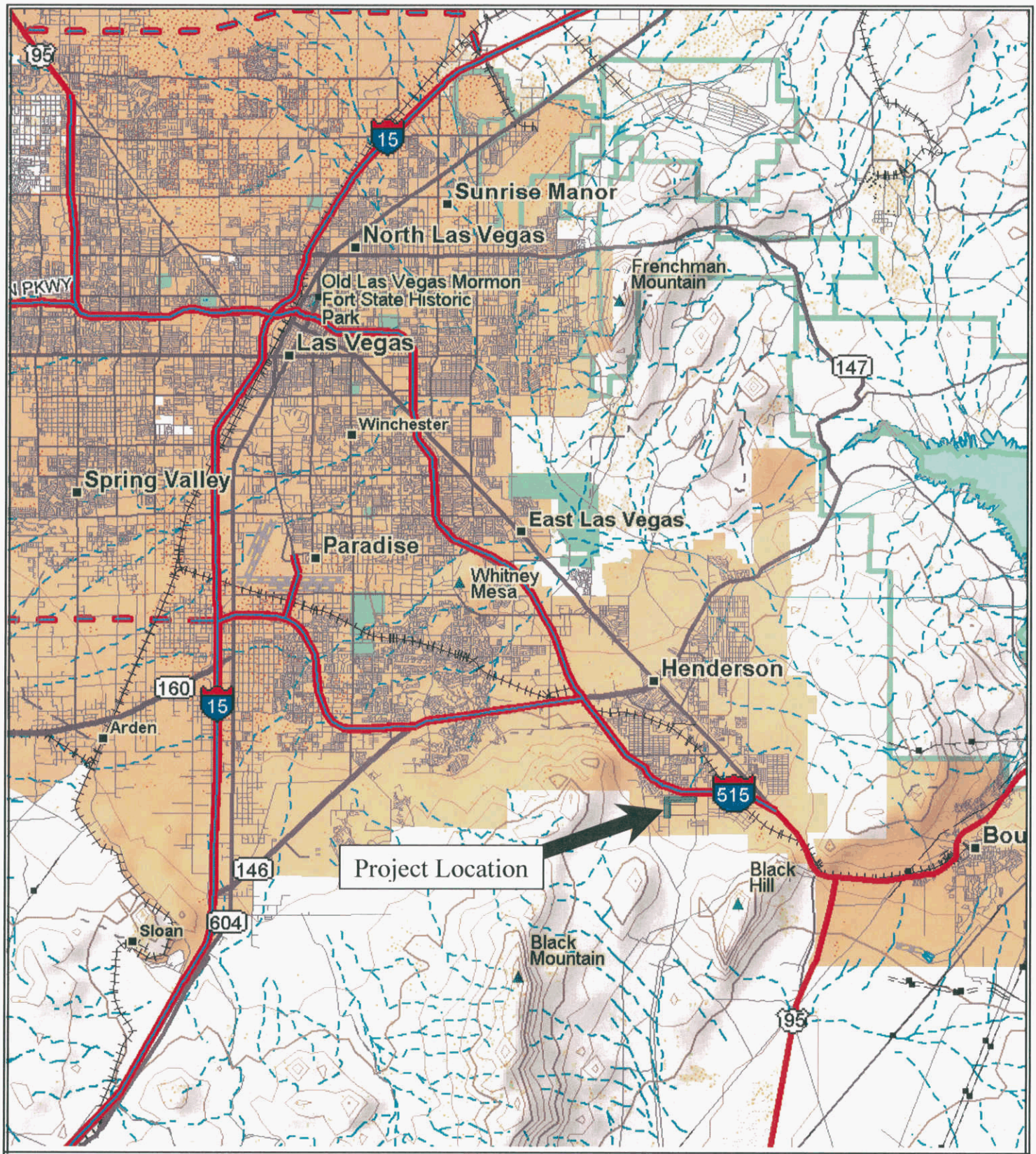
Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport:
Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

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

APPENDIX B

FIGURES

MISSION DRIVE
AREA / VICINITY MAP
-FIGURE 1.0



vtn nevada

Vicinity Map
Mission Drive/Greenway Road –
Roadway Improvements

Figure 1

CCRFCD FLOOD CONTROL FACILITIES MAP

- FIGURE F-26

REGIONAL FLOOD CONTROL DISTRICT

2002 LAS VEGAS VALLEY FLOOD CONTROL MASTER PLAN UPDATE

LEGEND

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

N W E S

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

SCALE: 1 inch = 3000 feet

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

FLOOD CONTROL FACILITIES
FIGURE F-26

PBS&J

G. C. WALLACE, INC.

ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
C1BH		**C-1 CHANNEL - BOULDER HWY**						
0000	P1	Conc Chnl 30'W 6'D 2:1 SS	2140	3224	CP22	C1SDN3	3.19	1.00
0040	P1	3: 15' X 6' RCBC @ Horizon Dr	100	3194	CP21	C1SDN3	3.11	1.00
0042	P1	Conc Chnl 30'W 6'D 2:1 SS	1525	3194	CP21	C1SDN3	3.11	1.00
0071	E	10' X 4' RCBC @ Equestrian Dr	100	2842	CP20	C1SDN3	2.77	1.00
0071	P1	3: 14' X 6' RCBC @ Equestrian Dr	100	2842	CP20	C1SDN3	2.77	1.00
0073	P1	Conc Chnl 30'W 6'D 2:1 SS	2000	2842	CP20	C1SDN3	2.77	0.80
0111	P1	Conc Chnl 20'W 6'D 2:1 SS	1960	1937	CP17	C1SDN3	1.53	0.80
0148	E	5: 8' X 4' RCBC @ Robert Way	120	1832	CP16	C1SDN3	1.42	1.00
0150	E	Earth Chnl 80'-90'W 5'D 2:1 SS with Drop Structures	1745	1832	CP16	C1SDN3	1.42	1.30
0150	P0	Conc Chnl 40'W 4'D 2:1 SS	1745	1832	CP16	C1SDN3	1.42	1.30
0184	E	Rip Rap Chnl 30'W 4'D 2:1 SS	545	1368	CP15	C1SDN3	1.09	1.30
0184	P0	Conc Chnl 30'W 4'D 2:1 SS	545	1368	CP15	C1SDN3	1.09	1.30
0194	E	3: 8' X 4' RCBC	125	1368	CP15	C1SDN3	1.09	1.00
0196	E	Rip Rap Chnl 30'W 4'D 2:1 SS	250	1368	CP15	C1SDN3	1.09	1.00
0196	P0	Conc Chnl 30'W 4'D 2:1 SS	250	1368	CP15	C1SDN3	1.09	1.00
0201	E	3: 8' X 4' RCBC	265	1368	CP15	C1SDN3	1.09	1.00
0206	E	Rip Rap Chnl 30'W 4'D 2:1 SS	425	1368	CP15	C1SDN3	1.09	1.00
0206	P0	Conc Chnl 30'W 4'D 2:1 SS	425	1368	CP15	C1SDN3	1.09	1.00
0214	E	3: 8' X 4' RCBC @ Conestoga Way	100	1368	CP15	C1SDN3	1.09	1.00
0216	P0	Conc Chnl 25'W 4'D 2:1 SS	1800	1368	CP15	C1SDN3	1.09	1.80
0250	P0	16' X 6' RCBC @ UPRR	50	803	C1-16	C1SDN3	0.52	0.50
0251	P0	Conc Chnl 10'W 5'D 2:1 SS	100	803	C1-16	C1SDN3	0.52	1.00
0253	P0	16' X 6' RCBC @ Dawson Ave	100	803	C1-16	C1SDN3	0.52	0.50
0255	P0	Conc Chnl 10'W 5'D 2:1 SS	2380	803	C1-16	C1SDN3	0.52	1.00
0300	P0	16' X 6' RCBC @ Foothills Dr	110	803	C1-16	C1SDN3	0.52	0.50
0302	P0	Conc Chnl 10'W 5'D 2:1 SS	1090	803	C1-16	C1SDN3	0.52	1.00
C1CH		**C-1 CHANNEL**						
0561	P3	Conc Chnl 20'W 6'D 0:1 SS	1801	1765	CP14	C1SDN3	2.08	2.00
0600	E	3: 10' X 7' RCBC @ Horizon Dr	436	1765	CP14	C1SDN3	2.08	1.20
0603	P3	Conc Chnl 30'W 6'D 0:1 SS	520	1765	CP14	C1SDN3	2.08	5.34
0604	E	Bridge 36'W 8.5'D @ UPRR	50	1765	CP14	C1SDN3	2.08	1.00
0613	P3	Conc Chnl 12.5'W 6'D 2:1 SS	1470	1765	CP14	C1SDN3	2.08	2.40
0641	P3	Conc Chnl 12.5'W 5'D 2:1 SS	1645	1641	CP13	C1SDN3	1.84	2.70
0672	E	4: 10' X 5' RCBC @ Vermillion Dr	115	1641	CP13	C1SDN3	1.84	0.50
0674	E	Conc Chnl 25'W 6'D 2:1 SS	630	1641	CP13	C1SDN3	1.84	0.70
0686	E	NDOT Sediment Basin		1239	CP12	C1SDN3	1.43	
0711	E	2: 10' X 10' RCBC @ US95	378	1239	CP12	C1SDN3	1.43	0.50
0718	E	NDOT Sediment Basin		1239	CP12	C1SDN3	1.43	
0742	E	10' X 8' RCBC @ Mission Dr	125	425	CP9	C1SDN4B	9.75	1.80
0744	E	Conc Chnl 14'W 8'D 0:1 SS	295	300	DB2	C1SDN4B	9.33	1.80
0750	E	Conc Chnl 14'W 4.5'D 0:1 SS	360	300	DB2	C1SDN4B	9.33	5.90
0757	E	84" RCP Outlet	5070	300	DB2	C1SDN4B	9.33	0.90
0853	E	20,000 cfs PMF Spillway		20000	CP8	C1SDN4B	9.33	
0854	E	402 ac-ft Mission Hills Detention Basin		3467	CP8	C1SDN4B	9.33	
0871	E	12' X 12' RCB	1830	2140	CP5	C1SDN3B	2.22	1.30
0882	E	Rip Rap Levee 10'	7000	1425	CP7	C1SDN3B	6.27	2.40
0905	E	12' X 10' RCB	1312	1779	CP4	C1SDN3B	5.22	1.10
0930	E	12' X 8' RCB	2207	1621	CP3	C1SDN3B	5.09	1.00
0972	E	8' X 8' RCB	2122	943	CP2	C1SDN3B	4.50	1.50
1012	E	54" RCP Outlet	4300	199	DB1	C1SDN3B	3.77	1.50
1094	E	21,600 cfs PMF Spillway		21600	C1-1	C1SDN3B	3.77	
1095	E	366 ac-ft Black Mountain Detention Basin		2709	C1-1	C1SDN3B	3.77	
1110	E	Soil Cement Levee 4'	1100	2709	C1-1	C1SDN3B	3.77	3.00
1138	E	Soil Cement Levee 4'	700	2709	C1-1	C1SDN3B	3.77	3.00

ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
C1E1		**C-1 CHANNEL - EQUESTRIAN TRIBUTARY**						
0000	P1	Energy Dissipator	50	688	CP30	C1SDN3B	1.21	
0002	P1	Conc Chnl 10'W 4.5'D 2:1 SS	2200	688	CP30	C1SDN3B	1.21	1.40
C1EQ		**C-1 CHANNEL - EQUESTRIAN D.B. OUTFALL**						
0158	E	39,100 cfs PMF Spillway		39100	CP44	C1SDN3B	7.06	
0159	E	409 ac-ft Equestrian Detention Basin		5196	CP44	C1SDN3B	7.06	
0202	E	Conc Chnl 20'W 8.0'D 2:1 SS	5000	3115	CP38	C1SDN3B	4.35	2.40
0297	E	Rip Rap Levee 10'	9000	3115	CP38	C1SDN3B	3.49	2.00
C1U1		**C-1 CHANNEL - US 95 TRIBUTARY 1**						
0000	P1	72" RCP	2950	404	C1-10	C1SDN3	0.41	2.00
0056	E	66" RCP	318	404	C1-10	C1SDN3	0.41	0.90
0062	E	60" RCP	742	404	C1-10	C1SDN3	0.41	2.10
C1US		**C-1 CHANNEL - US95**						
0000	E	4: 10' X 6' RCBC @ College Dr	171	900	CP11	C1SDN3	1.01	0.50
0003	E	Earth Chnl 30'-100'W 5'D 2:1 SS	3225	900	CP11	C1SDN3	1.01	2.10
0003	P1	Conc Chnl 20'W 4'D 2:1 SS	3225	900	CP11	C1SDN3	1.01	2.10
0064	E	Conc Chnl 18'W 6'D 2:1 SS	590	189	C1-11	C1SDN3	0.23	0.70
0075	E	4: 8' X 5' RCBC @ Greenway Road	140	189	C1-11	C1SDN3	0.23	0.40
0078	E	Conc Chnl 11.5'W 6'D 2:1 SS	1900	189	C1-11	C1SDN3	0.23	2.70
PTGL		**PITTMAN GAS LINE**						
0000	E	72" RCP	1675	678	CPPD030	PIT3SC	0.69	3.40
PTHR		**PITTMAN HORIZON RIDGE**						
0140	P1	Conc Chnl 15'W 4'D 2:1 SS	3425	1065	CPPD135	PIT3SC	0.89	4.00
0203	P1	84" RCP Outlet	200	882	CPPD125	PIT3SC	0.72	4.00
0204	P1	882 cfs Spillway		882	CPPD125	PIT3SC	0.72	
0205	P1	2.5 ac-ft Pittman Horizon Ridge Debris Basin		882	CPPD125	PIT3SC	0.72	
0210	E	Natural Wash	2950	882	CPPD125	PIT3SC	0.72	7.00
PTIS		**PITTMAN WASH - INTERSTATE**						
0102	E	Rip Rap Chnl 35'W 6'D 2:1 SS	3390	2380	CPPD060	PIT3SC	2.36	1.10
0166	E	2: 6' X 6' RCB	950	1365	CPPD045	PIT3SC	1.17	3.50
0184	E	Conc Chnl 9'W 4'D 3:1 SS	750	1962	CPPD050	PIT3SC	1.86	5.00
0197	E	3: 60" RCP @ Horizon Ridge Pkwy	150	681	CPPD030	PIT3SC	0.69	3.00
0198	E	Conc Chnl 10'W 4'D 2:1 SS	3150	681	CPPD030	PIT3SC	0.69	1.30
PTWH		**PITTMAN WEST HORIZON**						
0000	P1	Conc Chnl 12'W 5'D 2:1 SS	500	1365	CPPD045	PIT3	1.17	4.00
0010	P1	12' X 6' RCBC @ Horizon Dr	50	1365	CPPD045	PIT3	1.17	4.00
0011	P1	Conc Chnl 12'W 5'D 2:1 SS	6300	1365	CPPD045	PIT3	1.17	4.10

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

REGIONAL FLOOD CONTROL DISTRICT

2002 LAS VEGAS VALLEY
FLOOD CONTROL MASTER PLAN UPDATE
FACILITY INVENTORY
FIGURE F-26

LEGEND

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

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

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

Construction Features

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

PBS&J
G. C. WALLACE, INC.

NOTES TO USERS

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

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

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

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

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

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

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

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20810
(301) 713-3191

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

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

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

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

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

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

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

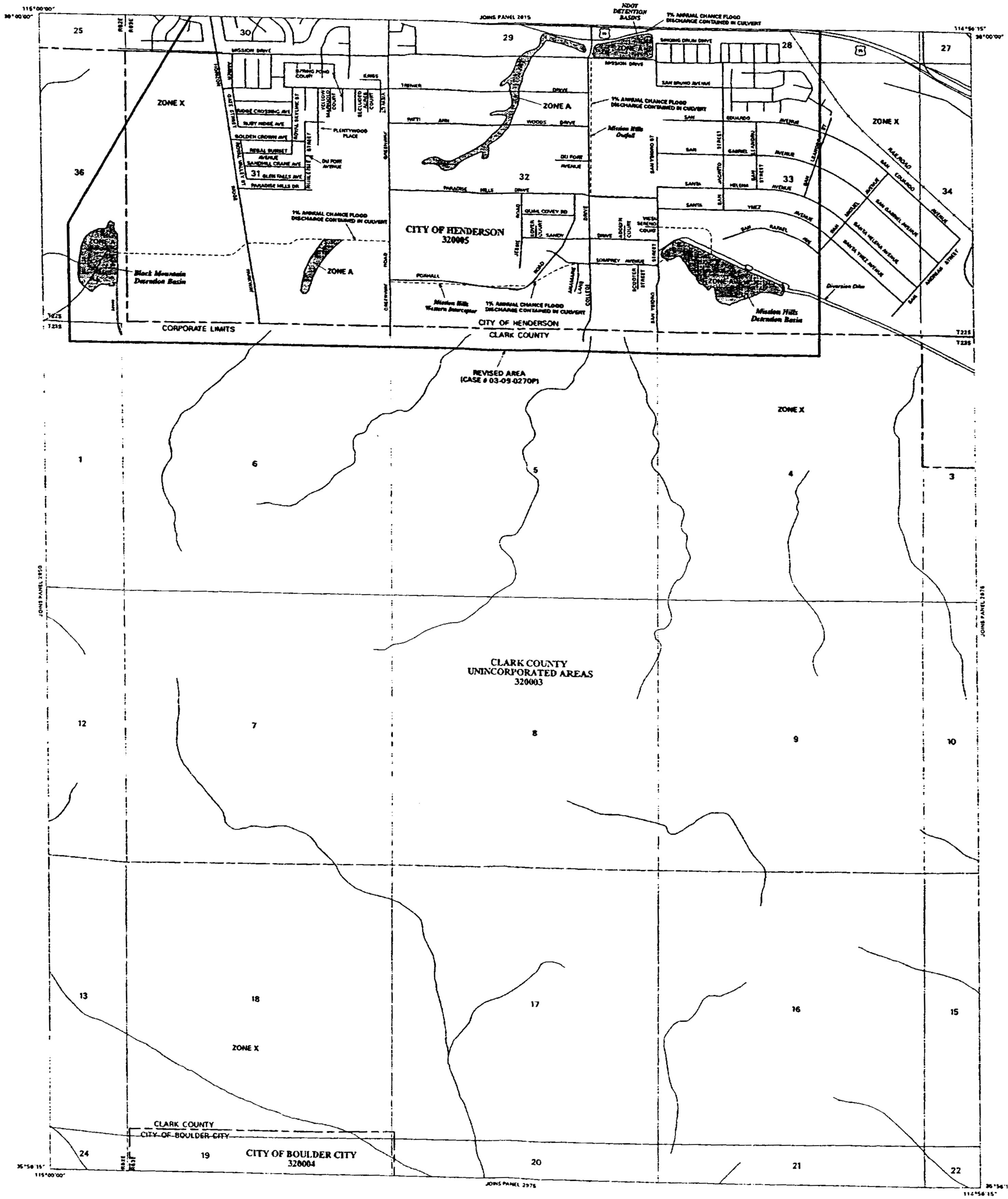
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result,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

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

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

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

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



LEGEND

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

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

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

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

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

*Referenced to the North American Vertical Datum of 1988

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

MAP REPOSITORY
Refer to Repository Listing on Index Map

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

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

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

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

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

NFIP

PANEL 2955E

FIRM

FLOOD INSURANCE RATE MAP

CLARK COUNTY,
NEVADA
AND INCORPORATED AREAS

PANEL 2955 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	[illegible]	[illegible]	E
HENDERSON, CITY OF	[illegible]	[illegible]	E
BOULDER CITY, CITY OF	[illegible]	[illegible]	E

REVISED TO
REFLECT LOMR
DATED NOV 06 2003

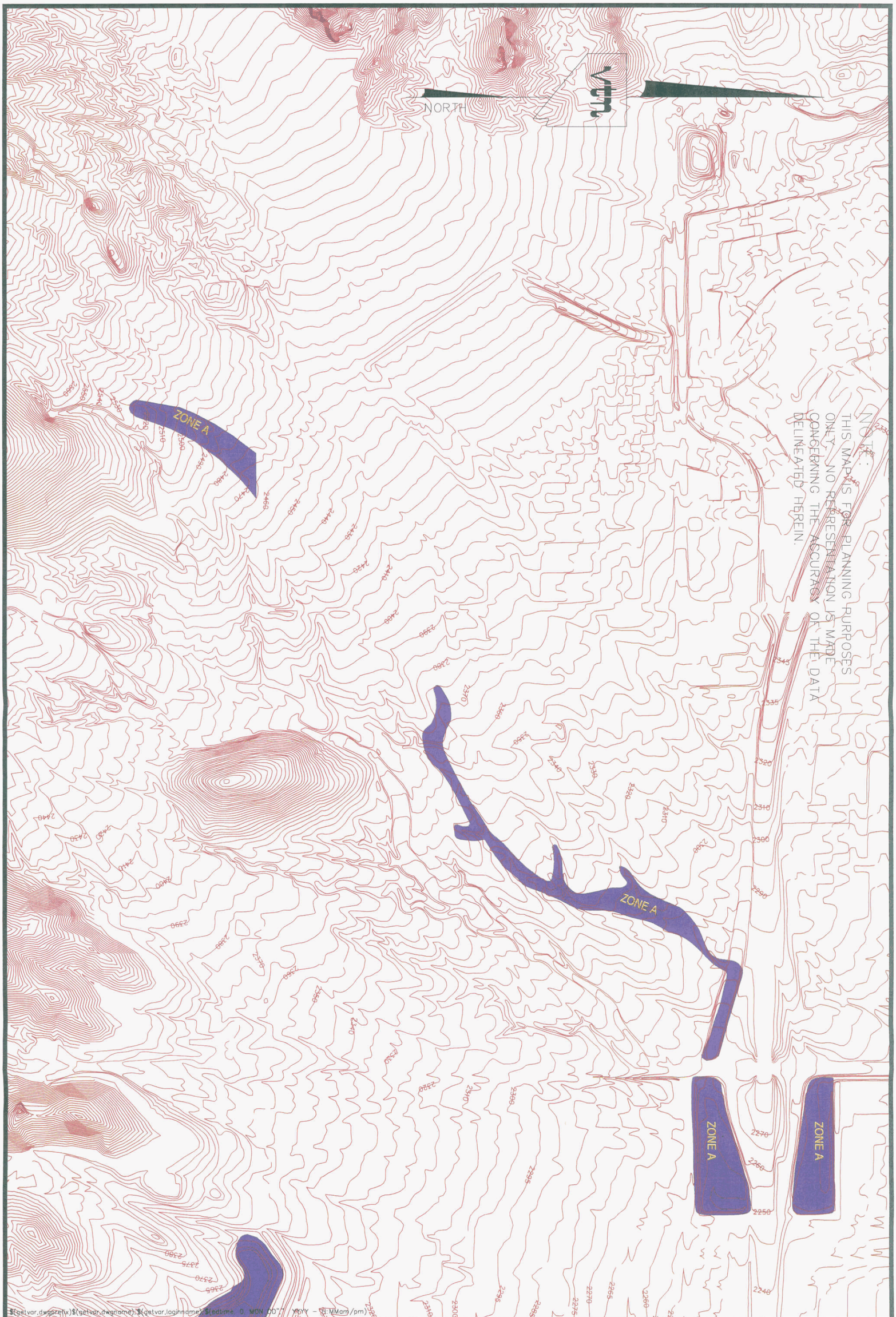
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C2955E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

FLOOD ZONE (A) MAP
w/ 5-foot contours
- FIGURE 2.1

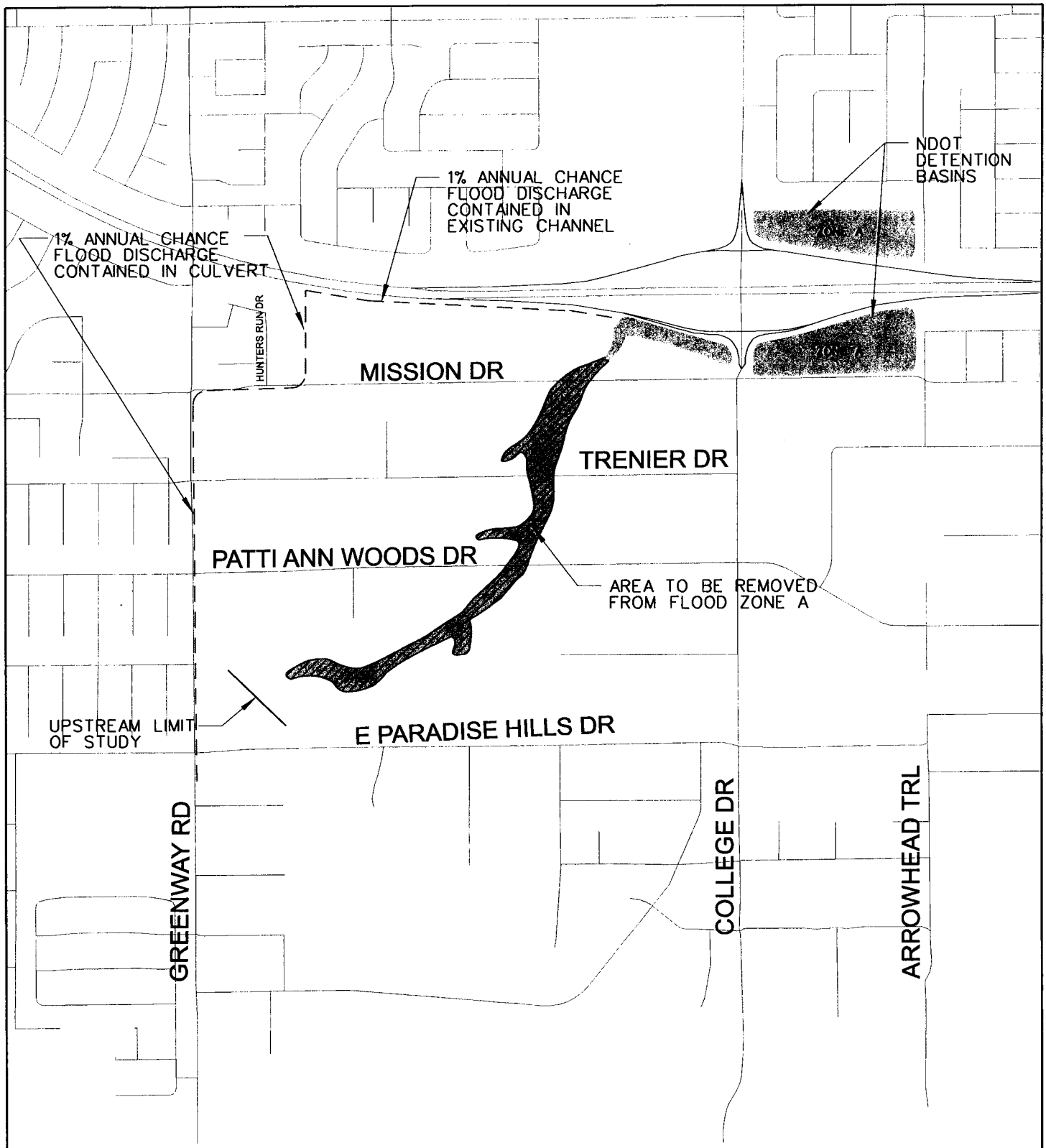


vtn nevada
2727 S. RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148

MISSION DRIVE
FLOOD ZONE EXHIBIT
with 5-foot contours (1996)

W.O.#: 6139
DATE: 03-11-05
BY:
SCALE: 1"=500'
SHEET 1 OF 1

VTN POST-PROJECT
ANNOTATED FLOOD ZONE MAP
- FIGURE 2.3



PANEL 2955 OF 4090

	NUMBER	PANEL	SUFFIX
CITY OF HENDERSON	320005	2955	E

MAP NUMBER: 32003C2955E

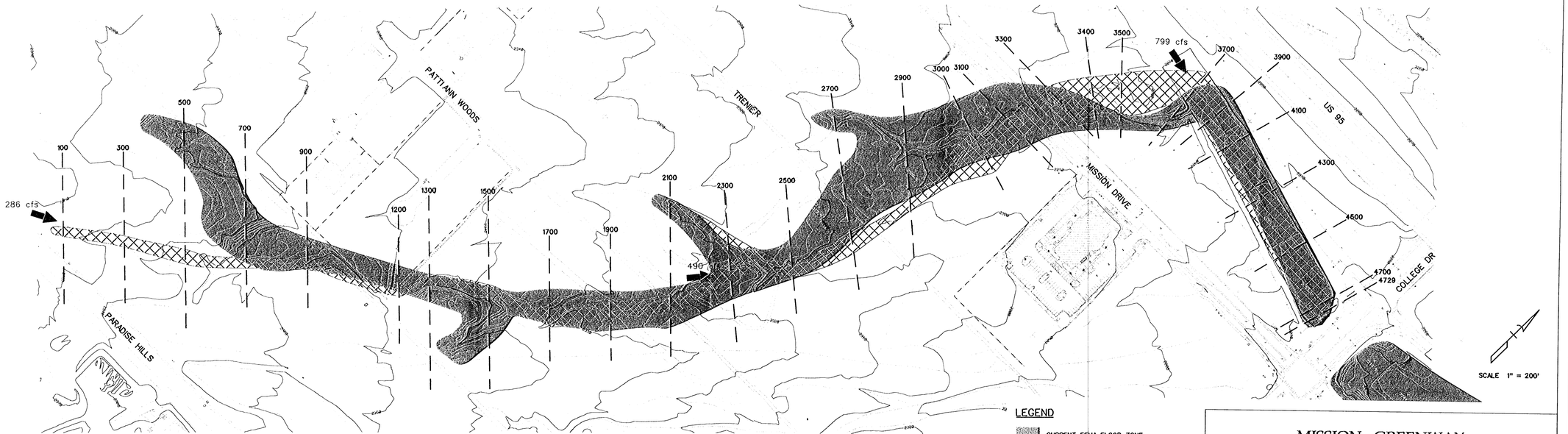
SCALE 1" = 1000'

ANNOTATED FLOOD ZONE MAP

FIGURE X

vtn nevada
CONSULTING ENGINEERS
PLANNERS
LAND SURVEYORS
3727 S. RAINBOW BLVD
LAS VEGAS, NV 89146
PHONE: (702) 247-4029
FAX: (702) 247-4282

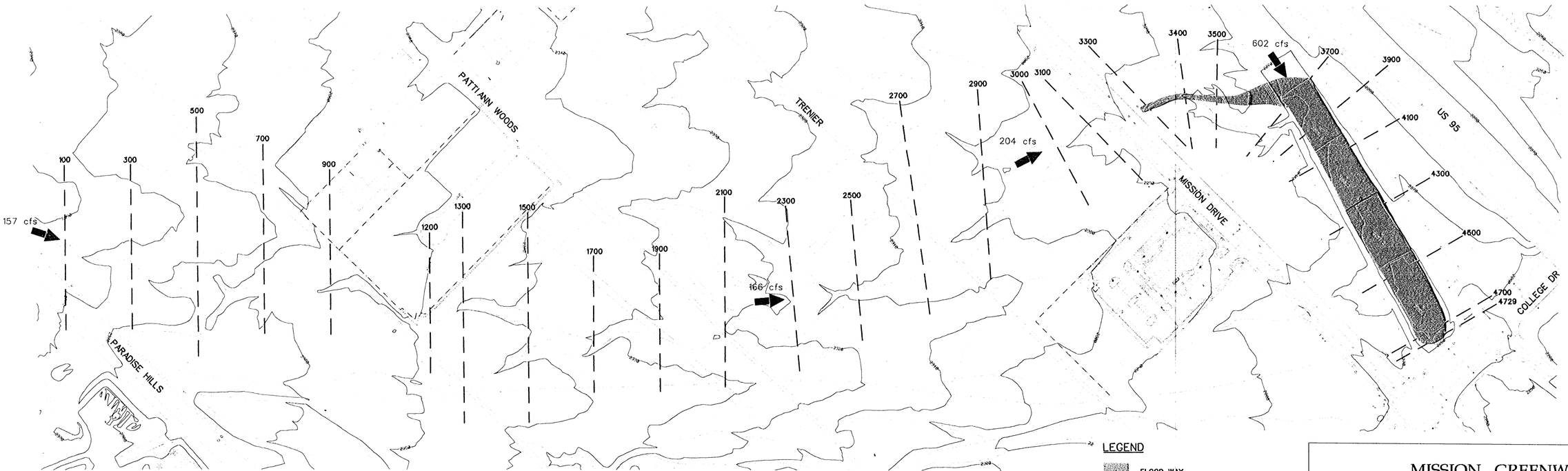
MISSION-GREENWAY: PRE-PROJECT CONDITIONS
(EFFECTIVE WORK MAP)
FIGURE 2.4



MISSION - GREENWAY
PRE-PROJECT CONDITIONS
(EFFECTIVE WORK MAP)

vtn nevada
CONSULTING ENGINEERS
PLANNERS
LAND SURVEYORS

MISSION-GREENWAY: POST-PROJECT CONDITIONS
(POST-PROJECT WORK MAP)
FIGURE 2.5



SCALE 1" = 200'

LEGEND

FLOOD WAY

100 YEAR FLOW

MISSION - GREENWAY
POST-PROJECT CONDITIONS
(POST PROJECT WORK MAP)

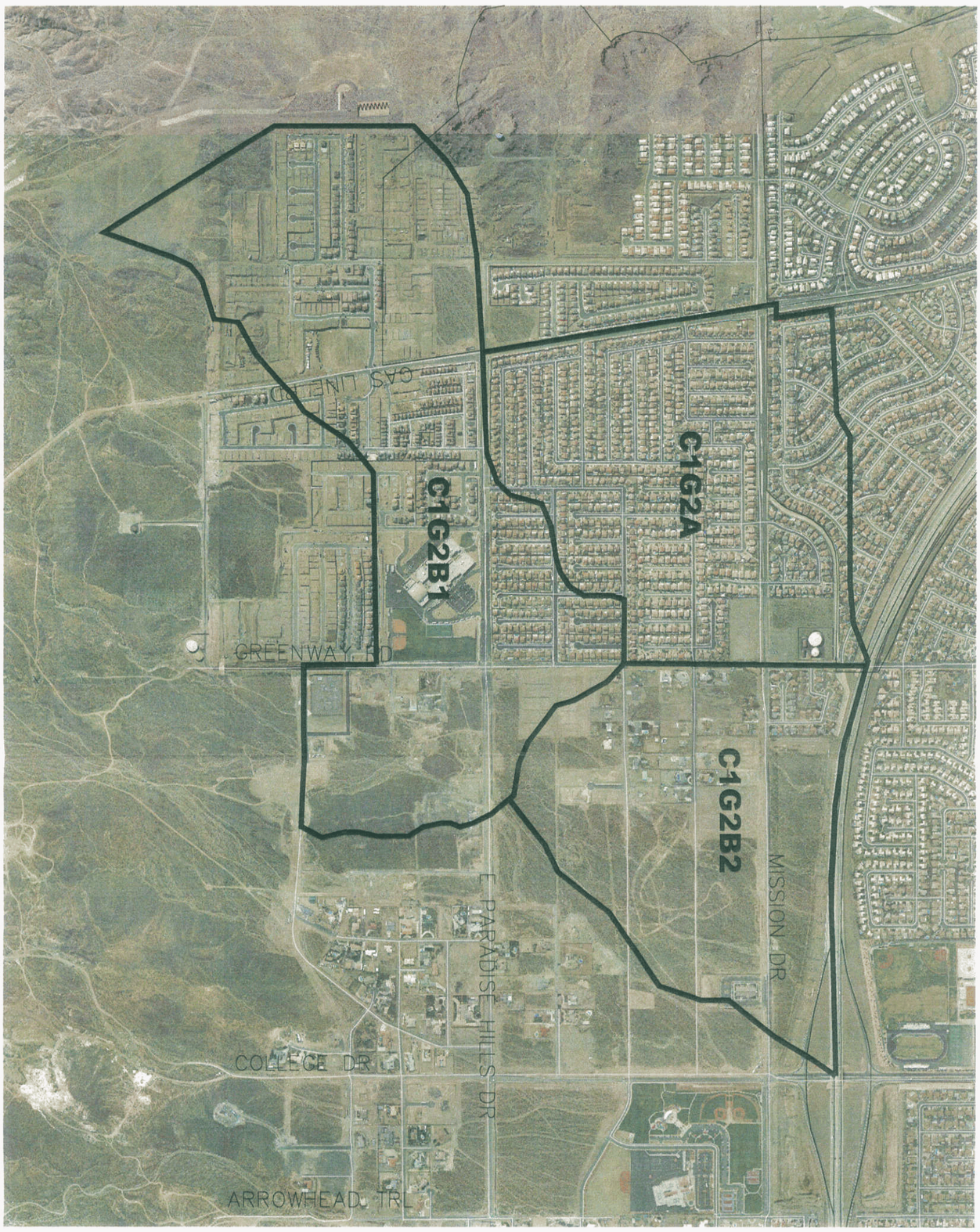
vtn nevada

APPENDIX C

HYDROLOGY

MISSION DRIVE LOMR
PRE-PROJECT: SUBBASIN MAP

PLT (PS)
I:\\\6139-CLOMR\DWG's\dwg\CLOMR-SUB-BASIN-MAP



NORTH

DRAWING	1
SHEET	1 OF 1 SHEETS
BY	DRF
DATE	01/03/06
SCALE HORIZ.	
SCALE VERT.	
NO.	6139-CLOMR

SEAL

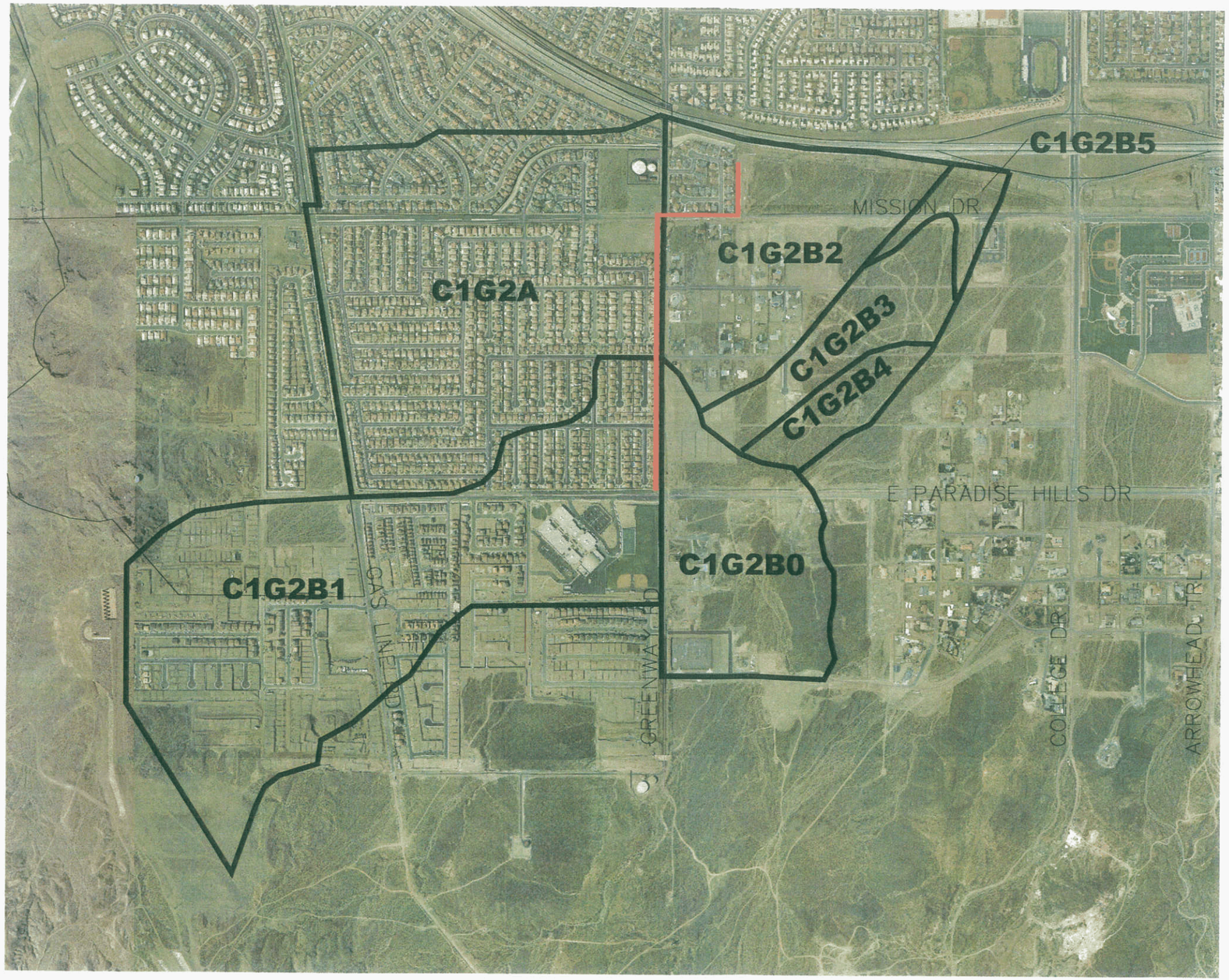
TITLE
SUBBASIN MAP
FIGURE 1.1

PROJECT
MISSION DRIVE CLOMR
PRE-IMPROVEMENT

REV	DATE	BY	REVISION

vtn nevada
CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89102-5148 PHONE (702) 873-7550 FAX (702) 362-2597

MISSION DRIVE LOMR
POST-PROJECT: SUBBASIN MAP



NORTH

EXISTING CHANNEL (MISSION DRIVE/GREENWAY IMPROVEMENTS)

REV | DATE | BY | REVISION

CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS
2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89102-5148 PHONE (702) 873-7550 FAX (702) 362-2597

vtn nevada

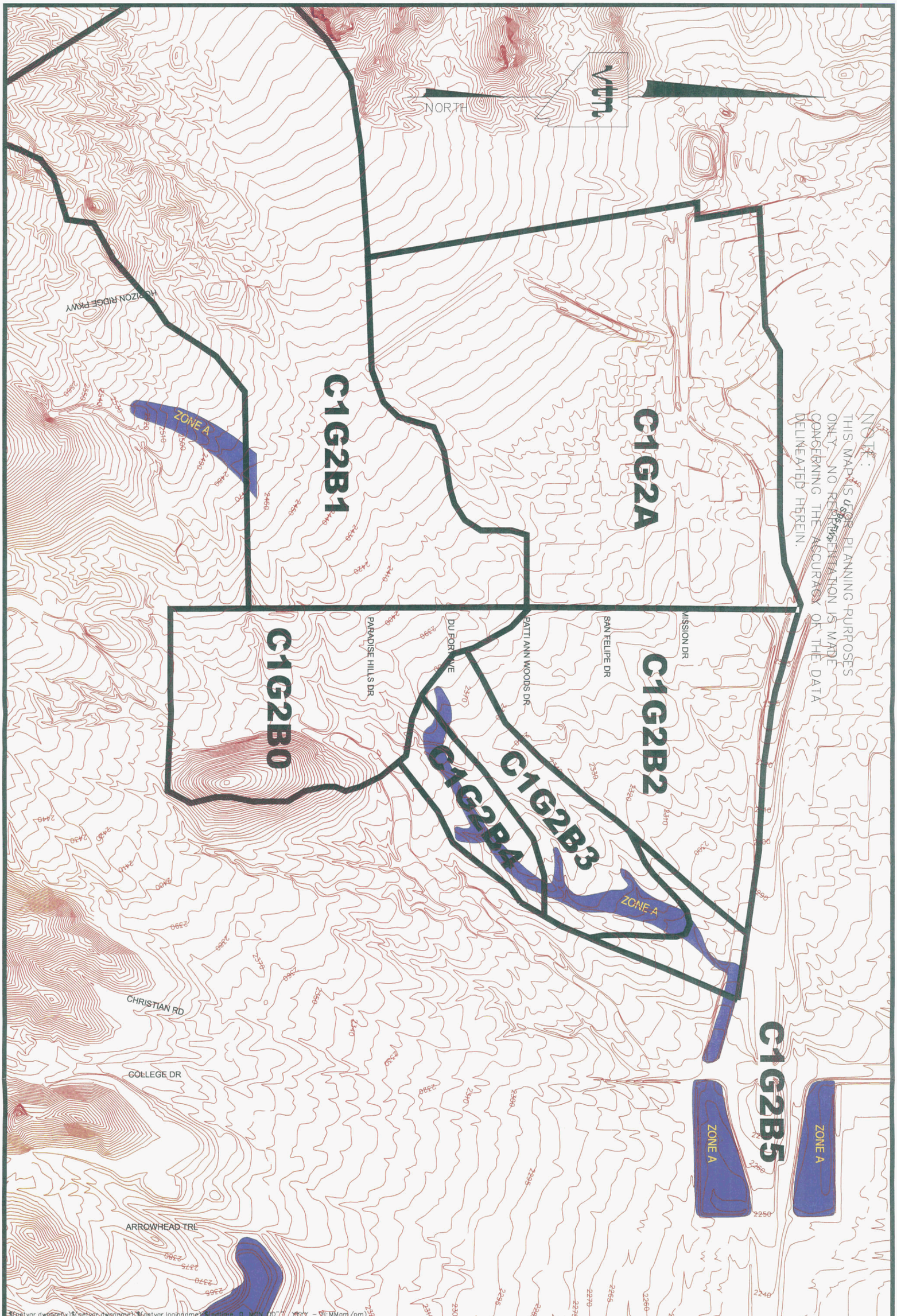
TITLE: SUBBASIN MAP
FIGURE 1.2

PROJECT: MISSION DRIVE CLOMR
POST IMPROVEMENT

SEAL

WO. NO. 6139-CLOMR
BY DRF
DATE 01/03/08
SCALE HORIZ. VERT.
DRAWING 1
SHEET 1 SHEETS

PLT (PS)
I:\1\6139-CLOMR\DWG's\dwg's\CLOMR-SUB-BASIN-MAP 11-22-05-2.dwg



vtn nevada
2727 S. RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148

MISSION DRIVE
POST PROJECT
SUBBASIN MAP

W.O.#: 6139
DATE: 03-11-05
BY:
SCALE: 1"=500'
SHEET 1 OF 1

HYDROLOGIC PARAMETERS: PRE-PROJECT

CN, AREAS, LAGTIME

CURVE NUMBER DETERMINATION

MISSION DRIVE IMPROVEMENTS : PRE-PROJECT LOMR

(MPU 2002 CONDITIONS)

* See end of table for abbreviated landuse descriptions.

Hydrologic Soil Group (Soil Survey Reference #'s)			Hydrologic Soil Group A (107 & 262)									Hydrologic Soil Group B								Hydrologic Soil Group D (150, 152, 240, 360)								
Subbasin		* Existing Landuse	LDR %			HFR %				UNF %	UNP %	LDR %			HFR %				UNF %	UNP %	LDR %			HFR %				UNF %	UNP %
	CHECK	CN #	51.0	61.0	76.0	81.0	89.0	39.0	81.0	55.0	63.0	68.0	75.0	84.0	88.0	92.0	61.0	88.0	72.0	77.0	84.0	87.0	91.0	93.0	95.0	80.0	93.0	86.0	88.0
Subbasins Contributing Directly to Debris Basin Below																													
C1G2B1	0	74.0	CN, Area & Lag Time Value C-1 WATERSHED FIS RESTUDY - SDN3 (NOV 2002)																											
C1G2B2	0	77.0	CN, Area & Lag Time Value C-1 WATERSHED FIS RESTUDY - SDN3 (NOV 2002)																											
C1G2A	0	79.0	CN, Area & Lag Time Value C-1 WATERSHED FIS RESTUDY - SDN3 (NOV 2002)																											

Abbreviated Landuse Description:

- LDR = Low Density Residential (40,000 sq-ft lots)
- MDR = Medium Density Residential (10,000 sq-ft lots)
- HDR = High Density Residential (7,000 sp-ft lots)
- HFR = Multi Family Residential (Apartments/Condos)
- COM = Commercial And Business
- PRK = Parks, Golf Courses (Open Space - Good Condition, Grass Cover > 75%)
- IND = Industrial
- UNF = Undeveloped Semiarid Rangeland (Desert Shrub - Fair, 30 to 70% Ground Cover)
- UNP = Undeveloped Semiarid Rangeland (Desert Shrub - Poor, Ground Cover < 30%)

HYDROLOGIC PARAMETERS: POST-PROJECT

CN, AREAS, LAGTIME

CURVE NUMBER DETERMINATION
MISSION DRIVE IMPROVEMENTS: POST-PROJECT LOMR
(MPU 2002 CONDITIONS)

* See end of table for abbreviated landuse descriptions.

Hydrologic Soil Group (Soil Survey Reference #'s)			Hydrologic Soil Group A (107 & 262)									Hydrologic Soil Group B									Hydrologic Soil Group D (150, 152, 240, 360)								
Subbasin		* Existing Landuse	LDR %			HFR %				UNF %	UNP %	LDR %			HFR %			UNF %	UNP %		LDR %			HFR %			UNF %	UNP %	
	CHECK	CN #	51.0	61.0	76.0	81.0	89.0	39.0	81.0	55.0	63.0	68.0	75.0	84.0	88.0	92.0	61.0	88.0	72.0	77.0	84.0	87.0	91.0	93.0	95.0	80.0	93.0	86.0	88.0
Subbasins Contributing Directly to Debris Basin Below																													
C1G2A	-	79.0	CN, Area & Lag Time Value C-1 WATERSHED FIS RESTUDY - SDN3 (NOV 2002)																										
C1G2B1	-	74.0	CN, Area & Lag Time Value C-1 WATERSHED FIS RESTUDY - SDN3 (NOV 2002)																										
C1G2B0	100	80.0																7		73									20
C1G2B2	100	71.6										60								40									
C1G2B3	100	75.2										20								80									
C1G2B4	100	77.0																		100									
C1G2B5	100	77.0																		100									

Abbreviated Landuse Description:

- LDR = Low Density Residential (40,000 sq-ft lots)
- MDR = Medium Density Residential (10,000 sq-ft lots)
- HDR = High Density Residential (7,000 sp-ft lots)
- HFR = Multi Family Residential (Apartments/Condos)
- COM = Commercial And Business
- PRK = Parks, Golf Courses (Open Space - Good Condition, Grass Cover > 75%)
- IND = Industrial
- UNF = Undeveloped Semiarid Rangeland (Desert Shrub - Fair, 30 to 70% Ground Cover)
- UNP = Undeveloped Semiarid Rangeland (Desert Shrub - Poor, Ground Cover < 30%)

CARTER BURGESS POST DEVELOPMENT
HEC-1 MODEL
(REFERENCE FOR VTN NEVADA
PRE-PROJECT CONDITIONS HEC-1)

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*          VERSION 4.1                  *
*                                       *
*  RUN DATE   12NOV02  TIME  17:28:02   *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    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


```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

              *DIAGRAM
    1         ID        **************   C-1 WATERSHED FIS RESTUDY  ****************
    2         ID
    3         ID    ***** PREPARED FOR:  CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT *****
    4         ID                              **   CLARK COUNTY, NEVADA   ***
    5         ID
    6         ID    ***** PREPARED BY: CARTER BURGESS AND SOUTHWEST FLUVIAL SYSTEMS  *****
    7         ID
    8         ID    EXISTING CONDITIONS DRAINAGE SYSTEM
    9         ID    INPUT FILE =   SDN3.DAT
   10         ID    INPUT FILE DATE =  NOV   2002
   11         ID    DESIGN STORM = 100-YEAR 6-HR STORM
   12         ID    STORM DISTRIBUTION = SDN #3
   13         ID
   14         ID    REFERENCED HYDROLOGIC MODELS:
   15         ID    PREDESIGN REPORT FOR THE BLACK MOUNTAIN AND MISSION HILLS DETENTION BASINS
   16         ID    AND OUTFALL STRUCTURES (VTN 1992)
   17         ID    SNWA RIVER MOUNTAINS WATER TREATMENT FACILITY DRAFT TECHNICAL DRAINAGE STUDY
   18         ID    (MONTGOMERY WATSON/CH2MHILL 1997)
   19         ID    EAST C-1 DETENTION BASIN FINAL DESIGN (VTN 1998)
   20         ID    DESIGN MEMORANDUM FOR THE EQUESTRIAN DETENTION BASIN (POGGEMEYER 1994)
   21         ID    DESIGN CALCULATION NOTEBOOK FOR THE BLACK MOUNTAIN DETENTION BASIN
   22         ID    (VTN 1998)
   23         ID    CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT 2002 MASTER PLAN UPDATE (LBA)
   24         ID    1-S15 BOULDER HIGHWAY TO LAKE MEAD DRIVE DRAINAGE STUDY (SVERDRUP, 1991)
   25         ID
   26         ID    JR CARDS CONTAINED DARFS BASED ON THE FOLLOWING VALUES:
   27         ID
   28         ID                          AREA     DARF
   29         ID                          SQ.MI.
   30         ID
   31         ID                          0 -  5   0.950
   32         ID                          5 - 12   0.880
   33         ID                         12 - 16   0.832
   34         ID                         16 - 20   0.804
   35         ID                         20 - 30   0.765
   36         ID                         30 - 40   0.725
   37         ID
   38         ID
   39         ID
   40         ID    THE FOLLOWING REDUCTION FACTORS ARE USED FOR  MODIFIED USLE COMPUTATIONS
   41         ID
   42         ID                           2-YR   0.260
   43         ID                           5-YR   0.440
   44         ID                          10-YR   0.570
   45         ID                          25-YR   0.765
   46         ID                          50-YR   0.880
   47         ID
   48         ID
   49         ID
   50         ID
   51         ID
   52         IT       5       0       0     300
   53         IN       5       0       0
   54         IO       5
```



```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

   55         JR    PREC   0.950   0.880   0.832   0.804    .765    .725    .570    .440    .260

   56         KK     C1H
   57         BA   4.007
   58         PB    3.15
   59         PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
   60         PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
   61         PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
   62         PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
   63         PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
   64         PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
   65         PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
   66         PC    .998    .999   1.00
   67         LS       0      85
   68         UD    0.14
              *
              *
              *  THE BLACK MTN DETENTION BASIN STAGE/DISCHARGE AND STAGE/STORAGE RELATIONSHIPS
              *  WERE CHECKED AGAINST THE LATEST RECORD DRAWINGS AND PREDESIGN REPORTS.
              *  THE FOLLOWING INPUT  WAS DIGITIZED FROM RECORD DRAWINGS AS THE HEC-1 INPUT
              *  WAS NOT AVAILABLE. THE RECORD DRAWINGS DIFFERED SLIGHTLY FROM THE
              *  PRE-DESIGN REPORT.
              *
              *
              *

   69         KK     DB1
   70         KM    FACILITY = BLACK MOUNTAIN DETENTION BASIN
   71         KM    FACILITY # = C1CH 0967
   72         KM    STORAGE VOLUME = 400 AC-FT (100-YR PK STAGE  = 2593 WSE)
   73         KM    OUTLET = 36" ORIFICE PLATE ON A 54" RCP
   74         KO       3
```

```
 75          RS       1    STOR      -1
 76          SV       0    1.19     4.55   10.32   22.58   38.69   54.90   73.42   92.55  113.51
 77          SV  135.16  158.22  183.23  208.1  234.67  262.55  292.02  325.32
 78          SE    2556    2558    2560    2562    2564    2566    2568    2570    2572    2574
 79          SE    2576    2578    2580    2582    2584    2586    2588    2590
 80          SQ       0    1.28   27.31   57.88   77.52   95.42  108.73   120.5  131.87  141.78
 81          SQ  150.74  159.67  168.97   176.6  183.71  190.74  197.77  204.93
 82          SE    2556    2558    2560    2562    2564    2566    2568    2570    2572    2574
 83          SE    2576    2578    2580    2582    2584    2586    2588    2590
             *

 84          KK    RDB1
 85          KM   ROUTE DB1 TO    C1HB1
 86          KM   FACILITY = MISSION HILLS INTERCEPTOR
 87          KM   FACILITY # C1CH 1012
 88          KM   TYPE OF FACILITY = RCB
 89          RD    5600   0.028   0.015           DEEP       8      50
             *
```

1 HEC-1 INPUT PAGE 3

```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 90          KK   C1HB1
 91          KM   PART OF 2001 MPU C1-2
 92          BA   .4497
 93          PB    3.17
 94          LS       0      82
 95          UD    0.51
             *

 96          KK     CP2
 97          KM   COMBINE RCP1 AND C1HB1
 98          HC       2
             *

 99          KK    RCP2
100          KM   ROUTE CP2 TO C1G3A
101          KM   FACILITY = MISSION HILLS INTERCEPTOR
102          KM   FACILITY # C1CH 0930
103          KM   TYPE OF FACILITY = RCB
104          RD    1000   0.028   0.015           DEEP       8      50
             *

105          KK   C1G3A
106          KM   2001 MPU C1-3
107          BA   .2726
108          PB    3.19
109          LS       0      85
110          UD    0.17
             *

111          KK     CP3
112          KM   COMBINE RCP2 AND C1G3A
113          HC       2
             *

114          KK    RCP3
115          KM   ROUTE CP3 TO C1G3B
116          KM   FACILITY = MISSION HILLS INTERCEPTOR
117          KM   FACILITY # 0905
118          KM   TYPE OF FACILITY = RCB
119          RD    2900   0.028   0.015           DEEP       8      50
             *

120          KK   C1G3B
121          KM   2001 MPU C1-5
122          BA   .7328
123          PB    3.21
124          LS       0      84
125          UD    0.11
             *
```

1 HEC-1 INPUT PAGE 4

```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

126          KK     CP4
127          KM   COMBINE RCP3 AND C1G3B
128          HC       2
             *

129          KK    RCP4
130          KM   ROUTE CP4 TO C1G3C
131          KM   MISSION HILLS INTERCEPTOR
132          KM   FACILITY # 0871
133          KM   TYPE OF FACILTY = RCB
134          RD    1300   0.025   0.015       0    DEEP      12     50
             *

135          KK   C1G3C
136          KM   2001 MPU C1-6
137          BA   1.048
138          PB    3.24
139          LS       0      85
140          UD    0.18
             *

141          KK     CP5
142          KM   COMBINE RCP4 AND C1G3C
143          KM   MISSION HILLS DETENTION BASIN
144          HC       2
             *

145          KK   C1G3D
146          KM   2001 MPU C1-7
147          BA   .8376
148          PB    3.28
149          LS       0      86
150          UD    0.15
             *

151          KK    CP6A
152          KM   COMBINE CP5 AND C1G3D
153          KM   MISSION HILLS DETENTION BASIN
154          HC       2
             *

155          KK   C5ICB
156          KM   PART OF 2001 C-8
157          BA   .7334
158          PB    3.37
159          LS       0      79
160          UD    0.15
             *
```

1 HEC-1 INPUT PAGE 5

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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
KK   C5ICB
KM   ROUTE C5ICB TO MISSION HILLS DETENTION BASIN
KM   FACILITY # = C1CH 0882
KM   TYPE OF FACILITY = ROCK LEVEE
RD    2350   0.024   0.040       0    TRAP      50       2
*

KK   C5I2A
KM   PART OF 2001 MPU C1-9
BA   1.400
PB    3.33
LS       0      80
UD    0.14
*

KK    CP6B
KM   COMBINE RC5ICB AND C5I2A
HC       2
*

KK     CP6
KM   COMBINE CP6A AND CP6B
KM   @ MISSION HILLS DETENTION BASIN
HC       2
*
*
*  THE MISSION HILLS DETENTION BASIN STAGE/DISCHARGE AND STAGE/VOLUME RELATIONS
*  WERE CHECKED AGAINST THE LATEST RECORD DRAWINGS AND PREDESIGN REPORTS.
*  THE FOLLOWING INPUT REFLECTS RECORD DRAWING INFORMATION
*

KK     DB2
KM   FACILITY = MISSION HILLS DETENTION BASIN
KM   FACILITY # C1CH 0854
KM   STORAGE VOLUME = 402 ACRE-FEET (100-YR WSE)
KM   OUTLET = 84" RCP
KO       3
RS       1    STOR      -1
SV       0    2.55   15.85   40.23   72.34   107.2   185.2   273.0   371.6   480.1
SV   598.5   630.2
SE    2323    2326    2328    2330    2332    2334    2338    2342    2346    2350
SE    2354    2355
SQ       0   56.78   108.7   142.9   170.4   193.9   234.1   268.4   298.7   326.1
SQ   351.6   357.6
SE    2323    2326    2328    2330    2332    2334    2338    2342    2346    2350
SE    2354    2355
*

KK    RDB2
KM    ROUTE DB2 TO C1G2D
KM   FACILITY = MISSION HILLS DETENTION BASIN
KM   FACILITY # = 0757
KM   TYPE OF FACILITY = RCP
RD    6100   0.025   0.013       0    CIRC     7.0
*
```



```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

KK   C1G2C
KM   PART OF 2001 MPU C1-13
BA   .2925
PB    3.23
LS       0      76
UD    0.27
*

KK   C1G2D
KM   PART OF 2001 MPU C1-21
BA   .2244
PB    3.27
LS       0      73
UD     .22
*

KK    CP7A
KM   COMBINE RDB2, C1G2C, AND C1G2D
KM   NDOT DETENTION BASIN @ US95
HC       3
*

KK  C1G2B1
KM   PART OF 2001 MPU C1-10
BA   .5231
PB    3.17
LS       0      74
UD     .42
*

KK   RG2B1
KM   ROUTE C1G2B1 TO C1G2B2
KM   NO FACILITY - OVERLAND FLOW
RD    4400    .028    .030       0    TRAP     200
*

KK  C1G2B2
KM   PART OF 2001 MPU C1-12
BA   .3097
PB    3.20
LS       0      77
UD     .27
*

KK    CP7B
KM   COMBINE C1G2B1, C1G2B2
KM   COLLEGE AT US95
HC       2
*
```



```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

KK   C1G2A
KM   PART OF 2001 MPU C1-11
BA   .3468
PB    3.17
LS       0      79
UD    0.22
*

KK  RC1G2A
KM    ROUTE C1G2A TO CP7C
KM   NDOT FACILITY @US95
RD    3800    .018    .030       0    TRAP     100
*
```

```
KK    CP7C
KM   COMBINE CP7B AND C1G2A
KM   COLLEGE AT US95
HC       2
*

KK     CP7
KM   COMBINE CP7B AND CP7C
KM   NDOT FACILITY AT US95
HC       2
*
*  NDOT DETENTION BASIN INPUT IS TAKEN FROM PREDESIGN REPORT AND DRAWINGS
*  THIS DETENTION BASIN IS BROKEN INTO TWO DETENTION PONDS, NAMELY POND A AND
*  POND B, ON THE UPPER AND LOWER SIDE OF THE INTERCHANGE, RESPECTIVELY. THE
*  100-YR PEAK IS ATTENUATED THROUGH THE BASIN BY ROUTING OF THE HYDROGRAPH,
*  FIRST THROUGH POND A AND SECOND THROUGH POND B. A DOUBLE 10X10  RCB CONNECTS
*  THE TWO PONDS UNDER I-515,INV EL = 2230 (INLET) AND 2221 (OUTLET) WHEREAS
*  A TRIPPLE RCB WAS DESIGNED AT THE OUTLET WITH INVERT EL = 2219.68, BUT IS NOT
*  CONSTRUCTED TO DATE. THE FOLLOWING STAGE/STORAGE AND STAGE/DISCHARGE RELATION
*  WERE TAKEN FROM THE NDOT PREDESIGN REPORT.
*
*

KK   CP7DB
KM   FACILITY = NDOT DETENTION BASIN
KM   FACILITY # C1CH 0658
KM   POND A
KM   STORAGE VOLUME = 94 AC-FT AT WSE= 2248
KM   OUTLET = DOUBLE 10 X 10 RCB
KO       3
RS       1    STOR      -1
SV       0    .125     .660   1.852   3.904   6.967  11.156  16.146  21.506  27.208
SV  33.219  39.589  46.369  53.528  61.032  68.877  77.056  85.507  94.163 102.957
SE    2230    2231    2232    2233    2234    2235    2236    2237    2238    2239
SE    2240    2241    2242    2243    2244    2245    2246    2247    2248    2249
SQ       0    70.2   180.1   317.4   479.1   659.2   854.5  1068.1  1290.9  1525.9
SQ  1776.1  2038.6  2256.8  2384.2  2511.7    2700  2887.0  3060.9  3225.7  3515.4
SE    2230    2231    2232    2233    2234    2235    2236    2237    2238    2239
SE    2240    2241    2242    2243    2244    2245    2246    2247    2248    2249
*
```



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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

KK   CP7DB
KM   FACILITY = NDOT DETENTION BASIN
KM   FACILITY # C1CH 0658
KM   POND B
KM   STORAGE VOLUME = 94 AC-FT AT WSE= 2232
KO       3
RS       1    STOR      -1
SV       0    .677   5.419  13.616  21.947  30.416  39.025  47.764  56.622  65.611
SV   74.74  84.018  93.457 103.051 112.794
SE    2220    2221    2222    2223    2224    2225    2226    2227    2228    2229
SE    2230    2231    2232    2233    2234
SQ       0    13.2    37.2   152.0   340.3   578.1   849.7  1155.1  1488.1  1845.5
SQ  2224.9  2481.1  2700.8  3035.5  3463.4
SE    2220    2221    2222    2223    2224    2225    2226    2227    2228    2229
SE    2230    2231    2232    2233    2234
*

KK    RCP7
KM   ROUTE CP7 TO CP8A
KM   PARTIALLY IMPROVED CHANNEL
KM   FACILITY # C1CH 0613, 0641, AND 0674
RD    3960    .025    .030       0    TRAP      20
*

KK    C1NA
KM    2001 MPU C1-14
BA   .4139
PB    3.18
LS       0      84
UD    0.03
*

KK   RC1NA
KM   ROUTE C1NA TO CP8A
KM   FACILITY = PARTIALLY IMPROVED CHANNEL
KM   FACILITY # C1CH 0613, 0641, AND 0674
RD    1980    .025    .030       0    TRAP      20
*

KK    CP8
KM   COMBINE C1NA AND CP8A
HC       2
*

KK   RCP8
KM   ROUTE CP8 TO C1HA
KM   C1 AND PUEBLO
RD    2500    .025    .030       0    TRAP      20
*  BEGIN POGGEMEYER DESIGN GROUP INPUT FROM 1998 LETTER OF MAP REVISION
*  FOR THE EQUESTRIAN DETENTION BASIN, CASE NO 99-09-623P. SOME SUBBASINS
*  IN THIS MODEL HAVE BEEN MODIFIED TO REFLECT POST 1998 DEVELOPMENT.
*  THE FOLLOWING TABLE CORRELATES 1998 LOMR SUBBASIN LABELS WITH LABELS IN
*  THIS MODEL.
*  ********************************************************************************
*  *                                                                              *
*  *                    EQUIVALENT 1998 LOMR SUBBASIN LABELS                      *
*  *                                                                              *
*  *                                                                              *
*  *                    1998 LOMR              THIS MODEL                         *
*  *                                                                              *
*  *                      C5FD                   C5FD                           *
*  *                      C5FA                   C5FA                           *
*  *                      C5FB                   C5FB                           *
*  *                      C5FC                   C5FC                           *
*  *                      C5EA                   C5EA                           *
*  *                      C5EC                   C5EC                           *
*  *                      C5EB                   C5EB                           *
*  *                      C5ED                   C5ED                           *
*  *                      C5DA                   C5DA                           *
*  *                      C5DB                   C5DB                           *
*  *                      C5CAa                  N/A                            *
*  *                      C5CAb                  N/A                            *
*  *                      C5CB                   C5CB                           *
*  *                      C5DC                   N/A                            *
*  *                      OFF-2A                 N/A                            *
*  *                      OFF-2B                 N/A                            *
*  *                      OFF-2C                 C1HD                           *
*  *                      OFF-3                  CIHE                           *
*  *                      OFF-4                  C1HF                           *
*  *                      OFF-6                  N/A                            *
*  *                      OFF-8                  C5I1D                          *
*  *                      OFF-9                  C5I1E                          *
*  *                      OFF-10                 C5GD                           *
*  *                      OFF-11                 N/A                            *
```

```
*  *                    OFF-12                C5I1C                 *
*  *                    OFF-13                N/A                   *
*  *                    OFF-14                C5GA                  *
*  *                    OFF-15                C5GB                  *
*  *                    OFF-16                C5GC                  *
*  *                    OFF-21                N/A                   *
*  *                    OFF-23                N/A                   *
*  *                    OFF-24                N/A                   *
*  *                                                                *
*  ******************************************************************
*
```



```
LINE  ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  308 KK    C5GC
  309 KM   1998 LOMR OFF-16
  310 BA   .1107
  311 PB    3.43
  312 LS       0      84
  313 UD    0.04
      *

  314 KK   RC5GC
  315 KM   ROUTE C5GC TO C5GB
  316 RD    1000    .020    .030            TRAP     100
      *

  317 KK    C5GB
  318 KM   1998 LOMR OFF-15
  319 BA   .3249
  320 PB    3.43
  321 LS       0      83
  322 UD     .16
      *

  323 KK    CP9
  324 KM   COMBINE C5GB AND C5GC
  325 HC       2
      *

  326 KK   RCP9
  327 KM   ROUTE CP9 TO C5GA
  328 RD    2640    .035    .030            TRAP      40
      *

  329 KK    C5GA
  330 KM   1998 LOMR OFF-14
  331 BA   .2723
  332 PB    3.39
  333 LS       0      66
  334 UD     .30
      *

  335 KK    CP10
  336 KM    COMBINE RCP9 AND C5GA
  337 HC       2
      *

  338 KK   RCP10
  339 KM    ROUTE CP10 TO C5I1E
  340 RD    2200    .033    .030            TRAP     100
  341
```



```
LINE  ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  342 KK   RCP10
  343 KM    ROUTE CP10 TO C5I1E
  344 RD    2200    .030    .030            TRAP     100
      *

  345 KK    C5GD
  346 KM   1998 LOMR OFF-10
  347 BA   .4447
  348 PB    3.46
  349 LS       0      67
  350 UD    0.46
      *

  351 KK  DIVER1
  352 KM   DIVERT FLOWS CONVEYED INTO CULVERT "A" STA 296+24, ACROSS BOULDER HIGHWAY
  353 DT  DIVER1
  354 DI       0      37     126     260     502
  355 DQ       0      10      20      30      40
      *

  356 KK   RC5GD
  357 KM   ROUTE C5GD TO C5I1E
  358 RD    2200    .030    .030            TRAP     100
      *

  359 KK   C5I1E
  360 KM   1998 LOMR OFF-9
  361 BA   .1634
  362 PB    3.45
  363 LS       0      79
  364 UD     .05
      *

  365 KK    CP11
  366 KM   COMBINE RCP10, C5I1E, AND RC5GD
  367 HC       3
      *

  368 KK   RCP11
  369 KM   ROUTE  CP11 TO C1HF
  370 RD    1600     .04    .030            TRAP     100
      *

  371 KK    C1HF
  372 KM   1998 LOMR OFF-4
  373 BA   .1008
  374 PB    3.45
  375 LS       0      78
  376 UD    0.27
      *
```



```
LINE  ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  377 KK    CP12
  378 KM   COMBINE RCP11 AND C1HF
  379 HC       2
      *
```

```
380          KK   RCP12
381          KM   ROUTE CP12 TO C1HE
382          RD    1800    .013    .030            TRAP     200
             *

383          KK   C5I1B
384          KM   MODIFIED 1998 LOMR SUBBASIN OFF-13
385          BA   .5185
386          PB    3.43
387          LS       0      71
388          UD    0.08
             *

389          KK  RC5I1B
390          KM   ROUTE C5I1B TO C5I1D
391          RD    1100    .018    .030            TRAP     100
             *

392          KK   C5I1D
393          KM   1998 LOMR OFF-8
394          BA   .1158
395          PB    3.43
396          LS       0      77
397          UD     .15
             *

398          KK    CP13
399          KM   COMBINE RC5I1B TO C5I1D
400          HC       2
             *

401          KK   RCP13
402          KM   ROUTE CP13 TO C1HE
403          RD    2100    .021    .030            TRAP     100
             *

404          KK    C1HE
405          KM   1998 LOMR OFF-3
406          BA   .1467
407          PB    3.29
408          LS       0      72
409          UD     .14
             *
1                                        HEC-1 INPUT                                        PAGE 12

          LINE   ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

410          KK    CP14
411          KM   COMBINE RCP12, RCP13, AND C1HE
412          HC       3
             *

413          KK  DIVER2
414          KM   DIVERT CULVERT AND BOULDER HIGHWAY OVERFLOWS INTO MAGIC WAY 844+00, 843+52,
415          KM   AND 840+46, TO SUBBASIN C5CC
416          DT  DIVER2
417          DI       0    1255    2000
418          DQ       0     116     900
             *

419          KK   RCP14
420          KM   ROUTE CP14 TO CIHD
421          RD     800    .010    .030            TRAP     100
             *

422          KK    C1HD
423          KM   1998 LOMR OFF-2C
424          BA   .0716
425          PB    3.29
426          LS       0      77
427          UD    0.15
             *

428          KK    CP15
429          KM   COMBINE RCP14 AND C1HD
430          HC       2
             *

431          KK   RCP15
432          KM   ROUTE CP15 TO C1HCB
433          RD    1700    .010    .030            TRAP     100
             *

434          KK  DIVER3
435          KM   DIVERT CULVERT FLOWS INTO SUBBASIN C5CC, STA 832+02, 825+52, AND 834+82
436          DT  DIVER3
437          DI       0    1171    2000
438          DQ       0     217     900
             *

439          KK    C5I1
440          KM   1998 LOMR OFF-11
441          BA   .2432
442          PB    3.43
443          LS       0      76
444          UD     .17
             *
1                                        HEC-1 INPUT                                        PAGE 13

          LINE   ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

445          KK   C5I1C
446          KM   1998 LOMR OFF-12
447          BA  0.0643
448          PB    3.43
449          LS       0      80
450          UD     .23
             *

451          KK  RC5I1C
452          KM   ROUTE C5I1C TO C5I1
453          RD     700    .014    .030            TRAP     100
             *

454          KK    CP16
455          KM   COMBINE RC5I1C AND C5I1
456          HC       2
             *

457          KK   RCP16
458          KM   ROUTE CP16 TO C1G1B
459          RD    1200    .018    .030            TRAP      50
             *

460          KK   C1G1B
461          KM   1998 LOMR OFF-6 IS PART OF THIS SUBBASIN
462          PB    3.21
```

```
463          BA   .1428
464          LS      0      87
465          UD    .18
             *

466          KK    CP17
467          KM   COMBINE RCP16 AND C1G1B
468          HC       2
             *

469          KK   RCP17
470          KM   ROUTE CP17 TO C1HCB
471          RD    1700    .010    .030            TRAP     100
             *

472          KK   C1HCB
473          KM   MODIFIED 1998 LOMR OFF-2B
474          BA   .1818
475          PB    3.29
476          LS      0      78
477          UD   0.06
             *
```



```
         LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

478          KK  CP18A
479          KM   COMBINE RCP17,AND C1HCB
480          HC       2
             *

481          KK    CP18
482          KM   COMBINE RCP15 AND CP18A
483          HC       2
             *

484          KK  DIVER4
485          KM   DIVERT CULVERT FLOWS AND BOULDER OVERFLOWS INTO SUBBASIN C5CC
486          KM   STA 816+22 AND 819+84, BOULDER HIGHWAY
487          DT  DIVER4
488          DI       0    1234    2000
489          DQ       0     111    1000
             *

490          KK   RCP18
491          KM   ROUTE CP18 TO C1HB
492          RD    1100    .007    .030            TRAP     100
             *

493          KK   C1G1A
494          KM   2001 MPU C1-15
495          BA   .2243
496          PB    3.20
497          LS      0      84
498          UD   0.22
             *

499          KK  RC1G1A
500          KM   ROUTE TO C1HB
501          KM   OVERLAND FLOW
502          RD    2600    .025    .030            TRAP     200
             *

503          KK    C1HB
504          KM   MODIFIED 1998 LOMR OFF-2A
505          BA   .1472
506          PB    3.21
507          LS      0      85
508          UD   0.03
             *

509          KK   CP19A
510          KM   COMBINE C1HB, RC1G1A
511          HC       2
             *
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         LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

512          KK    CP19
513          KM   COMBINE CP19A AND RCP18
514          HC       2
             *

515          KK  DIVER5
516          KM   DIVERT CULVERT FLOWS INTO SUBBASIN C4A1C, STA 807+37
517          DT  DIVER5
518          DI       0     798    2000
519          DQ       0      70     970
             *

520          KK   RCP19
521          KM   ROUTE CP19 TO BOULDER HIGHWAY AND PUEBLO
522          RD    2300    .013    .030            TRAP     100
             *

523          KK    C1HA
524          KM   SUBBASIN C1HA
525          KM   2001 MPU C1-24
526          BA   .0735
527          PB    3.13
528          LS      0      66
529          UD    .21
             *

530          KK   CP20A
531          KM   COMBINE C1HA AND RCP19
532          HC       2
             *

533          KK    CP20
534          KM   COMBINE CP20A AND RCP8
535          HC       2
             *

536          KK   RCP20
537          KM   ROUTE CP20 TO C1B
538          KM   FACILITY  = C-1 CHANNEL
539          KM   FACILITY # C1CH 0528
540          KM   TYPE OF FACILTIY  = CONCRETE CHANNEL
541          RD    1700    .027    .015            TRAP      25       1
             *

542          KK     C1D
543          KM   2001 MPU C1-26
544          BA   .4005
545          PB    3.14
```

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546          LS       0      78
547          UD     .21
             *
1                                        HEC-1 INPUT                                        PAGE 16

          LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

548          KK     RC1D
549          KM   ROUTE C1D TO C1C
550          KM   UNION PACIFIC RAILROAD
551          RD    1600    .014    .030       0    TRAP       0      50
             *

552          KK      C1C
553          KM   2001 MPU C1-27
554          BA   .2307
555          PB    3.08
556          LS       0      80
557          UD     .19
             *

558          KK     CP21
559          KM   COMBINE RC1D AND C1C
560          HC        2
             *

561          KK    RCP21
562          KM   ROUTE CP21 TO C1B
563          RD    4600    .010    .015       0    TRAP       0      30
             *

564          KK      C1B
565          KM   2001 MPU C1-28
566          BA   .3773
567          PB    3.11
568          LS       0      86
569          UD     .21
             *

570          KK    C4A1D
571          KM   2001 MPU C1-25
572          BA   0.062
573          PB    3.11
574          LS       0      78
575          UD     .19
             *

576          KK   RC4A1D
577          KM   ROUTE C4A1D TO C1B
578          RD     700    .020    .015            TRAP      25       1
             *

579          KK     CP22
580          KM   COMBINE RCP19,RCP20, C1B, AND RC4A1D
581          HC        4
             *
1                                        HEC-1 INPUT                                        PAGE 17

          LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

582          KK    RCP22
583          KM   ROUTE CP21 TO C1A
584          KM   FACILITY = C-1 CHANNEL
585          KM   FACILTIY # = C1CH 0455, 0502
586          KM   TYPE OF FACILTIY = CONCRETE CHANNEL
587          RD    3200    .021    .015            TRAP      25       1
             *

588          KK      C1A
589          KM   2001 MPU C1-29
590          BA   .1456
591          PB    2.99
592          LS       0      84
593          UD     .22
             *

594          KK     CP23
595          KM   COMBINE CP22 AND C1A
596          HC        2
             *

597          KK    RCP23
598          KM   ROUTE CP23 TO C4A1B
599          KM   FACILITY = C-1 CHANNEL
600          KM   FACILITY # = C1CH 0455
601          KM   TYPE OF FACILITY  = CONCRETE CHANNEL
602          RD    1250    .025    .025            TRAP     25.       1
             *

603          KK     C5CC
604          KM   1998 LOMR OFF-21
605          PB    3.29
606          BA   .3346
607          LS       0      79
608          UD    0.28
             *

609          KK     RET4
610          KM   RETRIEVE FLOWS FROM C1HCB
611          DR  DIVER4
             *

612          KK    RDIV4
613          KM   ROUTE DIVERSION 4 TO CP24A
614          KM   TYPE OF FACILTIY = OVERLAND FLOW TO EQUESTRIAN
615          RD     1100    .027    .030            TRAP     100       1
             *

616          KK    RDIV4
617          KM   ROUTE DIVERSION 4 TO CP24A
618          KM   TYPE OF FACILTIY = STREET FLOW IN EQUESTRIAN
619          RD     1700    .009    .016            TRAP      80       1
             *
1                                        HEC-1 INPUT                                        PAGE 18

          LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

620          KK    CP24A
621          KM   COMBINE C5CC AND RDIV4
622          HC        2
             *

623          KK     RET3
624          KM   RETRIEVE DIVERSION 3 FROM C1HD
625          DR  DIVER3
             *
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```
626          KK   RDIV3
627          KM   ROUTE DIVERSION 3 TO CP24A
628          KM   TYPE OF FACILTIY = OVERLAND FLOW TO EQUESTRIAN
629          RD    2000    .023    .030            TRAP      100       1
             *

630          KK   RDIV3
631          KM   ROUTE DIVERSION 3 TO CP24A
632          KM   TYPE OF FACILTIY = STREET FLOW IN EQUESTRIAN
633          RD    1100    .009    .016            TRAP       80       1
             *

634          KK   CP24B
635          KM   COMBINE CP24A AND RDIV4
636          HC       2
             *

637          KK    RET2
638          KM   RETRIEVE DIVERSION 2 FROM C1HE
639          DR  DIVER2
             *

640          KK   RDIV2
641          KM   ROUTE DIVERSION 2 TO CP24A
642          KM   TYPE OF FACILTIY = OVERLAND FLOW TO EQUESTRIAN
643          RD    2500    .024    .030            TRAP      100       1
             *

644          KK   RDIV2
645          KM   ROUTE DIVERSION 2 TO CP24A
646          KM   TYPE OF FACILTIY = STREET FLOW IN EQUESTRIAN
647          RD     600    .009    .016            TRAP       80       1
             *

648          KK   CP24C
649          KM   COMBINE CP24B AND RDIV2
650          HC       2
             *
```

1 HEC-1 INPUT PAGE 19

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LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

651          KK    C5CA
652          KM   PART OF 1998 LOMR C5CAb
653          KM   2001 MPU C1-30
654          BA   .2974
655          PB    3.41
656          LS       0       70
657          UD    0.22
             *

658          KK   RC5CA
659          KM   ROUTE C5CA TO C5CF
660          KM   APPALOOSA RD
661          RD    2000    .019    .016       0    TRAP       0       50
             *

662          KK    C5CF
663          KM   PART OF 1998 LOMR C5CA6
664          KM   2001 MPU C1-31
665          BA   .3233
666          PB    3.25
667          LS       0       68
668          UD    0.07
             *

669          KK    CP25
670          KM   COMBINE RC5CA AND C5CF
671          KM   APPALOOSA ROAD AND PALOMINO DRIVE
672          HC       2
             *

673          KK   RCP25
674          KM   ROUTE CP25 TO C5CE
675          KM   APPALOOSA ROAD
676          RD    2640    .020    .016            TRAP       50       0
             *

677          KK    C5CE
678          KM   PART OF 1998 LOMR C5CAb
679          BA   .3244
680          PB    3.29
681          LS       0       68
682          UD     .08
             *

683          KK    CP26
684          KM   COMBINE RCP25 AND C5CE
685          KM   APPALOOSA ROAD AND EQUESTRIAN
686          HC       2
             *
```

1 HEC-1 INPUT PAGE 20

```
LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

687          KK   RCP26
688          KM   ROUTE CP26 TO C5CD
689          KM   EQUESTRIAN DRIVE
690          RD    1200    .016    .016            TRAP       50       0
             *

691          KK    C5CD
692          KM   PART OF 1998 LOMR C5CAa AND C5CAb
693          BA   .2668
694          PB    3.31
695          LS       0       73
696          UD     .34
             *

697          KK    RET1
698          KM   RETREIVE DIVERSION 1 FROM C5GD
699          DR  DIVER1
             *

700          KK   RDIV1
701          KM   ROUTE DIVERSION 1 TO CP27
702          KM   TYPE OF FACILTIY = OVERLAND FLOW TO EX CONC CHANNEL
703          RD    2600    .019    .030            TRAP      100       1
             *

704          KK   RDIV1
705          KM   ROUTE DIVERSION 1 TO CP27
706          KM   TYPE OF FACILTIY = CONCRETE CHANNEL
707          RD    1300    .014    .015            TRAP       20       1
             *
```

```
708          KK   RDIV1
709          KM   ROUTE DIVERSION 1 TO CP27
710          KM   TYPE OF FACILTIY = STREET TO EQUESTRIAN
711          RD    2000    .014    .016            TRAP      60       1
             *

712          KK    CP27
713          KM   COMBINE RCP26, C5CD, AND RDIV1
714          HC       3
             *

715          KK   RCP27
716          KM   ROUTE CP27 TO CP24C
717          RD    1450    .017    .017            TRAP     100
             *

718          KK   CP24D
719          KM   COMBINE CP24C AND RCP27
720          HC       2
             *
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

721          KK    C5CB
722          KM   MODIFIED 1998 LOMR C5CB
723          KM   2001 MPU C1-47A
724          BA   .1409
725          PB    3.26
726          LS       0      81
727          UD     .30
             *

728          KK   CP24E
729          KM   COMBINE CP24D AND C5CB
730          HC       2
             *

731          KK    C5FD
732          KM   1998 LOMR C5FD
733          BA   .1706
734          PB    3.43
735          LS       0      83
736          UD     .07
             *

737          KK   RC5FD
738          KM   ROUTE C5FD TO C5FB
739          RD    2500     .02    .040       0    TRAP      50       2
             *

740          KK    C5FA
741          KM   1998 LOMR C5FA
742          BA   .5071
743          PB    3.43
744          LS       0      87
745          UD     .02
             *

746          KK   RC5FA
747          KM   ROUTE C5FA TO C5FB
748          RD    4600    .065    .040       0    TRAP     100       1
             *

749          KK    C5FB
750          KM   1998 LOMR C5FB
751          BA   .2592
752          PB    3.43
753          LS       0      69
754          UD     .17
             *

755          KK    CP28
756          KM   COMBINE RC5FD, RC5FA, AND C5FB
757          HC       3
             *
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

758          KK   RCP28
759          KM   ROUTE CP28 TO  C5FC
760          KM   FACILITY = C-1 CHANNEL - EQUESTRIAN LEVEE
761          KM   FACILITY # = C1EQ 0297
762          KM   TYPE OF FACILITY = ROCK LEVEE
763          RD    2000   0.019    .040       0    TRAP      50       3
             *

764          KK    C5FC
765          KM   1998 LOMR C5FC
766          KM   2001 MPU C1-37
767          BA   .2222
768          PB    3.43
769          LS       0      73
770          UD    0.16
             *

771          KK    CP29
772          KM   COMBINE RCP28 AND C5FC
773          HC       2
             *

774          KK   RCP29
775          KM   ROUTE CP29 TO C5EA
776          KM   FACILITY = C-1 CHANNEL - EQUESTRIAN LEVEE
777          KM   FACILITY # = C1EQ 0297
778          KM   TYPE OF FACILITY = ROCK LEVEE
779          RD    1900   0.018    .040       0    TRAP     100       3
             *

780          KK    C5EA
781          KM   1998 LOMR C5EA
782          KM   2001 MPU C1-38
783          BA   .4873
784          PB    3.43
785          LS       0      82
786          UD    0.12
             *

787          KK    CP30
788          KM   COMBINE RCP29 AND C5EA
789          HC       2
             *

790          KK   RCP30
791          KM   ROUTE CP30 TO C5EC
792          KM   FACILITY = C-1 CHANNEL - EQUESTRIAN LEVEE
```

```
793          KM   FACILITY # = C1EQ 0297
794          KM   TYPE OF FACILITY = ROCK LEVEE
795          RD    1600   0.017    .040       0    TRAP     100       3
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

796          KK    C5EB
797          KM    1998 LOMR C5EB
798          BA   .5469
799          PB    3.43
800          LS       0      88
801          UD     .21
             *

802          KK   RC5EB
803          KM   ROUTE C5EB  TO C5EC
804          RD    3500   0.040    .040       0    TRAP      50       3
             *

805          KK    C5EC
806          KM    1998 LOMR C5EC
807          BA   .2214
808          PB    3.43
809          LS       0      71
810          UD     .14
             *

811          KK    CP31
812          KM   COMBINE RC5EB, C5EC, AND RCP30
813          HC       3
             *

814          KK   RCP31
815          KM   ROUTE CP31 TO C5ED
816          KM   FACILITY = C-1 CHANNEL - EQUESTRIAN LEVEE
817          KM   FACILITY # = C1EQ 0297
818          KM   TYPE OF FACILITY = ROCK LEVEE
819          RD    2500   0.020    .040       0    TRAP      35       3
             *

820          KK    C5ED
821          KM   1998 LOMR C5ED
822          KM   2001 MPU C1-41
823          BA   .1578
824          PB    3.41
825          LS       0      79
826          UD    0.17
             *

827          KK    CP32
828          KM   COMBINE RCP31 AND C5ED
829          HC       2
             *

830          KK   RCP32
831          KM   ROUTE CP32 TO C5DA
832          KM   FACILITY = C-1 CHANNEL - EQUESTRIAN LEVEE
833          KM   FACILITY # = C1EQ 0349
834          KM   TYPE OF FACILITY = ROCK LEVEE
835          RD    1000   0.020    .040       0    TRAP      35       3
             *
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

836          KK    C5DA
837          KM   1998 LOMR C5DA
838          KM   2001 MPU C1-42
839          BA   1.063
840          PB    3.42
841          LS       0      86
842          UD    0.05
             *

843          KK    C5DB
844          KM   1998 LOMR C5DB
845          KM   2001 MPU C1-43
846          BA   .5321
847          PB    3.40
848          LS       0      88
849          UD    0.07
             *

850          KK    CP33
851          KM   COMBINE RCP32, C5DA, C5DB
852          HC       3
             *

853          KK   RCP33
854          KM   ROUTE CP33 TO C5CB
855          KM   FACILITY = C-1 CHANNEL - EQUESTRIAN CHANNEL
856          KM   FACILITY # = C1EQ 0297
857          KM   TYPE OF FACILITY = CONCRETE TRAP CHANNEL
858          RD    5000   0.027    .013       0    TRAP      20       1
             *

859          KK    CP24
860          KM   COMBINE RCP33 AND CP24E
861          HC       2
             *

862          KK   RCP24
863          KM   ROUTE CP24 TO CP34
864          KM   FACILITY = MAGIC WAY
865          KM   TYPE OF FACILITY = STEET
866          RD    3000   0.010    .016       0    TRAP      20       1
             *

867          KK    C5DC
868          KM   MODIFIED 1998 LOMR SUBBASIN C5DC
869          PB    3.31
870          BA   .3264
871          LS       0      83
872          UD     .02
             *
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

873          KK   RC5DC
874          KM   ROUTE C5DC TO C4BD
875          RD    6600    .024    .040       0    TRAP     100
             *
             *
```

```
876          KK    C4BD
877          KM   MODIFIED 1998 LOMR SUBBASIN C5DC
878          KM   2001 MPU C1-47
879          BA   .5243
880          PB    3.23
881          LS       0      82
882          UD    0.42
             *

883          KK   CP34A
884          KM   COMBINE RC4BF, C4BD, AND C5DC
885          HC       2
             *

886          KK   CP34B
887          KM   COMBINE  RCP24  AND CP34A
888          KM   EQUESTRIAN DETENTION BASIN
889          HC       2
             *
             *  THE EQUESTRIAN DETENTION BASIN STAGE/DISCHARGE AND STAGE/VOLUME RELATIONSHIPS
             *  WERE CHECKED AGAINST THE LATEST RECORD DRAWINGS AND PREDESIGN REPORTS.
             *  THE FOLLOWING INPUT REFLECTS RECORD DRAWING INFORMATION
             *

890          KK     DB4
891          KM   FACILITY = EQUESTRIAN DETENTION BASIN
892          KM   FACILITY # = CIEQ 0159
893          KM   STORAGE VOLUME = 409 AC-FT,(100-YR PEAK STAGE AT EL = 2069, W/O FREEBOARD)
894          KM   OUTLET = 48" RCP
895          KO       3
896          RS       1    STOR       0
897          SV       0       2      13      31      61      97     118     140     171     200
898          SV     229     261     290     315     344     379     409     437     470     504
899          SE    2048    2050    2052    2054    2056    2058    2059    2060    2061    2062
900          SE    2063    2064    2065    2066    2067    2068    2069    2070    2071    2072
901          SQ       0      37      80     117     142     163     173     182     191     198
902          SQ     206     213     221     228     235     242     248    2755    7761   14467
903          SS    2069     900     3.0     1.5
             *
             *
             *              *****END OF 1998 LOMR INPUT******
             *
             *
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

904          KK    C4BF
905          KM   PART OF 1998 LOMR SUBBASIN C5DC
906          PB    3.21
907          BA   .2776
908          LS       0      81
909          UD     .06
             *

910          KK   RC4BF
911          KM   ROUTE C4BF TO C4BC
912          RD    3100    .020    .033       0    TRAP   100.0
             *

913          KK    C4BC
914          KM   SUBBASIN C4BC
915          PB    3.15
916          BA   .2402
917          LS       0      82
918          UD     .19
             *

919          KK    CP34
920          KM   COMBINE CP34B, C4BC,AND RC4BF
921          HC       3
             *

922          KK   RCP34
923          KM   ROUTE CP34 TO C4A1C ALONG EQUESTRIAN OUTFALL
924          KM   FACILITY = C-1 CHANNEL - EQUESTRIAN DETENTION BASIN OUTFALL
925          KM   FACILITY # CIEQ 0078, 0112, 0139
926          RD    3600    .018    .030       0    TRAP     100
             *

927          KK   C4A1C
928          KM   2001 MPU C1-49
929          BA   .5200
930          PB    3.07
931          LS       0      82
932          UD     .25
             *

933          KK    RET5
934          KM   RETRIEVE DIVERSION 5
935          DR  DIVER5
             *

936          KK   RDIV5
937          KM   ROUTE DIV5 ALONG RACE TRACK ROAD TO NEWPORT
938          KM   FACILITY = STREET
939          RD    5000    .024    .016       0    TRAP     100
             *
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

940          KK   CP35A
941          KM   COMBINE RDIV5, RCP34, AND C4A1C
942          KM   RACETRACK AND NEWPORT
943          HC       3
             *

944          KK    C4A1
945          KM    2001 MPU C1-50
946          BA   .3493
947          PB    3.07
948          LS       0      79
949          UD     .32
             *

950          KK    CP35
951          KM   COMBINE CP35A AND C4A1
952          HC       2
             *

953          KK  RCP35
954          KM   ROUTE TO C4A1B
955          KM   OVERLAND FLOW
956          KM   C-1 CHANNEL AT BURKHOLDER
```

```
 957          RD    3500     .02    .030            TRAP     100       3
              *

 958          KK     C4BE
 959          KM   NOT A PART OF THE 1998 LOMR
 960          PB    3.17
 961          BA   .2206
 962          LS       0       85
 963          UD    0.26
              *

 964          KK   RC4BE
 965          KM   ROUTE C4BE TO C4BB
 966          RD    3400    .036    .030            TRAP     100
              *

 967          KK     C4BB
 968          BA   .3477
 969          PB    3.09
 970          LS       0       87
 971          UD    0.29
              *

 972          KK     CP36
 973          KM   COMBINE RC4BE AND C4BB
 974          HC        2
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 975          KK   RCP36
 976          KM   ROUTE CP36 TO C4A2B
 977          KM   ROUTE TO BURKHOLDER AND RACETRACK
 978          RD    2640   0.033   0.016       0    TRAP       0      50
              *

 979          KK   C4A2B
 980          KM   2001 MPU C1-52
 981          BA   .2491
 982          PB    3.03
 983          LS       0       75
 984          UD    0.10
              *

 985          KK     CP37
 986          KM   COMBINE RC4BB AND C4A2B
 987          KM   RACETRACK ROAD @ BURKHOLDER BOULEVARD
 988          HC        2
              *

 989          KK   RCP37
 990          KM   ROUTE CP37 TO C4A1B  ALONG BURKHOLDER
 991          RD    2700   0.033   0.016       0    TRAP       0      50
              *

 992          KK   CP38A
 993          KM   COMBINE CP35 AND RCP37 AT BURKHOLDER AND PUEBLO
 994          HC        2
              *

 995          KK   C4A1B
 996          KM   2001 MPU C1-53
 997          BA   .2492
 998          PB    2.98
 999          LS       0       72
1000          UD     .20
              *

1001          KK     CP38
1002          KM   COMBINE RCP22, CP38A, AND C4A1B @ BURKHOLDER AND PUEBLO
1003          HC        3
              *

1004          KK   RCP38
1005          KM   ROUTE CP38 TO CP45
1006          RD    2200   0.021   0.015       0    TRAP      10      02
              *

1007          KK    C4CB
1008          KM    2001 MPU C1-54
1009          BA   5.408
1010          PB    3.43
1011          LS       0       85
1012          UD    0.06
              *
              *
              *
              *  THE EAST C-1 DETENTION BASIN STAGE/STORAGE AND STAGE/DISCHARGE RELATIONSHIPS
              *  WERE CHECKED AGAINST THE LATEST RECORD DRAWINGS AND PREDESIGN REPORTS.
              *  THE FOLLOWING INPUT  WAS DIGITIZED FROM RECORD DRAWINGS AS THE HEC-1 INPUT
              *  WAS NOT AVAILABLE. THE RECORD DRAWINGS DIFFERED SLIGHTLY FROM THE
              *  PREDESIGN INPUT.
              *
              *
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1013          KK     DB5
1014          KM   FACILITY = EAST C-1 DETENTION BASIN
1015          KM   FACILITY # = C1IT 0492
1016          KM   STORAGE VOLUME = 400 AC-FT (100-YR PK STAGE WSE = 2485.3)
1017          KM   OUTLET = 48" RCP
1018          KO        3
1019          RS        1     STOR       -1
1020          SV      1.2      3.3      12.1      28.0      49.0      79.8     115.0     166.1     232.2     320.1
1021          SV    418.8    534.5    605.5    681.1    765.1    846.8    943.4   1044.8   1261.8   1426.1
1022          SE   2446.0   2450.0   2454.0   2458.0   2462.0   2466.0   2470.0   2474.0   2478.0   2482.0
1023          SE   2486.0   2490.0   2492.0   2494.0   2496.0   2498.0   2500.0     2502   2506.0   2510.0
1024          SQ      0.5     22.9     36.1     45.7     53.6     60.4     66.5     72.3     77.5     82.4
1025          SQ     87.0     91.2     93.5     95.6     97.6     99.5    101.4    103.4    107.2    110.7
1026          SE   2446.0   2450.0   2454.0   2458.0   2462.0   2466.0   2470.0   2474.0   2478.0   2482.0
1027          SE   2486.0   2490.0   2492.0   2494.0   2496.0   2498.0   2500.0     2502   2506.0   2510.0
              *

1028          KK    RDB5
1029          KM   ROUTE DB5 TO C4CA
1030          KM   FACILITY = EAST C-1 DETENTION BASIN LEVEE
1031          KM   FACILITY # = C1DK 0226
1032          KM   TYPE OF FACILTIY = SOIL CEMENT LEVEE
1033          RD    5300    .034    .025       0    TRAP      50       2
              *

1034          KK    C4CA
1035          KM    PART OF 2001 MPU C1-55
```

```
1036          BA   .1964
1037          PB    3.43
1038          LS       0       85
1039          UD    0.27
              *

1040          KK   C3B3E
1041          KM   PART OF 2001 MPU C1-55
1042          BA   .2225
1043          PB    3.43
1044          LS       0       90
1045          UD     .16
              *

1046          KK    CP39
1047          KM   COMBINE C4CA, C3B3E, AND RDB5
1048          HC       3
              *

1049          KK   RCP39
1050          KM   ROUTE CP39 TO C3B3D
1051          RD    2650     .023     .025       0    TRAP       50       2
              *
1                                        HEC-1 INPUT                                                    PAGE 30

              LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1052          KK   C3B3D
1053          KM   PART OF 2001 MPU C1-55
1054          PB    3.43
1055          BA   .2554
1056          LS       0       89
1057          UD     .14
              *

1058          KK    CP40
1059          KM   COMBINE RCP39 AND C3B3D
1060          HC       2
              *

1061          KK   RCP40
1062          KM   ROUTE TO CP42
1063          RD    1400      .05     .025            TRAP       50       3
              *

1064          KK   C3B3C
1065          KM   PART OF 2001 MPU C1-65
1066          BA   1.238
1067          PB    3.50
1068          LS       0       88
1069          UD    0.07
              *

1070          KK  RC3B3C
1071          KM   ROUTE C3B3C TO C3B3B
1072          RD    2300     .024     .030            TRAP      100       3
              *

1073          KK   C3B3B
1074          KM   PART OF 2001 MPU C1-65
1075          BA   .3220
1076          PB    3.43
1077          LS       0       87
1078          UD    0.17
              *

1079          KK    CP41
1080          KM   COMBINE C3B3C AND C3B3B
1081          HC       2
              *

1082          KK   RCP41
1083          KM   ROUTE TO C3B3A
1084          RD    6300      .05     .030            TRAP      100       3
              *
1                                        HEC-1 INPUT                                                    PAGE 31

              LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1085          KK   C3B3A
1086          BA   .5107
1087          PB    3.43
1088          LS       0       85
1089          UD    0.10
              *

1090          KK    CP42
1091          KM   COMBINE RCP41, RCP40, AND C3B3A
1092          HC       3
              *

1093          KK   RCP42
1094          KM   ROUTE CP42 TO CP43 @ MAGIC WAY AND DRAKE CHANNEL
1095          KM   OVERLAND FLOW THROUGH C4BA2
1096          RD    5300     .015     .030            TRAP      100       3
              *

1097          KK   C4BA2
1098          KM   PART OF 2001 MPU C1-46
1099          BA   .1351
1100          PB    3.43
1101          LS       0       74
1102          UD     .16
              *

1103          KK   CP43A
1104          KM   COMBINE C4BA2 AND RCP42
1105          HC       2
              *

1106          KK   RCP43
1107          KM   ROUTE CP43 TO C4A2A ALONG DRAKE CHANNEL
1108          KM   FACILTIY = C-1 CHANNEL - DRAKE CHANNEL
1109          KM   FACILTY # - C1DC 0051
1110          KM   TYPE OF FACILITY = EARTHEN W\ GABION DROPS
1111          RD   2640      .029     .030            TRAP       20       2
              *

1112          KK   C4BA3
1113          KM   PART OF 2001 MPU C1-46
1114          BA   .4069
1115          PB    3.43
1116          LS       0       78
1117          UD     .41
              *

1118          KK  RC4BA3
```

```
1119          KM   ROUTE C4BA3 TO C4A2A
1120          RD    2900     .031     .030            TRAP      200
1121          *
1                                        HEC-1 INPUT                                                PAGE 32

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1122          KK   C4A2A
1123          KM   2001 MPU C1-57
1124          BA    .2607
1125          PB    3.05
1126          LS       0       77
1127          UD     .04
              *

1128          KK    CP44
1129          KM   COMBINE C4A2A, RCP43, AND RC4BA3
1130          KM   DRAKE AND RACETRACK
1131          HC        3
              *

1132          KK   RCP44
1133          KM   ROUTE CP44 TO C4A1A
1134          KM   FACILITY = C-1 CHANNEL -DRAKE CHANNEL
1135          KM   TYPE OF FACILITY = CONCRETE CHANNEL
1136          RD    2640     .021     .015            TRAP       10       2
              *

1137          KK   C4A1A
1138          KM   2001 MPU C1-58
1139          BA    .2544
1140          PB    2.92
1141          LS       0       79
1142          UD     .66
              *

1143          KK    CP45
1144          KM   COMBINE RCP44, RCP38, AND C4A1A
1145          KM   CONFLUENCE OF C1 CHANNEL AND DRAKE CHANNEL
1146          HC        3
              *

1147          KK   RCP45
1148          KM   ROUTE CP45 TO C3B1C
1149          KM   FACILITY = C-1 CHANNEL
1150          KM   FACILITY # = C1CH 0321
1151          KM   TYPE OF FACILITY = CONCRETE CHANNEL
1152          RD    2640     .025     .015            TRAP       15       1
              *

1153          KK   C3A2B
1154          KM   PART OF 2001 MPU C1-65
1155          BA    .5139
1156          PB    3.23
1157          LS       0       86
1158          UD     .13
              *
1                                        HEC-1 INPUT                                                PAGE 33

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1159          KK  RC3A2B
1160          KM   ROUTE C3A2B TO CP46
1161          KM   FACILITY = OVERLAND FLOW
1162          RD    4100     .030     .030            TRAP      100       1
              *

1163          KK   C4BA1
1164          KM   PART OF 2001 MPU C1-62
1165          BA    .4758
1166          PB    2.99
1167          LS       0       74
1168          UD     .21
              *

1169          KK    CP46
1170          KM   COMBINE RC3A2B AND C4BA1
1171          HC        2
              *

1172          KK   RCP46
1173          KM   ROUTE CP46  TO C3B1D
1174          KM   OVERLAND FLOW TO RACETRACK
1175          RD    2640      .03      .03            TRAP      100       3
              *

1176          KK   C3B1D
1177          KM   2001 MPU C1-60
1178          BA    .2455
1179          PB    2.93
1180          LS       0       73
1181          UD     .05
              *

1182          KK    CP47
1183          KM   COMBINE RC4BA1 AND C3B1D
1184          KM   RACETRACK AND WARM SPRINGS
1185          HC        2
              *

1186          KK   RCP47
1187          KM   ROUTE CP47 TO C3B1C
1188          KM   WARM SPRINGS ROAD AND PUEBLO
1189          RD    2640     .025     .016            TRAP        0      50
              *

1190          KK   C3B1C
1191          KM   2001 MPU C1-61
1192          BA    .2434
1193          PB    2.87
1194          LS       0       84
1195          UD     .04
              *
1                                        HEC-1 INPUT                                                PAGE 34

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1196          KK    CP48
1197          KM   COMBINE RCP45, C3B1C, AND RCP46
1198          HC        3
              *

1199          KK   RCP48
1200          KM   ROUTE CP47 TO C3B1A
1201          KM   FACILITY = C-1 CHANNEL
1202          KM   FACILITY # C1CH 0284, 0340
```

```
1203          KM   TYPE OF FACILITY = CONCRETE CHANNEL
1204          RD    2640    .025    .015            TRAP      15       1
              *

1205          KK   C3B1B
1206          KM   PART OF 2001 MPU C1-67
1207          BA   .2094
1208          PB    2.92
1209          LS      0      76
1210          UD    .20
              *

1211          KK  RC3B1B
1212          KM   ROUTE C3B1B TO C3B1A
1213          KM   ITHACA AVENUE AND PUEBLO
1214          RD    2640    .025    .016            TRAP       0      50
              *

1215          KK   C3B1A
1216          KM   2001 MPU C1-63
1217          PB    2.85
1218          BA   .2435
1219          LS      0      78
1220          UD    .21
              *

1221          KK    CP49
1222          KM   COMBINE C3B1A, RC3B1B, AND RCP48
1223          HC       3
              *

1224          KK   RCP49
1225          KM   ROUTE CP49 TO C3A1A
1226          KM   FACILITY = C-1 CHANNEL
1227          KM   FACILITY # C1CH 0220, 0269
1228          KM   TYPE OF FACILITY = CONCRETE CHANNEL
1229          RD    3960    .025    .015            TRAP      15       1
              *

1230          KK   C3A2A
1231          KM   PART OF 2001 MPU C1-66
1232          BA   .4708
1233          PB    3.23
1234          LS      0      88
1235          UD    .09
              *
```

1 HEC-1 INPUT PAGE 35

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1236          KK  RC3A2A
1237          KM   ROUTE C3A2A TO C3A1B
1238          KM   OVERLAND FLOW
1239          RD    7900     .03    .030            TRAP       0     100       3
              *

1240          KK   C3A1B
1241          KM   PART OF 2001 MPU C1-66
1242          BA   1.018
1243          PB    3.23
1244          LS      0      81
1245          UD    .08
              *

1246          KK    CP50
1247          KM   COMBINE C3A1B,RC3A2A, AND CP49
1248          HC       2
              *

1249          KK   RCP50
1250          KM   ROUTE CP50 TO C3A1A
1251          KM   ITHACA
1252          RD    2600    .019    .016            TRAP      50
              *

1253          KK   C3A1A
1254          KM   PART OF 2001 MPU C1-64
1255          BA   .3744
1256          PB    2.84
1257          LS      0      81
1258          UD    .07
              *

1259          KK    CP51
1260          KM   COMBINE C3A1A,RCP50,AND RCP49 - C-1 CHANNEL AND LAKE MEAD DRIVE
1261          HC       3
              *
1262          ZZ
```

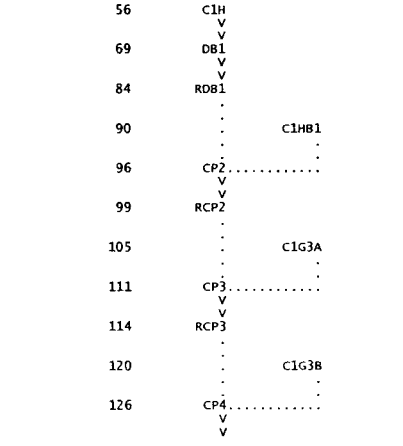
1

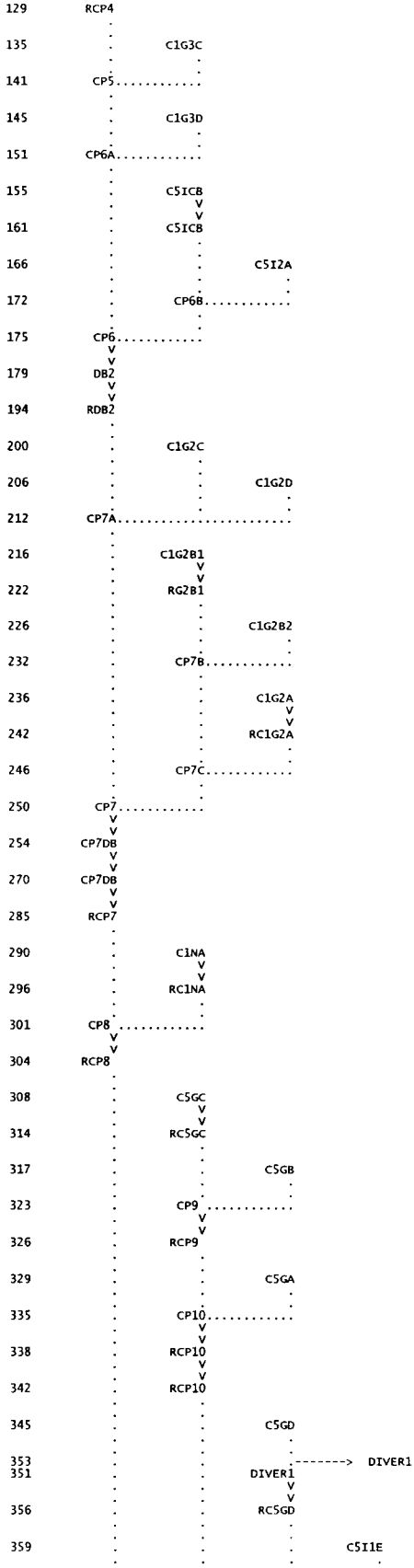
SCHEMATIC DIAGRAM OF STREAM NETWORK

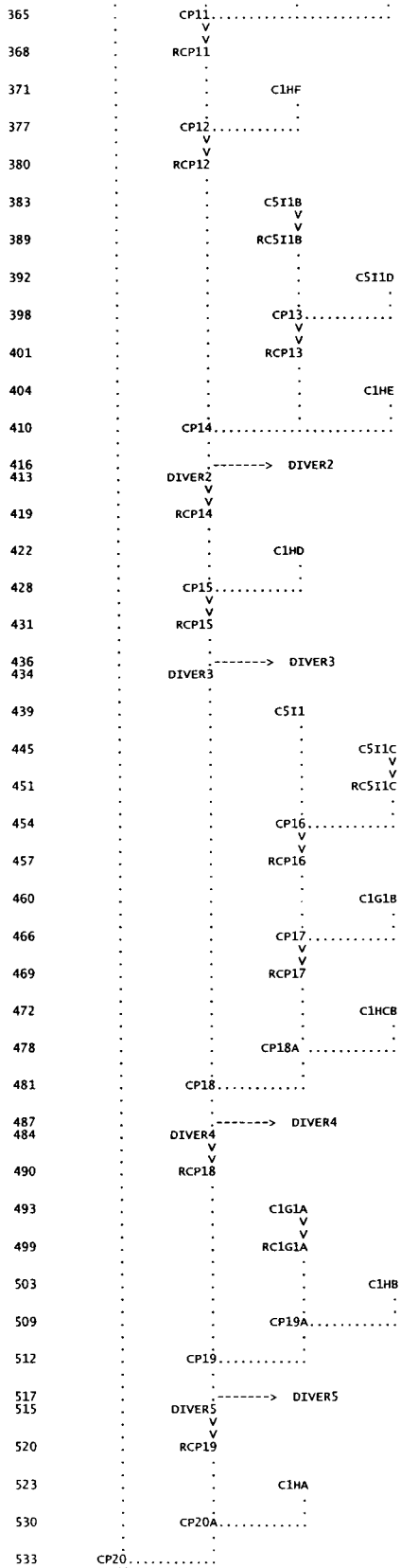
INPUT LINE NO.

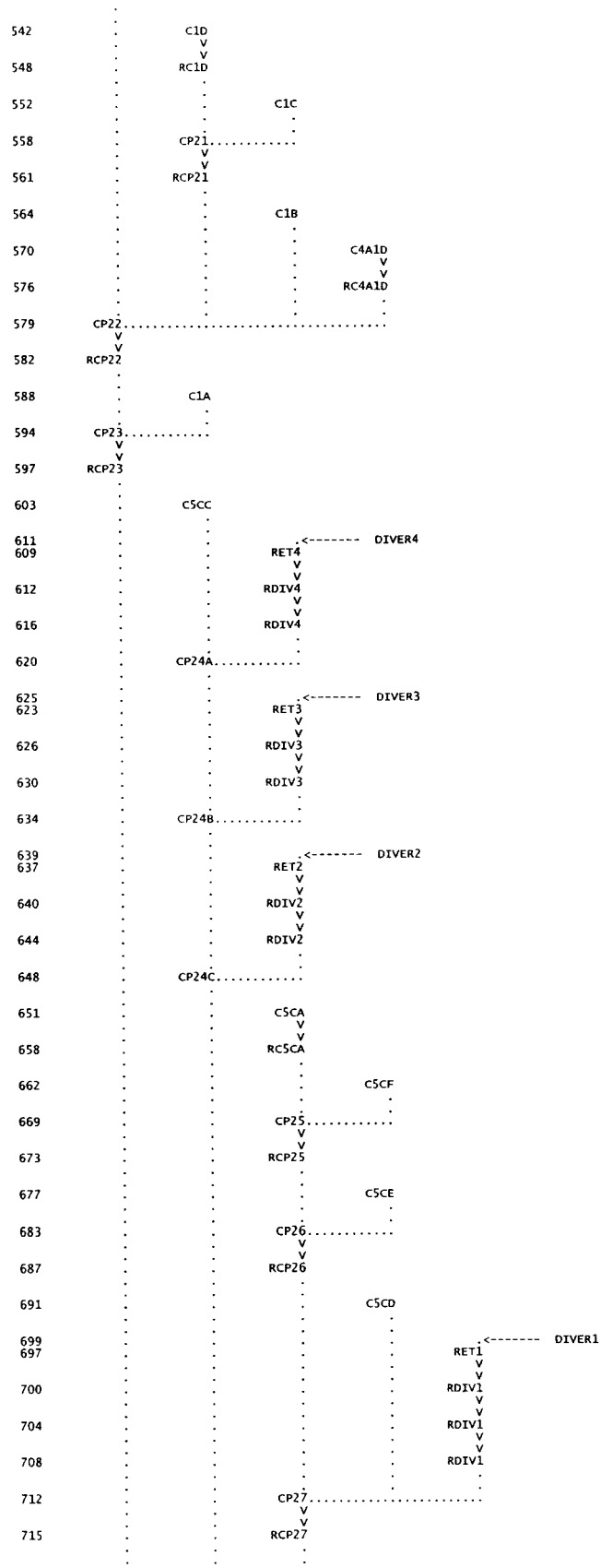
(V) ROUTING (---->) DIVERSION OR PUMP FLOW

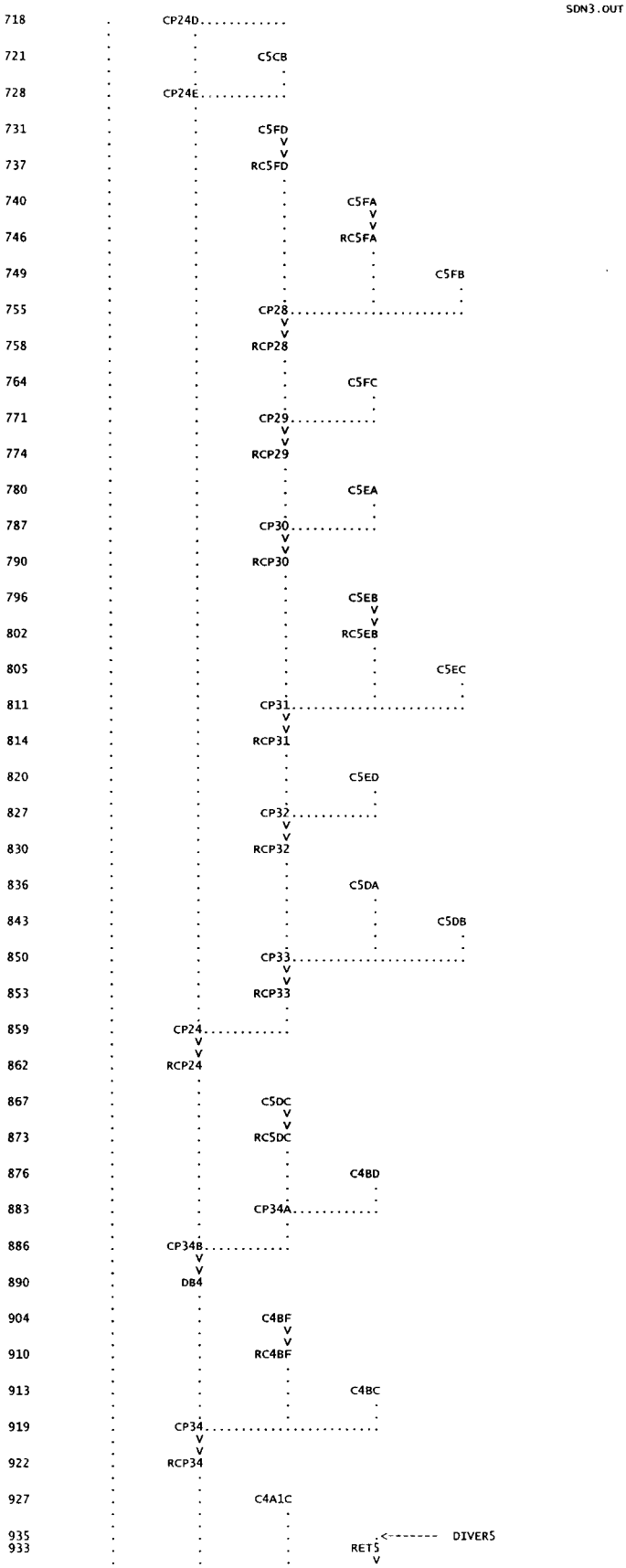
(.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW

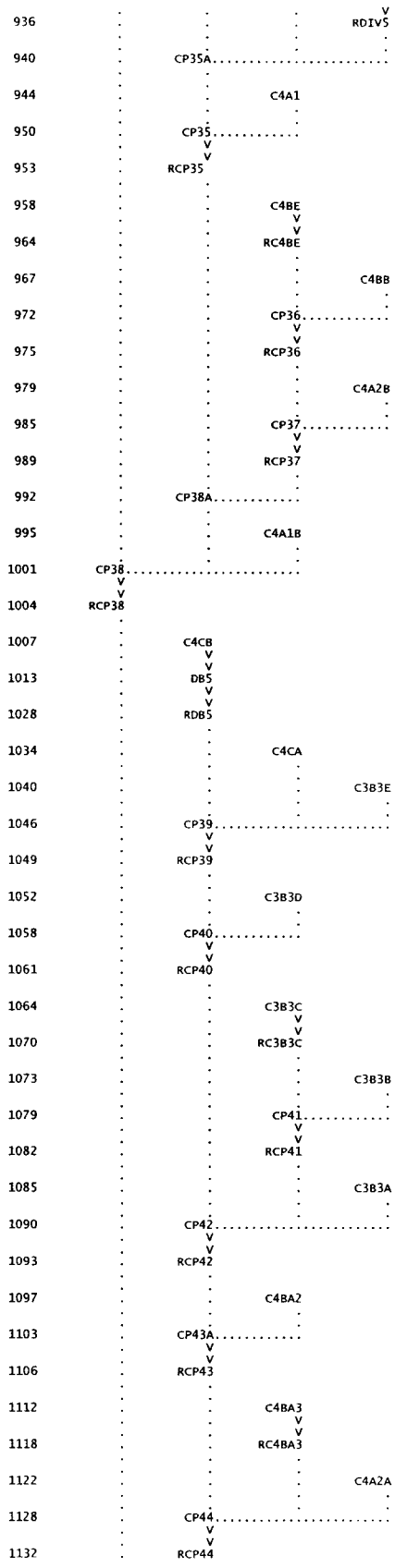


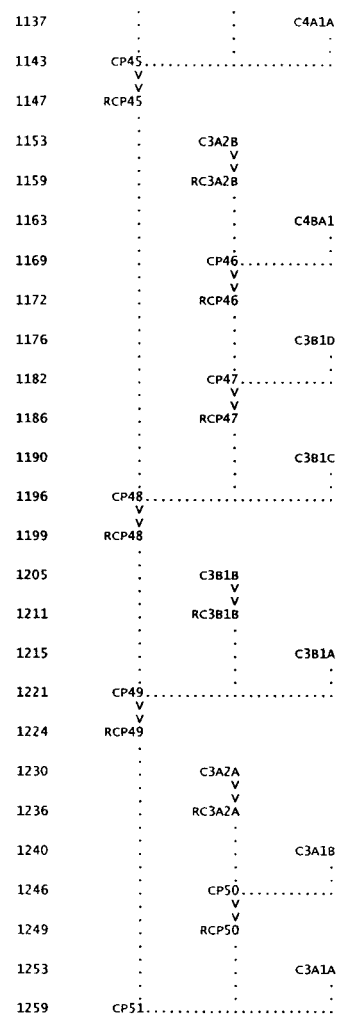

129 RCP4
135 C1G3C
141 CP5
145 C1G3D
151 CP6A
155 C5ICB
161 C5ICB
166 C5I2A
172 CP6B
175 CP6
179 DB2
194 RDB2
200 C1G2C
206 C1G2D
212 CP7A
216 C1G2B1
222 RG2B1
226 C1G2B2
232 CP7B
236 C1G2A
242 RC1G2A
246 CP7C
250 CP7
254 CP7DB
270 CP7DB
285 RCP7
290 C1NA
296 RC1NA
301 CP8
304 RCP8
308 C5GC
314 RC5GC
317 C5GB
323 CP9
326 RCP9
329 C5GA
335 CP10
338 RCP10
342 RCP10
345 C5GD
353 DIVER1
351 DIVER1
356 RC5GD
359 C5I1E


365 CP11
368 RCP11
371 C1HF
377 CP12
380 RCP12
383 C5I1B
389 RC5I1B
392 C5I1D
398 CP13
401 RCP13
404 C1HE
410 CP14
416
413 DIVER2
419 RCP14
422 C1HD
428 CP15
431 RCP15
436
434 DIVER3
439 C5I1
445 C5I1C
451 RC5I1C
454 CP16
457 RCP16
460 C1G1B
466 CP17
469 RCP17
472 C1HCB
478 CP18A
481 CP18
487
484 DIVER4
490 RCP18
493 C1G1A
499 RC1G1A
503 C1HB
509 CP19A
512 CP19
517
515 DIVER5
520 RCP19
523 C1HA
530 CP20A
533 CP20
536 RCP20


542 C1D
548 RC1D
552 C1C
558 CP21
561 RCP21
564 C1B
570 C4A1D
576 RC4A1D
579 CP22
582 RCP22
588 C1A
594 CP23
597 RCP23
603 C5CC
611 DIVER4
609 RET4
612 RDIV4
616 RDIV4
620 CP24A
625 DIVER3
623 RET3
626 RDIV3
630 RDIV3
634 CP24B
639 DIVER2
637 RET2
640 RDIV2
644 RDIV2
648 CP24C
651 C5CA
658 RC5CA
662 C5CF
669 CP25
673 RCP25
677 C5CE
683 CP26
687 RCP26
691 C5CD
699 DIVER1
697 RET1
700 RDIV1
704 RDIV1
708 RDIV1
712 CP27
715 RCP27


718 CP24D
721 C5CB
728 CP24E
731 C5FD
737 RC5FD
740 C5FA
746 RC5FA
749 C5FB
755 CP28
758 RCP28
764 C5FC
771 CP29
774 RCP29
780 C5EA
787 CP30
790 RCP30
796 C5EB
802 RC5EB
805 C5EC
811 CP31
814 RCP31
820 C5ED
827 CP32
830 RCP32
836 C5DA
843 C5DB
850 CP33
853 RCP33
859 CP24
862 RCP24
867 C5DC
873 RC5DC
876 C4BD
883 CP34A
886 CP34B
890 DB4
904 C4BF
910 RC4BF
913 C4BC
919 CP34
922 RCP34
927 C4A1C
935 DIVER5
933 RET5


936 RDIVS
940 CP35A
944 C4A1
950 CP35
953 RCP35
958 C4BE
964 RC4BE
967 C4BB
972 CP36
975 RCP36
979 C4A2B
985 CP37
989 RCP37
992 CP38A
995 C4A1B
1001 CP38
1004 RCP38
1007 C4CB
1013 DB5
1028 RDB5
1034 C4CA
1040 C3B3E
1046 CP39
1049 RCP39
1052 C3B3D
1058 CP40
1061 RCP40
1064 C3B3C
1070 RC3B3C
1073 C3B3B
1079 CP41
1082 RCP41
1085 C3B3A
1090 CP42
1093 RCP42
1097 C4BA2
1103 CP43A
1106 RCP43
1112 C4BA3
1118 RC4BA3
1122 C4A2A
1128 CP44
1132 RCP44



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*          VERSION 4.1                  *
*                                       *
*  RUN DATE   12NOV02  TIME  17:28:02   *
*                                       *
*****************************************
```

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

```
   **************   C-1 WATERSHED FIS RESTUDY  ****************

***** PREPARED FOR:  CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT *****
                        **    CLARK COUNTY, NEVADA   ***

***** PREPARED BY: CARTER BURGESS AND SOUTHWEST FLUVIAL SYSTEMS  *****

EXISTING CONDITIONS DRAINAGE SYSTEM
INPUT FILE =   SDN3.DAT
INPUT FILE DATE =  NOV   2002
DESIGN STORM = 100-YEAR 6-HR STORM
STORM DISTRIBUTION = SDN #3

REFERENCED HYDROLOGIC MODELS:
PREDESIGN REPORT FOR THE BLACK MOUNTAIN AND MISSION HILLS DETENTION BASINS
AND OUTFALL STRUCTURES (VTN 1992)
SNWA RIVER MOUNTAINS WATER TREATMENT FACILITY DRAFT TECHNICAL DRAINAGE STUDY
(MONTGOMERY WATSON/CH2MHILL 1997)
EAST C-1 DETENTION BASIN FINAL DESIGN (VTN 1998)
DESIGN MEMORANDUM FOR THE EQUESTRIAN DETENTION BASIN (POGGEMEYER 1994)
DESIGN CALCULATION NOTEBOOK FOR THE BLACK MOUNTAIN DETENTION BASIN
(VTN 1998)
CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT 2002 MASTER PLAN UPDATE (LBA)
I-515 BOULDER HIGHWAY TO LAKE MEAD DRIVE DRAINAGE STUDY (SVERDRUP, 1991)

JR CARDS CONTAINED DARFS BASED ON THE FOLLOWING VALUES:

                    AREA      DARF
                    SQ.MI.

                    0 -  5   0.950
                    5 - 12   0.880
                   12 - 16   0.832
                   16 - 20   0.804
                   20 - 30   0.765
                   30 - 40   0.725
```

THE FOLLOWING REDUCTION FACTORS ARE USED FOR MODIFIED USLE COMPUTATIONS

2-YR	0.260
5-YR	0.440
10-YR	0.570
25-YR	0.765
50-YR	0.880

```
  54 IO         OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT         HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1   0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE     2   0  ENDING DATE
                      NDTIME      0055  ENDING TIME
                      ICENT         19  CENTURY MARK

                    COMPUTATION INTERVAL      .08 HOURS
                      TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT

     JP         MULTI-PLAN OPTION
                      NPLAN          1  NUMBER OF PLANS

     JR         MULTI-RATIO OPTION
                    RATIOS OF PRECIPITATION
                   .95       .88       .83       .80       .76       .73       .57       .44       .26

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
  69 KK        *       DB1  *
               *            *
               **************

  74 KO         OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA

  75 RS         STORAGE ROUTING
                      NSTPS          1  NUMBER OF SUBREACHES
                       ITYP       STOR  TYPE OF INITIAL CONDITION
                     RSVRIC      -1.00  INITIAL CONDITION
                          X        .00 WORKING R AND D COEFFICIENT

  76 SV           STORAGE          .0       1.2       4.6      10.3      22.6      38.7      54.9      73.4      92.6     113.5
                                 135.2     158.2     183.2     208.1     234.7     262.5     292.0     325.3

  78 SE         ELEVATION     2556.00   2558.00   2560.00   2562.00   2564.00   2566.00   2568.00   2570.00   2572.00   2574.00
                              2576.00   2578.00   2580.00   2582.00   2584.00   2586.00   2588.00   2590.00

  80 SQ         DISCHARGE          0.        1.       27.       58.       78.       95.      109.      121.      132.      142.
                                 151.      160.      169.      177.      184.      191.      198.      205.

  82 SE         ELEVATION     2556.00   2558.00   2560.00   2562.00   2564.00   2566.00   2568.00   2570.00   2572.00   2574.00
                              2576.00   2578.00   2580.00   2582.00   2584.00   2586.00   2588.00   2590.00
                                                                    ***

                                        COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        .00      1.19      4.55     10.32     22.58     38.69     54.90     73.42     92.55    113.51
          OUTFLOW        .00      1.28     27.31     57.88     77.52     95.42    108.73    120.50    131.87    141.78
        ELEVATION    2556.00   2558.00   2560.00   2562.00   2564.00   2566.00   2568.00   2570.00   2572.00   2574.00

          STORAGE     135.16    158.22    183.23    208.10    234.67    262.55    292.02    325.32
          OUTFLOW     150.74    159.67    168.97    176.60    183.71    190.74    197.77    204.93
        ELEVATION    2576.00   2578.00   2580.00   2582.00   2584.00   2586.00   2588.00   2590.00

      ***           ***           ***           ***           ***

                      HYDROGRAPH AT STATION      DB1
                        FOR PLAN 1, RATIO =  .95

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                  (CFS)
+     198.      5.33                  191.         146.         141.         141.
                (INCHES)              .443        1.356        1.356        1.356
                (AC-FT)               95.          290.         290.         290.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                      6-HR        24-HR        72-HR     24.92-HR
+  (AC-FT)      (HR)
      294.      5.33                  264.         152.         146.         146.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                      6-HR        24-HR        72-HR     24.92-HR
+   (FEET)      (HR)
   2588.10      5.33               2586.03      2576.45      2575.70      2575.70

                      CUMULATIVE AREA =    4.01 SQ MI

      ***           ***           ***           ***           ***

                      HYDROGRAPH AT STATION      DB1
                        FOR PLAN 1, RATIO =  .88

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
```

			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 190.	5.33		182.	135.	130.	130.
		(INCHES)	.423	1.256	1.256	1.256
		(AC-FT)	90.	268.	268.	268.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
258.	5.33	229.	126.	121.	121.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2585.67	5.33	2583.56	2574.20	2573.53	2573.53

CUMULATIVE AREA = 4.01 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB1
FOR PLAN 1, RATIO = .83

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 184.	5.33	176.	127.	123.	123.
		(INCHES)	.408	1.181	1.181	1.181
		(AC-FT)	87.	252.	252.	252.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
234.	5.33	206.	109.	105.	105.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2583.94	5.33	2581.82	2572.66	2572.05	2572.05

CUMULATIVE AREA = 4.01 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB1
FOR PLAN 1, RATIO = .80

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 180.	5.33	172.	122.	118.	118.
		(INCHES)	.399	1.135	1.135	1.135
		(AC-FT)	85.	243.	243.	243.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
220.	5.33	193.	100.	96.	96.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2582.91	5.33	2580.80	2571.76	2571.18	2571.18

CUMULATIVE AREA = 4.01 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB1
FOR PLAN 1, RATIO = .76

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 175.	5.33	166.	115.	111.	111.
		(INCHES)	.385	1.067	1.067	1.067
		(AC-FT)	82.	228.	228.	228.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
201.	5.33	176.	88.	85.	85.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2581.46	5.33	2579.38	2570.52	2569.98	2569.98

CUMULATIVE AREA = 4.01 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB1
FOR PLAN 1, RATIO = .73

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 169.	5.33	159.	106.	103.	103.
		(INCHES)	.370	.988	.988	.988
		(AC-FT)	79.	211.	211.	211.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
182.	5.33	158.	76.	73.	73.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2579.94	5.33	2577.91	2569.22	2568.74	2568.74

CUMULATIVE AREA = 4.01 SQ MI

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HYDROGRAPH AT STATION DB1
FOR PLAN 1, RATIO = .57

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  PEAK FLOW      TIME                         MAXIMUM AVERAGE FLOW
                                      6-HR         24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                            (CFS)
+    142.        5.25                  132.          69.          67.          67.
                          (INCHES)     .306         .644         .644         .644
                           (AC-FT)      65.         138.         138.         138.

 PEAK STORAGE    TIME                       MAXIMUM AVERAGE STORAGE
                                      6-HR         24-HR        72-HR      24.92-HR
+  (AC-FT)       (HR)
      114.       5.25                   94.          37.          36.          36.

  PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
                                      6-HR         24-HR        72-HR      24.92-HR
+   (FEET)       (HR)
   2574.00       5.25               2572.05      2564.39      2564.08      2564.08

                         CUMULATIVE AREA =      4.01 SQ MI


       ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION       DB1
                            FOR PLAN 1, RATIO =   .44

  PEAK FLOW      TIME                         MAXIMUM AVERAGE FLOW
                                      6-HR         24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                            (CFS)
+    114.        5.25                  102.          41.          39.          39.
                          (INCHES)     .237         .378         .378         .378
                           (AC-FT)      51.          81.          81.          81.

 PEAK STORAGE    TIME                       MAXIMUM AVERAGE STORAGE
                                      6-HR         24-HR        72-HR      24.92-HR
+  (AC-FT)       (HR)
       63.       5.25                   48.          16.          15.          15.

  PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
                                      6-HR         24-HR        72-HR      24.92-HR
+   (FEET)       (HR)
   2568.87       5.25               2567.11      2561.09      2560.90      2560.90

                         CUMULATIVE AREA =      4.01 SQ MI


       ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION       DB1
                            FOR PLAN 1, RATIO =   .26

  PEAK FLOW      TIME                         MAXIMUM AVERAGE FLOW
                                      6-HR         24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
                            (CFS)
+     61.        5.17                   38.          10.          10.          10.
                          (INCHES)     .088         .096         .096         .096
                           (AC-FT)      19.          20.          20.          20.

 PEAK STORAGE    TIME                       MAXIMUM AVERAGE STORAGE
                                      6-HR         24-HR        72-HR      24.92-HR
+  (AC-FT)       (HR)
       13.       5.17                    7.           2.           2.           2.

  PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
                                      6-HR         24-HR        72-HR      24.92-HR
+   (FEET)       (HR)
   2562.37       5.17               2560.66      2558.06      2557.99      2557.99

                         CUMULATIVE AREA =      4.01 SQ MI


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            *            *
  179 KK    *     DB2    *
            *            *
            **************

  184 KO          OUTPUT CONTROL VARIABLES
                        IPRNT          3  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA

  185 RS          STORAGE ROUTING
                        NSTPS          1  NUMBER OF SUBREACHES
                         ITYP       STOR  TYPE OF INITIAL CONDITION
                       RSVRIC      -1.00  INITIAL CONDITION
                            X        .00  WORKING R AND D COEFFICIENT

  186 SV            STORAGE          .0       2.5      15.9      40.2      72.3     107.2     185.2     273.0     371.6     480.1
                                  598.5     630.2

  188 SE          ELEVATION     2323.00   2326.00   2328.00   2330.00   2332.00   2334.00   2338.00   2342.00   2346.00   2350.00
                                2354.00   2355.00

  190 SQ          DISCHARGE          0.       57.      109.      143.      170.      194.      234.      268.      299.      326.
                                   352.      358.

  192 SE          ELEVATION     2323.00   2326.00   2328.00   2330.00   2332.00   2334.00   2338.00   2342.00   2346.00   2350.00
                                2354.00   2355.00

                                                             ***

                                         COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

              STORAGE        .00      2.55     15.85     40.23     72.34    107.20    185.20    273.00    371.60    480.10
              OUTFLOW        .00     56.78    108.70    142.90    170.40    193.90    234.10    268.40    298.70    326.10
            ELEVATION    2323.00   2326.00   2328.00   2330.00   2332.00   2334.00   2338.00   2342.00   2346.00   2350.00

              STORAGE     598.50    630.20
              OUTFLOW     351.60    357.60
            ELEVATION    2354.00   2355.00

       ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION       DB2
                            FOR PLAN 1, RATIO =   .95

  PEAK FLOW      TIME                         MAXIMUM AVERAGE FLOW
                                      6-HR         24-HR        72-HR      24.92-HR
+   (CFS)        (HR)
```

		(CFS)				
+ 308.	6.08		304.	258.	249.	249.
		(INCHES)	.298	1.013	1.013	1.013
		(AC-FT)	150.	512.	512.	512.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
408.	6.17	391.	286.	276.	276.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2347.36	6.08	2346.70	2341.93	2341.23	2341.23

CUMULATIVE AREA = 9.48 SQ MI

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HYDROGRAPH AT STATION DB2
FOR PLAN 1, RATIO = .88

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
+ 294.	6.08	(CFS) 289.	243.	234.	234.
		(INCHES) .283	.954	.954	.954
		(AC-FT) 143.	482.	482.	482.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
357.	6.08	340.	244.	235.	235.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2345.41	6.08	2344.73	2340.11	2339.48	2339.48

CUMULATIVE AREA = 9.48 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB2
FOR PLAN 1, RATIO = .83

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
+ 284.	6.08	(CFS) 279.	232.	224.	224.
		(INCHES) .273	.911	.911	.911
		(AC-FT) 138.	461.	461.	461.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
323.	6.08	307.	216.	208.	208.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2344.03	6.08	2343.38	2338.85	2338.27	2338.27

CUMULATIVE AREA = 9.48 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB2
FOR PLAN 1, RATIO = .80

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
+ 278.	6.08	(CFS) 273.	225.	217.	217.
		(INCHES) .268	.884	.884	.884
		(AC-FT) 135.	447.	447.	447.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
303.	6.08	287.	200.	192.	192.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2343.23	6.08	2342.58	2338.10	2337.54	2337.54

CUMULATIVE AREA = 9.48 SQ MI

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HYDROGRAPH AT STATION DB2
FOR PLAN 1, RATIO = .76

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
+ 269.	6.08	(CFS) 264.	216.	208.	208.
		(INCHES) .259	.847	.847	.847
		(AC-FT) 131.	428.	428.	428.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
276.	6.08	261.	178.	171.	171.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2342.13	6.08	2341.45	2337.05	2336.54	2336.54

CUMULATIVE AREA = 9.48 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB2
FOR PLAN 1, RATIO = .73

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR

```
+   (CFS)       (HR)
                  (CFS)
+     259.      6.08          253.        205.        198.        198.
                (INCHES)      .249        .805        .805        .805
                 (AC-FT)      126.        407.        407.        407.

 PEAK STORAGE   TIME                   MAXIMUM AVERAGE STORAGE
                                 6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
      249.      6.08                235.        156.        150.        150.

  PEAK STAGE    TIME                   MAXIMUM AVERAGE STAGE
                                 6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   2340.92      6.08           2340.26     2335.97     2335.49     2335.49

                          CUMULATIVE AREA =    9.48 SQ MI

       ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      DB2
                            FOR PLAN 1, RATIO =  .57

  PEAK FLOW     TIME                   MAXIMUM AVERAGE FLOW
                                 6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                  (CFS)
+     217.      6.00          211.        156.        150.        150.
                (INCHES)      .207        .610        .610        .610
                 (AC-FT)      105.        308.        308.        308.

 PEAK STORAGE   TIME                   MAXIMUM AVERAGE STORAGE
                                 6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
      152.      6.00                140.         78.         75.         75.

  PEAK STAGE    TIME                   MAXIMUM AVERAGE STAGE
                                 6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   2336.32      6.00           2335.69     2331.64     2331.32     2331.32

                          CUMULATIVE AREA =    9.48 SQ MI

       ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      DB2
                            FOR PLAN 1, RATIO =  .44

  PEAK FLOW     TIME                   MAXIMUM AVERAGE FLOW
                                 6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                  (CFS)
+     177.      5.75          170.         91.         88.         88.
                (INCHES)      .166        .357        .357        .357
                 (AC-FT)       84.        180.        180.        180.

 PEAK STORAGE   TIME                   MAXIMUM AVERAGE STORAGE
                                 6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
       82.      5.75                72.         30.         29.         29.

  PEAK STAGE    TIME                   MAXIMUM AVERAGE STAGE
                                 6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   2332.56      5.75           2331.96     2327.63     2327.46     2327.46

                          CUMULATIVE AREA =    9.48 SQ MI

       ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION      DB2
                            FOR PLAN 1, RATIO =  .26

  PEAK FLOW     TIME                   MAXIMUM AVERAGE FLOW
                                 6-HR       24-HR       72-HR     24.92-HR
+   (CFS)       (HR)
                  (CFS)
+     101.      5.42           79.         22.         21.         21.
                (INCHES)      .078        .086        .086        .086
                 (AC-FT)       39.         43.         43.         43.

 PEAK STORAGE   TIME                   MAXIMUM AVERAGE STORAGE
                                 6-HR       24-HR       72-HR     24.92-HR
+  (AC-FT)      (HR)
       14.      5.42                 9.          2.          2.          2.

  PEAK STAGE    TIME                   MAXIMUM AVERAGE STAGE
                                 6-HR       24-HR       72-HR     24.92-HR
+   (FEET)      (HR)
   2327.71      5.42           2326.85     2324.07     2324.04     2324.04

                          CUMULATIVE AREA =    9.48 SQ MI


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            *            *
  254 KK    *    CP7DB   *
            *            *
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  260 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          3  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA

  261 RS          STORAGE ROUTING
                       NSTPS          1  NUMBER OF SUBREACHES
                        ITYP       STOR  TYPE OF INITIAL CONDITION
                      RSVRIC      -1.00  INITIAL CONDITION
                           X        .00 WORKING R AND D COEFFICIENT

  262 SV            STORAGE          .0         .1         .7        1.9        3.9        7.0       11.2       16.1       21.5       27.2
                                    33.2       39.6       46.4       53.5       61.0       68.9       77.1       85.5       94.2      103.0

  264 SE          ELEVATION     2230.00    2231.00    2232.00    2233.00    2234.00    2235.00    2236.00    2237.00    2238.00    2239.00
                                2240.00    2241.00    2242.00    2243.00    2244.00    2245.00    2246.00    2247.00    2248.00    2249.00

  266 SQ          DISCHARGE          0.        70.       180.       317.       479.       659.       855.      1068.      1291.      1526.
                                  1776.      2039.      2257.      2384.      2512.      2700.      2887.      3061.      3226.      3515.
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268 SE	ELEVATION	2230.00	2231.00	2232.00	2233.00	2234.00	2235.00	2236.00	2237.00	2238.00	2239.00
		2240.00	2241.00	2242.00	2243.00	2244.00	2245.00	2246.00	2247.00	2248.00	2249.00

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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	.13	.66	1.85	3.90	6.97	11.16	16.15	21.51	27.21
OUTFLOW	.00	70.20	180.10	317.40	479.10	659.20	854.50	1068.10	1290.90	1525.90
ELEVATION	2230.00	2231.00	2232.00	2233.00	2234.00	2235.00	2236.00	2237.00	2238.00	2239.00
STORAGE	33.22	39.59	46.37	53.53	61.03	68.88	77.06	85.51	94.16	102.96
OUTFLOW	1776.10	2038.60	2256.80	2384.20	2511.70	2700.00	2887.00	3060.90	3225.70	3515.40
ELEVATION	2240.00	2241.00	2242.00	2243.00	2244.00	2245.00	2246.00	2247.00	2248.00	2249.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 0. TO 70.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .95

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 1009.	4.08	474.	304.	293.	293.
		(INCHES) .394	1.012	1.012	1.012
		(AC-FT) 235.	603.	603.	603.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
15.	4.08	4.	2.	2.	2.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2236.72	4.08	2233.88	2232.80	2232.70	2232.70

CUMULATIVE AREA = 11.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .88

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
* (CFS)	(HR)				
		(CFS)			
+ 886.	4.08	435.	282.	272.	272.
		(INCHES) .362	.940	.940	.940
		(AC-FT) 216.	560.	560.	560.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
12.	4.08	4.	2.	2.	2.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2236.15	4.08	2233.67	2232.66	2232.56	2232.56

CUMULATIVE AREA = 11.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .83

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 803.	4.08	408.	267.	257.	257.
		(INCHES) .340	.889	.889	.889
		(AC-FT) 202.	530.	530.	530.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
10.	4.08	3.	2.	2.	2.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2235.73	4.08	2233.51	2232.55	2232.46	2232.46

CUMULATIVE AREA = 11.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .80

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 757.	4.08	393.	258.	248.	248.
		(INCHES) .327	.858	.858	.858
		(AC-FT) 195.	512.	512.	512.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
9.	4.08	3.	2.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2235.50	4.08	2233.42	2232.49	2232.40	2232.40

CUMULATIVE AREA = 11.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .76

```
   PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
                                         6-HR        24-HR         72-HR       24.92-HR
+   (CFS)         (HR)
                              (CFS)
+      695.       4.08                   371.        245.          236.           236.
                            (INCHES)     .309        .815          .815           .815
                             (AC-FT)     184.        486.          486.           486.

  PEAK STORAGE    TIME                            MAXIMUM AVERAGE STORAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+  (AC-FT)        (HR)
          8.      4.08                     3.          1.            1.             1.

   PEAK STAGE     TIME                              MAXIMUM AVERAGE STAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+   (FEET)        (HR)
   2235.18        4.08                2233.29      2232.40       2232.31        2232.31

                            CUMULATIVE AREA =    11.18 SQ MI

        ***              ***            ***             ***            ***

                             HYDROGRAPH AT STATION     CP7DB
                               FOR PLAN 1, RATIO =   .73

   PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
                                         6-HR        24-HR         72-HR       24.92-HR
+   (CFS)         (HR)
                              (CFS)
+      629.       4.08                   348.        231.          223.           223.
                            (INCHES)     .290        .769          .769           .769
                             (AC-FT)     173.        458.          458.           458.

  PEAK STORAGE    TIME                            MAXIMUM AVERAGE STORAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+  (AC-FT)        (HR)
          6.      4.08                     2.          1.            1.             1.

   PEAK STAGE     TIME                              MAXIMUM AVERAGE STAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+   (FEET)        (HR)
   2234.83        4.08                2233.15      2232.30       2232.21        2232.21

                            CUMULATIVE AREA =    11.18 SQ MI

        ***              ***            ***             ***            ***

                             HYDROGRAPH AT STATION     CP7DB
                               FOR PLAN 1, RATIO =   .57

   PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
                                         6-HR        24-HR         72-HR       24.92-HR
+   (CFS)         (HR)
                              (CFS)
+      393.       4.25                   263.        170.          164.           164.
                            (INCHES)     .219        .566          .566           .566
                             (AC-FT)     130.        337.          337.           337.

  PEAK STORAGE    TIME                            MAXIMUM AVERAGE STORAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+  (AC-FT)        (HR)
          3.      4.25                     1.          1.            1.             1.

   PEAK STAGE     TIME                              MAXIMUM AVERAGE STAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+   (FEET)        (HR)
   2233.47        4.25                2232.59      2231.83       2231.76        2231.76

                            CUMULATIVE AREA =    11.18 SQ MI

        ***              ***            ***             ***            ***

                             HYDROGRAPH AT STATION     CP7DB
                               FOR PLAN 1, RATIO =   .44

   PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
                                         6-HR        24-HR         72-HR       24.92-HR
+   (CFS)         (HR)
                              (CFS)
+      243.       5.08                   193.         98.           94.            94.
                            (INCHES)     .161        .326          .326           .326
                             (AC-FT)      96.        194.          194.           194.

  PEAK STORAGE    TIME                            MAXIMUM AVERAGE STORAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+  (AC-FT)        (HR)
          1.      5.08                     1.          0.            0.             0.

   PEAK STAGE     TIME                              MAXIMUM AVERAGE STAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+   (FEET)        (HR)
   2232.46        5.08                2232.09      2231.12       2231.08        2231.08

                            CUMULATIVE AREA =    11.18 SQ MI

        ***              ***            ***             ***            ***

                             HYDROGRAPH AT STATION     CP7DB
                               FOR PLAN 1, RATIO =   .26

   PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
                                         6-HR        24-HR         72-HR       24.92-HR
+   (CFS)         (HR)
                              (CFS)
+      108.       5.58                    82.         23.           22.            22.
                            (INCHES)     .068        .075          .075           .075
                             (AC-FT)      40.         45.           45.            45.

  PEAK STORAGE    TIME                            MAXIMUM AVERAGE STORAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+  (AC-FT)        (HR)
          0.      5.58                     0.          0.            0.             0.

   PEAK STAGE     TIME                              MAXIMUM AVERAGE STAGE
                                         6-HR        24-HR         72-HR       24.92-HR
+   (FEET)        (HR)
   2231.34        5.58                2231.09      2230.30       2230.29        2230.29

                            CUMULATIVE AREA =    11.18 SQ MI


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          *            *
270 KK    *     CP7DB  *
          *            *
          **************

275 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA

276 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       STOR  TYPE OF INITIAL CONDITION
                    RSVRIC      -1.00  INITIAL CONDITION
                         X        .00 WORKING R AND D COEFFICIENT

277 SV            STORAGE          .0        .7       5.4      13.6      21.9      30.4      39.0      47.8      56.6      65.6
                                  74.7      84.0      93.5     103.1     112.8

279 SE            ELEVATION     2220.00   2221.00   2222.00   2223.00   2224.00   2225.00   2226.00   2227.00   2228.00   2229.00
                                2230.00   2231.00   2232.00   2233.00   2234.00

281 SQ            DISCHARGE        0.       13.       37.      152.      340.      578.      850.     1155.     1488.     1846.
                                 2225.     2481.     2701.     3036.     3463.

283 SE            ELEVATION     2220.00   2221.00   2222.00   2223.00   2224.00   2225.00   2226.00   2227.00   2228.00   2229.00
                                2230.00   2231.00   2232.00   2233.00   2234.00

                                                                ***

                                COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

                STORAGE          .00       .68      5.42     13.62     21.95     30.42     39.03     47.76     56.62     65.61
                OUTFLOW          .00     13.20     37.20    152.00    340.30    578.10    849.70   1155.10   1488.10   1845.50
              ELEVATION      2220.00   2221.00   2222.00   2223.00   2224.00   2225.00   2226.00   2227.00   2228.00   2229.00

                STORAGE        74.74     84.02     93.46    103.05    112.79
                OUTFLOW      2224.90   2481.10   2700.80   3035.50   3463.40
              ELEVATION      2230.00   2231.00   2232.00   2233.00   2234.00

          ***             ***             ***             ***             ***

                            HYDROGRAPH AT STATION    CP7DB
                              FOR PLAN 1, RATIO =  .95

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     811.      4.50          460.         295.         284.         284.
                      (INCHES)          .382         .982         .982         .982
                       (AC-FT)          228.         585.         585.         585.

 PEAK STORAGE   TIME                            MAXIMUM AVERAGE STORAGE
                                      6-HR        24-HR        72-HR     24.92-HR
+  (AC-FT)      (HR)
       38.      4.50                  26.          19.          18.          18.

  PEAK STAGE    TIME                            MAXIMUM AVERAGE STAGE
                                      6-HR        24-HR        72-HR     24.92-HR
+   (FEET)      (HR)
    2225.86     4.50                2224.47      2223.59      2223.46      2223.46

                            CUMULATIVE AREA =   11.18 SQ MI

          ***             ***             ***             ***             ***

                            HYDROGRAPH AT STATION    CP7DB
                              FOR PLAN 1, RATIO =  .88

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     706.      4.50          420.         274.         264.         264.
                      (INCHES)          .349         .911         .911         .911
                       (AC-FT)          208.         543.         543.         543.

 PEAK STORAGE   TIME                            MAXIMUM AVERAGE STORAGE
                                      6-HR        24-HR        72-HR     24.92-HR
+  (AC-FT)      (HR)
       34.      4.50                  25.          18.          17.          17.

  PEAK STAGE    TIME                            MAXIMUM AVERAGE STAGE
                                      6-HR        24-HR        72-HR     24.92-HR
+   (FEET)      (HR)
    2225.47     4.50                2224.30      2223.47      2223.35      2223.35

                            CUMULATIVE AREA =   11.18 SQ MI

          ***             ***             ***             ***             ***

                            HYDROGRAPH AT STATION    CP7DB
                              FOR PLAN 1, RATIO =  .83

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+     635.      4.58          393.         259.         249.         249.
                      (INCHES)          .327         .861         .861         .861
                       (AC-FT)          195.         513.         513.         513.

 PEAK STORAGE   TIME                            MAXIMUM AVERAGE STORAGE
                                      6-HR        24-HR        72-HR     24.92-HR
+  (AC-FT)      (HR)
       32.      4.58                  24.          18.          17.          17.

  PEAK STAGE    TIME                            MAXIMUM AVERAGE STAGE
                                      6-HR        24-HR        72-HR     24.92-HR
+   (FEET)      (HR)
    2225.21     4.58                2224.19      2223.39      2223.27      2223.27

                            CUMULATIVE AREA =   11.18 SQ MI

          ***             ***             ***             ***             ***

                            HYDROGRAPH AT STATION    CP7DB
                              FOR PLAN 1, RATIO =  .80

  PEAK FLOW     TIME                            MAXIMUM AVERAGE FLOW
```

+ PEAK FLOW (CFS)	TIME (HR)		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE FLOW			
+ 595.	4.58	(CFS)	378.	250.	241.	241.
		(INCHES)	.314	.831	.831	.831
		(AC-FT)	187.	496.	496.	496.

PEAK STORAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)					
31.	4.58		23.	17.	17.	17.

PEAK STAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)					
2225.06	4.58		2224.12	2223.34	2223.22	2223.22

CUMULATIVE AREA = 11.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .76

+ PEAK FLOW (CFS)	TIME (HR)		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE FLOW			
+ 538.	4.58	(CFS)	356.	237.	228.	228.
		(INCHES)	.296	.789	.789	.789
		(AC-FT)	176.	470.	470.	470.

PEAK STORAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)					
29.	4.58		22.	17.	16.	16.

PEAK STAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)					
2224.83	4.58		2224.03	2223.27	2223.15	2223.15

CUMULATIVE AREA = 11.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .73

+ PEAK FLOW (CFS)	TIME (HR)		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE FLOW			
+ 484.	4.67	(CFS)	333.	224.	215.	215.
		(INCHES)	.277	.744	.744	.744
		(AC-FT)	165.	443.	443.	443.

PEAK STORAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)					
27.	4.67		21.	16.	15.	15.

PEAK STAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)					
2224.61	4.67		2223.92	2223.19	2223.07	2223.07

CUMULATIVE AREA = 11.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .57

+ PEAK FLOW (CFS)	TIME (HR)		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE FLOW			
+ 323.	5.42	(CFS)	248.	166.	160.	160.
		(INCHES)	.207	.551	.551	.551
		(AC-FT)	123.	329.	329.	329.

PEAK STORAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)					
21.	5.42		18.	13.	13.	13.

PEAK STAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)					
2223.91	5.42		2223.51	2222.83	2222.73	2222.73

CUMULATIVE AREA = 11.18 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .44

+ PEAK FLOW (CFS)	TIME (HR)		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE FLOW			
+ 217.	5.75	(CFS)	183.	98.	94.	94.
		(INCHES)	.152	.325	.325	.325
		(AC-FT)	91.	194.	194.	194.

PEAK STORAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)					
16.	5.75		15.	9.	8.	8.

PEAK STAGE	TIME		6-HR	24-HR	72-HR	24.92-HR
			MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)					
2223.35	5.75		2223.16	2222.12	2222.04	2222.04

CUMULATIVE AREA = 11.18 SQ MI

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HYDROGRAPH AT STATION CP7DB
FOR PLAN 1, RATIO = .26

```
  PEAK FLOW       TIME                                     MAXIMUM AVERAGE FLOW
                                                 6-HR          24-HR          72-HR          24.92-HR
+   (CFS)         (HR)
                                  (CFS)
+      93.        6.83                               72.            22.            22.            22.
                                  (INCHES)          .060           .075           .075           .075
                                  (AC-FT)            36.            45.            45.            45.

  PEAK STORAGE    TIME                                     MAXIMUM AVERAGE STORAGE
                                                 6-HR          24-HR          72-HR          24.92-HR
+  (AC-FT)        (HR)
        9.        6.75                                8.             2.             2.             2.

  PEAK STAGE      TIME                                     MAXIMUM AVERAGE STAGE
                                                 6-HR          24-HR          72-HR          24.92-HR
+   (FEET)        (HR)
   2222.48        6.83                          2222.30        2220.86        2220.83        2220.83

                                  CUMULATIVE AREA =    11.18 SQ MI

 *** HEC-1 ERROR 1 *** INVALID CARD IDENTIFICATION CODE OR CARD OUT OF SEQUENCE
      CARD NO.  341


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
  890 KK    *      DB4   *
            *            *
            **************

  895 KO          OUTPUT CONTROL VARIABLES
                      IPRNT             3  PRINT CONTROL
                      IPLOT             0  PLOT CONTROL
                      QSCAL            0.  HYDROGRAPH PLOT SCALE

                  HYDROGRAPH ROUTING DATA

  896 RS          STORAGE ROUTING
                      NSTPS             1  NUMBER OF SUBREACHES
                       ITYP          STOR  TYPE OF INITIAL CONDITION
                     RSVRIC           .00  INITIAL CONDITION
                          X           .00  WORKING R AND D COEFFICIENT

  897 SV            STORAGE            .0       2.0      13.0      31.0      61.0      97.0     118.0     140.0     171.0     200.0
                                    229.0     261.0     290.0     315.0     344.0     379.0     409.0     437.0     470.0     504.0

  899 SE          ELEVATION       2048.00   2050.00   2052.00   2054.00   2056.00   2058.00   2059.00   2060.00   2061.00   2062.00
                                  2063.00   2064.00   2065.00   2066.00   2067.00   2068.00   2069.00   2070.00   2071.00   2072.00

  901 SQ          DISCHARGE            0.       37.       80.      117.      142.      163.      173.      182.      191.      198.
                                     206.      213.      221.      228.      235.      242.      248.     2755.     7761.    14467.

  903 SS          SPILLWAY
                       CREL       2069.00  SPILLWAY CREST ELEVATION
                      SPWID        900.00  SPILLWAY WIDTH
                       COQW          3.00  WEIR COEFFICIENT
                       EXPW          1.50  EXPONENT OF HEAD

                                                          ***

                                                COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

                 STORAGE       .00      2.00     13.00     31.00     61.00     97.00    118.00    140.00    171.00    200.00
                 OUTFLOW       .00     37.00     80.00    117.00    142.00    163.00    173.00    182.00    191.00    198.00
               ELEVATION   2048.00   2050.00   2052.00   2054.00   2056.00   2058.00   2059.00   2060.00   2061.00   2062.00

                 STORAGE    229.00    261.00    290.00    315.00    344.00    379.00    409.00    437.00    470.00    504.00
                 OUTFLOW    206.00    213.00    221.00    228.00    235.00    242.00    248.00   2755.00   7761.00  14467.00
               ELEVATION   2063.00   2064.00   2065.00   2066.00   2067.00   2068.00   2069.00   2070.00   2071.00   2072.00

        ***             ***             ***             ***             ***

                                    HYDROGRAPH AT STATION       DB4
                                      FOR PLAN 1, RATIO =  .95

  PEAK FLOW       TIME                                     MAXIMUM AVERAGE FLOW
                                                 6-HR          24-HR          72-HR          24.92-HR
+   (CFS)         (HR)
                                  (CFS)
+    1713.        5.00                              454.           248.           239.           239.
                                  (INCHES)          .629          1.374          1.375          1.375
                                  (AC-FT)           225.           491.           492.           492.

  PEAK STORAGE    TIME                                     MAXIMUM AVERAGE STORAGE
                                                 6-HR          24-HR          72-HR          24.92-HR
+  (AC-FT)        (HR)
      425.        5.00                              387.           233.           224.           224.

  PEAK STAGE      TIME                                     MAXIMUM AVERAGE STAGE
                                                 6-HR          24-HR          72-HR          24.92-HR
+   (FEET)        (HR)
   2069.58        5.00                          2068.32        2062.57        2062.04        2062.04

                                  CUMULATIVE AREA =     6.71 SQ MI

        ***             ***             ***             ***             ***

                                    HYDROGRAPH AT STATION       DB4
                                      FOR PLAN 1, RATIO =  .88

  PEAK FLOW       TIME                                     MAXIMUM AVERAGE FLOW
                                                 6-HR          24-HR          72-HR          24.92-HR
+   (CFS)         (HR)
                                  (CFS)
+     933.        5.42                              304.           209.           201.           201.
                                  (INCHES)          .422          1.159          1.160          1.160
                                  (AC-FT)           151.           415.           415.           415.

  PEAK STORAGE    TIME                                     MAXIMUM AVERAGE STORAGE
                                                 6-HR          24-HR          72-HR          24.92-HR
+  (AC-FT)        (HR)
      417.        5.42                              379.           229.           221.           221.

  PEAK STAGE      TIME                                     MAXIMUM AVERAGE STAGE
                                                 6-HR          24-HR          72-HR          24.92-HR
+   (FEET)        (HR)
   2069.27        5.42                          2068.07        2062.41        2061.88        2061.88

                                  CUMULATIVE AREA =     6.71 SQ MI

        ***             ***             ***             ***             ***
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HYDROGRAPH AT STATION DB4
FOR PLAN 1, RATIO = .83

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
245.	6.08	238.	190.	183.	183.
	(INCHES)	.330	1.051	1.051	1.051
	(AC-FT)	118.	376.	376.	376.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
395.	6.08	361.	216.	208.	208.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2068.55	6.08	2067.48	2061.93	2061.42	2061.42

CUMULATIVE AREA = 6.71 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB4
FOR PLAN 1, RATIO = .80

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
240.	6.00	233.	184.	177.	177.
	(INCHES)	.323	1.019	1.019	1.019
	(AC-FT)	115.	365.	365.	365.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
370.	6.00	337.	197.	190.	190.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2067.75	6.00	2066.70	2061.24	2060.75	2060.75

CUMULATIVE AREA = 6.71 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB4
FOR PLAN 1, RATIO = .76

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
233.	6.00	225.	175.	169.	169.
	(INCHES)	.312	.973	.973	.973
	(AC-FT)	111.	348.	348.	348.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
336.	6.00	304.	173.	166.	166.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2066.73	6.00	2065.57	2060.27	2059.82	2059.82

CUMULATIVE AREA = 6.71 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB4
FOR PLAN 1, RATIO = .73

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
224.	6.00	216.	166.	160.	160.
	(INCHES)	.300	.921	.921	.921
	(AC-FT)	107.	329.	329.	329.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
302.	6.00	271.	148.	142.	142.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2065.48	6.00	2064.39	2059.24	2058.82	2058.82

CUMULATIVE AREA = 6.71 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB4
FOR PLAN 1, RATIO = .57

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
193.	6.00	186.	114.	110.	110.
	(INCHES)	.257	.631	.631	.631
	(AC-FT)	92.	226.	226.	226.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
179.	6.00	154.	66.	64.	64.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2061.26	6.00	2060.42	2054.91	2054.66	2054.66

CUMULATIVE AREA = 6.71 SQ MI

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     ***            ***          ***          ***          ***

                      HYDROGRAPH AT STATION      DB4
                        FOR PLAN 1, RATIO =   .44

  PEAK FLOW      TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR       24.92-HR
+   (CFS)        (HR)
                           (CFS)
+     160.       5.92                149.         65.         63.          63.
                         (INCHES)    .207        .360        .360         .360
                          (AC-FT)     74.        129.        129.         129.

  PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR        24-HR       72-HR       24.92-HR
+  (AC-FT)       (HR)
       92.       5.92                 74.         25.         24.          24.

  PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR        24-HR       72-HR       24.92-HR
+   (FEET)       (HR)
   2057.72       5.92             2056.69     2051.61     2051.48      2051.48

                          CUMULATIVE AREA =    6.71 SQ MI

     ***            ***          ***          ***          ***

                      HYDROGRAPH AT STATION      DB4
                        FOR PLAN 1, RATIO =   .26

  PEAK FLOW      TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR       24.92-HR
+   (CFS)        (HR)
                           (CFS)
+      83.       5.50                 63.         16.         16.          16.
                         (INCHES)    .087        .091        .091         .091
                          (AC-FT)     31.         33.         33.          33.

  PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR        24-HR       72-HR       24.92-HR
+  (AC-FT)       (HR)
       15.       5.50                  9.          2.          2.           2.

  PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR        24-HR       72-HR       24.92-HR
+   (FEET)       (HR)
   2052.18       5.50             2051.20     2048.84     2048.81      2048.81

                          CUMULATIVE AREA =    6.71 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
 1013 KK       *     DB5    *
               *            *
               **************

 1018 KO            OUTPUT CONTROL VARIABLES
                          IPRNT           3  PRINT CONTROL
                          IPLOT           0  PLOT CONTROL
                          QSCAL          0.  HYDROGRAPH PLOT SCALE

                  HYDROGRAPH ROUTING DATA

 1019 RS            STORAGE ROUTING
                          NSTPS           1  NUMBER OF SUBREACHES
                           ITYP        STOR  TYPE OF INITIAL CONDITION
                         RSVRIC       -1.00  INITIAL CONDITION
                              X         .00 WORKING R AND D COEFFICIENT

 1020 SV              STORAGE       1.2       3.3      12.1      28.0      49.0      79.8     115.0     166.1     232.2     320.1
                                  418.8     534.5     605.5     681.1     765.1     846.8     943.4    1044.8    1261.8    1426.1

 1022 SE            ELEVATION   2446.00   2450.00   2454.00   2458.00   2462.00   2466.00   2470.00   2474.00   2478.00   2482.00
                                2486.00   2490.00   2492.00   2494.00   2496.00   2498.00   2500.00   2502.00   2506.00   2510.00

 1024 SQ            DISCHARGE        1.       23.       36.       46.       54.       60.       67.       72.       78.       82.
                                    87.       91.       94.       96.       98.      100.      101.      103.      107.      111.

 1026 SE            ELEVATION   2446.00   2450.00   2454.00   2458.00   2462.00   2466.00   2470.00   2474.00   2478.00   2482.00
                                2486.00   2490.00   2492.00   2494.00   2496.00   2498.00   2500.00   2502.00   2506.00   2510.00
                                                                         ***

                                         COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       1.20      3.30     12.10     28.00     49.00     79.80    115.00    166.10    232.20    320.10
          OUTFLOW        .50     22.90     36.10     45.70     53.60     60.40     66.50     72.30     77.50     82.40
        ELEVATION    2446.00   2450.00   2454.00   2458.00   2462.00   2466.00   2470.00   2474.00   2478.00   2482.00

          STORAGE     418.80    534.50    605.50    681.10    765.10    846.80    943.40   1044.80   1261.80   1426.10
          OUTFLOW      87.00     91.20     93.50     95.60     97.60     99.50    101.40    103.40    107.20    110.70
        ELEVATION    2486.00   2490.00   2492.00   2494.00   2496.00   2498.00   2500.00   2502.00   2506.00   2510.00

     ***            ***          ***          ***          ***

                      HYDROGRAPH AT STATION      DB5
                        FOR PLAN 1, RATIO =   .95

  PEAK FLOW      TIME                        MAXIMUM AVERAGE FLOW
                                     6-HR        24-HR       72-HR       24.92-HR
+   (CFS)        (HR)
                           (CFS)
+      90.       6.00                 89.         82.         79.          79.
                         (INCHES)    .153        .562        .563         .563
                          (AC-FT)     44.        162.        162.         162.

  PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                     6-HR        24-HR       72-HR       24.92-HR
+  (AC-FT)       (HR)
      496.       6.00                481.        385.        371.         371.

  PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
                                     6-HR        24-HR       72-HR       24.92-HR
+   (FEET)       (HR)
   2488.66       6.00             2488.14     2482.96     2481.62      2481.62

                          CUMULATIVE AREA =    5.41 SQ MI

     ***            ***          ***          ***          ***
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HYDROGRAPH AT STATION DB5
FOR PLAN 1, RATIO = .88

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 88.	6.00	87.	79.	76.	76.
		(INCHES) .150	.545	.545	.545
		(AC-FT) 43.	157.	157.	157.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
438.	6.00	424.	335.	323.	323.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2486.67	6.00	2486.16	2480.94	2479.66	2479.66

CUMULATIVE AREA = 5.41 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB5
FOR PLAN 1, RATIO = .83

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 86.	6.00	85.	77.	75.	75.
		(INCHES) .147	.532	.532	.532
		(AC-FT) 42.	154.	154.	154.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
400.	6.00	386.	302.	291.	291.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2485.22	6.00	2484.65	2479.48	2478.25	2478.25

CUMULATIVE AREA = 5.41 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB5
FOR PLAN 1, RATIO = .80

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 85.	5.92	84.	76.	73.	73.
		(INCHES) .145	.525	.525	.525
		(AC-FT) 42.	151.	151.	151.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
377.	6.00	364.	283.	272.	272.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2484.32	6.00	2483.76	2478.62	2477.42	2477.42

CUMULATIVE AREA = 5.41 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB5
FOR PLAN 1, RATIO = .76

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 84.	5.83	83.	75.	72.	72.
		(INCHES) .143	.514	.514	.514
		(AC-FT) 41.	148.	148.	148.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
347.	5.92	333.	256.	247.	247.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2483.07	5.92	2482.53	2477.40	2476.24	2476.24

CUMULATIVE AREA = 5.41 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB5
FOR PLAN 1, RATIO = .73

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 82.	5.83	81.	73.	70.	70.
		(INCHES) .140	.501	.502	.502
		(AC-FT) 40.	145.	145.	145.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
316.	5.83	303.	230.	222.	222.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2481.80	5.83	2481.20	2476.07	2474.97	2474.97

CUMULATIVE AREA = 5.41 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB5
FOR PLAN 1, RATIO = .57

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
		(CFS)			
75.	5.50	74.	64.	62.	62.
		(INCHES) .128	.441	.441	.441
		(AC-FT) 37.	127.	127.	127.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
203.	5.50	191.	135.	130.	130.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2476.22	5.50	2475.51	2470.02	2469.14	2469.14

CUMULATIVE AREA = 5.41 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION DB5
FOR PLAN 1, RATIO = .44

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
		(CFS)			
67.	5.42	65.	53.	51.	51.
		(INCHES) .112	.363	.363	.363
		(AC-FT) 32.	105.	105.	105.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
119.	5.42	109.	67.	64.	64.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2470.33	5.42	2469.24	2463.09	2462.46	2462.46

CUMULATIVE AREA = 5.41 SQ MI

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HYDROGRAPH AT STATION DB5
FOR PLAN 1, RATIO = .26

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
		(CFS)			
46.	5.17	43.	18.	18.	18.
		(INCHES) .073	.127	.127	.127
		(AC-FT) 21.	37.	37.	37.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
30.	5.17	23.	8.	8.	8.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2458.34	5.17	2456.75	2450.22	2450.07	2450.07

CUMULATIVE AREA = 5.41 SQ MI

*** HEC-1 ERROR 1 *** INVALID CARD IDENTIFICATION CODE OR CARD OUT OF SEQUENCE
CARD NO. 1121 *
1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 .95	RATIO 2 .88	RATIO 3 .83	RATIO 4 .80	RATIO 5 .76	RATIO 6 .73	RATIO 7 .57	RATIO 8 .44	RATIO 9 .26
HYDROGRAPH AT													
+	C1H	4.01	1	FLOW	5490.	4881.	4468.	4229.	3899.	3563.	2311.	1350.	279.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	DB1	4.01	1	FLOW	198.	190.	184.	180.	175.	169.	142.	114.	61.
				TIME	5.33	5.33	5.33	5.33	5.33	5.33	5.25	5.25	5.17
			** PEAK STAGES IN FEET **										
			1	STAGE	2588.10	2585.67	2583.94	2582.91	2581.46	2579.94	2574.00	2568.87	2562.37
				TIME	5.33	5.33	5.33	5.33	5.33	5.33	5.25	5.25	5.17
ROUTED TO													
+	RDB1	4.01	1	FLOW	198.	190.	184.	180.	175.	169.	142.	114.	62.
				TIME	5.50	5.50	5.50	5.50	5.42	5.42	5.42	5.42	5.33
HYDROGRAPH AT													
+	C1HB1	.45	1	FLOW	305.	268.	243.	228.	208.	188.	114.	60.	9.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.17
2 COMBINED AT													
+	CP2	4.46	1	FLOW	481.	434.	403.	384.	360.	334.	236.	160.	70.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.08	4.08	5.17
ROUTED TO													
+	RCP2	4.46	1	FLOW	478.	432.	400.	382.	357.	331.	236.	159.	70.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.08	4.08	5.25
HYDROGRAPH AT													
+	C1G3A	.27	1	FLOW	358.	318.	291.	275.	253.	231.	149.	86.	19.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67
2 COMBINED AT													
+	CP3	4.73	1	FLOW	637.	571.	526.	500.	465.	428.	291.	186.	76.
				TIME	3.75	3.75	3.83	3.83	3.83	3.83	3.83	4.00	5.00
ROUTED TO													
+	RCP3	4.73	1	FLOW	635.	571.	525.	499.	462.	426.	291.	186.	76.
				TIME	3.75	3.83	3.83	3.83	3.83	3.92	3.92	4.08	5.08

HYDROGRAPH AT													
+	C1G3B	.73	1	FLOW	1014.	901.	824.	780.	719.	657.	425.	247.	49.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP4	5.46	1	FLOW	1517.	1343.	1226.	1156.	1063.	967.	595.	310.	95.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	4.92
ROUTED TO													
+	RCP4	5.46	1	FLOW	1497.	1287.	1173.	1156.	1073.	977.	600.	296.	94.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	5.00
HYDROGRAPH AT													
+	C1G3C	1.05	1	FLOW	1372.	1218.	1114.	1053.	970.	886.	571.	331.	76.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67
2 COMBINED AT													
+	CP5	6.51	1	FLOW	2792.	2442.	2232.	2159.	2000.	1826.	1158.	627.	127.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75
HYDROGRAPH AT													
+	C1G3D	.84	1	FLOW	1246.	1113.	1022.	970.	897.	824.	546.	330.	82.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP6A	7.35	1	FLOW	4005.	3515.	3206.	3053.	2811.	2556.	1635.	922.	196.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	3.75
HYDROGRAPH AT													
+	C5ICB	.73	1	FLOW	850.	741.	667.	625.	567.	509.	297.	144.	14.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.83
ROUTED TO													
+	C5ICB	.73	1	FLOW	799.	719.	652.	594.	539.	489.	291.	138.	18.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	4.00
HYDROGRAPH AT													
+	C5I2A	1.40	1	FLOW	1698.	1485.	1342.	1260.	1147.	1034.	618.	314.	35.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.75
2 COMBINED AT													
+	CP6B	2.13	1	FLOW	2448.	2133.	1921.	1790.	1629.	1459.	841.	421.	42.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67	4.92
2 COMBINED AT													
+	CP6	9.48	1	FLOW	6453.	5648.	5126.	4844.	4440.	4015.	2469.	1343.	231.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	3.75
ROUTED TO													
+	DB2	9.48	1	FLOW	308.	294.	284.	278.	269.	259.	217.	177.	101.
				TIME	6.08	6.08	6.08	6.08	6.08	6.08	6.00	5.75	5.42
			** PEAK STAGES IN FEET **										
			1	STAGE	2347.36	2345.41	2344.03	2343.23	2342.13	2340.92	2336.32	2332.56	2327.71
				TIME	6.08	6.08	6.08	6.08	6.08	6.08	6.00	5.75	5.42
ROUTED TO													
+	RDB2	9.48	1	FLOW	308.	294.	284.	278.	269.	259.	217.	177.	101.
				TIME	6.17	6.17	6.17	6.17	6.08	6.08	6.00	5.83	5.50
HYDROGRAPH AT													
+	C1G2C	.29	1	FLOW	210.	180.	160.	149.	133.	117.	62.	26.	2.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	5.00
HYDROGRAPH AT													
+	C1G2D	.22	1	FLOW	153.	129.	113.	104.	91.	79.	38.	13.	1.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83	5.00
3 COMBINED AT													
+	CP7A	10.00	1	FLOW	583.	518.	475.	450.	416.	381.	261.	194.	102.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	5.00	5.42
HYDROGRAPH AT													
+	C1G2B1	.52	1	FLOW	260.	220.	193.	178.	157.	137.	67.	25.	1.
				TIME	3.92	3.92	3.92	3.92	3.92	3.92	4.00	4.08	5.17
ROUTED TO													
+	RG2B1	.52	1	FLOW	267.	219.	192.	173.	157.	132.	91.	34.	2.
				TIME	4.08	4.08	4.08	4.17	4.08	4.25	4.17	4.58	7.00
HYDROGRAPH AT													
+	C1G2B2	.31	1	FLOW	230.	198.	177.	165.	148.	131.	71.	31.	3.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	5.00
2 COMBINED AT													
+	CP7B	.83	1	FLOW	403.	325.	284.	263.	243.	211.	125.	46.	3.
				TIME	3.92	4.00	4.08	4.00	4.00	4.00	4.17	4.58	5.00
HYDROGRAPH AT													
+	C1G2A	.35	1	FLOW	309.	267.	240.	224.	203.	181.	103.	49.	5.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	4.92
ROUTED TO													
+	RC1G2A	.35	1	FLOW	308.	270.	234.	224.	199.	176.	105.	38.	5.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.92	4.17	5.50
2 COMBINED AT													
+	CP7C	1.18	1	FLOW	671.	560.	487.	438.	404.	357.	194.	65.	7.
				TIME	3.92	3.92	3.92	4.00	4.00	4.00	4.17	4.58	5.08
2 COMBINED AT													
+	CP7	11.18	1	FLOW	1188.	1026.	920.	848.	766.	695.	430.	245.	108.
				TIME	3.83	3.92	3.92	3.92	4.00	4.00	3.83	5.00	5.50
ROUTED TO													
+	CP7DB	11.18	1	FLOW	1009.	886.	803.	757.	695.	629.	393.	243.	108.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.25	5.08	5.58
			** PEAK STAGES IN FEET **										
			1	STAGE	2236.72	2236.15	2235.73	2235.50	2235.18	2234.83	2233.47	2232.46	2231.34
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.25	5.08	5.58
ROUTED TO													
+	CP7DB	11.18	1	FLOW	811.	706.	635.	595.	538.	484.	323.	217.	93.
				TIME	4.50	4.50	4.58	4.58	4.58	4.67	5.42	5.75	6.83
			** PEAK STAGES IN FEET **										
			1	STAGE	2225.86	2225.47	2225.21	2225.06	2224.83	2224.61	2223.91	2223.35	2222.48
				TIME	4.50	4.50	4.58	4.58	4.58	4.67	5.42	5.75	6.83
ROUTED TO													
+	RCP7	11.18	1	FLOW	809.	705.	634.	593.	538.	484.	323.	217.	93.
				TIME	4.50	4.58	4.58	4.58	4.67	4.75	5.42	5.83	6.92
HYDROGRAPH AT													
+	C1NA	.41	1	FLOW	744.	662.	606.	574.	530.	484.	315.	184.	38.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

ROUTED TO													
+	RC1NA	.41	1	FLOW	675.	597.	542.	519.	469.	431.	264.	155.	36.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.58	3.58
2 COMBINED AT													
+	CP8	11.59	1	FLOW	948.	833.	753.	706.	643.	576.	367.	223.	93.
				TIME	4.58	4.58	4.58	4.58	4.58	4.58	4.92	5.83	6.92
ROUTED TO													
+	RCP8	11.59	1	FLOW	938.	821.	740.	695.	635.	572.	358.	221.	93.
				TIME	4.58	4.58	4.67	4.67	4.67	4.67	4.92	5.92	7.00
HYDROGRAPH AT													
+	C5GC	.11	1	FLOW	223.	199.	183.	173.	160.	147.	97.	58.	14.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
ROUTED TO													
+	RC5GC	.11	1	FLOW	187.	164.	150.	142.	133.	123.	84.	55.	11.
				TIME	3.50	3.50	3.50	3.50	3.58	3.58	3.58	3.58	3.67
HYDROGRAPH AT													
+	C5GB	.32	1	FLOW	451.	399.	364.	344.	316.	287.	182.	103.	20.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67
2 COMBINED AT													
+	CP9	.44	1	FLOW	626.	558.	510.	485.	448.	410.	267.	158.	31.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67
ROUTED TO													
+	RCP9	.44	1	FLOW	598.	526.	481.	453.	414.	379.	248.	150.	31.
				TIME	3.58	3.58	3.58	3.58	3.58	3.67	3.67	3.67	3.75
HYDROGRAPH AT													
+	C5GA	.27	1	FLOW	109.	88.	75.	67.	57.	47.	17.	5.	0.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.92	5.00	.00
2 COMBINED AT													
+	CP10	.71	1	FLOW	665.	579.	527.	497.	456.	414.	257.	150.	31.
				TIME	3.58	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75
ROUTED TO													
+	RCP10	.71	1	FLOW	660.	582.	529.	491.	452.	405.	255.	141.	22.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.75	4.25
ROUTED TO													
+	RCP10	.71	1	FLOW	642.	575.	518.	485.	437.	395.	273.	152.	26.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	4.33
HYDROGRAPH AT													
+	C5GD	.44	1	FLOW	163.	133.	113.	102.	88.	74.	29.	10.	0.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.08	5.08	.00
DIVERSION TO													
+	DIVER1	.44	1	FLOW	23.	20.	19.	17.	16.	14.	8.	3.	0.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.08	5.08	.00
HYDROGRAPH AT													
+	DIVER1	.44	1	FLOW	140.	112.	95.	85.	72.	60.	21.	7.	0.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.08	5.08	.00
ROUTED TO													
+	RC5GD	.44	1	FLOW	139.	112.	94.	85.	72.	59.	21.	7.	0.
				TIME	4.08	4.08	4.08	4.08	4.17	4.17	4.33	5.42	.00
HYDROGRAPH AT													
+	C5I1E	.16	1	FLOW	266.	233.	211.	199.	181.	163.	99.	51.	4.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.75
3 COMBINED AT													
+	CP11	1.32	1	FLOW	798.	697.	618.	570.	509.	458.	313.	163.	28.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	4.33
ROUTED TO													
+	RCP11	1.32	1	FLOW	780.	671.	591.	552.	495.	441.	299.	151.	33.
				TIME	3.75	3.75	3.75	3.75	3.75	3.83	3.83	3.92	4.50
HYDROGRAPH AT													
+	C1HF	.10	1	FLOW	90.	79.	71.	66.	60.	54.	31.	15.	2.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	5.00
2 COMBINED AT													
+	CP12	1.42	1	FLOW	870.	750.	662.	619.	555.	494.	328.	164.	34.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.92	4.50
ROUTED TO													
+	RCP12	1.42	1	FLOW	847.	728.	660.	616.	556.	499.	320.	175.	43.
				TIME	3.83	3.83	3.83	3.83	3.83	3.92	4.00	4.08	4.83
HYDROGRAPH AT													
+	C5I1B	.52	1	FLOW	479.	401.	350.	321.	281.	242.	109.	33.	1.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.58	3.58	4.92
ROUTED TO													
+	RC5I1B	.52	1	FLOW	447.	387.	333.	307.	272.	235.	110.	32.	1.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.75	5.42
HYDROGRAPH AT													
+	C5I1D	.12	1	FLOW	126.	109.	98.	91.	82.	73.	41.	18.	2.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67	4.92
2 COMBINED AT													
+	CP13	.63	1	FLOW	574.	496.	431.	398.	354.	308.	151.	49.	2.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67	4.92
ROUTED TO													
+	RCP13	.63	1	FLOW	548.	470.	404.	378.	334.	295.	139.	51.	2.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83	5.25
HYDROGRAPH AT													
+	C1HE	.15	1	FLOW	115.	96.	84.	77.	68.	58.	26.	8.	0.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.75	4.92
3 COMBINED AT													
+	CP14	2.20	1	FLOW	1315.	1115.	995.	924.	825.	733.	433.	214.	44.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	3.92	4.08	4.83
DIVERSION TO													
+	DIVER2	2.20	1	FLOW	179.	103.	92.	85.	76.	68.	40.	20.	4.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	3.92	4.08	4.83
HYDROGRAPH AT													
+	DIVER2	2.20	1	FLOW	1136.	1012.	903.	839.	748.	665.	393.	194.	40.
				TIME	3.67	3.75	3.75	3.75	3.83	3.83	3.92	4.08	4.83
ROUTED TO													
+	RCP14	2.20	1	FLOW	1135.	999.	889.	828.	742.	652.	382.	185.	32.
				TIME	3.75	3.75	3.83	3.83	3.83	3.83	4.00	4.17	5.00

HYDROGRAPH AT

+	C1HD	.07	1	FLOW	72.	62.	55.	52.	46.	41.	23.	10.	1.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67	4.92
2 COMBINED AT													
+	CP15	2.27	1	FLOW	1185.	1043.	920.	858.	768.	676.	391.	188.	32.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	4.00	4.17	5.00
ROUTED TO													
+	RCP15	2.27	1	FLOW	1176.	1033.	923.	858.	754.	666.	370.	180.	28.
				TIME	3.75	3.83	3.83	3.83	3.92	3.92	4.08	4.25	5.25
DIVERSION TO													
+	DIVER3	2.27	1	FLOW	221.	191.	171.	159.	140.	123.	69.	33.	5.
				TIME	3.75	3.83	3.83	3.83	3.92	3.92	4.08	4.25	5.25
HYDROGRAPH AT													
+	DIVER3	2.27	1	FLOW	955.	842.	752.	699.	614.	543.	302.	147.	22.
				TIME	3.75	3.83	3.83	3.83	3.92	3.92	4.08	4.25	5.25
HYDROGRAPH AT													
+	C5I1	.24	1	FLOW	238.	205.	182.	169.	152.	134.	73.	32.	3.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	4.92
HYDROGRAPH AT													
+	C5I1C	.06	1	FLOW	68.	59.	54.	50.	46.	41.	25.	13.	2.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83
ROUTED TO													
+	RC5I1C	.06	1	FLOW	66.	58.	53.	49.	44.	40.	24.	13.	2.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	4.08
2 COMBINED AT													
+	CP16	.31	1	FLOW	291.	251.	224.	209.	189.	168.	94.	42.	4.
				TIME	3.58	3.67	3.67	3.67	3.67	3.67	3.67	3.75	4.92
ROUTED TO													
+	RCP16	.31	1	FLOW	291.	252.	226.	210.	188.	166.	92.	42.	4.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83	5.17
HYDROGRAPH AT													
+	C1G1B	.14	1	FLOW	200.	179.	164.	156.	144.	133.	88.	54.	15.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67
2 COMBINED AT													
+	CP17	.45	1	FLOW	478.	420.	381.	357.	325.	292.	173.	86.	15.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.67
ROUTED TO													
+	RCP17	.45	1	FLOW	472.	401.	380.	357.	326.	293.	167.	87.	16.
				TIME	3.67	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.92
HYDROGRAPH AT													
+	C1HCB	.18	1	FLOW	249.	217.	195.	182.	165.	148.	85.	40.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	4.83
2 COMBINED AT													
+	CP18A	.63	1	FLOW	589.	495.	464.	434.	394.	355.	206.	98.	18.
				TIME	3.67	3.67	3.67	3.67	3.75	3.75	3.75	3.83	3.92
2 COMBINED AT													
+	CP18	2.90	1	FLOW	1522.	1306.	1159.	1075.	946.	820.	428.	194.	32.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	4.00	4.25	5.25
DIVERSION TO													
+	DIVER4	2.90	1	FLOW	446.	195.	104.	97.	85.	74.	39.	17.	3.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	4.00	4.25	5.25
HYDROGRAPH AT													
+	DIVER4	2.90	1	FLOW	1115.	1121.	1055.	978.	861.	747.	390.	176.	29.
				TIME	3.92	3.83	3.75	3.75	3.75	3.75	4.00	4.25	5.25
ROUTED TO													
+	RCP18	2.90	1	FLOW	1106.	1120.	1035.	966.	855.	747.	386.	165.	28.
				TIME	3.92	3.83	3.83	3.83	3.83	3.83	4.00	4.33	5.33
HYDROGRAPH AT													
+	C1G1A	.22	1	FLOW	255.	226.	206.	195.	179.	163.	104.	59.	12.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75
ROUTED TO													
+	RC1G1A	.22	1	FLOW	258.	227.	198.	187.	178.	164.	102.	58.	14.
				TIME	3.75	3.75	3.75	3.83	3.83	3.83	3.83	3.83	4.17
HYDROGRAPH AT													
+	C1HB	.15	1	FLOW	278.	249.	228.	217.	200.	184.	122.	73.	18.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT													
+	CP19A	.37	1	FLOW	348.	308.	273.	257.	243.	221.	137.	73.	18.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.50	3.50
2 COMBINED AT													
+	CP19	3.27	1	FLOW	1431.	1412.	1281.	1186.	1061.	936.	491.	202.	35.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	4.00	4.17	5.33
DIVERSION TO													
+	DIVER5	3.27	1	FLOW	544.	530.	431.	360.	267.	173.	43.	18.	3.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	4.00	4.17	5.33
HYDROGRAPH AT													
+	DIVER5	3.27	1	FLOW	887.	882.	849.	825.	794.	763.	448.	185.	32.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	4.00	4.17	5.33
ROUTED TO													
+	RCP19	3.27	1	FLOW	890.	881.	844.	832.	823.	759.	454.	187.	32.
				TIME	3.83	3.83	3.83	3.83	3.83	3.92	4.08	4.33	5.58
HYDROGRAPH AT													
+	C1HA	.07	1	FLOW	27.	21.	18.	16.	13.	11.	3.	1.	0.
				TIME	3.67	3.67	3.75	3.75	3.75	3.75	3.83	4.92	.00
2 COMBINED AT													
+	CP20A	3.35	1	FLOW	913.	899.	860.	847.	835.	767.	457.	187.	32.
				TIME	3.83	3.83	3.83	3.83	3.83	3.92	4.08	4.33	5.58
2 COMBINED AT													
+	CP20	14.94	1	FLOW	1499.	1350.	1247.	1193.	1110.	1025.	601.	315.	105.
				TIME	4.33	4.17	4.08	4.08	4.08	4.08	4.08	5.25	6.83
ROUTED TO													
+	RCP20	14.94	1	FLOW	1498.	1349.	1245.	1187.	1106.	1020.	590.	314.	105.
				TIME	4.33	4.17	4.17	4.17	4.08	4.08	4.08	5.25	6.83
HYDROGRAPH AT													
+	C1D	.40	1	FLOW	338.	291.	261.	243.	219.	194.	107.	48.	5.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	4.92
ROUTED TO													
+	RC1D	.40	1	FLOW	341.	288.	257.	240.	216.	192.	104.	48.	4.

				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.83	5.17
HYDROGRAPH AT													
+	C1C	.23	1	FLOW	213.	184.	166.	156.	141.	127.	74.	36.	4.
				TIME	3.58	3.67	3.67	3.67	3.67	3.67	3.67	3.67	4.92
2 COMBINED AT													
+	CP21	.63	1	FLOW	531.	447.	402.	375.	339.	303.	171.	77.	7.
				TIME	3.67	3.75	3.75	3.75	3.75	3.75	3.75	3.83	5.00
ROUTED TO													
+	RCP21	.63	1	FLOW	541.	459.	412.	384.	345.	294.	169.	77.	7.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.92	4.00	5.33
HYDROGRAPH AT													
+	C1B	.38	1	FLOW	450.	401.	368.	349.	322.	295.	194.	116.	27.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75
HYDROGRAPH AT													
+	C4A1D	.06	1	FLOW	52.	45.	41.	38.	34.	30.	17.	7.	1.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	4.92
ROUTED TO													
+	RC4A1D	.06	1	FLOW	52.	45.	40.	37.	34.	30.	16.	7.	1.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	5.00
4 COMBINED AT													
+	CP22	16.01	1	FLOW	2296.	2072.	1889.	1804.	1693.	1502.	802.	375.	107.
				TIME	3.75	3.75	3.83	3.83	3.83	3.83	4.08	5.08	6.00
ROUTED TO													
+	RCP22	16.01	1	FLOW	2285.	2055.	1883.	1789.	1666.	1478.	801.	375.	107.
				TIME	3.75	3.83	3.83	3.83	3.83	3.92	4.08	5.08	5.75
HYDROGRAPH AT													
+	C1A	.15	1	FLOW	149.	131.	119.	112.	103.	94.	59.	32.	6.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75
2 COMBINED AT													
+	CP23	16.15	1	FLOW	2419.	2166.	1973.	1875.	1745.	1535.	828.	384.	107.
				TIME	3.75	3.75	3.83	3.83	3.83	3.83	4.00	5.08	5.75
ROUTED TO													
+	RCP23	16.15	1	FLOW	2410.	2155.	1969.	1866.	1729.	1534.	825.	383.	107.
				TIME	3.75	3.83	3.83	3.83	3.83	3.92	4.00	5.08	6.17
HYDROGRAPH AT													
+	C5CC	.33	1	FLOW	286.	249.	224.	210.	190.	170.	99.	47.	5.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	5.00
HYDROGRAPH AT													
+	RET4	.00	1	FLOW	446.	195.	104.	97.	85.	74.	39.	17.	3.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	4.00	4.25	5.25
ROUTED TO													
+	RDIV4	.00	1	FLOW	416.	170.	103.	95.	86.	73.	39.	17.	3.
				TIME	3.75	3.83	3.83	3.83	3.83	3.83	4.00	4.25	5.50
ROUTED TO													
+	RDIV4	.00	1	FLOW	406.	149.	104.	96.	88.	74.	40.	18.	3.
				TIME	3.83	3.92	3.92	3.92	3.92	3.92	4.08	4.42	5.83
2 COMBINED AT													
+	CP24A	.33	1	FLOW	669.	371.	306.	283.	252.	217.	106.	47.	7.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	4.75
HYDROGRAPH AT													
+	RET3	.00	1	FLOW	221.	191.	171.	159.	140.	123.	69.	33.	5.
				TIME	3.75	3.83	3.83	3.83	3.92	3.92	4.08	4.25	5.25
ROUTED TO													
+	RDIV3	.00	1	FLOW	222.	192.	169.	159.	138.	124.	69.	36.	7.
				TIME	3.83	3.92	4.00	3.83	4.00	3.92	4.08	4.33	5.67
ROUTED TO													
+	RDIV3	.00	1	FLOW	220.	189.	167.	158.	139.	119.	66.	35.	6.
				TIME	3.92	3.92	3.92	3.92	3.92	4.08	4.17	4.42	5.83
2 COMBINED AT													
+	CP24B	.33	1	FLOW	886.	549.	452.	420.	378.	326.	154.	68.	10.
				TIME	3.83	3.83	3.83	3.92	3.92	3.92	4.08	4.42	5.83
HYDROGRAPH AT													
+	RET2	.00	1	FLOW	179.	103.	92.	85.	76.	68.	40.	20.	4.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	3.92	4.08	4.83
ROUTED TO													
+	RDIV2	.00	1	FLOW	185.	104.	93.	89.	79.	68.	40.	20.	3.
				TIME	3.83	3.83	3.83	3.83	3.83	3.92	4.00	4.50	5.50
ROUTED TO													
+	RDIV2	.00	1	FLOW	173.	102.	90.	84.	74.	67.	39.	18.	3.
				TIME	3.83	3.92	3.92	3.92	4.00	3.92	4.08	4.50	5.67
2 COMBINED AT													
+	CP24C	.33	1	FLOW	1059.	650.	539.	504.	453.	393.	192.	85.	11.
				TIME	3.83	3.83	3.83	3.92	3.92	3.92	4.08	4.42	5.83
HYDROGRAPH AT													
+	C5CA	.30	1	FLOW	185.	153.	132.	121.	105.	89.	40.	12.	0.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83	5.25
ROUTED TO													
+	RC5CA	.30	1	FLOW	182.	152.	131.	120.	104.	88.	40.	12.	0.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	4.00	6.42
HYDROGRAPH AT													
+	C5CF	.32	1	FLOW	228.	185.	157.	142.	121.	100.	34.	9.	0.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.58	4.83	.00
2 COMBINED AT													
+	CP25	.62	1	FLOW	307.	249.	217.	199.	173.	149.	64.	19.	0.
				TIME	3.58	3.75	3.75	3.75	3.75	3.75	3.75	4.83	6.42
ROUTED TO													
+	RCP25	.62	1	FLOW	306.	247.	215.	196.	169.	144.	64.	18.	0.
				TIME	3.58	3.75	3.75	3.75	3.75	3.83	3.83	5.00	8.33
HYDROGRAPH AT													
+	C5CE	.32	1	FLOW	221.	180.	152.	137.	116.	96.	37.	9.	0.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.58	4.83	.00
2 COMBINED AT													
+	CP26	.95	1	FLOW	508.	408.	343.	307.	258.	209.	85.	23.	0.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.83	5.00	8.33
ROUTED TO													
+	RCP26	.95	1	FLOW	487.	385.	321.	290.	248.	206.	83.	23.	0.
				TIME	3.58	3.58	3.67	3.67	3.67	3.75	3.83	5.00	9.58

HYDROGRAPH AT													
+	C5CD	.27	1	FLOW	153.	130.	114.	105.	93.	81.	39.	14.	1.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.92	3.92	5.08
HYDROGRAPH AT													
+	RET1	.00	1	FLOW	23.	20.	19.	17.	16.	14.	8.	3.	0.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.08	5.08	.00
ROUTED TO													
+	RDIV1	.00	1	FLOW	23.	21.	20.	20.	20.	17.	9.	3.	0.
				TIME	4.08	4.25	4.25	4.17	4.08	4.33	4.33	5.75	.00
ROUTED TO													
+	RDIV1	.00	1	FLOW	23.	21.	20.	20.	23.	16.	8.	3.	0.
				TIME	4.17	4.33	4.25	4.25	4.17	4.33	4.42	5.83	.00
ROUTED TO													
+	RDIV1	.00	1	FLOW	26.	21.	23.	19.	23.	17.	8.	3.	0.
				TIME	4.25	4.50	4.33	4.42	4.33	4.58	4.67	6.00	.00
3 COMBINED AT													
+	CP27	1.21	1	FLOW	589.	483.	419.	382.	331.	282.	122.	34.	1.
				TIME	3.67	3.67	3.75	3.75	3.75	3.75	3.83	5.00	5.08
ROUTED TO													
+	RCP27	1.21	1	FLOW	588.	484.	421.	380.	332.	280.	121.	34.	1.
				TIME	3.67	3.75	3.75	3.75	3.75	3.83	3.92	4.17	5.42
2 COMBINED AT													
+	CP24D	1.55	1	FLOW	1599.	1107.	942.	852.	747.	650.	295.	111.	11.
				TIME	3.83	3.83	3.83	3.83	3.92	3.92	4.08	4.42	5.83
HYDROGRAPH AT													
+	C5CB	.14	1	FLOW	127.	111.	101.	95.	86.	78.	47.	24.	3.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.92
2 COMBINED AT													
+	CP24E	1.69	1	FLOW	1719.	1212.	1038.	941.	819.	716.	324.	119.	12.
				TIME	3.83	3.83	3.83	3.83	3.92	3.92	4.08	4.42	5.83
HYDROGRAPH AT													
+	C5FD	.17	1	FLOW	294.	261.	238.	225.	207.	189.	122.	70.	13.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
ROUTED TO													
+	RC5FD	.17	1	FLOW	259.	228.	209.	200.	180.	167.	113.	68.	15.
				TIME	3.58	3.58	3.58	3.58	3.67	3.67	3.67	3.67	3.83
HYDROGRAPH AT													
+	C5FA	.51	1	FLOW	1125.	1013.	937.	893.	831.	769.	529.	338.	106.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
ROUTED TO													
+	RC5FA	.51	1	FLOW	1021.	870.	812.	747.	694.	634.	442.	289.	122.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.75
HYDROGRAPH AT													
+	C5FB	.26	1	FLOW	167.	137.	118.	108.	94.	80.	34.	9.	0.
				TIME	3.58	3.58	3.67	3.67	3.67	3.67	3.67	3.83	.00
3 COMBINED AT													
+	CP28	.94	1	FLOW	1447.	1235.	1137.	1053.	964.	876.	577.	364.	122.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	3.75
ROUTED TO													
+	RCP28	.94	1	FLOW	1315.	1135.	1064.	1006.	932.	849.	575.	334.	85.
				TIME	3.58	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.92
HYDROGRAPH AT													
+	C5FC	.22	1	FLOW	191.	161.	142.	131.	116.	101.	50.	18.	1.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	4.92
2 COMBINED AT													
+	CP29	1.16	1	FLOW	1506.	1285.	1197.	1130.	1042.	945.	624.	352.	85.
				TIME	3.58	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.92
ROUTED TO													
+	RCP29	1.16	1	FLOW	1497.	1266.	1192.	1080.	1007.	903.	625.	373.	65.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83	4.08
HYDROGRAPH AT													
+	C5EA	.49	1	FLOW	690.	611.	557.	526.	483.	439.	278.	156.	25.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP30	1.65	1	FLOW	2023.	1733.	1619.	1484.	1379.	1243.	797.	451.	76.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83	4.08
ROUTED TO													
+	RCP30	1.65	1	FLOW	2027.	1711.	1567.	1444.	1322.	1191.	743.	435.	79.
				TIME	3.67	3.67	3.67	3.67	3.75	3.75	3.75	3.92	4.25
HYDROGRAPH AT													
+	C5EB	.55	1	FLOW	806.	726.	671.	640.	596.	551.	379.	243.	77.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO													
+	RC5EB	.55	1	FLOW	781.	703.	652.	643.	600.	556.	387.	247.	74.
				TIME	3.67	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83
HYDROGRAPH AT													
+	C5EC	.22	1	FLOW	179.	150.	131.	120.	105.	91.	41.	13.	0.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.75	4.92
3 COMBINED AT													
+	CP31	2.41	1	FLOW	2964.	2542.	2327.	2186.	1999.	1815.	1165.	639.	115.
				TIME	3.67	3.67	3.67	3.67	3.75	3.75	3.75	3.92	4.25
ROUTED TO													
+	RCP31	2.41	1	FLOW	2865.	2478.	2301.	2180.	1998.	1797.	1129.	598.	104.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.92	4.42
HYDROGRAPH AT													
+	C5ED	.16	1	FLOW	178.	154.	139.	130.	118.	106.	61.	31.	3.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.83
2 COMBINED AT													
+	CP32	2.57	1	FLOW	3001.	2597.	2409.	2281.	2091.	1881.	1171.	615.	105.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.92	4.42
ROUTED TO													
+	RCP32	2.57	1	FLOW	2990.	2578.	2370.	2246.	2036.	1821.	1142.	606.	107.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	4.00	4.00
HYDROGRAPH AT													
+	C5DA	1.06	1	FLOW	2210.	1984.	1830.	1740.	1616.	1489.	1009.	629.	179.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50

HYDROGRAPH AT												
+	C5DB	.53	1	FLOW	1079.	973.	900.	858.	800.	740.	511.	328.	105.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT													
+	CP33	4.17	1	FLOW	4356.	3797.	3411.	3193.	2920.	2638.	1651.	980.	285.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
ROUTED TO													
+	RCP33	4.17	1	FLOW	4193.	3631.	3315.	3146.	2865.	2576.	1491.	857.	283.
				TIME	3.67	3.75	3.75	3.75	3.75	3.75	3.83	3.58	3.58
2 COMBINED AT													
+	CP24	5.85	1	FLOW	5742.	4748.	4227.	3948.	3545.	3142.	1756.	900.	284.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.58	3.58
ROUTED TO													
+	RCP24	5.85	1	FLOW	5646.	4681.	4158.	3871.	3476.	3074.	1736.	870.	261.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.58	3.67
HYDROGRAPH AT													
+	C5DC	.33	1	FLOW	601.	534.	488.	462.	425.	388.	251.	145.	28.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
ROUTED TO													
+	RC5DC	.33	1	FLOW	515.	462.	405.	381.	355.	346.	192.	142.	22.
				TIME	3.67	3.67	3.75	3.75	3.75	3.75	3.75	3.92	4.50
HYDROGRAPH AT													
+	C4BD	.52	1	FLOW	409.	359.	325.	306.	280.	253.	156.	83.	13.
				TIME	3.83	3.83	3.92	3.92	3.92	3.92	3.92	3.92	4.08
2 COMBINED AT													
+	CP34A	.85	1	FLOW	843.	750.	705.	661.	610.	575.	339.	226.	30.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.92	4.50
2 COMBINED AT													
+	CP34B	6.71	1	FLOW	6489.	5431.	4863.	4533.	4086.	3650.	2075.	1038.	265.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.92	3.67
ROUTED TO													
+	DB4	6.71	1	FLOW	1713.	933.	245.	240.	233.	224.	193.	160.	83.
				TIME	5.00	5.42	6.08	6.00	6.00	6.00	6.00	5.92	5.50
			** PEAK STAGES IN FEET **										
			1	STAGE	2069.58	2069.27	2068.55	2067.75	2066.73	2065.48	2061.26	2057.72	2052.18
				TIME	5.00	5.42	6.08	6.00	6.00	6.00	6.00	5.92	5.50
HYDROGRAPH AT													
+	C4BF	.28	1	FLOW	417.	366.	332.	312.	285.	258.	158.	83.	8.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.75
ROUTED TO													
+	RC4BF	.28	1	FLOW	353.	314.	290.	276.	250.	233.	149.	70.	8.
				TIME	3.58	3.58	3.67	3.67	3.67	3.67	3.67	3.67	5.08
HYDROGRAPH AT													
+	C4BC	.24	1	FLOW	255.	223.	202.	190.	173.	156.	96.	51.	7.
				TIME	3.58	3.58	3.58	3.58	3.58	3.67	3.67	3.67	3.75
3 COMBINED AT													
+	CP34	7.22	1	FLOW	1841.	960.	657.	626.	577.	538.	366.	210.	94.
				TIME	5.00	5.42	3.67	3.67	3.67	3.67	3.67	3.67	5.08
ROUTED TO													
+	RCP34	7.22	1	FLOW	1822.	1057.	663.	633.	593.	552.	381.	234.	93.
				TIME	5.08	5.42	3.75	3.75	3.75	3.75	3.83	3.92	5.33
HYDROGRAPH AT													
+	C4A1C	.52	1	FLOW	481.	420.	380.	357.	325.	292.	175.	93.	13.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.75	3.83
HYDROGRAPH AT													
+	RET5	.00	1	FLOW	544.	530.	431.	360.	267.	173.	43.	18.	3.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	4.00	4.17	5.33
ROUTED TO													
+	RDIV5	.00	1	FLOW	584.	575.	492.	429.	295.	197.	46.	19.	3.
				TIME	3.83	3.83	3.92	3.92	4.00	4.00	4.17	4.58	5.08
3 COMBINED AT													
+	CP35A	7.74	1	FLOW	1977.	1541.	1285.	1143.	943.	861.	542.	307.	98.
				TIME	5.08	3.83	3.83	3.92	3.92	3.75	3.83	3.92	5.33
HYDROGRAPH AT													
+	C4A1	.35	1	FLOW	248.	214.	191.	178.	160.	143.	81.	38.	4.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.83	5.00
2 COMBINED AT													
+	CP35	8.09	1	FLOW	2047.	1751.	1474.	1303.	1103.	1004.	623.	344.	101.
				TIME	5.08	3.83	3.83	3.92	3.75	3.75	3.83	3.92	5.33
ROUTED TO													
+	RCP35	8.09	1	FLOW	2078.	1669.	1440.	1282.	1126.	1018.	639.	341.	106.
				TIME	5.17	3.92	3.92	4.00	3.83	3.83	3.92	4.00	5.25
HYDROGRAPH AT													
+	C4BE	.22	1	FLOW	241.	214.	196.	185.	170.	155.	99.	58.	13.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83
ROUTED TO													
+	RC4BE	.22	1	FLOW	241.	215.	197.	187.	173.	158.	101.	58.	18.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.92	4.08
HYDROGRAPH AT													
+	C4BB	.35	1	FLOW	377.	337.	309.	294.	272.	250.	166.	101.	26.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83
2 COMBINED AT													
+	CP36	.57	1	FLOW	615.	546.	499.	472.	435.	396.	256.	152.	35.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.83	4.08
ROUTED TO													
+	RCP36	.57	1	FLOW	599.	535.	491.	463.	430.	396.	257.	154.	32.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.92	4.25
HYDROGRAPH AT													
+	C4A2B	.25	1	FLOW	203.	173.	153.	142.	126.	111.	56.	20.	1.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	4.92
2 COMBINED AT													
+	CP37	.82	1	FLOW	704.	616.	560.	527.	485.	445.	285.	163.	32.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	3.83	3.92	4.25
ROUTED TO													
+	RCP37	.82	1	FLOW	695.	614.	559.	527.	479.	432.	278.	161.	31.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.92	4.00	4.33
2 COMBINED AT													

+	CP38A	8.91	1	FLOW	2644.	2251.	1977.	1784.	1605.	1450.	917.	502.	122.
				TIME	3.83	3.92	3.92	3.83	3.83	3.83	3.92	4.00	5.25
HYDROGRAPH AT													
+	C4A1B	.25	1	FLOW	134.	110.	95.	87.	75.	64.	27.	7.	0.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83	.00
3 COMBINED AT													
+	CP38	25.31	1	FLOW	5128.	4464.	3968.	3719.	3396.	3019.	1738.	851.	212.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.92	4.00	5.75
ROUTED TO													
+	RCP38	25.31	1	FLOW	5089.	4425.	3941.	3681.	3349.	2965.	1707.	836.	210.
				TIME	3.83	3.83	3.92	3.83	3.83	3.83	3.92	4.08	5.83
HYDROGRAPH AT													
+	C4CB	5.41	1	FLOW	10493.	9383.	8626.	8188.	7580.	6962.	4634.	2816.	710.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
ROUTED TO													
+	DB5	5.41	1	FLOW	90.	88.	86.	85.	84.	82.	75.	67.	46.
				TIME	6.00	6.00	6.00	5.92	5.83	5.83	5.50	5.42	5.17
			**	PEAK STAGES IN FEET	**								
			1	STAGE	2488.66	2486.67	2485.22	2484.32	2483.07	2481.80	2476.22	2470.33	2458.34
				TIME	6.00	6.00	6.00	6.00	5.92	5.83	5.50	5.42	5.17
ROUTED TO													
+	RDB5	5.41	1	FLOW	90.	88.	86.	85.	84.	82.	75.	67.	47.
				TIME	6.08	6.08	6.08	6.08	6.08	6.08	5.67	5.50	4.08
HYDROGRAPH AT													
+	C4CA	.20	1	FLOW	237.	211.	193.	183.	169.	154.	101.	61.	15.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.75	3.83
HYDROGRAPH AT													
+	C3B3E	.22	1	FLOW	396.	359.	333.	318.	298.	277.	195.	130.	47.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT													
+	CP39	5.83	1	FLOW	670.	607.	563.	538.	502.	466.	329.	217.	81.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	3.83
ROUTED TO													
+	RCP39	5.83	1	FLOW	667.	606.	556.	530.	504.	459.	321.	219.	83.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	4.00
HYDROGRAPH AT													
+	C3B3D	.26	1	FLOW	455.	411.	381.	364.	340.	315.	220.	144.	49.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP40	6.08	1	FLOW	1059.	953.	883.	841.	785.	721.	503.	340.	99.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	4.00
ROUTED TO													
+	RCP40	6.08	1	FLOW	1043.	943.	869.	829.	780.	717.	498.	330.	94.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	4.08
HYDROGRAPH AT													
+	C3B3C	1.24	1	FLOW	2610.	2355.	2181.	2080.	1939.	1795.	1246.	805.	264.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
ROUTED TO													
+	RC3B3C	1.24	1	FLOW	2331.	2090.	1918.	1839.	1720.	1604.	1142.	753.	254.
				TIME	3.50	3.50	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	C3B3B	.32	1	FLOW	508.	456.	420.	399.	371.	341.	231.	143.	41.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.67
2 COMBINED AT													
+	CP41	1.56	1	FLOW	2788.	2529.	2338.	2238.	2090.	1945.	1373.	896.	294.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	RCP41	1.56	1	FLOW	2678.	2409.	2250.	2113.	2004.	1913.	1287.	811.	360.
				TIME	3.67	3.58	3.67	3.67	3.67	3.67	3.67	3.67	3.75
HYDROGRAPH AT													
+	C3B3A	.51	1	FLOW	838.	746.	684.	648.	598.	548.	359.	216.	56.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.58	3.58
3 COMBINED AT													
+	CP42	8.15	1	FLOW	4487.	4037.	3687.	3477.	3221.	3042.	2035.	1296.	492.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	3.75
ROUTED TO													
+	RCP42	8.15	1	FLOW	4538.	4097.	3705.	3481.	3226.	3060.	2114.	1346.	467.
				TIME	3.67	3.67	3.67	3.67	3.75	3.75	3.75	3.83	4.00
HYDROGRAPH AT													
+	C4BA2	.14	1	FLOW	123.	104.	92.	85.	76.	66.	34.	13.	1.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67	3.67	4.92
2 COMBINED AT													
+	CP43A	8.29	1	FLOW	4651.	4194.	3791.	3561.	3291.	3113.	2143.	1357.	467.
				TIME	3.67	3.67	3.67	3.67	3.67	3.75	3.75	3.83	4.00
ROUTED TO													
+	RCP43	8.29	1	FLOW	5326.	4905.	4303.	3894.	3840.	3871.	2747.	1799.	660.
				TIME	3.92	3.92	3.92	4.00	4.00	4.00	4.08	4.25	4.67
HYDROGRAPH AT													
+	C4BA3	.41	1	FLOW	296.	256.	230.	216.	195.	175.	101.	48.	6.
				TIME	3.83	3.83	3.92	3.92	3.92	3.92	3.92	3.92	5.08
ROUTED TO													
+	RC4BA3	.41	1	FLOW	299.	260.	233.	218.	197.	176.	100.	45.	6.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.08	4.25	5.58
HYDROGRAPH AT													
+	C4A2A	.26	1	FLOW	322.	278.	249.	232.	208.	185.	102.	43.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	4.83
3 COMBINED AT													
+	CP44	8.96	1	FLOW	5671.	5202.	4568.	4155.	4076.	4082.	2858.	1849.	662.
				TIME	3.92	3.92	3.92	4.00	4.00	4.00	4.08	4.25	4.67
ROUTED TO													
+	RCP44	8.96	1	FLOW	5372.	4754.	4232.	4134.	3964.	3787.	2539.	1708.	503.
				TIME	3.92	3.92	4.00	4.00	4.00	4.00	4.08	4.25	4.67
HYDROGRAPH AT													
+	C4A1A	.25	1	FLOW	109.	94.	83.	78.	70.	62.	34.	15.	2.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.25	4.25	5.25
3 COMBINED AT													
+	CP45	34.52	1	FLOW	10360.	9220.	8070.	7729.	7177.	6645.	4142.	2441.	664.

				TIME	3.92	3.92	4.00	4.00	4.00	4.00	4.08	4.25	4.67
ROUTED TO													
+	RCP45	34.52	1	FLOW	10134.	8908.	8064.	7661.	7065.	6431.	3923.	2303.	614.
				TIME	3.92	3.92	4.00	4.00	4.00	4.00	4.08	4.25	4.75
HYDROGRAPH AT													
+	C3A2B	.51	1	FLOW	769.	687.	632.	599.	555.	509.	339.	205.	52.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	RC3A2B	.51	1	FLOW	764.	683.	628.	595.	550.	481.	320.	196.	69.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83
HYDROGRAPH AT													
+	C4BA1	.48	1	FLOW	289.	242.	211.	194.	170.	147.	69.	23.	1.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83	5.00
2 COMBINED AT													
+	CP46	.99	1	FLOW	1052.	925.	839.	789.	721.	628.	387.	219.	69.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	3.83
ROUTED TO													
+	RCP46	.99	1	FLOW	1018.	879.	797.	755.	692.	608.	396.	229.	44.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	4.17
HYDROGRAPH AT													
+	C3B1D	.25	1	FLOW	215.	180.	157.	144.	127.	109.	48.	11.	0.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.75	5.75
2 COMBINED AT													
+	CP47	1.24	1	FLOW	1104.	953.	863.	816.	747.	657.	423.	234.	44.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.83	4.17
ROUTED TO													
+	RCP47	1.24	1	FLOW	1098.	935.	840.	789.	717.	634.	433.	220.	42.
				TIME	3.75	3.75	3.75	3.75	3.83	3.83	3.83	3.92	4.25
HYDROGRAPH AT													
+	C3B1C	.24	1	FLOW	374.	331.	302.	285.	262.	238.	151.	85.	13.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT													
+	CP48	36.00	1	FLOW	11007.	9699.	8664.	8235.	7601.	6932.	4194.	2427.	636.
				TIME	3.92	3.92	4.00	4.00	4.00	4.00	4.08	4.25	4.75
ROUTED TO													
+	RCP48	36.00	1	FLOW	10796.	9417.	8629.	8154.	7483.	6731.	4001.	2281.	605.
				TIME	3.92	3.92	4.00	4.00	4.00	4.00	4.08	4.25	4.75
HYDROGRAPH AT													
+	C3B1B	.21	1	FLOW	139.	118.	104.	96.	85.	74.	37.	14.	1.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	5.00
ROUTED TO													
+	RC3B1B	.21	1	FLOW	137.	117.	102.	94.	85.	73.	36.	14.	1.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.83	3.92	5.25
HYDROGRAPH AT													
+	C3B1A	.24	1	FLOW	170.	146.	129.	120.	107.	94.	49.	21.	2.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.75	4.92
3 COMBINED AT													
+	CP49	36.46	1	FLOW	11001.	9594.	8756.	8273.	7590.	6827.	4046.	2297.	606.
				TIME	3.92	3.92	4.00	4.00	4.00	4.00	4.08	4.25	4.75
ROUTED TO													
+	RCP49	36.46	1	FLOW	10681.	9463.	8677.	8134.	7387.	6542.	3959.	2151.	564.
				TIME	3.92	4.00	4.00	4.00	4.00	4.00	4.17	4.33	4.83
HYDROGRAPH AT													
+	C3A2A	.47	1	FLOW	825.	741.	684.	651.	605.	558.	380.	239.	72.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.58
ROUTED TO													
+	RC3A2A	.47	1	FLOW	774.	702.	661.	622.	571.	523.	365.	235.	100.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.92	3.92	4.08
HYDROGRAPH AT													
+	C3A1B	1.02	1	FLOW	1403.	1230.	1114.	1047.	954.	861.	520.	269.	31.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.75
2 COMBINED AT													
+	CP50	1.49	1	FLOW	1434.	1259.	1139.	1074.	979.	884.	536.	306.	113.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.92	4.08
ROUTED TO													
+	RCP50	1.49	1	FLOW	1369.	1191.	1071.	1004.	913.	818.	514.	292.	122.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	4.00	4.17
HYDROGRAPH AT													
+	C3A1A	.37	1	FLOW	433.	377.	339.	317.	288.	258.	150.	72.	6.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	4.83
3 COMBINED AT													
+	CP51	38.32	1	FLOW	11769.	10276.	9440.	8873.	8089.	7200.	4232.	2290.	608.
				TIME	3.92	4.00	4.00	4.00	4.00	4.00	4.17	4.33	4.83

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SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .00									
RDB1	MANE	5.00	198.15	330.00	1.35	5.00	198.15	330.00	1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2901E+03 EXCESS= .0000E+00 OUTFLOW= .2882E+03 BASIN STORAGE= .1925E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
RDB1	MANE	5.00	189.58	330.00	1.25	5.00	189.58	330.00	1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2687E+03 EXCESS= .0000E+00 OUTFLOW= .2670E+03 BASIN STORAGE= .1688E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
RDB1	MANE	5.00	183.52	330.00	1.17	5.00	183.52	330.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2527E+03 EXCESS= .0000E+00 OUTFLOW= .2513E+03 BASIN STORAGE= .1503E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RDB1	MANE	5.00	179.83	330.00	1.13	5.00	179.83	330.00	1.13	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2428E+03 EXCESS= .0000E+00 OUTFLOW= .2415E+03 BASIN STORAGE= .1371E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RDB1	MANE	5.00	174.55	325.00	1.06	5.00	174.55	325.00	1.06	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2282E+03 EXCESS= .0000E+00 OUTFLOW= .2272E+03 BASIN STORAGE= .1133E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RDB1	MANE	5.00	168.69	325.00	.98	5.00	168.69	325.00	.98	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2112E+03 EXCESS= .0000E+00 OUTFLOW= .2106E+03 BASIN STORAGE= .7315E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RDB1	MANE	5.00	141.81	325.00	.64	5.00	141.81	325.00	.64	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1375E+03 EXCESS= .0000E+00 OUTFLOW= .1375E+03 BASIN STORAGE= .6901E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RDB1	MANE	5.00	113.87	325.00	.38	5.00	113.87	325.00	.38	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8080E+02 EXCESS= .0000E+00 OUTFLOW= .8079E+02 BASIN STORAGE= .5011E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RDB1	MANE	5.00	61.59	320.00	.10	5.00	61.59	320.00	.10	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2042E+02 EXCESS= .0000E+00 OUTFLOW= .2042E+02 BASIN STORAGE= .3159E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP2	MANE	1.46	480.08	241.54	1.35	5.00	478.34	240.00	1.35	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3212E+03 EXCESS= .0000E+00 OUTFLOW= .3208E+03 BASIN STORAGE= .3452E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP2	MANE	1.49	433.67	241.80	1.24	5.00	432.00	240.00	1.24	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2959E+03 EXCESS= .0000E+00 OUTFLOW= .2956E+03 BASIN STORAGE= .3032E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP2	MANE	1.52	402.19	241.86	1.17	5.00	400.32	240.00	1.17	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2773E+03 EXCESS= .0000E+00 OUTFLOW= .2771E+03 BASIN STORAGE= .2709E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP2	MANE	1.54	384.30	241.60	1.12	5.00	382.03	240.00	1.12	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2661E+03 EXCESS= .0000E+00 OUTFLOW= .2659E+03 BASIN STORAGE= .2471E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP2	MANE	1.56	358.96	242.52	1.05	5.00	357.10	240.00	1.05	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2496E+03 EXCESS= .0000E+00 OUTFLOW= .2494E+03 BASIN STORAGE= .2088E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP2	MANE	1.59	333.49	242.33	.97	5.00	331.41	240.00	.97	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2309E+03 EXCESS= .0000E+00 OUTFLOW= .2308E+03 BASIN STORAGE= .1360E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP2	MANE	1.74	236.24	246.84	.63	5.00	235.93	245.00	.63	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1501E+03 EXCESS= .0000E+00 OUTFLOW= .1501E+03 BASIN STORAGE= .1248E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP2	MANE	1.92	160.01	247.23	.37	5.00	158.70	245.00	.37	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8774E+02 EXCESS= .0000E+00 OUTFLOW= .8774E+02 BASIN STORAGE= .9090E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP2	MANE	2.36	69.60	314.21	.09	5.00	69.56	315.00	.09	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2179E+02 EXCESS= .0000E+00 OUTFLOW= .2179E+02 BASIN STORAGE= .5748E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	3.93	635.79	228.00	1.36	5.00	635.28	225.00	1.36	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3444E+03 EXCESS= .0000E+00 OUTFLOW= .3435E+03 BASIN STORAGE= .1006E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	4.04	571.78	230.39	1.25	5.00	571.12	230.00	1.25	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3162E+03 EXCESS= .0000E+00 OUTFLOW= .3154E+03 BASIN STORAGE= .8864E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	4.13	526.86	231.06	1.17	5.00	524.86	230.00	1.17	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2962E+03 EXCESS= .0000E+00 OUTFLOW= .2954E+03 BASIN STORAGE= .7924E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	4.18	498.96	229.80	1.12	5.00	498.94	230.00	1.12	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2836E+03 EXCESS= .0000E+00 OUTFLOW= .2829E+03 BASIN STORAGE= .7255E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	4.26	463.22	234.07	1.05	5.00	462.37	230.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2659E+03 EXCESS= .0000E+00 OUTFLOW= .2654E+03 BASIN STORAGE= .6257E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	4.34	426.96	234.57	.97	5.00	426.22	235.00	.97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2458E+03 EXCESS= .0000E+00 OUTFLOW= .2455E+03 BASIN STORAGE= .4070E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	4.78	291.16	234.41	.63	5.00	291.00	235.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1598E+03 EXCESS= .0000E+00 OUTFLOW= .1598E+03 BASIN STORAGE= .3686E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	4.75	185.86	247.00	.37	5.00	185.51	245.00	.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9342E+02 EXCESS= .0000E+00 OUTFLOW= .9341E+02 BASIN STORAGE= .2671E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	5.00	75.86	305.00	.09	5.00	75.86	305.00	.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2327E+02 EXCESS= .0000E+00 OUTFLOW= .2326E+02 BASIN STORAGE= .1687E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP4	MANE	4.67	1519.65	219.37	1.38	5.00	1496.99	220.00	1.38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4046E+03 EXCESS= .0000E+00 OUTFLOW= .4033E+03 BASIN STORAGE= .1489E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP4	MANE	4.81	1296.36	221.33	1.26	5.00	1287.32	220.00	1.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3690E+03 EXCESS= .0000E+00 OUTFLOW= .3679E+03 BASIN STORAGE= .1316E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP4	MANE	4.92	1184.04	221.53	1.18	5.00	1173.01	220.00	1.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3441E+03 EXCESS= .0000E+00 OUTFLOW= .3431E+03 BASIN STORAGE= .1180E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP4	MANE	5.00	1161.03	219.81	1.13	5.00	1155.95	220.00	1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3292E+03 EXCESS= .0000E+00 OUTFLOW= .3283E+03 BASIN STORAGE= .1078E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP4	MANE	5.00	1072.87	220.00	1.05	5.00	1072.87	220.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3077E+03 EXCESS= .0000E+00 OUTFLOW= .3070E+03 BASIN STORAGE= .9432E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP4	MANE	5.00	977.17	220.00	.97	5.00	977.17	220.00	.97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2839E+03 EXCESS= .0000E+00 OUTFLOW= .2835E+03 BASIN STORAGE= .6249E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP4	MANE	5.00	600.48	220.00	.63	5.00	600.48	220.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1843E+03 EXCESS= .0000E+00 OUTFLOW= .1843E+03 BASIN STORAGE= .5627E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP4	MANE	3.75	310.14	221.25	.37	5.00	295.76	220.00	.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1076E+03 EXCESS= .0000E+00 OUTFLOW= .1076E+03 BASIN STORAGE= .3975E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP4	MANE	3.75	94.30	300.00	.09	5.00	94.30	300.00	.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2667E+02 EXCESS= .0000E+00 OUTFLOW= .2667E+02 BASIN STORAGE= .2527E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

C5ICB	MANE	3.95	810.67	217.01	1.34	5.00	799.18	220.00	1.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5231E+02 EXCESS= .0000E+00 OUTFLOW= .5235E+02 BASIN STORAGE= .6127E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

C5ICB	MANE	4.15	719.90	219.95	1.16	5.00	718.93	220.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4552E+02 EXCESS= .0000E+00 OUTFLOW= .4556E+02 BASIN STORAGE= .5705E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

C5ICB	MANE	4.31	653.22	219.92	1.05	5.00	651.81	220.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4100E+02 EXCESS= .0000E+00 OUTFLOW= .4104E+02 BASIN STORAGE= .6286E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

C5ICB	MANE	4.42	599.48	220.83	.98	5.00	594.39	220.00	.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3830E+02 EXCESS= .0000E+00 OUTFLOW= .3834E+02 BASIN STORAGE= .5643E-02 PERCENT ERROR= -.1

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          FOR PLAN = 1  RATIO=  .00
             C5ICB  MANE          3.75    542.44    217.50       .89       5.00    539.00    220.00          .89

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3478E+02 EXCESS= .0000E+00 OUTFLOW= .3482E+02 BASIN STORAGE= .5931E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             C5ICB  MANE          3.50    492.01    220.50       .80       5.00    489.46    220.00          .80

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3128E+02 EXCESS= .0000E+00 OUTFLOW= .3131E+02 BASIN STORAGE= .4294E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             C5ICB  MANE          2.75    291.25    220.00       .48       5.00    291.25    220.00          .48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1866E+02 EXCESS= .0000E+00 OUTFLOW= .1869E+02 BASIN STORAGE= .5355E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             C5ICB  MANE          1.25    144.56    222.50       .25       5.00    138.48    225.00          .25

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9804E+01 EXCESS= .0000E+00 OUTFLOW= .9818E+01 BASIN STORAGE= .4604E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             C5ICB  MANE          1.25     18.30    240.00       .04       5.00     18.30    240.00          .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1546E+01 EXCESS= .0000E+00 OUTFLOW= .1559E+01 BASIN STORAGE= .5281E-02 PERCENT ERROR=  -1.2

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          3.70    308.00    369.71      1.01       5.00    308.00    370.00         1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5124E+03 EXCESS= .0000E+00 OUTFLOW= .5110E+03 BASIN STORAGE= .1430E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          3.73    294.23    369.37       .95       5.00    294.22    370.00          .95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4822E+03 EXCESS= .0000E+00 OUTFLOW= .4809E+03 BASIN STORAGE= .1342E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          3.76    283.80    368.29       .91       5.00    283.80    370.00          .91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4603E+03 EXCESS= .0000E+00 OUTFLOW= .4591E+03 BASIN STORAGE= .1271E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          3.77    277.69    369.90       .88       5.00    277.69    370.00          .88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4476E+03 EXCESS= .0000E+00 OUTFLOW= .4464E+03 BASIN STORAGE= .1228E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          3.80    269.41    368.35       .84       5.00    269.40    365.00          .84

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4279E+03 EXCESS= .0000E+00 OUTFLOW= .4267E+03 BASIN STORAGE= .1169E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          3.83    259.15    367.39       .80       5.00    259.15    365.00          .80

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4071E+03 EXCESS= .0000E+00 OUTFLOW= .4061E+03 BASIN STORAGE= .1091E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          3.96    217.18    360.78       .61       5.00    217.18    360.00          .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3086E+03 EXCESS= .0000E+00 OUTFLOW= .3081E+03 BASIN STORAGE= .4811E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          4.13    176.95    346.96       .36       5.00    176.95    350.00          .36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1805E+03 EXCESS= .0000E+00 OUTFLOW= .1804E+03 BASIN STORAGE= .1616E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB2  MANE          4.62    101.03    328.02       .09       5.00    101.03    330.00          .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4343E+02 EXCESS= .0000E+00 OUTFLOW= .4342E+02 BASIN STORAGE= .9988E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RG2B1  MANE          5.00    267.24    245.00       .92       5.00    267.24    245.00          .92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2554E+02 EXCESS= .0000E+00 OUTFLOW= .2564E+02 BASIN STORAGE= .1537E-01 PERCENT ERROR=   -.5

          FOR PLAN = 1  RATIO=  .00
             RG2B1  MANE          4.25    221.60    246.50       .78       5.00    218.75    245.00          .78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2170E+02 EXCESS= .0000E+00 OUTFLOW= .2179E+02 BASIN STORAGE= .1525E-01 PERCENT ERROR=   -.5

          FOR PLAN = 1  RATIO=  .00
             RG2B1  MANE          4.00    192.30    248.00       .69       5.00    191.70    245.00          .69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1917E+02 EXCESS= .0000E+00 OUTFLOW= .1927E+02 BASIN STORAGE= .1626E-01 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .00
             RG2B1  MANE          3.75    184.71    247.50       .64       5.00    173.12    250.00          .64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1774E+02 EXCESS= .0000E+00 OUTFLOW= .1784E+02 BASIN STORAGE= .1806E-01 PERCENT ERROR=   -.7

          FOR PLAN = 1  RATIO=  .00
             RG2B1  MANE          3.00    172.02    246.00       .57       5.00    156.97    245.00          .57
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1581E+02 EXCESS= .0000E+00 OUTFLOW= .1590E+02 BASIN STORAGE= .1754E-01 PERCENT ERROR= -.7

FOR PLAN = 1 RATIO= .00

RG2B1	MANE	2.75	155.74	247.50	.50	5.00	132.04	255.00	.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1390E+02 EXCESS= .0000E+00 OUTFLOW= .1400E+02 BASIN STORAGE= .1723E-01 PERCENT ERROR= -.8

FOR PLAN = 1 RATIO= .00

RG2B1	MANE	2.50	90.63	250.00	.27	5.00	90.63	250.00	.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7366E+01 EXCESS= .0000E+00 OUTFLOW= .7463E+01 BASIN STORAGE= .1619E-01 PERCENT ERROR= -1.5

FOR PLAN = 1 RATIO= .00

RG2B1	MANE	2.25	42.09	267.75	.12	5.00	33.56	275.00	.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3178E+01 EXCESS= .0000E+00 OUTFLOW= .3251E+01 BASIN STORAGE= .1770E-01 PERCENT ERROR= -2.9

FOR PLAN = 1 RATIO= .00

RG2B1	MANE	3.50	2.39	420.00	.00	5.00	2.39	420.00	.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1133E+00 EXCESS= .0000E+00 OUTFLOW= .1274E+00 BASIN STORAGE= .1527E-01 PERCENT ERROR= -25.9

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	5.00	308.14	230.00	1.20	5.00	308.14	230.00	1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2214E+02 EXCESS= .0000E+00 OUTFLOW= .2220E+02 BASIN STORAGE= .1420E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	5.00	269.57	230.00	1.04	5.00	269.57	230.00	1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1918E+02 EXCESS= .0000E+00 OUTFLOW= .1926E+02 BASIN STORAGE= .1322E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	4.75	236.68	228.00	.93	5.00	233.52	230.00	.93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1720E+02 EXCESS= .0000E+00 OUTFLOW= .1726E+02 BASIN STORAGE= .1338E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	4.50	225.60	229.50	.87	5.00	223.96	230.00	.88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1611E+02 EXCESS= .0000E+00 OUTFLOW= .1618E+02 BASIN STORAGE= .1269E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	4.25	199.84	229.50	.79	5.00	199.21	230.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1456E+02 EXCESS= .0000E+00 OUTFLOW= .1462E+02 BASIN STORAGE= .1239E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	4.25	177.14	233.75	.71	5.00	175.56	230.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1304E+02 EXCESS= .0000E+00 OUTFLOW= .1310E+02 BASIN STORAGE= .1197E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	2.25	116.52	234.00	.42	5.00	105.21	235.00	.41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7646E+01 EXCESS= .0000E+00 OUTFLOW= .7704E+01 BASIN STORAGE= .1491E-01 PERCENT ERROR= -.9

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	1.75	61.30	236.25	.22	5.00	37.84	250.00	.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3913E+01 EXCESS= .0000E+00 OUTFLOW= .3978E+01 BASIN STORAGE= .1253E-01 PERCENT ERROR= -2.0

FOR PLAN = 1 RATIO= .00

RC1G2A	MANE	2.50	6.80	287.50	.03	5.00	5.44	330.00	.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5365E+00 EXCESS= .0000E+00 OUTFLOW= .5574E+00 BASIN STORAGE= .1328E-01 PERCENT ERROR= -6.4

FOR PLAN = 1 RATIO= .00

RCP7	MANE	3.45	809.92	272.64	.98	5.00	808.54	270.00	.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5857E+03 EXCESS= .0000E+00 OUTFLOW= .5836E+03 BASIN STORAGE= .2403E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP7	MANE	3.65	706.01	273.55	.91	5.00	705.33	275.00	.91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5426E+03 EXCESS= .0000E+00 OUTFLOW= .5407E+03 BASIN STORAGE= .2298E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP7	MANE	3.81	634.59	277.80	.86	5.00	634.50	275.00	.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5130E+03 EXCESS= .0000E+00 OUTFLOW= .5111E+03 BASIN STORAGE= .2208E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP7	MANE	3.91	594.24	277.34	.83	5.00	593.23	275.00	.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4953E+03 EXCESS= .0000E+00 OUTFLOW= .4935E+03 BASIN STORAGE= .2154E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP7	MANE	4.07	538.01	280.50	.78	5.00	537.90	280.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4699E+03 EXCESS= .0000E+00 OUTFLOW= .4682E+03 BASIN STORAGE= .2079E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP7 MANE 4.24 484.25 284.15 .74 5.00 484.05 285.00 .74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4434E+03 EXCESS= .0000E+00 OUTFLOW= .4417E+03 BASIN STORAGE= .1982E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP7 MANE 4.99 323.13 329.01 .55 5.00 323.09 325.00 .55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3283E+03 EXCESS= .0000E+00 OUTFLOW= .3272E+03 BASIN STORAGE= .1280E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP7 MANE 5.00 217.00 350.00 .33 5.00 217.00 350.00 .33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1940E+03 EXCESS= .0000E+00 OUTFLOW= .1940E+03 BASIN STORAGE= .1029E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP7 MANE 5.00 92.80 415.00 .07 5.00 92.80 415.00 .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4460E+02 EXCESS= .0000E+00 OUTFLOW= .4460E+02 BASIN STORAGE= .6035E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC1NA MANE 1.79 702.28 210.68 1.53 5.00 675.31 210.00 1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3385E+02 EXCESS= .0000E+00 OUTFLOW= .3387E+02 BASIN STORAGE= .3174E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC1NA MANE 1.87 633.34 211.42 1.35 5.00 596.99 210.00 1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2984E+02 EXCESS= .0000E+00 OUTFLOW= .2986E+02 BASIN STORAGE= .3696E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC1NA MANE 1.94 576.19 211.24 1.23 5.00 541.54 210.00 1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2713E+02 EXCESS= .0000E+00 OUTFLOW= .2715E+02 BASIN STORAGE= .3634E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC1NA MANE 1.98 554.47 211.95 1.16 5.00 518.81 210.00 1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2565E+02 EXCESS= .0000E+00 OUTFLOW= .2567E+02 BASIN STORAGE= .3154E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC1NA MANE 2.05 491.43 210.74 1.06 5.00 469.10 210.00 1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2347E+02 EXCESS= .0000E+00 OUTFLOW= .2349E+02 BASIN STORAGE= .3021E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC1NA MANE 2.12 467.08 212.06 .97 5.00 431.06 210.00 .97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2139E+02 EXCESS= .0000E+00 OUTFLOW= .2141E+02 BASIN STORAGE= .3763E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC1NA MANE 2.52 291.93 211.63 .61 5.00 263.57 210.00 .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1356E+02 EXCESS= .0000E+00 OUTFLOW= .1357E+02 BASIN STORAGE= .3062E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC1NA MANE 2.50 178.06 212.50 .36 5.00 155.27 215.00 .35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7830E+01 EXCESS= .0000E+00 OUTFLOW= .7844E+01 BASIN STORAGE= .4090E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RC1NA MANE .75 36.67 214.50 .08 5.00 36.14 215.00 .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1868E+01 EXCESS= .0000E+00 OUTFLOW= .1872E+01 BASIN STORAGE= .3132E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RCP8 MANE 2.05 942.27 276.25 1.00 5.00 938.07 275.00 1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6170E+03 EXCESS= .0000E+00 OUTFLOW= .6158E+03 BASIN STORAGE= .1518E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP8 MANE 2.15 827.93 277.97 .92 5.00 821.20 275.00 .92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5707E+03 EXCESS= .0000E+00 OUTFLOW= .5695E+03 BASIN STORAGE= .1452E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP8 MANE 2.24 748.50 278.22 .87 5.00 739.83 280.00 .87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5387E+03 EXCESS= .0000E+00 OUTFLOW= .5375E+03 BASIN STORAGE= .1394E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP8 MANE 2.30 701.91 278.54 .84 5.00 695.17 280.00 .84

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5194E+03 EXCESS= .0000E+00 OUTFLOW= .5182E+03 BASIN STORAGE= .1360E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP8 MANE 2.39 641.12 277.31 .79 5.00 635.06 280.00 .79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4921E+03 EXCESS= .0000E+00 OUTFLOW= .4909E+03 BASIN STORAGE= .1313E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP8 MANE 2.50 574.17 277.30 .75 5.00 572.43 280.00 .75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4631E+03 EXCESS= .0000E+00 OUTFLOW= .4621E+03 BASIN STORAGE= .1253E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	2.99	360.34	296.28	.55	5.00	357.65	295.00	.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3411E+03 EXCESS= .0000E+00 OUTFLOW= .3404E+03 BASIN STORAGE= .8138E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	3.65	221.81	354.40	.33	5.00	221.46	355.00	.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2018E+03 EXCESS= .0000E+00 OUTFLOW= .2018E+03 BASIN STORAGE= .6901E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	5.00	92.80	420.00	.08	5.00	92.80	420.00	.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4647E+02 EXCESS= .0000E+00 OUTFLOW= .4646E+02 BASIN STORAGE= .3867E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	2.97	198.58	211.16	1.73	5.00	186.52	210.00	1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1020E+02 EXCESS= .0000E+00 OUTFLOW= .1022E+02 BASIN STORAGE= .2913E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	3.11	178.59	211.63	1.53	5.00	164.03	210.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9006E+01 EXCESS= .0000E+00 OUTFLOW= .9020E+01 BASIN STORAGE= .3281E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	3.22	169.15	212.54	1.40	5.00	149.69	210.00	1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8265E+01 EXCESS= .0000E+00 OUTFLOW= .8279E+01 BASIN STORAGE= .3143E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	3.29	157.79	213.81	1.32	5.00	142.21	210.00	1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7805E+01 EXCESS= .0000E+00 OUTFLOW= .7819E+01 BASIN STORAGE= .4020E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	3.39	146.80	213.83	1.22	5.00	132.71	215.00	1.22

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7172E+01 EXCESS= .0000E+00 OUTFLOW= .7184E+01 BASIN STORAGE= .3065E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	3.51	130.35	214.33	1.11	5.00	122.70	215.00	1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6530E+01 EXCESS= .0000E+00 OUTFLOW= .6543E+01 BASIN STORAGE= .3303E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	3.75	90.57	213.75	.72	5.00	84.45	215.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4248E+01 EXCESS= .0000E+00 OUTFLOW= .4258E+01 BASIN STORAGE= .3279E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	2.50	55.39	215.00	.42	5.00	55.39	215.00	.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2478E+01 EXCESS= .0000E+00 OUTFLOW= .2483E+01 BASIN STORAGE= .3757E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC5GC	MANE	.75	15.39	216.00	.11	5.00	11.46	220.00	.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6382E+00 EXCESS= .0000E+00 OUTFLOW= .6419E+00 BASIN STORAGE= .2846E-02 PERCENT ERROR= -1.0

FOR PLAN = 1 RATIO= .00

RCP9	MANE	3.04	610.87	216.10	1.68	5.00	597.64	215.00	1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3891E+02 EXCESS= .0000E+00 OUTFLOW= .3894E+02 BASIN STORAGE= .5978E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP9	MANE	3.19	543.36	216.62	1.48	5.00	526.14	215.00	1.48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3438E+02 EXCESS= .0000E+00 OUTFLOW= .3441E+02 BASIN STORAGE= .5831E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP9	MANE	3.30	498.01	217.99	1.35	5.00	481.37	215.00	1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3129E+02 EXCESS= .0000E+00 OUTFLOW= .3131E+02 BASIN STORAGE= .4458E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP9	MANE	3.37	462.75	215.64	1.27	5.00	452.88	215.00	1.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2954E+02 EXCESS= .0000E+00 OUTFLOW= .2956E+02 BASIN STORAGE= .5664E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP9	MANE	3.48	426.16	219.13	1.17	5.00	414.43	215.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2713E+02 EXCESS= .0000E+00 OUTFLOW= .2715E+02 BASIN STORAGE= .5964E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP9	MANE	3.60	389.60	216.28	1.06	5.00	379.35	220.00	1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2468E+02 EXCESS= .0000E+00 OUTFLOW= .2471E+02 BASIN STORAGE= .5665E-02 PERCENT ERROR= -.1

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          FOR PLAN = 1  RATIO=  .00
             RCP9   MANE          4.28    257.06    218.31       .68      5.00    247.53    220.00          .68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1577E+02 EXCESS= .0000E+00 OUTFLOW= .1580E+02 BASIN STORAGE= .5589E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP9   MANE          3.25    152.12    221.00       .39      5.00    149.54    220.00          .39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9127E+01 EXCESS= .0000E+00 OUTFLOW= .9147E+01 BASIN STORAGE= .5226E-02 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
             RCP9   MANE          1.25     33.49    227.50       .10      5.00     30.78    225.00          .10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2224E+01 EXCESS= .0000E+00 OUTFLOW= .2233E+01 BASIN STORAGE= .4714E-02 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          3.64    661.85    218.13      1.28      5.00    660.04    220.00         1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4839E+02 EXCESS= .0000E+00 OUTFLOW= .4843E+02 BASIN STORAGE= .5715E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          3.84    584.76    219.02      1.12      5.00    582.49    220.00         1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4226E+02 EXCESS= .0000E+00 OUTFLOW= .4230E+02 BASIN STORAGE= .6080E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          3.99    530.15    219.36      1.01      5.00    528.92    220.00         1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3803E+02 EXCESS= .0000E+00 OUTFLOW= .3807E+02 BASIN STORAGE= .5563E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          4.08    497.43    220.47       .95      5.00    490.79    220.00          .95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3564E+02 EXCESS= .0000E+00 OUTFLOW= .3569E+02 BASIN STORAGE= .6116E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          4.23    452.51    219.73       .86      5.00    452.37    220.00          .86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3248E+02 EXCESS= .0000E+00 OUTFLOW= .3252E+02 BASIN STORAGE= .6539E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          4.39    409.42    224.01       .78      5.00    405.45    220.00          .78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2932E+02 EXCESS= .0000E+00 OUTFLOW= .2936E+02 BASIN STORAGE= .6479E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          5.00    255.39    225.00       .47      5.00    255.39    225.00          .47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1772E+02 EXCESS= .0000E+00 OUTFLOW= .1776E+02 BASIN STORAGE= .7716E-02 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          3.75    141.34    225.00       .26      5.00    141.34    225.00          .26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9686E+01 EXCESS= .0000E+00 OUTFLOW= .9732E+01 BASIN STORAGE= .5452E-02 PERCENT ERROR=   -.5

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          1.50     51.54    238.50       .06      5.00     22.36    255.00          .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2288E+01 EXCESS= .0000E+00 OUTFLOW= .2327E+01 BASIN STORAGE= .5964E-02 PERCENT ERROR=  -2.0

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          3.75    642.67    225.10      1.28      5.00    642.39    225.00         1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4841E+02 EXCESS= .0000E+00 OUTFLOW= .4846E+02 BASIN STORAGE= .6251E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          3.94    576.54    224.81      1.12      5.00    574.53    225.00         1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4226E+02 EXCESS= .0000E+00 OUTFLOW= .4232E+02 BASIN STORAGE= .6382E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          4.10    521.75    225.46      1.01      5.00    518.01    225.00         1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3804E+02 EXCESS= .0000E+00 OUTFLOW= .3810E+02 BASIN STORAGE= .5903E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          4.22    490.42    223.86       .95      5.00    485.30    225.00          .95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3574E+02 EXCESS= .0000E+00 OUTFLOW= .3579E+02 BASIN STORAGE= .7173E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          4.36    444.27    226.92       .86      5.00    436.68    225.00          .86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3250E+02 EXCESS= .0000E+00 OUTFLOW= .3255E+02 BASIN STORAGE= .6309E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP10  MANE          4.56    397.81    227.96       .78      5.00    395.14    225.00          .78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2940E+02 EXCESS= .0000E+00 OUTFLOW= .2945E+02 BASIN STORAGE= .7586E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
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RCP10	MANE	5.00	273.08	225.00	.47	5.00	273.08	225.00	.47	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1776E+02 EXCESS= .0000E+00 OUTFLOW= .1784E+02 BASIN STORAGE= .5982E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RCP10	MANE	4.25	154.30	229.50	.26	5.00	152.30	230.00	.26	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9775E+01 EXCESS= .0000E+00 OUTFLOW= .9835E+01 BASIN STORAGE= .6678E-02 PERCENT ERROR= -.7

FOR PLAN = 1 RATIO= .00

RCP10	MANE	3.00	28.40	261.00	.06	5.00	26.18	260.00	.06	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2130E+01 EXCESS= .0000E+00 OUTFLOW= .2158E+01 BASIN STORAGE= .6480E-02 PERCENT ERROR= -1.7

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	3.00	139.09	243.00	.60	5.00	138.97	245.00	.60	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1422E+02 EXCESS= .0000E+00 OUTFLOW= .1423E+02 BASIN STORAGE= .6050E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	2.75	111.77	244.75	.49	5.00	111.63	245.00	.49	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1159E+02 EXCESS= .0000E+00 OUTFLOW= .1160E+02 BASIN STORAGE= .6812E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	2.75	94.21	244.75	.42	5.00	94.14	245.00	.42	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9904E+01 EXCESS= .0000E+00 OUTFLOW= .9917E+01 BASIN STORAGE= .6022E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	2.50	84.60	245.00	.38	5.00	84.60	245.00	.38	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8969E+01 EXCESS= .0000E+00 OUTFLOW= .8981E+01 BASIN STORAGE= .5735E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	2.50	71.64	250.00	.33	5.00	71.64	250.00	.33	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7720E+01 EXCESS= .0000E+00 OUTFLOW= .7732E+01 BASIN STORAGE= .6425E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	2.50	59.45	247.50	.28	5.00	59.18	250.00	.28	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6513E+01 EXCESS= .0000E+00 OUTFLOW= .6523E+01 BASIN STORAGE= .5914E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	2.25	21.78	256.50	.12	5.00	21.00	260.00	.12	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2852E+01 EXCESS= .0000E+00 OUTFLOW= .2860E+01 BASIN STORAGE= .5542E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	3.75	7.14	322.50	.04	5.00	7.12	325.00	.04	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9147E+00 EXCESS= .0000E+00 OUTFLOW= .9201E+00 BASIN STORAGE= .5835E-02 PERCENT ERROR= -1.2

FOR PLAN = 1 RATIO= .00

RC5GD	MANE	5.00	.00	.00	.00	5.00	.00	325.00	.00	

FOR PLAN = 1 RATIO= .00

RCP11	MANE	2.32	787.98	227.36	1.07	5.00	779.56	225.00	1.07	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7487E+02 EXCESS= .0000E+00 OUTFLOW= .7488E+02 BASIN STORAGE= .4001E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP11	MANE	2.45	684.25	227.79	.92	5.00	671.05	225.00	.92	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6449E+02 EXCESS= .0000E+00 OUTFLOW= .6450E+02 BASIN STORAGE= .4568E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP11	MANE	2.57	603.01	226.20	.82	5.00	591.45	225.00	.82	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5751E+02 EXCESS= .0000E+00 OUTFLOW= .5752E+02 BASIN STORAGE= .4382E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP11	MANE	2.65	557.64	228.26	.77	5.00	552.32	225.00	.77	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5378E+02 EXCESS= .0000E+00 OUTFLOW= .5379E+02 BASIN STORAGE= .4400E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP11	MANE	2.78	502.25	227.74	.69	5.00	495.18	225.00	.69	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4831E+02 EXCESS= .0000E+00 OUTFLOW= .4832E+02 BASIN STORAGE= .4483E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP11	MANE	2.90	448.57	226.00	.62	5.00	440.91	230.00	.62	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4321E+02 EXCESS= .0000E+00 OUTFLOW= .4322E+02 BASIN STORAGE= .4463E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP11	MANE	3.37	304.27	229.44	.36	5.00	299.08	230.00	.36	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2507E+02 EXCESS= .0000E+00 OUTFLOW= .2509E+02 BASIN STORAGE= .3912E-02 PERCENT ERROR= -.1

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          FOR PLAN = 1  RATIO=  .00
             RCP11  MANE          4.25    166.65    238.00       .19      5.00    151.37    235.00          .19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1306E+02 EXCESS= .0000E+00 OUTFLOW= .1309E+02 BASIN STORAGE= .3772E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP11  MANE          1.75     38.71    269.50       .04      5.00     32.68    270.00          .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2522E+01 EXCESS= .0000E+00 OUTFLOW= .2539E+01 BASIN STORAGE= .4601E-02 PERCENT ERROR=   -.9

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          4.66    848.47    228.38      1.09      5.00    846.81    230.00         1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8195E+02 EXCESS= .0000E+00 OUTFLOW= .8201E+02 BASIN STORAGE= .8791E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          4.95    737.24    232.49       .94      5.00    727.63    230.00          .94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7073E+02 EXCESS= .0000E+00 OUTFLOW= .7078E+02 BASIN STORAGE= .8159E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          5.00    660.28    230.00       .83      5.00    660.28    230.00          .83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6303E+02 EXCESS= .0000E+00 OUTFLOW= .6308E+02 BASIN STORAGE= .9913E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          5.00    615.88    230.00       .78      5.00    615.88    230.00          .78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5898E+02 EXCESS= .0000E+00 OUTFLOW= .5904E+02 BASIN STORAGE= .7857E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          5.00    555.93    230.00       .70      5.00    555.93    230.00          .70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5308E+02 EXCESS= .0000E+00 OUTFLOW= .5313E+02 BASIN STORAGE= .9825E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          5.00    498.79    235.00       .63      5.00    498.79    235.00          .63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4741E+02 EXCESS= .0000E+00 OUTFLOW= .4745E+02 BASIN STORAGE= .8380E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          5.00    320.49    240.00       .37      5.00    320.49    240.00          .37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2763E+02 EXCESS= .0000E+00 OUTFLOW= .2767E+02 BASIN STORAGE= .7970E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          5.00    175.22    245.00       .19      5.00    175.22    245.00          .19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1433E+02 EXCESS= .0000E+00 OUTFLOW= .1438E+02 BASIN STORAGE= .1010E-01 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .00
             RCP12  MANE          2.50     42.53    290.00       .04      5.00     42.53    290.00          .04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2798E+01 EXCESS= .0000E+00 OUTFLOW= .2826E+01 BASIN STORAGE= .7781E-02 PERCENT ERROR=  -1.3

          FOR PLAN = 1  RATIO=  .00
            RC5I1B  MANE          2.49    467.03    213.80       .91      5.00    447.42    215.00          .91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2526E+02 EXCESS= .0000E+00 OUTFLOW= .2528E+02 BASIN STORAGE= .3981E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1B  MANE          2.50    401.05    212.50       .77      5.00    387.15    215.00          .77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2132E+02 EXCESS= .0000E+00 OUTFLOW= .2134E+02 BASIN STORAGE= .3876E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1B  MANE          1.75    350.58    213.50       .68      5.00    332.97    215.00          .68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1876E+02 EXCESS= .0000E+00 OUTFLOW= .1877E+02 BASIN STORAGE= .3804E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1B  MANE          1.50    321.30    213.00       .63      5.00    306.62    215.00          .62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1730E+02 EXCESS= .0000E+00 OUTFLOW= .1731E+02 BASIN STORAGE= .3330E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1B  MANE          1.50    281.58    213.00       .55      5.00    271.57    215.00          .55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1534E+02 EXCESS= .0000E+00 OUTFLOW= .1535E+02 BASIN STORAGE= .4397E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1B  MANE          1.25    243.61    213.75       .48      5.00    234.87    215.00          .48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1340E+02 EXCESS= .0000E+00 OUTFLOW= .1341E+02 BASIN STORAGE= .4321E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1B  MANE          1.00    110.25    215.00       .25      5.00    110.25    215.00          .25

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6859E+01 EXCESS= .0000E+00 OUTFLOW= .6867E+01 BASIN STORAGE= .3292E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RC5I1B  MANE           .75     36.14    221.25       .10      5.00     32.24    225.00          .10
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .2775E+01 EXCESS= .0000E+00 OUTFLOW= .2785E+01 BASIN STORAGE= .4086E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC5I1B	MANE	1.25	1.22	321.25	.00	5.00	1.20	325.00	.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3730E-01 EXCESS= .0000E+00 OUTFLOW= .3940E-01 BASIN STORAGE= .3297E-02 PERCENT ERROR= -14.5

FOR PLAN = 1 RATIO= .00

RCP13	MANE	4.22	564.82	219.24	.98	5.00	547.85	220.00	.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3313E+02 EXCESS= .0000E+00 OUTFLOW= .3318E+02 BASIN STORAGE= .6895E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP13	MANE	4.47	488.01	218.91	.83	5.00	470.11	220.00	.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2809E+02 EXCESS= .0000E+00 OUTFLOW= .2816E+02 BASIN STORAGE= .8933E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP13	MANE	3.75	419.86	217.50	.73	5.00	403.66	220.00	.73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2468E+02 EXCESS= .0000E+00 OUTFLOW= .2474E+02 BASIN STORAGE= .7920E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP13	MANE	3.50	378.33	220.50	.68	5.00	377.85	220.00	.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2284E+02 EXCESS= .0000E+00 OUTFLOW= .2289E+02 BASIN STORAGE= .7026E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP13	MANE	3.75	334.03	221.25	.60	5.00	333.75	220.00	.60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2032E+02 EXCESS= .0000E+00 OUTFLOW= .2037E+02 BASIN STORAGE= .7890E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP13	MANE	3.50	298.15	220.50	.53	5.00	295.29	220.00	.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1789E+02 EXCESS= .0000E+00 OUTFLOW= .1795E+02 BASIN STORAGE= .6126E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP13	MANE	1.75	155.46	222.25	.28	5.00	139.07	225.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9534E+01 EXCESS= .0000E+00 OUTFLOW= .9559E+01 BASIN STORAGE= .6892E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP13	MANE	1.50	57.29	231.00	.12	5.00	50.58	230.00	.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4060E+01 EXCESS= .0000E+00 OUTFLOW= .4071E+01 BASIN STORAGE= .7316E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RCP13	MANE	2.25	1.90	276.75	.01	5.00	1.65	315.00	.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2118E+00 EXCESS= .0000E+00 OUTFLOW= .2162E+00 BASIN STORAGE= .6301E-02 PERCENT ERROR= -5.1

FOR PLAN = 1 RATIO= .00

RCP14	MANE	1.53	1139.67	222.86	.94	5.00	1135.03	225.00	.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1100E+03 EXCESS= .0000E+00 OUTFLOW= .1100E+03 BASIN STORAGE= .3264E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP14	MANE	1.60	1007.49	227.06	.81	5.00	999.42	225.00	.81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9509E+02 EXCESS= .0000E+00 OUTFLOW= .9509E+02 BASIN STORAGE= .2963E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP14	MANE	1.67	900.57	227.57	.72	5.00	888.60	230.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8440E+02 EXCESS= .0000E+00 OUTFLOW= .8441E+02 BASIN STORAGE= .2904E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP14	MANE	1.72	837.93	227.50	.67	5.00	828.24	230.00	.67

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7864E+02 EXCESS= .0000E+00 OUTFLOW= .7865E+02 BASIN STORAGE= .2923E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP14	MANE	1.80	742.62	230.90	.60	5.00	741.63	230.00	.60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7051E+02 EXCESS= .0000E+00 OUTFLOW= .7052E+02 BASIN STORAGE= .2847E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP14	MANE	1.89	657.78	232.63	.53	5.00	651.79	230.00	.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6259E+02 EXCESS= .0000E+00 OUTFLOW= .6259E+02 BASIN STORAGE= .2844E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP14	MANE	2.33	392.23	238.00	.30	5.00	382.32	240.00	.30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3541E+02 EXCESS= .0000E+00 OUTFLOW= .3543E+02 BASIN STORAGE= .2980E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP14	MANE	3.10	185.76	247.63	.15	5.00	185.28	250.00	.15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1744E+02 EXCESS= .0000E+00 OUTFLOW= .1745E+02 BASIN STORAGE= .2833E-02 PERCENT ERROR= -.1

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          FOR PLAN = 1  RATIO=  .00
             RCP14  MANE          4.75     35.72    299.25        .02       5.00      31.54    300.00          .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2763E+01 EXCESS= .0000E+00 OUTFLOW= .2774E+01 BASIN STORAGE= .3044E-02 PERCENT ERROR=   -.5

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          3.19   1189.53    226.44        .95       5.00    1175.69    225.00          .95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1145E+03 EXCESS= .0000E+00 OUTFLOW= .1146E+03 BASIN STORAGE= .6520E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          3.36   1046.61    228.24        .82       5.00    1033.39    230.00          .82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9896E+02 EXCESS= .0000E+00 OUTFLOW= .9900E+02 BASIN STORAGE= .7015E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          3.53    925.46    229.42        .73       5.00     923.48    230.00          .73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8782E+02 EXCESS= .0000E+00 OUTFLOW= .8786E+02 BASIN STORAGE= .6553E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          3.63    860.50    228.70        .68       5.00     857.97    230.00          .68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8188E+02 EXCESS= .0000E+00 OUTFLOW= .8192E+02 BASIN STORAGE= .7062E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          3.79    754.04    231.38        .61       5.00     753.61    235.00          .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7338E+02 EXCESS= .0000E+00 OUTFLOW= .7342E+02 BASIN STORAGE= .7883E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          3.99    667.80    235.58        .54       5.00     666.32    235.00          .54

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6518E+02 EXCESS= .0000E+00 OUTFLOW= .6522E+02 BASIN STORAGE= .6852E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          4.97    384.23    243.63        .30       5.00     370.08    245.00          .30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3685E+02 EXCESS= .0000E+00 OUTFLOW= .3691E+02 BASIN STORAGE= .7985E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          5.00    179.93    255.00        .15       5.00     179.93    255.00          .15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1817E+02 EXCESS= .0000E+00 OUTFLOW= .1820E+02 BASIN STORAGE= .7967E-02 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
             RCP15  MANE          3.75     32.42    311.25        .02       5.00      27.61    315.00          .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2861E+01 EXCESS= .0000E+00 OUTFLOW= .2870E+01 BASIN STORAGE= .6574E-02 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .00
            RC5I1C  MANE          3.73     67.70    223.57       1.45       5.00      66.14    225.00         1.45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4962E+01 EXCESS= .0000E+00 OUTFLOW= .4965E+01 BASIN STORAGE= .2346E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1C  MANE          3.93     59.20    224.06       1.26       5.00      58.29    225.00         1.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4335E+01 EXCESS= .0000E+00 OUTFLOW= .4338E+01 BASIN STORAGE= .2329E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1C  MANE          4.09     52.79    225.14       1.14       5.00      52.75    225.00         1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3913E+01 EXCESS= .0000E+00 OUTFLOW= .3915E+01 BASIN STORAGE= .2848E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1C  MANE          4.20     49.46    222.51       1.07       5.00      48.72    225.00         1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3671E+01 EXCESS= .0000E+00 OUTFLOW= .3674E+01 BASIN STORAGE= .2343E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RC5I1C  MANE          4.36     44.72    222.32        .97       5.00      44.40    225.00          .97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3341E+01 EXCESS= .0000E+00 OUTFLOW= .3343E+01 BASIN STORAGE= .2484E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RC5I1C  MANE          4.55     40.45    222.72        .88       5.00      40.04    225.00          .88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3012E+01 EXCESS= .0000E+00 OUTFLOW= .3015E+01 BASIN STORAGE= .2468E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RC5I1C  MANE          3.50     24.45    227.50        .54       5.00      24.34    225.00          .54

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1836E+01 EXCESS= .0000E+00 OUTFLOW= .1838E+01 BASIN STORAGE= .2806E-02 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
            RC5I1C  MANE          2.00     12.79    228.00        .29       5.00      12.62    230.00          .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9953E+00 EXCESS= .0000E+00 OUTFLOW= .9967E+00 BASIN STORAGE= .2220E-02 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .00
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     RC5I1C  MANE          1.50      2.11    237.00       .05       5.00       1.74    245.00          .05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1820E+00 EXCESS= .0000E+00 OUTFLOW= .1833E+00 BASIN STORAGE= .2256E-02 PERCENT ERROR=  -1.9

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          2.51    292.60    218.36      1.25       5.00     291.11    220.00         1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2044E+02 EXCESS= .0000E+00 OUTFLOW= .2044E+02 BASIN STORAGE= .3237E-02 PERCENT ERROR=    .0

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          2.66    252.01    220.83      1.08       5.00     251.71    220.00         1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1766E+02 EXCESS= .0000E+00 OUTFLOW= .1767E+02 BASIN STORAGE= .2693E-02 PERCENT ERROR=    .0

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          2.78    226.28    219.94       .97       5.00     226.14    220.00          .97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1582E+02 EXCESS= .0000E+00 OUTFLOW= .1583E+02 BASIN STORAGE= .3112E-02 PERCENT ERROR=   -.1

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          2.86    211.00    220.34       .90       5.00     210.06    220.00          .90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1477E+02 EXCESS= .0000E+00 OUTFLOW= .1478E+02 BASIN STORAGE= .3054E-02 PERCENT ERROR=   -.1

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          2.98    189.86    220.78       .81       5.00     188.18    220.00          .81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1334E+02 EXCESS= .0000E+00 OUTFLOW= .1334E+02 BASIN STORAGE= .2935E-02 PERCENT ERROR=   -.1

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          3.12    167.94    221.85       .73       5.00     166.05    220.00          .73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1191E+02 EXCESS= .0000E+00 OUTFLOW= .1192E+02 BASIN STORAGE= .3420E-02 PERCENT ERROR=   -.1

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          3.75     92.29    221.25       .42       5.00      91.82    225.00          .42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6901E+01 EXCESS= .0000E+00 OUTFLOW= .6909E+01 BASIN STORAGE= .2942E-02 PERCENT ERROR=   -.2

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          2.25     42.95    227.25       .21       5.00      41.57    230.00          .21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3472E+01 EXCESS= .0000E+00 OUTFLOW= .3477E+01 BASIN STORAGE= .2816E-02 PERCENT ERROR=   -.2

     FOR PLAN = 1  RATIO=  .00
        RCP16  MANE          3.50      4.09    308.00       .03       5.00       3.94    310.00          .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4372E+00 EXCESS= .0000E+00 OUTFLOW= .4386E+00 BASIN STORAGE= .2820E-02 PERCENT ERROR=  -1.0

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          4.58    474.02    224.63      1.42       5.00     471.80    220.00         1.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3411E+02 EXCESS= .0000E+00 OUTFLOW= .3414E+02 BASIN STORAGE= .7837E-02 PERCENT ERROR=   -.1

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          4.83    414.59    222.21      1.24       5.00     401.10    225.00         1.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2972E+02 EXCESS= .0000E+00 OUTFLOW= .2976E+02 BASIN STORAGE= .8453E-02 PERCENT ERROR=   -.1

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          5.00    379.74    225.00      1.12       5.00     379.74    225.00         1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2691E+02 EXCESS= .0000E+00 OUTFLOW= .2695E+02 BASIN STORAGE= .8259E-02 PERCENT ERROR=   -.2

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          5.00    356.99    225.00      1.05       5.00     356.99    225.00         1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2528E+02 EXCESS= .0000E+00 OUTFLOW= .2531E+02 BASIN STORAGE= .8401E-02 PERCENT ERROR=   -.2

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          5.00    325.73    225.00       .96       5.00     325.73    225.00          .96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2304E+02 EXCESS= .0000E+00 OUTFLOW= .2307E+02 BASIN STORAGE= .8520E-02 PERCENT ERROR=   -.2

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          5.00    293.39    225.00       .87       5.00     293.39    225.00          .87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2081E+02 EXCESS= .0000E+00 OUTFLOW= .2084E+02 BASIN STORAGE= .6368E-02 PERCENT ERROR=   -.2

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          4.75    168.86    228.00       .53       5.00     167.45    225.00          .53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1279E+02 EXCESS= .0000E+00 OUTFLOW= .1282E+02 BASIN STORAGE= .6948E-02 PERCENT ERROR=   -.2

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          4.25     87.06    229.50       .30       5.00      86.77    230.00          .30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7099E+01 EXCESS= .0000E+00 OUTFLOW= .7110E+01 BASIN STORAGE= .7290E-02 PERCENT ERROR=   -.3

     FOR PLAN = 1  RATIO=  .00
        RCP17  MANE          1.50     21.27    231.00       .06       5.00      16.14    235.00          .06
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1514E+01 EXCESS= .0000E+00 OUTFLOW= .1528E+01 BASIN STORAGE= .6939E-02 PERCENT ERROR= -1.4

FOR PLAN = 1 RATIO= .00

RCP18	MANE	2.35	1107.12	235.38	.78	5.00	1106.01	235.00	.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1215E+03 EXCESS= .0000E+00 OUTFLOW= .1215E+03 BASIN STORAGE= .4562E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	2.35	1120.15	230.13	.71	5.00	1119.59	230.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1092E+03 EXCESS= .0000E+00 OUTFLOW= .1092E+03 BASIN STORAGE= .4288E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	2.41	1046.07	228.60	.63	5.00	1034.52	230.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9802E+02 EXCESS= .0000E+00 OUTFLOW= .9802E+02 BASIN STORAGE= .4425E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	2.48	971.73	228.15	.59	5.00	965.64	230.00	.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9153E+02 EXCESS= .0000E+00 OUTFLOW= .9153E+02 BASIN STORAGE= .4368E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	2.61	857.57	229.73	.53	5.00	855.30	230.00	.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8260E+02 EXCESS= .0000E+00 OUTFLOW= .8261E+02 BASIN STORAGE= .5212E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	2.76	749.02	229.34	.48	5.00	746.90	230.00	.48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7362E+02 EXCESS= .0000E+00 OUTFLOW= .7363E+02 BASIN STORAGE= .4616E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	3.58	388.14	243.72	.28	5.00	386.24	240.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4267E+02 EXCESS= .0000E+00 OUTFLOW= .4268E+02 BASIN STORAGE= .4836E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	4.92	165.58	260.84	.14	5.00	165.17	260.00	.14

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2184E+02 EXCESS= .0000E+00 OUTFLOW= .2186E+02 BASIN STORAGE= .5003E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP18	MANE	3.00	29.99	321.00	.02	5.00	28.17	320.00	.02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3796E+01 EXCESS= .0000E+00 OUTFLOW= .3803E+01 BASIN STORAGE= .4564E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	5.00	257.88	225.00	1.55	5.00	257.88	225.00	1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1853E+02 EXCESS= .0000E+00 OUTFLOW= .1858E+02 BASIN STORAGE= .1215E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	5.00	227.05	225.00	1.37	5.00	227.05	225.00	1.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1634E+02 EXCESS= .0000E+00 OUTFLOW= .1639E+02 BASIN STORAGE= .1164E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	4.75	204.60	228.00	1.25	5.00	197.61	225.00	1.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1486E+02 EXCESS= .0000E+00 OUTFLOW= .1490E+02 BASIN STORAGE= .1256E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	4.75	193.58	228.00	1.17	5.00	186.66	230.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1402E+02 EXCESS= .0000E+00 OUTFLOW= .1405E+02 BASIN STORAGE= .1230E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	5.00	178.41	230.00	1.08	5.00	178.41	230.00	1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1287E+02 EXCESS= .0000E+00 OUTFLOW= .1290E+02 BASIN STORAGE= .1074E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	5.00	163.58	230.00	.98	5.00	163.58	230.00	.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1170E+02 EXCESS= .0000E+00 OUTFLOW= .1174E+02 BASIN STORAGE= .1040E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	4.50	101.68	229.50	.63	5.00	101.68	230.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7450E+01 EXCESS= .0000E+00 OUTFLOW= .7483E+01 BASIN STORAGE= .9573E-02 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	3.00	61.60	237.00	.36	5.00	57.83	230.00	.36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4303E+01 EXCESS= .0000E+00 OUTFLOW= .4340E+01 BASIN STORAGE= .1164E-01 PERCENT ERROR= -1.1

FOR PLAN = 1 RATIO= .00

RC1G1A	MANE	1.50	20.17	249.00	.09	5.00	14.17	250.00	.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1033E+01 EXCESS= .0000E+00 OUTFLOW= .1064E+01 BASIN STORAGE= .9827E-02 PERCENT ERROR= -4.0

```
          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          4.48    903.73    228.41       .71      5.00    889.99    230.00         .71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1231E+03 EXCESS= .0000E+00 OUTFLOW= .1231E+03 BASIN STORAGE= .8839E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          4.49    883.48    228.90       .64      5.00    880.63    230.00         .64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1123E+03 EXCESS= .0000E+00 OUTFLOW= .1123E+03 BASIN STORAGE= .1012E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          4.56    845.41    232.42       .59      5.00    843.78    230.00         .59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1035E+03 EXCESS= .0000E+00 OUTFLOW= .1035E+03 BASIN STORAGE= .7602E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          4.61    836.61    230.47       .56      5.00    832.42    230.00         .57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9851E+02 EXCESS= .0000E+00 OUTFLOW= .9855E+02 BASIN STORAGE= .7718E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          4.68    831.46    229.39       .52      5.00    823.00    230.00         .52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9155E+02 EXCESS= .0000E+00 OUTFLOW= .9158E+02 BASIN STORAGE= .8047E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          4.76    761.21    233.13       .48      5.00    758.73    235.00         .48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8356E+02 EXCESS= .0000E+00 OUTFLOW= .8361E+02 BASIN STORAGE= .7805E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          5.00    454.08    245.00       .29      5.00    454.08    245.00         .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5062E+02 EXCESS= .0000E+00 OUTFLOW= .5067E+02 BASIN STORAGE= .8731E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          5.00    186.94    260.00       .15      5.00    186.94    260.00         .15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2667E+02 EXCESS= .0000E+00 OUTFLOW= .2670E+02 BASIN STORAGE= .8611E-02 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RCP19  MANE          2.25     33.32    265.50       .03      5.00     31.91    335.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5178E+01 EXCESS= .0000E+00 OUTFLOW= .5199E+01 BASIN STORAGE= .7715E-02 PERCENT ERROR=   -.6

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE           .96   1497.61    259.80       .93      5.00   1497.56    260.00         .93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7413E+03 EXCESS= .0000E+00 OUTFLOW= .7406E+03 BASIN STORAGE= .7647E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE          1.00   1349.94    250.79       .86      5.00   1349.29    250.00         .86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6839E+03 EXCESS= .0000E+00 OUTFLOW= .6833E+03 BASIN STORAGE= .7290E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE          1.02   1247.72    246.79       .80      5.00   1245.21    250.00         .81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6421E+03 EXCESS= .0000E+00 OUTFLOW= .6415E+03 BASIN STORAGE= .6984E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE          1.04   1192.68    246.60       .77      5.00   1187.49    250.00         .78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6180E+03 EXCESS= .0000E+00 OUTFLOW= .6174E+03 BASIN STORAGE= .6803E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE          1.07   1108.27    246.64       .73      5.00   1106.02    245.00         .73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5837E+03 EXCESS= .0000E+00 OUTFLOW= .5832E+03 BASIN STORAGE= .6551E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE          1.10   1023.51    246.12       .69      5.00   1020.33    245.00         .69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5464E+03 EXCESS= .0000E+00 OUTFLOW= .5459E+03 BASIN STORAGE= .6231E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE          1.33    599.61    246.24       .49      5.00    589.71    245.00         .49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3915E+03 EXCESS= .0000E+00 OUTFLOW= .3911E+03 BASIN STORAGE= .3943E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE          1.68    314.06    315.67       .29      5.00    313.60    315.00         .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2286E+03 EXCESS= .0000E+00 OUTFLOW= .2286E+03 BASIN STORAGE= .2926E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP20  MANE          2.49    104.74    411.13       .06      5.00    104.70    410.00         .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5165E+02 EXCESS= .0000E+00 OUTFLOW= .5165E+02 BASIN STORAGE= .1532E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RC1D  MANE          5.00    341.08    225.00      1.12      5.00    341.08    225.00        1.12
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2385E+02 EXCESS= .0000E+00 OUTFLOW= .2386E+02 BASIN STORAGE= .1200E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RC1D	MANE	4.25	288.69	225.25	.96	5.00	287.86	225.00	.96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2057E+02 EXCESS= .0000E+00 OUTFLOW= .2058E+02 BASIN STORAGE= .1210E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RC1D	MANE	4.25	258.22	225.25	.86	5.00	257.33	225.00	.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1840E+02 EXCESS= .0000E+00 OUTFLOW= .1840E+02 BASIN STORAGE= .1834E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RC1D	MANE	4.25	240.71	225.25	.80	5.00	239.79	225.00	.81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1716E+02 EXCESS= .0000E+00 OUTFLOW= .1717E+02 BASIN STORAGE= .1774E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RC1D	MANE	4.25	216.68	225.25	.73	5.00	215.72	225.00	.73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1548E+02 EXCESS= .0000E+00 OUTFLOW= .1549E+02 BASIN STORAGE= .1688E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RC1D	MANE	4.00	192.56	224.00	.65	5.00	192.02	225.00	.65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1382E+02 EXCESS= .0000E+00 OUTFLOW= .1383E+02 BASIN STORAGE= .1700E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RC1D	MANE	2.00	106.51	228.00	.37	5.00	104.48	230.00	.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7930E+01 EXCESS= .0000E+00 OUTFLOW= .7934E+01 BASIN STORAGE= .1416E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RC1D	MANE	1.75	48.17	231.00	.18	5.00	47.69	230.00	.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3923E+01 EXCESS= .0000E+00 OUTFLOW= .3926E+01 BASIN STORAGE= .1180E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RC1D	MANE	3.00	4.46	309.00	.02	5.00	4.46	310.00	.02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4424E+00 EXCESS= .0000E+00 OUTFLOW= .4434E+00 BASIN STORAGE= .1273E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RCP21	MANE	5.00	541.43	230.00	1.15	5.00	541.43	230.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3857E+02 EXCESS= .0000E+00 OUTFLOW= .3860E+02 BASIN STORAGE= .2422E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP21	MANE	5.00	459.25	230.00	.99	5.00	459.25	230.00	.99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3337E+02 EXCESS= .0000E+00 OUTFLOW= .3339E+02 BASIN STORAGE= .3021E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP21	MANE	5.00	411.94	230.00	.89	5.00	411.94	230.00	.89

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2990E+02 EXCESS= .0000E+00 OUTFLOW= .2993E+02 BASIN STORAGE= .2000E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP21	MANE	5.00	383.76	230.00	.83	5.00	383.76	230.00	.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2793E+02 EXCESS= .0000E+00 OUTFLOW= .2796E+02 BASIN STORAGE= .3052E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP21	MANE	5.00	344.70	230.00	.75	5.00	344.70	230.00	.75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2525E+02 EXCESS= .0000E+00 OUTFLOW= .2527E+02 BASIN STORAGE= .2886E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP21	MANE	4.75	300.96	232.75	.67	5.00	293.77	230.00	.67

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2255E+02 EXCESS= .0000E+00 OUTFLOW= .2257E+02 BASIN STORAGE= .2145E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP21	MANE	2.50	169.35	235.00	.39	5.00	169.35	235.00	.39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1310E+02 EXCESS= .0000E+00 OUTFLOW= .1311E+02 BASIN STORAGE= .2022E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP21	MANE	2.25	76.97	238.50	.20	5.00	76.69	240.00	.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6614E+01 EXCESS= .0000E+00 OUTFLOW= .6622E+01 BASIN STORAGE= .2015E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP21	MANE	3.25	7.52	318.50	.03	5.00	7.50	320.00	.02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8408E+00 EXCESS= .0000E+00 OUTFLOW= .8434E+00 BASIN STORAGE= .2172E-02 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00

RC4A1D	MANE	1.45	52.58	217.24	1.10	5.00	52.35	220.00	1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3626E+01 EXCESS= .0000E+00 OUTFLOW= .3626E+01 BASIN STORAGE= .5432E-03 PERCENT ERROR= .0

```
 FOR PLAN = 1  RATIO=  .00
   RC4A1D  MANE          1.53     45.33    218.27       .95       5.00     44.96    220.00          .95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3126E+01 EXCESS= .0000E+00 OUTFLOW= .3126E+01 BASIN STORAGE= .5549E-03 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
   RC4A1D  MANE          1.59     40.35    220.82       .85       5.00     40.27    220.00          .85

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2794E+01 EXCESS= .0000E+00 OUTFLOW= .2795E+01 BASIN STORAGE= .5830E-03 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
   RC4A1D  MANE          1.63     37.74    221.54       .79       5.00     37.32    220.00          .79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2607E+01 EXCESS= .0000E+00 OUTFLOW= .2608E+01 BASIN STORAGE= .5308E-03 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
   RC4A1D  MANE          1.69     33.95    221.53       .71       5.00     33.63    220.00          .71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2350E+01 EXCESS= .0000E+00 OUTFLOW= .2351E+01 BASIN STORAGE= .5857E-03 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
   RC4A1D  MANE          1.76     30.03    218.66       .63       5.00     29.86    220.00          .63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2096E+01 EXCESS= .0000E+00 OUTFLOW= .2096E+01 BASIN STORAGE= .5603E-03 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
   RC4A1D  MANE          2.00     16.72    222.00       .36       5.00     16.43    220.00          .36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1199E+01 EXCESS= .0000E+00 OUTFLOW= .1199E+01 BASIN STORAGE= .6021E-03 PERCENT ERROR=   -.1

 FOR PLAN = 1  RATIO=  .00
   RC4A1D  MANE          1.25      7.48    222.50       .18       5.00      7.36    225.00          .18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5901E+00 EXCESS= .0000E+00 OUTFLOW= .5902E+00 BASIN STORAGE= .5261E-03 PERCENT ERROR=   -.1

 FOR PLAN = 1  RATIO=  .00
   RC4A1D  MANE          3.25       .68    302.25       .02       5.00       .67    300.00          .02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6447E-01 EXCESS= .0000E+00 OUTFLOW= .6456E-01 BASIN STORAGE= .6137E-03 PERCENT ERROR=  -1.1

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          1.68   2295.24    226.55       .95       5.00   2284.65    225.00          .95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8154E+03 EXCESS= .0000E+00 OUTFLOW= .8142E+03 BASIN STORAGE= .1561E+01 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          1.74   2068.01    228.10       .88       5.00   2054.87    230.00          .88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7487E+03 EXCESS= .0000E+00 OUTFLOW= .7475E+03 BASIN STORAGE= .1488E+01 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          1.80   1888.47    228.61       .82       5.00   1883.02    230.00          .82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7008E+03 EXCESS= .0000E+00 OUTFLOW= .6997E+03 BASIN STORAGE= .1426E+01 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          1.83   1790.11    230.59       .79       5.00   1789.29    230.00          .79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6729E+03 EXCESS= .0000E+00 OUTFLOW= .6719E+03 BASIN STORAGE= .1389E+01 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          1.87   1681.44    232.16       .74       5.00   1666.31    230.00          .74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6338E+03 EXCESS= .0000E+00 OUTFLOW= .6328E+03 BASIN STORAGE= .1338E+01 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          1.95   1498.44    232.55       .69       5.00   1477.59    235.00          .69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5919E+03 EXCESS= .0000E+00 OUTFLOW= .5909E+03 BASIN STORAGE= .1273E+01 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          2.45    800.93    244.78       .49       5.00    800.65    245.00          .49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4191E+03 EXCESS= .0000E+00 OUTFLOW= .4185E+03 BASIN STORAGE= .8138E+00 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          3.22    375.87    305.46       .29       5.00    375.50    305.00          .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2440E+03 EXCESS= .0000E+00 OUTFLOW= .2440E+03 BASIN STORAGE= .6359E-01 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP22  MANE          5.00    106.89    345.00       .06       5.00    106.89    345.00          .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5477E+02 EXCESS= .0000E+00 OUTFLOW= .5477E+02 BASIN STORAGE= .3152E-01 PERCENT ERROR=   -.1

 FOR PLAN = 1  RATIO=  .00
    RCP23  MANE           .84   2415.53    226.19       .96       5.00   2409.55    225.00          .96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8252E+03 EXCESS= .0000E+00 OUTFLOW= .8246E+03 BASIN STORAGE= .8003E+00 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
    RCP23  MANE           .88   2165.60    226.58       .88       5.00   2154.93    230.00          .88
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7571E+03 EXCESS= .0000E+00 OUTFLOW= .7565E+03 BASIN STORAGE= .7629E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP23	MANE	.91	1970.33	230.65	.82	5.00	1969.18	230.00	.82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7084E+03 EXCESS= .0000E+00 OUTFLOW= .7078E+03 BASIN STORAGE= .7311E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP23	MANE	.92	1868.66	230.31	.79	5.00	1865.84	230.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6802E+03 EXCESS= .0000E+00 OUTFLOW= .6796E+03 BASIN STORAGE= .7122E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP23	MANE	.95	1738.74	230.62	.74	5.00	1729.44	230.00	.74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6402E+03 EXCESS= .0000E+00 OUTFLOW= .6397E+03 BASIN STORAGE= .6859E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP23	MANE	.99	1536.29	231.56	.69	5.00	1533.51	235.00	.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5974E+03 EXCESS= .0000E+00 OUTFLOW= .5969E+03 BASIN STORAGE= .6527E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP23	MANE	1.24	827.87	241.83	.49	5.00	825.29	240.00	.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4228E+03 EXCESS= .0000E+00 OUTFLOW= .4225E+03 BASIN STORAGE= .4196E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP23	MANE	1.63	383.52	307.21	.29	5.00	382.94	305.00	.29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2464E+03 EXCESS= .0000E+00 OUTFLOW= .2463E+03 BASIN STORAGE= .3380E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP23	MANE	2.58	107.04	369.48	.06	5.00	106.99	370.00	.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5530E+02 EXCESS= .0000E+00 OUTFLOW= .5530E+02 BASIN STORAGE= .1630E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	2.32	427.71	227.47	-1.00	5.00	415.98	225.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	3.20	170.71	227.10	-1.00	5.00	169.75	230.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	4.08	104.11	228.25	-1.00	5.00	102.74	230.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	4.20	95.86	230.82	-1.00	5.00	95.28	230.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	4.41	87.07	229.36	-1.00	5.00	86.43	230.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	4.66	73.57	228.37	-1.00	5.00	73.40	230.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	5.00	38.87	240.00	-1.00	5.00	38.87	240.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	5.00	17.18	255.00	-1.00	5.00	17.18	255.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	3.00	3.02	327.00	-1.00	5.00	2.73	330.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	3.24	408.25	229.86	-1.00	5.00	406.10	230.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	4.57	160.60	233.12	-1.00	5.00	149.48	235.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	5.00	103.57	235.00	-1.00	5.00	103.57	235.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	5.00	96.01	235.00	-1.00	5.00	96.01	235.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	5.00	87.93	235.00	-1.00	5.00	87.93	235.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV4	MANE	5.00	73.87	235.00	-1.00	5.00	73.87	235.00	-1.00

FOR PLAN = 1	RATIO=	.00							
RDIV4	MANE	5.00	40.33	245.00	-1.00	5.00	40.33	245.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV4	MANE	5.00	18.07	265.00	-1.00	5.00	18.07	265.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV4	MANE	4.25	2.93	348.50	-1.00	5.00	2.71	350.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	222.44	230.00	-1.00	5.00	222.44	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	191.85	235.00	-1.00	5.00	191.85	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	169.48	240.00	-1.00	5.00	169.48	240.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	158.52	230.00	-1.00	5.00	158.52	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	138.13	240.00	-1.00	5.00	138.13	240.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	123.82	235.00	-1.00	5.00	123.82	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	69.25	245.00	-1.00	5.00	69.25	245.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	35.84	260.00	-1.00	5.00	35.84	260.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	7.10	340.00	-1.00	5.00	7.10	340.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	2.67	221.08	234.56	-1.00	5.00	220.20	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	2.82	191.64	237.01	-1.00	5.00	189.21	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	2.96	169.33	236.75	-1.00	5.00	167.47	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	3.04	157.77	242.93	-1.00	5.00	157.66	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	3.20	140.10	236.94	-1.00	5.00	138.71	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	3.34	122.83	237.10	-1.00	5.00	119.48	245.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	4.18	71.19	246.41	-1.00	5.00	65.75	250.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	35.50	265.00	-1.00	5.00	35.50	265.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV3	MANE	5.00	6.15	350.00	-1.00	5.00	6.15	350.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV2	MANE	5.00	185.13	230.00	-1.00	5.00	185.13	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV2	MANE	5.00	103.88	230.00	-1.00	5.00	103.88	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV2	MANE	5.00	92.99	230.00	-1.00	5.00	92.99	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV2	MANE	5.00	88.77	230.00	-1.00	5.00	88.77	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDIV2	MANE	5.00	79.31	230.00	-1.00	5.00	79.31	230.00	-1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 5.00 67.81 235.00 -1.00 5.00 67.81 235.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 5.00 40.43 240.00 -1.00 5.00 40.43 240.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 5.00 19.68 270.00 -1.00 5.00 19.68 270.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 4.75 3.81 332.50 -1.00 5.00 2.80 330.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 1.56 179.96 230.93 -1.00 5.00 172.82 230.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 1.95 103.33 233.87 -1.00 5.00 101.87 235.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 2.03 92.53 233.88 -1.00 5.00 90.26 235.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 2.07 87.24 231.89 -1.00 5.00 84.22 235.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 2.16 77.72 233.52 -1.00 5.00 74.29 240.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 2.30 66.76 234.24 -1.00 5.00 66.59 235.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 2.80 41.60 243.78 -1.00 5.00 38.69 245.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 3.70 18.77 262.48 -1.00 5.00 17.58 270.00 -1.00

FOR PLAN = 1 RATIO= .00
RDIV2 MANE 5.00 3.50 340.00 -1.00 5.00 3.50 340.00 -1.00

FOR PLAN = 1 RATIO= .00
RC5CA MANE 3.25 182.79 224.25 .85 5.00 181.78 225.00 .85

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1350E+02 EXCESS= .0000E+00 OUTFLOW= .1350E+02 BASIN STORAGE= .1022E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5CA MANE 2.25 151.96 225.00 .71 5.00 151.96 225.00 .71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1134E+02 EXCESS= .0000E+00 OUTFLOW= .1134E+02 BASIN STORAGE= .9292E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5CA MANE 2.00 132.73 226.00 .63 5.00 131.50 225.00 .63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9924E+01 EXCESS= .0000E+00 OUTFLOW= .9926E+01 BASIN STORAGE= .9986E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5CA MANE 2.00 121.28 226.00 .58 5.00 119.86 225.00 .58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9129E+01 EXCESS= .0000E+00 OUTFLOW= .9132E+01 BASIN STORAGE= .9420E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5CA MANE 1.75 105.00 227.50 .51 5.00 103.80 225.00 .51

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8059E+01 EXCESS= .0000E+00 OUTFLOW= .8061E+01 BASIN STORAGE= .9204E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5CA MANE 1.75 90.18 227.50 .44 5.00 88.26 225.00 .44

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7011E+01 EXCESS= .0000E+00 OUTFLOW= .7014E+01 BASIN STORAGE= .8323E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5CA MANE 1.50 40.01 232.50 .22 5.00 39.81 230.00 .22

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3485E+01 EXCESS= .0000E+00 OUTFLOW= .3487E+01 BASIN STORAGE= .8342E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC5CA MANE 1.50 11.80 238.50 .08 5.00 11.70 240.00 .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1331E+01 EXCESS= .0000E+00 OUTFLOW= .1332E+01 BASIN STORAGE= .9216E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC5CA MANE 1.50 .05 346.50 .00 5.00 .03 385.00 .00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3189E-02 EXCESS= .0000E+00 OUTFLOW= .3521E-02 BASIN STORAGE= .8075E-03 PERCENT ERROR= -35.7

FOR PLAN = 1 RATIO= .00
RCP25 MANE 3.25 305.65 214.50 .76 5.00 305.65 215.00 .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2506E+02 EXCESS= .0000E+00 OUTFLOW= .2509E+02 BASIN STORAGE= .4370E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP25 MANE 2.75 251.06 222.75 .63 5.00 246.95 225.00 .63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2092E+02 EXCESS= .0000E+00 OUTFLOW= .2094E+02 BASIN STORAGE= .4627E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP25 MANE 2.25 215.55 227.25 .55 5.00 215.48 225.00 .55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1821E+02 EXCESS= .0000E+00 OUTFLOW= .1822E+02 BASIN STORAGE= .4203E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP25 MANE 2.25 197.07 227.25 .50 5.00 195.90 225.00 .50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1668E+02 EXCESS= .0000E+00 OUTFLOW= .1670E+02 BASIN STORAGE= .4058E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP25 MANE 2.25 171.59 227.25 .44 5.00 169.13 225.00 .44

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1465E+02 EXCESS= .0000E+00 OUTFLOW= .1466E+02 BASIN STORAGE= .3978E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP25 MANE 2.25 146.44 227.25 .38 5.00 143.57 230.00 .38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1265E+02 EXCESS= .0000E+00 OUTFLOW= .1267E+02 BASIN STORAGE= .4831E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP25 MANE 1.25 64.11 230.00 .18 5.00 64.11 230.00 .18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6026E+01 EXCESS= .0000E+00 OUTFLOW= .6037E+01 BASIN STORAGE= .4628E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RCP25 MANE 2.50 18.34 300.00 .06 5.00 18.34 300.00 .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2136E+01 EXCESS= .0000E+00 OUTFLOW= .2142E+01 BASIN STORAGE= .4648E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00
RCP25 MANE 4.00 .04 516.00 .00 5.00 .04 500.00 .00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3322E-02 EXCESS= .0000E+00 OUTFLOW= .4370E-02 BASIN STORAGE= .4129E-02 PERCENT ERROR=-155.9

FOR PLAN = 1 RATIO= .00
RCP26 MANE 1.43 500.01 216.84 .74 5.00 487.39 215.00 .74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3710E+02 EXCESS= .0000E+00 OUTFLOW= .3710E+02 BASIN STORAGE= .1951E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP26 MANE 1.56 406.13 216.39 .61 5.00 385.03 215.00 .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3087E+02 EXCESS= .0000E+00 OUTFLOW= .3088E+02 BASIN STORAGE= .2227E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP26 MANE 1.67 343.33 216.88 .53 5.00 321.34 220.00 .53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2678E+02 EXCESS= .0000E+00 OUTFLOW= .2678E+02 BASIN STORAGE= .2333E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP26 MANE 1.74 303.08 218.08 .49 5.00 289.84 220.00 .49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2453E+02 EXCESS= .0000E+00 OUTFLOW= .2454E+02 BASIN STORAGE= .2340E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP26 MANE 1.75 258.20 217.00 .43 5.00 247.94 220.00 .43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2152E+02 EXCESS= .0000E+00 OUTFLOW= .2152E+02 BASIN STORAGE= .2381E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP26 MANE 1.75 210.18 218.75 .37 5.00 205.67 225.00 .37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1853E+02 EXCESS= .0000E+00 OUTFLOW= .1854E+02 BASIN STORAGE= .2019E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP26 MANE 1.50 83.81 232.50 .17 5.00 83.07 230.00 .17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8636E+01 EXCESS= .0000E+00 OUTFLOW= .8641E+01 BASIN STORAGE= .2066E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP26 MANE 2.75 23.48 297.00 .06 5.00 23.33 300.00 .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3007E+01 EXCESS= .0000E+00 OUTFLOW= .3009E+01 BASIN STORAGE= .2365E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP26 MANE 5.00 .03 575.00 .00 5.00 .03 575.00 .00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4370E-02 EXCESS= .0000E+00 OUTFLOW= .4966E-02 BASIN STORAGE= .1904E-02 PERCENT ERROR= -57.2

FOR PLAN = 1 RATIO= .00
RDIV1 MANE 3.00 24.86 246.00 -1.00 5.00 23.06 245.00 -1.00

FOR PLAN = 1 RATIO= .00 RDIV1 MANE	2.75	23.55	247.50	-1.00	5.00	20.62	255.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	2.75	21.24	242.00	-1.00	5.00	19.52	255.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	2.50	20.76	242.50	-1.00	5.00	20.10	250.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	2.50	20.02	245.00	-1.00	5.00	20.02	245.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	2.50	17.33	247.50	-1.00	5.00	16.55	260.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	2.25	9.98	265.50	-1.00	5.00	9.11	260.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.75	2.90	292.50	-1.00	5.00	2.77	345.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	5.00	.00	.00	-1.00	5.00	.00	345.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.25	22.63	250.25	-1.00	5.00	22.54	250.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.25	20.84	260.00	-1.00	5.00	20.84	260.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.50	20.71	255.50	-1.00	5.00	19.97	255.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.00	20.36	255.00	-1.00	5.00	20.36	255.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	2.75	23.71	250.25	-1.00	5.00	22.61	250.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.25	16.45	260.00	-1.00	5.00	16.45	260.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.25	11.64	266.50	-1.00	5.00	7.99	265.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	5.00	3.08	350.00	-1.00	5.00	3.08	350.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	5.00	.00	.00	-1.00	5.00	.00	350.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.75	25.51	255.00	-1.00	5.00	25.51	255.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.75	22.52	258.75	-1.00	5.00	21.06	270.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	4.00	23.03	260.00	-1.00	5.00	23.03	260.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.50	22.21	262.50	-1.00	5.00	19.27	265.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.25	22.73	260.00	-1.00	5.00	22.73	260.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.50	18.89	273.00	-1.00	5.00	16.52	275.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	3.50	10.81	283.50	-1.00	5.00	8.22	280.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	5.00	3.23	360.00	-1.00	5.00	3.23	360.00	-1.00
FOR PLAN = 1 RATIO= .00 RDIV1 MANE	5.00	.00	.00	-1.00	5.00	.00	360.00	-1.00

FOR PLAN = 1 RATIO= .00
RCP27 MANE 2.18 591.10 218.30 .83 5.00 587.78 220.00 .83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5382E+02 EXCESS= .0000E+00 OUTFLOW= .5384E+02 BASIN STORAGE= .3646E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP27 MANE 2.36 486.31 224.50 .70 5.00 483.50 225.00 .70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4521E+02 EXCESS= .0000E+00 OUTFLOW= .4522E+02 BASIN STORAGE= .3153E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP27 MANE 2.50 422.11 225.15 .61 5.00 421.39 225.00 .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3953E+02 EXCESS= .0000E+00 OUTFLOW= .3955E+02 BASIN STORAGE= .3099E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP27 MANE 2.59 383.29 225.74 .56 5.00 380.30 225.00 .56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3631E+02 EXCESS= .0000E+00 OUTFLOW= .3633E+02 BASIN STORAGE= .3350E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP27 MANE 2.50 332.11 225.00 .50 5.00 332.11 225.00 .50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3218E+02 EXCESS= .0000E+00 OUTFLOW= .3220E+02 BASIN STORAGE= .3754E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP27 MANE 2.50 279.92 230.00 .43 5.00 279.92 230.00 .43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2790E+02 EXCESS= .0000E+00 OUTFLOW= .2792E+02 BASIN STORAGE= .3714E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP27 MANE 2.00 121.76 234.00 .21 5.00 121.14 235.00 .21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1357E+02 EXCESS= .0000E+00 OUTFLOW= .1358E+02 BASIN STORAGE= .3256E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP27 MANE 3.00 34.46 249.00 .08 5.00 34.02 250.00 .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5010E+01 EXCESS= .0000E+00 OUTFLOW= .5015E+01 BASIN STORAGE= .3120E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP27 MANE 3.00 .91 333.00 .00 5.00 .81 325.00 .00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5939E-01 EXCESS= .0000E+00 OUTFLOW= .6076E-01 BASIN STORAGE= .3101E-02 PERCENT ERROR= -7.5

FOR PLAN = 1 RATIO= .00
RC5FD MANE 4.50 265.74 216.00 1.66 5.00 258.56 215.00 1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1506E+02 EXCESS= .0000E+00 OUTFLOW= .1510E+02 BASIN STORAGE= .5688E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RC5FD MANE 4.50 235.13 216.00 1.46 5.00 227.91 215.00 1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1328E+02 EXCESS= .0000E+00 OUTFLOW= .1332E+02 BASIN STORAGE= .5195E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RC5FD MANE 4.00 215.51 216.00 1.33 5.00 208.54 215.00 1.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1207E+02 EXCESS= .0000E+00 OUTFLOW= .1211E+02 BASIN STORAGE= .6596E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RC5FD MANE 3.75 213.04 217.50 1.26 5.00 200.50 215.00 1.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1146E+02 EXCESS= .0000E+00 OUTFLOW= .1149E+02 BASIN STORAGE= .6273E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RC5FD MANE 4.00 186.04 216.00 1.15 5.00 180.01 220.00 1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1044E+02 EXCESS= .0000E+00 OUTFLOW= .1047E+02 BASIN STORAGE= .5259E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RC5FD MANE 3.75 178.51 217.50 1.05 5.00 167.22 220.00 1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9558E+01 EXCESS= .0000E+00 OUTFLOW= .9582E+01 BASIN STORAGE= .5960E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RC5FD MANE 3.00 117.10 219.00 .67 5.00 113.18 220.00 .67

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6066E+01 EXCESS= .0000E+00 OUTFLOW= .6080E+01 BASIN STORAGE= .5831E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RC5FD MANE 2.50 68.21 220.00 .39 5.00 68.21 220.00 .39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3495E+01 EXCESS= .0000E+00 OUTFLOW= .3510E+01 BASIN STORAGE= .6046E-02 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00
RC5FD MANE .75 20.08 229.50 .09 5.00 15.03 230.00 .10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8362E+00 EXCESS= .0000E+00 OUTFLOW= .8529E+00 BASIN STORAGE= .6047E-02 PERCENT ERROR= -2.7

FOR PLAN = 1 RATIO= .00
RC5FA MANE 3.00 1051.42 216.00 1.99 5.00 1021.36 215.00 1.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5349E+02 EXCESS= .0000E+00 OUTFLOW= .5369E+02 BASIN STORAGE= .1122E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RC5FA MANE 3.25 873.95 214.50 1.76 5.00 870.05 215.00 1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4736E+02 EXCESS= .0000E+00 OUTFLOW= .4754E+02 BASIN STORAGE= .1281E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RC5FA MANE 3.75 824.79 217.50 1.63 5.00 811.52 215.00 1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4398E+02 EXCESS= .0000E+00 OUTFLOW= .4413E+02 BASIN STORAGE= .1019E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RC5FA MANE 4.00 756.64 216.00 1.53 5.00 746.59 215.00 1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4132E+02 EXCESS= .0000E+00 OUTFLOW= .4150E+02 BASIN STORAGE= .9741E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00
RC5FA MANE 4.00 704.23 216.00 1.42 5.00 693.66 215.00 1.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3824E+02 EXCESS= .0000E+00 OUTFLOW= .3843E+02 BASIN STORAGE= .1450E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00
RC5FA MANE 4.25 644.56 216.75 1.30 5.00 633.64 215.00 1.30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3509E+02 EXCESS= .0000E+00 OUTFLOW= .3527E+02 BASIN STORAGE= .1075E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00
RC5FA MANE 3.75 471.25 217.50 .88 5.00 441.92 215.00 .88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2377E+02 EXCESS= .0000E+00 OUTFLOW= .2389E+02 BASIN STORAGE= .1270E-01 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00
RC5FA MANE 3.75 290.43 217.50 .55 5.00 288.67 220.00 .55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1480E+02 EXCESS= .0000E+00 OUTFLOW= .1487E+02 BASIN STORAGE= .1440E-01 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00
RC5FA MANE 1.25 122.02 225.00 .17 5.00 122.02 225.00 .17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4556E+01 EXCESS= .0000E+00 OUTFLOW= .4632E+01 BASIN STORAGE= .1288E-01 PERCENT ERROR= -2.0

FOR PLAN = 1 RATIO= .00
RCP28 MANE 3.11 1403.16 217.77 1.60 5.00 1314.84 215.00 1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7997E+02 EXCESS= .0000E+00 OUTFLOW= .8004E+02 BASIN STORAGE= .3687E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP28 MANE 3.29 1194.52 217.26 1.40 5.00 1134.62 220.00 1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7013E+02 EXCESS= .0000E+00 OUTFLOW= .7020E+02 BASIN STORAGE= .5218E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP28 MANE 3.39 1103.11 216.95 1.29 5.00 1063.76 220.00 1.29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6439E+02 EXCESS= .0000E+00 OUTFLOW= .6445E+02 BASIN STORAGE= .5246E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP28 MANE 3.48 1019.30 219.49 1.21 5.00 1006.22 220.00 1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6053E+02 EXCESS= .0000E+00 OUTFLOW= .6059E+02 BASIN STORAGE= .3595E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP28 MANE 3.60 945.78 219.33 1.11 5.00 931.65 220.00 1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5556E+02 EXCESS= .0000E+00 OUTFLOW= .5561E+02 BASIN STORAGE= .4453E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP28 MANE 3.72 857.69 219.53 1.01 5.00 848.56 220.00 1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5044E+02 EXCESS= .0000E+00 OUTFLOW= .5048E+02 BASIN STORAGE= .4601E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP28 MANE 4.00 574.69 220.00 .66 5.00 574.69 220.00 .66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3283E+02 EXCESS= .0000E+00 OUTFLOW= .3289E+02 BASIN STORAGE= .5022E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP28 MANE 4.75 355.84 223.25 .39 5.00 334.09 225.00 .39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1940E+02 EXCESS= .0000E+00 OUTFLOW= .1947E+02 BASIN STORAGE= .5564E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RCP28 MANE 2.00 118.51 232.00 .11 5.00 85.31 235.00 .11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5415E+01 EXCESS= .0000E+00 OUTFLOW= .5457E+01 BASIN STORAGE= .5115E-02 PERCENT ERROR= -.9

FOR PLAN = 1 RATIO= .00
RCP29 MANE 3.54 1502.56 219.50 1.49 5.00 1496.56 220.00 1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9191E+02 EXCESS= .0000E+00 OUTFLOW= .9201E+02 BASIN STORAGE= .7348E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP29	MANE	3.76	1275.12	221.63	1.30	5.00	1265.89	220.00	1.30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8042E+02 EXCESS= .0000E+00 OUTFLOW= .8052E+02 BASIN STORAGE= .5594E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP29	MANE	3.86	1192.71	219.89	1.19	5.00	1192.21	220.00	1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7354E+02 EXCESS= .0000E+00 OUTFLOW= .7365E+02 BASIN STORAGE= .7336E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP29	MANE	3.94	1101.06	220.78	1.11	5.00	1080.27	220.00	1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6884E+02 EXCESS= .0000E+00 OUTFLOW= .6891E+02 BASIN STORAGE= .5421E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP29	MANE	4.06	1026.93	223.53	1.02	5.00	1006.78	220.00	1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6315E+02 EXCESS= .0000E+00 OUTFLOW= .6324E+02 BASIN STORAGE= .5324E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP29	MANE	4.21	934.94	223.39	.93	5.00	902.98	220.00	.93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5725E+02 EXCESS= .0000E+00 OUTFLOW= .5733E+02 BASIN STORAGE= .6303E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP29	MANE	4.50	624.52	225.00	.59	5.00	624.52	225.00	.60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3669E+02 EXCESS= .0000E+00 OUTFLOW= .3675E+02 BASIN STORAGE= .5552E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP29	MANE	5.00	372.59	230.00	.34	5.00	372.59	230.00	.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2101E+02 EXCESS= .0000E+00 OUTFLOW= .2109E+02 BASIN STORAGE= .7294E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RCP29	MANE	2.75	101.70	247.50	.09	5.00	64.76	245.00	.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5333E+01 EXCESS= .0000E+00 OUTFLOW= .5386E+01 BASIN STORAGE= .5404E-02 PERCENT ERROR= -1.1

FOR PLAN = 1 RATIO= .00

RCP30	MANE	2.72	2029.62	220.08	1.52	5.00	2026.82	220.00	1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1333E+03 EXCESS= .0000E+00 OUTFLOW= .1333E+03 BASIN STORAGE= .5929E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP30	MANE	2.88	1721.73	221.69	1.33	5.00	1710.81	220.00	1.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1168E+03 EXCESS= .0000E+00 OUTFLOW= .1168E+03 BASIN STORAGE= .5357E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP30	MANE	2.95	1600.01	221.49	1.21	5.00	1567.23	220.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1066E+03 EXCESS= .0000E+00 OUTFLOW= .1066E+03 BASIN STORAGE= .5307E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP30	MANE	3.05	1464.53	222.74	1.14	5.00	1443.99	220.00	1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9976E+02 EXCESS= .0000E+00 OUTFLOW= .9978E+02 BASIN STORAGE= .5155E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP30	MANE	3.14	1356.89	222.71	1.04	5.00	1321.68	225.00	1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9168E+02 EXCESS= .0000E+00 OUTFLOW= .9170E+02 BASIN STORAGE= .5863E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP30	MANE	3.26	1216.76	221.78	.95	5.00	1191.19	225.00	.95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8316E+02 EXCESS= .0000E+00 OUTFLOW= .8318E+02 BASIN STORAGE= .5655E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP30	MANE	3.85	781.98	227.30	.60	5.00	742.73	225.00	.60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5306E+02 EXCESS= .0000E+00 OUTFLOW= .5309E+02 BASIN STORAGE= .6087E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP30	MANE	4.77	471.66	233.70	.34	5.00	435.30	235.00	.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3020E+02 EXCESS= .0000E+00 OUTFLOW= .3024E+02 BASIN STORAGE= .5718E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP30	MANE	2.25	80.67	254.25	.08	5.00	78.64	255.00	.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7341E+01 EXCESS= .0000E+00 OUTFLOW= .7362E+01 BASIN STORAGE= .5717E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC5EB	MANE	4.75	807.04	223.25	2.05	5.00	781.29	220.00	2.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5973E+02 EXCESS= .0000E+00 OUTFLOW= .5980E+02 BASIN STORAGE= .5530E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC5EB MANE 4.75 727.61 223.25 1.84 5.00 703.23 225.00 1.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5346E+02 EXCESS= .0000E+00 OUTFLOW= .5353E+02 BASIN STORAGE= .5274E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC5EB MANE 4.75 673.13 223.25 1.69 5.00 651.61 225.00 1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4922E+02 EXCESS= .0000E+00 OUTFLOW= .4927E+02 BASIN STORAGE= .5091E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC5EB MANE 5.00 642.91 225.00 1.61 5.00 642.91 225.00 1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4680E+02 EXCESS= .0000E+00 OUTFLOW= .4686E+02 BASIN STORAGE= .6495E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC5EB MANE 5.00 600.00 225.00 1.49 5.00 600.00 225.00 1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4341E+02 EXCESS= .0000E+00 OUTFLOW= .4346E+02 BASIN STORAGE= .6293E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC5EB MANE 5.00 556.00 225.00 1.37 5.00 556.00 225.00 1.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3996E+02 EXCESS= .0000E+00 OUTFLOW= .4002E+02 BASIN STORAGE= .6080E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC5EB MANE 5.00 387.14 225.00 .93 5.00 387.14 225.00 .93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2710E+02 EXCESS= .0000E+00 OUTFLOW= .2714E+02 BASIN STORAGE= .6732E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RC5EB MANE 5.00 247.49 225.00 .59 5.00 247.49 225.00 .59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1715E+02 EXCESS= .0000E+00 OUTFLOW= .1718E+02 BASIN STORAGE= .5661E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RC5EB MANE 2.00 77.25 232.00 .19 5.00 74.16 230.00 .19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5638E+01 EXCESS= .0000E+00 OUTFLOW= .5656E+01 BASIN STORAGE= .5459E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RCP31 MANE 2.79 2902.30 223.51 1.58 5.00 2865.38 225.00 1.58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2040E+03 EXCESS= .0000E+00 OUTFLOW= .2040E+03 BASIN STORAGE= .4092E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP31 MANE 2.95 2492.69 223.84 1.39 5.00 2478.07 225.00 1.39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1793E+03 EXCESS= .0000E+00 OUTFLOW= .1794E+03 BASIN STORAGE= .3702E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP31 MANE 3.04 2308.41 224.68 1.27 5.00 2301.23 225.00 1.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1636E+03 EXCESS= .0000E+00 OUTFLOW= .1637E+03 BASIN STORAGE= .4017E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP31 MANE 3.10 2184.12 226.49 1.20 5.00 2179.50 225.00 1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1541E+03 EXCESS= .0000E+00 OUTFLOW= .1541E+03 BASIN STORAGE= .3630E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP31 MANE 3.20 2000.96 227.15 1.10 5.00 1997.66 225.00 1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1417E+03 EXCESS= .0000E+00 OUTFLOW= .1417E+03 BASIN STORAGE= .4848E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP31 MANE 3.31 1797.37 224.90 1.00 5.00 1797.35 225.00 1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1290E+03 EXCESS= .0000E+00 OUTFLOW= .1290E+03 BASIN STORAGE= .4560E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP31 MANE 3.85 1132.11 231.18 .65 5.00 1129.10 230.00 .65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8311E+02 EXCESS= .0000E+00 OUTFLOW= .8315E+02 BASIN STORAGE= .4911E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP31 MANE 4.74 624.78 236.92 .38 5.00 597.50 235.00 .38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4853E+02 EXCESS= .0000E+00 OUTFLOW= .4856E+02 BASIN STORAGE= .4141E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCP31 MANE 3.25 117.51 237.25 .10 5.00 103.51 265.00 .10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1294E+02 EXCESS= .0000E+00 OUTFLOW= .1298E+02 BASIN STORAGE= .4180E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RCP32 MANE 1.11 2991.93 224.78 1.57 5.00 2989.98 225.00 1.57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2153E+03 EXCESS= .0000E+00 OUTFLOW= .2153E+03 BASIN STORAGE= .1427E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP32 MANE 1.17 2580.51 225.71 1.38 5.00 2577.53 225.00 1.38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1893E+03 EXCESS= .0000E+00 OUTFLOW= .1893E+03 BASIN STORAGE= .1447E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP32	MANE	1.20	2386.33	225.62	1.26	5.00	2369.57	225.00	1.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1726E+03 EXCESS= .0000E+00 OUTFLOW= .1726E+03 BASIN STORAGE= .1485E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP32	MANE	1.22	2267.48	226.23	1.18	5.00	2245.76	225.00	1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1625E+03 EXCESS= .0000E+00 OUTFLOW= .1625E+03 BASIN STORAGE= .1486E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP32	MANE	1.26	2066.75	226.83	1.09	5.00	2036.07	225.00	1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1493E+03 EXCESS= .0000E+00 OUTFLOW= .1493E+03 BASIN STORAGE= .1518E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP32	MANE	1.31	1866.23	226.07	.99	5.00	1820.97	225.00	.99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1359E+03 EXCESS= .0000E+00 OUTFLOW= .1359E+03 BASIN STORAGE= .1582E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP32	MANE	1.54	1156.00	230.77	.64	5.00	1141.85	230.00	.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8728E+02 EXCESS= .0000E+00 OUTFLOW= .8728E+02 BASIN STORAGE= .1544E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP32	MANE	1.92	614.08	238.09	.37	5.00	605.88	240.00	.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5068E+02 EXCESS= .0000E+00 OUTFLOW= .5068E+02 BASIN STORAGE= .1516E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP32	MANE	3.53	107.17	239.99	.10	5.00	107.10	240.00	.10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1322E+02 EXCESS= .0000E+00 OUTFLOW= .1324E+02 BASIN STORAGE= .1643E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP33	MANE	1.68	4329.06	212.00	1.71	5.00	4193.31	220.00	1.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3794E+03 EXCESS= .0000E+00 OUTFLOW= .3795E+03 BASIN STORAGE= .3154E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP33	MANE	1.77	3770.59	211.90	1.51	5.00	3630.97	225.00	1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3356E+03 EXCESS= .0000E+00 OUTFLOW= .3357E+03 BASIN STORAGE= .3385E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP33	MANE	1.83	3354.89	212.69	1.38	5.00	3315.38	225.00	1.38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3069E+03 EXCESS= .0000E+00 OUTFLOW= .3069E+03 BASIN STORAGE= .2884E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP33	MANE	1.88	3165.12	212.08	1.30	5.00	3146.20	225.00	1.30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2900E+03 EXCESS= .0000E+00 OUTFLOW= .2900E+03 BASIN STORAGE= .3005E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP33	MANE	1.94	2868.71	226.58	1.20	5.00	2865.45	225.00	1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2669E+03 EXCESS= .0000E+00 OUTFLOW= .2670E+03 BASIN STORAGE= .2850E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP33	MANE	2.01	2598.87	226.79	1.10	5.00	2575.97	225.00	1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2439E+03 EXCESS= .0000E+00 OUTFLOW= .2439E+03 BASIN STORAGE= .3122E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP33	MANE	2.37	1601.46	213.01	.72	5.00	1491.44	230.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1593E+03 EXCESS= .0000E+00 OUTFLOW= .1593E+03 BASIN STORAGE= .3642E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP33	MANE	2.84	943.62	213.22	.43	5.00	856.71	215.00	.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9524E+02 EXCESS= .0000E+00 OUTFLOW= .9526E+02 BASIN STORAGE= .3549E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP33	MANE	2.50	282.72	215.00	.12	5.00	282.72	215.00	.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2691E+02 EXCESS= .0000E+00 OUTFLOW= .2693E+02 BASIN STORAGE= .3406E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP24	MANE	1.45	5680.51	225.62	1.66	5.00	5646.38	225.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5180E+03 EXCESS= .0000E+00 OUTFLOW= .5181E+03 BASIN STORAGE= .2903E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP24	MANE	1.55	4704.83	225.75	1.44	5.00	4680.58	225.00	1.44

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4493E+03 EXCESS= .0000E+00 OUTFLOW= .4494E+03 BASIN STORAGE= .2583E-02 PERCENT ERROR= .0

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          FOR PLAN = 1  RATIO=  .00
             RCP24  MANE          1.61   4185.76    227.10      1.30      5.00   4158.45    225.00        1.30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4071E+03 EXCESS= .0000E+00 OUTFLOW= .4071E+03 BASIN STORAGE= .2741E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP24  MANE          1.65   3911.68    226.04      1.23      5.00   3871.27    225.00        1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3830E+03 EXCESS= .0000E+00 OUTFLOW= .3830E+03 BASIN STORAGE= .2853E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP24  MANE          1.71   3516.60    226.19      1.12      5.00   3475.85    225.00        1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3503E+03 EXCESS= .0000E+00 OUTFLOW= .3503E+03 BASIN STORAGE= .3007E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP24  MANE          1.79   3124.56    227.06      1.02      5.00   3074.48    225.00        1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3176E+03 EXCESS= .0000E+00 OUTFLOW= .3176E+03 BASIN STORAGE= .2796E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP24  MANE          2.19   1739.19    230.35       .64      5.00   1735.87    230.00         .64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1995E+03 EXCESS= .0000E+00 OUTFLOW= .1996E+03 BASIN STORAGE= .2623E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP24  MANE          2.78    880.55    216.45       .36      5.00    869.79    215.00         .36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1139E+03 EXCESS= .0000E+00 OUTFLOW= .1139E+03 BASIN STORAGE= .2802E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP24  MANE          2.75    260.53    220.00       .09      5.00    260.53    220.00         .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2934E+02 EXCESS= .0000E+00 OUTFLOW= .2936E+02 BASIN STORAGE= .2558E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE          4.00    515.13    220.00      1.58      5.00    515.13    220.00        1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2719E+02 EXCESS= .0000E+00 OUTFLOW= .2749E+02 BASIN STORAGE= .2750E-01 PERCENT ERROR=  -1.2

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE          4.00    461.81    220.00      1.39      5.00    461.81    220.00        1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2393E+02 EXCESS= .0000E+00 OUTFLOW= .2419E+02 BASIN STORAGE= .2380E-01 PERCENT ERROR=  -1.2

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE          3.75    440.89    221.25      1.28      5.00    405.48    225.00        1.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2199E+02 EXCESS= .0000E+00 OUTFLOW= .2221E+02 BASIN STORAGE= .2316E-01 PERCENT ERROR=  -1.1

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE          3.75    428.34    221.25      1.20      5.00    380.66    225.00        1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2072E+02 EXCESS= .0000E+00 OUTFLOW= .2094E+02 BASIN STORAGE= .2134E-01 PERCENT ERROR=  -1.2

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE          3.50    387.43    220.50      1.10      5.00    355.05    225.00        1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1894E+02 EXCESS= .0000E+00 OUTFLOW= .1917E+02 BASIN STORAGE= .2950E-01 PERCENT ERROR=  -1.4

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE          3.75    345.74    225.00      1.00      5.00    345.74    225.00        1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1724E+02 EXCESS= .0000E+00 OUTFLOW= .1746E+02 BASIN STORAGE= .2993E-01 PERCENT ERROR=  -1.5

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE          2.75    254.21    228.25       .63      5.00    192.04    225.00         .63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1076E+02 EXCESS= .0000E+00 OUTFLOW= .1095E+02 BASIN STORAGE= .2398E-01 PERCENT ERROR=  -2.0

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE          2.00    213.24    234.00       .37      5.00    142.42    235.00         .37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6177E+01 EXCESS= .0000E+00 OUTFLOW= .6415E+01 BASIN STORAGE= .2793E-01 PERCENT ERROR=  -4.3

          FOR PLAN = 1  RATIO=  .00
             RC5DC  MANE           .75     21.79    270.00       .09      5.00     21.79    270.00         .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1417E+01 EXCESS= .0000E+00 OUTFLOW= .1516E+01 BASIN STORAGE= .2620E-01 PERCENT ERROR=  -8.8

          FOR PLAN = 1  RATIO=  .00
             RC4BF  MANE          4.00    363.47    216.00      1.35      5.00    352.54    215.00        1.36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1997E+02 EXCESS= .0000E+00 OUTFLOW= .2004E+02 BASIN STORAGE= .1211E-01 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .00
             RC4BF  MANE          3.75    337.00    217.50      1.19      5.00    314.01    215.00        1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1759E+02 EXCESS= .0000E+00 OUTFLOW= .1766E+02 BASIN STORAGE= .1327E-01 PERCENT ERROR=   -.5

          FOR PLAN = 1  RATIO=  .00
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	RC4BF	MANE	3.50	305.01	217.00	1.07	5.00	290.31	220.00	1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1585E+02 EXCESS= .0000E+00 OUTFLOW= .1591E+02 BASIN STORAGE= .1242E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC4BF	MANE	3.50	285.58	217.00	1.01	5.00	275.70	220.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1488E+02 EXCESS= .0000E+00 OUTFLOW= .1493E+02 BASIN STORAGE= .1223E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC4BF	MANE	3.75	258.41	217.50	.92	5.00	249.91	220.00	.92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1358E+02 EXCESS= .0000E+00 OUTFLOW= .1363E+02 BASIN STORAGE= .1077E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC4BF	MANE	3.50	233.74	220.50	.83	5.00	233.36	220.00	.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1222E+02 EXCESS= .0000E+00 OUTFLOW= .1227E+02 BASIN STORAGE= .1165E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC4BF	MANE	2.25	152.73	220.50	.50	5.00	148.55	220.00	.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7397E+01 EXCESS= .0000E+00 OUTFLOW= .7431E+01 BASIN STORAGE= .1079E-01 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00

RC4BF	MANE	1.25	96.41	221.25	.27	5.00	69.84	220.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4005E+01 EXCESS= .0000E+00 OUTFLOW= .4053E+01 BASIN STORAGE= .1112E-01 PERCENT ERROR= -1.5

FOR PLAN = 1 RATIO= .00

RC4BF	MANE	1.25	14.22	248.75	.05	5.00	8.42	305.00	.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7294E+00 EXCESS= .0000E+00 OUTFLOW= .7626E+00 BASIN STORAGE= .9997E-02 PERCENT ERROR= -5.9

FOR PLAN = 1 RATIO= .00

RCP34	MANE	4.75	1822.41	303.86	1.37	5.00	1821.99	305.00	1.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5288E+03 EXCESS= .0000E+00 OUTFLOW= .5265E+03 BASIN STORAGE= .3549E+01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP34	MANE	5.00	1056.67	325.00	1.16	5.00	1056.67	325.00	1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4484E+03 EXCESS= .0000E+00 OUTFLOW= .4460E+03 BASIN STORAGE= .3542E+01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP34	MANE	5.00	662.77	225.00	1.05	5.00	662.77	225.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4064E+03 EXCESS= .0000E+00 OUTFLOW= .4036E+03 BASIN STORAGE= .3472E+01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP34	MANE	5.00	633.21	225.00	1.01	5.00	633.21	225.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3931E+03 EXCESS= .0000E+00 OUTFLOW= .3904E+03 BASIN STORAGE= .3347E+01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP34	MANE	5.00	592.53	225.00	.96	5.00	592.53	225.00	.96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3739E+03 EXCESS= .0000E+00 OUTFLOW= .3714E+03 BASIN STORAGE= .3147E+01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP34	MANE	5.00	552.25	225.00	.91	5.00	552.25	225.00	.91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3528E+03 EXCESS= .0000E+00 OUTFLOW= .3505E+03 BASIN STORAGE= .2920E+01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP34	MANE	5.00	380.55	230.00	.62	5.00	380.55	230.00	.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2399E+03 EXCESS= .0000E+00 OUTFLOW= .2399E+03 BASIN STORAGE= .1746E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP34	MANE	5.00	234.50	235.00	.35	5.00	234.50	235.00	.35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1367E+03 EXCESS= .0000E+00 OUTFLOW= .1367E+03 BASIN STORAGE= .1183E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP34	MANE	5.00	93.22	320.00	.09	5.00	93.22	320.00	.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3409E+02 EXCESS= .0000E+00 OUTFLOW= .3415E+02 BASIN STORAGE= .1066E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RDIV5	MANE	5.00	583.82	230.00	-1.00	5.00	583.82	230.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV5	MANE	5.00	574.74	230.00	-1.00	5.00	574.74	230.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV5	MANE	5.00	492.40	235.00	-1.00	5.00	492.40	235.00	-1.00

FOR PLAN = 1 RATIO= .00

RDIV5	MANE	5.00	428.98	235.00	-1.00	5.00	428.98	235.00	-1.00

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 FOR PLAN = 1  RATIO=  .00
    RDIV5  MANE          5.00    295.41    240.00     -1.00      5.00    295.41    240.00       -1.00


 FOR PLAN = 1  RATIO=  .00
    RDIV5  MANE          5.00    196.68    240.00     -1.00      5.00    196.68    240.00       -1.00


 FOR PLAN = 1  RATIO=  .00
    RDIV5  MANE          5.00     45.73    250.00     -1.00      5.00     45.73    250.00       -1.00


 FOR PLAN = 1  RATIO=  .00
    RDIV5  MANE          5.00     18.99    275.00     -1.00      5.00     18.99    275.00       -1.00


 FOR PLAN = 1  RATIO=  .00
    RDIV5  MANE          2.25      3.85    303.75     -1.00      5.00      3.44    305.00       -1.00


 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          4.70   2079.56    310.09      1.42      5.00   2077.79    310.00        1.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6147E+03 EXCESS= .0000E+00 OUTFLOW= .6125E+03 BASIN STORAGE= .3369E+01 PERCENT ERROR=   -.2

 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          4.98   1698.15    234.12      1.20      5.00   1669.49    235.00        1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5206E+03 EXCESS= .0000E+00 OUTFLOW= .5183E+03 BASIN STORAGE= .3367E+01 PERCENT ERROR=   -.2

 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          5.00   1439.54    235.00      1.08      5.00   1439.54    235.00        1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4684E+03 EXCESS= .0000E+00 OUTFLOW= .4661E+03 BASIN STORAGE= .3298E+01 PERCENT ERROR=   -.2

 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          5.00   1281.77    240.00      1.04      5.00   1281.77    240.00        1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4496E+03 EXCESS= .0000E+00 OUTFLOW= .4474E+03 BASIN STORAGE= .3176E+01 PERCENT ERROR=   -.2

 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          5.00   1126.39    230.00       .97      5.00   1126.39    230.00         .97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4229E+03 EXCESS= .0000E+00 OUTFLOW= .4209E+03 BASIN STORAGE= .2985E+01 PERCENT ERROR=   -.2

 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          5.00   1018.42    230.00       .91      5.00   1018.42    230.00         .91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3950E+03 EXCESS= .0000E+00 OUTFLOW= .3932E+03 BASIN STORAGE= .2762E+01 PERCENT ERROR=   -.2

 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          5.00    638.52    235.00       .62      5.00    638.52    235.00         .62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2655E+03 EXCESS= .0000E+00 OUTFLOW= .2655E+03 BASIN STORAGE= .2096E+00 PERCENT ERROR=   -.1

 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          5.00    340.93    240.00       .35      5.00    340.93    240.00         .35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1503E+03 EXCESS= .0000E+00 OUTFLOW= .1504E+03 BASIN STORAGE= .8118E-02 PERCENT ERROR=    .0

 FOR PLAN = 1  RATIO=  .00
     RCP35  MANE          5.00    105.63    315.00       .08      5.00    105.63    315.00         .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3652E+02 EXCESS= .0000E+00 OUTFLOW= .3656E+02 BASIN STORAGE= .8690E-02 PERCENT ERROR=   -.1

 FOR PLAN = 1  RATIO=  .00
     RC4BE  MANE          5.00    240.64    230.00      1.60      5.00    240.64    230.00        1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1880E+02 EXCESS= .0000E+00 OUTFLOW= .1884E+02 BASIN STORAGE= .1022E-01 PERCENT ERROR=   -.2

 FOR PLAN = 1  RATIO=  .00
     RC4BE  MANE          5.00    214.71    230.00      1.42      5.00    214.71    230.00        1.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1663E+02 EXCESS= .0000E+00 OUTFLOW= .1666E+02 BASIN STORAGE= .9744E-02 PERCENT ERROR=   -.3

 FOR PLAN = 1  RATIO=  .00
     RC4BE  MANE          5.00    197.35    230.00      1.29      5.00    197.35    230.00        1.29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1516E+02 EXCESS= .0000E+00 OUTFLOW= .1520E+02 BASIN STORAGE= .8589E-02 PERCENT ERROR=   -.3

 FOR PLAN = 1  RATIO=  .00
     RC4BE  MANE          5.00    187.03    230.00      1.22      5.00    187.03    230.00        1.22

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1432E+02 EXCESS= .0000E+00 OUTFLOW= .1435E+02 BASIN STORAGE= .8417E-02 PERCENT ERROR=   -.3

 FOR PLAN = 1  RATIO=  .00
     RC4BE  MANE          5.00    172.69    230.00      1.12      5.00    172.69    230.00        1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1317E+02 EXCESS= .0000E+00 OUTFLOW= .1320E+02 BASIN STORAGE= .8170E-02 PERCENT ERROR=   -.3

 FOR PLAN = 1  RATIO=  .00
     RC4BE  MANE          5.00    158.02    230.00      1.02      5.00    158.02    230.00        1.02
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1200E+02 EXCESS= .0000E+00 OUTFLOW= .1203E+02 BASIN STORAGE= .1012E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC4BE	MANE	5.00	100.65	230.00	.66	5.00	100.65	230.00	.66	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7727E+01 EXCESS= .0000E+00 OUTFLOW= .7755E+01 BASIN STORAGE= .1033E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC4BE	MANE	3.75	61.20	236.25	.39	5.00	58.43	235.00	.39	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4550E+01 EXCESS= .0000E+00 OUTFLOW= .4576E+01 BASIN STORAGE= .9482E-02 PERCENT ERROR= -.8

FOR PLAN = 1 RATIO= .00

RC4BE	MANE	1.75	17.70	245.00	.10	5.00	17.70	245.00	.11	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1168E+01 EXCESS= .0000E+00 OUTFLOW= .1194E+01 BASIN STORAGE= .1009E-01 PERCENT ERROR= -3.0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	3.55	608.48	227.17	1.65	5.00	598.63	230.00	1.65	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5005E+02 EXCESS= .0000E+00 OUTFLOW= .5006E+02 BASIN STORAGE= .1213E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	3.66	535.72	230.34	1.47	5.00	535.48	230.00	1.47	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4441E+02 EXCESS= .0000E+00 OUTFLOW= .4442E+02 BASIN STORAGE= .1237E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	3.74	496.95	228.08	1.34	5.00	491.02	230.00	1.34	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4061E+02 EXCESS= .0000E+00 OUTFLOW= .4062E+02 BASIN STORAGE= .9618E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	3.79	466.22	227.50	1.27	5.00	462.58	230.00	1.27	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3843E+02 EXCESS= .0000E+00 OUTFLOW= .3844E+02 BASIN STORAGE= .1021E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	3.87	433.70	228.41	1.17	5.00	429.87	230.00	1.17	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3541E+02 EXCESS= .0000E+00 OUTFLOW= .3542E+02 BASIN STORAGE= .1186E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	3.96	396.65	229.78	1.07	5.00	396.02	230.00	1.07	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3236E+02 EXCESS= .0000E+00 OUTFLOW= .3237E+02 BASIN STORAGE= .1025E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	4.42	257.20	229.87	.70	5.00	257.14	230.00	.70	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2120E+02 EXCESS= .0000E+00 OUTFLOW= .2120E+02 BASIN STORAGE= .9764E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	5.00	153.59	235.00	.42	5.00	153.59	235.00	.42	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1274E+02 EXCESS= .0000E+00 OUTFLOW= .1274E+02 BASIN STORAGE= .8751E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP36	MANE	2.25	35.04	252.00	.12	5.00	32.40	255.00	.12	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3641E+01 EXCESS= .0000E+00 OUTFLOW= .3643E+01 BASIN STORAGE= .1090E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP37	MANE	3.51	697.50	228.12	1.42	5.00	695.14	230.00	1.42	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6179E+02 EXCESS= .0000E+00 OUTFLOW= .6180E+02 BASIN STORAGE= .1165E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP37	MANE	3.63	614.87	228.62	1.25	5.00	614.34	230.00	1.25	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5440E+02 EXCESS= .0000E+00 OUTFLOW= .5440E+02 BASIN STORAGE= .9295E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP37	MANE	3.72	561.81	230.37	1.13	5.00	558.95	230.00	1.13	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4943E+02 EXCESS= .0000E+00 OUTFLOW= .4944E+02 BASIN STORAGE= .9872E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP37	MANE	3.77	528.91	230.17	1.07	5.00	527.41	230.00	1.07	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4661E+02 EXCESS= .0000E+00 OUTFLOW= .4662E+02 BASIN STORAGE= .9695E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP37	MANE	3.85	486.31	231.13	.98	5.00	478.68	230.00	.98	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4267E+02 EXCESS= .0000E+00 OUTFLOW= .4268E+02 BASIN STORAGE= .1131E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP37	MANE	3.94	443.33	232.18	.89	5.00	431.74	230.00	.89	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3876E+02 EXCESS= .0000E+00 OUTFLOW= .3877E+02 BASIN STORAGE= .1055E-02 PERCENT ERROR= .0

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          FOR PLAN = 1  RATIO=  .00
             RCP37  MANE          4.40    281.31    233.13       .57      5.00    278.26    235.00          .57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2464E+02 EXCESS= .0000E+00 OUTFLOW= .2464E+02 BASIN STORAGE= .8932E-03 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP37  MANE          5.00    161.07    240.00       .33      5.00    161.07    240.00          .33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1422E+02 EXCESS= .0000E+00 OUTFLOW= .1423E+02 BASIN STORAGE= .9275E-03 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP37  MANE          3.00     32.06    261.00       .08      5.00     31.40    260.00          .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3701E+01 EXCESS= .0000E+00 OUTFLOW= .3704E+01 BASIN STORAGE= .8981E-03 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE           .88   5118.44    230.88      1.12      5.00   5089.31    230.00         1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1509E+04 EXCESS= .0000E+00 OUTFLOW= .1508E+04 BASIN STORAGE= .1266E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE           .92   4458.39    230.84       .99      5.00   4425.01    230.00          .99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1337E+04 EXCESS= .0000E+00 OUTFLOW= .1336E+04 BASIN STORAGE= .1228E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE           .95   3966.41    231.75       .91      5.00   3941.48    235.00          .91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1230E+04 EXCESS= .0000E+00 OUTFLOW= .1229E+04 BASIN STORAGE= .1184E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE           .97   3711.62    231.57       .87      5.00   3680.62    230.00          .87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1179E+04 EXCESS= .0000E+00 OUTFLOW= .1178E+04 BASIN STORAGE= .1145E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE          1.00   3389.22    231.15       .82      5.00   3349.33    230.00          .82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1108E+04 EXCESS= .0000E+00 OUTFLOW= .1107E+04 BASIN STORAGE= .1087E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE          1.03   3015.22    231.37       .76      5.00   2965.01    230.00          .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1033E+04 EXCESS= .0000E+00 OUTFLOW= .1032E+04 BASIN STORAGE= .1017E+01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE          1.22   1733.33    236.18       .53      5.00   1706.62    235.00          .53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7150E+03 EXCESS= .0000E+00 OUTFLOW= .7146E+03 BASIN STORAGE= .4554E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE          1.52    849.13    242.26       .31      5.00    835.61    245.00          .31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4118E+03 EXCESS= .0000E+00 OUTFLOW= .4118E+03 BASIN STORAGE= .2991E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP38  MANE          2.34    211.29    347.97       .07      5.00    209.68    350.00          .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9555E+02 EXCESS= .0000E+00 OUTFLOW= .9555E+02 BASIN STORAGE= .1334E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
              RDB5  MANE          5.00     89.79    365.00       .56      5.00     89.79    365.00          .56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1627E+03 EXCESS= .0000E+00 OUTFLOW= .1609E+03 BASIN STORAGE= .1962E+01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
              RDB5  MANE          5.00     87.71    365.00       .54      5.00     87.71    365.00          .54

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1576E+03 EXCESS= .0000E+00 OUTFLOW= .1558E+03 BASIN STORAGE= .1924E+01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
              RDB5  MANE          5.00     86.11    365.00       .53      5.00     86.11    365.00          .53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1538E+03 EXCESS= .0000E+00 OUTFLOW= .1521E+03 BASIN STORAGE= .1894E+01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
              RDB5  MANE          5.00     85.07    365.00       .52      5.00     85.07    365.00          .52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1516E+03 EXCESS= .0000E+00 OUTFLOW= .1499E+03 BASIN STORAGE= .1876E+01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
              RDB5  MANE          5.00     83.64    365.00       .51      5.00     83.64    365.00          .51

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1484E+03 EXCESS= .0000E+00 OUTFLOW= .1467E+03 BASIN STORAGE= .1849E+01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
              RDB5  MANE          5.00     82.16    365.00       .50      5.00     82.16    365.00          .50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1449E+03 EXCESS= .0000E+00 OUTFLOW= .1432E+03 BASIN STORAGE= .1815E+01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
              RDB5  MANE          5.00     75.19    340.00       .44      5.00     75.19    340.00          .44
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1275E+03 EXCESS= .0000E+00 OUTFLOW= .1259E+03 BASIN STORAGE= .1631E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RDB5	MANE	5.00	66.99	330.00	.36	5.00	66.99	330.00	.36	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1049E+03 EXCESS= .0000E+00 OUTFLOW= .1037E+03 BASIN STORAGE= .1339E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RDB5	MANE	5.00	46.64	245.00	.13	5.00	46.64	245.00	.13	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3661E+02 EXCESS= .0000E+00 OUTFLOW= .3662E+02 BASIN STORAGE= .7622E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP39	MANE	3.65	670.36	219.18	.66	5.00	667.24	220.00	.66	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2060E+03 EXCESS= .0000E+00 OUTFLOW= .2052E+03 BASIN STORAGE= .1111E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP39	MANE	3.79	606.80	219.75	.63	5.00	605.79	220.00	.63	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1961E+03 EXCESS= .0000E+00 OUTFLOW= .1952E+03 BASIN STORAGE= .1089E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP39	MANE	3.89	557.35	221.91	.60	5.00	556.01	220.00	.61	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1889E+03 EXCESS= .0000E+00 OUTFLOW= .1881E+03 BASIN STORAGE= .1072E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP39	MANE	3.96	532.64	221.78	.59	5.00	529.65	220.00	.59	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1851E+03 EXCESS= .0000E+00 OUTFLOW= .1842E+03 BASIN STORAGE= .1062E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP39	MANE	4.06	505.14	219.29	.57	5.00	503.55	220.00	.57	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1795E+03 EXCESS= .0000E+00 OUTFLOW= .1786E+03 BASIN STORAGE= .1047E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP39	MANE	4.17	466.24	221.14	.55	5.00	459.27	220.00	.55	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1733E+03 EXCESS= .0000E+00 OUTFLOW= .1725E+03 BASIN STORAGE= .1028E+01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP39	MANE	4.74	329.37	222.91	.47	5.00	320.75	220.00	.47	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1463E+03 EXCESS= .0000E+00 OUTFLOW= .1456E+03 BASIN STORAGE= .9244E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP39	MANE	5.00	219.37	220.00	.37	5.00	219.37	220.00	.37	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1167E+03 EXCESS= .0000E+00 OUTFLOW= .1161E+03 BASIN STORAGE= .7602E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP39	MANE	5.00	83.43	240.00	.13	5.00	83.43	240.00	.13	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4093E+02 EXCESS= .0000E+00 OUTFLOW= .4092E+02 BASIN STORAGE= .4313E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP40	MANE	1.32	1058.76	217.37	.72	5.00	1043.29	220.00	.72	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2341E+03 EXCESS= .0000E+00 OUTFLOW= .2338E+03 BASIN STORAGE= .4579E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP40	MANE	1.37	954.43	217.52	.68	5.00	943.40	220.00	.68	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2213E+03 EXCESS= .0000E+00 OUTFLOW= .2210E+03 BASIN STORAGE= .4488E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP40	MANE	1.41	883.66	216.44	.65	5.00	868.85	220.00	.65	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2124E+03 EXCESS= .0000E+00 OUTFLOW= .2120E+03 BASIN STORAGE= .4417E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP40	MANE	1.43	841.18	217.43	.64	5.00	829.45	220.00	.64	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2072E+03 EXCESS= .0000E+00 OUTFLOW= .2069E+03 BASIN STORAGE= .4375E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP40	MANE	1.47	786.78	216.95	.61	5.00	779.94	220.00	.62	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1998E+03 EXCESS= .0000E+00 OUTFLOW= .1995E+03 BASIN STORAGE= .4312E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP40	MANE	1.51	723.27	217.62	.59	5.00	716.90	220.00	.59	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1921E+03 EXCESS= .0000E+00 OUTFLOW= .1917E+03 BASIN STORAGE= .4231E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP40	MANE	1.72	501.73	221.57	.49	5.00	498.42	220.00	.49	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1589E+03 EXCESS= .0000E+00 OUTFLOW= .1586E+03 BASIN STORAGE= .3801E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP40 MANE 1.97 334.99 223.13 .38 5.00 330.19 220.00 .38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1246E+03 EXCESS= .0000E+00 OUTFLOW= .1244E+03 BASIN STORAGE= .3118E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP40 MANE 3.07 95.04 242.17 .14 5.00 94.39 245.00 .14

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4394E+02 EXCESS= .0000E+00 OUTFLOW= .4393E+02 BASIN STORAGE= .1688E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 2.66 2515.68 213.01 2.11 5.00 2331.08 210.00 2.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1394E+03 EXCESS= .0000E+00 OUTFLOW= .1396E+03 BASIN STORAGE= .5843E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 2.77 2274.47 213.06 1.89 5.00 2090.23 210.00 1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1248E+03 EXCESS= .0000E+00 OUTFLOW= .1249E+03 BASIN STORAGE= .7247E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 2.85 2067.57 213.59 1.74 5.00 1917.86 215.00 1.74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1149E+03 EXCESS= .0000E+00 OUTFLOW= .1150E+03 BASIN STORAGE= .7201E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 2.90 1950.31 211.63 1.66 5.00 1839.08 215.00 1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1092E+03 EXCESS= .0000E+00 OUTFLOW= .1093E+03 BASIN STORAGE= .5852E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 2.98 1793.07 214.29 1.53 5.00 1719.86 215.00 1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1011E+03 EXCESS= .0000E+00 OUTFLOW= .1012E+03 BASIN STORAGE= .7399E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 3.06 1656.64 214.45 1.41 5.00 1603.55 215.00 1.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9316E+02 EXCESS= .0000E+00 OUTFLOW= .9327E+02 BASIN STORAGE= .5318E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 3.51 1182.37 214.29 .96 5.00 1142.09 215.00 .96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6351E+02 EXCESS= .0000E+00 OUTFLOW= .6359E+02 BASIN STORAGE= .7243E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 3.50 776.11 213.50 .61 5.00 752.56 215.00 .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4044E+02 EXCESS= .0000E+00 OUTFLOW= .4050E+02 BASIN STORAGE= .7313E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RC3B3C MANE 1.50 262.06 216.00 .20 5.00 254.16 215.00 .20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1341E+02 EXCESS= .0000E+00 OUTFLOW= .1343E+02 BASIN STORAGE= .5216E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP41 MANE 4.00 2754.58 216.00 2.08 5.00 2678.06 220.00 2.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1731E+03 EXCESS= .0000E+00 OUTFLOW= .1734E+03 BASIN STORAGE= .1191E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP41 MANE 3.75 2571.81 217.50 1.86 5.00 2409.24 215.00 1.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1547E+03 EXCESS= .0000E+00 OUTFLOW= .1550E+03 BASIN STORAGE= .1576E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP41 MANE 4.00 2265.53 216.00 1.71 5.00 2250.04 220.00 1.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1423E+03 EXCESS= .0000E+00 OUTFLOW= .1426E+03 BASIN STORAGE= .1164E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP41 MANE 4.25 2168.78 216.75 1.63 5.00 2112.76 220.00 1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1352E+03 EXCESS= .0000E+00 OUTFLOW= .1355E+03 BASIN STORAGE= .1193E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP41 MANE 4.50 2006.30 220.50 1.51 5.00 2003.72 220.00 1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1254E+03 EXCESS= .0000E+00 OUTFLOW= .1257E+03 BASIN STORAGE= .1598E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RCP41 MANE 5.00 1912.64 220.00 1.40 5.00 1912.64 220.00 1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1159E+03 EXCESS= .0000E+00 OUTFLOW= .1162E+03 BASIN STORAGE= .1584E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RCP41 MANE 4.75 1304.72 218.50 .95 5.00 1286.80 220.00 .95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7853E+02 EXCESS= .0000E+00 OUTFLOW= .7876E+02 BASIN STORAGE= .1178E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RCP41 MANE 4.25 838.26 221.00 .60 5.00 810.72 220.00 .60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4952E+02 EXCESS= .0000E+00 OUTFLOW= .4968E+02 BASIN STORAGE= .1469E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP41	MANE	1.50	359.83	225.00	.20	5.00	359.83	225.00	.21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1623E+02 EXCESS= .0000E+00 OUTFLOW= .1641E+02 BASIN STORAGE= .1084E-01 PERCENT ERROR= -1.2

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	4538.36	220.00	1.05	5.00	4538.36	220.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4570E+03 EXCESS= .0000E+00 OUTFLOW= .4559E+03 BASIN STORAGE= .3690E+01 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	4096.76	220.00	.96	5.00	4096.76	220.00	.96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4202E+03 EXCESS= .0000E+00 OUTFLOW= .4191E+03 BASIN STORAGE= .3618E+01 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	3704.58	220.00	.91	5.00	3704.58	220.00	.91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3950E+03 EXCESS= .0000E+00 OUTFLOW= .3939E+03 BASIN STORAGE= .3563E+01 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	3480.60	220.00	.87	5.00	3480.60	220.00	.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3801E+03 EXCESS= .0000E+00 OUTFLOW= .3784E+03 BASIN STORAGE= .3531E+01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	3226.21	225.00	.82	5.00	3226.21	225.00	.82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3605E+03 EXCESS= .0000E+00 OUTFLOW= .3588E+03 BASIN STORAGE= .3482E+01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	3059.85	225.00	.78	5.00	3059.85	225.00	.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3400E+03 EXCESS= .0000E+00 OUTFLOW= .3384E+03 BASIN STORAGE= .3418E+01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	2113.90	225.00	.59	5.00	2113.90	225.00	.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2582E+03 EXCESS= .0000E+00 OUTFLOW= .2569E+03 BASIN STORAGE= .3083E+01 PERCENT ERROR= -.7

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	1345.59	230.00	.43	5.00	1345.59	230.00	.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1867E+03 EXCESS= .0000E+00 OUTFLOW= .1854E+03 BASIN STORAGE= .2551E+01 PERCENT ERROR= -.7

FOR PLAN = 1 RATIO= .00

RCP42	MANE	5.00	467.03	240.00	.15	5.00	467.03	240.00	.15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6492E+02 EXCESS= .0000E+00 OUTFLOW= .6505E+02 BASIN STORAGE= .1495E+00 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RCP43	MANE	5.00	5325.73	235.00	1.04	5.00	5325.73	235.00	1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4636E+03 EXCESS= .0000E+00 OUTFLOW= .4610E+03 BASIN STORAGE= .8587E+01 PERCENT ERROR= -1.3

FOR PLAN = 1 RATIO= .00

RCP43	MANE	5.00	4904.71	235.00	.96	5.00	4904.71	235.00	.96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4257E+03 EXCESS= .0000E+00 OUTFLOW= .4226E+03 BASIN STORAGE= .8413E+01 PERCENT ERROR= -1.2

FOR PLAN = 1 RATIO= .00

RCP43	MANE	5.00	4302.55	235.00	.90	5.00	4302.55	235.00	.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3997E+03 EXCESS= .0000E+00 OUTFLOW= .3966E+03 BASIN STORAGE= .8275E+01 PERCENT ERROR= -1.3

FOR PLAN = 1 RATIO= .00

RCP43	MANE	5.00	3894.44	240.00	.86	5.00	3894.44	240.00	.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3839E+03 EXCESS= .0000E+00 OUTFLOW= .3809E+03 BASIN STORAGE= .8197E+01 PERCENT ERROR= -1.4

FOR PLAN = 1 RATIO= .00

RCP43	MANE	5.00	3839.75	240.00	.82	5.00	3839.75	240.00	.82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3637E+03 EXCESS= .0000E+00 OUTFLOW= .3608E+03 BASIN STORAGE= .8081E+01 PERCENT ERROR= -1.4

FOR PLAN = 1 RATIO= .00

RCP43	MANE	5.00	3870.61	240.00	.77	5.00	3870.61	240.00	.77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3427E+03 EXCESS= .0000E+00 OUTFLOW= .3399E+03 BASIN STORAGE= .7925E+01 PERCENT ERROR= -1.5

FOR PLAN = 1 RATIO= .00

RCP43	MANE	5.00	2747.09	245.00	.58	5.00	2747.09	245.00	.58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2592E+03 EXCESS= .0000E+00 OUTFLOW= .2565E+03 BASIN STORAGE= .7120E+01 PERCENT ERROR= -1.7

FOR PLAN = 1 RATIO= .00

RCP43	MANE	5.00	1798.55	255.00	.42	5.00	1798.55	255.00	.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1865E+03 EXCESS= .0000E+00 OUTFLOW= .1844E+03 BASIN STORAGE= .5868E+01 PERCENT ERROR= -2.0

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          FOR PLAN = 1  RATIO=  .00
            RCP43  MANE          5.00    660.47    280.00       .15       5.00    660.47    280.00         .15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6512E+02 EXCESS= .0000E+00 OUTFLOW= .6615E+02 BASIN STORAGE= .2841E+00 PERCENT ERROR=  -2.0

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          5.00    298.87    240.00      1.32       5.00    298.87    240.00        1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2857E+02 EXCESS= .0000E+00 OUTFLOW= .2861E+02 BASIN STORAGE= .1126E-01 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          5.00    259.71    240.00      1.14       5.00    259.71    240.00        1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2478E+02 EXCESS= .0000E+00 OUTFLOW= .2482E+02 BASIN STORAGE= .1066E-01 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          5.00    233.25    240.00      1.03       5.00    233.25    240.00        1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2226E+02 EXCESS= .0000E+00 OUTFLOW= .2230E+02 BASIN STORAGE= .1022E-01 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          5.00    218.03    240.00       .96       5.00    218.03    240.00         .96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2083E+02 EXCESS= .0000E+00 OUTFLOW= .2087E+02 BASIN STORAGE= .9962E-02 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          5.00    197.11    240.00       .87       5.00    197.11    240.00         .87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1887E+02 EXCESS= .0000E+00 OUTFLOW= .1891E+02 BASIN STORAGE= .9589E-02 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          5.00    176.03    240.00       .78       5.00    176.03    240.00         .78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1691E+02 EXCESS= .0000E+00 OUTFLOW= .1695E+02 BASIN STORAGE= .1209E-01 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          3.00    100.98    246.00       .46       5.00     99.82    245.00         .46

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9970E+01 EXCESS= .0000E+00 OUTFLOW= .1000E+02 BASIN STORAGE= .1168E-01 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          2.25     53.97    252.00       .24       5.00     45.10    255.00         .24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5148E+01 EXCESS= .0000E+00 OUTFLOW= .5181E+01 BASIN STORAGE= .1016E-01 PERCENT ERROR=   -.8

          FOR PLAN = 1  RATIO=  .00
            RC4BA3  MANE          3.50      7.33    287.00       .03       5.00      5.82    335.00         .03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7403E+00 EXCESS= .0000E+00 OUTFLOW= .7560E+00 BASIN STORAGE= .1016E-01 PERCENT ERROR=  -3.5

          FOR PLAN = 1  RATIO=  .00
            RCP44  MANE          1.02   5597.19    235.94      1.05       5.00   5371.98    235.00        1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5033E+03 EXCESS= .0000E+00 OUTFLOW= .5030E+03 BASIN STORAGE= .5051E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
            RCP44  MANE          1.05   5133.83    235.98       .96       5.00   4754.09    235.00         .96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4591E+03 EXCESS= .0000E+00 OUTFLOW= .4589E+03 BASIN STORAGE= .4945E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
            RCP44  MANE          1.09   4546.36    236.86       .90       5.00   4231.71    240.00         .90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4293E+03 EXCESS= .0000E+00 OUTFLOW= .4290E+03 BASIN STORAGE= .4861E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
            RCP44  MANE          1.12   4177.41    237.10       .86       5.00   4134.45    240.00         .86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4114E+03 EXCESS= .0000E+00 OUTFLOW= .4111E+03 BASIN STORAGE= .4814E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
            RCP44  MANE          1.13   3993.42    240.77       .81       5.00   3964.32    240.00         .81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3883E+03 EXCESS= .0000E+00 OUTFLOW= .3880E+03 BASIN STORAGE= .4744E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RCP44  MANE          1.13   3933.70    240.66       .76       5.00   3787.50    240.00         .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3645E+03 EXCESS= .0000E+00 OUTFLOW= .3642E+03 BASIN STORAGE= .4649E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RCP44  MANE          1.26   2723.21    245.81       .57       5.00   2538.55    245.00         .57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2706E+03 EXCESS= .0000E+00 OUTFLOW= .2704E+03 BASIN STORAGE= .4167E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RCP44  MANE          1.44   1788.49    256.47       .40       5.00   1708.31    255.00         .40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1915E+03 EXCESS= .0000E+00 OUTFLOW= .1913E+03 BASIN STORAGE= .3425E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
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RCP44	MANE	1.98	609.88	282.43	.14	5.00	502.69	280.00	.14

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6705E+02 EXCESS= .0000E+00 OUTFLOW= .6706E+02 BASIN STORAGE= .1443E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	.72	10261.79	236.02	1.10	5.00	10133.64	235.00	1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2025E+04 EXCESS= .0000E+00 OUTFLOW= .2024E+04 BASIN STORAGE= .1657E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	.74	9188.54	235.91	.98	5.00	8908.21	235.00	.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1807E+04 EXCESS= .0000E+00 OUTFLOW= .1806E+04 BASIN STORAGE= .1612E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	.78	8082.18	236.74	.91	5.00	8064.12	240.00	.91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1669E+04 EXCESS= .0000E+00 OUTFLOW= .1668E+04 BASIN STORAGE= .1562E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	.79	7678.38	240.26	.87	5.00	7661.46	240.00	.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1600E+04 EXCESS= .0000E+00 OUTFLOW= .1599E+04 BASIN STORAGE= .1519E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	.81	7132.91	240.73	.82	5.00	7064.60	240.00	.82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1505E+04 EXCESS= .0000E+00 OUTFLOW= .1504E+04 BASIN STORAGE= .1456E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	.83	6554.15	241.30	.76	5.00	6430.73	240.00	.76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1405E+04 EXCESS= .0000E+00 OUTFLOW= .1404E+04 BASIN STORAGE= .1379E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	.98	4095.82	246.34	.54	5.00	3922.66	245.00	.54

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9902E+03 EXCESS= .0000E+00 OUTFLOW= .9897E+03 BASIN STORAGE= .7815E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	1.17	2394.32	256.34	.33	5.00	2303.46	255.00	.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6059E+03 EXCESS= .0000E+00 OUTFLOW= .6057E+03 BASIN STORAGE= .3649E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP45	MANE	1.82	653.43	282.75	.09	5.00	613.87	285.00	.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1627E+03 EXCESS= .0000E+00 OUTFLOW= .1627E+03 BASIN STORAGE= .2910E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	5.00	763.53	220.00	1.73	5.00	763.53	220.00	1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4718E+02 EXCESS= .0000E+00 OUTFLOW= .4730E+02 BASIN STORAGE= .1272E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	5.00	683.01	220.00	1.53	5.00	683.01	220.00	1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4189E+02 EXCESS= .0000E+00 OUTFLOW= .4200E+02 BASIN STORAGE= .1227E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	5.00	627.72	220.00	1.40	5.00	627.72	220.00	1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3832E+02 EXCESS= .0000E+00 OUTFLOW= .3842E+02 BASIN STORAGE= .1194E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	5.00	595.47	220.00	1.33	5.00	595.47	220.00	1.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3626E+02 EXCESS= .0000E+00 OUTFLOW= .3635E+02 BASIN STORAGE= .1174E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	5.00	550.49	220.00	1.22	5.00	550.49	220.00	1.22

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3343E+02 EXCESS= .0000E+00 OUTFLOW= .3353E+02 BASIN STORAGE= .1145E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	4.75	482.10	218.50	1.12	5.00	481.45	220.00	1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3055E+02 EXCESS= .0000E+00 OUTFLOW= .3065E+02 BASIN STORAGE= .1192E-01 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	4.00	321.19	224.00	.73	5.00	320.40	220.00	.73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2000E+02 EXCESS= .0000E+00 OUTFLOW= .2006E+02 BASIN STORAGE= .1064E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	3.50	200.24	224.00	.44	5.00	196.20	225.00	.44

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1208E+02 EXCESS= .0000E+00 OUTFLOW= .1214E+02 BASIN STORAGE= .1138E-01 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC3A2B	MANE	1.25	69.39	230.00	.13	5.00	69.39	230.00	.13

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3383E+01 EXCESS= .0000E+00 OUTFLOW= .3448E+01 BASIN STORAGE= .1055E-01 PERCENT ERROR= -2.2

FOR PLAN = 1 RATIO= .00

RCP46	MANE	4.01	1035.68	224.38	1.29	5.00	1018.17	225.00	1.29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6786E+02 EXCESS= .0000E+00 OUTFLOW= .6793E+02 BASIN STORAGE= .5306E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP46	MANE	4.20	912.28	222.86	1.13	5.00	878.93	225.00	1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5936E+02 EXCESS= .0000E+00 OUTFLOW= .5943E+02 BASIN STORAGE= .7146E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP46	MANE	4.36	813.88	222.44	1.02	5.00	797.24	225.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5353E+02 EXCESS= .0000E+00 OUTFLOW= .5361E+02 BASIN STORAGE= .7568E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP46	MANE	4.46	775.02	223.13	.96	5.00	755.01	225.00	.95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5039E+02 EXCESS= .0000E+00 OUTFLOW= .5048E+02 BASIN STORAGE= .6861E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP46	MANE	4.62	697.21	226.25	.87	5.00	691.84	225.00	.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4601E+02 EXCESS= .0000E+00 OUTFLOW= .4607E+02 BASIN STORAGE= .6103E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP46	MANE	4.86	616.33	223.62	.79	5.00	608.23	225.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4152E+02 EXCESS= .0000E+00 OUTFLOW= .4159E+02 BASIN STORAGE= .5474E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP46	MANE	5.00	396.36	225.00	.49	5.00	396.36	225.00	.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2574E+02 EXCESS= .0000E+00 OUTFLOW= .2581E+02 BASIN STORAGE= .6766E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RCP46	MANE	4.50	232.74	229.50	.28	5.00	229.27	230.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1448E+02 EXCESS= .0000E+00 OUTFLOW= .1454E+02 BASIN STORAGE= .6835E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RCP46	MANE	2.00	100.61	242.00	.07	5.00	43.85	250.00	.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3730E+01 EXCESS= .0000E+00 OUTFLOW= .3796E+01 BASIN STORAGE= .5320E-02 PERCENT ERROR= -1.9

FOR PLAN = 1 RATIO= .00

RCP47	MANE	3.40	1099.48	224.58	1.18	5.00	1098.29	225.00	1.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7749E+02 EXCESS= .0000E+00 OUTFLOW= .7751E+02 BASIN STORAGE= .1044E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP47	MANE	3.53	949.63	225.95	1.02	5.00	934.78	225.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6728E+02 EXCESS= .0000E+00 OUTFLOW= .6730E+02 BASIN STORAGE= .1126E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP47	MANE	3.62	857.13	227.98	.92	5.00	839.97	225.00	.92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6037E+02 EXCESS= .0000E+00 OUTFLOW= .6039E+02 BASIN STORAGE= .1074E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP47	MANE	3.67	813.48	227.52	.86	5.00	789.49	225.00	.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5674E+02 EXCESS= .0000E+00 OUTFLOW= .5676E+02 BASIN STORAGE= .1247E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP47	MANE	3.75	737.64	228.88	.79	5.00	717.37	230.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5179E+02 EXCESS= .0000E+00 OUTFLOW= .5181E+02 BASIN STORAGE= .1025E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP47	MANE	3.87	654.90	228.59	.71	5.00	634.39	230.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4653E+02 EXCESS= .0000E+00 OUTFLOW= .4655E+02 BASIN STORAGE= .9875E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP47	MANE	4.33	441.45	229.28	.43	5.00	433.08	230.00	.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2836E+02 EXCESS= .0000E+00 OUTFLOW= .2837E+02 BASIN STORAGE= .1335E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RCP47	MANE	4.75	222.46	232.75	.24	5.00	219.69	235.00	.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1549E+02 EXCESS= .0000E+00 OUTFLOW= .1552E+02 BASIN STORAGE= .1282E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RCP47	MANE	3.00	44.34	258.00	.06	5.00	41.92	255.00	.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3671E+01 EXCESS= .0000E+00 OUTFLOW= .3681E+01 BASIN STORAGE= .1106E-02 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00
RCP48 MANE .70 10913.37 236.10 1.10 5.00 10796.40 235.00 1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2119E+04 EXCESS= .0000E+00 OUTFLOW= .2118E+04 BASIN STORAGE= .1658E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP48 MANE .73 9670.54 236.27 .98 5.00 9417.31 235.00 .98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1889E+04 EXCESS= .0000E+00 OUTFLOW= .1887E+04 BASIN STORAGE= .1613E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP48 MANE .76 8633.43 240.21 .91 5.00 8629.12 240.00 .91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1742E+04 EXCESS= .0000E+00 OUTFLOW= .1741E+04 BASIN STORAGE= .1563E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP48 MANE .77 8186.75 240.53 .87 5.00 8154.30 240.00 .87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1669E+04 EXCESS= .0000E+00 OUTFLOW= .1668E+04 BASIN STORAGE= .1520E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP48 MANE .79 7564.87 240.83 .82 5.00 7483.36 240.00 .82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1568E+04 EXCESS= .0000E+00 OUTFLOW= .1567E+04 BASIN STORAGE= .1457E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP48 MANE .82 6883.04 241.13 .76 5.00 6730.56 240.00 .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1461E+04 EXCESS= .0000E+00 OUTFLOW= .1460E+04 BASIN STORAGE= .1380E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP48 MANE .97 4175.00 246.26 .53 5.00 4000.87 245.00 .53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1025E+04 EXCESS= .0000E+00 OUTFLOW= .1024E+04 BASIN STORAGE= .7849E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP48 MANE 1.17 2371.81 256.86 .33 5.00 2281.39 255.00 .33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6250E+03 EXCESS= .0000E+00 OUTFLOW= .6248E+03 BASIN STORAGE= .3656E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCP48 MANE 1.85 621.87 286.92 .09 5.00 604.59 285.00 .09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1672E+03 EXCESS= .0000E+00 OUTFLOW= .1672E+03 BASIN STORAGE= .2918E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 4.25 137.70 225.25 .87 5.00 137.38 225.00 .87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9664E+01 EXCESS= .0000E+00 OUTFLOW= .9669E+01 BASIN STORAGE= .1103E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 4.00 118.35 224.00 .74 5.00 117.07 225.00 .74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8233E+01 EXCESS= .0000E+00 OUTFLOW= .8238E+01 BASIN STORAGE= .1064E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 3.25 103.05 224.25 .65 5.00 102.31 225.00 .65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7282E+01 EXCESS= .0000E+00 OUTFLOW= .7285E+01 BASIN STORAGE= .1026E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 3.25 95.00 224.25 .60 5.00 94.44 225.00 .60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6746E+01 EXCESS= .0000E+00 OUTFLOW= .6750E+01 BASIN STORAGE= .9884E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 2.50 85.06 225.00 .54 5.00 85.06 225.00 .54

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6023E+01 EXCESS= .0000E+00 OUTFLOW= .6026E+01 BASIN STORAGE= .1052E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 2.00 73.22 224.00 .48 5.00 72.98 225.00 .48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5307E+01 EXCESS= .0000E+00 OUTFLOW= .5309E+01 BASIN STORAGE= .1178E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 1.50 36.73 228.00 .25 5.00 36.39 230.00 .25

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2843E+01 EXCESS= .0000E+00 OUTFLOW= .2844E+01 BASIN STORAGE= .9708E-03 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 1.50 13.72 234.00 .11 5.00 13.69 235.00 .11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1250E+01 EXCESS= .0000E+00 OUTFLOW= .1252E+01 BASIN STORAGE= .9799E-03 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RC3B1B MANE 3.50 .84 315.00 .00 5.00 .84 315.00 .00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5537E-01 EXCESS= .0000E+00 OUTFLOW= .5543E-01 BASIN STORAGE= .1150E-02 PERCENT ERROR= -2.2

FOR PLAN = 1 RATIO= .00
RCP49 MANE 1.05 10924.50 236.50 1.10 5.00 10681.43 235.00 1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2140E+04 EXCESS= .0000E+00 OUTFLOW= .2138E+04 BASIN STORAGE= .2488E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP49	MANE	1.10	9604.29	236.78	.98	5.00	9463.34	240.00	.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1907E+04 EXCESS= .0000E+00 OUTFLOW= .1905E+04 BASIN STORAGE= .2420E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP49	MANE	1.14	8689.84	240.86	.90	5.00	8676.68	240.00	.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1758E+04 EXCESS= .0000E+00 OUTFLOW= .1756E+04 BASIN STORAGE= .2347E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP49	MANE	1.16	8204.33	240.93	.86	5.00	8133.70	240.00	.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1683E+04 EXCESS= .0000E+00 OUTFLOW= .1682E+04 BASIN STORAGE= .2281E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP49	MANE	1.19	7520.52	240.96	.81	5.00	7386.80	240.00	.81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1581E+04 EXCESS= .0000E+00 OUTFLOW= .1580E+04 BASIN STORAGE= .2187E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP49	MANE	1.24	6795.19	241.16	.76	5.00	6542.10	240.00	.76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1473E+04 EXCESS= .0000E+00 OUTFLOW= .1471E+04 BASIN STORAGE= .2072E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP49	MANE	1.48	4048.59	246.83	.53	5.00	3958.97	250.00	.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1031E+04 EXCESS= .0000E+00 OUTFLOW= .1030E+04 BASIN STORAGE= .1183E+01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP49	MANE	1.79	2264.36	258.15	.32	5.00	2151.44	260.00	.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6278E+03 EXCESS= .0000E+00 OUTFLOW= .6275E+03 BASIN STORAGE= .5500E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP49	MANE	2.82	591.74	287.95	.09	5.00	564.09	290.00	.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1675E+03 EXCESS= .0000E+00 OUTFLOW= .1675E+03 BASIN STORAGE= .4394E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	3.50	804.87	227.50	1.89	5.00	773.72	230.00	1.89

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4726E+02 EXCESS= .0000E+00 OUTFLOW= .4742E+02 BASIN STORAGE= .6566E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	3.50	722.08	227.50	1.69	5.00	701.84	230.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4222E+02 EXCESS= .0000E+00 OUTFLOW= .4236E+02 BASIN STORAGE= .6370E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	3.75	678.64	228.75	1.55	5.00	660.81	230.00	1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3882E+02 EXCESS= .0000E+00 OUTFLOW= .3895E+02 BASIN STORAGE= .7137E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	4.25	627.72	229.50	1.47	5.00	621.68	230.00	1.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3670E+02 EXCESS= .0000E+00 OUTFLOW= .3684E+02 BASIN STORAGE= .7694E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	4.50	573.63	229.50	1.36	5.00	570.74	230.00	1.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3402E+02 EXCESS= .0000E+00 OUTFLOW= .3418E+02 BASIN STORAGE= .6059E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	4.50	524.49	229.50	1.25	5.00	523.41	230.00	1.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3128E+02 EXCESS= .0000E+00 OUTFLOW= .3142E+02 BASIN STORAGE= .5931E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	3.50	373.15	234.50	.84	5.00	364.59	235.00	.84

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2110E+02 EXCESS= .0000E+00 OUTFLOW= .2120E+02 BASIN STORAGE= .5443E-02 PERCENT ERROR= -.5

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	4.00	239.20	236.00	.53	5.00	235.18	235.00	.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1315E+02 EXCESS= .0000E+00 OUTFLOW= .1325E+02 BASIN STORAGE= .6046E-02 PERCENT ERROR= -.8

FOR PLAN = 1 RATIO= .00

RC3A2A	MANE	1.50	119.69	244.50	.17	5.00	99.68	245.00	.19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4184E+01 EXCESS= .0000E+00 OUTFLOW= .4282E+01 BASIN STORAGE= .6642E-02 PERCENT ERROR= -2.5

FOR PLAN = 1 RATIO= .00

RCP50	MANE	1.94	1418.95	213.12	1.53	5.00	1369.00	215.00	1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1216E+03 EXCESS= .0000E+00 OUTFLOW= .1216E+03 BASIN STORAGE= .4174E-02 PERCENT ERROR= .0

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          FOR PLAN = 1  RATIO=  .00
             RCP50  MANE          2.04   1251.03    212.32      1.35      5.00   1190.71    215.00        1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1073E+03 EXCESS= .0000E+00 OUTFLOW= .1073E+03 BASIN STORAGE= .3932E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP50  MANE          2.12   1129.62    212.44      1.23      5.00   1070.95    215.00        1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9754E+02 EXCESS= .0000E+00 OUTFLOW= .9755E+02 BASIN STORAGE= .3936E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP50  MANE          2.18   1052.46    213.18      1.16      5.00   1004.32    215.00        1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9188E+02 EXCESS= .0000E+00 OUTFLOW= .9190E+02 BASIN STORAGE= .4255E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP50  MANE          2.26    972.80    212.21      1.06      5.00    912.93    215.00        1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8443E+02 EXCESS= .0000E+00 OUTFLOW= .8445E+02 BASIN STORAGE= .4850E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP50  MANE          2.35    852.03    211.63       .97      5.00    818.02    215.00         .97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7669E+02 EXCESS= .0000E+00 OUTFLOW= .7670E+02 BASIN STORAGE= .4331E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP50  MANE          2.87    522.32    212.48       .61      5.00    513.75    215.00         .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4865E+02 EXCESS= .0000E+00 OUTFLOW= .4866E+02 BASIN STORAGE= .4378E-02 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RCP50  MANE          3.59    296.28    237.24       .35      5.00    292.15    240.00         .35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2814E+02 EXCESS= .0000E+00 OUTFLOW= .2817E+02 BASIN STORAGE= .4680E-02 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RCP50  MANE          1.75    129.02    250.25       .09      5.00    121.72    250.00         .10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7453E+01 EXCESS= .0000E+00 OUTFLOW= .7474E+01 BASIN STORAGE= .4798E-02 PERCENT ERROR=   -.3


***    2 ERROR(S) DETECTED BY HEC-1 ***
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POST-PROJECT: HEC-1 OUTPUT

MISSIOND.OUT

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUL  1997                *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   02FEB06  TIME  16:45:31   *
*                                       *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX          XXX
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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


```
          LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
                    *DIAGRAM
*** FREE ***
             1      ID    MISSION LOMR FEMA HYDROLOGY
             2      ID
             3      ID    POST-DEVELOPMENT CONDITIONS DRAINAGE SYSTEM  SDN3
             4      ID
             5      ID    INPUT FILE =   MISSIOND.DAT
             6      ID    INPUT FILE DATE =  02/02/06
             7      ID    DESIGN STORM = 100-YEAR 6-HR STORM
             8      ID    STORM DISTRIBUTION = SDN #3
             9      ID    MODELED BY : VTN NEVADA
            10      ID
            11      ID
            12      ID    REFERENCED HYDROLOGIC MODELS:
            13      ID    C-1 WATERSHED FIS RESTUDY (CARTER BURGESS AND SOUTHWEST FLUVIAL SYSTEMS 2002
            14      ID    PREDESIGN REPORT FOR THE BLACK MOUNTAIN AND MISSION HILLS DETENTION BASINS
            15      ID    AND OUTFALL STRUCTURES (VTN 1992)
            16      ID    SNWA RIVER MOUNTAINS WATER TREATMENT FACILITY DRAFT TECHNICAL DRAINAGE STUDY
            17      ID    (MONTGOMERY WATSON/CH2MHILL 1997)
            18      ID    EAST C-1 DETENTION BASIN FINAL DESIGN (VTN 1998)
            19      ID    DESIGN MEMORANDUM FOR THE EQUESTRIAN DETENTION BASIN (POGGEMEYER 1994)
            20      ID    DESIGN CALCULATION NOTEBOOK FOR THE BLACK MOUNTAIN DETENTION BASIN
            21      ID    (VTN 1998)
            22      ID    CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT 2002 MASTER PLAN UPDATE (LBA)
            23      ID    I-515 BOULDER HIGHWAY TO LAKE MEAD DRIVE DRAINAGE STUDY (SVERDRUP, 1991)
            24      ID
            25      ID    JR CARDS CONTAINED DARFS BASED ON THE FOLLOWING VALUES:
            26      ID
            27      ID                          AREA     DARF
            28      ID                          SQ.MI.
            29      ID
            30      ID                          0.0 - 0.2   0.992
            31      ID                          0.2 - 0.4   0.984
            32      ID                          0.4 - 0.6   0.978
            33      ID                          0.6 - 0.8   0.974
            34      ID                          0.8 - 1.0   0.970
            35      ID                          1.0 - 1.2   0.962
            36      ID                          1.2 - 1.4   0.954
            37      ID                          1.4 - 1.5   0.950
            38      ID
            39      ID
            40      ID
            41      ID
            42      ID
            43      ID
            44      ID
            45      IT      5       0       0     300
            46      IN      5       0       0
            47      IO      5
            48      JR    PREC   0.992   0.984   0.978   0.974   0.970   0.962   0.954   0.950
                    *
```



```
          LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

            49      KK  C1G2B1
            50      KM   PART OF 2001 MPU C1-10
            51      KM   CN,TAKEN FROM C-1 WATERSHED FIS RESTUDY
            52      KM   BY (CARTER BURGESS AND SOUTHWEST FLUVIAL SYSTEMS 2002)
            53      BA   .3930
            54      PB    3.17
            55      PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
            56      PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
            57      PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
            58      PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
            59      PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
            60      PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
            61      PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
            62      PC    .998    .999   1.00
            63      LS     0      74
            64      UD    .376
                    *

            65      KK   RG2B1
            66      KM   ROUTE C1G2B1 TO C1G2B2
            67      KM   NO FACILITY - OVERLAND FLOW
            68      RD    4400    .028    .030       0    TRAP     200
                    *

            69      KK   C1G2A
            70      KM   PART OF 2001 MPU C1-11
            71      KM   AREA,CN,LAG TIME TAKEN FROM C-1 WATERSHED FIS RESTUDY
            72      KM   BY (CARTER BURGESS AND SOUTHWEST FLUVIAL SYSTEMS 2002)
            73      BA   .3468
            74      PB    3.17
            75      LS     0      79
            76      UD    0.22
                    *

            77      KK  RC1G2A
```

```
 78          KM   ROUTE C1G2A TO CP7C
 79          KM   NDOT FACILITY @US95
 80          RD    3800    .018    .030       0    TRAP     100
             *

 81          KK    CP7A
 82          KM   COMBINE C1G2A AND C1G2B1
 83          KM   GREENWAY AT US95
 84          HC       2
             *

 85          KK  C1G2B2
 86          KM   PART OF 2001 MPU C1-12
 87          KM   SUBBASIN SPLIT INTO 4 SECTIONS TO MODEL TOPO
 88          BA  .1611
 89          PB   3.20
 90          LS      0    71.6
 91          UD   .270
             *
1                                        HEC-1 INPUT                                        PAGE  3

        LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 92          KK   RG2B2
 93          KM   ROUTE C1G2B2 TO END
 94          KM   NO FACILITY - OVERLAND FLOW
 95          RD    4400    .028    .030       0    TRAP     200
             *

 96          KK    CP7B
 97          KM   COMBINE C1G2B1 AND C1G2A
 98          KM   GREENWAY AT US95
 99          HC       2
             *

100          KK  C1G2B0
101          KM   LOWER SECTION OF C1G2B1 TAKEN FROM C-1 WATERSHED FIS RESTUDY
102          KM   BY (CARTER BURGESS AND SOUTHWEST FLUVIAL SYSTEMS 2002)
103          KM   BEGINNING OF WASH
104          BA  .1291
105          PB   3.17
106          LS      0      80
107          UD   .133
             *

108          KK   RG2B0
109          KM   ROUTE C1G2B0 TO C1G2B2
110          KM   NO FACILITY - OVERLAND FLOW
111          RD    4400    .028    .030       0    TRAP     200
             *

112          KK  C1G2B4
113          KM   SPLIT SECTION OF C1G2B2
114          KM   BEGINNING OF WASH
115          BA    .031
116          PB   3.17
117          LS      0      77
118          UD   .151
             *

119          KK    CP1
120          KM   COMBINE C1G2B0 AND C1G2B4
121          HC       2
             *

122          KK   RG2B4
123          KM   ROUTE C1G2B4 TO C1G2B3
124          KM   NO FACILITY - OVERLAND FLOW
125          RD    4400    .028    .030       0    TRAP     200
             *

126          KK  C1G2B3
127          KM   SPLIT SECTION OF C1G2B2
128          KM   BEGINNING OF WASH
129          BA  .0635
130          PB   3.17
131          LS      0    75.2
1                                        HEC-1 INPUT                                        PAGE  4

        LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

132          UD   .193
             *

133          KK    CP2
134          KM   COMBINE C1G2B0,C1G2B4 & C1G2B3
135          HC       2
             *

136          KK   RG2B3
137          KM   ROUTE C1G2B3 TO C1G2B5
138          KM   NO FACILITY - OVERLAND FLOW
139          RD    4400    .028    .030       0    TRAP     200
             *

140          KK  C1G2B5
141          KM   SPLIT SECTION OF C1G2B2
142          KM   END OF WASH
143          BA  .0209
144          PB   3.17
145          LS      0      77
146          UD   .131
             *

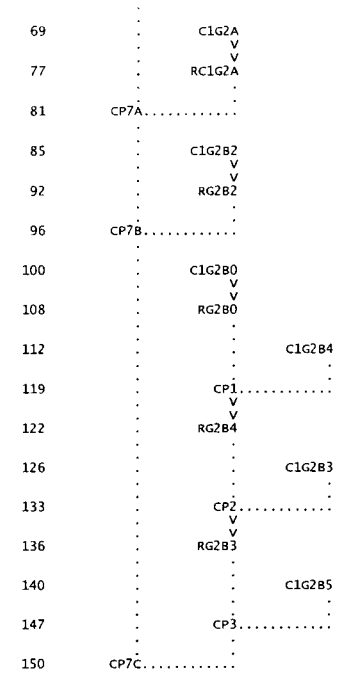
147          KK    CP3
148          KM   COMBINE C1G2B0,C1G2B4,C1G2B3 & C1G2B5
149          HC       2
             *

150          KK    CP7C
151          KM   COMBINE C1G2B0 AND C1G2B2
152          KM   COLLEGE AT US95
153          KM   END OF WASH
154          HC       2
             *
             *
155          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   49      C1G2B1
             V
             V
   65       RG2B1
```



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUL   1997                *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   02FEB06  TIME  16:45:31   *
*                                       *
*****************************************
```

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

MISSION LOMR FEMA HYDROLOGY

POST-DEVELOPMENT CONDITIONS DRAINAGE SYSTEM SDN3

INPUT FILE = MISSIOND.DAT
INPUT FILE DATE = 02/02/06
DESIGN STORM = 100-YEAR 6-HR STORM
STORM DISTRIBUTION = SDN #3
MODELED BY : VTN NEVADA

REFERENCED HYDROLOGIC MODELS:
C-1 WATERSHED FIS RESTUDY (CARTER BURGESS AND SOUTHWEST FLUVIAL SYSTEMS 2002
PREDESIGN REPORT FOR THE BLACK MOUNTAIN AND MISSION HILLS DETENTION BASINS
AND OUTFALL STRUCTURES (VTN 1992)
SNWA RIVER MOUNTAINS WATER TREATMENT FACILITY DRAFT TECHNICAL DRAINAGE STUDY
(MONTGOMERY WATSON/CH2MHILL 1997)
EAST C-1 DETENTION BASIN FINAL DESIGN (VTN 1998)
DESIGN MEMORANDUM FOR THE EQUESTRIAN DETENTION BASIN (POGGEMEYER 1994)
DESIGN CALCULATION NOTEBOOK FOR THE BLACK MOUNTAIN DETENTION BASIN
(VTN 1998)
CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT 2002 MASTER PLAN UPDATE (LBA)
I-515 BOULDER HIGHWAY TO LAKE MEAD DRIVE DRAINAGE STUDY (SVERDRUP, 1991)

JR CARDS CONTAINED DARFS BASED ON THE FOLLOWING VALUES:

AREA SQ.MI.	DARF
0.0 - 0.2	0.992
0.2 - 0.4	0.984
0.4 - 0.6	0.978
0.6 - 0.8	0.974
0.8 - 1.0	0.970
1.0 - 1.2	0.962
1.2 - 1.4	0.954
1.4 - 1.5	0.950

```
 47 IO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE       1    0  STARTING DATE
                     ITIME         0000  STARTING TIME
                        NQ          300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE       2    0  ENDING DATE
                    NDTIME         0055  ENDING TIME
                     ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL      .08 HOURS
                       TOTAL TIME BASE    24.92 HOURS
```

ENGLISH UNITS

DRAINAGE AREA	SQUARE MILES
PRECIPITATION DEPTH	INCHES
LENGTH, ELEVATION	FEET
FLOW	CUBIC FEET PER SECOND
STORAGE VOLUME	ACRE-FEET
SURFACE AREA	ACRES
TEMPERATURE	DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
.99 .98 .98 .97 .97 .96 .95 .95

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 .99	RATIO 2 .98	RATIO 3 .98	RATIO 4 .97	RATIO 5 .97	RATIO 6 .96	RATIO 7 .95	RATIO 8 .95
HYDROGRAPH AT												
+	C1G2B1	.39	1	FLOW	228.	224.	221.	219.	217.	213.	210.	208.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO												
+	RG2B1	.39	1	FLOW	231.	228.	225.	223.	222.	211.	207.	205.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT												
+	C1G2A	.35	1	FLOW	334.	329.	325.	323.	320.	316.	311.	309.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO												
+	RC1G2A	.35	1	FLOW	331.	327.	323.	311.	308.	304.	310.	308.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
2 COMBINED AT												
+	CP7A	.74	1	FLOW	501.	494.	488.	483.	480.	457.	451.	447.
				TIME	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92
HYDROGRAPH AT												
+	C1G2B2	.16	1	FLOW	97.	95.	94.	93.	92.	90.	89.	88.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
ROUTED TO												
+	RG2B2	.16	1	FLOW	115.	111.	113.	114.	115.	99.	98.	98.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2 COMBINED AT												
+	CP7B	.90	1	FLOW	575.	564.	560.	558.	556.	533.	526.	522.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
HYDROGRAPH AT												
+	C1G2B0	.13	1	FLOW	157.	155.	153.	152.	151.	149.	147.	145.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO												
+	RG2B0	.13	1	FLOW	149.	147.	146.	145.	145.	143.	142.	141.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT												
+	C1G2B4	.03	1	FLOW	31.	31.	31.	30.	30.	30.	29.	29.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT												
+	CP1	.16	1	FLOW	166.	164.	163.	162.	161.	159.	158.	157.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO												
+	RG2B4	.16	1	FLOW	192.	186.	181.	178.	175.	175.	176.	176.
				TIME	4.08	4.08	4.08	4.08	4.08	4.17	4.17	4.17
HYDROGRAPH AT												
+	C1G2B3	.06	1	FLOW	52.	51.	51.	50.	50.	49.	48.	48.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT												
+	CP2	.22	1	FLOW	210.	204.	199.	195.	192.	189.	189.	189.
				TIME	4.08	4.08	4.08	4.08	4.08	4.17	4.17	4.17
ROUTED TO												
+	RG2B3	.22	1	FLOW	210.	213.	216.	217.	217.	216.	214.	212.
				TIME	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42
HYDROGRAPH AT												
+	C1G2B5	.02	1	FLOW	22.	22.	22.	21.	21.	21.	21.	20.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT												
+	CP3	.24	1	FLOW	213.	216.	219.	219.	219.	219.	216.	215.
				TIME	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42
2 COMBINED AT												
+	CP7C	1.15	1	FLOW	643.	631.	633.	630.	627.	602.	593.	589.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

1

*** NORMAL END OF HEC-1 ***

APPENDIX D

HYDRAULICS

WSPG MODEL FOR MISSION DRIVE/GREENWAY RD IMPROVEMENTS

VTN3.OUT

(WSPG RUN FROM MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS FINAL DRAINAGE REPORT FEBRUARY 2004)

```
0
T1 MISSION DRIVE ROADWAY DESIGN
T2 MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. CHANN.
T3 WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04
SO   574.00 2303.54 16       .035
R    674.00 2305.64 16       .035
R    774.00 2307.74 16       .035
JX   834.00 2309.00 14  1    .013   400.0         2309.00         10.00
R    868.47 2309.80 14       .013
R    902.94 2310.61 14       .013
R    979.63 2312.39 14       .013
R   1056.31 2314.18 14       .013                          100.00
TS  1081.31 2314.76 15       .015
R   1453.67 2318.49 15       .015
TS  1478.67 2318.74 13       .015
TS  1488.67 2318.84 12       .015
JX  1498.67 2318.94  3 10    .015    24.0         2318.94          0.1
R   1656.18 2320.51  3       .013                          100.00
R   2116.18 2325.12  3       .013
JX  2119.68 2325.15  3  7    .013    25.4         2326.38         45.00
R   2130.51 2325.26  3       .013
R   2318.25 2331.23  3       .013                          120.00
R   2704.00 2343.53  3       .013
R   2804.00 2347.74  3       .013
R   2825.15 2348.12  3       .013
JX  2830.15 2348.21  3  7    .013    85.8         2348.21         90.00
R   2890.01 2349.28  3       .013
JX  2892.01 2349.32  3  6    .013    14.3         2352.92         45.00
R   3138.08 2353.72  3       .013                                          1
JX  3144.08 2353.83  3  6    .013    22.3         2357.83         75.00
R   3467.42 2359.63  3       .013                                          1
JX  3473.42 2359.93  4  8    .013    98.3         2367.92         90.00
R   3558.73 2363.44  4       .013                                          1
JX  3563.73 2363.65  4 10    .013    29.7         2374.12         45.00
R   3785.46 2372.79  4       .013
R   3809.00 2373.76  4       .013                                          1
R   4122.26 2375.72  4       .013                                          1
JX  4126.26 2375.82  9  7    .013    42.2         2375.82         45.00
R   4454.00 2383.78  9       .013
R   4719.59 2388.89  9       .013
R   4860.42 2393.31  9       .013                          40.00 80.00     1
JX  4864.42 2394.31  8  8 8 .013    31.0   31.0 2394.312394.31 35.00 35.00
R   5267.87 2403.84  8       .013
R   5667.87 2412.70  8       .013                                          1
JX  5671.87 2414.20 10 10    .013   152.2         2414.20         45.00
R   5998.89 2422.58 10       .013                                          1
JX  6002.89 2423.08  6  6    .013    50.5         2423.08         40.00
R   6329.90 2429.66  6       .013
SH                   6       .013                2434.66
CD  1   1              5.0    18.0 2.0  2.0
CD  2   3              6.0     7.0
CD  3   3              6.0     6.0
CD  4   4              5.5
CD  5   4              3.0
CD  6   4              2.0
CD  7   4              3.5
CD  8   4              4.0
CD  9   4              5.0
CD 10   4              2.5
CD 11   3              6.0    10.0
CD 12   2             11.0    10.0
CD 13   2             11.0     8.0
CD 14   3              6.0     8.0
CD 15   2              6.0     8.0
CD 16   1              5.0    37.0 2.0  2.0
```

DATE: 2/ 5/2004
TIME: 14:53

F0515P

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIERS	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	1	0	0.00	5.00	18.00	2.00	2.00	0.00										
CD	2	3	0	0.00	6.00	7.00	0.00	0.00	0.00										
CD	3	3	0	0.00	6.00	6.00	0.00	0.00	0.00										
CD	4	4			5.50														
CD	5	4			3.00														
CD	6	4			2.00														
CD	7	4			3.50														
CD	8	4			4.00														
CD	9	4			5.00														
CD	10	4			2.50														
CD	11	3	0	0.00	6.00	10.00	0.00	0.00	0.00										
CD	12	2	0	0.00	11.00	10.00			0.00										
CD	13	2	0	0.00	11.00	8.00			0.00										
CD	14	3	0	0.00	6.00	8.00	0.00	0.00	0.00										
CD	15	2	0	0.00	6.00	8.00			0.00										
CD	16	1	0	0.00	5.00	37.00	2.00	2.00	0.00										

F 0 5 1 5 P

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

MISSION DRIVE ROADWAY DESIGN

HEADING LINE NO 2 IS -

MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C

HEADING LINE NO 3 IS -

WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

F 0 5 1 5 P

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET

U/S DATA	STATION	INVERT	SECT	W S ELEV
	574.00	2303.54	16	0.00

ELEMENT NO 2 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	674.00	2305.64	16	0.035	0.00	0.00	0.00	0

ELEMENT NO 3 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	774.00	2307.74	16	0.035	0.00	0.00	0.00	0

ELEMENT NO 4 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	834.00	2309.00	14	1	0	0.013	400.0	0.0	2309.00	0.00	10.00	0.00

ELEMENT NO 5 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	868.47	2309.80	14	0.013	0.00	0.00	0.00	0

ELEMENT NO 6 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	902.94	2310.61	14	0.013	0.00	0.00	0.00	0

ELEMENT NO 7 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	979.63	2312.39	14	0.013	0.00	0.00	0.00	0

ELEMENT NO 8 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1056.31	2314.18	14	0.013	100.00	0.00	0.00	0

ELEMENT NO 9 IS A TRANSITION

U/S DATA	STATION	INVERT	SECT	N
	1081.31	2314.76	15	0.015

ELEMENT NO 10 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1453.67	2318.49	15	0.015	0.00	0.00	0.00	0

ELEMENT NO 11 IS A TRANSITION

U/S DATA	STATION	INVERT	SECT	N
	1478.67	2318.74	13	0.015

ELEMENT NO 12 IS A TRANSITION

U/S DATA	STATION	INVERT	SECT	N
	1488.67	2318.84	12	0.015

ELEMENT NO 13 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1498.67	2318.94	3	10	0	0.015	24.0	0.0	2318.94	0.00	0.10	0.000

F 0 5 1 5 P

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 14 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1656.18	2320.51	3	0.013	100.00	0.00	0.00	0

ELEMENT NO 15 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2116.18	2325.12	3	0.013	0.00	0.00	0.00	0

ELEMENT NO 16 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	2119.68	2325.15	3	7	0	0.013	25.4	0.0	2326.38	0.00	45.00	0.00

ELEMENT NO 17 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2130.51	2325.26	3	0.013	0.00	0.00	0.00	0

ELEMENT NO 18 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2318.25	2331.23	3	0.013	120.00	0.00	0.00	0

ELEMENT NO 19 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2704.00	2343.53	3	0.013	0.00	0.00	0.00	0

ELEMENT NO 20 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2804.00	2347.74	3	0.013	0.00	0.00	0.00	0

ELEMENT NO 21 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2825.15	2348.12	3	0.013	0.00	0.00	0.00	0

ELEMENT NO 22 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	2830.15	2348.21	3	7	0	0.013	85.8	0.0	2348.21	0.00	90.00	0.00

ELEMENT NO 23 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2890.01	2349.28	3	0.013	0.00	0.00	0.00	0

ELEMENT NO 24 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	2892.01	2349.32	3	6	0	0.013	14.3	0.0	2352.92	0.00	45.00	0.00

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WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 25 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3138.08	2353.72	3	0.013	0.00	0.00	0.00	1

ELEMENT NO 26 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3144.08	2353.83	3	6	0	0.013	22.3	0.0	2357.83	0.00	75.00	0.00

ELEMENT NO 27 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3467.42	2359.63	3	0.013	0.00	0.00	0.00	1

ELEMENT NO 28 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3473.42	2359.93	4	8	0	0.013	98.3	0.0	2367.92	0.00	90.00	0.00

ELEMENT NO 29 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3558.73	2363.44	4	0.013	0.00	0.00	0.00	1

ELEMENT NO 30 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3563.73	2363.65	4	10	0	0.013	29.7	0.0	2374.12	0.00	45.00	0.00

ELEMENT NO 31 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3785.46	2372.79	4	0.013	0.00	0.00	0.00	0

ELEMENT NO 32 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3809.00	2373.76	4	0.013	0.00	0.00	0.00	1

ELEMENT NO 33 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	4122.26	2375.72	4	0.013	0.00	0.00	0.00	1

ELEMENT NO 34 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	4126.26	2375.82	9	7	0	0.013	42.2	0.0	2375.82	0.00	45.00	0.00

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WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 35 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	4454.00	2383.78	9	0.013	0.00	0.00	0.00	0

ELEMENT NO 36 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	4719.59	2388.89	9	0.013	0.00	0.00	0.00	0

ELEMENT NO 37 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	4860.42	2393.31	9	0.013	40.00	80.00	0.00	1

ELEMENT NO 38 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	4864.42	2394.31	8	8	8	0.013	31.0	31.0	2394.31	2394.31	35.00	35.00

ELEMENT NO 39 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	5267.87	2403.84	8	0.013	0.00	0.00	0.00	0

ELEMENT NO 40 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	5667.87	2412.70	8	0.013	0.00	0.00	0.00	1

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ELEMENT NO  41 IS A JUNCTION
            U/S DATA    STATION    INVERT  SECT LAT-1 LAT-2    N      Q3      Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                        5671.87 2414.20   10    10     0  0.013   152.2     0.0  2414.20     0.00   45.00    0.00

ELEMENT NO  42 IS A REACH
            U/S DATA    STATION    INVERT  SECT                 N                                  RADIUS  ANGLE  ANG PT  MAN H
                        5998.89 2422.58   10              0.013                                       0.00   0.00    0.00      1

ELEMENT NO  43 IS A JUNCTION
            U/S DATA    STATION    INVERT  SECT LAT-1 LAT-2    N      Q3      Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                        6002.89 2423.08    6     6     0  0.013    50.5     0.0  2423.08     0.00   40.00    0.00

ELEMENT NO  44 IS A REACH
            U/S DATA    STATION    INVERT  SECT                 N                                  RADIUS  ANGLE  ANG PT  MAN H
                        6329.90 2429.66    6              0.013                                       0.00   0.00    0.00      0

ELEMENT NO  45 IS A SYSTEM HEADWORKS
            U/S DATA    STATION    INVERT  SECT                                          W S ELEV
                        6329.90 2429.66    6                                          2434.66
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WATER SURFACE PROFILE - ELEMENT CARD LISTING
NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF		NORM DEPTH			ZR		
574.00	2303.54	2.424	2305.964	1030.1	10.15	1.601	2307.565	0.00	2.743	5.00	37.00	2.00	0	0.00
66.03	0.02100					.021000	1.39		2.424			2.00		
640.03	2304.93	2.424	2307.351	1030.1	10.15	1.601	2308.952	0.00	2.743	5.00	37.00	2.00	0	0.00
33.97	0.02100					.021881	0.74		2.424			2.00		
674.00	2305.64	2.367	2308.007	1030.1	10.43	1.688	2309.695	0.00	2.743	5.00	37.00	2.00	0	0.00
7.85	0.02100					.023254	0.18		2.424			2.00		
681.85	2305.80	2.338	2308.143	1030.1	10.57	1.735	2309.878	0.00	2.743	5.00	37.00	2.00	0	0.00
16.29	0.02100					.025618	0.42		2.424			2.00		
698.14	2306.15	2.240	2308.387	1030.1	11.09	1.908	2310.295	0.00	2.743	5.00	37.00	2.00	0	0.00
11.13	0.02100					.029664	0.33		2.424			2.00		
709.27	2306.38	2.146	2308.527	1030.1	11.63	2.099	2310.626	0.00	2.743	5.00	37.00	2.00	0	0.00
8.91	0.02100					.034362	0.31		2.424			2.00		
718.18	2306.57	2.055	2308.623	1030.1	12.19	2.309	2310.932	0.00	2.743	5.00	37.00	2.00	0	0.00
7.63	0.02100					.039818	0.30		2.424			2.00		
725.81	2306.73	1.968	2308.696	1030.1	12.79	2.540	2311.236	0.00	2.743	5.00	37.00	2.00	0	0.00
6.77	0.02100					.046157	0.31		2.424			2.00		
732.58	2306.87	1.884	2308.754	1030.1	13.41	2.794	2311.548	0.00	2.743	5.00	37.00	2.00	0	0.00
6.11	0.02100					.053523	0.33		2.424			2.00		
738.69	2307.00	1.803	2308.802	1030.1	14.07	3.073	2311.875	0.00	2.743	5.00	37.00	2.00	0	0.00
5.60	0.02100					.062087	0.35		2.424			2.00		
744.29	2307.12	1.726	2308.842	1030.1	14.76	3.381	2312.223	0.00	2.743	5.00	37.00	2.00	0	0.00
5.17	0.02100					.072045	0.37		2.424			2.00		

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF		NORM DEPTH			ZR		
749.46	2307.22	1.652	2308.877	1030.1	15.48	3.719	2312.596	0.00	2.743	5.00	37.00	2.00	0	0.00
4.80	0.02100					.083628	0.40		2.424			2.00		
754.26	2307.32	1.580	2308.905	1030.1	16.23	4.091	2312.996	0.00	2.743	5.00	37.00	2.00	0	0.00
4.47	0.02100					.097105	0.43		2.424			2.00		
758.73	2307.42	1.512	2308.931	1030.1	17.02	4.500	2313.431	0.00	2.743	5.00	37.00	2.00	0	0.00
4.19	0.02100					.112790	0.47		2.424			2.00		
762.92	2307.51	1.446	2308.953	1030.1	17.85	4.950	2313.903	0.00	2.743	5.00	37.00	2.00	0	0.00
3.93	0.02100					.131049	0.52		2.424			2.00		

766.85	2307.59	1.383	2308.973	1030.1	18.73	5.445	2314.418	0.00	2.743		5.00	37.00	2.00	0	0.00
3.68	0.02100					.152310	0.56			2.424			2.00		
770.53	2307.67	1.323	2308.990	1030.1	19.64	5.989	2314.979	0.00	2.743		5.00	37.00	2.00	0	0.00
3.47	0.02100					.177074	0.61			2.424			2.00		
774.00	2307.74	1.265	2309.005	1030.1	20.60	6.588	2315.593	0.00	2.743		5.00	37.00	2.00	0	0.00
JUNCT STR	0.02100					.021744	1.30						2.00		
834.00	2309.00	3.473	2312.473	630.1	22.68	7.986	2320.459	0.00	5.777		6.00	8.00	0.00	0	0.00
34.47	0.02321					.016811	0.58			3.113			0.00		
868.47	2309.80	3.536	2313.336	630.1	22.27	7.704	2321.040	0.00	5.777		6.00	8.00	0.00	0	0.00
34.47	0.02350					.015911	0.55			3.099			0.00		
902.94	2310.61	3.617	2314.227	630.1	21.77	7.361	2321.588	0.00	5.777		6.00	8.00	0.00	0	0.00
28.43	0.02321					.014984	0.43			3.113			0.00		
931.37	2311.27	3.697	2314.967	630.1	21.31	7.048	2322.015	0.00	5.777		6.00	8.00	0.00	0	0.00
48.26	0.02321					.013671	0.66			3.113			0.00		

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
979.63	2312.39	3.877	2316.267	630.1	20.31	6.408	2322.675	0.00	5.777		6.00	8.00	0.00	0	0.00
28.37	0.02334					.012186	0.35			3.107			0.00		
1008.00	2313.05	4.026	2317.078	630.1	19.56	5.942	2323.020	0.00	5.777		6.00	8.00	0.00	0	0.00
27.58	0.02334					.010885	0.30			3.107			0.00		
1035.58	2313.70	4.223	2317.919	630.1	18.65	5.402	2323.321	0.00	5.777		6.00	8.00	0.00	0	0.00
20.73	0.02334					.009594	0.20			3.107			0.00		
1056.31	2314.18	4.429	2318.609	630.1	17.78	4.911	2323.520	0.00	5.777		6.00	8.00	0.00	0	0.00
TRANS STR	0.02320					.011200	0.28						0.00		
1081.31	2314.76	4.667	2319.427	630.1	16.87	4.422	2323.849	0.00	5.777		6.00	8.00	0.00	0	0.00
150.00	0.01002					.010802	1.62			4.740			0.00		
1231.31	2316.26	4.546	2320.809	630.1	17.33	4.661	2325.470	0.00	5.777		6.00	8.00	0.00	0	0.00
133.60	0.01002					.011922	1.59			4.740			0.00		
1364.91	2317.60	4.335	2321.936	630.1	18.17	5.127	2327.063	0.00	5.777		6.00	8.00	0.00	0	0.00
88.76	0.01002					.013521	1.20			4.740			0.00		
1453.67	2318.49	4.133	2322.623	630.1	19.06	5.640	2328.263	0.00	5.777		6.00	8.00	0.00	0	0.00
TRANS STR	0.01000					.014836	0.37						0.00		
1478.67	2318.74	4.037	2322.777	630.1	19.51	5.911	2328.688	0.00	5.777		11.00	8.00	0.00	0	0.00
TRANS STR	0.01000					.018660	0.19						0.00		
1488.67	2318.84	2.871	2321.711	630.1	21.94	7.478	2329.189	0.00	4.979		11.00	10.00	0.00	0	0.00
JUNCT STR	0.01000					.018299	0.18						0.00		
1498.67	2318.94	5.441	2324.381	606.1	18.57	5.352	2329.733	0.00	6.000		6.00	6.00	0.00	0	0.00
157.51	0.00997					.011567	1.82			5.652			0.00		

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
1656.18	2320.51	5.212	2325.722	606.1	19.38	5.834	2331.556	0.00	6.000		6.00	6.00	0.00	0	0.00
111.94	0.01002					.012919	1.45			5.640			0.00		
1768.12	2321.63	4.979	2326.611	606.1	20.29	6.392	2333.003	0.00	6.000		6.00	6.00	0.00	0	0.00
90.56	0.01002					.014521	1.32			5.640			0.00		
1858.68	2322.54	4.747	2327.286	606.1	21.28	7.031	2334.317	0.00	6.000		6.00	6.00	0.00	0	0.00
75.94	0.01002					.016372	1.24			5.640			0.00		

1934.62	2323.30	4.526	2327.826	606.1	22.32	7.734	2335.560	0.00	6.000		6.00	6.00	0.00	0	0.00
66.60	0.01002					.018471	1.23			5.640			0.00		
2001.22	2323.97	4.316	2328.284	606.1	23.41	8.508	2336.792	0.00	6.000		6.00	6.00	0.00	0	0.00
60.00	0.01002					.020855	1.25			5.640			0.00		
2061.22	2324.57	4.115	2328.684	606.1	24.55	9.358	2338.042	0.00	6.000		6.00	6.00	0.00	0	0.00
54.96	0.01002					.023564	1.30			5.640			0.00		
2116.18	2325.12	3.923	2329.043	606.1	25.75	10.294	2339.337	0.00	6.000		6.00	6.00	0.00	0	0.00
JUNCT STR	0.00857					.027461	0.10						0.00		
2119.68	2325.15	3.542	2328.692	580.7	27.32	11.590	2340.282	0.00	6.000		6.00	6.00	0.00	0	0.00
10.83	0.01016					.030354	0.33			5.418			0.00		
2130.51	2325.26	3.504	2328.764	580.7	27.62	11.849	2340.613	0.00	6.000		6.00	6.00	0.00	0	0.00
187.74	0.03180					.030210	5.67			3.461			0.00		
2318.25	2331.23	3.556	2334.786	580.7	27.22	11.505	2346.291	0.00	6.000		6.00	6.00	0.00	0	0.00
195.94	0.03189					.028195	5.52			3.457			0.00		
2514.19	2337.48	3.697	2341.175	580.7	26.18	10.641	2351.816	0.00	6.000		6.00	6.00	0.00	0	0.00
117.88	0.03189					.025211	2.97			3.457			0.00		

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
2632.07	2341.24	3.878	2345.114	580.7	24.96	9.673	2354.787	0.00	6.000		6.00	6.00	0.00	0	0.00
71.93	0.03189					.022291	1.60			3.457			0.00		
2704.00	2343.53	4.067	2347.597	580.7	23.80	8.794	2356.391	0.00	6.000		6.00	6.00	0.00	0	0.00
19.95	0.04210					.020049	0.40			3.111			0.00		
2723.95	2344.37	4.208	2348.578	580.7	23.00	8.212	2356.790	0.00	6.000		6.00	6.00	0.00	0	0.00
22.53	0.04210					.018077	0.41			3.111			0.00		
2746.48	2345.32	4.414	2349.732	580.7	21.93	7.466	2357.198	0.00	6.000		6.00	6.00	0.00	0	0.00
17.76	0.04210					.016016	0.28			3.111			0.00		
2764.24	2346.07	4.629	2350.695	580.7	20.91	6.787	2357.482	0.00	6.000		6.00	6.00	0.00	0	0.00
14.01	0.04210					.014201	0.20			3.111			0.00		
2778.25	2346.66	4.855	2351.511	580.7	19.93	6.170	2357.681	0.00	6.000		6.00	6.00	0.00	0	0.00
10.99	0.04210					.012599	0.14			3.111			0.00		
2789.24	2347.12	5.092	2352.210	580.7	19.01	5.609	2357.819	0.00	6.000		6.00	6.00	0.00	0	0.00
8.45	0.04210					.011187	0.09			3.111			0.00		
2797.69	2347.47	5.341	2352.815	580.7	18.12	5.099	2357.914	0.00	6.000		6.00	6.00	0.00	0	0.00
6.31	0.04210					.009940	0.06			3.111			0.00		
2804.00	2347.74	5.601	2353.341	580.7	17.28	4.636	2357.977	0.00	6.000		6.00	6.00	0.00	0	0.00
8.09	0.01797					.009121	0.07			4.317			0.00		
2812.09	2347.89	5.720	2353.605	580.7	16.92	4.446	2358.051	0.00	6.000		6.00	6.00	0.00	0	0.00
13.06	0.01797					.010378	0.14			4.317			0.00		
2825.15	2348.12	6.000	2354.120	580.7	16.24	4.097	2358.217	0.00	6.000		6.00	6.00	0.00	0	0.00
JUNCT STR	0.01800					.010246	0.05						0.00		

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
2830.15	2348.21	8.204	2356.414	494.9	13.84	2.976	2359.390	0.00	5.958		6.00	6.00	0.00	0	0.00
59.86	0.01787					.008621	0.52			3.819			0.00		
2890.01	2349.28	7.650	2356.930	494.9	13.84	2.976	2359.906	0.00	5.958		6.00	6.00	0.00	0	0.00
JUNCT STR	0.02000					.008376	0.02						0.00		

2892.01	2349.32	7.926	2357.246	480.6	13.44	2.806	2360.052	0.00	5.842		6.00	6.00	0.00	0	0.00
86.60	0.01788					.008130	0.70			3.733			0.00		
2978.61	2350.87	7.131	2358.000	480.6	13.44	2.806	2360.806	0.00	5.842		6.00	6.00	0.00	0	0.00
HYDRAULIC JUMP													0.00		
2978.61	2350.87	3.953	2354.822	480.6	20.26	6.375	2361.197	0.00	5.842		6.00	6.00	0.00	0	0.00
70.09	0.01788					.015051	1.05			3.733			0.00		
3048.70	2352.12	4.029	2356.151	480.6	19.88	6.137	2362.288	0.00	5.842		6.00	6.00	0.00	0	0.00
89.38	0.01788					.013839	1.24			3.733			0.00		
3138.08	2353.72	4.226	2357.946	480.6	18.96	5.579	2363.525	0.00	5.842		6.00	6.00	0.00	0	0.00
JUNCT STR	0.01833					.014928	0.09						0.00		
3144.08	2353.83	3.681	2357.511	458.3	20.75	6.686	2364.197	0.00	5.660		6.00	6.00	0.00	0	0.00
68.77	0.01794					.016663	1.15			3.595			0.00		
3212.85	2355.06	3.715	2358.779	458.3	20.56	6.564	2365.343	0.00	5.660		6.00	6.00	0.00	0	0.00
171.12	0.01794					.015510	2.65			3.595			0.00		
3383.97	2358.13	3.896	2362.029	458.3	19.60	5.968	2367.997	0.00	5.660		6.00	6.00	0.00	0	0.00
83.45	0.01794					.013716	1.14			3.595			0.00		
3467.42	2359.63	4.086	2363.716	458.3	18.69	5.425	2369.141	0.00	5.660		6.00	6.00	0.00	0	0.00
JUNCT STR	0.05000					.020314	0.12						0.00		

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
3473.42	2359.93	3.209	2363.139	360.0	25.01	9.713	2372.852	0.00	5.064		5.50	0.00	0.00	0	0.00
47.80	0.04114					.026237	1.25			2.842			0.00		
3521.22	2361.90	3.331	2365.228	360.0	23.91	8.879	2374.107	0.00	5.064		5.50	0.00	0.00	0	0.00
37.51	0.04114					.023315	0.87			2.842			0.00		
3558.73	2363.44	3.469	2366.909	360.0	22.80	8.072	2374.981	0.00	5.064		5.50	0.00	0.00	0	0.00
JUNCT STR	0.04200					.026286	0.13						0.00		
3563.73	2363.65	2.948	2366.598	330.3	25.47	10.072	2376.670	0.00	4.933		5.50	0.00	0.00	0	0.00
20.47	0.04122					.030141	0.62			2.700			0.00		
3584.20	2364.49	2.979	2367.473	330.3	25.14	9.812	2377.285	0.00	4.933		5.50	0.00	0.00	0	0.00
58.09	0.04122					.027881	1.62			2.700			0.00		
3642.29	2366.89	3.096	2369.984	330.3	23.97	8.919	2378.903	0.00	4.933		5.50	0.00	0.00	0	0.00
41.39	0.04122					.024625	1.02			2.700			0.00		
3683.68	2368.59	3.220	2371.814	330.3	22.85	8.109	2379.923	0.00	4.933		5.50	0.00	0.00	0	0.00
31.17	0.04122					.021777	0.68			2.700			0.00		
3714.85	2369.88	3.351	2373.230	330.3	21.79	7.371	2380.601	0.00	4.933		5.50	0.00	0.00	0	0.00
24.21	0.04122					.019287	0.47			2.700			0.00		
3739.06	2370.88	3.490	2374.368	330.3	20.77	6.701	2381.069	0.00	4.933		5.50	0.00	0.00	0	0.00
19.17	0.04122					.017108	0.33			2.700			0.00		
3758.23	2371.67	3.637	2375.305	330.3	19.81	6.092	2381.397	0.00	4.933		5.50	0.00	0.00	0	0.00
15.22	0.04122					.015208	0.23			2.700			0.00		
3773.45	2372.30	3.795	2376.090	330.3	18.89	5.538	2381.628	0.00	4.933		5.50	0.00	0.00	0	0.00
12.01	0.04122					.013558	0.16			2.700			0.00		

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
3785.46	2372.79	3.966	2376.756	330.3	18.01	5.034	2381.790	0.00	4.933		5.50	0.00	0.00	0	0.00
2.59	0.04121					.012615	0.03			2.700			0.00		

3788.05	2372.90	4.011	2376.908	330.3	17.79	4.916	2381.824	0.00	4.933		5.50	0.00	0.00	0	0.00
8.77	0.04121					.011801	0.10			2.700			0.00		
3796.82	2373.26	4.200	2377.458	330.3	16.96	4.469	2381.927	0.00	4.933		5.50	0.00	0.00	0	0.00
6.42	0.04121					.010621	0.07			2.700			0.00		
3803.24	2373.52	4.410	2377.932	330.3	16.18	4.063	2381.995	0.00	4.933		5.50	0.00	0.00	0	0.00
4.19	0.04121					.009635	0.04			2.700			0.00		
3807.43	2373.70	4.647	2378.342	330.3	15.42	3.693	2382.035	0.00	4.933		5.50	0.00	0.00	0	0.00
1.57	0.04121					.008866	0.01			2.700			0.00		
3809.00	2373.76	4.933	2378.693	330.3	14.70	3.357	2382.050	0.00	4.933		5.50	0.00	0.00	0	0.00
45.17	0.00626					.008536	0.39			5.500			0.00		
3854.17	2374.04	5.341	2379.384	330.3	14.02	3.051	2382.435	0.00	4.933		5.50	0.00	0.00	0	0.00
38.93	0.00626					.009047	0.35			5.500			0.00		
3893.10	2374.29	5.500	2379.786	330.3	13.90	3.001	2382.787	0.00	4.933		5.50	0.00	0.00	0	0.00
229.16	0.00626					.009619	2.20			5.500			0.00		
4122.26	2375.72	6.393	2382.113	330.3	13.90	3.001	2385.114	0.00	4.933		5.50	0.00	0.00	0	0.00
JUNCT STR	0.02500												0.00		
4126.26	2375.82	3.151	2378.971	288.1	22.10	7.585	2386.556	0.00	4.623		5.00	0.00	0.00	0	0.00
168.67	0.02429					.022810	3.85			3.111			0.00		
4294.93	2379.92	3.206	2383.123	288.1	21.66	7.283	2390.406	0.00	4.623		5.00	0.00	0.00	0	0.00
159.07	0.02429					.020988	3.34			3.111			0.00		

WATER SURFACE PROFILE LISTING

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH		HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO					SF AVE	HF			NORM DEPTH			ZR		
4454.00	2383.78	3.343	2387.123	288.1	20.65	6.621	2393.744	0.00	4.623		5.00	0.00	0.00	0	0.00
265.59	0.01924					.020608	5.47			3.375			0.00		
4719.59	2388.89	3.246	2392.136	288.1	21.35	7.081	2399.217	0.00	4.623		5.00	0.00	0.00	0	0.00
36.16	0.03139					.020539	0.74			2.862			0.00		
4755.75	2390.03	3.351	2393.376	288.1	20.59	6.584	2399.960	0.00	4.623		5.00	0.00	0.00	0	0.00
35.16	0.03139					.018543	0.65			2.862			0.00		
4790.91	2391.13	3.498	2394.626	288.1	19.63	5.986	2400.612	0.00	4.623		5.00	0.00	0.00	0	0.00
25.95	0.03139					.016545	0.43			2.862			0.00		
4816.86	2391.94	3.657	2395.600	288.1	18.72	5.442	2401.042	0.00	4.623		5.00	0.00	0.00	0	0.00
19.42	0.03139					.014819	0.29			2.862			0.00		
4836.28	2392.55	3.830	2396.382	288.1	17.85	4.946	2401.328	0.00	4.623		5.00	0.00	0.00	0	0.00
14.28	0.03139					.013343	0.19			2.862			0.00		
4850.56	2393.00	4.022	2397.023	288.1	17.02	4.497	2401.520	0.00	4.623		5.00	0.00	0.00	0	0.00
9.86	0.03139					.012113	0.12			2.862			0.00		
4860.42	2393.31	4.241	2397.551	288.1	16.23	4.088	2401.639	0.00	4.623		5.00	0.00	0.00	0	0.00
JUNCT STR	0.25000					.017455	0.07						0.00		
4864.42	2394.31	3.399	2397.709	226.1	19.87	6.130	2403.839	0.00	3.904		4.00	0.00	0.00	0	0.00
153.95	0.02362					.023185	3.57			3.372			0.00		
5018.37	2397.95	3.431	2401.378	226.1	19.71	6.031	2407.409	0.00	3.904		4.00	0.00	0.00	0	0.00
249.50	0.02362					.022308	5.57			3.372			0.00		
5267.87	2403.84	3.652	2407.492	226.1	18.79	5.482	2412.974	0.00	3.904		4.00	0.00	0.00	0	0.00
400.00	0.02215					.021805	8.72			3.540			0.00		

WATER SURFACE PROFILE LISTING

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MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
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STATION INVERT ELEV DEPTH OF FLOW W.S. ELEV Q VEL VEL HEAD ENERGY GRD.EL. SUPER ELEV CRITICAL DEPTH HGT/ DIA BASE/ ID NO. ZL NO PIER AVBPR
L/ELEM SO SF AVE HF NORM DEPTH ZR

5667.87	2412.70	3.904	2416.604	226.1	18.11	5.090	2421.694	0.00	3.904		4.00	0.00	0.00	0	0.00
JUNCT STR	0.37500												0.00		
5671.87	2414.20	2.452	2416.652	73.9	15.12	3.551	2420.203	0.00	2.452		2.50	0.00	0.00	0	0.00
3.31	0.02562					.030517	0.10			2.500			0.00		
5675.18	2414.28	2.500	2416.785	73.9	15.05	3.519	2420.304	0.00	2.452		2.50	0.00	0.00	0	0.00
323.71	0.02562					.032186	10.42			2.500			0.00		
5998.89	2422.58	4.887	2427.467	73.9	15.05	3.519	2430.986	0.00	2.452		2.50	0.00	0.00	0	0.00
JUNCT STR	0.12500					.021580	0.09						0.00		
6002.89	2423.08	7.131	2430.211	23.4	7.45	0.861	2431.072	0.00	1.718		2.00	0.00	0.00	0	0.00
327.01	0.02012					.010699	3.50			1.270			0.00		
6329.90	2429.66	4.050	2433.710	23.4	7.45	0.861	2434.571	0.00	1.718		2.00	0.00	0.00	0	0.00U

MISSION DRIVE ROADWAY DESIGN
MAINLINE DESIGN FOR 100 YEAR STORM EVENT (W/ REVISED BASIN)400CFS IN EX. C
WSPG FILE: VTN3.DAT, BY: W.T., VTN, 02/05/04

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                .         .         .         .         .         .         .         .         .         .         .
574.00          .IWCX                                                                                          .    R
601.54          .                                                                                              .
629.08          .                                                                                              .
656.62          . IWCX                                                                                         .    R
684.16          . I XEH                                                                                        .    R
711.70          . I XEH                                                                                        .    R
739.24          . I WCX                                                                                        .    R
766.78          .  IWCX                                                                                        .    R
794.32          .  IWCEH                                                                                       .    R
821.86          .  IWCEH                                                                                       .    R
849.40          .  IWC X                                                                                       .    R
876.94          .  I X X                                                                                       .    R
904.48          .  I X X                                                                                       .    R
932.02          .  I X X                                                                                       .    R
959.56          .  I X HE                                                                                      .    R
987.10          .  I WCHE                                                                                      .    R
1014.64         .   IWCHE                                                                                      .    R
1042.18         .   IWCH E                                                                                     .    R
1069.72         .   IWCH E                                                                                     .    R
1097.26         .   IWC H E                                                                                    .    JX
1124.80         .    I W X   E                                                                                 .    R
1152.34         .    I  W X   E                                                                                .    R
1179.88         .     I  WX   E                                                                                .    R
1207.42         .     I  W X   E                                                                               .    R
1234.96         .      I  W X  E                                                                               .    R
1262.50         .       I  WX  E                                                                               .    R
1290.04         .       I  W X  E                                                                              .    R
1317.59         .        I  WX  E                                                                              .    TX
1345.13         .        I   XH E                                                                              .    R
1372.67         .         I   WX E                                                                             .    R
1400.21         .          I   WX E                                                                            .    R
1427.75         .                                                                                              .
1455.29         .            I  WX  E                                                                          .    TX
1482.83         .            I  W C  X                                                                         .    TX
1510.37         .            I W C   EH                                                                        .    JX
1537.91         .            I   WX  E                                                                         .    R
1565.45         .                                                                                              .
1592.99         .                                                                                              .
1620.53         .                                                                                              .
1648.07         .                                                                                              .
1675.61         .             I   WX   E                                                                       .    R
1703.15         .                                                                                              .
1730.69         .                                                                                              .
1758.23         .                                                                                              .
1785.77         .              I   WX   E                                                                      .    R
1813.31         .                                                                                              .
1840.85         .                                                                                              .
1868.39         .               I   WX   E                                                                     .    R
1895.93         .                                                                                              .
1923.47         .                                                                                              .
1951.01         .                I  WX    E                                                                    .    R
1978.55         .                                                                                              .
2006.09         .                I  W X    E                                                                   .    R
2033.63         .                                                                                              .
2061.17         .                                                                                              .
2088.71         .                 I  WX     E                                                                  .    R
2116.25         .                 I  W X     E                                                                 .    JX
2143.79         .                 I  W X      E                                                                .    R
2171.33         .                 I  W X      E                                                                .    R
2198.87         .                                                                                              .
2226.41         .                                                                                              .
2253.95         .                                                                                              .
2281.49         .                                                                                              .
2309.03         .                                                                                              .
2336.57         .                      I W X      E                                                            .    R
2364.11         .                                                                                              .
2391.65         .                                                                                              .
2419.19         .                                                                                              .
2446.73         .                                                                                              .
2474.27         .                                                                                              .
2501.81         .                                                                                              .
2529.35         .                         I  W X     E                                                         .    R
2556.89         .                                                                                              .
2584.43         .                                                                                              .
2611.97         .                                                                                              .
2639.51         .                            I  W X     E                                                      .    R
2667.05         .                                                                                              .
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2694.59
2722.13
2749.68
2777.22
2804.76
2832.30
2859.84
2887.38
2914.92
2942.46
2970.00
2997.54
3025.08
3052.62
3080.16
3107.70
3135.24
3162.78
3190.32
3217.86
3245.40
3272.94
3300.48
3328.02
3355.56
3383.10
3410.64
3438.18
3465.72
3493.26
3520.80
3548.34
3575.88
3603.42
3630.96
3658.50
3686.04
3713.58
3741.12
3768.66
3796.20
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3878.82
3906.36
3933.90
3961.44
3988.98
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4044.06
4071.60
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4181.77
4209.31
4236.85
4264.39
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4347.01
4374.55
4402.09
4429.63
4457.17
4484.71
4512.25
4539.79
4567.33
4594.87
4622.41
4649.95
4677.49
4705.03
4732.57
4760.11
4787.65
4815.19
4842.73
4870.27
4897.81
4925.35
4952.89
4980.43
5007.97
5035.51
5063.05
5090.59
5118.13
5145.67
5173.21
5200.75
5228.29
5255.83
5283.37
5310.91
5338.45
5365.99
5393.53
5421.07
5448.61
5476.15
5503.69
5531.23
5558.77
5586.31

```
 5613.86    .                                                                                             .
 5641.40    .                                                                                             .
 5668.94    .                                                                         I  X   E            .    JX
 5696.48    .                                                                          I X  E             .    R
 5724.02    .                                                                          I X  E             .    R
 5751.56    .                                                                                             .
 5779.10    .                                                                                             .
 5806.64    .                                                                                             .
 5834.18    .                                                                                             .
 5861.72    .                                                                                             .
 5889.26    .                                                                                             .
 5916.80    .                                                                                             .
 5944.34    .                                                                                             .
 5971.88    .                                                                                             .
 5999.42    .                                                                               I X W  E      .    JX
 6026.96    .                                                                                IX    WE     .    R
 6054.50    .                                                                                             .
 6082.04    .                                                                                             .
 6109.58    .                                                                                             .
 6137.12    .                                                                                             .
 6164.66    .                                                                                             .
 6192.20    .                                                                                             .
 6219.74    .                                                                                             .
 6247.28    .                                                                                             .
 6274.82    .                                                                                             .
 6302.36    .                                                                                             .
 6329.90    .                                                                                     IX WE.       R
              .        .        .        .        .        .        .        .        .        .        .

          2303.54  2316.64  2329.75  2342.85  2355.95  2369.06  2382.16  2395.26  2408.36  2421.47  2434.57
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLYU

MISSION DRIVE/GREENWAY ROADWAY IMPROVEMENT

WSPG HYDRAULIC SUMMARY WITH 100YR FLOW CONDITION

WSPG STATION	SD PROFILE STATION	LENGTH IN WSPG (ft)	DESIGN FLOW (cfs)	INVERT ELEV (ft)	SLOPE (ft/ft)	DEPTH OF FLOW[1] y*(ft)	DEPTH OF FLOW y(ft)	VELOCITY V(fps)	H.G.L. H(ft)	E.G.L. E(ft)	CHANNEL TYPE	BASE WIDTH b(ft)	Z	FROUDE NUMBER Fr	DESIGN WALL H.T. (ft)	FREEBOARD (ft)	COMMENTS
574.00			819.1	2303.54		2.119	2.119	9.37	2305.659	2307.02	EX. TRAP.	37	2	1.13	5	2.88	TEMP. RIPRAP
674.00	41+70.00	100.00	819.1	2305.64	0.021	2.101	2.101	9.46	2307.741	2309.13	EX. TRAP.	37	2	1.15	5	2.90	TEMP. RIPRAP
774.00	40+70.00	100.00	819.1	2307.74	0.021	1.124	0.982	21.40	2308.722	2315.83	EX. TRAP.	37	2	3.81	5	4.02	TEMP. RIPRAP
834.00	39+70.00	60.00	630.1	2309.00	0.021	3.590	3.473	22.68	2312.473	2320.46	RCB	8	0	2.14	6	2.53	OK
868.47	39+35.53	34.47	630.1	2309.80	0.023	3.642	3.536	22.27	2313.336	2321.04	RCB	8	0	2.09	6	2.46	OK
902.94	39+01.06	34.47	630.1	2310.61	0.023	3.710	3.617	21.77	2314.227	2321.59	RCB	8	0	2.02	6	2.38	OK
979.63	38+24.37	76.69	630.1	2312.39	0.023	3.928	3.877	20.31	2316.267	2322.67	RCB	8	0	1.82	6	2.12	OK
1056.31	37+47.69	76.68	630.1	2314.18	0.023	4.429	4.429	17.78	2318.609	2323.52	RCB	8	0	1.49	6	1.57	OK
1081.31	37+22.69	25.00	630.1	2314.76	0.023	4.667	4.667	16.87	2319.427	2323.85	RECT	8	0	1.38	6.5	1.83	REQ. FREEBOARD=1.70', OK
1453.67	33+50.33	372.36	630.1	2318.49	0.010	4.145	4.133	19.06	2322.623	2328.26	RECT	8	0	1.65	6.5	2.37	REQ. FREEBOARD=1.76', OK
1478.67	33+25.33	25.00	630.1	2318.74	0.010	4.063	4.037	19.51	2322.777	2328.69	RECT	8	0	1.71	11	6.96	OK
1488.67	33+15.33	10.00	630.1	2318.84	0.010	2.993	2.871	21.94	2321.711	2329.19	RECT	10	0	2.28	11	8.13	OK
1498.67	33+05.33	10.00	606.1	2318.94	0.010	5.441	5.441	18.57	2324.381	2329.74	RCB	6	0	1.40	6	0.56	OK
1656.18	31+47.82	157.51	606.1	2320.51	0.010	5.212	5.212	19.38	2325.722	2331.55	RCB	6	0	1.50	6	0.79	OK
2116.18	26+87.82	460.00	606.1	2325.12	0.010	4.092	3.923	25.75	2329.043	2339.34	RCB	6	0	2.29	6	2.08	OK
2119.68	26+84.32	3.50	580.7	2325.15	0.009	3.756	3.542	27.32	2328.692	2340.28	RCB	6	0	2.56	6	2.46	OK
2130.51	26+73.49	10.83	580.7	2325.26	0.010	3.725	3.504	27.62	2328.764	2340.61	RCB	6	0	2.60	6	2.50	OK
2318.25	24+85.75	187.74	580.7	2331.23	0.032	3.767	3.556	27.22	2334.786	2346.29	RCB	6	0	2.54	6	2.44	OK
2704.00	21+00.00	385.75	580.7	2343.53	0.032	4.187	4.067	23.80	2347.597	2356.39	RCB	6	0	2.08	6	1.93	OK
2804.00	20+00.00	100.00	580.7	2347.74	0.042	5.601	5.601	17.28	2353.341	2357.98	RCB	6	0	1.29	6	0.40	OK
2825.15	19+78.85	21.15	580.7	2348.12	0.018	6.000	6.000	16.24	2354.120	2358.22	RCB	6	0	1.17	6	0.00	OK
2830.15	19+73.85	5.00	494.9	2348.21	0.018	8.204	8.204	13.84	2356.414	2359.39	RCB	6	0	0.85	6	0.00	OK
2890.01	19+07.99	59.86	494.9	2349.28	0.018	7.650	7.650	13.84	2356.930	2359.90	RCB	6	0	0.88	6	0.00	OK
2892.01	19+05.99	2.00	480.6	2349.32	0.020	7.926	7.926	13.44	2357.246	2360.05	RCB	6	0	0.84	6	0.00	OK
2978.61	18+19.39	86.60	480.6	2350.87	0.018	7.131	7.131	13.44	2358.001	2360.81	RCB	6	0	0.89	6	0.00	OK
2978.61	18+19.39	0.00	480.6	2350.87	N/A	4.000	3.953	20.26	2354.823	2361.20	RCB	6	0	1.80	6	2.05	OK
3138.08	16+65.91	159.47	480.6	2353.72	0.018	4.231	4.226	18.96	2357.946	2363.53	RCB	6	0	1.63	6	1.77	OK
3144.08	16+59.91	6.00	458.3	2353.83	0.018	3.750	3.681	20.75	2357.511	2364.20	RCB	6	0	1.91	6	2.32	OK
3467.42	13+36.58	323.34	458.3	2359.63	0.018	4.092	4.086	18.69	2363.716	2369.14	RCB	6	0	1.63	6	1.91	OK
3473.42	13+30.58	6.00	360.0	2359.93	0.050	3.382	3.209	25.01	2363.139	2372.85	RCP	0	0	2.46	5.5	2.29	OK
3558.73	12+45.27	85.31	360.0	2363.44	0.041	3.589	3.469	22.80	2366.909	2374.98	RCP	0	0	2.16	5.5	2.03	OK
3563.73	12+40.27	5.00	330.3	2363.65	0.042	3.137	2.948	25.47	2366.598	2376.67	RCP	0	0	2.61	5.5	2.55	OK
3785.46	10+00.00	221.73	330.3	2372.79	0.041	3.966	3.966	18.01	2376.756	2381.79	RCP	0	0	1.59	5.5	1.53	OK
3809.00	EXISTING FACILITY	23.54	330.3	2373.76	0.041	4.933	4.933	14.70	2378.693	2382.05	RCP	0	0	1.17	5.5	0.57	OK
4122.26		313.26	330.3	2375.72	0.006	6.393	6.393	13.90	2382.113	2385.11	RCP	0	0	0.97	5.5	0.00	OK
4126.26		4.00	288.1	2375.82	0.025	3.267	3.151	22.10	2378.971	2386.56	RCP	0	0	2.19	5	1.85	OK
4454.00		327.74	288.1	2383.78	0.024	3.423	3.343	20.65	2387.123	2393.74	RCP	0	0	1.99	5	1.66	OK
4719.59		265.59	288.1	2388.89	0.019	3.344	3.246	21.35	2392.136	2399.21	RCP	0	0	2.09	5	1.75	OK
4860.42		140.83	288.1	2393.31	0.031	4.241	4.241	16.23	2397.551	2401.64	RCP	0	0	1.39	5	0.76	OK
4864.42		4.00	226.1	2394.31	0.250	3.461	3.399	19.87	2397.709	2403.84	RCP	0	0	1.90	4	0.60	OK
5267.87		403.45	226.1	2403.84	0.024	3.681	3.652	18.79	2407.492	2412.97	RCP	0	0	1.73	4	0.35	OK
5667.87		400.00	226.1	2412.70	0.022	3.906	3.904	18.11	2416.604	2421.70	RCP	0	0	1.62	4	0.10	OK

WSPG STATION	SD PROFILE STATION	LENGTH IN WSPG (ft)	DESIGN FLOW (cfs)	INVERT ELEV (ft)	SLOPE (ft/ft)	DEPTH OF FLOW[1] y*(ft)	DEPTH OF FLOW y(ft)	VELOCITY V(fps)	H.G.L. H(ft)	E.G.L. E(ft)	CHANNEL TYPE	BASE WIDTH b(ft)	Z	FROUDE NUMBER Fr	DESIGN WALL H.T. (ft)	FREEBOARD (ft)	COMMENTS
5671.87	EXISTING FACILITY	4.00	**73.9**	**2414.20**	0.375	2.467	**2.452**	**15.12**	2416.652	2420.20	**RCP**	0	0	1.70	2.5	0.05	OK
5998.89		327.02	**7.4**	**2422.58**	0.026	4.887	**4.887**	**15.05**	2427.467	2430.98	**RCP**	0	0	1.20	2.5	0.00	OK
6002.89		4.00	**23.4**	**2423.08**	0.125	7.131	**7.131**	**7.45**	2430.211	2431.07	**RCP**	0	0	0.49	2	0.00	OK
6329.90		327.01	**23.4**	**2429.66**	0.020	4.050	**4.050**	**7.45**	2433.710	2434.57	**RCP**	0	0	0.65	2	0.00	OK

(1) DEPTH WITH AIR ENTRAINMENT

INLET CALCS FOR MISSION DRIVE/GREENWAY RD IMPROVEMENTS

(WSPG RUN FROM MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS FINAL DRAINAGE REPORT FEBRUARY 2004)

MISSION DRIVE/GREENWAY DRAINAGE DESIGN

Determination of Flow Interception Capacity of Drop Inlets

100-YR FLOW

All calculations are based on FHWA HEC-22 method

INPUT DATA:
n = 0.016

LOCATION	TYPE OF DROP INLET	DESIGN POINT	Q	$Q_{w/bypass}$	L_{grate}[1]	$L_{curb\ opening}$	S	S_x	L_T[2]	L_{eff}[3]	E[4]	T[5]	Q_s[6]	Q_x[7]	E_o[8]	V	R_f[9]	R_s[10]	Q_{grate}	$Q_{curb\ opening}$	CAPACITY FACTOR[11]		D.I. INTERCEPTION	MAX. SYS. CAPACITY (cfs)	BYPASS
			cfs	cfs	ft	ft	ft/ft	ft/ft	ft	ft		ft	cfs	cfs		ft/s			cfs	cfs	GRATE	CURB OPENING	(cfs)		(cfs)
Paradise Hills	Existing Type "C" w/ 1 Grate	*G1*	351.2	351.2	3.0	3.0	0.024	0.020	287.25	0.00	0.00	50.00	271.11	243.11	0.10	10.84	1	0.02	33.43	0.00	70%	80%	23.4	23.4	327.8
	Existing Modi. Type "C" w/ 3 Grates			327.8	9.0	9.0	0.024	0.020	279.05	0.00	0.00	50.00	271.11	243.11	0.10	10.84	1	0.22	82.06	0.00	70%	80%	57.4	50.5	277.3
Remove and Replace (Modi. Type "C" w/ 2 Grates)	Propose 25' Type "CM2" DI			277.3	25.0	25.0	0.024	0.020	260.11	0.00	0.00	50.00	271.11	243.11	0.10	10.84	1	0.22	82.06	0.00	70%	80%	57.4	50.5	277.3
	Existing Modi. Type "C" w/ 4 Grates			130.1	12.0	12.0	0.024	0.020	189.29	0.00	0.00	37.98	130.10	112.60	0.13	9.02	1	0.44	66.56	0.00	70%	80%	46.6	5.0	125.1
	Exisitng 20' Type "CM2" DI (Middle School)			125.1	12.0	20.0	0.018	0.020	170.80	8.00	0.06	38.62	117.81	102.22	0.13	7.90	1	0.50	66.20	7.29	70%	80%	52.2	31.0	94.1
	Existing 20' Type "CM2" DI (Middle School)			94.1	12.0	20.0	0.027	0.020	171.15	8.00	0.06	32.18	88.63	74.67	0.16	8.56	1	0.46	48.23	5.47	70%	80%	38.1	31.0	63.1
	FLOW USED IN WSPG	288.1																							
Greenway Rd./Du Fort Ave.	Existing 18' Modi. Type "C" w/ 5 Grates	*G2*	54	54.0	15.0	18.0	0.027	0.020	135.24	3.00	0.03	26.48	52.50	42.57	0.19	7.49	1	0.64	37.32	1.50	70%	80%	27.3	27.3	26.7
	Existing 18' Modi. Type "C" w/ 5 Grates			26.7	15.0	18.0	0.027	0.020	100.57	3.00	0.04	20.26	25.68	19.46	0.24	6.26	1	0.71	20.11	0.99	70%	80%	14.9	14.9	11.8
	FLOW USED IN WSPG	42.2																							
Greenway Rd./Patti Ann Woods Dr.	Existing Modi. Type "C" w/ 4 Grates	*G4*	105	105.0	12.0	12.0	0.020	0.020	163.78	0.00	0.00	36.27	105.00	90.24	0.14	7.98	1	0.49	59.00	0.00	70%	80%	41.3	41.3	63.7
	Existing Modi. Type "C" w/ 3 Grates			63.7	9.0	12.0	0.020	0.020	132.77	3.00	0.03	29.75	61.90	51.40	0.17	6.99	1	0.39	30.36	1.80	70%	80%	22.7	22.7	41.0
	Propose 20' Type "CM2" DI			41.0	20.0	20.0	0.020	0.020	110.34	0.00	0.00	25.50	41.00	32.97	0.20	6.31	1	0.83	35.28	0.00	70%	80%	24.7	24.7	16.3
	Propose 15' Type "CM2" DI			16.3	15.0	15.0	0.020	0.020	74.91	0.00	0.00	18.05	16.30	11.92	0.27	5.00	1	0.79	13.78	0.00	70%	80%	9.6	9.6	6.7
	FLOW USED IN WSPG	98.3																							
Greenway Rd./Trenier Dr.	Propose 20' Type "CM2" DI	*G6*	90	90.0	20.0	20.0	0.026	0.020	166.09	0.00	0.00	32.59	90.00	76.00	0.16	8.47	1	0.74	69.99	0.00	70%	80%	49.0	49.0	41.0
	Propose 20' Type "CM2" DI			41.0	20.0	20.0	0.026	0.020	119.39	0.00	0.00	24.28	41.01	32.60	0.21	6.96	1	0.80	34.48	0.00	70%	80%	24.1	24.1	16.9
	Propose 10' Type "CM2" DI			16.9	10.0	10.0	0.026	0.020	82.22	0.00	0.00	17.41	16.87	12.18	0.28	5.57	1	0.55	11.36	0.00	70%	80%	8.0	8.0	8.9
	Propose 10' Type "CM2" DI			8.9	10.0	10.0	0.026	0.020	62.91	0.00	0.00	13.71	8.92	5.86	0.34	4.74	1	0.62	6.68	0.00	70%	80%	4.7	4.7	4.2
	FLOW USED IN WSPG	85.8																							
Greenway Rd./Mission Dr.	Existing 42" Wide Modi. Type "C"	*G8*	84.0	84.0	21.0	42.0	0.013	0.020	131.05	21.00	0.19	33.37	67.81	57.49	0.15	6.09	1	0.85	59.19	16.19	70%	80%	54.4	54.4	29.6
	Propose 20' Type "CM2" DI			29.6	20.0	20.0	0.025	0.020	102.91	0.00	0.00	21.65	29.61	22.86	0.23	6.32	1	0.83	25.63	0.00	70%	80%	17.9	17.9	11.7
	Propose 20' Type "CM2" DI			11.7	20.0	20.0	0.025	0.020	69.59	0.00	0.00	15.27	11.67	8.02	0.31	5.00	1	0.88	10.69	0.00	70%	80%	7.5	7.5	4.2
	FLOW USED IN WSPG	25.4																							
On Greenway Just Before Patti Ann Wood	Propose 10' Type "CM2" DI		74.9	74.9	10.0	10.0	0.023	0.030	116.66	0.00	0.00	24.10	74.90	59.44	0.21	8.60	1	0.45	42.43	0.00	70%	80%	29.7	29.7	45.2
On Greenway Between Patti Ann Wood & Trenier	Propose 10' Type "CM2" DI			51.9	10.0	10.0	0.023	0.030	99.96	0.00	0.00	21.00	51.86	39.70	0.23	7.84	1	0.49	31.81	0.00	70%	80%	22.3	22.3	29.6
On Greenway Just Before Trenier	Propose 10' Type "CM2" DI			29.6	10.0	10.0	0.022	0.030	77.74	0.00	0.00	17.19	29.59	21.27	0.28	6.68	1	0.57	20.38	0.00	70%	80%	14.3	14.3	15.3

L_{grate}[1]=Length of grate in total parallel with curb/sidewalk

[2]L_T = Curb opening length required to intercept 100% of the gutter flow
$L_T = KQ^{0.42}S^{0.3}(1/nS_x)^{0.6}$ K = 0.6

[3]Curb opening length upstream of the grate

[4]E = Curb opening inlet interception efficiency
$E = 1-(1-L/L_T)^{1.8}$

[5]T = Width of flow
$T = (Q/((0.56/n)S_x^{1.67}S^{0.5}))^{1/2.67}$

FLOW USED IN WSPG=DESIGN FLOW (Q) -FLOW BYPASS FROM LAST DI

[6]Q_s = Gutter flow
$Q_s = (0.56/n)S_x^{1.67}T^{2.67}S^{0.5}$

[7]Q_x = Side flow
$Q_x = (0.56/n)S_x^{1.67}T_x^{2.67}S^{0.5}$

[8]E_o = Ratio of frontal flow to total gutter flow
$E_o = Q_s-Q_x/Q_s$

[9]R_f = Frontal flow interception efficiency

[10]Rs = Side flow interception efficiency
$Rs = 1/(1+0.15V^{1.8}/S_xL^{2.3})$

STORM DRAIN PLAN & PROFILE
FOR MISSION DRIVE/GREENWAY RD IMPROVEMENTS

(WSPG RUN FROM MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS FINAL DRAINAGE REPORT FEBRUARY 2004)

vtn nevada
CONSULTING ENGINEERS • PLANNERS • SURVEYORS
PROVIDING QUALITY PROFESSIONAL
SERVICES SINCE 1960

March 15, 2006
W.O.# 6139

City of Henderson
Public Works Department
240 Water Street
P.O. Box 95050
Henderson, Nevada 80990-5050

Attention: **Ms. Jonna Sansom, P.E. Project Engineer III**

Subject: **SUBSTANTIAL COMPLETION OF MISSION DRIVE / GREENWAY ROAD IMPROVEMENTS: PARADISE HILLS TO GREENWAY ROAD TO COLLEGE DRIVE.**

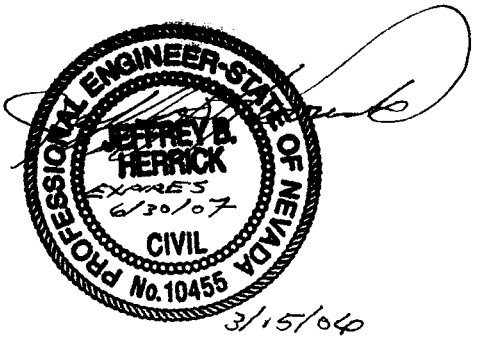
CONTRACT NO. 02-03-11 PWP-CL-2004-4

VTN-Nevada has reviewed the "As-Built" drawings for the subject project. In addition, VTN-Nevada conducted a field survey of the subject project alignment on March 8, 2006. Based on the review of the "As-Built" Drawings and project tour observations, Frehner Construction Company has substantially completed construction of all roadway and storm drain improvements indicated on the project improvement plans and technical documents.

If you have any question regarding substantial Completion of the project, please contact me at (702) 253-2343.

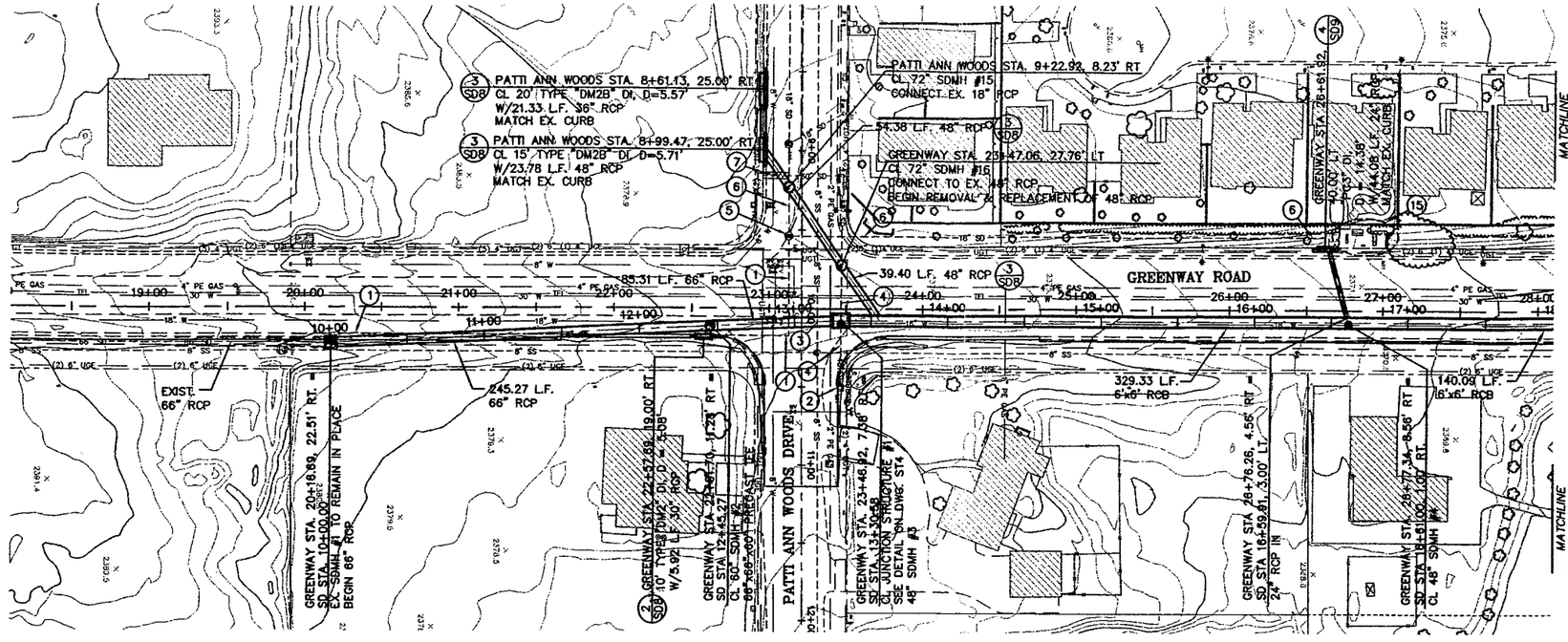
Respectfully,

VTN Nevada



Jeffrey B. Herrick, P.E.

2727 SOUTH RAINBOW BOULEVARD LAS VEGAS, NEVADA 89146-5148
TEL. (702) 873-7550 FAX: 362-2597



NOTES

1. SEE DRAWING I2 FOR GENERAL NOTES.
2. CONTRACTOR SHALL VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF EXISTING UTILITY RELOCATION'S WITHIN PROPOSED AND EXISTING SIDEWALK, CURB AND GUTTER AREAS WITH THE APPROPRIATE UTILITY COMPANY.
4. CONTRACTOR SHALL INSTALL NEW CURB, GUTTER AND SIDEWALK AS NECESSARY IN AREAS WHERE NEW DROP INLETS ARE INSTALLED IN EXISTING CURB, GUTTER AND SIDEWALK. MATCH EXISTING GRADES.
5. SEE DRAWINGS D1 – D8 AND ST1 – ST6 FOR STORM DRAIN DETAILS.

LEGEND

- RCP W/ CEMENT SLURRY ENCASEMENT (4" THICK MIN.)
- CEMENT SLURRY BACKFILL

CONSTRUCTION NOTES

1. REMOVE EXISTING 6" STORM DRAIN BLEEDER LINE
2. REMOVE EXISTING STORM DRAIN BUBBLER
3. CEMENT SLURRY BACKFILL TO SPRING LINE OF EXISTING 8" SS. 8" SS TO REMAIN IN SERVICE DURING CONSTRUCTION
4. ABANDON AND/OR REMOVE EXISTING 48" STORM DRAIN RCP
5. ABANDON AND/OR REMOVE EXISTING STORM DRAIN MANHOLE
6. ABANDON AND/OR REMOVE EXISTING 18" STORM DRAIN RCP
7. CEMENT SLURRY ENCASE EXISTING STORM DRAIN RCP (4" THICK MIN.) 10' EACH SIDE OF WATER PIPELINE
15. PROTECT IN PLACE. EXISTING BLOCKWALL & UTILITY VAULTS

Avoid overhead power line contact.

2 working days **Call before you Overhead** 1-702-593-6111
Nevada Power Environment and Safety Services Department

Avoid cutting underground utility lines. It's costly.

2 working days **Call before you Dig** 1-800-227-2600
Underground Service Alert (U.S.A.)

(06475)

DEPARTMENT OF PUBLIC WORKS
CITY OF HENDERSON

REV	DATE	BY	REVISION

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STORM DRAIN PLAN AND PROFILE
SD STA. 10+00.00 TO SD STA. 18+00.00
GREENWAY ROAD

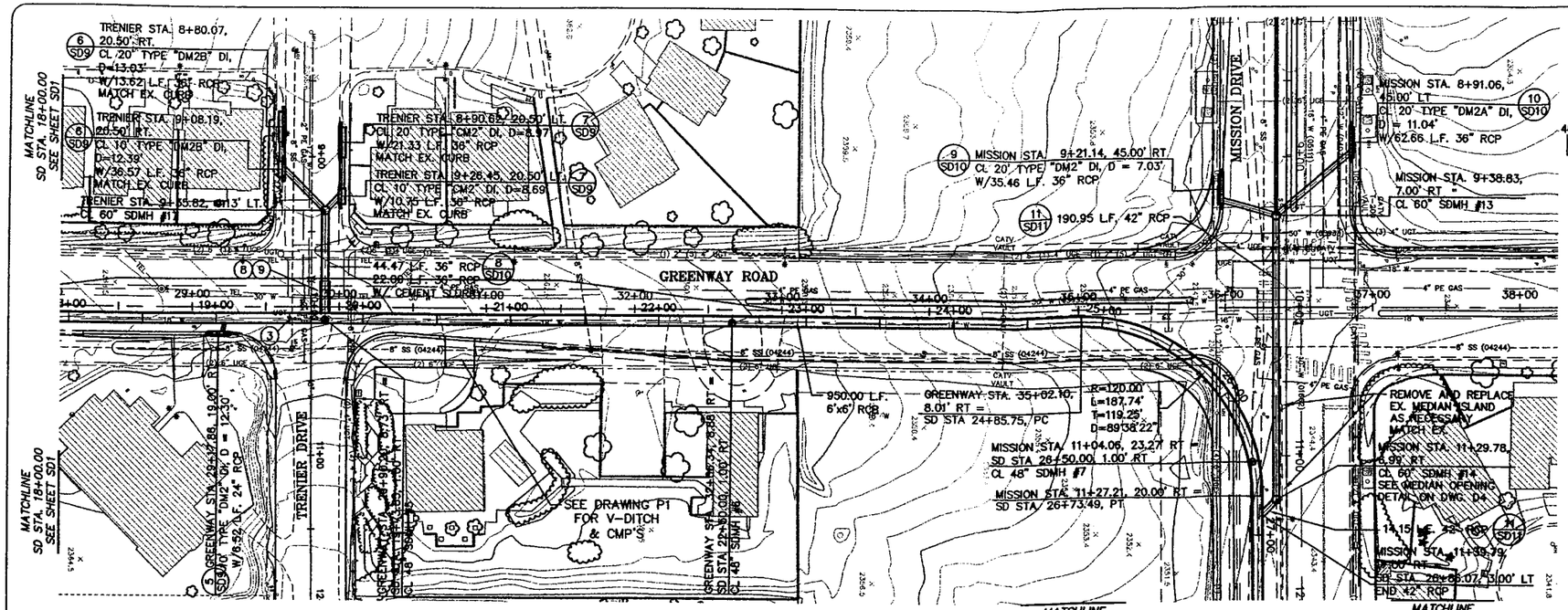
PROJECT: MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS
PARADISE HILLS TO GREENWAY ROAD TO COLLEGE DRIVE

SEAL
PROFESSIONAL ENGINEER
JEFFREY B. HERRICK
EXP. 06/30/06
CIVIL
No. 10435

WO. NO.	6139
BY	LMW
	TMM
DATE	09/03/04
SCALE HORIZ.	1"=40'
VERT.	1"=4'
DRAWING	SD1
SHEET OF SHEETS	

(06475)

I:\6139\DWG\6139-SD-MAIN.DWG



NORTH

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

NOTES

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5. SEE DRAWINGS D1 – D8 AND ST1 – ST6 FOR STORM DRAIN DETAILS.

LEGEND

RCP W/ CEMENT SLURRY ENCASEMENT (4" THICK MIN.)

CEMENT SLURRY BACKFILL

CONSTRUCTION NOTES

(3) CEMENT SLURRY BACKFILL TO SPRING LINE OF EXISTING 8" SS 8" SS TO REMAIN IN SERVICE DURING CONSTRUCTION

(8) CEMENT SLURRY ENCASE SD RCP (4" THICK MIN.) 10' MIN. EACH SIDE OF EXISTING WATER PIPELINE

(9) CEMENT SLURRY BACKFILL TO SPRING LINE OF EX. WATER PIPELINE

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REV	DATE	BY	REVISION

DEPARTMENT OF PUBLIC WORKS
CITY OF HENDERSON

STORM DRAIN PLAN AND PROFILE SD STA. 18+00.00 TO SD STA. 27+50.00 GREENWAY ROAD

PROJECT: MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS PARADISE HILLS TO GREENWAY ROAD TO COLLEGE DRIVE

SEAL
PROFESSIONAL ENGINEER STATE OF NEVADA
JEFFREY B. HERRICK
EXP. 06/30/06
CIVIL
No. 10455

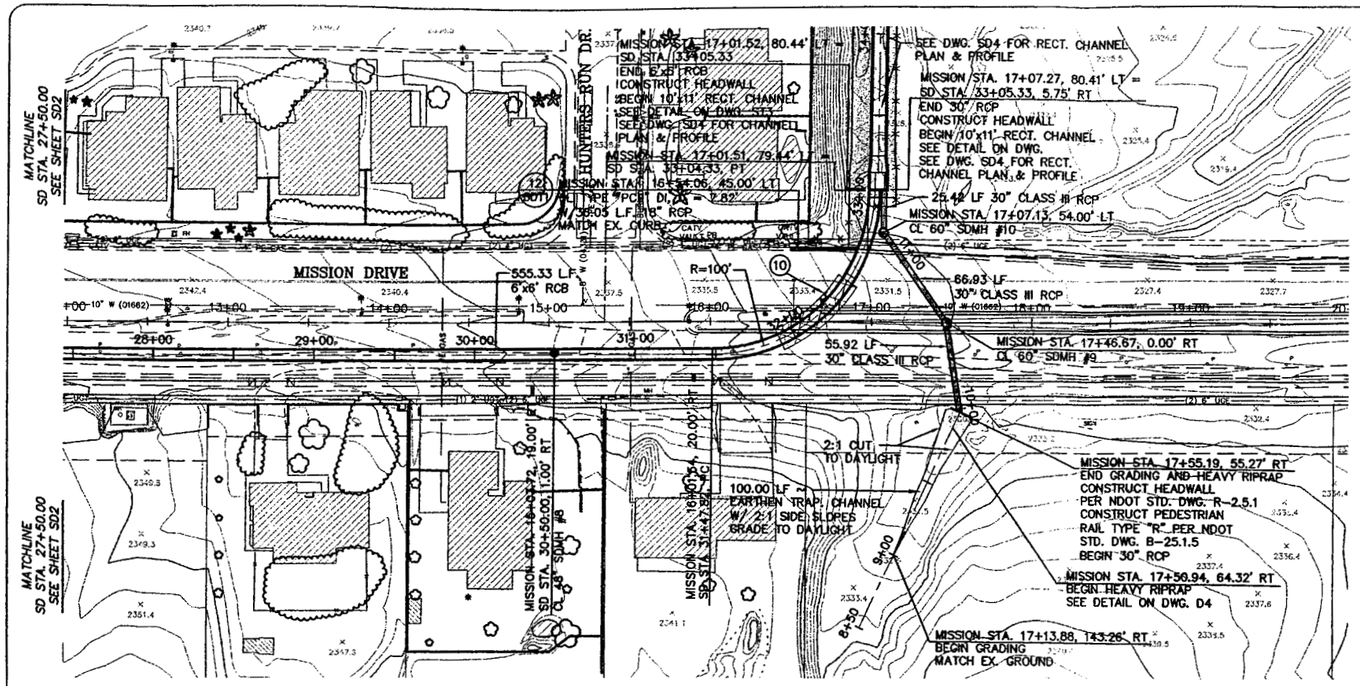
Avoid overhead power line contact. 2 working days Call before you Overhead 1-702-593-6111 Nevada Power Environment and Safety Services Department

Avoid cutting underground utility lines. It's costly. 2 working days Call before you Dig 1-800-227-2600 Underground Service Alert (USA) (06475)

WO. NO.	6139
BY	LMW
BY	TMM
DATE	09/03/04
SCALE HORIZ.	1"=40'
SCALE VERT.	1"=4'
DRAWING	SD2
SHEET OF SHEETS	

(06475)

I:\6139\DWG\6139-SD-MAINLINE



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NORTH

NOTES

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5. SEE DRAWINGS D1 – D8 AND ST1 – ST6 FOR STORM DRAIN DETAILS.

LEGEND

- RCB W/ POLYURETHANE ELASTOMERIC SEALANT
- CHANNEL MAINTENANCE ROAD AND MANWAY ACCESS

CONSTRUCTION NOTES

(10) SEAL RCB JOINTS WITH POLYURETHANE ELASTOMERIC SEALANT 10' MINIMUM EACH SIDE OF WATER PIPELINE.

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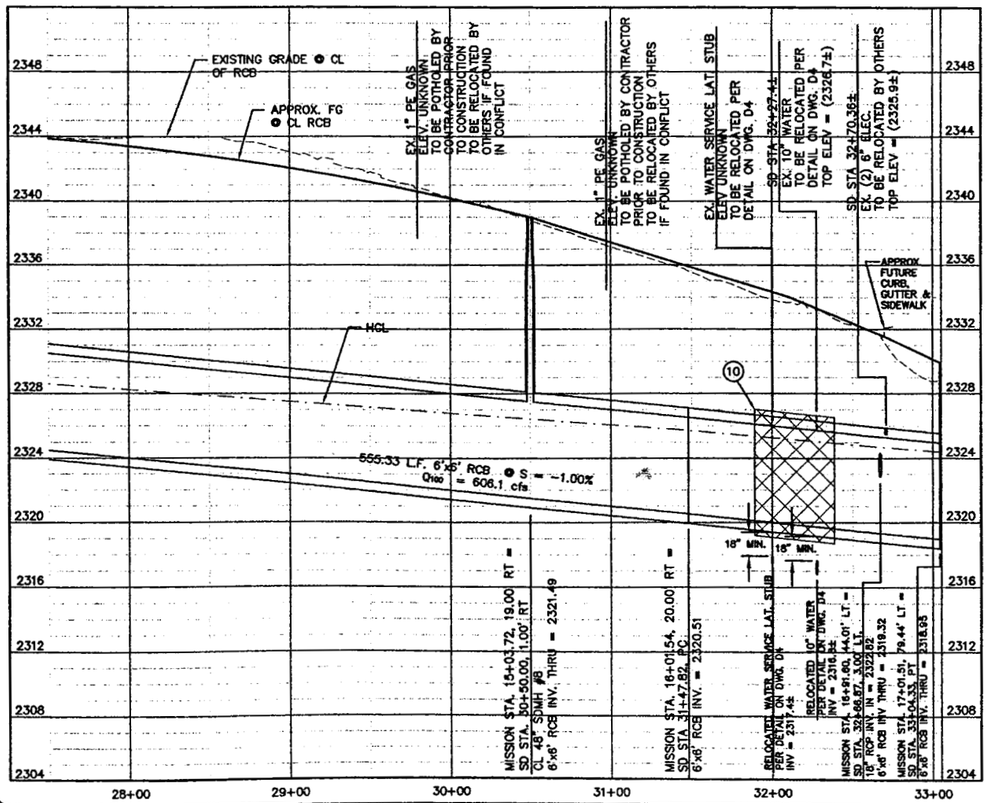

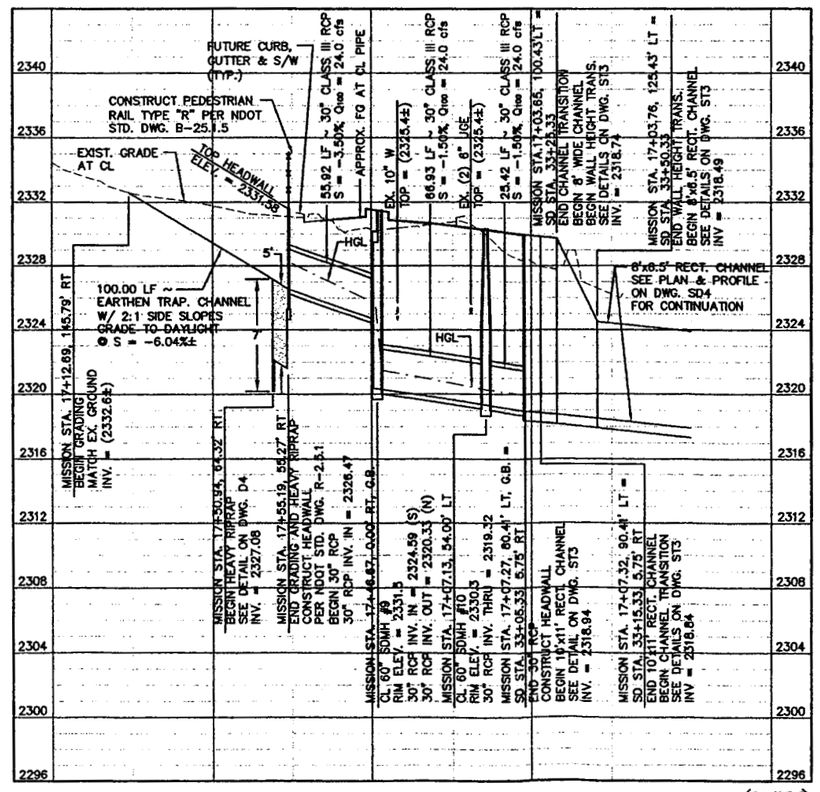

(06475)

E:\S139\DWG\S139-SD-MAIN.DWG

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CITY OF HENDERSON

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LAS VEGAS, NEVADA 89146-5148 PHONE (702) 873-7550 FAX (702) 362-2597

REV	DATE	BY	REVISION

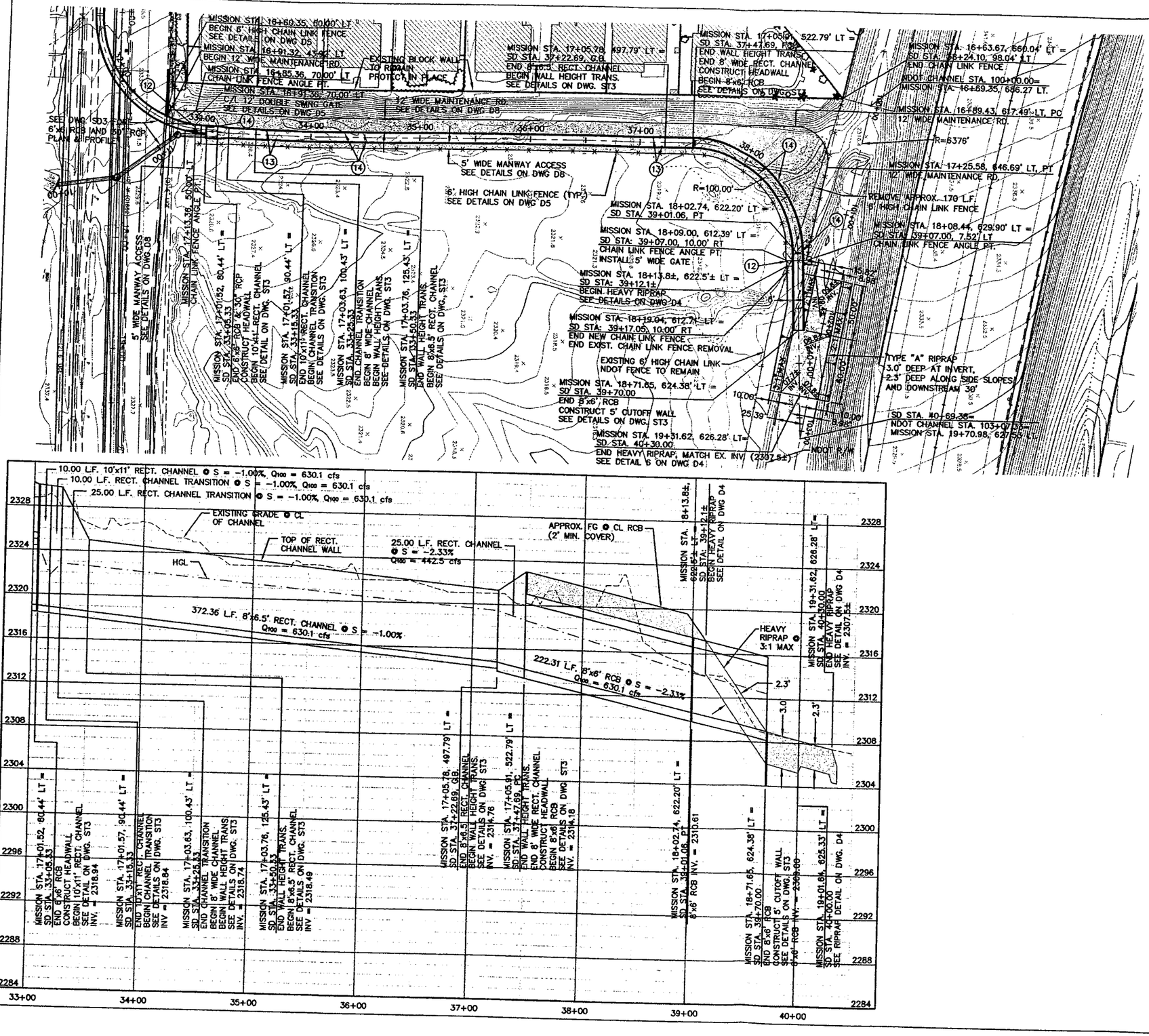
STORM DRAIN PLAN AND PROFILE SD STA. 27+50.00 TO SD STA. 33+05.33 MISSION DRIVE

PROJECT
MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS
PARADISE HILLS TO GREENWAY ROAD TO COLLEGE DRIVE

SEAL
PROFESSIONAL ENGINEER STATE OF NEVADA
JEFFREY B. HERRICK
EXP. 06/30/06
CIVIL
No. 10453

WO. NO.	6139
BY	LMW
	TMM
DATE	09/03/04
SCALE HORZ.	1"=40'
VERT.	1"=4'
DRAWING	SD3
SHEET	OF SHEETS

(06475)



NOTES

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5. SEE DRAWINGS D1 – D8 AND ST1 – ST6 FOR STORM DRAIN DETAILS.

LEGEND

CHANNEL MAINTENANCE ROAD AND MANWAY ACCESS

CONSTRUCTION NOTES

(12) INSTALL FLOOD WARNING SIGN ON CHAIN LINK FENCE ADJACENT TO GATE, SEE DETAIL ON DWG. D5

(13) INSTALL CHANNEL LADDER SEE DETAILS ON DWG. D7

(14) INSTALL POST AND CABLE RAILING ON ALL OPEN CHANNEL WALLS AND HEADWALLS, SEE DETAILS ON DWG D6

Avoid overhead power line contact. 2 working days **Call before you Overhead** 1-702-593-6111 Nevada Power Environment and Safety Services Department

Avoid cutting underground utility lines. It's costly. 2 working days **Call before you Dig** 1-800-227-2600 Underground Service Alert (USA)

(06475)

DEPARTMENT OF PUBLIC WORKS
CITY OF HENDERSON

REV	DATE	BY	REVISION

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STORM DRAIN PLAN AND PROFILE
SD STA. 33+05.33 TO SD STA. 40+30.00
MISSION DRIVE

PROJECT
MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS
PARADISE HILLS TO GREENWAY ROAD TO COLLEGE DRIVE

SEAL
PROFESSIONAL ENGINEER STATE OF NEVADA
JEFFREY W. HERRICK
EXP. 06/30/06
CIVIL
No. 10455

WO. NO.	6139
BY	LMW
	TMM
DATE	09/03/04
SCALE	HORIZ. 1"=40' VERT. 1"=4'
DRAWING	SD4
SHEET	OF SHEETS

(06475)

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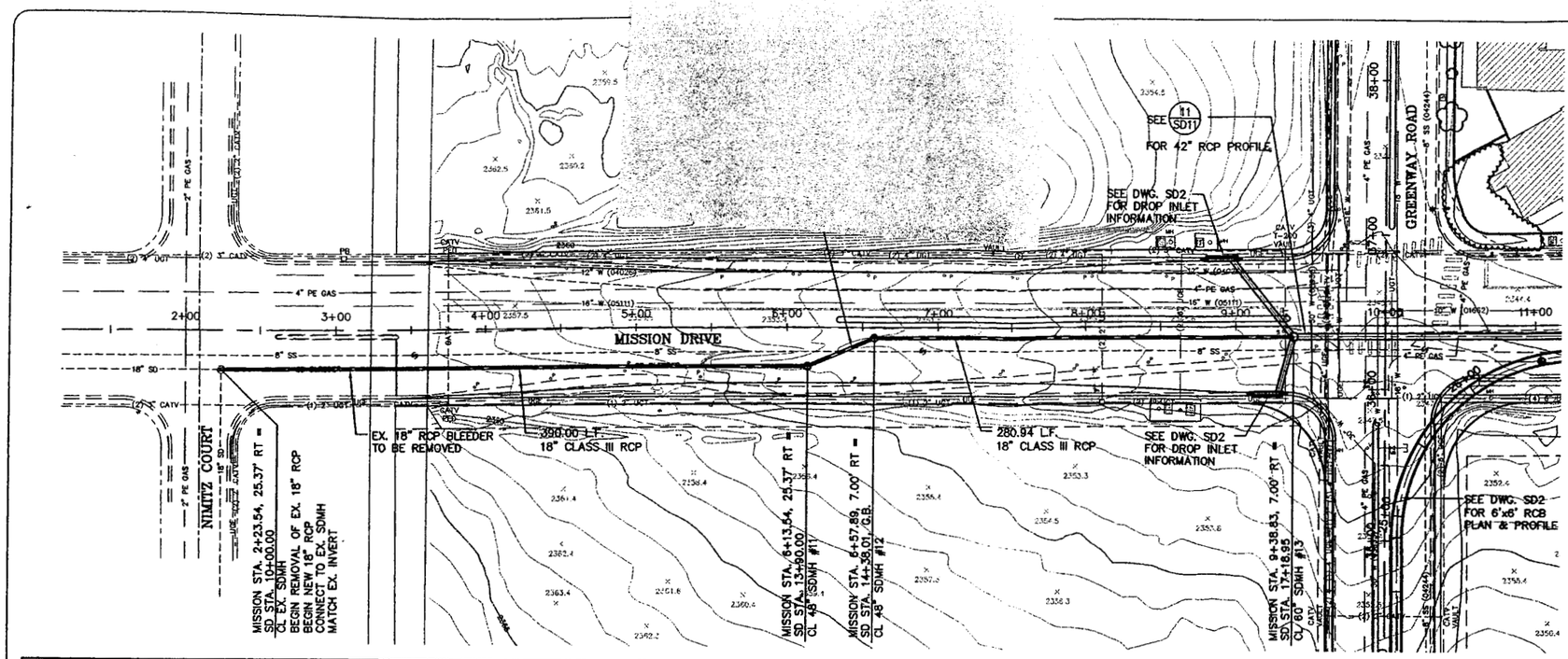

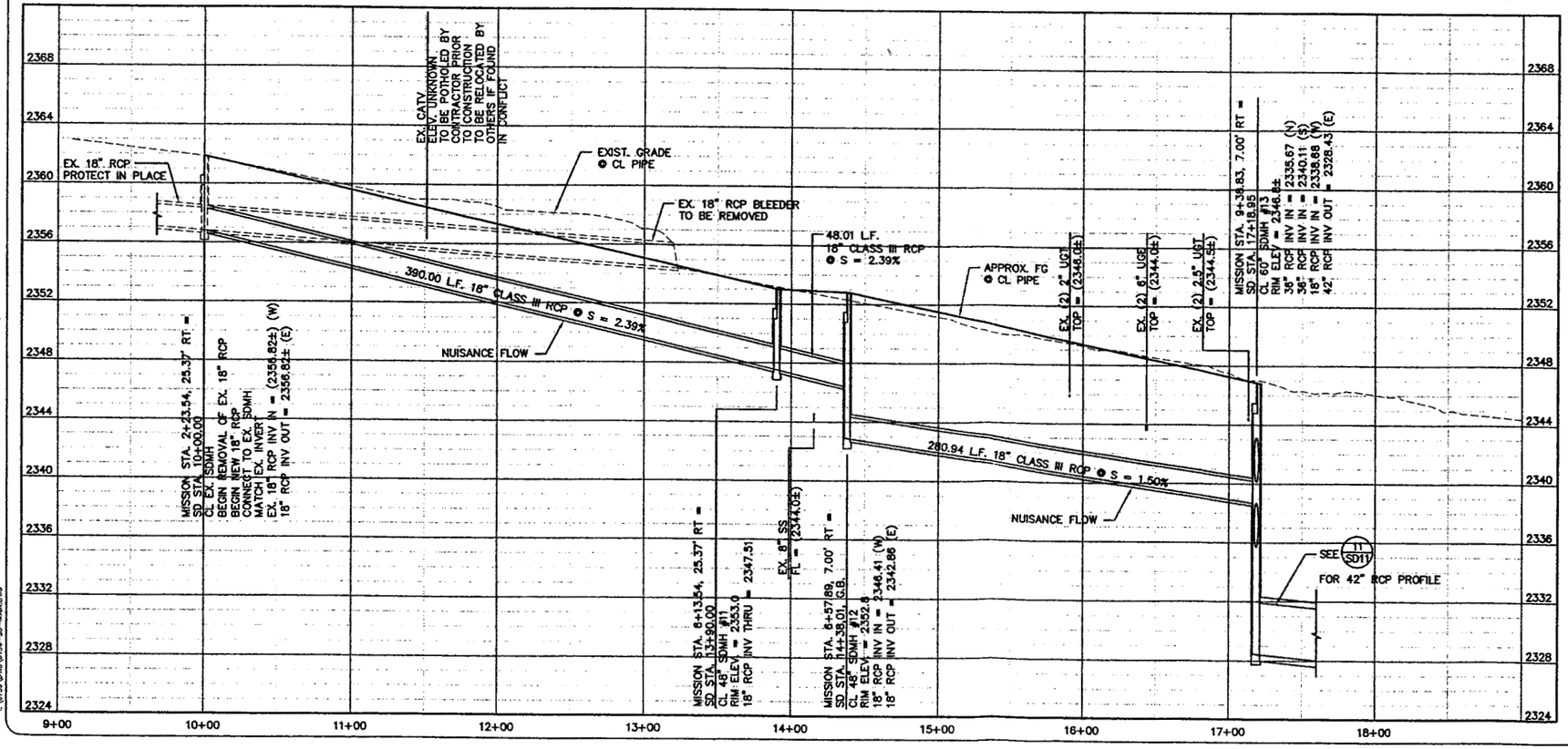

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NOTES

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5. SEE DRAWINGS D1 – D8 AND ST1 – ST6 FOR STORM DRAIN DETAILS.

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1-702-593-6111
Nevada Power Environment and Safety Services Department

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2 working days **Call** before you **Dig**
1-800-227-2600
Underground Service Alert (U.S.A.)
(06475)

DEPARTMENT OF PUBLIC WORKS
CITY OF HENDERSON

REV	DATE	BY	REVISION

CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS
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LAS VEGAS, NEVADA 89146-5148 PHONE (702) 873-7550 FAX (702) 362-2597

TITLE: STORM DRAIN PLAN AND PROFILE SD STA. 10+00.00 TO SD STA. 17+18.95 MISSION DRIVE

PROJECT: MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS PARADISE HILLS TO GREENWAY ROAD TO COLLEGE DRIVE

SEAL
PROFESSIONAL ENGINEER-STATE OF NEVADA
JEFFREY B. HERRICK
EXP. 09/30/05
CIVIL
No. 10455

WO. NO.	6139
BY	LMW
	TMM
DATE	09/03/04
SCALE HORIZ.	1"=40'
VERT.	1"=4'
DRAWING	SD5
SHEET	OF SHEETS

(06475)

I:\6139\DWG\6139-SD-MAIN.DWG

CARTER BURGESS POST-PROJECT HEC-RAS MODEL

(FROM FIS STUDY)

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: C-1 Channel System FIS Restudy -Reach 4
Project File : Reach4.prj
Run Date and Time: 10/25/2005 12:49:54 PM

Project in English units

Project Description:
Approximate Methods Hydraulics, Reach 4, d/s of Black Mtn Detention Basin and
Mission Hills Interceptor

****

PLAN DATA

Plan Title: Reach 4
Plan File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\carter burgess FIS\2.2.2.3 REACH 4\Reach4.p01

Geometry Title: C-1 FIS Restudy- Reach 4, Approx Methods
Geometry File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\carter burgess FIS\2.2.2.3 REACH 4\Reach4.g01

Flow Title : Reach 4
Flow File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\carter burgess FIS\2.2.2.3 REACH 4\Reach4.f03

Plan Summary Information:
Number of: Cross Sections = 25 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.003
Critical depth calculation tolerance = 0.003
Maximum number of iterations = 20
Maximum difference tolerance = 0.1
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: Reach 4
Flow File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\carter burgess FIS\2.2.2.3 REACH 4\Reach4.f03

Flow Data (cfs)

River	Reach	RS	PF 1
Reach 4	C1G2B1 TO C1G2B225		286
Reach 4	C1G2B1 TO C1G2B211		490
Reach 4	C1G2B1 TO C1G2B26		799

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Reach 4	C1G2B1 TO C1G2B2	PF 1	Normal S = 0.0312	Normal S = 0.0312

****

GEOMETRY DATA

Geometry Title: C-1 FIS Restudy- Reach 4, Approx Methods
Geometry File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\carter burgess FIS\2.2.2.3 REACH 4\Reach4.g01

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 25

INPUT
Description: Section Y-Y, Reach 4
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-100	2575	-58.63	2570.2	-50	2570.3	-25	2570.6	0	2570.8
25	2571.1	50	2571.4	75	2571.7	91.41	2571.9		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-100	.03	-100	.03	91.41	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-100 91.41 550 550 550 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2571.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.		0.030	
W.S. Elev (ft)	2571.34	Reach Len. (ft)	550.00	550.00	550.00
Crit W.S. (ft)	2571.34	Flow Area (sq ft)		65.83	
E.G. Slope (ft/ft)	*0.015979	Area (sq ft)		65.83	
Q Total (cfs)	286.00	Flow (cfs)		286.00	
Top Width (ft)	113.81	Top Width (ft)		113.81	
Vel Total (ft/s)	4.34	Avg. Vel. (ft/s)		4.34	
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)		0.58	
Conv. Total (cfs)	2262.5	Conv. (cfs)		2262.5	
Length Wtd. (ft)	550.00	Wetted Per. (ft)		113.88	
Min Ch El (ft)	2570.20	Shear (lb/sq ft)		0.58	
Alpha	1.00	Stream Power (lb/ft s)		2.51	

* Frctn Loss (ft)	*	9.23	* Cum Volume (acre-ft)	*	1.68	*	20.58	*	0.40	*
* C & E Loss (ft)	*	0.02	* Cum SA (acres)	*	10.76	*	34.34	*	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 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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 24

INPUT
Description: Section X-X, Reach 4
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-142.75	2554.9	-1402554.854		-125	2554.6	-100	2554.4	-75	2554.2
-50	2554	-25	2553.8	0	2553.8	25	2554.1	50	2554.4
75	2554.8	100	2555	107.52554.919		118.51	2554.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-142.75	.03	-140	.03	100	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-140 100 400 400 400 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2554.76	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.22	* Wt. n-Val.	*	* 0.030	* *
* W.S. Elev (ft)	* 2554.55	* Reach Len. (ft)	* 400.00	* 400.00	* 400.00 *
* Crit W.S. (ft)	* 2554.55	* Flow Area (sq ft)	*	* 76.29	* *
* E.G. Slope (ft/ft)	*0.017628	* Area (sq ft)	*	* 76.29	* *
* Q Total (cfs)	* 286.00	* Flow (cfs)	*	* 286.00	* *
* Top Width (ft)	* 177.26	* Top Width (ft)	*	* 177.26	* *
* Vel Total (ft/s)	* 3.75	* Avg. Vel. (ft/s)	*	* 3.75	* *
* Max Chl Dpth (ft)	* 0.75	* Hydr. Depth (ft)	*	* 0.43	* *
* Conv. Total (cfs)	* 2154.1	* Conv. (cfs)	*	* 2154.1	* *
* Length Wtd. (ft)	* 400.00	* Wetted Per. (ft)	*	* 177.27	* *
* Min Ch El (ft)	* 2553.80	* Shear (lb/sq ft)	*	* 0.47	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 1.78	* *
* Frctn Loss (ft)	* 7.17	* Cum Volume (acre-ft)	* 1.68	* 19.69	* 0.40 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 10.76	* 32.50	* 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 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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 23

INPUT
Description: Section W-W, Reach 4
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-151.31	2543.9	-150	2543.9	-125	2544.2	-100	2544.6	-75	2545
-50	2544.7	-25	2544.5	0	2544.3	25	2544.1	50	2544.1
75	2544.1	100	2544.1	125	2544.4	150	2544.6	153.52	2544.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-151.31	.03	-75	.03	150	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-75 150 300 300 300 .1 .3
Blocked Obstructions num= 1

Sta L	Sta R	Elev
-151.31	-75	2545

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2544.88	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.20	* Wt. n-Val.	*	* 0.030	* 0.030 *
* W.S. Elev (ft)	* 2544.68	* Reach Len. (ft)	* 300.00	* 300.00	* 300.00 *
* Crit W.S. (ft)	* 2544.68	* Flow Area (sq ft)	*	* 78.79	* 0.10 *
* E.G. Slope (ft/ft)	*0.018204	* Area (sq ft)	*	* 78.79	* 0.10 *
* Q Total (cfs)	* 286.00	* Flow (cfs)	*	* 285.93	* 0.07 *
* Top Width (ft)	* 199.53	* Top Width (ft)	*	* 196.89	* 2.64 *
* Vel Total (ft/s)	* 3.63	* Avg. Vel. (ft/s)	*	* 3.63	* 0.75 *
* Max Chl Dpth (ft)	* 0.57	* Hydr. Depth (ft)	*	* 0.40	* 0.04 *
* Conv. Total (cfs)	* 2119.7	* Conv. (cfs)	*	* 2119.2	* 0.5 *
* Length Wtd. (ft)	* 300.00	* Wetted Per. (ft)	*	* 196.89	* 2.64 *
* Min Ch El (ft)	* 2544.10	* Shear (lb/sq ft)	*	* 0.45	* 0.04 *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 1.65	* 0.03 *
* Frctn Loss (ft)	* 5.47	* Cum Volume (acre-ft)	* 1.68	* 18.97	* 0.40 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 10.76	* 30.78	* 0.64 *

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 22

INPUT
Description: Section V-V, Reach 4
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-167.27	2534.9	-150	2535	-125	2535.1	-100	2535.3	-75	2535.1
-50	2534.9	-25	2534.7	0	2534.5	25	2534.3	50	2534.1

```
      75  2534.3     100  2534.5     125  2534.7     150    2535  167.27  2535.3

Manning's n Values         num=       3
      Sta   n Val      Sta   n Val      Sta   n Val
*****************************************************
 -167.27      .03    -100      .03     150      .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -100     150             333     386     355             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2535.10  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.21  * Wt. n-Val.             *          *    0.030  *          *
* W.S. Elev (ft)          * 2534.89  * Reach Len. (ft)        *  333.00  *  386.00  *  355.00  *
* Crit W.S. (ft)          * 2534.89  * Flow Area (sq ft)      *          *   77.56  *          *
* E.G. Slope (ft/ft)      *0.018293  * Area (sq ft)           *          *   77.56  *          *
* Q Total (cfs)           *  286.00  * Flow (cfs)            *          *  286.00  *          *
* Top Width (ft)          *  189.93  * Top Width (ft)        *          *  189.93  *          *
* Vel Total (ft/s)        *    3.69  * Avg. Vel. (ft/s)      *          *    3.69  *          *
* Max Chl Dpth (ft)       *    0.79  * Hydr. Depth (ft)      *          *    0.41  *          *
* Conv. Total (cfs)       *  2114.6  * Conv. (cfs)           *          *  2114.6  *          *
* Length Wtd. (ft)        *  386.00  * Wetted Per. (ft)      *          *  189.94  *          *
* Min Ch El (ft)          * 2534.10  * Shear (lb/sq ft)      *          *    0.47  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    1.72  *          *
* Frctn Loss (ft)         *    7.15  * Cum Volume (acre-ft)   *    1.68  *   18.44  *    0.40  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *   10.76  *   29.45  *    0.63  *
*************************************************************************************************

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: Reach 4
REACH: C1G2B1 TO C1G2B2   RS: 21

INPUT
Description: Section U-U, Reach 4
Station Elevation Data    num=      20
      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
*************************************************************************************
     -225    2525 -218.91    2525    -200  2524.8    -175  2524.5    -150  2524.2
     -125    2524    -100    2524     -75    2524     -50  2523.9     -25  2523.8
        0  2523.8      25    2524      50  2524.4      75  2524.6     100  2524.7
    109.4  2524.7     125  2524.7     150  2524.7     175  2524.7   184.2  2524.7

Manning's n Values         num=       3
      Sta   n Val      Sta   n Val      Sta   n Val
*****************************************************
     -225      .03    -225      .03     100      .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -225     100             300     400     450             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2524.57  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.20  * Wt. n-Val.             *          *    0.030  *          *
* W.S. Elev (ft)          * 2524.37  * Reach Len. (ft)        *  300.00  *  400.00  *  450.00  *
* Crit W.S. (ft)          * 2524.37  * Flow Area (sq ft)      *          *   80.52  *          *
* E.G. Slope (ft/ft)      *0.018756  * Area (sq ft)           *          *   80.52  *          *
* Q Total (cfs)           *  286.00  * Flow (cfs)            *          *  286.00  *          *
* Top Width (ft)          *  212.49  * Top Width (ft)        *          *  212.49  *          *
* Vel Total (ft/s)        *    3.55  * Avg. Vel. (ft/s)      *          *    3.55  *          *
* Max Chl Dpth (ft)       *    0.57  * Hydr. Depth (ft)      *          *    0.38  *          *
* Conv. Total (cfs)       *  2088.3  * Conv. (cfs)           *          *  2088.3  *          *
* Length Wtd. (ft)        *  400.00  * Wetted Per. (ft)      *          *  212.50  *          *
* Min Ch El (ft)          * 2523.80  * Shear (lb/sq ft)      *          *    0.44  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    1.58  *          *
* Frctn Loss (ft)         *    7.33  * Cum Volume (acre-ft)   *    1.68  *   17.74  *    0.40  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *   10.76  *   27.67  *    0.63  *
*************************************************************************************************

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: Reach 4
REACH: C1G2B1 TO C1G2B2   RS: 20

INPUT
Description: Section T-T, Reach 4
Station Elevation Data    num=      25
      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
*************************************************************************************
 -352.59  2515.1    -350  2515.1    -325  2514.9    -300  2514.7    -275  2514.5
    -250  2514.2    -225  2513.8    -200  2513.4    -175  2513.1    -150  2512.7
    -125  2512.3    -100  2511.8     -75  2511.2     -50  2510.6     -25    2510
       0  2509.9      25  2509.9      50  2510.1      75  2510.1     100    2510
     125    2510     150  2510.2     175  2514.3     200    2515  221.15    2515

Manning's n Values         num=       3
      Sta   n Val      Sta   n Val      Sta   n Val
*****************************************************
 -352.59      .03    -350      .03     200      .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -350     200             700     500     400             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2510.65  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.20  * Wt. n-Val.             *          *    0.030  *          *
* W.S. Elev (ft)          * 2510.44  * Reach Len. (ft)        *  700.00  *  500.00  *  400.00  *
* Crit W.S. (ft)          * 2510.44  * Flow Area (sq ft)      *          *   78.89  *          *
* E.G. Slope (ft/ft)      *0.017889  * Area (sq ft)           *          *   78.89  *          *
* Q Total (cfs)           *  286.00  * Flow (cfs)            *          *  286.00  *          *
* Top Width (ft)          *  194.84  * Top Width (ft)        *          *  194.84  *          *
* Vel Total (ft/s)        *    3.63  * Avg. Vel. (ft/s)      *          *    3.63  *          *
* Max Chl Dpth (ft)       *    0.54  * Hydr. Depth (ft)      *          *    0.40  *          *
* Conv. Total (cfs)       *  2138.3  * Conv. (cfs)           *          *  2138.3  *          *
* Length Wtd. (ft)        *  522.84  * Wetted Per. (ft)      *          *  194.86  *          *
* Min Ch El (ft)          * 2509.90  * Shear (lb/sq ft)      *          *    0.45  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    1.64  *          *
* Frctn Loss (ft)         *    5.16  * Cum Volume (acre-ft)   *    1.68  *   17.00  *    0.40  *
```

* C & E Loss (ft)	* 0.03	* Cum SA (acres)	* 10.76	* 25.80	* 0.63	*

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 19

INPUT
Description: Section S-S, Reach 4
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-720	2485	-500	2487	-207.87	2493.4	-200	2493.5	-175	2493.9
-150	2494.1	-125	2494.3	-100	2494.5	-75	2494.7	-50	2494.8
-25	2494.6	0	2494.3	25	2493.9	50	2493.9	75	2494.6
100	2495.2	125	2497.4	150	2499.8	175	2500	200	2500
207.87	2500	245	2495	410	2500	440	2510		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-720	.03	-50	.03	200	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-50	200	400	409	430 .1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
-720	-50	2494.8

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2495.00	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.09	* Wt. n-Val.	* 0.030	* 0.030	*	*
* W.S. Elev (ft)	* 2494.91	* Reach Len. (ft)	* 400.00	* 409.00	* 430.00	*
* Crit W.S. (ft)	* 2494.91	* Flow Area (sq ft)	* 73.12	* 80.64	*	*
* E.G. Slope (ft/ft)	*0.006242	* Area (sq ft)	* 73.12	* 80.64	*	*
* Q Total (cfs)	* 286.00	* Flow (cfs)	* 65.34	* 220.66	*	*
* Top Width (ft)	* 807.88	* Top Width (ft)	* 670.00	* 137.88	*	*
* Vel Total (ft/s)	* 1.86	* Avg. Vel. (ft/s)	* 0.89	* 2.74	*	*
* Max Chl Dpth (ft)	* 1.01	* Hydr. Depth (ft)	* 0.11	* 0.58	*	*
* Conv. Total (cfs)	* 3619.9	* Conv. (cfs)	* 827.0	* 2792.9	*	*
* Length Wtd. (ft)	* 407.97	* Wetted Per. (ft)	* 670.11	* 137.90	*	*
* Min Ch El (ft)	* 2493.90	* Shear (lb/sq ft)	* 0.04	* 0.23	*	*
* Alpha	* 1.72	* Stream Power (lb/ft s)	* 0.04	* 0.62	*	*
* Frctn Loss (ft)	* 3.85	* Cum Volume (acre-ft)	* 1.10	* 16.09	* 0.40	*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 5.37	* 23.89	* 0.63	*

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 18

INPUT
Description: Section R-R, Reach 4
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-200	2481	-50	2480	0	2479.7	120	2477.4	220	2480
300	2487								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-200	.03	-200	.03	300	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-200	300	400	399	400 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2478.90	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.30	* Wt. n-Val.	*	* 0.030	*	*
* W.S. Elev (ft)	* 2478.59	* Reach Len. (ft)	* 400.00	* 399.00	* 400.00	*
* Crit W.S. (ft)	* 2478.59	* Flow Area (sq ft)	*	* 64.56	*	*
* E.G. Slope (ft/ft)	*0.015925	* Area (sq ft)	*	* 64.56	*	*
* Q Total (cfs)	* 286.00	* Flow (cfs)	*	* 286.00	*	*
* Top Width (ft)	* 108.18	* Top Width (ft)	*	* 108.18	*	*
* Vel Total (ft/s)	* 4.43	* Avg. Vel. (ft/s)	*	* 4.43	*	*
* Max Chl Dpth (ft)	* 1.19	* Hydr. Depth (ft)	*	* 0.60	*	*
* Conv. Total (cfs)	* 2266.4	* Conv. (cfs)	*	* 2266.4	*	*
* Length Wtd. (ft)	* 399.06	* Wetted Per. (ft)	*	* 108.21	*	*
* Min Ch El (ft)	* 2477.40	* Shear (lb/sq ft)	*	* 0.59	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 2.63	*	*
* Frctn Loss (ft)	* 5.97	* Cum Volume (acre-ft)	* 0.76	* 15.41	* 0.40	*
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 2.30	* 22.73	* 0.63	*

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 17

INPUT
Description: Section Q-Q, Reach 4

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-390	2465.9	-175.71	2465.3	-175	2465.3	-150	2465.6	-125	2465.7
-100	2465.4	-75	2465.2	-50	2465	-25	2465	0	2465
25	2465	50	2465.8	75	2466.6	100	2468.6	125	2468.1
150	2468.6	175	2469	175.71	2469				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-390	.03	-125	.03	175	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-125 175 400 431 528 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2465.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.030	0.030	
W.S. Elev (ft)	2465.60	Reach Len. (ft)	400.00	431.00	528.00
Crit W.S. (ft)	2465.60	Flow Area (sq ft)	20.37	72.70	
E.G. Slope (ft/ft)	*0.014097	Area (sq ft)	20.37	72.70	
Q Total (cfs)	286.00	Flow (cfs)	34.06	251.94	
Top Width (ft)	295.09	Top Width (ft)	134.38	160.71	
Vel Total (ft/s)	3.07	Avg. Vel. (ft/s)	1.67	3.47	
Max Chl Dpth (ft)	0.60	Hydr. Depth (ft)	0.15	0.45	
Conv. Total (cfs)	2408.8	Conv. (cfs)	286.9	2122.0	
Length Wtd. (ft)	429.15	Wetted Per. (ft)	134.38	160.72	
Min Ch El (ft)	2465.00	Shear (lb/sq ft)	0.13	0.40	
Alpha	1.16	Stream Power (lb/ft s)	0.22	1.38	
Frctn Loss (ft)	6.42	Cum Volume (acre-ft)	0.67	14.78	0.40
C & E Loss (ft)	0.01	Cum SA (acres)	1.68	21.50	0.63

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

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 16

INPUT
Description: Section P-P, Reach
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-208.12	2453.8	-200	2453.8	-175	2453.8	-150	2453.6	-125	2453.5
-100	2452.9	-75	2452.4	-50	2452.1	-25	2452.3	0	2453
25	2453.8	50	2454.4	75	2454.7	100	2454.7	125	2454.8
150	2454.9	175	2455	200	2455	208.12	2455.3		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-208.12	.03	-200	.03	200	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-200 200 440 414 400 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2453.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.		0.030	
W.S. Elev (ft)	2453.08	Reach Len. (ft)	440.00	414.00	400.00
Crit W.S. (ft)	2453.08	Flow Area (sq ft)		64.98	
E.G. Slope (ft/ft)	*0.015929	Area (sq ft)		64.98	
Q Total (cfs)	286.00	Flow (cfs)		286.00	
Top Width (ft)	109.97	Top Width (ft)		109.97	
Vel Total (ft/s)	4.40	Avg. Vel. (ft/s)		4.40	
Max Chl Dpth (ft)	0.98	Hydr. Depth (ft)		0.59	
Conv. Total (cfs)	2266.0	Conv. (cfs)		2266.0	
Length Wtd. (ft)	414.00	Wetted Per. (ft)		109.99	
Min Ch El (ft)	2452.10	Shear (lb/sq ft)		0.59	
Alpha	1.00	Stream Power (lb/ft s)		2.59	
Frctn Loss (ft)	6.79	Cum Volume (acre-ft)	0.57	14.10	0.40
C & E Loss (ft)	0.02	Cum SA (acres)	1.06	20.16	0.63

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 15

INPUT
Description: Section O-O, Reach 4
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-550	2440.7	-538.07	2440.7	-525	2440.5	-500	2440.1	-475	2440
-450	2440	-425	2440	-400	2440	-375	2440.7	-350	2441.6
-325	2442	-300	2442.1	-275	2442.5	-250	2442.8	-225	2443.2
-200	2443.5	-175	2443.6	-150	2443.5	-125	2443.5	-100	2443.5
-75	2444	-50	2444.6	-25	2445	0	2445.2	25	2445.8
50	2446.4	75	2447	100	2447.4	125	2447.5	150	2447.5
175	2447.7	200	2447.9	225	2448.1	250	2448.5	275	2448.8
300	2448.7	325	2448.8	350	2448.9	375	2449.2	400	2449.5
425	2449.8	428.39	2449.8	481.7	2449.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-550	.03	-550	.03	400	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-550 400 250 561 650 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2440.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.		0.030	
W.S. Elev (ft)	2440.60	Reach Len. (ft)	250.00	561.00	650.00

* Crit W.S. (ft)	* 2440.60	* Flow Area (sq ft)	*		*	72.79	*		*		*
* E.G. Slope (ft/ft)	*0.016917	* Area (sq ft)	*		*	72.79	*		*		*
* Q Total (cfs)	* 286.00	* Flow (cfs)	*		*	286.00	*		*		*
* Top Width (ft)	* 152.83	* Top Width (ft)	*		*	152.83	*		*		*
* Vel Total (ft/s)	* 3.93	* Avg. Vel. (ft/s)	*		*	3.93	*		*		*
* Max Chl Dpth (ft)	* 0.60	* Hydr. Depth (ft)	*		*	0.48	*		*		*
* Conv. Total (cfs)	* 2198.9	* Conv. (cfs)	*		*	2198.9	*		*		*
* Length Wtd. (ft)	* 561.00	* Wetted Per. (ft)	*		*	152.84	*		*		*
* Min Ch El (ft)	* 2440.00	* Shear (lb/sq ft)	*		*	0.50	*		*		*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	1.98	*		*		*
* Frctn Loss (ft)	* 9.91	* Cum Volume (acre-ft)	*	0.57	*	13.44	*	0.40	*		*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	1.06	*	18.91	*	0.63	*		*

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 14

INPUT
Description: Section N-N, Reach 4
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-542.98	2434.2	-525	2433.9	-500	2433.5	-475	2432.8	-450	2432
-425	2431.2	-400	2430.4	-375	2430	-350	2430	-325	2429.7
-300	2429.8	-275	2430	-250	2430.3	-225	2430.5	-200	2430.7
-175	2430.9	-150	2431	-125	2431	-100	2430.9	-75	2430.7
-50	2430.6	-25	2430.4	0	2430.2	25	2430.5	50	2430.6
75	2430.7	100	2431	125	2431.4	150	2431.6	175	2431.7
200	2431.5	225	2431.2	250	2430.8	275	2431.3	300	2433.3
325	2435	350	2435.3	375	2436.1	400	2436.9	425	2437.3
449.25	2436.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-542.98	.03	-542.98	.03	425	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-542.98	425	700	397	370	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2430.65	* Element	*	Left OB	*	Channel	*	Right OB	*		*
* Vel Head (ft)	* 0.18	* Wt. n-Val.	*		*	0.030	*		*		*
* W.S. Elev (ft)	* 2430.47	* Reach Len. (ft)	*	700.00	*	397.00	*	370.00	*		*
* Crit W.S. (ft)	* 2430.47	* Flow Area (sq ft)	*		*	83.39	*		*		*
* E.G. Slope (ft/ft)	*0.018458	* Area (sq ft)	*		*	83.39	*		*		*
* Q Total (cfs)	* 286.00	* Flow (cfs)	*		*	286.00	*		*		*
* Top Width (ft)	* 229.15	* Top Width (ft)	*		*	229.15	*		*		*
* Vel Total (ft/s)	* 3.43	* Avg. Vel. (ft/s)	*		*	3.43	*		*		*
* Max Chl Dpth (ft)	* 0.77	* Hydr. Depth (ft)	*		*	0.36	*		*		*
* Conv. Total (cfs)	* 2105.1	* Conv. (cfs)	*		*	2105.1	*		*		*
* Length Wtd. (ft)	* 397.00	* Wetted Per. (ft)	*		*	229.16	*		*		*
* Min Ch El (ft)	* 2429.70	* Shear (lb/sq ft)	*		*	0.42	*		*		*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	1.44	*		*		*
* Frctn Loss (ft)	* 6.80	* Cum Volume (acre-ft)	*	0.57	*	12.44	*	0.40	*		*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	*	1.06	*	16.45	*	0.63	*		*

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

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 13

INPUT
Description: Section M-M, Reach 4
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-389.72	2411.2	-375	2411.3	-350	2411	-325	2410.5	-300	2410
-275	2410	-250	2410	-225	2410.8	-200	2411.9	-175	2412.7
-150	2413.5	-125	2414	-100	2414.4	-75	2414.5	-50	2414.6
-25	2414.4	0	2414.5	25	2414.4	50	2414.6	75	2414.6
100	2414.6	125	2415	150	2415.7	175	2417.1	200	2418.7
225	2420.1	250	2420.8	275	2421.2	300	2421.3	325	2421
350	2420.6	375	2420.1	389.72	2419.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-389.72	.03	-375	.03	300	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-375	300	368	410	454	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2411.09	* Element	*	Left OB	*	Channel	*	Right OB	*		*
* Vel Head (ft)	* 0.29	* Wt. n-Val.	*		*	0.030	*		*		*
* W.S. Elev (ft)	* 2410.80	* Reach Len. (ft)	*	368.00	*	410.00	*	454.00	*		*
* Crit W.S. (ft)	* 2410.80	* Flow Area (sq ft)	*		*	66.15	*		*		*
* E.G. Slope (ft/ft)	*0.015952	* Area (sq ft)	*		*	66.15	*		*		*
* Q Total (cfs)	* 286.00	* Flow (cfs)	*		*	286.00	*		*		*
* Top Width (ft)	* 115.09	* Top Width (ft)	*		*	115.09	*		*		*
* Vel Total (ft/s)	* 4.32	* Avg. Vel. (ft/s)	*		*	4.32	*		*		*
* Max Chl Dpth (ft)	* 0.80	* Hydr. Depth (ft)	*		*	0.57	*		*		*
* Conv. Total (cfs)	* 2264.4	* Conv. (cfs)	*		*	2264.4	*		*		*
* Length Wtd. (ft)	* 410.00	* Wetted Per. (ft)	*		*	115.11	*		*		*
* Min Ch El (ft)	* 2410.00	* Shear (lb/sq ft)	*		*	0.57	*		*		*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		*	2.47	*		*		*
* Frctn Loss (ft)	* 7.19	* Cum Volume (acre-ft)	*	0.57	*	11.75	*	0.40	*		*
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	*	1.06	*	14.88	*	0.63	*		*

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 12

INPUT
Description: Section L-L, Reach 4
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-550	2400	-530	2400	-364.06	2398.7	-350	2398.8	-325	2398.7
-300	2398.7	-275	2398.7	-250	2398.6	-225	2398.6	-200	2398.7
-175	2398.8	-150	2399	-125	2399.4	-100	2399.7	-75	2399.9
-50	2400	-25	2400	0	2400	25	2399.9	50	2399.9
75	2399.8	100	2399.5	125	2399.6	150	2399.8	175	2400
200	2401.1	225	2401.2	250	2400	275	2400	300	2400
325	2400.1	350	2401.3	360.92	401.765	364.06	2401.9		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-550	.03	-550	.03	364.06	.03

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
-550	364.06	519	440	373	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2399.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.030	
W.S. Elev (ft)	2399.08	Reach Len. (ft)	519.00	440.00	373.00
Crit W.S. (ft)	2399.08	Flow Area (sq ft)		87.45	
E.G. Slope (ft/ft)	0.019361	Area (sq ft)		87.45	
Q Total (cfs)	286.00	Flow (cfs)		286.00	
Top Width (ft)	267.49	Top Width (ft)		267.49	
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)		3.27	
Max Chl Dpth (ft)	0.48	Hydr. Depth (ft)		0.33	
Conv. Total (cfs)	2055.4	Conv. (cfs)		2055.4	
Length Wtd. (ft)	440.00	Wetted Per. (ft)		267.50	
Min Ch El (ft)	2398.60	Shear (lb/sq ft)		0.40	
Alpha	1.00	Stream Power (lb/ft s)		1.29	
Frctn Loss (ft)	7.54	Cum Volume (acre-ft)	0.57	11.03	0.40
C & E Loss (ft)	0.01	Cum SA (acres)	1.06	13.08	0.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 11

INPUT
Description: Section K-K, Reach 4
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-287.72	2383.7	-275	2383.4	-250	2383.9	-225	2384.2	-200	2384.2
-175	2384.1	-150	2383.8	-125	2383.8	-100	2383.6	-75	2383.2
-50	2383	-25	2383.1	0	2383.4	25	2383.9	50	2384.6
75	2385	100	2387.8	125	2390.3	150	2391.3	175	2391.6
200	2391.9	225	2391.8	250	2390.7	275	2390	287.72	2389.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-287.72	.03	-200	.03	200	.03

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
-200	200	388	420	460	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
-287.72	-200	

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2384.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.		0.030	
W.S. Elev (ft)	2384.06	Reach Len. (ft)	388.00	420.00	460.00
Crit W.S. (ft)	2384.06	Flow Area (sq ft)		114.29	
E.G. Slope (ft/ft)	0.016006	Area (sq ft)		114.29	
Q Total (cfs)	490.00	Flow (cfs)		490.00	
Top Width (ft)	201.95	Top Width (ft)		201.95	
Vel Total (ft/s)	4.29	Avg. Vel. (ft/s)		4.29	
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)		0.57	
Conv. Total (cfs)	3873.1	Conv. (cfs)		3873.1	
Length Wtd. (ft)	420.00	Wetted Per. (ft)		201.96	
Min Ch El (ft)	2383.00	Shear (lb/sq ft)		0.57	
Alpha	1.00	Stream Power (lb/ft s)		2.42	
Frctn Loss (ft)	6.50	Cum Volume (acre-ft)	0.57	10.01	0.40
C & E Loss (ft)	0.01	Cum SA (acres)	1.06	10.71	0.63

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 10

INPUT
Description: Section J-J, Reach 4
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-269.77	2371.2	-250	2371.7	-225	2371.9	-200	2372.1	-175	2372
-150	2371	-125	2371.4	-100	2370.7	-75	2370	-50	2370

-25	2370.8	0	2371.5	25	2373	50	2375.4	75	2377.8
100	2379.7	125	2380	150	2380	175	2378.9	200	2377.3
225	2375.7	250	2372.9	269.77	2371	380	2370	450	2370
470	2365	500	2365	550	2368.4	600	2365	650	2367
700	2365								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-269.77	.03	-200	.03	150	.03

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
-200	150		420	413	450	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
-269.77	-200		125	700	

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2371.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.		0.030	
W.S. Elev (ft)	2371.37	Reach Len. (ft)	420.00	413.00	450.00
Crit W.S. (ft)	2371.37	Flow Area (sq ft)		104.05	
E.G. Slope (ft/ft)	0.014980	Area (sq ft)		104.05	
Q Total (cfs)	490.00	Flow (cfs)		490.00	
Top Width (ft)	151.92	Top Width (ft)		151.92	
Vel Total (ft/s)	4.71	Avg. Vel. (ft/s)		4.71	
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)		0.68	
Conv. Total (cfs)	4003.4	Conv. (cfs)		4003.4	
Length Wtd. (ft)	413.00	Wetted Per. (ft)		151.97	
Min Ch El (ft)	2370.00	Shear (lb/sq ft)		0.64	
Alpha	1.00	Stream Power (lb/ft s)		3.02	
Frctn Loss (ft)	5.79	Cum Volume (acre-ft)	0.57	8.96	0.40
C & E Loss (ft)	0.02	Cum SA (acres)	1.06	9.01	0.63

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

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 9

INPUT
Description: Section I-I, Reach 4
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-294.68	2359.5	-275	2359.7	-250	2359.9	-225	2359.9	-200	2359.9
-175	2359.2	-150	2358.8	-125	2359	-100	2359.2	-75	2359.5
-50	2360	-25	2360.7	0	2361.3	25	2361.5	50	2361.1
75	2360.7	100	2360.3	125	2357.2	150	2355.2	175	2355
200	2354.3	225	2352.9	250	2353.3	275	2355.9	294.68	2357.1
400	2360	480	2360.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-294.68	.03	25	.03	294.68	.03

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
25	294.68		350	403	447	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2355.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.		0.030	
W.S. Elev (ft)	2354.75	Reach Len. (ft)	350.00	403.00	447.00
Crit W.S. (ft)	2354.75	Flow Area (sq ft)		83.74	
E.G. Slope (ft/ft)	0.013162	Area (sq ft)		83.74	
Q Total (cfs)	490.00	Flow (cfs)		490.00	
Top Width (ft)	80.02	Top Width (ft)		80.02	
Vel Total (ft/s)	5.85	Avg. Vel. (ft/s)		5.85	
Max Chl Dpth (ft)	1.85	Hydr. Depth (ft)		1.05	
Conv. Total (cfs)	4271.1	Conv. (cfs)		4271.1	
Length Wtd. (ft)	403.00	Wetted Per. (ft)		80.15	
Min Ch El (ft)	2352.90	Shear (lb/sq ft)		0.86	
Alpha	1.00	Stream Power (lb/ft s)		5.02	
Frctn Loss (ft)	5.08	Cum Volume (acre-ft)	0.57	8.07	0.40
C & E Loss (ft)	0.02	Cum SA (acres)	1.06	7.91	0.63

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 8

INPUT
Description: Section H-H, Reach 4
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-305.16	2354.4	-300	2354.3	-275	2354	-250	2353.5	-225	2352.9
-200	2352.3	-175	2351.5	-150	2350.5	-125	2349.6	-100	2348.1
-75	2345.4	-50	2346.1	-25	2346.5	0	2346.6	25	2346.7
50	2346.1	75	2345.4	100	2345	125	2345	150	2344.5
175	2341.4	200	2341.9	225	2345	250	2345	275	2345
300	2345.6	304.82	2345.693	305.16	2345.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-305.16	.03	-300	.03	300	.03

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
-300	300		412	397	383	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2344.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.030	

* W.S. Elev (ft)	* 2343.49	* Reach Len. (ft)	* 412.00	* 397.00	* 383.00	*	
* Crit W.S. (ft)	* 2343.49	* Flow Area (sq ft)	*	* 73.88	*	*	
* E.G. Slope (ft/ft)	*0.012078	* Area (sq ft)	*	* 73.88	*	*	
* Q Total (cfs)	* 490.00	* Flow (cfs)	*	* 490.00	*	*	
* Top Width (ft)	* 54.70	* Top Width (ft)	*	* 54.70	*	*	
* Vel Total (ft/s)	* 6.63	* Avg. Vel. (ft/s)	*	* 6.63	*	*	
* Max Chl Dpth (ft)	* 2.09	* Hydr. Depth (ft)	*	* 1.35	*	*	
* Conv. Total (cfs)	* 4458.5	* Conv. (cfs)	*	* 4458.5	*	*	
* Length Wtd. (ft)	* 397.00	* Wetted Per. (ft)	*	* 54.93	*	*	
* Min Ch El (ft)	* 2341.40	* Shear (lb/sq ft)	*	* 1.01	*	*	
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 6.73	*	*	
* Frctn Loss (ft)	* 4.95	* Cum Volume (acre-ft)	* 0.57	* 7.34	* 0.40	*	
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 1.06	* 7.28	* 0.63	*	

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 7

INPUT
Description: Section G-G, Reach 4
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-292.18	2343.5	-275	2342.7	-250	2341.3	-225	2339.6	-200	2335.7
-175	2335	-150	2335	-125	2335	-100	2335	-75	2335
-50	2335	-25	2335.2	0	2335.9	25	2336	50	2336.2
75	2336.3	100	2336.2	125	2336	150	2335.5	175	2335
200	2332.7	225	2331.6	250	2330.7	275	2332.1	292.18	2334.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-292.18	.03	-275	.03	292.18	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-275	292.18	422	411	404	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2333.20	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (ft)	* 0.54	* Wt. n-Val.	*	* 0.030 *	*
* W.S. Elev (ft)	* 2332.66	* Reach Len. (ft)	* 422.00	* 411.00 *	404.00 *
* Crit W.S. (ft)	* 2332.66	* Flow Area (sq ft)	*	* 83.33 *	*
* E.G. Slope (ft/ft)	*0.012883	* Area (sq ft)	*	* 83.33 *	*
* Q Total (cfs)	* 490.00	* Flow (cfs)	*	* 490.00 *	*
* Top Width (ft)	* 77.77	* Top Width (ft)	*	* 77.77 *	*
* Vel Total (ft/s)	* 5.88	* Avg. Vel. (ft/s)	*	* 5.88 *	*
* Max Chl Dpth (ft)	* 1.96	* Hydr. Depth (ft)	*	* 1.07 *	*
* Conv. Total (cfs)	* 4317.1	* Conv. (cfs)	*	* 4317.1 *	*
* Length Wtd. (ft)	* 411.00	* Wetted Per. (ft)	*	* 77.90 *	*
* Min Ch El (ft)	* 2330.70	* Shear (lb/sq ft)	*	* 0.86 *	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 5.06 *	*
* Frctn Loss (ft)	* 5.24	* Cum Volume (acre-ft)	* 0.57	* 6.62 *	0.40 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 1.06	* 6.68 *	0.63 *

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 6

INPUT
Description: Section F-F, Reach 4
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-258.62	2326.7	-250	2326.1	-225	2324.9	-200	2322.4	-175	2322.4
-150	2323.5	-125	2325	-100	2325	-75	2325	-50	2324.5
-25	2324.1	0	2324	25	2324.4	50	2324.9	75	2325
100	2325	125	2322.8	150	2320	175	2321	200	2323.5
225	2326.2	250	2329.4	258.62	2330	300	2332.7	370	2330

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-258.62	.03	-250	.03	250	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-250	250	350	414	470	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2323.47	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (ft)	* 0.60	* Wt. n-Val.	*	* 0.030 *	*
* W.S. Elev (ft)	* 2322.87	* Reach Len. (ft)	* 350.00	* 414.00 *	470.00 *
* Crit W.S. (ft)	* 2322.87	* Flow Area (sq ft)	*	* 129.00 *	*
* E.G. Slope (ft/ft)	*0.012682	* Area (sq ft)	*	* 129.00 *	*
* Q Total (cfs)	* 799.00	* Flow (cfs)	*	* 799.00 *	*
* Top Width (ft)	* 109.94	* Top Width (ft)	*	* 109.94 *	*
* Vel Total (ft/s)	* 6.19	* Avg. Vel. (ft/s)	*	* 6.19 *	*
* Max Chl Dpth (ft)	* 2.87	* Hydr. Depth (ft)	*	* 1.17 *	*
* Conv. Total (cfs)	* 7095.0	* Conv. (cfs)	*	* 7095.0 *	*
* Length Wtd. (ft)	* 414.00	* Wetted Per. (ft)	*	* 110.24 *	*
* Min Ch El (ft)	* 2320.00	* Shear (lb/sq ft)	*	* 0.93 *	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 5.74 *	*
* Frctn Loss (ft)	* 5.13	* Cum Volume (acre-ft)	* 0.57	* 5.62 *	0.40 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 1.06	* 5.80 *	0.63 *

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

CROSS SECTION

RIVER: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 5

INPUT
Description: Section E-E, Reach 4
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-187.5	2314.7	-175	2314.8	-150	2314.7	-125	2314.7	-100	2314.6
-75	2314.7	-50	2315	-25	2315	0	2314.4	25	2315.5
50	2312.2	75	2310.4	100	2310	125	2310	150	2312.2
175	2314.4	187.5	2315.5	250	2320	330	2320.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-187.5	.03	25	.03	187.5	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
25	187.5	500	401	480	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2312.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.		0.030	
W.S. Elev (ft)	2311.85	Reach Len. (ft)	500.00	401.00	480.00
Crit W.S. (ft)	2311.85	Flow Area (sq ft)		121.25	
E.G. Slope (ft/ft)	0.012111	Area (sq ft)		121.25	
Q Total (cfs)	799.00	Flow (cfs)		799.00	
Top Width (ft)	91.08	Top Width (ft)		91.08	
Vel Total (ft/s)	6.59	Avg. Vel. (ft/s)		6.59	
Max Chl Dpth (ft)	1.85	Hydr. Depth (ft)		1.33	
Conv. Total (cfs)	7260.2	Conv. (cfs)		7260.2	
Length Wtd. (ft)	401.00	Wetted Per. (ft)		91.22	
Min Ch El (ft)	2310.00	Shear (lb/sq ft)		1.01	
Alpha	1.00	Stream Power (lb/ft s)		6.62	
Frctn Loss (ft)	5.59	Cum Volume (acre-ft)	0.57	4.43	0.40
C & E Loss (ft)	0.11	Cum SA (acres)	1.06	4.84	0.63

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 4

INPUT
Description: Section D-D, Reach 4
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-450	2308.2	-300	2305	-220	2298.3	-188.96	2300.5	-175	2300.6
-150	2300.8	-125	2300.1	-100	2300.3	-75	2300.6	-50	2300.8
-25	2301	0	2300.3	25	2300	50	2300.4	75	2301.5
100	2302.6	125	2303.8	150	2305	175	2308.5	188.97	2310

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-450	.03	-300	.03	175	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-300	175	403	437	470	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2301.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.		0.030	
W.S. Elev (ft)	2300.86	Reach Len. (ft)	403.00	437.00	470.00
Crit W.S. (ft)	2300.86	Flow Area (sq ft)		176.06	
E.G. Slope (ft/ft)	0.016227	Area (sq ft)		176.06	
Q Total (cfs)	799.00	Flow (cfs)		799.00	
Top Width (ft)	288.40	Top Width (ft)		288.40	
Vel Total (ft/s)	4.54	Avg. Vel. (ft/s)		4.54	
Max Chl Dpth (ft)	2.56	Hydr. Depth (ft)		0.61	
Conv. Total (cfs)	6272.3	Conv. (cfs)		6272.3	
Length Wtd. (ft)	436.56	Wetted Per. (ft)		288.62	
Min Ch El (ft)	2298.30	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		2.80	
Frctn Loss (ft)	4.40	Cum Volume (acre-ft)	0.57	3.07	0.40
C & E Loss (ft)	0.01	Cum SA (acres)	1.06	3.09	0.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: 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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 3

INPUT
Description: Section C-C, Reach 4
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-350	2295	-262.19	2290.9	-250	2290.7	-225	2290.4	-200	2290
-175	2290	-150	2290	-125	2288	-100	2290	-75	2290
-50	2290	-25	2291	0	2292	25	2292.9	50	2293.9
75	2294.8	100	2296	125	2297.1	150	2297.6	175	2298.1
200	2298.7	225	2298.8	250	2299.5	262.2	2299.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-350	.03	-150	.03	-100	.03

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

-150	-100	502	401	330	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2291.14	* Element	* Left OB *	Channel * Right OB *
* Vel Head (ft)	* 0.40	* Wt. n-Val.	* 0.030 *	0.030 * 0.030 *
* W.S. Elev (ft)	* 2290.74	* Reach Len. (ft)	* 502.00 *	401.00 * 330.00 *
* Crit W.S. (ft)	* 2290.74	* Flow Area (sq ft)	* 55.33 *	87.01 * 43.86 *
* E.G. Slope (ft/ft)	*0.006852	* Area (sq ft)	* 55.33 *	87.01 * 43.86 *
* Q Total (cfs)	* 799.00	* Flow (cfs)	* 150.41 *	515.03 * 133.56 *
* Top Width (ft)	* 220.96	* Top Width (ft)	* 102.46 *	50.00 * 68.51 *
* Vel Total (ft/s)	* 4.29	* Avg. Vel. (ft/s)	* 2.72 *	5.92 * 3.05 *
* Max Chl Dpth (ft)	* 2.74	* Hydr. Depth (ft)	* 0.54 *	1.74 * 0.64 *
* Conv. Total (cfs)	* 9652.7	* Conv. (cfs)	* 1817.1 *	6222.0 * 1613.6 *
* Length Wtd. (ft)	* 404.57	* Wetted Per. (ft)	* 102.46 *	50.16 * 68.52 *
* Min Ch El (ft)	* 2288.00	* Shear (lb/sq ft)	* 0.23 *	0.74 * 0.27 *
* Alpha	* 1.39	* Stream Power (lb/ft s)	* 0.63 *	4.39 * 0.83 *
* Frctn Loss (ft)	* 3.51	* Cum Volume (acre-ft)	* 0.32 *	1.75 * 0.17 *
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 0.59 *	1.40 * 0.26 *

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 2

INPUT
Description: Section B-B, Reach 4
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-244.72	2277.8	-225	2278.7	-200	2280	-175	2280	-150	2279.5
-125	2277.3	-100	2275	-75	2275.7	-50	2280	-25	2280.5
0	2281.2	25	2282.3	50	2284.3	75	2285	100	2285.1
125	2285.7	150	2286.2	175	2286.7	200	2287.3	225	2288
244.72	2288.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-244.72	.03	-200	.03	-50	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-200	-50	301	275	254 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2278.52	* Element	* Left OB *	Channel * Right OB *
* Vel Head (ft)	* 0.84	* Wt. n-Val.	*	0.030 * *
* W.S. Elev (ft)	* 2277.68	* Reach Len. (ft)	* 301.00 *	275.00 * 254.00 *
* Crit W.S. (ft)	* 2277.68	* Flow Area (sq ft)	*	108.65 * *
* E.G. Slope (ft/ft)	*0.011367	* Area (sq ft)	*	108.65 * *
* Q Total (cfs)	* 799.00	* Flow (cfs)	*	799.00 * *
* Top Width (ft)	* 65.81	* Top Width (ft)	*	65.81 * *
* Vel Total (ft/s)	* 7.35	* Avg. Vel. (ft/s)	*	7.35 * *
* Max Chl Dpth (ft)	* 2.68	* Hydr. Depth (ft)	*	1.65 * *
* Conv. Total (cfs)	* 7494.2	* Conv. (cfs)	*	7494.2 * *
* Length Wtd. (ft)	* 275.00	* Wetted Per. (ft)	*	66.11 * *
* Min Ch El (ft)	* 2275.00	* Shear (lb/sq ft)	*	1.17 * *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	8.58 * *
* Frctn Loss (ft)	* 3.54	* Cum Volume (acre-ft)	*	0.85 * *
* C & E Loss (ft)	* 0.13	* Cum SA (acres)	*	0.86 * *

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: Reach 4
REACH: C1G2B1 TO C1G2B2 RS: 1

INPUT
Description: Section A-A, Reach 4
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-244.13	2279.8	-225	2279.5	-200	2278.1	-175	2275.4	-150	2268.2
-125	2264	-100	2263.6	-75	2265	-50	2265	0	2265
25	2265	50	2265	75	2265.6	100	2274	125	2275.6
150	2276.4	175	2277.3	200	2278.3	225	2280	244.13	2280

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-244.13	.03	-225	.03	225	.03

Bank Sta: Left	Right	Coeff Contr.	Expan.
-225	225	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2265.95	* Element	* Left OB *	Channel * Right OB *
* Vel Head (ft)	* 0.39	* Wt. n-Val.	*	0.030 * *
* W.S. Elev (ft)	* 2265.56	* Reach Len. (ft)	*	* *
* Crit W.S. (ft)	* 2265.56	* Flow Area (sq ft)	*	159.13 * *
* E.G. Slope (ft/ft)	*0.014663	* Area (sq ft)	*	159.13 * *
* Q Total (cfs)	* 799.00	* Flow (cfs)	*	799.00 * *
* Top Width (ft)	* 207.58	* Top Width (ft)	*	207.58 * *
* Vel Total (ft/s)	* 5.02	* Avg. Vel. (ft/s)	*	5.02 * *
* Max Chl Dpth (ft)	* 1.96	* Hydr. Depth (ft)	*	0.77 * *
* Conv. Total (cfs)	* 6598.3	* Conv. (cfs)	*	6598.3 * *
* Length Wtd. (ft)	*	* Wetted Per. (ft)	*	207.76 * *
* Min Ch El (ft)	* 2263.60	* Shear (lb/sq ft)	*	0.70 * *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	3.52 * *
* Frctn Loss (ft)	*	* Cum Volume (acre-ft)	*	* *
* C & E Loss (ft)	*	* Cum SA (acres)	*	* *

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is below critical depth). Water surface set to critical depth.

SUMMARY OF MANNING'S N VALUES

River:Reach 4

Reach	River Sta.	n1	n2	n3
C1G2B1 TO C1G2B2	25	.03	.03	.03
C1G2B1 TO C1G2B2	24	.03	.03	.03
C1G2B1 TO C1G2B2	23	.03	.03	.03
C1G2B1 TO C1G2B2	22	.03	.03	.03
C1G2B1 TO C1G2B2	21	.03	.03	.03
C1G2B1 TO C1G2B2	20	.03	.03	.03
C1G2B1 TO C1G2B2	19	.03	.03	.03
C1G2B1 TO C1G2B2	18	.03	.03	.03
C1G2B1 TO C1G2B2	17	.03	.03	.03
C1G2B1 TO C1G2B2	16	.03	.03	.03
C1G2B1 TO C1G2B2	15	.03	.03	.03
C1G2B1 TO C1G2B2	14	.03	.03	.03
C1G2B1 TO C1G2B2	13	.03	.03	.03
C1G2B1 TO C1G2B2	12	.03	.03	.03
C1G2B1 TO C1G2B2	11	.03	.03	.03
C1G2B1 TO C1G2B2	10	.03	.03	.03
C1G2B1 TO C1G2B2	9	.03	.03	.03
C1G2B1 TO C1G2B2	8	.03	.03	.03
C1G2B1 TO C1G2B2	7	.03	.03	.03
C1G2B1 TO C1G2B2	6	.03	.03	.03
C1G2B1 TO C1G2B2	5	.03	.03	.03
C1G2B1 TO C1G2B2	4	.03	.03	.03
C1G2B1 TO C1G2B2	3	.03	.03	.03
C1G2B1 TO C1G2B2	2	.03	.03	.03
C1G2B1 TO C1G2B2	1	.03	.03	.03

SUMMARY OF REACH LENGTHS

River: Reach 4

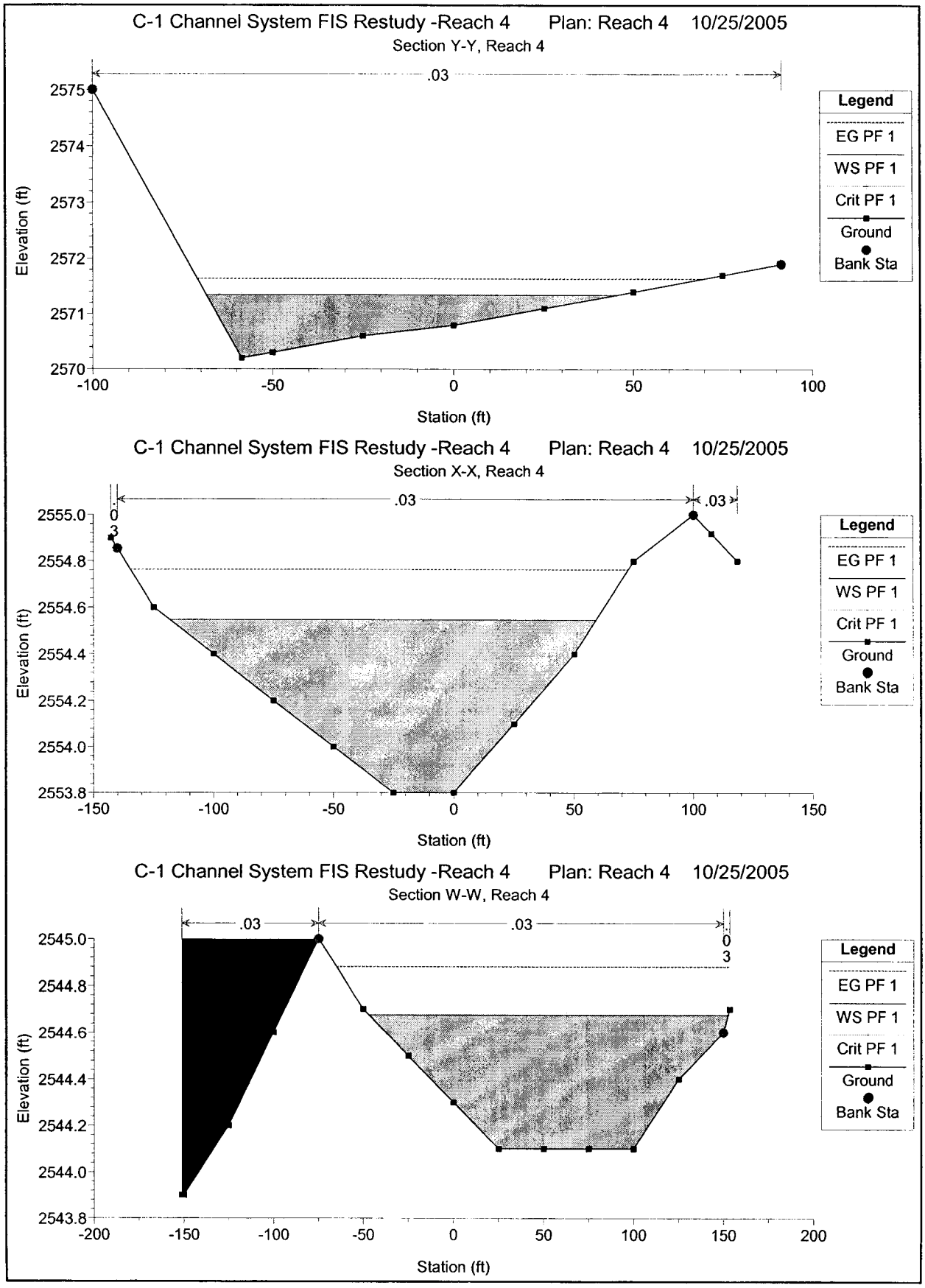
Reach	River Sta.	Left	Channel	Right
C1G2B1 TO C1G2B2	25	550	550	550
C1G2B1 TO C1G2B2	24	400	400	400
C1G2B1 TO C1G2B2	23	300	300	300
C1G2B1 TO C1G2B2	22	333	386	355
C1G2B1 TO C1G2B2	21	300	400	450
C1G2B1 TO C1G2B2	20	700	500	400
C1G2B1 TO C1G2B2	19	400	409	430
C1G2B1 TO C1G2B2	18	400	399	400
C1G2B1 TO C1G2B2	17	400	431	528
C1G2B1 TO C1G2B2	16	440	414	400
C1G2B1 TO C1G2B2	15	250	561	650
C1G2B1 TO C1G2B2	14	700	397	370
C1G2B1 TO C1G2B2	13	368	410	454
C1G2B1 TO C1G2B2	12	519	440	373
C1G2B1 TO C1G2B2	11	388	420	460
C1G2B1 TO C1G2B2	10	420	413	450
C1G2B1 TO C1G2B2	9	350	403	447
C1G2B1 TO C1G2B2	8	412	397	383
C1G2B1 TO C1G2B2	7	422	411	404
C1G2B1 TO C1G2B2	6	350	414	470
C1G2B1 TO C1G2B2	5	500	401	480
C1G2B1 TO C1G2B2	4	403	437	470
C1G2B1 TO C1G2B2	3	502	401	330
C1G2B1 TO C1G2B2	2	301	275	254
C1G2B1 TO C1G2B2	1			

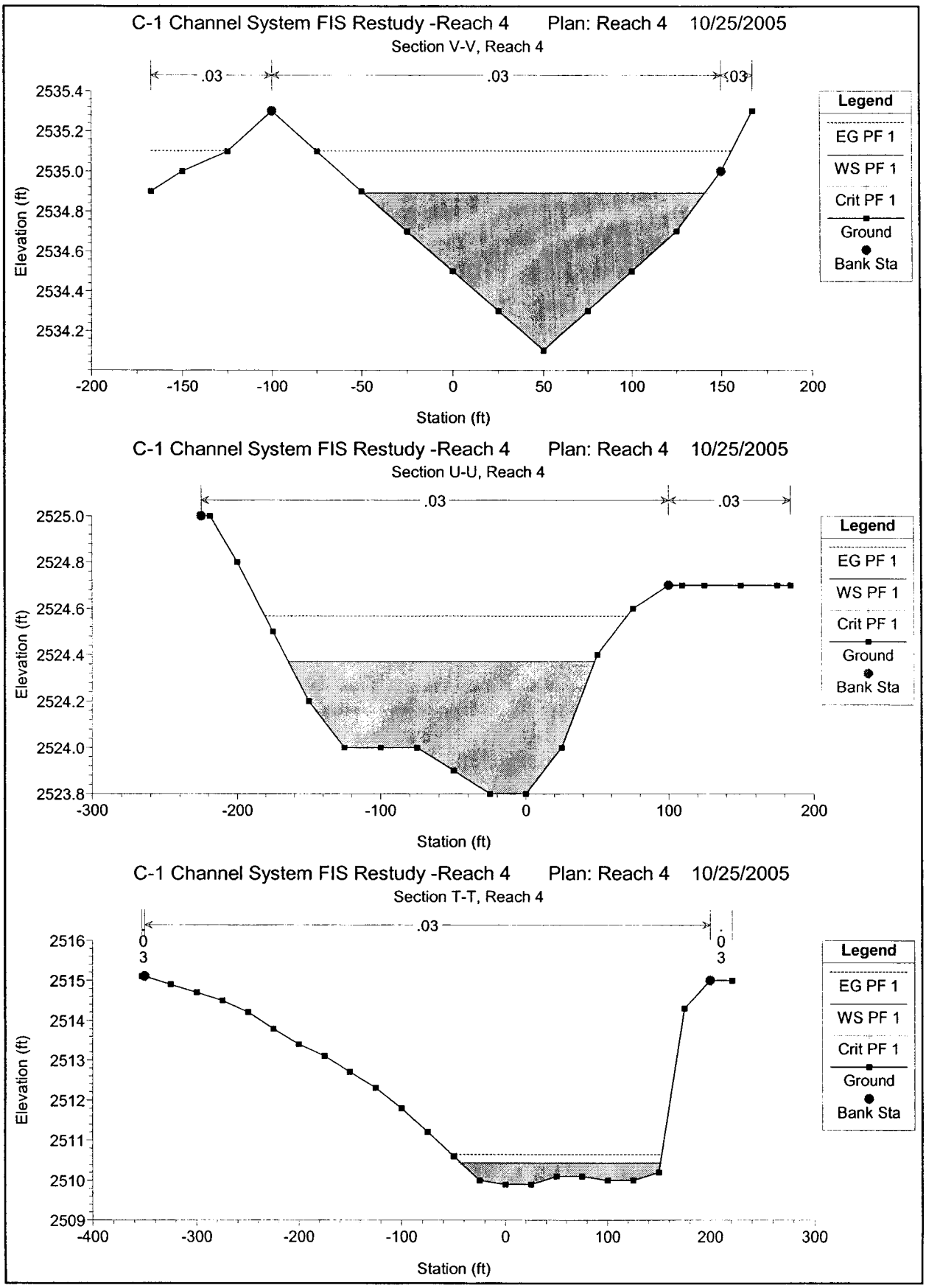
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Reach 4

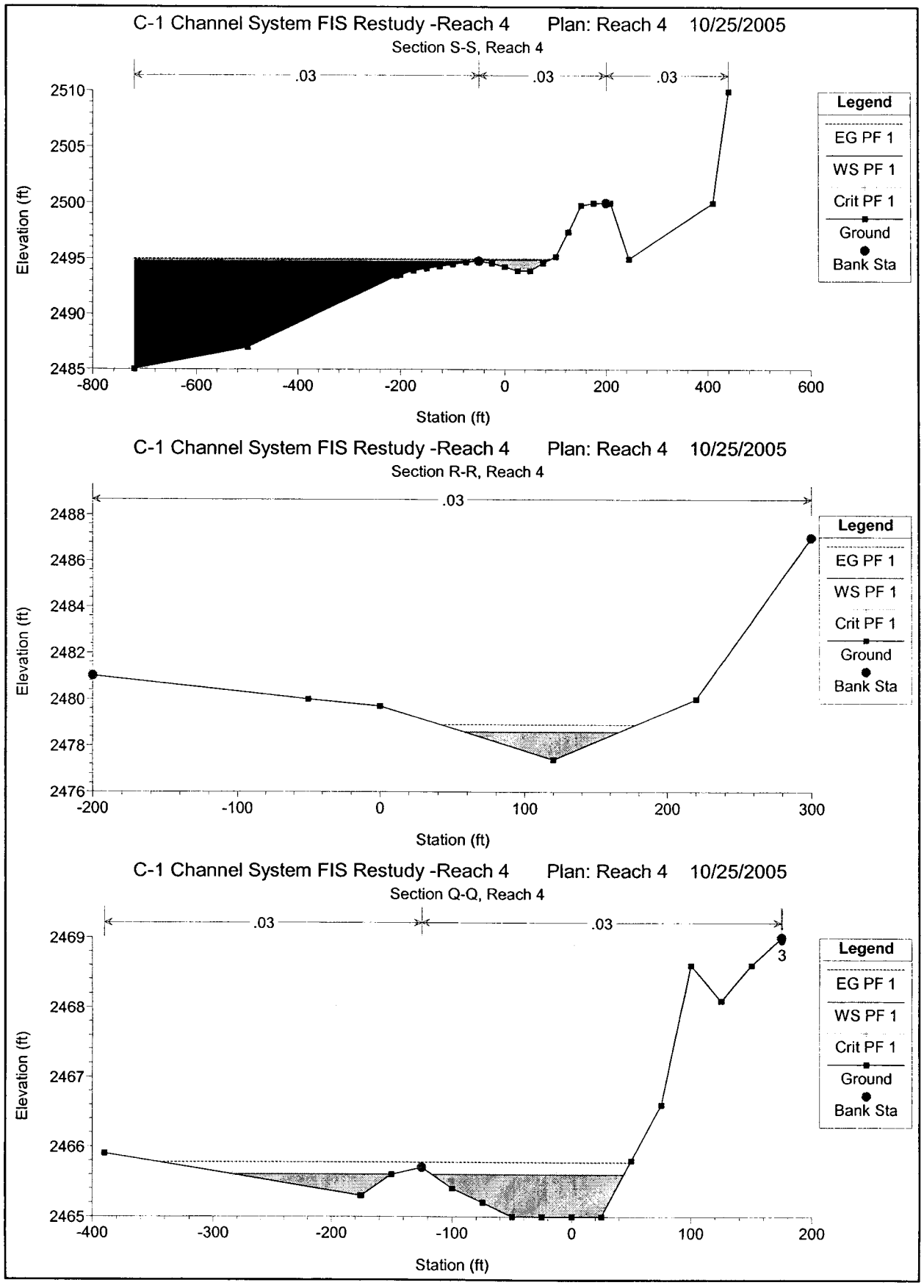
Reach	River Sta.	Contr.	Expan.
C1G2B1 TO C1G2B2	25	.1	.3
C1G2B1 TO C1G2B2	24	.1	.3
C1G2B1 TO C1G2B2	23	.1	.3
C1G2B1 TO C1G2B2	22	.1	.3
C1G2B1 TO C1G2B2	21	.1	.3
C1G2B1 TO C1G2B2	20	.1	.3
C1G2B1 TO C1G2B2	19	.1	.3
C1G2B1 TO C1G2B2	18	.1	.3
C1G2B1 TO C1G2B2	17	.1	.3
C1G2B1 TO C1G2B2	16	.1	.3
C1G2B1 TO C1G2B2	15	.1	.3
C1G2B1 TO C1G2B2	14	.1	.3
C1G2B1 TO C1G2B2	13	.1	.3
C1G2B1 TO C1G2B2	12	.1	.3
C1G2B1 TO C1G2B2	11	.1	.3
C1G2B1 TO C1G2B2	10	.1	.3
C1G2B1 TO C1G2B2	9	.1	.3
C1G2B1 TO C1G2B2	8	.1	.3
C1G2B1 TO C1G2B2	7	.1	.3
C1G2B1 TO C1G2B2	6	.1	.3
C1G2B1 TO C1G2B2	5	.1	.3
C1G2B1 TO C1G2B2	4	.1	.3
C1G2B1 TO C1G2B2	3	.1	.3
C1G2B1 TO C1G2B2	2	.1	.3
C1G2B1 TO C1G2B2	1	.1	.3

HEC-RAS Plan: Reach 6 River: Reach 4 Reach: C1G2B1 TO C1G2B2 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)	
C1G2B1 TO C1G2B2	25	PF 1	286.00	2570.20	2571.34	2571.34	2571.64	0.015979	4.34	65.83	113.81	1.01
C1G2B1 TO C1G2B2	24	PF 1	286.00	2553.80	2554.55	2554.55	2554.76	0.017628	3.75	76.29	177.26	1.01
C1G2B1 TO C1G2B2	23	PF 1	286.00	2544.10	2544.68	2544.68	2544.88	0.018204	3.63	78.89	199.53	1.01
C1G2B1 TO C1G2B2	22	PF 1	286.00	2534.10	2534.89	2534.89	2535.10	0.018293	3.69	77.56	189.93	1.02
C1G2B1 TO C1G2B2	21	PF 1	286.00	2523.80	2524.37	2524.37	2524.57	0.018756	3.55	80.52	212.49	1.02
C1G2B1 TO C1G2B2	20	PF 1	286.00	2509.90	2510.44	2510.44	2510.65	0.017889	3.63	78.89	194.84	1.00
C1G2B1 TO C1G2B2	19	PF 1	286.00	2493.90	2494.91	2494.91	2495.00	0.006242	2.74	153.76	807.88	0.63
C1G2B1 TO C1G2B2	18	PF 1	286.00	2477.40	2478.59	2478.59	2478.90	0.015925	4.43	64.56	108.18	1.01
C1G2B1 TO C1G2B2	17	PF 1	286.00	2465.00	2465.60	2465.60	2465.77	0.014097	3.47	93.07	295.09	0.91
C1G2B1 TO C1G2B2	16	PF 1	286.00	2452.10	2453.08	2453.08	2453.38	0.015929	4.40	64.98	109.97	1.01
C1G2B1 TO C1G2B2	15	PF 1	286.00	2440.00	2440.60	2440.60	2440.84	0.016917	3.93	72.79	152.83	1.00
C1G2B1 TO C1G2B2	14	PF 1	286.00	2429.70	2430.47	2430.47	2430.65	0.018458	3.43	83.39	229.15	1.00
C1G2B1 TO C1G2B2	13	PF 1	286.00	2410.00	2410.80	2410.80	2411.09	0.015952	4.32	66.15	115.09	1.01
C1G2B1 TO C1G2B2	12	PF 1	286.00	2398.60	2399.08	2399.08	2399.25	0.019361	3.27	87.45	267.49	1.01
C1G2B1 TO C1G2B2	11	PF 1	490.00	2383.00	2384.06	2384.06	2384.34	0.016006	4.29	114.29	201.95	1.00
C1G2B1 TO C1G2B2	10	PF 1	490.00	2370.00	2371.37	2371.37	2371.72	0.014980	4.71	104.05	151.92	1.00
C1G2B1 TO C1G2B2	9	PF 1	490.00	2352.90	2354.75	2354.75	2355.28	0.013162	5.85	83.74	80.02	1.01
C1G2B1 TO C1G2B2	8	PF 1	490.00	2341.40	2343.49	2343.49	2344.17	0.012078	6.63	73.88	54.70	1.01
C1G2B1 TO C1G2B2	7	PF 1	490.00	2330.70	2332.66	2332.66	2333.20	0.012883	5.88	83.33	77.77	1.00
C1G2B1 TO C1G2B2	6	PF 1	799.00	2320.00	2322.87	2322.87	2323.47	0.012682	6.19	129.00	109.94	1.01
C1G2B1 TO C1G2B2	5	PF 1	799.00	2310.00	2311.85	2311.85	2312.52	0.012111	6.59	121.25	91.08	1.01
C1G2B1 TO C1G2B2	4	PF 1	799.00	2298.30	2300.86	2300.86	2301.18	0.016227	4.54	176.06	288.40	1.02
C1G2B1 TO C1G2B2	3	PF 1	799.00	2288.00	2290.74	2290.74	2291.14	0.006852	5.92	186.20	220.96	0.79
C1G2B1 TO C1G2B2	2	PF 1	799.00	2275.00	2277.68	2277.68	2278.52	0.011367	7.35	108.65	65.81	1.01
C1G2B1 TO C1G2B2	1	PF 1	799.00	2263.60	2265.56	2265.56	2265.95	0.014663	5.02	159.13	207.58	1.01


C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section Y-Y, Reach 4
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section X-X, Reach 4
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section W-W, Reach 4
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section V-V, Reach 4
.03
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2535.4
2535.2
2535.0
2534.8
2534.6
2534.4
2534.2
-200
-150
-100
-50
0
50
100
150
200
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section U-U, Reach 4
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2525.0
2524.8
2524.6
2524.4
2524.2
2524.0
2523.8
-300
-200
-100
0
100
200
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section T-T, Reach 4
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2516
2515
2514
2513
2512
2511
2510
2509
-400
-300
-200
-100
0
100
200
300
Station (ft)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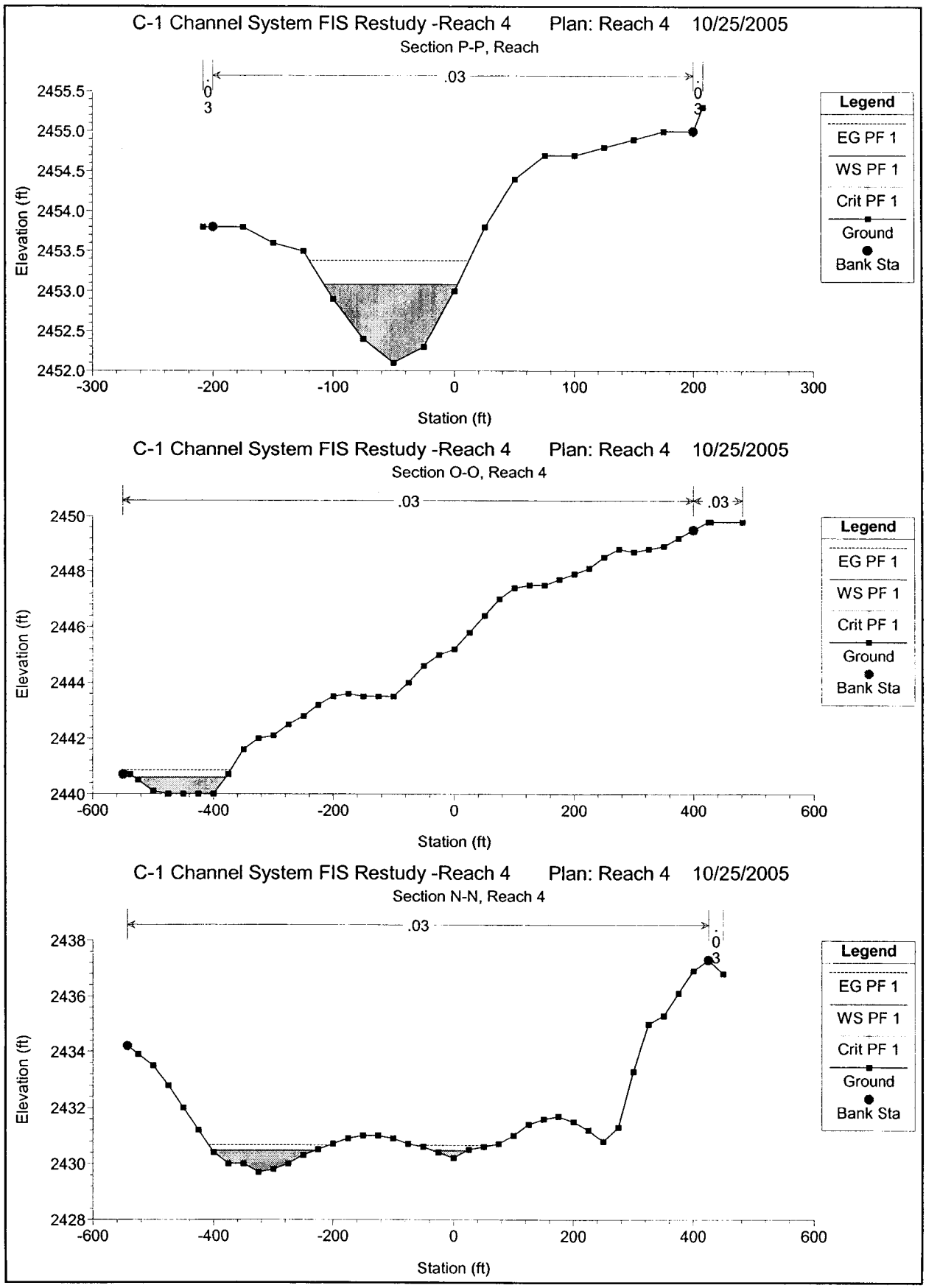
Section S-S, Reach 4
.03
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section R-R, Reach 4
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section Q-Q, Reach 4
.03
.03
3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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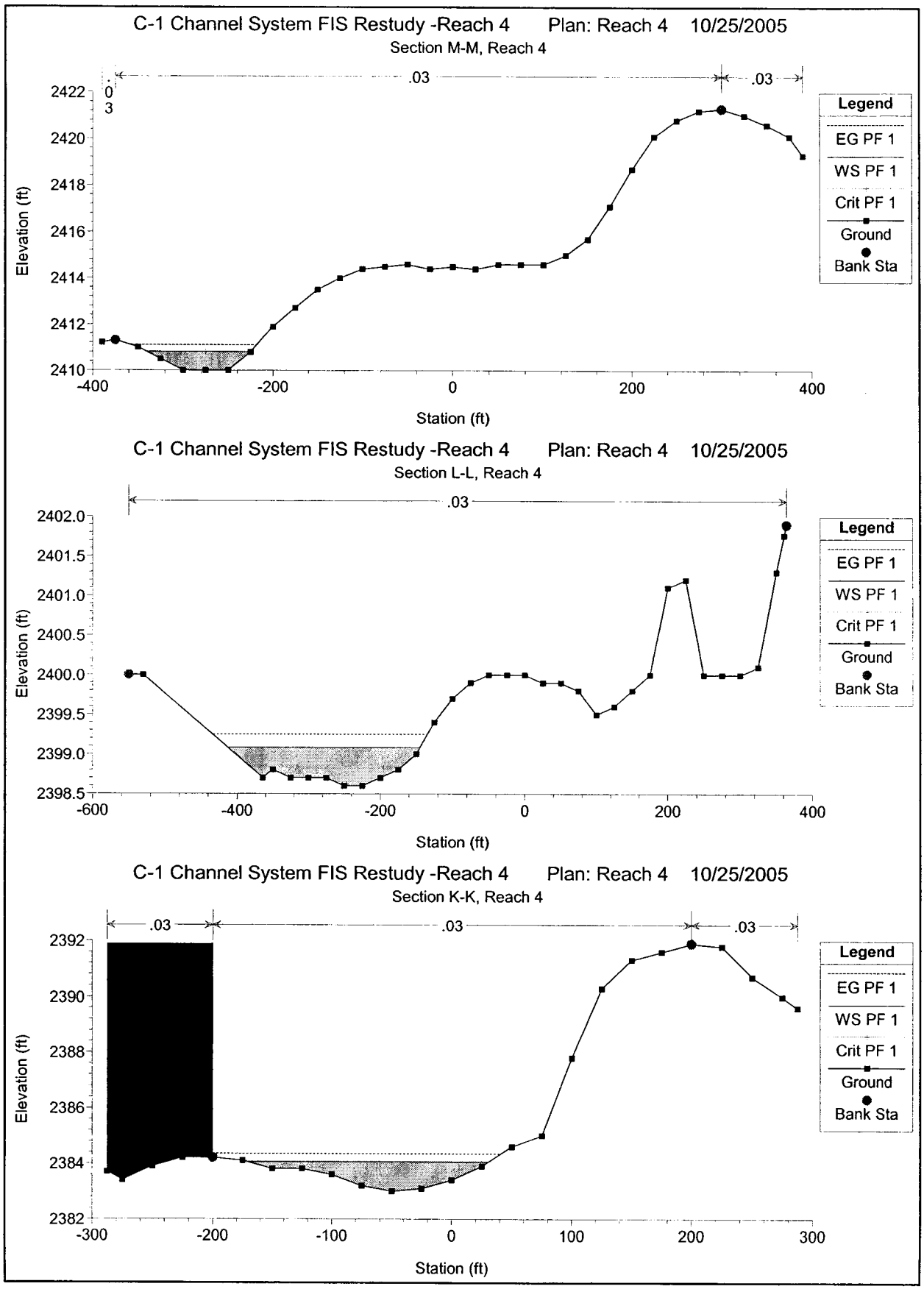
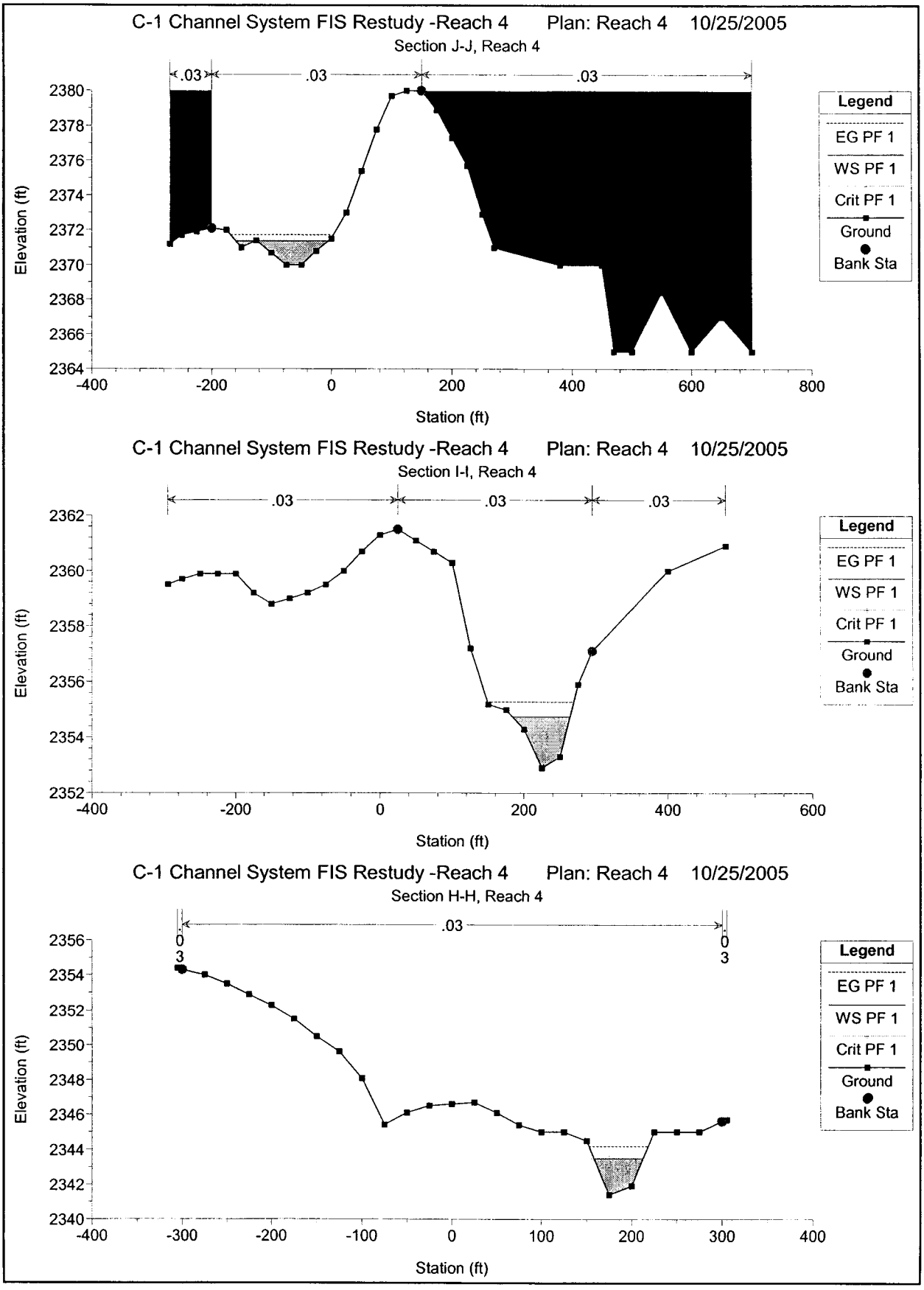
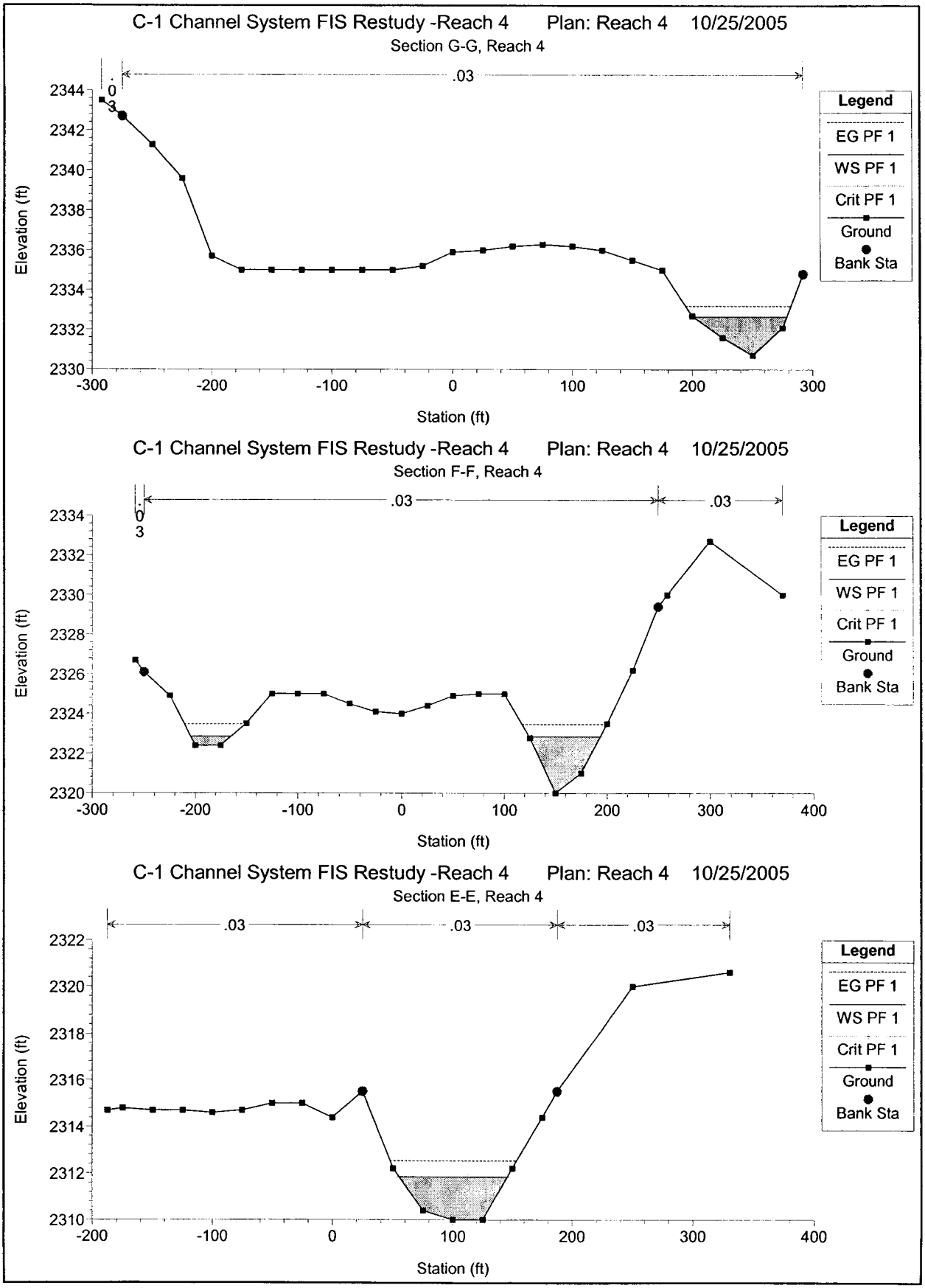
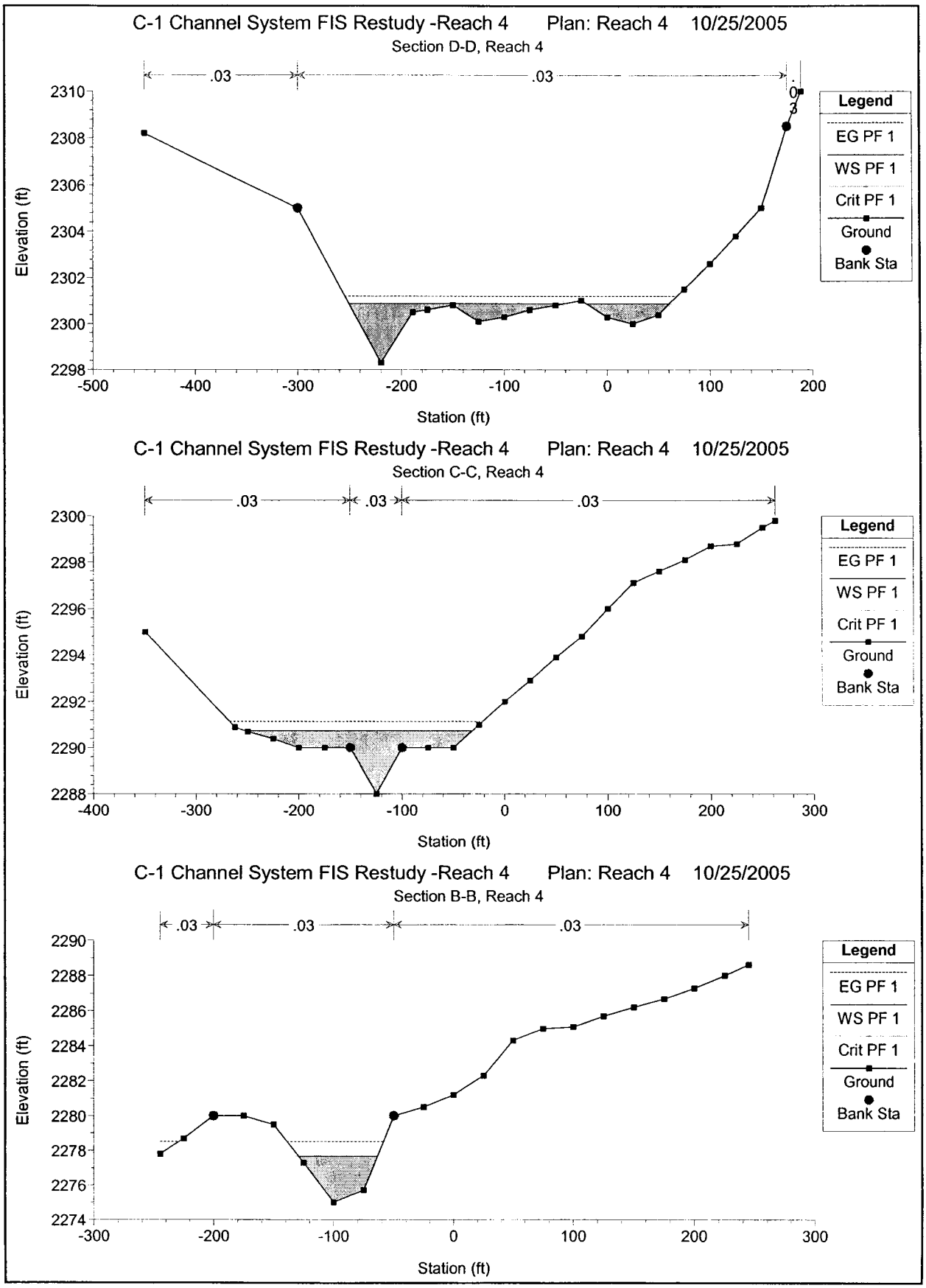
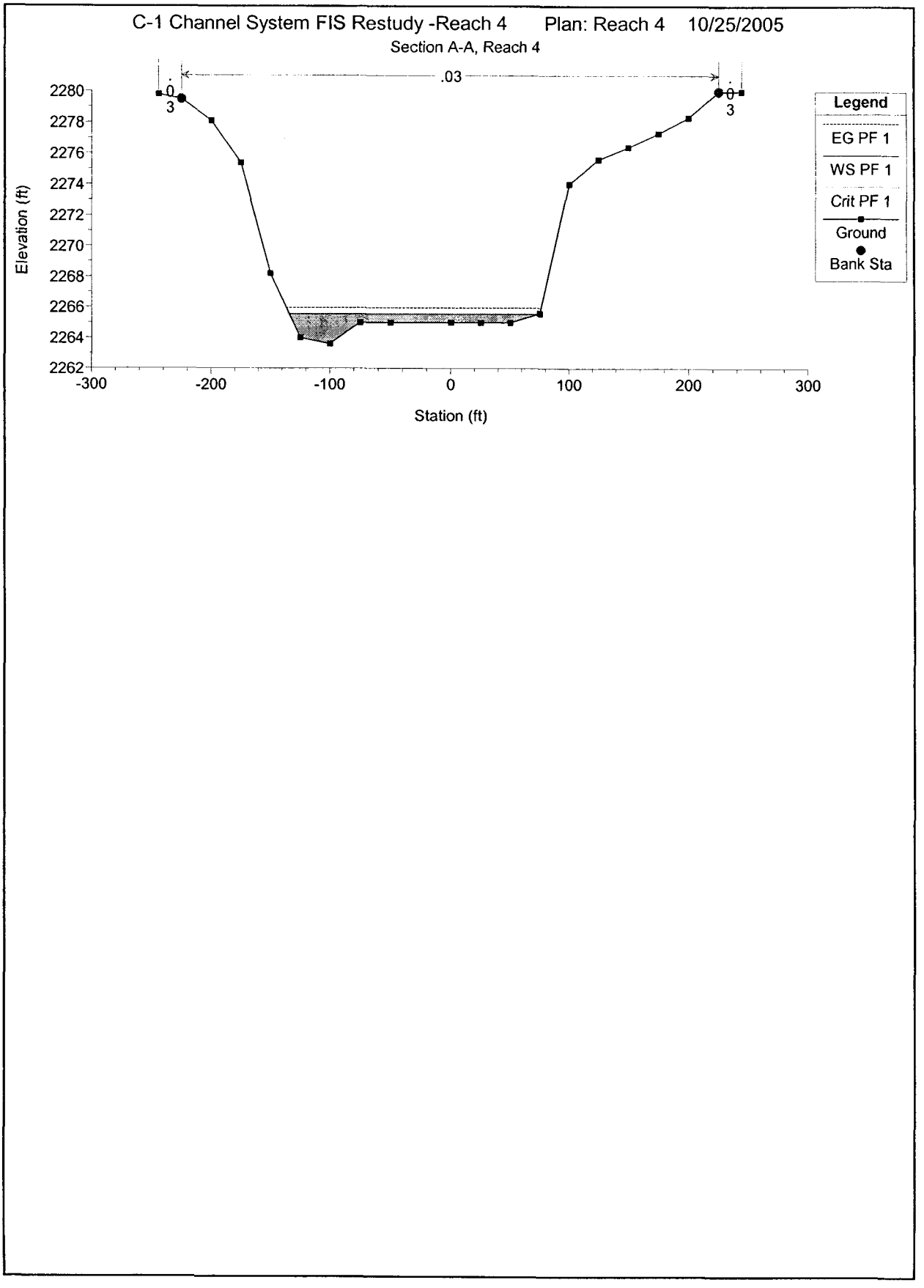
Section P-P, Reach
.03
.03
0
3
0
3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2455.5
2455.0
2454.5
2454.0
2453.5
2453.0
2452.5
2452.0
-300
-200
-100
0
100
200
300
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section O-O, Reach 4
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2450
2448
2446
2444
2442
2440
-600
-400
-200
0
200
400
600
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section N-N, Reach 4
.03
0
3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2438
2436
2434
2432
2430
2428
-600
-400
-200
0
200
400
600
Station (ft)


C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section M-M, Reach 4
.03
.03
0
3
Elevation (ft)
2422
2420
2418
2416
2414
2412
2410
-400
-200
0
200
400
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section L-L, Reach 4
.03
Elevation (ft)
2402.0
2401.5
2401.0
2400.5
2400.0
2399.5
2399.0
2398.5
-600
-400
-200
0
200
400
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section K-K, Reach 4
.03
.03
.03
Elevation (ft)
2392
2390
2388
2386
2384
2382
-300
-200
-100
0
100
200
300
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta


C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section J-J, Reach 4
.03
.03
.03
Elevation (ft)
2380
2378
2376
2374
2372
2370
2368
2366
2364
-400
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section I-I, Reach 4
.03
.03
.03
Elevation (ft)
2362
2360
2358
2356
2354
2352
-400
-200
0
200
400
600
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section H-H, Reach 4
.03
0
3
0
3
Elevation (ft)
2356
2354
2352
2350
2348
2346
2344
2342
2340
-400
-300
-200
-100
0
100
200
300
400
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta


C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section G-G, Reach 4
.03
0
3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2344
2342
2340
2338
2336
2334
2332
2330
-300
-200
-100
0
100
200
300
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section F-F, Reach 4
.03
.03
0
3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2334
2332
2330
2328
2326
2324
2322
2320
-300
-200
-100
0
100
200
300
400
Station (ft)
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section E-E, Reach 4
.03
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2322
2320
2318
2316
2314
2312
2310
-200
-100
0
100
200
300
400
Station (ft)


C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section D-D, Reach 4
.03
.03
.03
Elevation (ft)
2310
2308
2306
2304
2302
2300
2298
-500
-400
-300
-200
-100
0
100
200
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section C-C, Reach 4
.03
.03
.03
Elevation (ft)
2300
2298
2296
2294
2292
2290
2288
-400
-300
-200
-100
0
100
200
300
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section B-B, Reach 4
.03
.03
.03
Elevation (ft)
2290
2288
2286
2284
2282
2280
2278
2276
2274
-300
-200
-100
0
100
200
300
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta


C-1 Channel System FIS Restudy -Reach 4 Plan: Reach 4 10/25/2005
Section A-A, Reach 4
.03
.0
3
.0
3
Elevation (ft)
2280
2278
2276
2274
2272
2270
2268
2266
2264
2262
-300
-200
-100
0
100
200
300
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta

CORRECTIVE/EFFECTIVE PRE-PROJECT CONDITIONS (VTN): HEC-RAS OUTPUT W/ CARTER BURGESS FLOWS

(USED HEC-1 CARTER BURGESS POST-DEVELOPMENT FLOWS FOR VTN PRE-PROJECT CONDITIONS)

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
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****

PROJECT DATA
Project Title: VTN-Pre-Project w/Carter Burgess Flows
Project File : 022206.prj
Run Date and Time: 2/22/2006 6:08:43 PM

Project in English units

Project Description:
Mission LOMR: VTN Post-Project w/ Carter Burgess Flow (Ref)

****

PLAN DATA

Plan Title: Plan 16
Plan File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.p16

Geometry Title: 02-22-06
Geometry File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.g12

Flow Title : Carter Burgess Flows
Flow File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.f04

Plan Summary Information:
Number of: Cross Sections = 27 Multiple Openings = 0
Culverts = 1 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

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

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

****

FLOW DATA

Flow Title: Carter Burgess Flows
Flow File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.f04

Flow Data (cfs)

River	Reach	RS	PF 1
FIS Flood Zone	Mission	48	286
FIS Flood Zone	Mission	26	490
FIS Flood Zone	Mission	19	799

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
FIS Flood Zone	Mission	PF 1	Critical	Normal S = 0.0229

****

GEOMETRY DATA

Geometry Title: 02-22-06
Geometry File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.g12

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 48

INPUT
Description: 0+100
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-173.84	2392	-118.84	2391.68	-58.01	2388	-42.83	2387.43	21.55	2382
28.51	2382	38.23	2383.92	97.69	2385.67	123.66	2384.09	145.04	2380
256.2	2378.52	338.85	2376	371.85	2381.52	376.8	2380	389.09	2382
423.32	2374.68	446.53	2376	457.06	2378	484.25	2378	508.7	2372.78
524.94	2376	555.62	2376	567.65	2370	591.28	2370	609.45	2372
628.27	2372	682.75	2401.51						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-173.84	.035	-118.84	.035	97.69	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-118.84 97.69 200 200 200 .1 .3
Left Levee Station= -42.83 Elevation= 2387.43
Right Levee Station= 97.69 Elevation= 2385.67

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2384.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.		0.035	
W.S. Elev (ft)	2384.01	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	2384.01	Flow Area (sq ft)		48.10	
E.G. Slope (ft/ft)	0.017231	Area (sq ft)		48.10	
Q Total (cfs)	286.00	Flow (cfs)		286.00	
Top Width (ft)	43.38	Top Width (ft)		43.38	
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)		5.95	

* Max Chl Dpth (ft)	* 14.01	* Hydr. Depth (ft)	*	*	1.11	*	*
* Conv. Total (cfs)	* 2178.8	* Conv. (cfs)	*	*	2178.8	*	*
* Length Wtd. (ft)	* 200.00	* Wetted Per. (ft)	*	*	43.66	*	*
* Min Ch El (ft)	* 2382.00	* Shear (lb/sq ft)	*	*	1.19	*	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	*	7.05	*	*
* Frctn Loss (ft)	* 0.00	* Cum Volume (acre-ft)	*	0.02	* 10.17	*	*
* C & E Loss (ft)	* 0.05	* Cum SA (acres)	*	0.09	* 7.84	*	*

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: FIS Flood Zone
REACH: Mission RS: 46

INPUT
Description: 0+300
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-84.97	2384.63	6.45	2378.12	25.09	2376.04	53.39	2374	64.77	2374
117.96	2377.87	218.54	2376	266.82	2367.72	294.84	2367.11	312.32	2368
366.86	2367.89	383.36	2368.35	447.53	2368	474.66	2367.16	514.95	2379.89
554.18	2380.42	601.91	2379.58	617.76	2376	641.09	2376.13	683.46	2387.18

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-84.97	.035	6.45	.035	117.96	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
6.45 117.96 200 200 200 .1 .3
Left Levee Station= 6.45 Elevation= 2378.12
Right Levee Station= 117.96 Elevation= 2377.87

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2376.04	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.47	* Wt. n-Val.	*	* 0.035	* *
* W.S. Elev (ft)	* 2375.57	* Reach Len. (ft)	* 200.00	* 200.00	* 200.00 *
* Crit W.S. (ft)	* 2375.57	* Flow Area (sq ft)	*	* 52.03	* *
* E.G. Slope (ft/ft)	*0.018018	* Area (sq ft)	*	* 52.03	* *
* Q Total (cfs)	* 286.00	* Flow (cfs)	*	* 286.00	* *
* Top Width (ft)	* 54.80	* Top Width (ft)	*	* 54.80	* *
* Vel Total (ft/s)	* 5.50	* Avg. Vel. (ft/s)	*	* 5.50	* *
* Max Chl Dpth (ft)	* 8.46	* Hydr. Depth (ft)	*	* 0.95	* *
* Conv. Total (cfs)	* 2130.6	* Conv. (cfs)	*	* 2130.6	* *
* Length Wtd. (ft)	* 200.00	* Wetted Per. (ft)	*	* 54.91	* *
* Min Ch El (ft)	* 2374.00	* Shear (lb/sq ft)	*	* 1.07	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 5.86	* *
* Frctn Loss (ft)	* 0.95	* Cum Volume (acre-ft)	* 0.02	* 9.94	* *
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 0.09	* 7.62	* *

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: FIS Flood Zone
REACH: Mission RS: 44

INPUT
Description: 0+500
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-49.81	2378.58	46.88	2373.73	87.47	2363.08	121.51	2362	160.53	2368
195.41	2369.5	229.76	2368	247.29	2362	299.43	2362	354.98	2366
437.9	2366	457.32	2358.25	476.17	2356.64	598.56	2368.16	646.7	2368
681.22	2382								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-49.81	.035	46.88	.035	195.41	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
46.88 195.41 400 210 200 .1 .3
Left Levee Station= 46.88 Elevation= 2373.73
Right Levee Station= 195.41 Elevation= 2369.5

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2364.22	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.51	* Wt. n-Val.	*	* 0.035	* *
* W.S. Elev (ft)	* 2363.70	* Reach Len. (ft)	* 400.00	* 210.00	* 200.00 *
* Crit W.S. (ft)	* 2363.70	* Flow Area (sq ft)	*	* 49.67	* *
* E.G. Slope (ft/ft)	*0.017427	* Area (sq ft)	*	* 49.67	* *
* Q Total (cfs)	* 286.00	* Flow (cfs)	*	* 286.00	* *
* Top Width (ft)	* 47.47	* Top Width (ft)	*	* 47.47	* *
* Vel Total (ft/s)	* 5.76	* Avg. Vel. (ft/s)	*	* 5.76	* *
* Max Chl Dpth (ft)	* 7.06	* Hydr. Depth (ft)	*	* 1.05	* *
* Conv. Total (cfs)	* 2166.5	* Conv. (cfs)	*	* 2166.5	* *
* Length Wtd. (ft)	* 210.00	* Wetted Per. (ft)	*	* 47.70	* *
* Min Ch El (ft)	* 2362.00	* Shear (lb/sq ft)	*	* 1.13	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 6.52	* *
* Frctn Loss (ft)	* 1.63	* Cum Volume (acre-ft)	* 0.02	* 9.70	* *
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 0.09	* 7.38	* *

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: FIS Flood Zone
REACH: Mission RS: 42

INPUT
Description: 0+700
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-3.26	2370.96	20.48	2360	109.52	2357.99	127.31	2354	136.96	2354
166.31	2357.9	208.45	2358.52	227.77	2360	247.65	2360	277.16	2361.97
277.27	2361.97	277.77	2361.97	331.57	2362	383.73	2364	399.01	2364
442.36	2362	462.45	2360	479.15	2352.13	490.21	2352	515.36	2354
540	2352	597	2350	627.49	2362				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-3.26	.035	20.48	.035	227.77	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
20.48	227.77	220	350	.1	.3

Left Levee Station= 20.48 Elevation= 2360
Right Levee Station= 227.77 Elevation= 2360

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2356.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.		0.035	
W.S. Elev (ft)	2356.03	Reach Len. (ft)	220.00	220.00	350.00
Crit W.S. (ft)	2356.03	Flow Area (sq ft)		44.13	
E.G. Slope (ft/ft)	0.016645	Area (sq ft)		44.13	
Q Total (cfs)	286.00	Flow (cfs)		286.00	
Top Width (ft)	33.92	Top Width (ft)		33.92	
Vel Total (ft/s)	6.48	Avg. Vel. (ft/s)		6.48	
Max Chl Dpth (ft)	6.03	Hydr. Depth (ft)		1.30	
Conv. Total (cfs)	2216.8	Conv. (cfs)		2216.8	
Length Wtd. (ft)	220.00	Wetted Per. (ft)		34.28	
Min Ch El (ft)	2354.00	Shear (lb/sq ft)		1.34	
Alpha	1.00	Stream Power (lb/ft s)		8.67	
Frctn Loss (ft)	2.99	Cum Volume (acre-ft)	0.02	9.48	
C & E Loss (ft)	0.01	Cum SA (acres)	0.09	7.18	

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: FIS Flood Zone
REACH: Mission RS: 40

INPUT
Description: 0+900
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
40.76	2357.87	138.91	2350	152.31	2350	169.69	2356	217.32	2356.04
265.62	2357.42	382.86	2358	382.96	2358	425.96	2356	502.96	2359.06
524.35	2358								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
40.76	.035	40.76	.035	382.96	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
40.76	382.96	300	300	.1	.3

Left Levee Station= 40.76 Elevation= 2357.87
Right Levee Station= 265.62 Elevation= 2357.42

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2352.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.		0.035	
W.S. Elev (ft)	2351.75	Reach Len. (ft)	300.00	300.00	300.00
Crit W.S. (ft)	2351.75	Flow Area (sq ft)		47.11	
E.G. Slope (ft/ft)	0.016829	Area (sq ft)		47.11	
Q Total (cfs)	286.00	Flow (cfs)		286.00	
Top Width (ft)	40.34	Top Width (ft)		40.34	
Vel Total (ft/s)	6.07	Avg. Vel. (ft/s)		6.07	
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)		1.17	
Conv. Total (cfs)	2204.6	Conv. (cfs)		2204.6	
Length Wtd. (ft)	300.00	Wetted Per. (ft)		40.71	
Min Ch El (ft)	2350.00	Shear (lb/sq ft)		1.22	
Alpha	1.00	Stream Power (lb/ft s)		7.38	
Frctn Loss (ft)	4.99	Cum Volume (acre-ft)	0.02	9.25	
C & E Loss (ft)	0.02	Cum SA (acres)	0.09	7.00	

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

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 37

INPUT
Description: 1+200
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-73.3	2350	-64.13	2348	17.29	2348	31.09	2350.31	43.06	2350.77
67.84	2350	109.53	2349.52	129.54	2348	141.96	2348	160.5	2347.44
203.41	2347.05	213.19	2346.2	231.47	2345.27	237.84	2343.07	254.96	2344
263.97	2348	292.81	2348.8	430.54	2347.99	447.09	2346.43	482.21	2348.76
508.61	2349.28	538.41	2348.38	604.11	2349.14	661.33	2347.98		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
*********************************************
   -73.3    .035   43.06    .035  508.61    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         43.06  508.61               100     100     100            .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2346.12  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.73  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)         * 2345.39  * Reach Len. (ft)        *  100.00  *   100.00  *  100.00  *
* Crit W.S. (ft)         * 2345.39  * Flow Area (sq ft)      *          *    41.74  *          *
* E.G. Slope (ft/ft)     *0.016468  * Area (sq ft)           *          *    41.74  *          *
* Q Total (cfs)          *  286.00  * Flow (cfs)             *          *   286.00  *          *
* Top Width (ft)         *   28.90  * Top Width (ft)         *          *    28.90  *          *
* Vel Total (ft/s)       *    6.85  * Avg. Vel. (ft/s)       *          *     6.85  *          *
* Max Chl Dpth (ft)      *    2.32  * Hydr. Depth (ft)       *          *     1.44  *          *
* Conv. Total (cfs)      *  2228.7  * Conv. (cfs)            *          *   2228.7  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)       *          *    29.59  *          *
* Min Ch El (ft)         * 2343.07  * Shear (lb/sq ft)       *          *     1.45  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     9.94  *          *
* Frctn Loss (ft)        *    1.67  * Cum Volume (acre-ft)   *    0.02  *     8.94  *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *    0.09  *     6.76  *          *
*****************************************************************************************************

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: FIS Flood Zone
REACH: Mission            RS: 36

INPUT
Description: 1+300
Station Elevation Data    num=      12
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*************************************************************************************
   45.57 2347.92   159.01    2344   180.69    2344   189.27    2340   214.78    2340
  230.59 2346.93   271.17    2348   280.07 2346.31   427.63    2344   456.67    2346
  512.55 2346.25   652.62 2345.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
   45.57    .035   45.57    .035  456.67    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         45.57  456.67               200     200     200            .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2342.18  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.68  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)         * 2341.50  * Reach Len. (ft)        *  200.00  *   200.00  *  200.00  *
* Crit W.S. (ft)         * 2341.50  * Flow Area (sq ft)      *          *    43.20  *          *
* E.G. Slope (ft/ft)     *0.016839  * Area (sq ft)           *          *    43.20  *          *
* Q Total (cfs)          *  286.00  * Flow (cfs)             *          *   286.00  *          *
* Top Width (ft)         *   32.14  * Top Width (ft)         *          *    32.14  *          *
* Vel Total (ft/s)       *    6.62  * Avg. Vel. (ft/s)       *          *     6.62  *          *
* Max Chl Dpth (ft)      *    1.50  * Hydr. Depth (ft)       *          *     1.34  *          *
* Conv. Total (cfs)      *  2204.0  * Conv. (cfs)            *          *   2204.0  *          *
* Length Wtd. (ft)       *  200.00  * Wetted Per. (ft)       *          *    32.79  *          *
* Min Ch El (ft)         * 2340.00  * Shear (lb/sq ft)       *          *     1.38  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     9.17  *          *
* Frctn Loss (ft)        *    3.63  * Cum Volume (acre-ft)   *    0.02  *     8.84  *          *
* C & E Loss (ft)        *    0.09  * Cum SA (acres)         *    0.09  *     6.69  *          *
*****************************************************************************************************

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: FIS Flood Zone
REACH: Mission            RS: 34

INPUT
Description: 1+500
Station Elevation Data    num=      19
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*************************************************************************************
 -186.26     2346 -148.74 2345.86   -54.8 2339.88   22.59 2339.59   62.76    2340
  115.82 2340.55   160.63 2340.07   209.66    2338   219.09    2336   254.24    2336
   273.6 2340.11   310.56    2340    331.1    2336   349.75 2336.04   387.82    2342
  448.56 2345.82   490.03 2346.79   514.61 2346.13   602.59    2338

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -186.26    .035 -148.74    .035  448.56    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        -148.74  448.56               250     200     200            .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)         * 2337.30  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.39  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)         * 2336.91  * Reach Len. (ft)        *  250.00  *   200.00  *  200.00  *
* Crit W.S. (ft)         * 2336.91  * Flow Area (sq ft)      *          *    56.81  *          *
* E.G. Slope (ft/ft)     *0.019602  * Area (sq ft)           *          *    56.81  *          *
* Q Total (cfs)          *  286.00  * Flow (cfs)             *          *   286.00  *          *
* Top Width (ft)         *   72.54  * Top Width (ft)         *          *    72.54  *          *
* Vel Total (ft/s)       *    5.03  * Avg. Vel. (ft/s)       *          *     5.03  *          *
* Max Chl Dpth (ft)      *    0.91  * Hydr. Depth (ft)       *          *     0.78  *          *
* Conv. Total (cfs)      *  2042.7  * Conv. (cfs)            *          *   2042.7  *          *
* Length Wtd. (ft)       *  200.00  * Wetted Per. (ft)       *          *    72.89  *          *
* Min Ch El (ft)         * 2336.00  * Shear (lb/sq ft)       *          *     0.95  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *     4.80  *          *
* Frctn Loss (ft)        *    3.90  * Cum Volume (acre-ft)   *    0.02  *     8.61  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    0.09  *     6.45  *          *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
```

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

CROSS SECTION


RIVER: FIS Flood Zone
REACH: Mission            RS: 32

INPUT
Description: 1+700
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -284.04    2344 -243.74    2344 -118.46 2337.35   -75.6 2336.84  -46.51    2334
  -13.99    2334    27.6 2335.17  168.04 2334.99  253.22 2333.67  295.68    2330
  348.33 2330.04  360.87    2334  437.29    2338  497.79 2339.78  616.37    2334
  631.42 2333.89  653.39 2332.06   689.8 2321.85

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 -284.04    .035 -243.74    .035  497.79    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -243.74  497.79             200     200     200            .1       .3
Left Levee      Station= -243.74      Elevation=   2344
Right Levee     Station=  497.79      Elevation= 2339.78

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2331.36  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.42  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)          * 2330.94  * Reach Len. (ft)        *  200.00  *  200.00  *  200.00  *
* Crit W.S. (ft)          * 2330.94  * Flow Area (sq ft)      *          *   55.01  *          *
* E.G. Slope (ft/ft)      *0.019354  * Area (sq ft)           *          *   55.01  *          *
* Q Total (cfs)           *  286.00  * Flow (cfs)             *          *  286.00  *          *
* Top Width (ft)          *   66.41  * Top Width (ft)         *          *   66.41  *          *
* Vel Total (ft/s)        *    5.20  * Avg. Vel. (ft/s)       *          *    5.20  *          *
* Max Chl Dpth (ft)       *    9.09  * Hydr. Depth (ft)       *          *    0.83  *          *
* Conv. Total (cfs)       *  2055.8  * Conv. (cfs)            *          *  2055.8  *          *
* Length Wtd. (ft)        *  200.00  * Wetted Per. (ft)       *          *   66.59  *          *
* Min Ch El (ft)          * 2330.00  * Shear (lb/sq ft)      *          *    1.00  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    5.19  *          *
* Frctn Loss (ft)         *    0.44  * Cum Volume (acre-ft)   *    0.02  *    8.36  *          *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)         *    0.09  *    6.13  *          *
*************************************************************************************************

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: FIS Flood Zone
REACH: Mission            RS: 30

INPUT
Description: 1+900
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -250.32 2336.65 -126.77    2334  -102.3    2328  -79.42 2326.47  -53.84    2328
   15.58 2329.84  173.54 2329.68   248.4    2330  274.21    2326  307.47    2324
  329.12 2326.06  356.58    2326  431.57 2334.48  494.85 2334.48  604.27    2328
  621.53 2328.89  638.68  2328.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 -250.32    .035 -126.77    .035  431.57    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      -126.77  431.57             200     200     200            .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2326.43  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.49  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)          * 2325.93  * Reach Len. (ft)        *  200.00  *  200.00  *  200.00  *
* Crit W.S. (ft)          * 2325.93  * Flow Area (sq ft)      *          *   50.67  *          *
* E.G. Slope (ft/ft)      *0.018576  * Area (sq ft)           *          *   50.67  *          *
* Q Total (cfs)           *  286.00  * Flow (cfs)             *          *  286.00  *          *
* Top Width (ft)          *   52.44  * Top Width (ft)         *          *   52.44  *          *
* Vel Total (ft/s)        *    5.64  * Avg. Vel. (ft/s)       *          *    5.64  *          *
* Max Chl Dpth (ft)       *    1.93  * Hydr. Depth (ft)       *          *    0.97  *          *
* Conv. Total (cfs)       *  2098.4  * Conv. (cfs)            *          *  2098.4  *          *
* Length Wtd. (ft)        *  200.00  * Wetted Per. (ft)       *          *   52.59  *          *
* Min Ch El (ft)          * 2324.00  * Shear (lb/sq ft)      *          *    1.12  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    6.31  *          *
* Frctn Loss (ft)         *    3.59  * Cum Volume (acre-ft)   *    0.02  *    8.11  *          *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *    0.09  *    5.86  *          *
*************************************************************************************************

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: FIS Flood Zone
REACH: Mission            RS: 28

INPUT
Description: 2+100
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 -233.84 2330.43  -84.24    2324  -66.89    2324  -53.02    2320  -18.78 2321.74
   -3.04    2324    16.5    2322   25.01    2324   63.16 2323.8   91.57 2322.33
  170.95 2323.22  247.57    2324  273.66    2320  296.16    2320     360    2325
  420.77 2329.64  473.24 2330.78   579.4    2322  646.84 2321.94  675.91  2312.1

Manning's n Values        num=       3
```

Sta	n Val	Sta	n Val	Sta	n Val
-233.84	.035	-233.84	.035	420.77	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-233.84 420.77 210 200 200 .1 .3
Left Levee Station= 247.57 Elevation= 2324
Right Levee Station= 420.77 Elevation= 2329.64

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2321.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.035	
W.S. Elev (ft)	2321.40	Reach Len. (ft)	210.00	200.00	200.00
Crit W.S. (ft)	2321.40	Flow Area (sq ft)		50.54	
E.G. Slope (ft/ft)	*0.017379	Area (sq ft)		50.54	
Q Total (cfs)	286.00	Flow (cfs)		286.00	
Top Width (ft)	49.56	Top Width (ft)		49.56	
Vel Total (ft/s)	5.66	Avg. Vel. (ft/s)		5.66	
Max Chl Dpth (ft)	9.30	Hydr. Depth (ft)		1.02	
Conv. Total (cfs)	2169.5	Conv. (cfs)		2169.5	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		49.72	
Min Ch El (ft)	2320.00	Shear (lb/sq ft)		1.10	
Alpha	1.00	Stream Power (lb/ft s)		6.24	
Frctn Loss (ft)	0.96	Cum Volume (acre-ft)	0.02	7.88	
C & E Loss (ft)	0.07	Cum SA (acres)	0.09	5.62	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 26

INPUT
Description: 2+300
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-332.09	2322.62	-266.12	2322.02	-239	2320.3	-195.8	2319.85	-171.96	2317.86
-141.05	2318	-89.33	2319.39	8.82	2319.2	50.01	2318	62.61	2314
89.81	2314	132.42	2317.69	158.02	2316	168.26	2315.97	200.86	2319.7
272.99	2316.02	284.41	2313.88	317.24	2313.84	334.2	2320	386.09	2326
465.37	2326	491.34	2322.53	509.9	2321.9	558.51	2316	606.32	2315.97
632.67	2312.82								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-332.09	.035	8.82	.035	386.09	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
8.82 386.09 300 300 330 .1 .3
Left Levee Station= 200.86 Elevation= 2319.7
Right Levee Station= 334.2 Elevation= 2320

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2316.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.		0.035	
W.S. Elev (ft)	2315.63	Reach Len. (ft)	300.00	300.00	330.00
Crit W.S. (ft)	2315.63	Flow Area (sq ft)		70.82	
E.G. Slope (ft/ft)	*0.015633	Area (sq ft)		70.82	
Q Total (cfs)	490.00	Flow (cfs)		490.00	
Top Width (ft)	47.12	Top Width (ft)		47.12	
Vel Total (ft/s)	6.92	Avg. Vel. (ft/s)		6.92	
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)		1.50	
Conv. Total (cfs)	3919.0	Conv. (cfs)		3919.0	
Length Wtd. (ft)	300.00	Wetted Per. (ft)		47.60	
Min Ch El (ft)	2313.84	Shear (lb/sq ft)		1.45	
Alpha	1.00	Stream Power (lb/ft s)		10.05	
Frctn Loss (ft)	4.68	Cum Volume (acre-ft)	0.02	7.60	
C & E Loss (ft)	0.01	Cum SA (acres)	0.09	5.40	

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 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: FIS Flood Zone
REACH: Mission RS: 24

INPUT
Description: 2+500
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-695	2315	-645	2317	-555	2318	-500	2315	-466	2316
-415	2312	-393	2312	-313	2316	-285	2316	-240	2312
-123	2314	85	2313.5	140	2311	155	2308	185	2308
207	2312	340	2319	435	2319.5	482	2317.2	538	2308
658	2309	705	2306						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-695	.035	-555	.035	340	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-555 340 220 220 270 .1 .3
Left Levee Station= -555 Elevation= 2318
Right Levee Station= 340 Elevation= 2319

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2310.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.		0.035	
W.S. Elev (ft)	2309.82	Reach Len. (ft)	220.00	220.00	270.00

* Crit W.S. (ft)	* 2309.82	* Flow Area (sq ft)	*		* 71.98	*		*
* E.G. Slope (ft/ft)	*0.015585	* Area (sq ft)	*		* 71.98	*		*
* Q Total (cfs)	* 490.00	* Flow (cfs)	*		* 490.00	*		*
* Top Width (ft)	* 49.11	* Top Width (ft)	*		* 49.11	*		*
* Vel Total (ft/s)	* 6.81	* Avg. Vel. (ft/s)	*		* 6.81	*		*
* Max Chl Dpth (ft)	* 3.82	* Hydr. Depth (ft)	*		* 1.47	*		*
* Conv. Total (cfs)	* 3925.0	* Conv. (cfs)	*		* 3925.0	*		*
* Length Wtd. (ft)	* 220.00	* Wetted Per. (ft)	*		* 49.45	*		*
* Min Ch El (ft)	* 2308.00	* Shear (lb/sq ft)	*		* 1.42	*		*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*		* 9.64	*		*
* Frctn Loss (ft)	* 3.58	* Cum Volume (acre-ft)	*	0.02	* 7.11	*		*
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	*	0.09	* 5.07	*		*

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 22

INPUT
Description: 2+700
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-690	2308	-660	2312	-575	2312	-500	2314	-375	2309
-305	2304	-287	2304	-210	2307.5	55	2307.5	65	2304
85	2303	125	2305	152	2307.5	195	2308	237	2313
280	2313	320	2310	358	2309	460	2310.5	530	2310
570	2302.5	585	2298	600	2298	620	2300	640	2300

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-690	.035	-375	.035	195	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-375	195	230	240	.1	.3

Left Levee Station= 55 Elevation= 2307.5
Right Levee Station= 152 Elevation= 2307.5

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2305.72	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.61	* Wt. n-Val.	*	* 0.035	* *
* W.S. Elev (ft)	• 2305.10	* Reach Len. (ft)	* 230.00	* 240.00	* 240.00 *
* Crit W.S. (ft)	* 2305.10	* Flow Area (sq ft)	*	* 77.98	* *
* E.G. Slope (ft/ft)	*0.017022	* Area (sq ft)	*	* 77.98	* *
• Q Total (cfs)	* 490.00	* Flow (cfs)	*	* 490.00	* *
* Top Width (ft)	* 64.26	* Top Width (ft)	*	* 64.26	* *
* Vel Total (ft/s)	* 6.28	* Avg. Vel. (ft/s)	*	* 6.28	* *
* Max Chl Dpth (ft)	* 7.10	* Hydr. Depth (ft)	*	* 1.21	* *
* Conv. Total (cfs)	* 3755.7	* Conv. (cfs)	*	* 3755.7	* *
* Length Wtd. (ft)	* 240.00	* Wetted Per. (ft)	*	* 64.53	* *
* Min Ch El (ft)	* 2303.00	* Shear (lb/sq ft)	*	* 1.28	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 8.07	* *
* Frctn Loss (ft)	* 2.67	* Cum Volume (acre-ft)	* 0.02	* 6.73	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 0.09	* 4.78	* *

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: FIS Flood Zone
REACH: Mission RS: 20

INPUT
Description: 2+900
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-620	2308	-580	2308	-520	2306	-470	2305.75	-450	2307
-360	2306	-220	2300	-210	2298	-195	2298	-180	2300
-165	2300	-150	2298	-130	2303	-60	2302.8	-25	2299.8
-15	2299.8	-10	2298	20	2298	50	2300	120	2302
180	2310	260	2310.8	480	2298.5	510	2298	580	2300

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-620	.035	-450	.035	180	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-450	180	200	200	.1	.3

Left Levee Station= -360 Elevation= 2306
Right Levee Station= 180 Elevation= 2310

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2299.72	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.46	* Wt. n-Val.	*	* 0.035	* *
* W.S. Elev (ft)	* 2299.27	* Reach Len. (ft)	* 200.00	* 200.00	* 200.00 *
* Crit W.S. (ft)	* 2299.27	* Flow Area (sq ft)	*	* 90.41	* *
* E.G. Slope (ft/ft)	*0.018289	* Area (sq ft)	*	* 90.41	* *
* Q Total (cfs)	* 490.00	* Flow (cfs)	*	* 490.00	* *
* Top Width (ft)	* 97.87	* Top Width (ft)	*	* 97.87	* *
* Vel Total (ft/s)	* 5.42	* Avg. Vel. (ft/s)	*	* 5.42	* *
* Max Chl Dpth (ft)	* 1.27	* Hydr. Depth (ft)	*	* 0.92	* *
* Conv. Total (cfs)	* 3623.3	* Conv. (cfs)	*	* 3623.3	* *
* Length Wtd. (ft)	* 200.00	* Wetted Per. (ft)	*	* 98.59	* *
* Min Ch El (ft)	* 2298.00	* Shear (lb/sq ft)	*	* 1.05	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 5.67	* *
* Frctn Loss (ft)	* 3.71	* Cum Volume (acre-ft)	* 0.02	* 6.27	* *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.09	* 4.34	* *

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: 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: FIS Flood Zone
REACH: Mission RS: 19

INPUT
Description: 3+000
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
52.74	2299.74	81.63	2298.73	100.84	2296	152.59	2295.81	199	2294
210.08	2292	247.52	2292	252.8	2291.63	258.56	2292	349.01	2292
362.72	2294	420.28	2295.25						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
52.74	.035	199	.035	362.72	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
199	362.72	100	100	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2293.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.		0.035	
W.S. Elev (ft)	2292.97	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	2292.97	Flow Area (sq ft)		142.93	
E.G. Slope (ft/ft)	0.018683	Area (sq ft)		142.93	
Q Total (cfs)	799.00	Flow (cfs)		799.00	
Top Width (ft)	150.98	Top Width (ft)		150.98	
Vel Total (ft/s)	5.59	Avg. Vel. (ft/s)		5.59	
Max Chl Dpth (ft)	1.34	Hydr. Depth (ft)		0.95	
Conv. Total (cfs)	5845.6	Conv. (cfs)		5845.6	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		151.16	
Min Ch El (ft)	2291.63	Shear (lb/sq ft)		1.10	
Alpha	1.00	Stream Power (lb/ft s)		6.17	
Frctn Loss (ft)	1.77	Cum Volume (acre-ft)	0.02	5.73	
C & E Loss (ft)	0.02	Cum SA (acres)	0.09	3.76	

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: FIS Flood Zone
REACH: Mission RS: 18

INPUT
Description: 3+100
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
41.32	2296	62.28	2296	80.22	2293.9	112.9	2292.5	168.47	2292
214.86	2286	227.03	2286	237.92	2288	303.24	2290	322.54	2290
347.5	2291	369.05	2290.98	404.01	2290	432.4	2290		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
41.32	.035	168.47	.035	347.5	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
168.47	347.5	165	165	.1	.3

Cross Section Lid num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
232.61	2291	2290	236.61	2291	2290

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2289.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.		0.035	
W.S. Elev (ft)	2289.11	Reach Len. (ft)	165.00	165.00	165.00
Crit W.S. (ft)	2289.11	Flow Area (sq ft)		118.63	
E.G. Slope (ft/ft)	0.016733	Area (sq ft)		118.63	
Q Total (cfs)	799.00	Flow (cfs)		799.00	
Top Width (ft)	83.50	Top Width (ft)		83.50	
Vel Total (ft/s)	6.74	Avg. Vel. (ft/s)		6.74	
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)		1.42	
Conv. Total (cfs)	6176.8	Conv. (cfs)		6176.8	
Length Wtd. (ft)	165.00	Wetted Per. (ft)		87.34	
Min Ch El (ft)	2287.03	Shear (lb/sq ft)		1.42	
Alpha	1.00	Stream Power (lb/ft s)		9.56	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.02	5.43	
C & E Loss (ft)		Cum SA (acres)	0.09	3.50	

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.

CULVERT

RIVER: FIS Flood Zone
REACH: Mission RS: 17

INPUT
Description:
Distance from Upstream XS = 100
Deck/Roadway Width = 4
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
221.03	2291	2290	225.03	2291	2290

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
**********************************************************************************
   41.32    2296   62.28    2296   80.22  2293.9   112.9  2292.5  168.47    2292
  214.86    2286  227.03    2286  237.92    2288  303.24    2290  322.54    2290
  347.5     2291  369.05 2290.98  404.01    2290   432.4    2290

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
   41.32    .035  168.47    .035   347.5    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
        168.47   347.5             .1       .3

Downstream  Deck/Roadway Coordinates
    num=        2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
**************************************************
  260.31  2289.6  2288.6  264.31  2289.6  2288.6

Downstream Bridge Cross Section Data
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
   48.08    2294   58.34    2294   98.13    2292  111.08    2290  200.49    2286
  206.56    2286  249.41 2284.03  258.31    2282  260.61    2282  278.52    2286
     301 2285.51  321.73 2285.46  350.14  2284.8  369.37    2286  413.53 2286.45

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
   48.08    .035  200.49    .035  413.53    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
        200.49  413.53             .1       .3

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

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1         Box         7       4
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
                35      100     .014      .014          0                  .05                  1
Upstream   Elevation =  2283
           Centerline Station =  223.03
Downstream Elevation =  2281.6
           Centerline Station =  262.31

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1
**********************************************************************
* Q Culv Group (cfs)     *  196.19  * Culv Full Len (ft)     *         *
* # Barrels              *       1  * Culv Vel US (ft/s)     *   11.65  *
* Q Barrel (cfs)         *  196.19  * Culv Vel DS (ft/s)     *   14.10  *
* E.G. US. (ft)          * 2289.75  * Culv Inv El Up (ft)    * 2283.00  *
* W.S. US. (ft)          * 2289.11  * Culv Inv El Dn (ft)    * 2281.60  *
* E.G. DS (ft)           * 2286.34  * Culv Frctn Ls (ft)     *    1.15  *
* W.S. DS (ft)           * 2285.85  * Culv Exit Loss (ft)    *    1.83  *
* Delta EG (ft)          *    3.41  * Culv Entr Loss (ft)    *    0.43  *
* Delta WS (ft)          *    3.26  * Q Weir (cfs)           *  602.81  *
* E.G. IC (ft)           * 2289.75  * Weir Sta Lft (ft)      *  185.79  *
* E.G. OC (ft)           * 2289.42  * Weir Sta Rgt (ft)      *  295.39  *
* Culvert Control        *   Inlet  * Weir Submerg           *    0.00  *
* Culv WS Inlet (ft)     * 2287.21  * Weir Max Depth (ft)    *    3.76  *
* Culv WS Outlet (ft)    * 2285.08  * Weir Avg Depth (ft)    *    1.57  *
* Culv Nml Depth (ft)    *    3.36  * Weir Flow Area (sq ft) *  165.99  *
* Culv Crt Depth (ft)    *    4.21  * Min El Weir Flow (ft)  * 2286.01  *
**********************************************************************

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note:    The flow in the culvert is entirely supercritical.

CROSS SECTION


RIVER: FIS Flood Zone
REACH: Mission            RS: 16

INPUT
Description: 3+300
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
**********************************************************************************
   48.08    2294   58.34    2294   98.13    2292  111.08    2290  200.49    2286
  206.56    2286  249.41 2284.03  258.31    2282  260.61    2282  278.52    2286
     301 2285.51  321.73 2285.46  350.14  2284.8  369.37    2286  413.53 2286.45

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
   48.08    .035  200.49    .035  413.53    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        200.49  413.53               100     100     110             .1       .3
Cross Section Lid
    num=        2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
**************************************************
  232.61  2289.6  2288.6  236.61  2289.6  2288.6

CROSS SECTION OUTPUT  Profile #PF 1
**************************************************************************************************
* E.G. Elev (ft)         * 2286.34  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.49  * Wt. n-Val.             *         *    0.035 *          *
* W.S. Elev (ft)         * 2285.85  * Reach Len. (ft)       * 100.00  *   100.00 *  110.00  *
* Crit W.S. (ft)         * 2285.85  * Flow Area (sq ft)     *         *   142.72 *          *
* E.G. Slope (ft/ft)     *0.019006  * Area (sq ft)          *         *   142.72 *          *
* Q Total (cfs)          *  799.00  * Flow (cfs)            *         *   799.00 *          *
* Top Width (ft)         *  149.54  * Top Width (ft)        *         *   149.54 *          *
* Vel Total (ft/s)       *    5.60  * Avg. Vel. (ft/s)      *         *     5.60 *          *
* Max Chl Dpth (ft)      *    1.23  * Hydr. Depth (ft)      *         *     0.95 *          *
* Conv. Total (cfs)      *  5795.7  * Conv. (cfs)           *         *  5795.7  *          *
* Length Wtd. (ft)       *  100.00  * Wetted Per. (ft)      *         *   152.55 *          *
* Min Ch El (ft)         * 2284.62  * Shear (lb/sq ft)      *         *     1.11 *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *         *     6.21 *          *
* Frctn Loss (ft)        *    1.78  * Cum Volume (acre-ft)   *    0.02 *     4.94 *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *    0.09 *     3.05 *          *
**************************************************************************************************

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: FIS Flood Zone
REACH: Mission RS: 15

INPUT
Description: 3+400
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
17.71	2286.97	26.99	2286.94	54.39	2282	65.42	2282	85.7	2284
108.83	2284	132.46	2281.98	167.75	2280	178.3	2280	192.04	2280.74
214.38	2280.54	219.45	2280.29	230.34	2282	251.22	2282	260.86	2284
278.16	2286	332.59	2286						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
17.71	.035	108.83	.035	278.16	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
108.83 278.16 60 60 60 .1 .3
Left Levee Station= 108.83 Elevation= 2284

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2282.61	Element	Left OB	Channel / Right OB
Vel Head (ft)	0.55	Wt. n-Val.		0.035 /
W.S. Elev (ft)	2282.07	Reach Len. (ft)	60.00	60.00 / 60.00
Crit W.S. (ft)	2282.07	Flow Area (sq ft)		134.75 /
E.G. Slope (ft/ft)	0.016770	Area (sq ft)		134.75 /
Q Total (cfs)	799.00	Flow (cfs)		799.00 /
Top Width (ft)	120.08	Top Width (ft)		120.08 /
Vel Total (ft/s)	5.93	Avg. Vel. (ft/s)		5.93 /
Max Chl Dpth (ft)	2.07	Hydr. Depth (ft)		1.12 /
Conv. Total (cfs)	6169.9	Conv. (cfs)		6169.9 /
Length Wtd. (ft)	60.00	Wetted Per. (ft)		120.31 /
Min Ch El (ft)	2280.00	Shear (lb/sq ft)		1.17 /
Alpha	1.00	Stream Power (lb/ft s)		6.95 /
Frctn Loss (ft)	0.96	Cum Volume (acre-ft)	0.02	4.62 /
C & E Loss (ft)	0.03	Cum SA (acres)	0.09	2.74 /

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: 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: FIS Flood Zone
REACH: Mission RS: 14

INPUT
Description: 3+500
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
28.41	2280	52.78	2282	95.32	2282	128.99	2280	163.46	2280
169.48	2279.49	204.01	2278	221.5	2276	237.94	2276	263.15	2282
300.4	2284	325.65	2284.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
28.41	.035	95.32	.035	263.15	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
95.32 263.15 240 260 390 .1 .3
Left Levee Station= 95.32 Elevation= 2282

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2279.75	Element	Left OB	Channel / Right OB
Vel Head (ft)	0.81	Wt. n-Val.		0.035 /
W.S. Elev (ft)	2278.94	Reach Len. (ft)	240.00	260.00 / 390.00
Crit W.S. (ft)	2278.94	Flow Area (sq ft)		110.29 /
E.G. Slope (ft/ft)	0.015398	Area (sq ft)		110.29 /
Q Total (cfs)	799.00	Flow (cfs)		799.00 /
Top Width (ft)	67.92	Top Width (ft)		67.92 /
Vel Total (ft/s)	7.24	Avg. Vel. (ft/s)		7.24 /
Max Chl Dpth (ft)	2.93	Hydr. Depth (ft)		1.62 /
Conv. Total (cfs)	6438.9	Conv. (cfs)		6438.9 /
Length Wtd. (ft)	260.00	Wetted Per. (ft)		68.40 /
Min Ch El (ft)	2276.00	Shear (lb/sq ft)		1.55 /
Alpha	1.00	Stream Power (lb/ft s)		11.23 /
Frctn Loss (ft)	2.33	Cum Volume (acre-ft)	0.02	4.45 /
C & E Loss (ft)	0.15	Cum SA (acres)	0.09	2.61 /

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 12

INPUT
Description: 3+700
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-300	2280	-280	2282	-170	2282	-65	2278	-47	2275

```
    -30    2266      40  2266.5      75    2268     100    2275     150    2270
    160    2270     200    2280     220    2280     255    2282     370    2286
    500    2286     530    2294

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -300    .035     -65    .035     200    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           -65     200              140      90     120             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2268.55  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.31  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)         * 2268.24  * Reach Len. (ft)       *  140.00  *   90.00  *  120.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          *  178.76  *          *
* E.G. Slope (ft/ft)     *0.005851  * Area (sq ft)           *          *  178.76  *          *
* Q Total (cfs)          *  799.00  * Flow (cfs)            *          *  799.00  *          *
* Top Width (ft)         *  110.09  * Top Width (ft)        *          *  110.09  *          *
* Vel Total (ft/s)       *    4.47  * Avg. Vel. (ft/s)      *          *    4.47  *          *
* Max Chl Dpth (ft)      *    2.24  * Hydr. Depth (ft)      *          *    1.62  *          *
* Conv. Total (cfs)      * 10445.6  * Conv. (cfs)           *          * 10445.6  *          *
* Length Wtd. (ft)       *   90.00  * Wetted Per. (ft)      *          *  110.71  *          *
* Min Ch El (ft)         * 2266.00  * Shear (lb/sq ft)      *          *    0.59  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.64  *          *
* Frctn Loss (ft)        *    0.85  * Cum Volume (acre-ft)  *    0.02  *    3.59  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *    0.09  *    2.08  *          *
*****************************************************************************************

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: FIS Flood Zone
REACH: Mission            RS: 10

INPUT
Description: 3+900
Station Elevation Data    num=      14
     Sta    Elev      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
    -370  2273.5    -300    2282    -185    2282    -110    2276     -45    2276
     -30    2274     -10    2266      70  2265.5      90  2266.5     120    2280
     180    2282     240    2283     345    2286     490    2286

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -370    .035    -185    .035     120    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           -185     120              110     120     125             .1      .3
Left Levee      Station=    -185      Elevation=    2282
Right Levee     Station=     120      Elevation=    2280

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2267.67  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.64  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)         * 2267.03  * Reach Len. (ft)       *  110.00  *  120.00  *  125.00  *
* Crit W.S. (ft)         * 2267.03  * Flow Area (sq ft)      *          *  124.87  *          *
* E.G. Slope (ft/ft)     *0.017824  * Area (sq ft)           *          *  124.87  *          *
* Q Total (cfs)          *  799.00  * Flow (cfs)            *          *  799.00  *          *
* Top Width (ft)         *  103.76  * Top Width (ft)        *          *  103.76  *          *
* Vel Total (ft/s)       *    6.40  * Avg. Vel. (ft/s)      *          *    6.40  *          *
* Max Chl Dpth (ft)      *    1.53  * Hydr. Depth (ft)      *          *    1.20  *          *
* Conv. Total (cfs)      *  5984.7  * Conv. (cfs)           *          *  5984.7  *          *
* Length Wtd. (ft)       *  120.00  * Wetted Per. (ft)      *          *  104.10  *          *
* Min Ch El (ft)         * 2265.50  * Shear (lb/sq ft)      *          *    1.33  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    8.54  *          *
* Frctn Loss (ft)        *    2.03  * Cum Volume (acre-ft)  *    0.02  *    3.27  *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *    0.09  *    1.86  *          *
*****************************************************************************************

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: FIS Flood Zone
REACH: Mission            RS: 08

INPUT
Description: 4+100
Station Elevation Data    num=      11
     Sta    Elev      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
    -365    2282    -240    2282    -140    2274     -80    2274     -45    2262
      38    2262      58    2264      90    2279     160    2280     300    2286
     305    2286

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -365    .035     -80    .035      90    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           -80      90              200     200     200             .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************
* E.G. Elev (ft)         * 2264.00  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.61  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)         * 2263.39  * Reach Len. (ft)       *  200.00  *  200.00  *  200.00  *
* Crit W.S. (ft)         * 2263.37  * Flow Area (sq ft)      *          *  127.52  *          *
* E.G. Slope (ft/ft)     *0.016007  * Area (sq ft)           *          *  127.52  *          *
* Q Total (cfs)          *  799.00  * Flow (cfs)            *          *  799.00  *          *
* Top Width (ft)         *  100.91  * Top Width (ft)        *          *  100.91  *          *
* Vel Total (ft/s)       *    6.27  * Avg. Vel. (ft/s)      *          *    6.27  *          *
* Max Chl Dpth (ft)      *    1.39  * Hydr. Depth (ft)      *          *    1.26  *          *
* Conv. Total (cfs)      *  6315.2  * Conv. (cfs)           *          *  6315.2  *          *
* Length Wtd. (ft)       *  200.00  * Wetted Per. (ft)      *          *  101.21  *          *
* Min Ch El (ft)         * 2262.00  * Shear (lb/sq ft)      *          *    1.26  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    7.89  *          *
* Frctn Loss (ft)        *    3.35  * Cum Volume (acre-ft)  *    0.02  *    2.93  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *    0.09  *    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: FIS Flood Zone
REACH: Mission RS: 06

INPUT
Description: 4+300
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-345	2284	-280	2282	-155	2270.5	-80	2270	-65	2268
-45	2258	-30	2258	60	2260	90	2278	100	2280
120	2280	240	2284	260	2285				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-345	.035	-80	.035	90	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-80	90	200	200	200	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2260.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.		0.035	
W.S. Elev (ft)	2260.04	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	2260.04	Flow Area (sq ft)		127.99	
E.G. Slope (ft/ft)	0.017590	Area (sq ft)		127.99	
Q Total (cfs)	799.00	Flow (cfs)		799.00	
Top Width (ft)	109.13	Top Width (ft)		109.13	
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)		6.24	
Max Chl Dpth (ft)	2.04	Hydr. Depth (ft)		1.17	
Conv. Total (cfs)	6024.4	Conv. (cfs)		6024.4	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		109.65	
Min Ch El (ft)	2258.00	Shear (lb/sq ft)		1.28	
Alpha	1.00	Stream Power (lb/ft s)		8.00	
Frctn Loss (ft)	0.73	Cum Volume (acre-ft)	0.02	2.34	
C & E Loss (ft)	0.14	Cum SA (acres)	0.09	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.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 04

INPUT
Description: 4+500
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-475	2282	-340	2282	-335	2279	-160	2264	-75	2264
-50	2254	30	2254	60	2256	80	2266.5	100	2267.5
120	2267	130	2268	160	2268	250	2274	280	2274.5
330	2274	520	2280						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-475	.035	-75	.035	80	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-75	80	200	200	200	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2256.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.035	
W.S. Elev (ft)	2256.69	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)		Flow Area (sq ft)		275.22	
E.G. Slope (ft/ft)	0.001525	Area (sq ft)		275.22	
Q Total (cfs)	799.00	Flow (cfs)		799.00	
Top Width (ft)	118.03	Top Width (ft)		118.03	
Vel Total (ft/s)	2.90	Avg. Vel. (ft/s)		2.90	
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)		2.33	
Conv. Total (cfs)	20458.7	Conv. (cfs)		20458.7	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		118.79	
Min Ch El (ft)	2254.00	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.64	
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	0.02	1.41	
C & E Loss (ft)	0.00	Cum SA (acres)	0.09	0.58	

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission *RS: 02*

INPUT
Description: 4+700
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-430	2262.5	-400	2256	-360	2256.5	-320	2258	-280	2258
-220	2260.5	-200	2260	-110	2260	-100	2260.5	-60	2260
-38	2253	30	2253.5	60	2256	88	2270	130	2272
180	2268	250	2271	260	2274	360	2276		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-430	.035	-100	.035	88	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-100	88	29	29	29	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2256.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	2256.42	Reach Len. (ft)	29.00	29.00	29.00
Crit W.S. (ft)		Flow Area (sq ft)	7.56	284.50	

* E.G. Slope (ft/ft)	*0.001225	* Area (sq ft)	* 7.56	* 284.50	*	*	*
* Q Total (cfs)	* 799.00	* Flow (cfs)	* 3.98	* 795.02	*	*	*
* Top Width (ft)	* 145.36	* Top Width (ft)	* 35.76	* 109.60	*	*	*
* Vel Total (ft/s)	* 2.74	* Avg. Vel. (ft/s)	* 0.53	* 2.79	*	*	*
* Max Chl Dpth (ft)	* 3.42	* Hydr. Depth (ft)	* 0.21	* 2.60	*	*	*
* Conv. Total (cfs)	* 22825.5	* Conv. (cfs)	* 113.7	* 22711.8	*	*	*
* Length Wtd. (ft)	* 29.00	* Wetted Per. (ft)	* 35.81	* 110.34	*	*	*
* Min Ch El (ft)	* 2253.00	* Shear (lb/sq ft)	* 0.02	* 0.20	*	*	*
* Alpha	* 1.04	* Stream Power (lb/ft s)	* 0.01	* 0.55	*	*	*
* Frctn Loss (ft)	* 0.09	* Cum Volume (acre-ft)	* 0.00	* 0.13	*	*	*
* C & E Loss (ft)	* 0.08	* Cum SA (acres)	* 0.01	* 0.05	*	*	*

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: FIS Flood Zone
REACH: Mission RS: 01

INPUT
Description: 4+729
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-220	2260	-50	2260	-30	2258	-20	2252	-15	2252
0	2255	10	2254.9	15	2252	20	2252	30	2256
60	2258.5	90	2269	130	2270.5	160	2270	195	2268
240	2270								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-220	.035	-30	.035	60	.035

Bank Sta: Left	Right	Coeff Contr.	Expan.
-30	60	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2256.37	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (ft)	* 0.94	* Wt. n-Val.	*	* 0.035 *	*
* W.S. Elev (ft)	* 2255.43	* Reach Len. (ft)	*	*	*
* Crit W.S. (ft)	* 2255.43	* Flow Area (sq ft)	*	* 102.43 *	*
* E.G. Slope (ft/ft)	*0.015443	* Area (sq ft)	*	* 102.43 *	*
* Q Total (cfs)	* 799.00	* Flow (cfs)	*	* 799.00 *	*
* Top Width (ft)	* 54.29	* Top Width (ft)	*	* 54.29 *	*
* Vel Total (ft/s)	* 7.80	* Avg. Vel. (ft/s)	*	* 7.80 *	*
* Max Chl Dpth (ft)	* 3.43	* Hydr. Depth (ft)	*	* 1.89 *	*
* Conv. Total (cfs)	* 6429.5	* Conv. (cfs)	*	* 6429.5 *	*
* Length Wtd. (ft)	*	* Wetted Per. (ft)	*	* 56.98 *	*
* Min Ch El (ft)	* 2252.00	* Shear (lb/sq ft)	*	* 1.73 *	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 13.52 *	*
* Frctn Loss (ft)	*	* Cum Volume (acre-ft)	*	*	*
* C & E Loss (ft)	*	* Cum SA (acres)	*	*	*

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is below critical depth). Water surface set to critical depth.

SUMMARY OF MANNING'S N VALUES

River:FIS Flood Zone

Reach	River Sta.	n1	n2	n3
*Mission	48	.035*	.035*	.035*
*Mission	46	.035*	.035*	.035*
*Mission	44	.035*	.035*	.035*
*Mission	42	.035*	.035*	.035*
*Mission	40	.035*	.035*	.035*
*Mission	37	.035*	.035*	.035*
*Mission	36	.035*	.035*	.035*
*Mission	34	.035*	.035*	.035*
*Mission	32	.035*	.035*	.035*
*Mission	30	.035*	.035*	.035*
*Mission	28	.035*	.035*	.035*
*Mission	26	.035*	.035*	.035*
*Mission	24	.035*	.035*	.035*
*Mission	22	.035*	.035*	.035*
*Mission	20	.035*	.035*	.035*
*Mission	19	.035*	.035*	.035*
*Mission	18	.035*	.035*	.035*
*Mission	17	*Culvert *	*	*
*Mission	16	.035*	.035*	.035*
*Mission	15	.035*	.035*	.035*
*Mission	14	.035*	.035*	.035*
*Mission	12	.035*	.035*	.035*
*Mission	10	.035*	.035*	.035*
*Mission	08	.035*	.035*	.035*
*Mission	06	.035*	.035*	.035*
*Mission	04	.035*	.035*	.035*
*Mission	02	.035*	.035*	.035*
*Mission	01	.035*	.035*	.035*

SUMMARY OF REACH LENGTHS

River: FIS Flood Zone

Reach	River Sta.	Left	Channel	Right
*Mission	48	200*	200*	200*
*Mission	46	200*	200*	200*
*Mission	44	400*	210*	200*
*Mission	42	220*	220*	350*
*Mission	40	300*	300*	300*
*Mission	37	100*	100*	100*
*Mission	36	200*	200*	200*
*Mission	34	250*	200*	200*
*Mission	32	200*	200*	200*
*Mission	30	200*	200*	200*
*Mission	28	210*	200*	200*
*Mission	26	300*	300*	330*
*Mission	24	220*	220*	270*
*Mission	22	230*	240*	240*
*Mission	20	200*	200*	200*
*Mission	19	100*	100*	100*
*Mission	18	165*	165*	165*
*Mission	17	*Culvert *	*	*

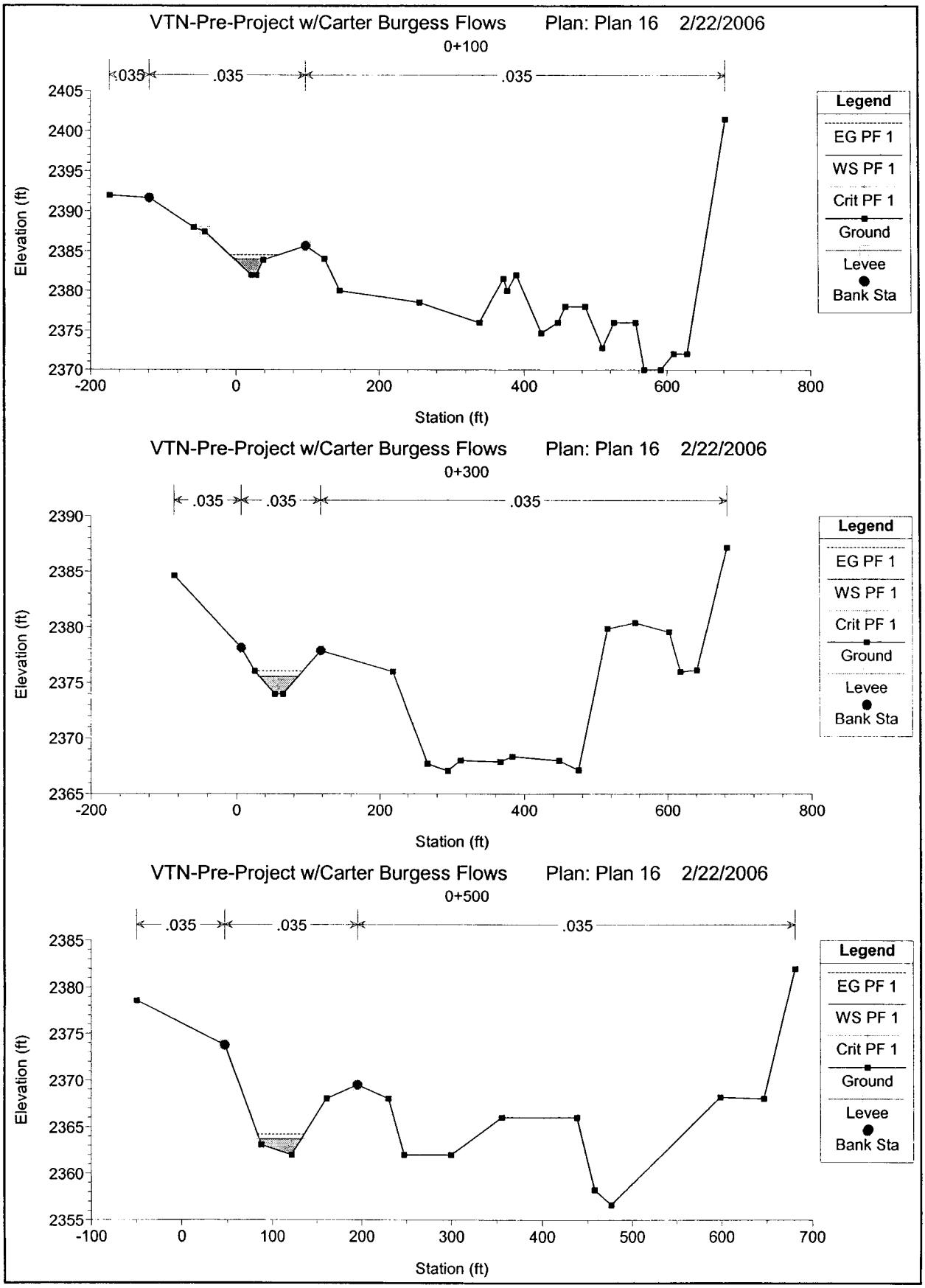
*Mission	*	16	*	100*	100*	110*
*Mission	*	15	*	60*	60*	60*
*Mission	*	14	*	240*	260*	390*
*Mission	*	12	*	140*	90*	120*
*Mission	*	10	*	110*	120*	125*
*Mission	*	08	*	200*	200*	200*
*Mission	*	06	*	200*	200*	200*
*Mission	*	04	*	200*	200*	200*
*Mission	*	02	*	29*	29*	29*
*Mission	*	01	*	*	*	*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: FIS Flood Zone

* Reach	*	River Sta.	* Contr.	* Expan.	*
*Mission	*	48	*	.1*	.3*
*Mission	*	46	*	.1*	.3*
*Mission	*	44	*	.1*	.3*
*Mission	*	42	*	.1*	.3*
*Mission	*	40	*	.1*	.3*
*Mission	*	37	*	.1*	.3*
*Mission	*	36	*	.1*	.3*
*Mission	*	34	*	.1*	.3*
*Mission	*	32	*	.1*	.3*
*Mission	*	30	*	.1*	.3*
*Mission	*	28	*	.1*	.3*
*Mission	*	26	*	.1*	.3*
*Mission	*	24	*	.1*	.3*
*Mission	*	22	*	.1*	.3*
*Mission	*	20	*	.1*	.3*
*Mission	*	19	*	.1*	.3*
*Mission	*	18	*	.1*	.3*
*Mission	*	17	*Culvert	*	*
*Mission	*	16	*	.1*	.3*
*Mission	*	15	*	.1*	.3*
*Mission	*	14	*	.1*	.3*
*Mission	*	12	*	.1*	.3*
*Mission	*	10	*	.1*	.3*
*Mission	*	08	*	.1*	.3*
*Mission	*	06	*	.1*	.3*
*Mission	*	04	*	.1*	.3*
*Mission	*	02	*	.1*	.3*
*Mission	*	01	*	.1*	.3*

HEC-RAS Plan: Plan 16 River: FIS Flood Zone Reach: Mission 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	Hydr Depth
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Mission	48	PF 1	286.00	2382.00	2384.01	2384.01	2384.56	0.017231	5.95	48.10	43.38	0.99	1.11
Mission	46	PF 1	286.00	2374.00	2375.57	2375.57	2376.04	0.018018	5.50	52.03	54.80	0.99	0.95
Mission	44	PF 1	286.00	2362.00	2363.70	2363.70	2364.22	0.017427	5.76	49.67	47.47	0.99	1.05
Mission	42	PF 1	286.00	2354.00	2356.03	2356.03	2356.68	0.016645	6.48	44.13	33.92	1.00	1.30
Mission	40	PF 1	286.00	2350.00	2351.75	2351.75	2352.33	0.016829	6.07	47.11	40.34	0.99	1.17
Mission	37	PF 1	286.00	2343.07	2345.39	2345.39	2346.12	0.016468	6.85	41.74	28.90	1.00	1.44
Mission	36	PF 1	286.00	2340.00	2341.50	2341.50	2342.18	0.016839	6.62	43.20	32.14	1.01	1.34
Mission	34	PF 1	286.00	2336.00	2336.91	2336.91	2337.30	0.019602	5.03	56.81	72.54	1.00	0.78
Mission	32	PF 1	286.00	2330.00	2330.94	2330.94	2331.36	0.019354	5.20	55.01	66.41	1.01	0.83
Mission	30	PF 1	286.00	2324.00	2325.93	2325.93	2326.43	0.018576	5.64	50.67	52.44	1.01	0.97
Mission	28	PF 1	286.00	2320.00	2321.40	2321.40	2321.90	0.017379	5.66	50.54	49.56	0.99	1.02
Mission	26	PF 1	490.00	2313.84	2315.63	2315.63	2316.38	0.015633	6.92	70.82	47.12	0.99	1.50
Mission	24	PF 1	490.00	2308.00	2309.82	2309.82	2310.54	0.015585	6.81	71.98	49.11	0.99	1.47
Mission	22	PF 1	490.00	2303.00	2305.10	2305.10	2305.72	0.017022	6.28	77.98	64.26	1.01	1.21
Mission	20	PF 1	490.00	2298.00	2299.27	2299.27	2299.72	0.018289	5.42	90.41	97.87	0.99	0.92
Mission	19	PF 1	799.00	2291.63	2292.97	2292.97	2293.46	0.018683	5.59	142.93	150.98	1.01	0.95
Mission	18	PF 1	799.00	2287.03	2289.11	2289.11	2289.82	0.016733	6.74	118.63	83.50	0.90	1.42
Mission	17		Culvert										
Mission	16	PF 1	799.00	2284.62	2285.85	2285.85	2286.34	0.019006	5.60	142.72	149.54	0.92	0.95
Mission	15	PF 1	799.00	2280.00	2282.07	2282.07	2282.61	0.016770	5.93	134.75	120.08	0.99	1.12
Mission	14	PF 1	799.00	2276.00	2278.94	2278.94	2279.75	0.015398	7.24	110.29	67.92	1.00	1.62
Mission	12	PF 1	799.00	2266.00	2268.24		2268.55	0.005851	4.47	178.76	110.09	0.62	1.62
Mission	10	PF 1	799.00	2265.50	2267.03	2267.03	2267.87	0.017824	6.40	124.87	103.76	1.03	1.20
Mission	08	PF 1	799.00	2262.00	2263.39	2263.37	2264.00	0.016007	6.27	127.52	100.91	0.98	1.26
Mission	06	PF 1	799.00	2258.00	2260.04	2260.04	2260.64	0.017590	6.24	127.99	109.13	1.02	1.17
Mission	04	PF 1	799.00	2254.00	2256.69		2256.82	0.001525	2.90	275.22	118.03	0.34	2.33
Mission	02	PF 1	799.00	2253.00	2256.42		2256.54	0.001225	2.79	292.06	145.36	0.31	2.01
Mission	01	PF 1	799.00	2252.00	2255.43	2255.43	2256.37	0.015443	7.80	102.43	54.29	1.00	1.89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.035
.035
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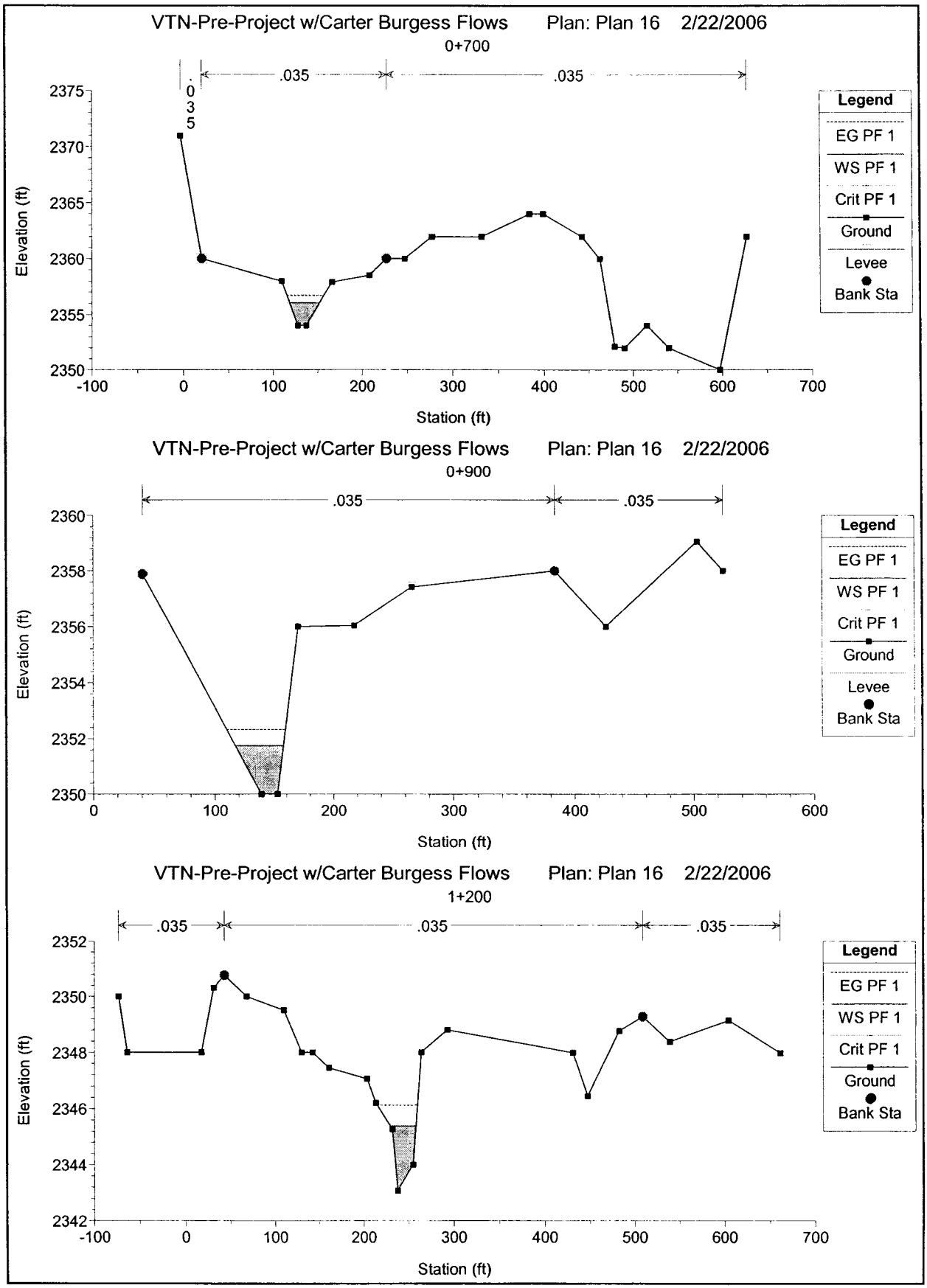
2400
2395
2390
2385
2380
2375
2370
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
0+300
.035
.035
.035
Elevation (ft)
2390
2385
2380
2375
2370
2365
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
0+500
.035
.035
.035
Elevation (ft)
2385
2380
2375
2370
2365
2360
2355
-100
0
100
200
300
400
500
600
700
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta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Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
0+900
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
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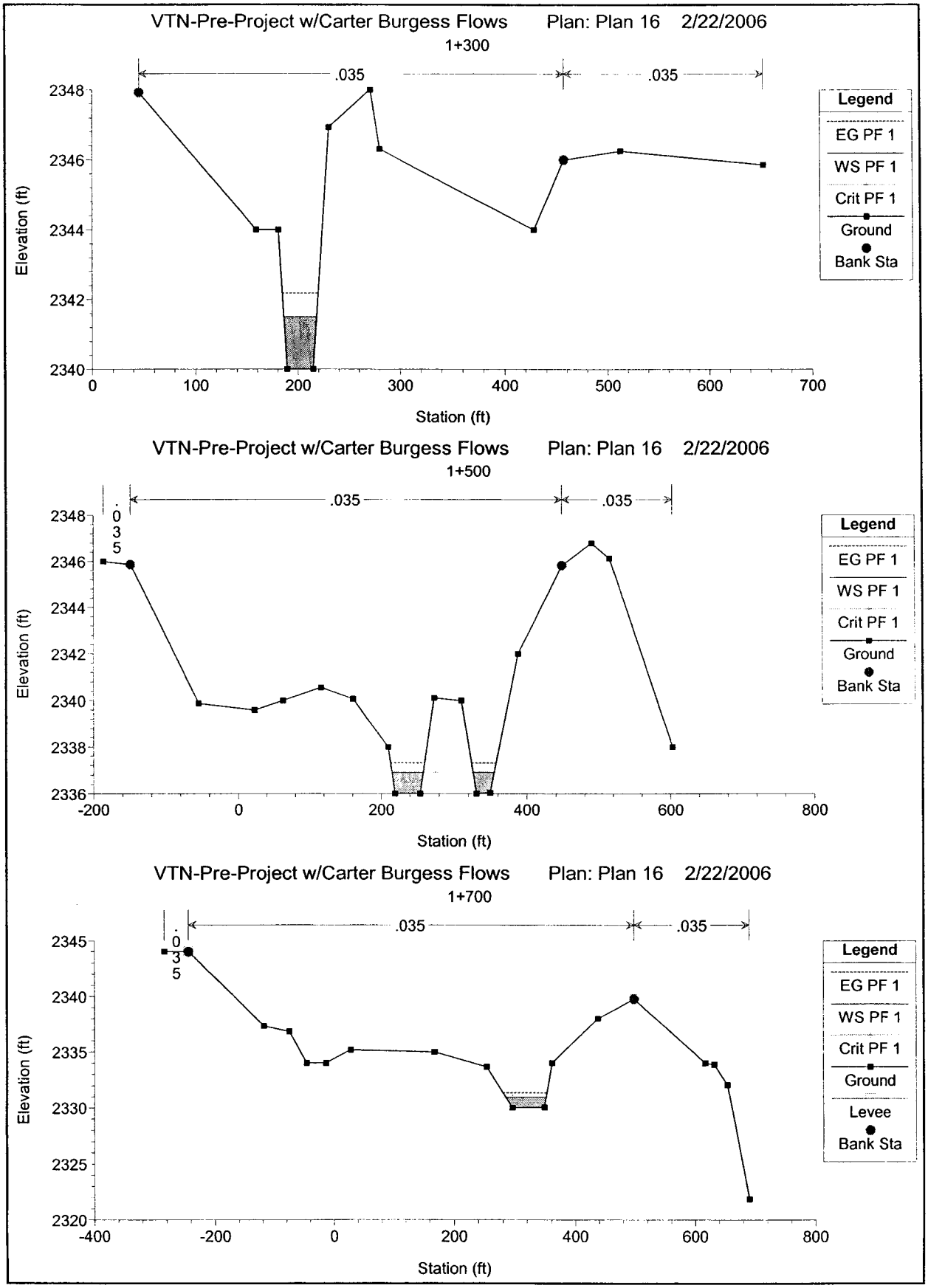
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta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WS PF 1
Crit PF 1
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Bank Sta
Elevation (ft)
Station (ft)
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
1+500
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.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
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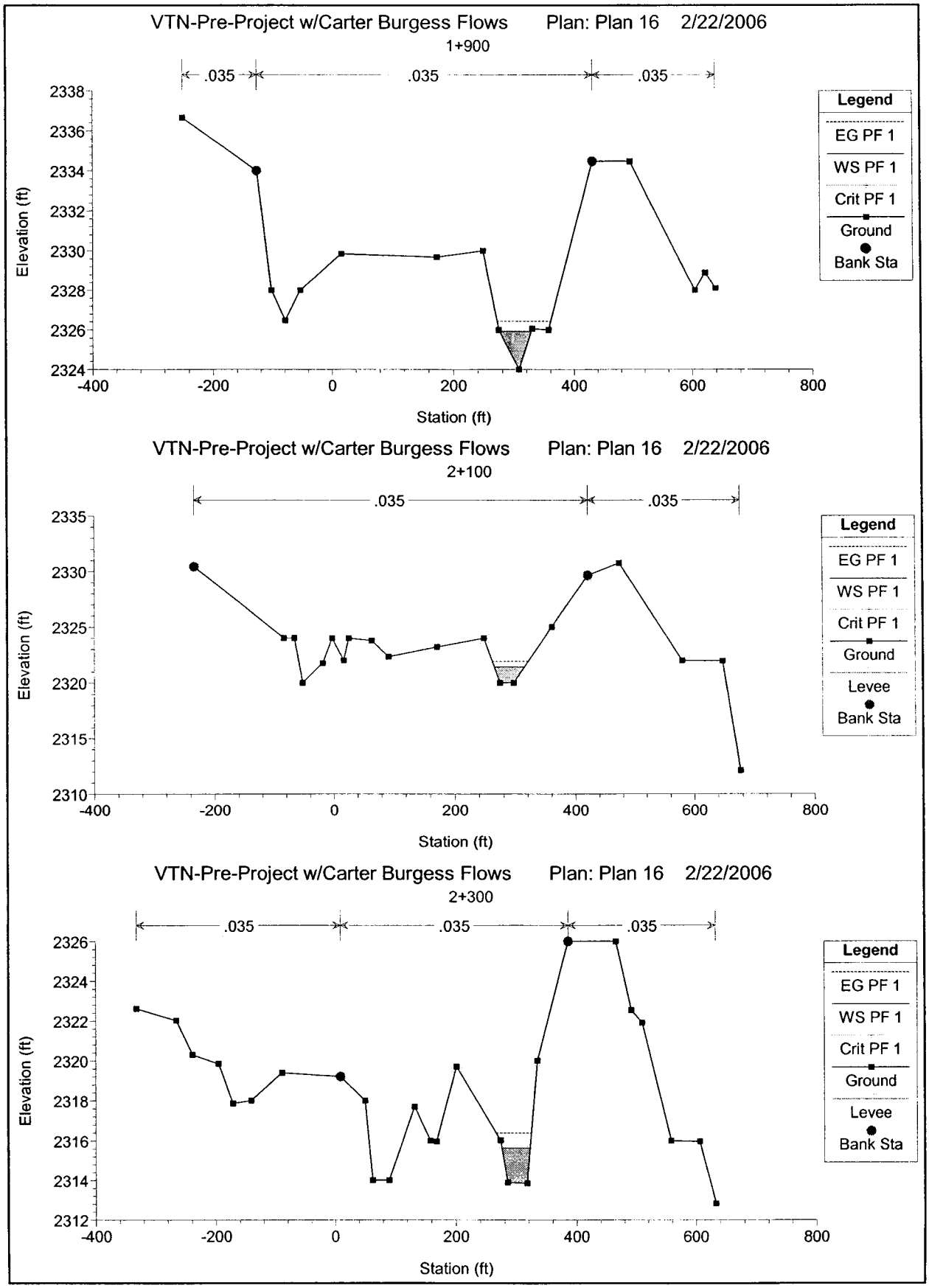
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)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.035
.035
Elevation (ft)
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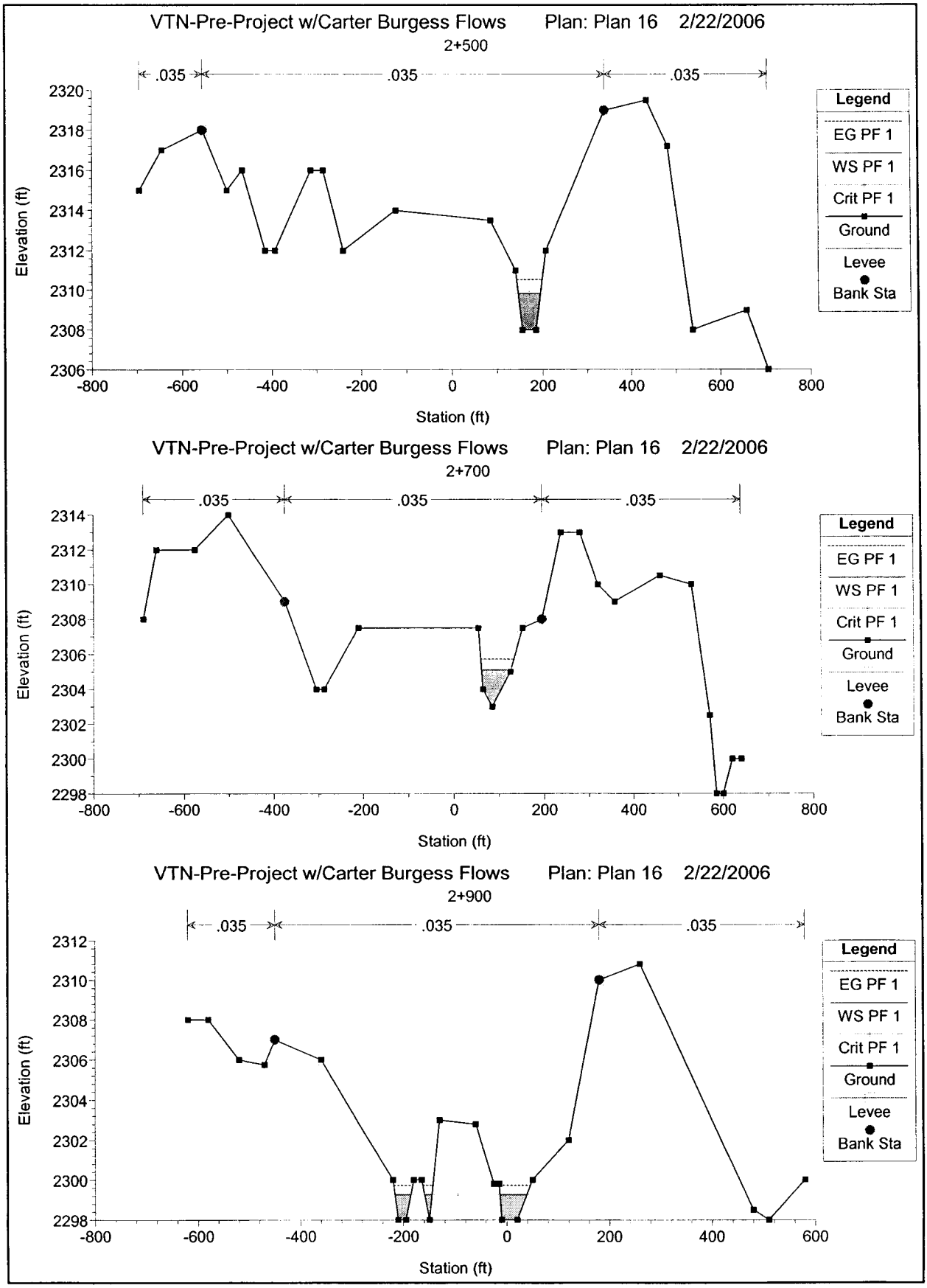
2336
2334
2332
2330
2328
2326
2324
-400
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
2+100
.035
.035
Elevation (ft)
2335
2330
2325
2320
2315
2310
-400
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
2+300
.035
.035
.035
Elevation (ft)
2326
2324
2322
2320
2318
2316
2314
2312
-400
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta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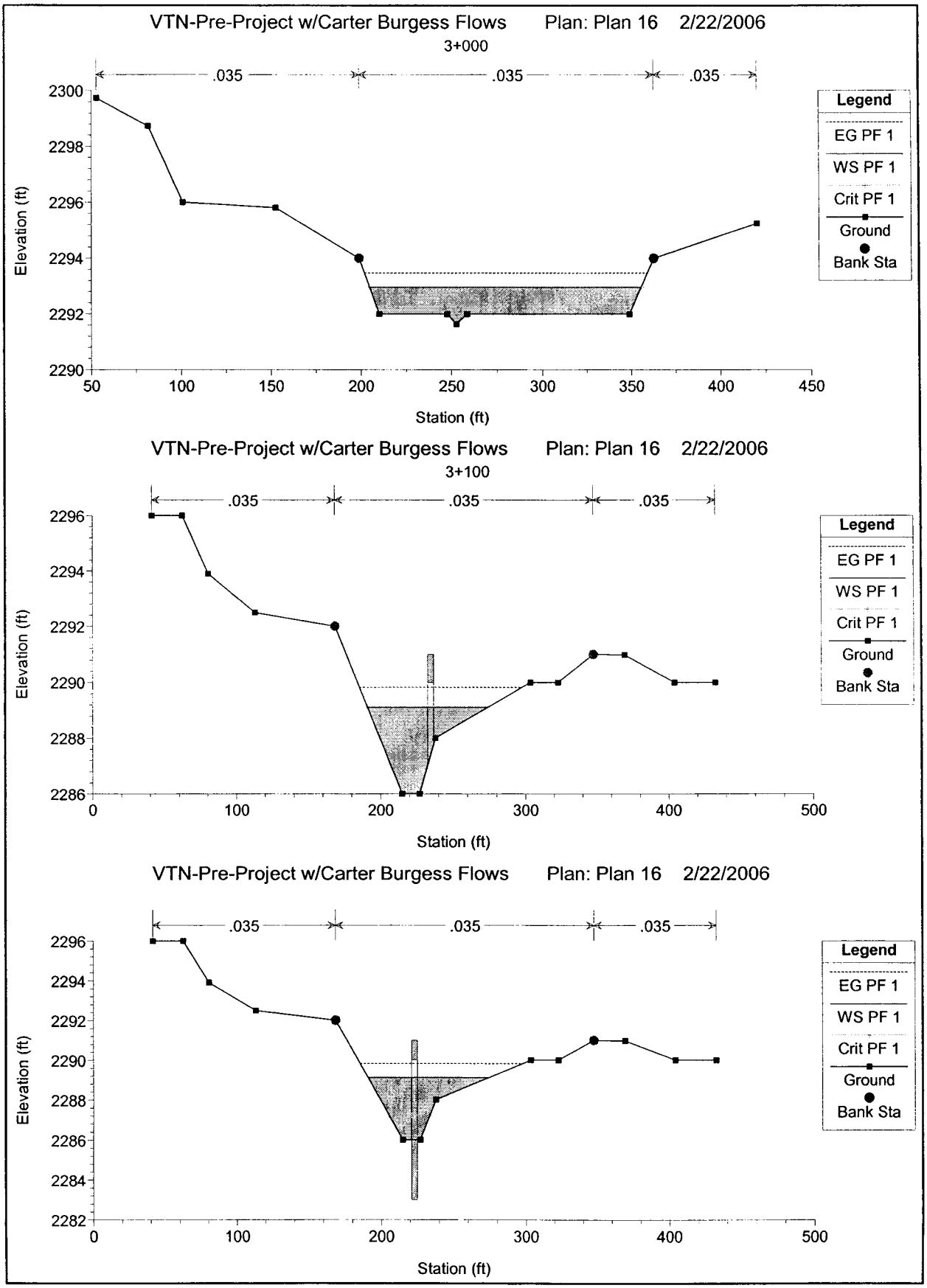
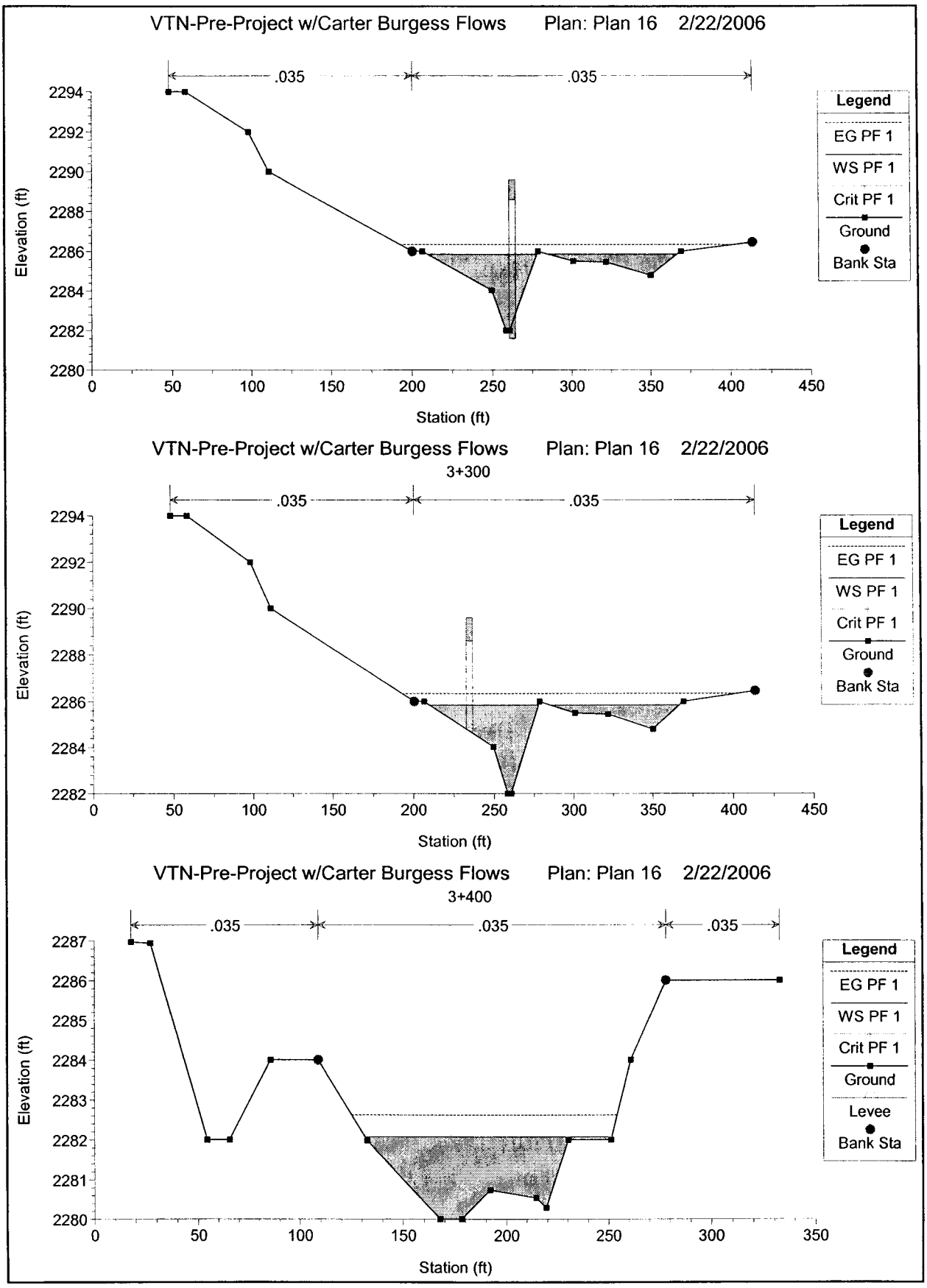
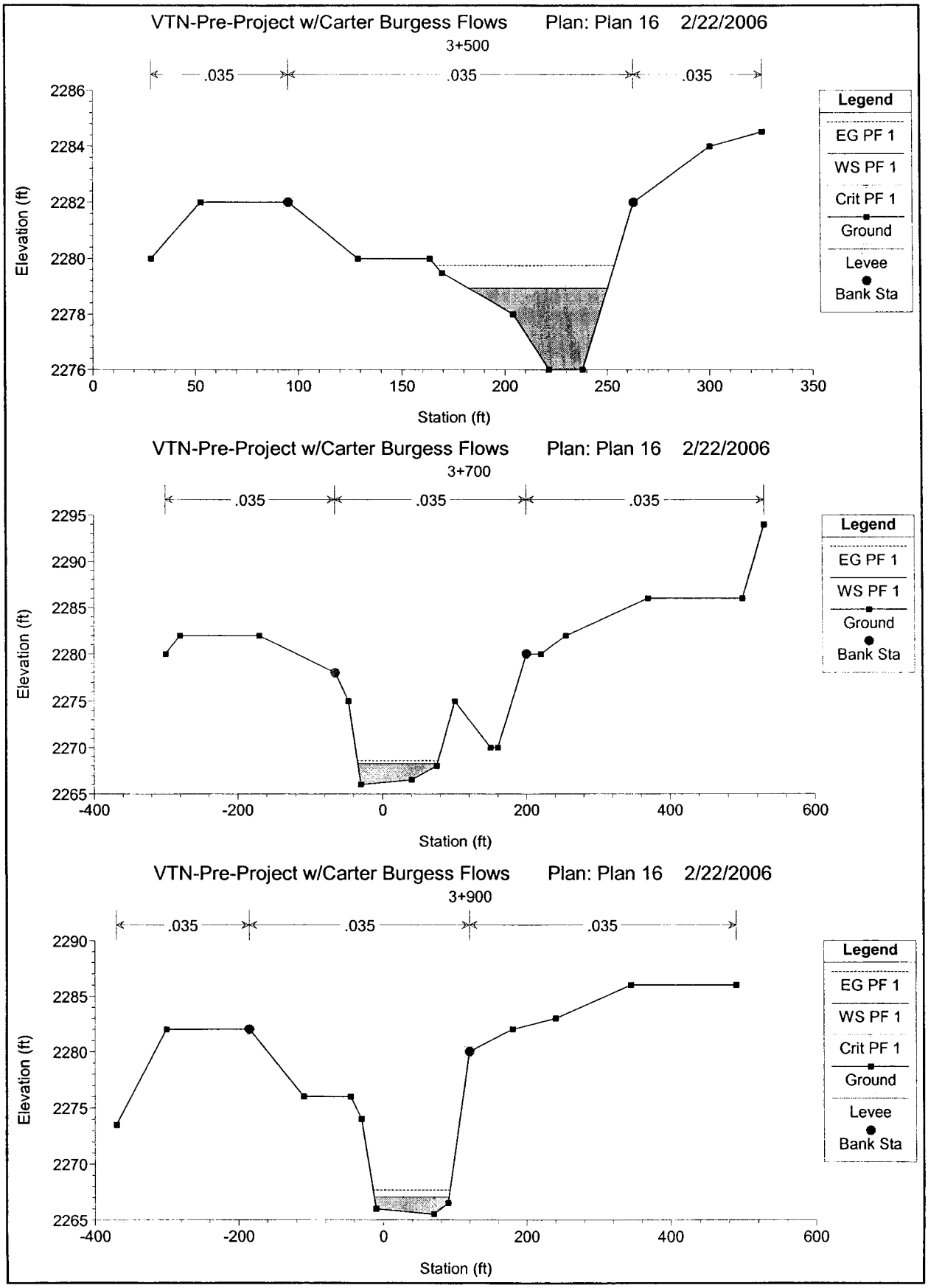
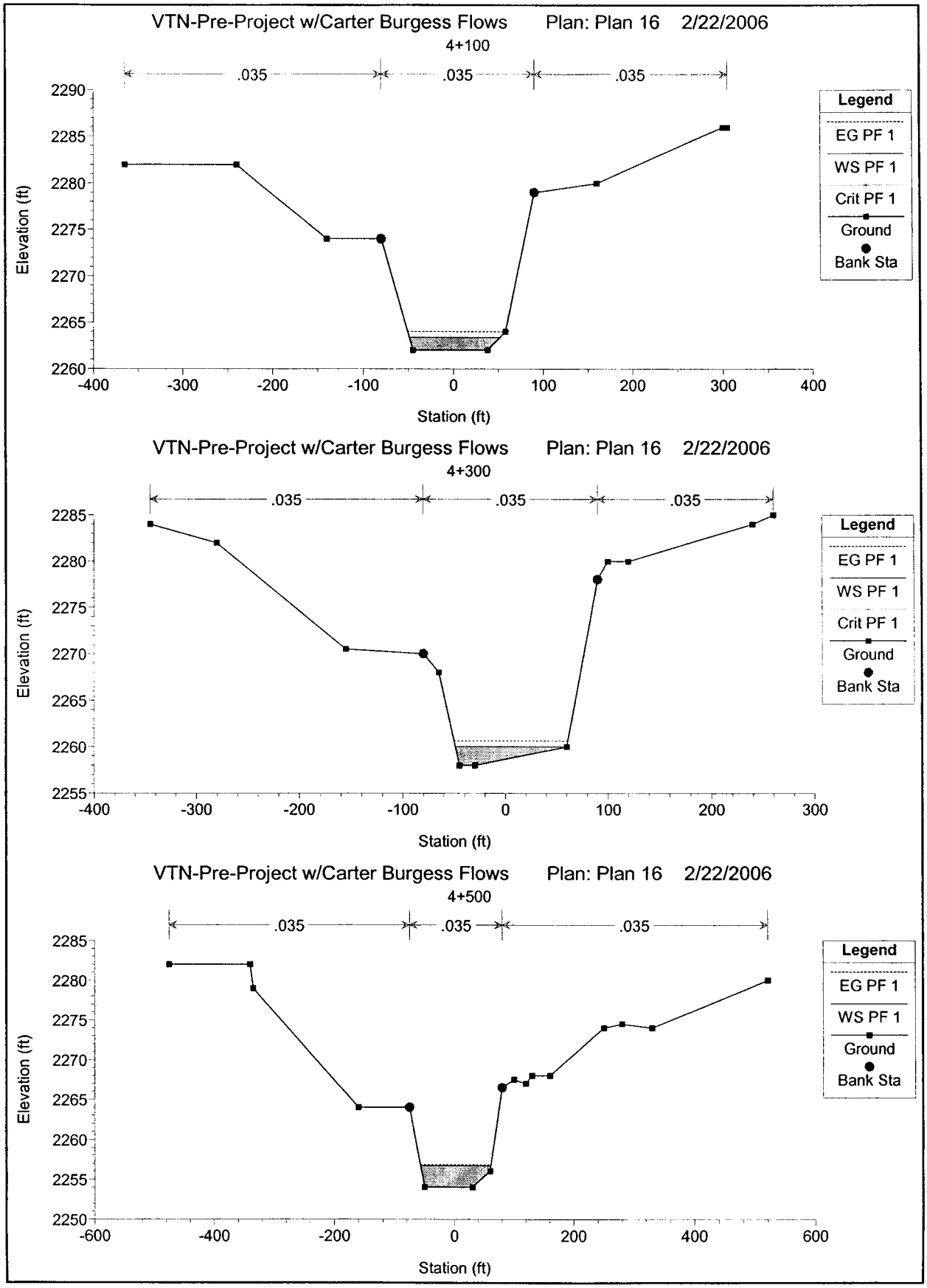
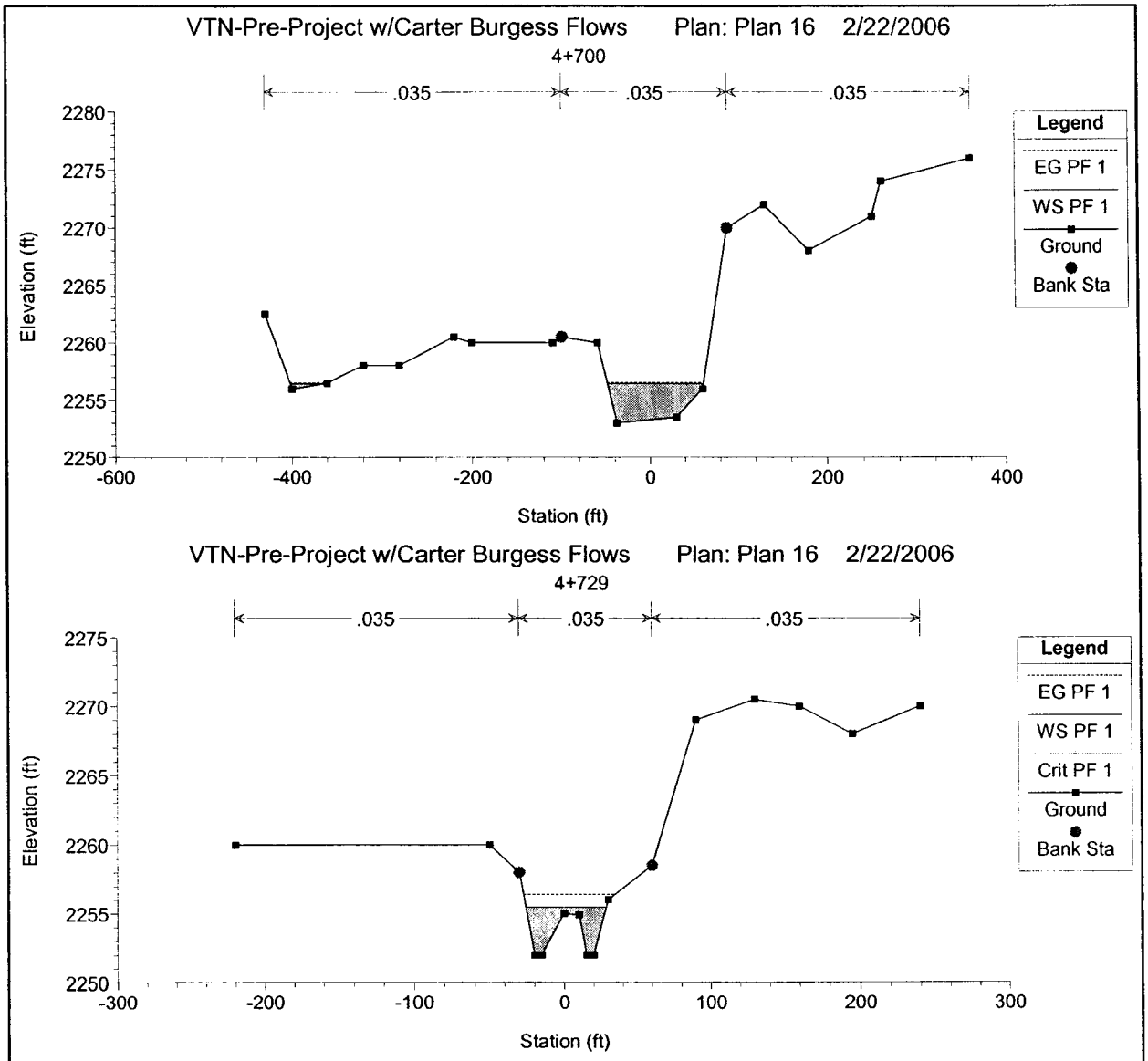
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
2+700
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
2+900
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta

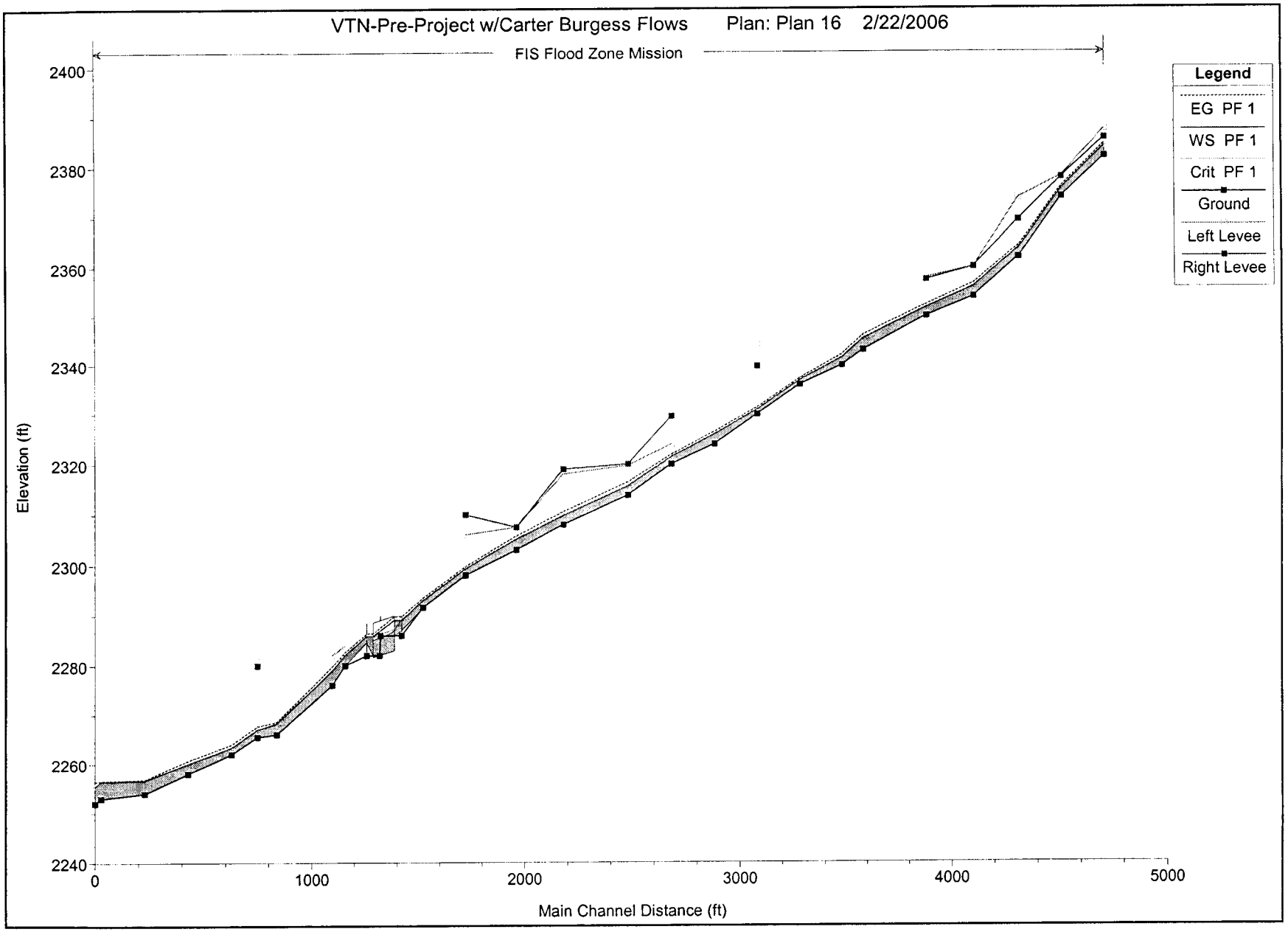

VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
3+000
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
3+100
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
3+300
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
3+400
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta


VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
3+500
.035
.035
.035
Elevation (ft)
2286
2284
2282
2280
2278
2276
0
50
100
150
200
250
300
350
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
3+700
.035
.035
.035
Elevation (ft)
2295
2290
2285
2280
2275
2270
2265
-400
-200
0
200
400
600
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
3+900
.035
.035
.035
Elevation (ft)
2290
2285
2280
2275
2270
2265
-400
-200
0
200
400
600
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta


VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
4+100
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
4+300
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
4+500
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta


VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
4+700
.035
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
2280
2275
2270
2265
2260
2255
2250
-600
-400
-200
0
200
400
Station (ft)
VTN-Pre-Project w/Carter Burgess Flows Plan: Plan 16 2/22/2006
4+729
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2275
2270
2265
2260
2255
2250
-300
-200
-100
0
100
200
300
Station (ft)


VTN-Pre-Project w/Carter Burgess Flows
Plan: Plan 16 2/22/2006
FIS Flood Zone Mission
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Left Levee
Right Levee
Elevation (ft)
2400
2380
2360
2340
2320
2300
2280
2260
2240
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)

HEC-RAS Plan: 022206 River: FIS Flood Zone Reach: Mission Profile: PF 1

Reach	River Sta	Cross Section 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 # C	Hydr Depth (ft)
Mission	48	0+100	PF 1	286	2382	2384.01	2384.01	2384.56	0.017231	5.95	48.1	43.38	0.99	1.11
Mission	46	0+300	PF 1	286	2374	2375.57	2375.57	2376.04	0.018018	5.5	52.03	54.8	0.99	0.95
Mission	44	0+500	PF 1	286	2362	2363.7	2363.7	2364.22	0.017427	5.76	49.67	47.47	0.99	1.05
Mission	42	0+700	PF 1	286	2354	2356.03	2356.03	2356.68	0.016645	6.48	44.13	33.92	1	1.3
Mission	40	0+900	PF 1	286	2350	2351.75	2351.75	2352.33	0.016829	6.07	47.11	40.34	0.99	1.17
Mission	37	1+200	PF 1	286	2343.07	2345.39	2345.39	2346.12	0.016468	6.85	41.74	28.9	1	1.44
Mission	36	1+300	PF 1	286	2340	2341.5	2341.5	2342.18	0.016839	6.62	43.2	32.14	1.01	1.34
Mission	34	1+500	PF 1	286	2336	2336.91	2336.91	2337.3	0.019602	5.03	56.81	72.54	1	0.78
Mission	32	1+700	PF 1	286	2330	2330.94	2330.94	2331.36	0.019354	5.2	55.01	66.41	1.01	0.83
Mission	30	1+900	PF 1	286	2324	2325.93	2325.93	2326.43	0.018576	5.64	50.67	52.44	1.01	0.97
Mission	28	2+100	PF 1	286	2320	2321.4	2321.4	2321.9	0.017379	5.66	50.54	49.56	0.99	1.02
Mission	26	2+300	PF 1	490	2313.84	2315.63	2315.63	2316.38	0.015633	6.92	70.82	47.12	0.99	1.5
Mission	24	2+500	PF 1	490	2308	2309.82	2309.82	2310.54	0.015585	6.81	71.98	49.11	0.99	1.47
Mission	22	2+700	PF 1	490	2303	2305.1	2305.1	2305.72	0.017022	6.28	77.98	64.26	1.01	1.21
Mission	20	2+900	PF 1	490	2298	2299.27	2299.27	2299.72	0.018289	5.42	90.41	97.87	0.99	0.92
Mission	19	3+000	PF 1	799	2291.63	2292.97	2292.97	2293.46	0.018683	5.59	142.93	150.98	1.01	0.95
Mission	18	3+100	PF 1	799	2287.03	2289.11	2289.11	2289.82	0.016733	6.74	118.63	83.5	0.9	1.42
Mission	17	Culvert		Culvert										
Mission	16	3+300	PF 1	799	2284.62	2285.85	2285.85	2286.34	0.019006	5.6	142.72	149.54	0.92	0.95
Mission	15	3+400	PF 1	799	2280	2282.07	2282.07	2282.61	0.01677	5.93	134.75	120.08	0.99	1.12
Mission	14	3+500	PF 1	799	2276	2278.94	2278.94	2279.75	0.015398	7.24	110.29	67.92	1	1.62
Mission	12	3+700	PF 1	799	2266	2268.24		2268.55	0.005851	4.47	178.76	110.09	0.62	1.62
Mission	10	3+900	PF 1	799	2265.5	2267.03	2267.03	2267.67	0.017824	6.4	124.87	103.76	1.03	1.2
Mission	8	4+100	PF 1	799	2262	2263.39	2263.37	2264	0.016007	6.27	127.52	100.91	0.98	1.26
Mission	6	4+300	PF 1	799	2258	2260.04	2260.04	2260.64	0.01759	6.24	127.99	109.13	1.02	1.17
Mission	4	4+500	PF 1	799	2254	2256.69		2256.82	0.001525	2.9	275.22	118.03	0.34	2.33
Mission	2	4+700	PF 1	799	2253	2256.42		2256.54	0.001225	2.79	292.06	145.36	0.31	2.01
Mission	1	4+729	PF 1	799	2252	2255.43	2255.43	2256.37	0.015443	7.8	102.43	54.29	1	1.89

CORRECTIVE/EFFECTIVE
CHECK-RAS – (VTN) PRE PROJECT
HYDRAULIC MODEL
(022206.PRJ)

Manning's n Value and Transition Loss Coefficient Review

Project File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.prj
Plan File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.p16
Geometry File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.g12
Flow File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.f04
Report File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.nt
Selected profiles: PF 1
Date: 3/2/2006
Time: 10:47:17 AM

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP
FIS Flood Zone,Mission						
48		0.035	0.035	0.035	0.1	0.3
46		0.035	0.035	0.035	0.1	0.3
44		0.035	0.035	0.035	0.1	0.3
42		0.035	0.035	0.035	0.1	0.3
40		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
37		0.035	0.035	0.035	0.1	0.3
36		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
34		0.035	0.035	0.035	0.1	0.3
32		0.035	0.035	0.035	0.1	0.3
30		0.035	0.035	0.035	0.1	0.3
28		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
26		0.035	0.035	0.035	0.1	0.3
24		0.035	0.035	0.035	0.1	0.3
22		0.035	0.035	0.035	0.1	0.3
20		0.035	0.035	0.035	0.1	0.3
19		0.035	0.035	0.035	0.1	0.3
18		0.035	0.035	0.035	0.1	0.3
17	Culvert-Up	0.035	0.035	0.035	0.1	0.3
17	Culvert-Dn	0.035	0.035	0.035	0.1	0.3
16		0.035	0.035	0.035	0.1	0.3
15		0.035	0.035	0.035	0.1	0.3
14		0.035	0.035	0.035	0.1	0.3
12		0.035	0.035	0.035	0.1	0.3
10		0.035	0.035	0.035	0.1	0.3
8		0.035	0.035	0.035	0.1	0.3
6		0.035	0.035	0.035	0.1	0.3
4		0.035	0.035	0.035	0.1	0.3
2		0.035	0.035	0.035	0.1	0.3
1		0.035	0.035	0.035	0.1	0.3

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.035	0.035
Right Overbank n Value:	0.035	0.035
Channel n Value:	0.035	0.035
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

RS: 48
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 46
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 44
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 42
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 37
NT RC 05 The left overbank n value of 0.035 and the right overbank n value

of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 34
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 32
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 30
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 26
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 24
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 22
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 20
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 19
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 18
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 17
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 17
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 16
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 15
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 14
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 12
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 10
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 8
NT RC 05 The left overbank n value of 0.035 and the right overbank n value

The overbank n values should be reevaluated.

RS: 6
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 4
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 2
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

TRANSITION LOSS COEFFICIENT CHECK

RS: 19
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: 18
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: 16
NT TL 01 This is section 2
Contraction and expansion loss coefficients are 0.1 and 0.3
They should be equal to 0.3 and 0.5 respectively.

ROUGHNESS COEFFICIENT AT STRUCTURES

---END---

Cross Section Location and Alignment Review

Project File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.prj
Plan File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.p16
Geometry File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.g12
Flow File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.f04
Report File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.xs
Selected profiles: PF 1
Date: 3/2/2006
Time: 10:47:40 AM

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code
FIS Flood Zone,Mission						
48	200	200	200	43.38	286	C
46	200	200	200	54.8	286	C
44	400	210	200	47.47	286	C
42	220	220	350	33.92	286	C
40	300	300	300	40.34	286	C
37	100	100	100	28.9	286	C
36	200	200	200	32.14	286	C
34	250	200	200	72.54	286	D,C
32	200	200	200	66.41	286	E,C
30	200	200	200	52.44	286	C
28	210	200	200	49.56	286	E,C
26	300	300	330	47.12	490	E,C
24	220	220	270	49.11	490	E,C
22	230	240	240	64.26	490	E,C
20	200	200	200	97.87	490	D,C
19	100	100	100	150.98	799	C
18	165	165	165	83.5	799	C
17	Culvert #1-Up					
17	Culvert #1-Dn					
16	100	100	110	149.54	799	D,C
15	60	60	60	120.08	799	C
14	240	260	390	67.92	799	C
12	140	90	120	110.09	799	
10	110	120	125	103.76	799	C
8	200	200	200	100.91	799	
6	200	200	200	109.13	799	C
4	200	200	200	118.03	799	
2	29	29	29	145.36	799	D
1	0	0	0	54.29	799	C

B=blocked obstruction XS SC 05
C=critial depth XS SC 03
D=divided flow XS SC 01
E=cross section extended XS SC 02
K=known water-surface XS SC 04

DISTANCE CHECK

SPACING CHECK

INEFFECTIVE FLOW CHECK

RS: 48
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 48
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 46
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 46
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 44
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 44
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 42
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 42
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 40
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 40
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 32
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 32
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 28
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 28
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 26
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 26
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 24
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 24
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 22
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 22
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 20
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

```
RS:       20
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:       15
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:       14
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:       10
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:       10
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.


DISCHARGE CHECK
----------------


LOCATION CHECK
---------------

RS:       46
XS LC 01 Lenchl Up/TopwdthAct Dn = 4.21
         MaxChlDpth Up/MaxChlDpth Dn = 1.20
         TopwdthAct Up/TopwdthAct Dn = 1.15
         This cross section is located too far upstream from the
         critical depth cross section.

RS:       44
XS LC 01 Lenchl Up/TopwdthAct Dn = 6.19
         MaxChlDpth Up/MaxChlDpth Dn = 1.17
         TopwdthAct Up/TopwdthAct Dn = 1.40
         This cross section is located too far upstream from the
         critical depth cross section.

RS:       32
XS LC 01 Lenchl Up/TopwdthAct Dn = 3.81
         MaxChlDpth Up/MaxChlDpth Dn = 4.71
         TopwdthAct Up/TopwdthAct Dn = 1.27
         This cross section is located too far upstream from the
         critical depth cross section.


BOUNDARY CONDITION CHECK
------------------------

XS BC 02 The name of the stream is FIS Flood Zone,Mission
         Normal S = 0.0229 is specified as the downstream boundary
         for profile PF 1

XS BC 02 The name of the stream is FIS Flood Zone,Mission
         Critical is specified as the upstream boundary
         for profile PF 1

XS BC 03 Maximum number of iterations is 0
         It should not be less than 20.

XS FR 01 The profile is computed as supercritical flow regime.


LATERAL WEIRS CHECK
-----------------------

---END---
```

CHECK-RAS Program: Structure Check

Project File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.prj
Plan File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.p16
Geometry File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.g12
Flow File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.f04
Report File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\Carter Burgess FIS Post Flows- VTN Model\022206.br
Selected profiles: PF 1
Date: 3/2/2006
Time: 10:47:51 AM

RS	MaxLoChord	MnTpRd	EGEL	WSEL	MinChEl	Structure
FIS Flood Zone,Mission						
48			2384.56	2384.01	2382	
46			2376.04	2375.57	2374	
44			2364.22	2363.7	2362	
42			2356.68	2356.03	2354	
40			2352.33	2351.75	2350	
37			2346.12	2345.39	2343.07	
36			2342.18	2341.5	2340	
34			2337.3	2336.91	2336	
32			2331.36	2330.94	2330	
30			2326.43	2325.93	2324	
28			2321.9	2321.4	2320	
26			2316.38	2315.63	2313.84	
24			2310.54	2309.82	2308	
22			2305.72	2305.1	2303	
20			2299.72	2299.27	2298	
19			2293.46	2292.97	2291.63	
18			2289.82	2289.11	2287.03	Lid
17	2290	2286	0	2287.21	2283	Culvert #1-Up
17	2288.6	2282	0	2285.08	2281.6	Culvert #1-Dn
16			2286.34	2285.85	2284.62	Lid
15			2282.61	2282.07	2280	
14			2279.75	2278.94	2276	
12			2268.55	2268.24	2266	
10			2267.67	2267.03	2265.5	
8			2264	2263.39	2262	
6			2260.64	2260.04	2258	
4			2256.82	2256.69	2254	
2			2256.54	2256.42	2253	
1			2256.37	2255.43	2252	

RIVER/REACH: FIS Flood Zone, Mission
RIVER STATION: 17
TYPE OF STRUCTURE: Culvert

Description:

Distance from Upstream XS:	100
Deck/Roadway Width:	4
Weir Coefficient:	2.6
Maximum allowable submergence for weir flow:	0.95
Elevation at which weir flow begins:	0
Weir crest shape:	Broad Crested

Sec	River Station	Length Channel	WSEL	Surch.	EGEL	TopWidth Actual	
4	19	100.00	2292.97		2293.46	150.98	
3	18	165.00	2289.11		2289.82	83.5	
	17	100.00	2287.21		0	0	Culvert #1-Up
	17	30.00	2285.08		0	0	Culvert #1-Dn
2	16	100.00	2285.85		2286.34	149.54	
1	15	60.00	2282.07		2282.61	120.08	

Ineffective Flow, Section 3			Ineffective Flow, Section 2		
Sta L	Sta R	Elev	Sta L	Sta R	Elev

Opening Type	StagStaL	StagStaR	EncStaL	EncStaR	LIfStaS	RIfStaS
Culvert Group						U
						D

CULVERT:
Culvert Name: Culvert #1

Shape:	Box	Rise:	7	Span:	4	Barrels:	1

FHWA Chart #: # 8 - flared wingwalls
FHWA Scale #: # 1 - Wingwall flared 30 to 75 deg.
Solution Crit:Highest U.S. EG

UpstrmDist:	35	Length:	100	n-Value:	0.014		
EntLossCoef:	0.05	ExtLossCoef:	1	CulvInvElU	2283	CulvInvElD	2281.6
LCntStaU:	223.03	RCntStaU:	223.03	LCntStaD	262.31	RCntStaD	262.31
Culvert Depth Blocked:	0						

Culv Area:	28	CulvQ:	196.19	MinTopRd:	2286.01

	LAbutSt	RAbutSt	LMnTpRd	RMnTpRd	MnTpRd	MxLoCd	
Culvert #1	221.03	225.03	2286	2286	2286	2290	U
	260.31	264.31	2282	2282	2282	2288.6	D

Name	Q Total.	Q Struc	Q Weir	Selected Method	Flow Type
Culvert #1		196.19	602.81	Highest U.S. EG	Low and Weir Flow

GEOMETRIC CHECK

RS: 17
ST GD 03 The starting station of 221.03 from upstream road/weir data is greater than the starting station of 41.32 from upstream internal section/ secion 3.
The high chord elevation of 2291 for the starting road/weir station is greater than the ground elevation of 2286 for the same ground station.
The road/weir profile may need to be extended.

RS: 17
ST GD 03 The end station of 225.03 from upstream road/weir data is less than the end station of 432.4 from upstream internal section/section 3.
The high chord elevation of 2291 for the end road/weir station is greater than the ground elevation of 2286 for the same ground station.
The road/weir profile may need to be extended.

RS: 17
ST GD 03 The starting station of 260.31 from downstream road/weir data is greater than the starting station of 48.08 from downstream internal section.
The high chord elevation of 2289.6 for the starting road/weir station is greater than the ground elevation of 2282 for the same ground station.
The road/weir profile may need to be extended.

RS: 17
ST GD 03 The end station of 264.31 from downstream road/weir data is less than the end station of 413.53 from downstream internal section.
The high chord elevation of 2289.6 for the end road/weir station is greater than the ground elevation of 2282.826 for the same ground station.
The road/weir profile may need to be extended.

RS: 16
ST GD 08 'Cross Section Lid' option is used for this section.
Cross section lid data must be removed from this section, unless the structure is modeled as culverts in series.

RS: 18
ST GD 08 'Cross Section Lid' option is used for this section.
Cross section lid data must be removed from this section, unless the structure is modeled as culverts in series.

TYPE OF FLOW CHECK

RS: 17 This is Culvert #1
CV LW 01 Type of flow is low and weir flow because,
1. EGEL 3 of 2289.82 is greater than MinTopRd of 2286.01.
2. EGEL 3 of 2289.82 is less than MxLoCdU of 2290.00.

RS: 17 This is Culvert #1
CV LW 01 Type of flow is low and weir flow because,
1. EGEL 3 of 2289.82 is greater than MinTopRd of 2286.01.

2. CulvWSIn of 2287.21 is less than MxLoCdU of 2290.00.
3. CulvWSOut of 2285.08 is less than MxLoCdD of 2288.60.
4. Q/AD^0.5 of 2.65 is less than 4.0.

DISTANCE CHECK

CULVERT COEFFICIENT CHECK

RS: 17 This is Culvert #1
CV CF 01 Culvert Chart # is 8 and Scale # is 1
Culvert entrance shape is Wingwall flared 30 to 75 deg.
Culvert entrance loss coefficient is 0.05 It should be equal to 0.4
Please refer to Table 6.3 on page 6-22 and Tabble 6.4 on page 6-23 of HEC-RAS Hydraulic Reference Manual, September 1998.

CULVERT CRITERIA CHECK

INEFFECTIVE FLOW CHECK

RS: 18 This is section 3
ST GD 05 Weir flow occurs at Culvert Group 1
The velocity head at Section 3 is more than 0.5 foot and more than the velocity head at Section 4.
Section 3 should be recoded to represent the natural valley cross section.

---END

POST- PROJECT CONDITIONS (VTN): HEC-RAS OUTPUT

(USED VTN HEC-1 POST-PROJECT
CONDITIONS FOR FLOWS)

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: Mission-Post Dev 02-26-06
Project File : 022606.prj
Run Date and Time: 2/26/2006 4:21:33 PM

Project in English units

Project Description:
Mission LOMR Post-Conditions-VTN

****

PLAN DATA

Plan Title: Post-Project 02-26-06
Plan File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.p15

Geometry Title: post test 02-08-06
Geometry File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.g11

Flow Title : Post Conditions
Flow File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.f04

Plan Summary Information:
Number of: Cross Sections = 27 Multiple Openings = 0
Culverts = 1 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

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

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

****

FLOW DATA

Flow Title: Post Conditions
Flow File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.f04

Flow Data (cfs)

River	Reach	RS	PF 1
FIS Flood Zone	Mission	48	157
FIS Flood Zone	Mission	26	166
FIS Flood Zone	Mission	19	204
FIS Flood Zone	Mission	12	602

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
FIS Flood Zone	Mission	PF 1	Critical	Normal S = 0.0229

****

GEOMETRY DATA

Geometry Title: post test 02-08-06
Geometry File : j:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.g11

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 48

INPUT
Description: 0+100
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-173.84	2392	-118.84	2391.68	-58.01	2388	-42.83	2387.43	21.55	2382
28.51	2382	38.23	2383.92	97.69	2385.67	123.66	2384.09	145.04	2380
256.2	2378.52	338.85	2376	371.85	2381.52	376.8	2380	389.09	2382
423.32	2374.68	446.53	2376	457.06	2378	484.25	2378	508.7	2372.78
524.94	2376	555.62	2376	567.65	2370	591.28	2370	609.45	2372
628.27	2372	682.75	2401.51						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-173.84	.035	-118.84	.035	97.69	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-118.84	97.69	200	200	.1	.3

Left Levee Station= -42.83 Elevation= 2387.43
Right Levee Station= 97.69 Elevation= 2385.67

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2383.94	Element			
Vel Head (ft)	0.45	Wt. n-Val.		0.035	
W.S. Elev (ft)	2383.50	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	2383.50	Flow Area (sq ft)		29.32	
E.G. Slope (ft/ft)	0.018231	Area (sq ft)		29.32	
Q Total (cfs)	157.00	Flow (cfs)		157.00	
Top Width (ft)	32.26	Top Width (ft)		32.26	

* Vel Total (ft/s)	* 5.36	* Avg. Vel. (ft/s)	*	* 5.36	* *
* Max Chl Dpth (ft)	* 13.50	* Hydr. Depth (ft)	*	* 0.91	* *
* Conv. Total (cfs)	* 1162.8	* Conv. (cfs)	*	* 1162.8	* *
* Length Wtd. (ft)	* 200.00	* Wetted Per. (ft)	*	* 32.47	* *
* Min Ch El (ft)	* 2382.00	* Shear (lb/sq ft)	*	* 1.03	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 5.50	* *
* Frctn Loss (ft)	* 0.21	* Cum Volume (acre-ft)	*	* 6.31	* *
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	*	* 6.38	* *

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: FIS Flood Zone
REACH: Mission RS: 46

INPUT
Description: 0+300
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-84.97	2384.63	6.45	2378.12	25.09	2376.04	53.39	2374	64.77	2374
117.96	2377.87	218.54	2376	266.82	2367.72	294.84	2367.11	312.32	2368
366.86	2367.89	383.36	2368.35	447.53	2368	474.66	2367.16	514.95	2379.89
554.18	2380.42	601.91	2379.58	617.76	2376	641.09	2376.13	683.46	2387.18

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-84.97	.035	6.45	.035	117.96	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
6.45 117.96 200 200 200 .1 .3
Left Levee Station= 6.45 Elevation= 2378.12
Right Levee Station= 117.96 Elevation= 2377.87

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2375.54	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.37	* Wt. n-Val.	*	* 0.035	* *
* W.S. Elev (ft)	• 2375.17	* Reach Len. (ft)	* 200.00	* 200.00	* 200.00 *
* Crit W.S. (ft)	* 2375.17	* Flow Area (sq ft)	*	* 32.34	* *
* E.G. Slope (ft/ft)	*0.019624	* Area (sq ft)	*	* 32.34	* *
* Q Total (cfs)	* 157.00	* Flow (cfs)	*	* 157.00	* *
* Top Width (ft)	* 43.77	* Top Width (ft)	*	* 43.77	* *
* Vel Total (ft/s)	* 4.85	* Avg. Vel. (ft/s)	*	* 4.85	* *
* Max Chl Dpth (ft)	* 8.06	* Hydr. Depth (ft)	*	* 0.74	* *
* Conv. Total (cfs)	* 1120.8	* Conv. (cfs)	*	* 1120.8	* *
* Length Wtd. (ft)	* 200.00	* Wetted Per. (ft)	*	* 43.85	* *
* Min Ch El (ft)	* 2374.00	* Shear (lb/sq ft)	*	* 0.90	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.39	* *
* Frctn Loss (ft)	* 0.60	* Cum Volume (acre-ft)	*	* 6.17	* *
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	*	* 6.21	* *

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: FIS Flood Zone
REACH: Mission RS: 44

INPUT
Description: 0+500
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-49.81	2378.58	46.88	2373.73	87.47	2363.08	121.51	2362	160.53	2368
195.41	2369.5	229.76	2368	247.29	2362	299.43	2362	354.98	2366
437.9	2366	457.32	2358.25	476.17	2356.64	598.56	2368.16	646.7	2368
681.22	2382								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-49.81	.035	46.88	.035	195.41	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
46.88 195.41 400 210 200 .1 .3
Left Levee Station= 46.88 Elevation= 2373.73
Right Levee Station= 195.41 Elevation= 2369.5

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2363.69	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.37	* Wt. n-Val.	*	* 0.035	* *
* W.S. Elev (ft)	* 2363.31	* Reach Len. (ft)	* 400.00	* 210.00	* 200.00 *
* Crit W.S. (ft)	* 2363.31	* Flow Area (sq ft)	*	* 32.04	* *
* E.G. Slope (ft/ft)	*0.020097	* Area (sq ft)	*	* 32.04	* *
* Q Total (cfs)	* 157.00	* Flow (cfs)	*	* 157.00	* *
* Top Width (ft)	* 43.47	* Top Width (ft)	*	* 43.47	* *
* Vel Total (ft/s)	* 4.90	* Avg. Vel. (ft/s)	*	* 4.90	* *
* Max Chl Dpth (ft)	* 6.67	* Hydr. Depth (ft)	*	* 0.74	* *
* Conv. Total (cfs)	* 1107.5	* Conv. (cfs)	*	* 1107.5	* *
* Length Wtd. (ft)	* 210.00	* Wetted Per. (ft)	*	* 43.62	* *
* Min Ch El (ft)	* 2362.00	* Shear (lb/sq ft)	*	* 0.92	* *
• Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.52	* *
* Frctn Loss (ft)	* 1.09	* Cum Volume (acre-ft)	*	* 6.02	* *
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	*	* 6.01	• *

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

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 42

INPUT
Description: 0+700
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-3.26	2370.96	20.48	2360	109.52	2357.99	127.31	2354	136.96	2354
166.31	2357.9	208.45	2358.52	227.77	2360	247.65	2360	277.16	2361.97
277.27	2361.97	277.77	2361.97	331.57	2362	383.73	2364	399.01	2364
442.36	2362	462.45	2360	479.15	2352.13	490.21	2352	515.36	2354
540	2352	597	2350	627.49	2362				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-3.26	.035	20.48	.035	227.77	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
20.48	227.77	220	220	350	.1	.3

Left Levee Station= 20.48 Elevation= 2360
Right Levee Station= 227.77 Elevation= 2360

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2355.99	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (ft)	* 0.49	* Wt. n-Val.	*	0.035 *	*
* W.S. Elev (ft)	* 2355.50	* Reach Len. (ft)	* 220.00 *	220.00 *	350.00 *
* Crit W.S. (ft)	* 2355.50	* Flow Area (sq ft)	*	27.86 *	*
* E.G. Slope (ft/ft)	*0.017604	* Area (sq ft)	*	27.86 *	*
* Q Total (cfs)	* 157.00	* Flow (cfs)	*	157.00 *	*
* Top Width (ft)	* 27.59	* Top Width (ft)	*	27.59 *	*
* Vel Total (ft/s)	* 5.63	* Avg. Vel. (ft/s)	*	5.63 *	*
* Max Chl Dpth (ft)	* 5.50	* Hydr. Depth (ft)	*	1.01 *	*
* Conv. Total (cfs)	* 1183.3	* Conv. (cfs)	*	1183.3 *	*
* Length Wtd. (ft)	* 220.00	* Wetted Per. (ft)	*	27.85 *	*
* Min Ch El (ft)	* 2354.00	* Shear (lb/sq ft)	*	1.10 *	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	6.20 *	*
* Frctn Loss (ft)	* 2.44	* Cum Volume (acre-ft)	*	5.87 *	*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	5.84 *	*

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 40

INPUT
Description: 0+900
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
40.76	2357.87	138.91	2350	152.31	2350	169.69	2356	217.32	2356.04
265.62	2357.42	382.86	2358	382.96	2358	425.96	2356	502.96	2359.06
524.35	2358	550.64	2348	568.55	2348				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
40.76	.035	40.76	.035	382.96	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
40.76	382.96	300	300	300	.1	.3

Left Levee Station= 40.76 Elevation= 2357.87
Right Levee Station= 265.62 Elevation= 2357.42

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2351.71	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (ft)	* 0.45	* Wt. n-Val.	*	0.035 *	*
* W.S. Elev (ft)	* 2351.26	* Reach Len. (ft)	* 300.00 *	300.00 *	300.00 *
* Crit W.S. (ft)	* 2351.26	* Flow Area (sq ft)	*	29.21 *	*
* E.G. Slope (ft/ft)	*0.018922	* Area (sq ft)	*	29.21 *	*
* Q Total (cfs)	* 157.00	* Flow (cfs)	*	157.00 *	*
* Top Width (ft)	* 32.82	* Top Width (ft)	*	32.82 *	*
* Vel Total (ft/s)	* 5.37	* Avg. Vel. (ft/s)	*	5.37 *	*
* Max Chl Dpth (ft)	* 3.26	* Hydr. Depth (ft)	*	0.89 *	*
* Conv. Total (cfs)	* 1141.3	* Conv. (cfs)	*	1141.3 *	*
* Length Wtd. (ft)	* 300.00	* Wetted Per. (ft)	*	33.09 *	*
* Min Ch El (ft)	* 2350.00	* Shear (lb/sq ft)	*	1.04 *	*
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	5.61 *	*
* Frctn Loss (ft)	* 5.30	* Cum Volume (acre-ft)	*	5.73 *	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	*	5.69 *	*

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: FIS Flood Zone
REACH: Mission RS: 37

INPUT
Description: 1+200
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-73.3	2350	-64.13	2348	17.29	2348	31.09	2350.31	43.06	2350.77
67.84	2350	109.53	2349.52	129.54	2348	141.96	2348	160.5	2347.44
203.41	2347.05	213.19	2346.2	231.47	2345.27	237.84	2343.07	254.96	2344
263.97	2348	292.81	2348.8	430.54	2347.99	447.09	2346.43	482.21	2348.76
508.61	2349.28	538.41	2348.38	604.11	2349.14	661.33	2347.98		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-73.3	.035	43.06	.035	508.61	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
43.06	508.61	100	100	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2345.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.		0.035	
W.S. Elev (ft)	2344.78	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	2344.78	Flow Area (sq ft)		26.27	
E.G. Slope (ft/ft)	0.017879	Area (sq ft)		26.27	
Q Total (cfs)	157.00	Flow (cfs)		157.00	
Top Width (ft)	23.84	Top Width (ft)		23.84	
Vel Total (ft/s)	5.98	Avg. Vel. (ft/s)		5.98	
Max Chl Dpth (ft)	1.71	Hydr. Depth (ft)		1.10	
Conv. Total (cfs)	1174.2	Conv. (cfs)		1174.2	
Length Wtd. (ft)	100.00	Wetted Per. (ft)		24.31	
Min Ch El (ft)	2343.07	Shear (lb/sq ft)		1.21	
Alpha	1.00	Stream Power (lb/ft s)		7.21	
Frctn Loss (ft)	1.83	Cum Volume (acre-ft)		5.54	
C & E Loss (ft)	0.02	Cum SA (acres)		5.49	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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: FIS Flood Zone
REACH: Mission RS: 36

INPUT
Description: 1+300
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
45.57	2347.92	159.01	2344	180.69	2344	189.27	2340	214.78	2340
230.59	2346.93	271.17	2348	280.07	2346.31	427.63	2344	456.67	2346
512.55	2346.25	652.62	2345.86						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
45.57	.035	45.57	.035	456.67	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.57	456.67	200	200	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2341.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.		0.035	
W.S. Elev (ft)	2341.02	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	2341.02	Flow Area (sq ft)		28.40	
E.G. Slope (ft/ft)	0.018636	Area (sq ft)		28.40	
Q Total (cfs)	157.00	Flow (cfs)		157.00	
Top Width (ft)	30.04	Top Width (ft)		30.04	
Vel Total (ft/s)	5.53	Avg. Vel. (ft/s)		5.53	
Max Chl Dpth (ft)	1.02	Hydr. Depth (ft)		0.95	
Conv. Total (cfs)	1150.1	Conv. (cfs)		1150.1	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		30.48	
Min Ch El (ft)	2340.00	Shear (lb/sq ft)		1.08	
Alpha	1.00	Stream Power (lb/ft s)		5.99	
Frctn Loss (ft)	4.03	Cum Volume (acre-ft)		5.48	
C & E Loss (ft)	0.06	Cum SA (acres)		5.43	

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: FIS Flood Zone
REACH: Mission RS: 34

INPUT
Description: 1+500
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-186.26	2346	-148.74	2345.86	-54.8	2339.88	22.59	2339.59	62.76	2340
115.82	2340.55	160.63	2340.07	209.66	2338	219.09	2336	254.24	2336
273.6	2340.11	310.56	2340	331.1	2336	349.75	2336.04	387.82	2342
448.56	2345.82	490.03	2346.79	514.61	2346.13	602.59	2338		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-186.26	.035	-148.74	.035	448.56	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-148.74	448.56	250	200	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2336.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.		0.035	
W.S. Elev (ft)	2336.62	Reach Len. (ft)	250.00	200.00	200.00
Crit W.S. (ft)	2336.62	Flow Area (sq ft)		37.07	
E.G. Slope (ft/ft)	0.021830	Area (sq ft)		37.07	
Q Total (cfs)	157.00	Flow (cfs)		157.00	
Top Width (ft)	66.60	Top Width (ft)		66.60	
Vel Total (ft/s)	4.23	Avg. Vel. (ft/s)		4.23	
Max Chl Dpth (ft)	0.62	Hydr. Depth (ft)		0.56	
Conv. Total (cfs)	1062.6	Conv. (cfs)		1062.6	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		66.84	
Min Ch El (ft)	2336.00	Shear (lb/sq ft)		0.76	
Alpha	1.00	Stream Power (lb/ft s)		3.20	
Frctn Loss (ft)	4.54	Cum Volume (acre-ft)		5.32	
C & E Loss (ft)	0.00	Cum SA (acres)		5.21	

Warning: The energy equation could not be balanced within the specified number of iterations. The

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

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 32

INPUT
Description: 1+700
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-284.04	2344	-243.74	2344	-118.46	2337.35	-75.6	2336.84	-46.51	2334
-13.99	2334	27.6	2335.17	168.04	2334.99	253.22	2333.67	295.68	2330
348.33	2330.04	360.87	2334	437.29	2338	497.79	2339.78	616.37	2334
631.42	2333.89	653.39	2332.06	689.8	2321.85				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-284.04	.035	-243.74	.035	497.79	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-243.74 497.79 200 200 200 .1 .3
Left Levee Station= -243.74 Elevation= 2344
Right Levee Station= 497.79 Elevation= 2339.78

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2330.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.		0.035	
W.S. Elev (ft)	2330.63	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	2330.63	Flow Area (sq ft)		35.11	
E.G. Slope (ft/ft)	0.023667	Area (sq ft)		35.11	
Q Total (cfs)	157.00	Flow (cfs)		157.00	
Top Width (ft)	61.84	Top Width (ft)		61.84	
Vel Total (ft/s)	4.47	Avg. Vel. (ft/s)		4.47	
Max Chl Dpth (ft)	8.78	Hydr. Depth (ft)		0.57	
Conv. Total (cfs)	1020.5	Conv. (cfs)		1020.5	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		61.96	
Min Ch El (ft)	2330.00	Shear (lb/sq ft)		0.84	
Alpha	1.00	Stream Power (lb/ft s)		3.74	
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)		5.16	
C & E Loss (ft)	0.04	Cum SA (acres)		4.91	

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 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: FIS Flood Zone
REACH: Mission RS: 30

INPUT
Description: 1+900
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-250.32	2336.65	-126.77	2334	-102.3	2328	-79.42	2326.47	-53.84	2328
15.58	2329.84	173.54	2329.68	248.4	2330	274.21	2326	307.47	2324
329.12	2326.06	356.58	2326	431.57	2334.48	494.85	2334.48	604.27	2328
621.53	2328.89	638.68	2328.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-250.32	.035	-126.77	.035	431.57	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-126.77 431.57 200 200 200 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2325.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.035	
W.S. Elev (ft)	2325.52	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	2325.52	Flow Area (sq ft)		31.34	
E.G. Slope (ft/ft)	0.020153	Area (sq ft)		31.34	
Q Total (cfs)	157.00	Flow (cfs)		157.00	
Top Width (ft)	41.25	Top Width (ft)		41.25	
Vel Total (ft/s)	5.01	Avg. Vel. (ft/s)		5.01	
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)		0.76	
Conv. Total (cfs)	1105.9	Conv. (cfs)		1105.9	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		41.36	
Min Ch El (ft)	2324.00	Shear (lb/sq ft)		0.95	
Alpha	1.00	Stream Power (lb/ft s)		4.78	
Frctn Loss (ft)	4.00	Cum Volume (acre-ft)		5.01	
C & E Loss (ft)	0.00	Cum SA (acres)		4.67	

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: FIS Flood Zone
REACH: Mission RS: 28

INPUT
Description: 2+100
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-233.84	2330.43	-84.24	2324	-66.89	2324	-53.02	2320	-18.78	2321.74
-3.04	2324	16.5	2322	25.01	2324	63.16	2323.8	91.57	2322.33
170.95	2323.22	247.57	2324	273.66	2320	296.16	2320	360	2325
420.77	2329.64	473.24	2330.78	579.4	2322	646.84	2321.94	675.91	2312.1

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -233.84    .035 -233.84    .035  420.77    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       -233.84  420.77             210     200     200            .1       .3
Left Levee      Station=  247.57      Elevation=    2324
Right Levee     Station=  420.77      Elevation= 2329.64

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)          * 2321.37  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.38  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)          * 2320.99  * Reach Len. (ft)        *  210.00  *  200.00  *  200.00  *
* Crit W.S. (ft)          * 2320.99  * Flow Area (sq ft)      *          *   31.60  *          *
* E.G. Slope (ft/ft)      *0.019800  * Area (sq ft)           *          *   31.60  *          *
* Q Total (cfs)           *  157.00  * Flow (cfs)            *          *  157.00  *          *
* Top Width (ft)          *   41.54  * Top Width (ft)        *          *   41.54  *          *
* Vel Total (ft/s)        *    4.97  * Avg. Vel. (ft/s)      *          *    4.97  *          *
* Max Chl Dpth (ft)       *    8.89  * Hydr. Depth (ft)      *          *    0.76  *          *
* Conv. Total (cfs)       *  1115.8  * Conv. (cfs)           *          *  1115.8  *          *
* Length Wtd. (ft)        *  200.00  * Wetted Per. (ft)      *          *   41.65  *          *
* Min Ch El (ft)          * 2320.00  * Shear (lb/sq ft)      *          *    0.94  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    4.66  *          *
* Frctn Loss (ft)         *    0.44  * Cum Volume (acre-ft)   *          *    4.86  *          *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)         *          *    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: FIS Flood Zone
REACH: Mission            RS: 26

INPUT
Description: 2+300
Station Elevation Data    num=      26
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
 -332.09 2322.62 -266.12 2322.02    -239  2320.3  -195.8 2319.85 -171.96 2317.86
 -141.05    2318  -89.33 2319.39    8.82  2319.2   50.01    2318   62.61    2314
  89.81    2314  132.42 2317.69  158.02    2316  168.26 2315.97  200.86  2319.7
 272.99 2316.02  284.41 2313.88  317.24 2313.84   334.2    2320  386.09    2326
 465.37    2326  491.34 2322.53   509.9  2321.9  558.51    2316  606.32 2315.97
 632.67 2312.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
 -332.09    .035    8.82    .035  386.09    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          8.82  386.09             300     300     330            .1       .3
Left Levee      Station=  200.86      Elevation=  2319.7
Right Levee     Station=   334.2      Elevation=    2320

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)          * 2315.16  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.40  * Wt. n-Val.             *          *    0.035  *          *
* W.S. Elev (ft)          * 2314.76  * Reach Len. (ft)        *  300.00  *  300.00  *  330.00  *
* Crit W.S. (ft)          * 2314.76  * Flow Area (sq ft)      *          *   32.71  *          *
* E.G. Slope (ft/ft)      *0.018864  * Area (sq ft)           *          *   32.71  *          *
* Q Total (cfs)           *  166.00  * Flow (cfs)            *          *  166.00  *          *
* Top Width (ft)          *   40.05  * Top Width (ft)        *          *   40.05  *          *
* Vel Total (ft/s)        *    5.07  * Avg. Vel. (ft/s)      *          *    5.07  *          *
* Max Chl Dpth (ft)       *    1.94  * Hydr. Depth (ft)      *          *    0.82  *          *
* Conv. Total (cfs)       *  1208.6  * Conv. (cfs)           *          *  1208.6  *          *
* Length Wtd. (ft)        *  300.00  * Wetted Per. (ft)      *          *   40.29  *          *
* Min Ch El (ft)          * 2313.84  * Shear (lb/sq ft)      *          *    0.96  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *    4.85  *          *
* Frctn Loss (ft)         *    5.66  * Cum Volume (acre-ft)   *          *    4.71  *          *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *          *    4.30  *          *
*****************************************************************************************************

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: 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: FIS Flood Zone
REACH: Mission            RS: 24

INPUT
Description: 2+500
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
    -695    2315    -645    2317    -555    2318    -500    2315    -466    2316
    -415    2312    -393    2312    -313    2316    -285    2316    -240    2312
    -123    2314      85  2313.5     140    2311     155    2308     185    2308
     207    2312     340    2319     435  2319.5     482  2317.2     538    2308
     658    2309     705    2306

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
    -695    .035    -555    .035     340    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          -555     340             220     220     270            .1       .3
Left Levee      Station=    -555      Elevation=    2318
Right Levee     Station=     340      Elevation=    2319

CROSS SECTION OUTPUT  Profile #PF 1
*****************************************************************************************************
* E.G. Elev (ft)          * 2309.34  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.40  * Wt. n-Val.             *          *    0.035  *          *
```

* W.S. Elev (ft)	* 2308.93	* Reach Len. (ft)	* 220.00	* 220.00	* 270.00 *
* Crit W.S. (ft)	* 2308.93	* Flow Area (sq ft)	*	* 32.60	* *
* E.G. Slope (ft/ft)	*0.018881	* Area (sq ft)	*	* 32.60	* *
* Q Total (cfs)	* 166.00	* Flow (cfs)	*	* 166.00	* *
* Top Width (ft)	* 39.81	* Top Width (ft)	*	* 39.81	* *
* Vel Total (ft/s)	* 5.09	* Avg. Vel. (ft/s)	*	* 5.09	* *
* Max Chl Dpth (ft)	* 2.93	* Hydr. Depth (ft)	*	* 0.82	* *
* Conv. Total (cfs)	* 1208.1	* Conv. (cfs)	*	* 1208.1	* *
* Length Wtd. (ft)	* 220.00	* Wetted Per. (ft)	*	* 39.98	* *
* Min Ch El (ft)	* 2308.00	* Shear (lb/sq ft)	*	* 0.96	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.89	* *
* Frctn Loss (ft)	* 3.34	* Cum Volume (acre-ft)	*	* 4.49	* *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	*	* 4.02	* *

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 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: FIS Flood Zone
REACH: Mission RS: 22

INPUT
Description: 2+700
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-690	2308	-660	2312	-575	2312	-500	2314	-375	2309
-305	2304	-287	2304	-210	2307.5	55	2307.5	65	2304
85	2303	125	2305	152	2307.5	195	2308	237	2313
280	2313	320	2310	358	2309	460	2310.5	530	2310
570	2302.5	585	2298	600	2298	620	2300	640	2300

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-690	.035	-375	.035	195	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-375	195	230	240	.1	.3
Left Levee	Station=	55	Elevation=	2307.5	
Right Levee	Station=	152	Elevation=	2307.5	

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2304.69	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.35	* Wt. n-Val.	*	* 0.035	* *
* W.S. Elev (ft)	* 2304.34	* Reach Len. (ft)	* 230.00	* 240.00	* 240.00 *
* Crit W.S. (ft)	* 2304.34	* Flow Area (sq ft)	*	* 34.73	* *
* E.G. Slope (ft/ft)	*0.019407	* Area (sq ft)	*	* 34.73	* *
* Q Total (cfs)	* 166.00	* Flow (cfs)	*	* 166.00	* *
* Top Width (ft)	* 47.68	* Top Width (ft)	*	* 47.68	* *
* Vel Total (ft/s)	* 4.78	* Avg. Vel. (ft/s)	*	* 4.78	* *
* Max Chl Dpth (ft)	* 6.34	* Hydr. Depth (ft)	*	* 0.73	* *
* Conv. Total (cfs)	* 1191.6	* Conv. (cfs)	*	* 1191.6	* *
* Length Wtd. (ft)	* 240.00	* Wetted Per. (ft)	*	* 47.79	* *
* Min Ch El (ft)	* 2303.00	* Shear (lb/sq ft)	*	* 0.88	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.21	* *
* Frctn Loss (ft)	* 1.52	* Cum Volume (acre-ft)	*	* 4.32	* *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	* 3.80	* *

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: FIS Flood Zone
REACH: Mission RS: 20

INPUT
Description: 2+900
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-620	2308	-580	2308	-520	2306	-470	2305.75	-450	2307
-360	2306	-220	2300	-210	2298	-195	2298	-180	2300
-165	2300	-150	2298	-130	2303	-60	2302.8	-25	2299.8
-15	2299.8	-10	2298	20	2298	50	2300	120	2302
180	2310	260	2310.8	480	2298.5	510	2298	580	2300

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-620	.035	-450	.035	180	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-450	180	200	200	.1	.3
Left Levee	Station=	-360	Elevation=	2306	
Right Levee	Station=	180	Elevation=	2310	

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2298.94	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.27	* Wt. n-Val.	*	* 0.035	* *
* W.S. Elev (ft)	* 2298.67	* Reach Len. (ft)	* 200.00	* 200.00	* 200.00 *
* Crit W.S. (ft)	* 2298.67	* Flow Area (sq ft)	*	* 39.63	* *
* E.G. Slope (ft/ft)	*0.022156	* Area (sq ft)	*	* 39.63	* *
* Q Total (cfs)	* 166.00	* Flow (cfs)	*	* 166.00	* *
* Top Width (ft)	* 73.05	* Top Width (ft)	*	* 73.05	* *
* Vel Total (ft/s)	* 4.19	* Avg. Vel. (ft/s)	*	* 4.19	* *
* Max Chl Dpth (ft)	* 0.67	* Hydr. Depth (ft)	*	* 0.54	* *
* Conv. Total (cfs)	* 1115.2	* Conv. (cfs)	*	* 1115.2	* *
* Length Wtd. (ft)	* 200.00	* Wetted Per. (ft)	*	* 73.43	* *
* Min Ch El (ft)	* 2298.00	* Shear (lb/sq ft)	*	* 0.75	* *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 3.13	* *
* Frctn Loss (ft)	* 4.65	* Cum Volume (acre-ft)	*	* 4.11	* *
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	*	* 3.47	* *

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

```
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
         depth, the calculated water surface came back below critical depth.  This indicates that there
         is not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid,
         water surface was used.

CROSS SECTION


RIVER: FIS Flood Zone
REACH: Mission            RS: 19

INPUT
Description: 3+000
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
   52.74 2299.74   81.63 2298.73  100.84    2296  152.59 2295.81     199    2294
  210.08    2292  247.52    2292  252.8 2291.63  258.56    2292  349.01    2292
  362.72    2294  420.28 2295.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
   52.74    .035     199    .035  362.72    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          199  362.72               100     100     100              .1      .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2292.59  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.20  * Wt. n-Val.           *          *    0.035  *          *
* W.S. Elev (ft)          * 2292.39  * Reach Len. (ft)      *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          * 2292.39  * Flow Area (sq ft)    *          *    57.15  *          *
* E.G. Slope (ft/ft)      *0.024201  * Area (sq ft)         *          *    57.15  *          *
* Q Total (cfs)           *  204.00  * Flow (cfs)           *          *   204.00  *          *
* Top Width (ft)          *  143.76  * Top Width (ft)       *          *   143.76  *          *
* Vel Total (ft/s)        *    3.57  * Avg. Vel. (ft/s)     *          *     3.57  *          *
* Max Chl Dpth (ft)       *    0.76  * Hydr. Depth (ft)     *          *     0.40  *          *
* Conv. Total (cfs)       *  1311.3  * Conv. (cfs)          *          *  1311.3   *          *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)     *          *   143.85  *          *
* Min Ch El (ft)          * 2291.63  * Shear (lb/sq ft)     *          *     0.60  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *     2.14  *          *
* Frctn Loss (ft)         *    2.07  * Cum Volume (acre-ft)  *          *     3.89  *          *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)        *          *     2.97  *          *
*************************************************************************************************

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 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: FIS Flood Zone
REACH: Mission            RS: 18

INPUT
Description: 3+100
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
   41.32    2296   62.28    2296   80.22  2293.9   112.9  2292.5  168.47    2292
  214.86    2286  227.03    2286  237.92    2288  303.24    2290  322.54    2290
   347.5    2291  369.05 2290.98  404.01    2290   432.4    2290

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
   41.32    .035  168.47    .035   347.5    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          168.47   347.5               165     165     165              .1      .3
Cross Section Lid
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
***********************************************
  232.61    2291    2290  236.61    2291    2290

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)          * 2288.09  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.53  * Wt. n-Val.           *          *    0.035  *          *
* W.S. Elev (ft)          * 2287.56  * Reach Len. (ft)      *  165.00  *  165.00  *  165.00  *
* Crit W.S. (ft)          * 2287.56  * Flow Area (sq ft)    *          *    34.96  *          *
* E.G. Slope (ft/ft)      *0.017836  * Area (sq ft)         *          *    34.96  *          *
* Q Total (cfs)           *  204.00  * Flow (cfs)           *          *   204.00  *          *
* Top Width (ft)          *   32.70  * Top Width (ft)       *          *    32.70  *          *
* Vel Total (ft/s)        *    5.84  * Avg. Vel. (ft/s)     *          *     5.84  *          *
* Max Chl Dpth (ft)       *    0.53  * Hydr. Depth (ft)     *          *     1.07  *          *
* Conv. Total (cfs)       *  1527.5  * Conv. (cfs)          *          *  1527.5   *          *
* Length Wtd. (ft)        *  165.00  * Wetted Per. (ft)     *          *    33.47  *          *
* Min Ch El (ft)          * 2287.03  * Shear (lb/sq ft)     *          *     1.16  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *          *     6.79  *          *
* Frctn Loss (ft)         *          * Cum Volume (acre-ft)  *          *     3.79  *          *
* C & E Loss (ft)         *          * Cum SA (acres)        *          *     2.77  *          *
*************************************************************************************************

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.

CULVERT


RIVER: FIS Flood Zone
REACH: Mission            RS: 17

INPUT
Description:
Distance from Upstream XS =      100
Deck/Roadway Width        =        4
Weir Coefficient          =      2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
***********************************************
  221.03    2291    2290  225.03    2291    2290

Upstream Bridge Cross Section Data
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
```

```
  41.32    2296   62.28    2296   80.22  2293.9   112.9  2292.5  168.47    2292
 214.86    2286  227.03    2286  237.92    2288  303.24    2290  322.54    2290
  347.5    2291  369.05 2290.98  404.01    2290   432.4    2290
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
41.32	.035	168.47	.035	347.5	.035

Bank Sta: Left Right Coeff Contr. Expan.
168.47 347.5 .1 .3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
260.31	2289.6	2288.6	264.31	2289.6	2288.6

Downstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
48.08	2294	58.34	2294	98.13	2292	111.08	2290	200.49	2286
206.56	2286	249.41	2284.03	258.31	2282	260.61	2282	278.52	2286
301	2285.51	321.73	2285.46	350.14	2284.8	369.37	2286	413.53	2286.45

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
48.08	.035	200.49	.035	413.53	.035

Bank Sta: Left Right Coeff Contr. Expan.
200.49 413.53 .1 .3

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

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
Culvert #1            Box       7       4
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
                 35     100     .014     .014         0                 .05                1
Upstream   Elevation =  2283
           Centerline Station =  223.03
Downstream Elevation =  2281.6
           Centerline Station =  262.31

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1
*************************************************************************
* Q Culv Group (cfs)     *  115.47  * Culv Full Len (ft)     *          *
* # Barrels              *       1  * Culv Vel US (ft/s)     *    9.76  *
* Q Barrel (cfs)         *  115.47  * Culv Vel DS (ft/s)     *   12.51  *
* E.G. US. (ft)          * 2287.67  * Culv Inv El Up (ft)    * 2283.00  *
* W.S. US. (ft)          * 2287.56  * Culv Inv El Dn (ft)    * 2281.60  *
* E.G. DS (ft)           * 2285.04  * Culv Frctn Ls (ft)     *    1.10  *
* W.S. DS (ft)           * 2284.64  * Culv Exit Loss (ft)    *    1.30  *
* Delta EG (ft)          *    2.63  * Culv Entr Loss (ft)    *    0.23  *
* Delta WS (ft)          *    2.92  * Q Weir (cfs)           *   88.53  *
* E.G. IC (ft)           * 2287.67  * Weir Sta Lft (ft)      *  202.02  *
* E.G. OC (ft)           * 2287.51  * Weir Sta Rgt (ft)      *  236.07  *
* Culvert Control        *   Inlet  * Weir Submerg           *    0.00  *
* Culv WS Inlet (ft)     * 2285.96  * Weir Max Depth (ft)    *    1.66  *
* Culv WS Outlet (ft)    * 2283.91  * Weir Avg Depth (ft)    *    1.06  *
* Culv Nml Depth (ft)    *    2.22  * Weir Flow Area (sq ft) *   31.74  *
* Culv Crt Depth (ft)    *    2.96  * Min El Weir Flow (ft)  * 2286.01  *
*************************************************************************

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note:    The flow in the culvert is entirely supercritical.

CROSS SECTION


RIVER: FIS Flood Zone
REACH: Mission            RS: 16

INPUT
Description: 3+300
Station Elevation Data    num=      15
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
48.08	2294	58.34	2294	98.13	2292	111.08	2290	200.49	2286
206.56	2286	249.41	2284.03	258.31	2282	260.61	2282	278.52	2286
301	2285.51	321.73	2285.46	350.14	2284.8	369.37	2286	413.53	2286.45

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
48.08	.035	200.49	.035	413.53	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
200.49 413.53 100 100 110 .1 .3

Cross Section Lid
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
232.61	2289.6	2288.6	236.61	2289.6	2288.6

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (ft)	* 2285.04	* Element	* Left OB	* Channel * Right OB *
* Vel Head (ft)	* 0.40	* Wt. n-Val.	*	* 0.035 * *
* W.S. Elev (ft)	* 2284.64	* Reach Len. (ft)	* 100.00	* 100.00 * 110.00 *
* Crit W.S. (ft)	* 2284.64	* Flow Area (sq ft)	*	* 40.18 * *
* E.G. Slope (ft/ft)	*0.012747	* Area (sq ft)	*	* 40.18 * *
* Q Total (cfs)	* 204.00	* Flow (cfs)	*	* 204.00 * *
* Top Width (ft)	* 36.29	* Top Width (ft)	*	* 36.29 * *
* Vel Total (ft/s)	* 5.08	* Avg. Vel. (ft/s)	*	* 5.08 * *
* Max Chl Dpth (ft)	* 0.02	* Hydr. Depth (ft)	*	* 1.11 * *
* Conv. Total (cfs)	* 1806.9	* Conv. (cfs)	*	* 1806.9 * *
* Length Wtd. (ft)	* 100.00	* Wetted Per. (ft)	*	* 36.85 * *
* Min Ch El (ft)	* 2284.62	* Shear (lb/sq ft)	*	* 0.87 * *
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	* 4.41 * *
* Frctn Loss (ft)	* 1.61	* Cum Volume (acre-ft)	*	* 3.64 * *
* C & E Loss (ft)	* 0.03	* Cum SA (acres)	*	* 2.64 * *

```
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: FIS Flood Zone
REACH: Mission RS: 15

INPUT
Description: 3+400
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
17.71	2286.97	26.99	2286.94	54.39	2282	65.42	2282	85.7	2284
108.83	2284	132.46	2281.98	167.75	2280	178.3	2280	192.04	2280.74
214.38	2280.54	219.45	2280.29	230.34	2282	251.22	2282	260.86	2284
278.16	2286	332.59	2286						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
17.71	.035	108.83	.035	278.16	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
108.83	278.16	60	60	.1	.3

Left Levee Station= 108.83 Elevation= 2284

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2281.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.		0.035	
W.S. Elev (ft)	2281.07	Reach Len. (ft)	60.00	60.00	60.00
Crit W.S. (ft)	2281.07	Flow Area (sq ft)		46.27	
E.G. Slope (ft/ft)	*0.020877	Area (sq ft)		46.27	
Q Total (cfs)	204.00	Flow (cfs)		204.00	
Top Width (ft)	75.83	Top Width (ft)		75.83	
Vel Total (ft/s)	4.41	Avg. Vel. (ft/s)		4.41	
Max Chl Dpth (ft)	1.07	Hydr. Depth (ft)		0.61	
Conv. Total (cfs)	1411.9	Conv. (cfs)		1411.9	
Length Wtd. (ft)	60.00	Wetted Per. (ft)		75.95	
Min Ch El (ft)	2280.00	Shear (lb/sq ft)		0.79	
Alpha	1.00	Stream Power (lb/ft s)		3.50	
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)		3.55	
C & E Loss (ft)	0.02	Cum SA (acres)		2.51	

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

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 14

INPUT
Description: 3+500
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
28.41	2280	52.78	2282	95.32	2282	128.99	2280	163.46	2280
169.48	2279.49	204.01	2278	221.5	2276	237.94	2276	263.15	2282
300.4	2284	325.65	2284.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
28.41	.035	95.32	.035	263.15	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
95.32	263.15	240	260	.1	.3

Left Levee Station= 95.32 Elevation= 2282

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2277.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.035	
W.S. Elev (ft)	2277.39	Reach Len. (ft)	240.00	260.00	390.00
Crit W.S. (ft)	2277.39	Flow Area (sq ft)		35.35	
E.G. Slope (ft/ft)	*0.018013	Area (sq ft)		35.35	
Q Total (cfs)	204.00	Flow (cfs)		204.00	
Top Width (ft)	34.43	Top Width (ft)		34.43	
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)		5.77	
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)		1.03	
Conv. Total (cfs)	1520.0	Conv. (cfs)		1520.0	
Length Wtd. (ft)	260.00	Wetted Per. (ft)		34.67	
Min Ch El (ft)	2276.00	Shear (lb/sq ft)		1.15	
Alpha	1.00	Stream Power (lb/ft s)		6.62	
Frctn Loss (ft)	1.93	Cum Volume (acre-ft)		3.49	
C & E Loss (ft)	0.08	Cum SA (acres)		2.43	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 12

INPUT
Description: 3+700
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-300	2280	-280	2282	-170	2282	-65	2278	-47	2275
-30	2266	40	2266.5	75	2268	100	2275	150	2270
160	2270	200	2280	220	2280	255	2282	370	2286
500	2286	530	2294						

```
Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
*********************************************
    -300    .035      -65    .035     200    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            -65     200             140      90     120             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2268.22  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.25  * Wt. n-Val.            *          *   0.035  *          *
* W.S. Elev (ft)         * 2267.97  * Reach Len. (ft)      *  140.00  *   90.00  *  120.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *          *  149.25  *          *
* E.G. Slope (ft/ft)     *0.005903  * Area (sq ft)          *          *  149.25  *          *
* Q Total (cfs)          *  602.00  * Flow (cfs)           *          *  602.00  *          *
* Top Width (ft)         *  108.01  * Top Width (ft)       *          *  108.01  *          *
* Vel Total (ft/s)       *    4.03  * Avg. Vel. (ft/s)     *          *    4.03  *          *
* Max Chl Dpth (ft)      *    1.97  * Hydr. Depth (ft)     *          *    1.38  *          *
* Conv. Total (cfs)      *  7835.2  * Conv. (cfs)          *          *  7835.2  *          *
* Length Wtd. (ft)       *   90.00  * Wetted Per. (ft)     *          *  108.54  *          *
* Min Ch El (ft)         * 2266.00  * Shear (lb/sq ft)     *          *    0.51  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    2.04  *          *
* Frctn Loss (ft)        *    0.85  * Cum Volume (acre-ft)  *          *    2.94  *          *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *          *    2.01  *          *
*************************************************************************************************

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

CROSS SECTION


RIVER: FIS Flood Zone
REACH: Mission            RS: 10

INPUT
Description: 3+900
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -370  2273.5    -300    2282    -185    2282    -110    2276     -45    2276
     -30    2274     -10    2266      70  2265.5      90  2266.5     120    2280
     180    2282     240    2283     345    2286     490    2286

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
*********************************************
    -370    .035    -185    .035     120    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            -185     120             110     120     125             .1       .3
Left Levee      Station=    -185      Elevation=    2282
Right Levee     Station=     120      Elevation=    2280

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2267.35  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.50  * Wt. n-Val.            *          *   0.035  *          *
* W.S. Elev (ft)         * 2266.85  * Reach Len. (ft)      *  110.00  *  120.00  *  125.00  *
* Crit W.S. (ft)         * 2266.85  * Flow Area (sq ft)     *          *  105.57  *          *
* E.G. Slope (ft/ft)     *0.017489  * Area (sq ft)          *          *  105.57  *          *
* Q Total (cfs)          *  602.00  * Flow (cfs)           *          *  602.00  *          *
* Top Width (ft)         *  102.88  * Top Width (ft)       *          *  102.88  *          *
* Vel Total (ft/s)       *    5.70  * Avg. Vel. (ft/s)     *          *    5.70  *          *
* Max Chl Dpth (ft)      *    1.35  * Hydr. Depth (ft)     *          *    1.03  *          *
* Conv. Total (cfs)      *  4552.1  * Conv. (cfs)          *          *  4552.1  *          *
* Length Wtd. (ft)       *  120.00  * Wetted Per. (ft)     *          *  103.14  *          *
* Min Ch El (ft)         * 2265.50  * Shear (lb/sq ft)     *          *    1.12  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    6.37  *          *
* Frctn Loss (ft)        *    1.97  * Cum Volume (acre-ft)  *          *    2.67  *          *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *          *    1.79  *          *
*************************************************************************************************

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: 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: FIS Flood Zone
REACH: Mission            RS: 08

INPUT
Description: 4+100
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    -365    2282    -240    2282    -140    2274     -80    2274     -45    2262
      38    2262      58    2264      90    2279     160    2280     300    2286
     305    2286

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val     Sta   n Val
*********************************************
    -365    .035     -80    .035      90    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             -80      90             200     200     200             .1       .3

CROSS SECTION OUTPUT  Profile #PF 1
*************************************************************************************************
* E.G. Elev (ft)         * 2263.67  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.48  * Wt. n-Val.            *          *   0.035  *          *
* W.S. Elev (ft)         * 2263.19  * Reach Len. (ft)      *  200.00  *  200.00  *  200.00  *
* Crit W.S. (ft)         * 2263.14  * Flow Area (sq ft)     *          *  107.79  *          *
* E.G. Slope (ft/ft)     *0.015369  * Area (sq ft)          *          *  107.79  *          *
* Q Total (cfs)          *  602.00  * Flow (cfs)           *          *  602.00  *          *
* Top Width (ft)         *   98.35  * Top Width (ft)       *          *   98.35  *          *
* Vel Total (ft/s)       *    5.58  * Avg. Vel. (ft/s)     *          *    5.58  *          *
* Max Chl Dpth (ft)      *    1.19  * Hydr. Depth (ft)     *          *    1.10  *          *
* Conv. Total (cfs)      *  4855.9  * Conv. (cfs)          *          *  4855.9  *          *
* Length Wtd. (ft)       *  200.00  * Wetted Per. (ft)     *          *   98.61  *          *
* Min Ch El (ft)         * 2262.00  * Shear (lb/sq ft)     *          *    1.05  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *          *    5.86  *          *
* Frctn Loss (ft)        *    3.34  * Cum Volume (acre-ft)  *          *    2.38  *          *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *          *    1.51  *          *
*************************************************************************************************

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: FIS Flood Zone
REACH: Mission RS: 06

INPUT
Description: 4+300
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-345	2284	-280	2282	-155	2270.5	-80	2270	-65	2268
-45	2258	-30	2258	60	2260	90	2278	100	2280
120	2280	240	2284	260	2285				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-345	.035	-80	.035	90	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-80	90	200	200	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2260.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.		0.035	
W.S. Elev (ft)	2259.80	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	2259.80	Flow Area (sq ft)		103.00	
E.G. Slope (ft/ft)	*0.018215	Area (sq ft)		103.00	
Q Total (cfs)	602.00	Flow (cfs)		602.00	
Top Width (ft)	99.53	Top Width (ft)		99.53	
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)		5.84	
Max Chl Dpth (ft)	1.80	Hydr. Depth (ft)		1.03	
Conv. Total (cfs)	4460.5	Conv. (cfs)		4460.5	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		99.98	
Min Ch El (ft)	2258.00	Shear (lb/sq ft)		1.17	
Alpha	1.00	Stream Power (lb/ft s)		6.85	
Frctn Loss (ft)	0.80	Cum Volume (acre-ft)		1.90	
C & E Loss (ft)	0.13	Cum SA (acres)		1.06	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 04

INPUT
Description: 4+500
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-475	2282	-340	2282	-335	2279	-160	2264	-75	2264
-50	2254	30	2254	60	2256	80	2266.5	100	2267.5
120	2267	130	2268	160	2268	250	2274	280	2274.5
330	2274	520	2280						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-475	.035	-75	.035	80	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-75	80	200	200	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2256.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.035	
W.S. Elev (ft)	2256.24	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)		Flow Area (sq ft)		222.47	
E.G. Slope (ft/ft)	*0.001717	Area (sq ft)		222.47	
Q Total (cfs)	602.00	Flow (cfs)		602.00	
Top Width (ft)	116.05	Top Width (ft)		116.05	
Vel Total (ft/s)	2.71	Avg. Vel. (ft/s)		2.71	
Max Chl Dpth (ft)	2.24	Hydr. Depth (ft)		1.92	
Conv. Total (cfs)	14529.2	Conv. (cfs)		14529.2	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		116.60	
Min Ch El (ft)	2254.00	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.55	
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)		1.15	
C & E Loss (ft)	0.00	Cum SA (acres)		0.56	

CROSS SECTION

RIVER: FIS Flood Zone
REACH: Mission RS: 02

INPUT
Description: 4+700
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-430	2262.5	-400	2256	-360	2256.5	-320	2258	-280	2258
-220	2260.5	-200	2260	-110	2260	-100	2260.5	-60	2260
-38	2253	30	2253.5	60	2256	88	2270	130	2272
180	2268	250	2271	260	2274	360	2276		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-430	.035	-100	.035	88	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-100	88	29	29	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2256.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	2255.94	Reach Len. (ft)	29.00	29.00	29.00
Crit W.S. (ft)		Flow Area (sq ft)		232.61	
E.G. Slope (ft/ft)	*0.001322	Area (sq ft)		232.61	
Q Total (cfs)	602.00	Flow (cfs)		602.00	
Top Width (ft)	106.57	Top Width (ft)		106.57	

Vel Total (ft/s)	2.59	Avg. Vel. (ft/s)	2.59		
Max Chl Dpth (ft)	2.94	Hydr. Depth (ft)	2.18		
Conv. Total (cfs)	16558.3	Conv. (cfs)	16558.3		
Length Wtd. (ft)	29.00	Wetted Per. (ft)	107.14		
Min Ch El (ft)	2253.00	Shear (lb/sq ft)	0.18		
Alpha	1.00	Stream Power (lb/ft s)	0.46		
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	0.11		
C & E Loss (ft)	0.07	Cum SA (acres)	0.05		

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: FIS Flood Zone
REACH: Mission RS: 01

INPUT
Description: 4+729
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-220	2260	-50	2260	-30	2258	-20	2252	-15	2252
0	2255	10	2254.9	15	2252	20	2252	30	2256
60	2258.5	90	2269	130	2270.5	160	2270	195	2268
240	2270								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-220	.035	-30	.035	60	.035

Bank Sta: Left Right Coeff Contr. Expan.
-30 60 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	2255.88	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.81	Wt. n-Val.		0.035		
W.S. Elev (ft)	2255.07	Reach Len. (ft)				
Crit W.S. (ft)	2255.07	Flow Area (sq ft)		83.25		
E.G. Slope (ft/ft)	0.016819	Area (sq ft)		83.25		
Q Total (cfs)	602.00	Flow (cfs)		602.00		
Top Width (ft)	52.80	Top Width (ft)		52.80		
Vel Total (ft/s)	7.23	Avg. Vel. (ft/s)		7.23		
Max Chl Dpth (ft)	3.07	Hydr. Depth (ft)		1.58		
Conv. Total (cfs)	4641.9	Conv. (cfs)		4641.9		
Length Wtd. (ft)		Wetted Per. (ft)		55.32		
Min Ch El (ft)	2252.00	Shear (lb/sq ft)		1.58		
Alpha	1.00	Stream Power (lb/ft s)		11.43		
Frctn Loss (ft)		Cum Volume (acre-ft)				
C & E Loss (ft)		Cum SA (acres)				

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is below critical depth). Water surface set to critical depth.

SUMMARY OF MANNING'S N VALUES

River:FIS Flood Zone

Reach	River Sta.	n1	n2	n3
Mission	48	.035	.035	.035
Mission	46	.035	.035	.035
Mission	44	.035	.035	.035
Mission	42	.035	.035	.035
Mission	40	.035	.035	.035
Mission	37	.035	.035	.035
Mission	36	.035	.035	.035
Mission	34	.035	.035	.035
Mission	32	.035	.035	.035
Mission	30	.035	.035	.035
Mission	28	.035	.035	.035
Mission	26	.035	.035	.035
Mission	24	.035	.035	.035
Mission	22	.035	.035	.035
Mission	20	.035	.035	.035
Mission	19	.035	.035	.035
Mission	18	.035	.035	.035
Mission	17	Culvert		
Mission	16	.035	.035	.035
Mission	15	.035	.035	.035
Mission	14	.035	.035	.035
Mission	12	.035	.035	.035
Mission	10	.035	.035	.035
Mission	08	.035	.035	.035
Mission	06	.035	.035	.035
Mission	04	.035	.035	.035
Mission	02	.035	.035	.035
Mission	01	.035	.035	.035

SUMMARY OF REACH LENGTHS

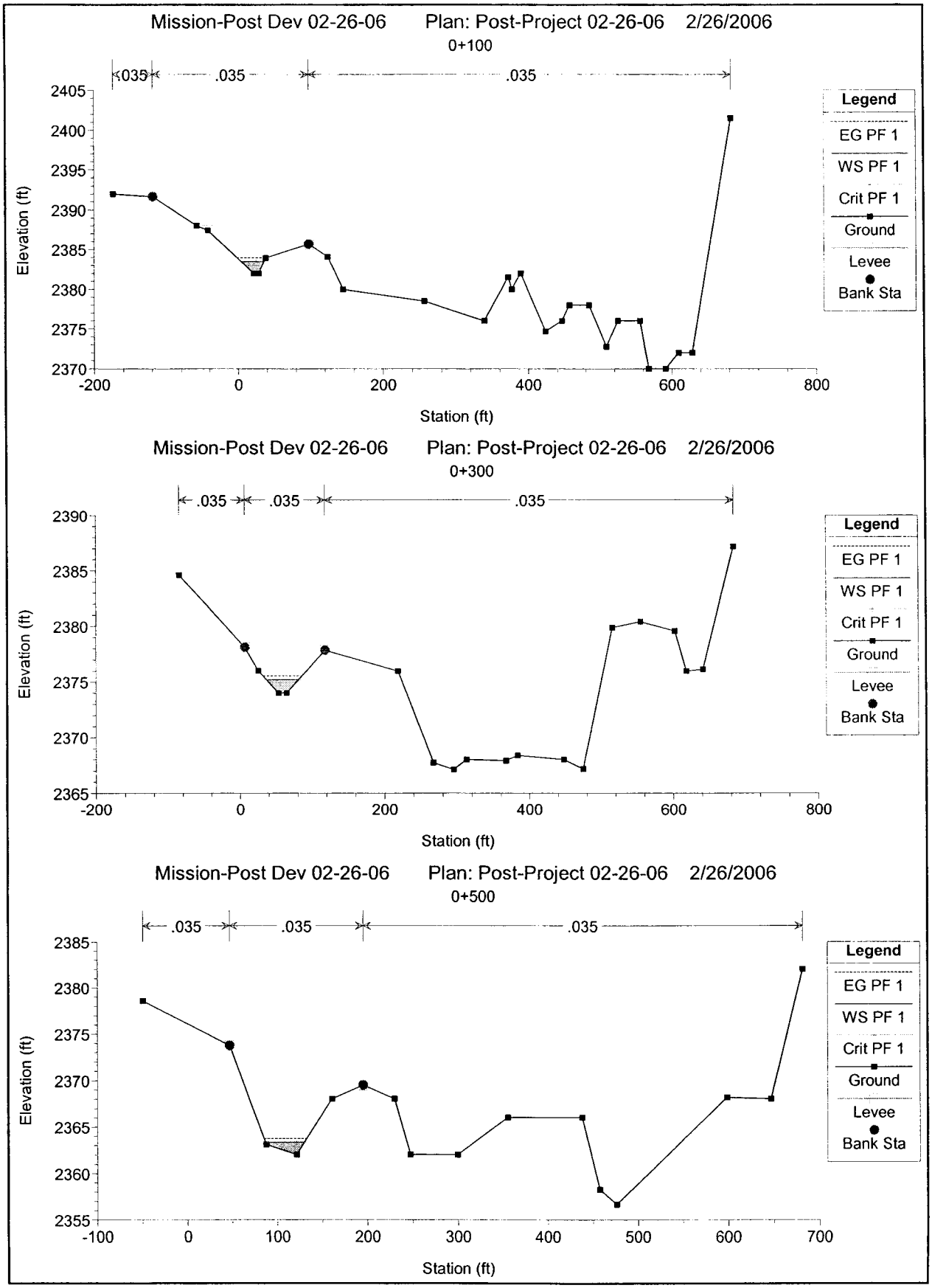
River: FIS Flood Zone

Reach	River Sta.	Left	Channel	Right
Mission	48	200	200	200
Mission	46	200	200	200
Mission	44	400	210	200
Mission	42	220	220	350
Mission	40	300	300	300
Mission	37	100	100	100
Mission	36	200	200	200
Mission	34	250	200	200
Mission	32	200	200	200
Mission	30	200	200	200
Mission	28	210	200	200
Mission	26	300	300	330
Mission	24	220	220	270
Mission	22	230	240	240
Mission	20	200	200	200
Mission	19	100	100	100
Mission	18	165	165	165
Mission	17	Culvert		
Mission	16	100	100	110
Mission	15	60	60	60
Mission	14	240	260	390
Mission	12	140	90	120

*Mission	*	10	*	110*	120*	125*
*Mission	*	08	*	200*	200*	200*
*Mission	*	06	*	200*	200*	200*
*Mission	*	04	*	200*	200*	200*
*Mission	*	02	*	29*	29*	29*
*Mission	*	01	*	*	*	*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: FIS Flood Zone

Reach	River Sta.	Contr.	Expan.
*Mission	48	.1	.3
*Mission	46	.1	.3
*Mission	44	.1	.3
*Mission	42	.1	.3
*Mission	40	.1	.3
*Mission	37	.1	.3
*Mission	36	.1	.3
*Mission	34	.1	.3
*Mission	32	.1	.3
*Mission	30	.1	.3
*Mission	28	.1	.3
*Mission	26	.1	.3
*Mission	24	.1	.3
*Mission	22	.1	.3
*Mission	20	.1	.3
*Mission	19	.1	.3
*Mission	18	.1	.3
*Mission	17	*Culvert *	*
*Mission	16	.1	.3
*Mission	15	.1	.3
*Mission	14	.1	.3
*Mission	12	.1	.3
*Mission	10	.1	.3
*Mission	08	.1	.3
*Mission	06	.1	.3
*Mission	04	.1	.3
*Mission	02	.1	.3
*Mission	01	.1	.3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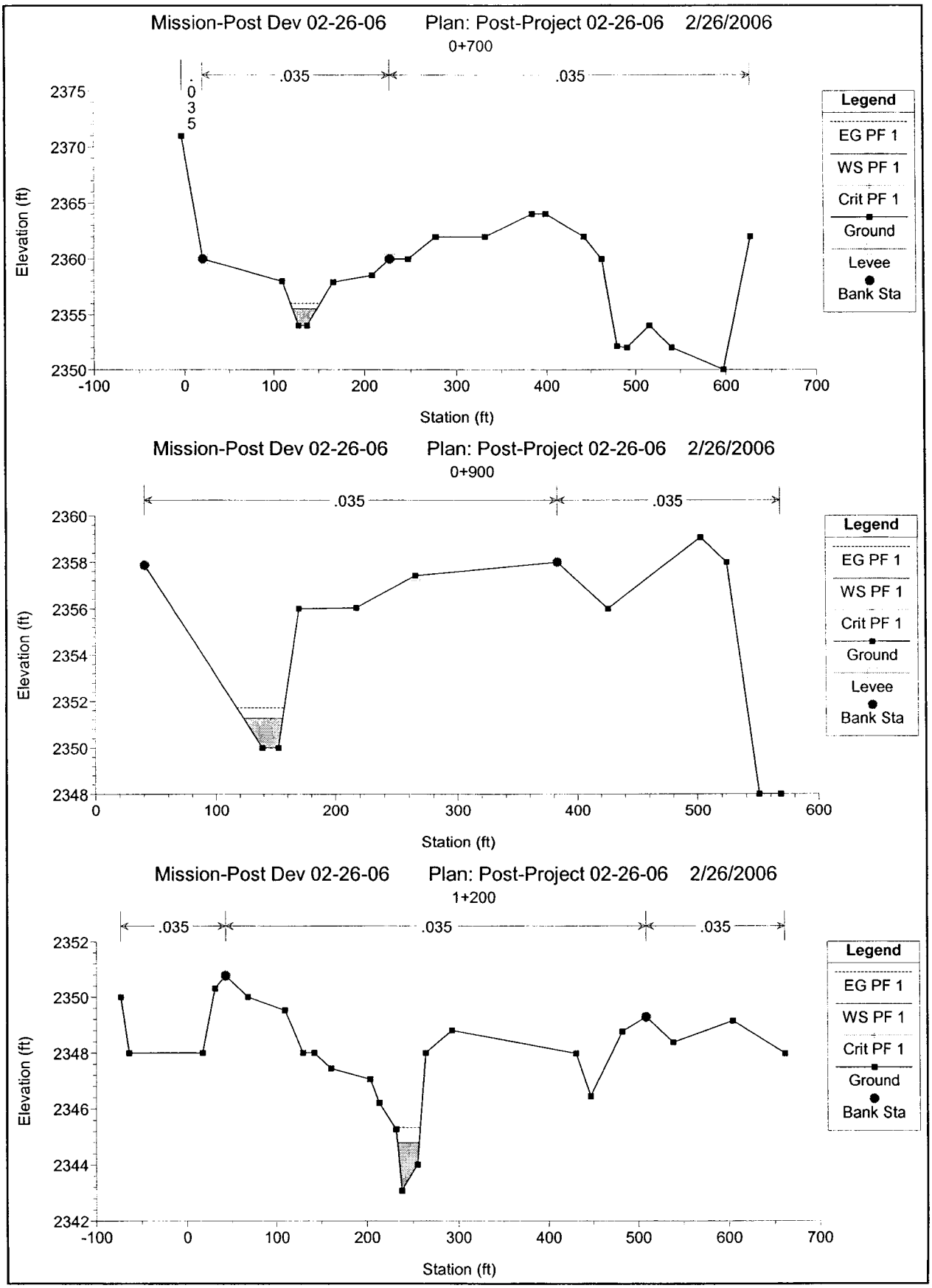
0+100
.035
.035
.035
Elevation (ft)
2405
2400
2395
2390
2385
2380
2375
2370
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
0+300
.035
.035
.035
Elevation (ft)
2390
2385
2380
2375
2370
2365
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
0+500
.035
.035
.035
Elevation (ft)
2385
2380
2375
2370
2365
2360
2355
-100
0
100
200
300
400
500
600
700
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta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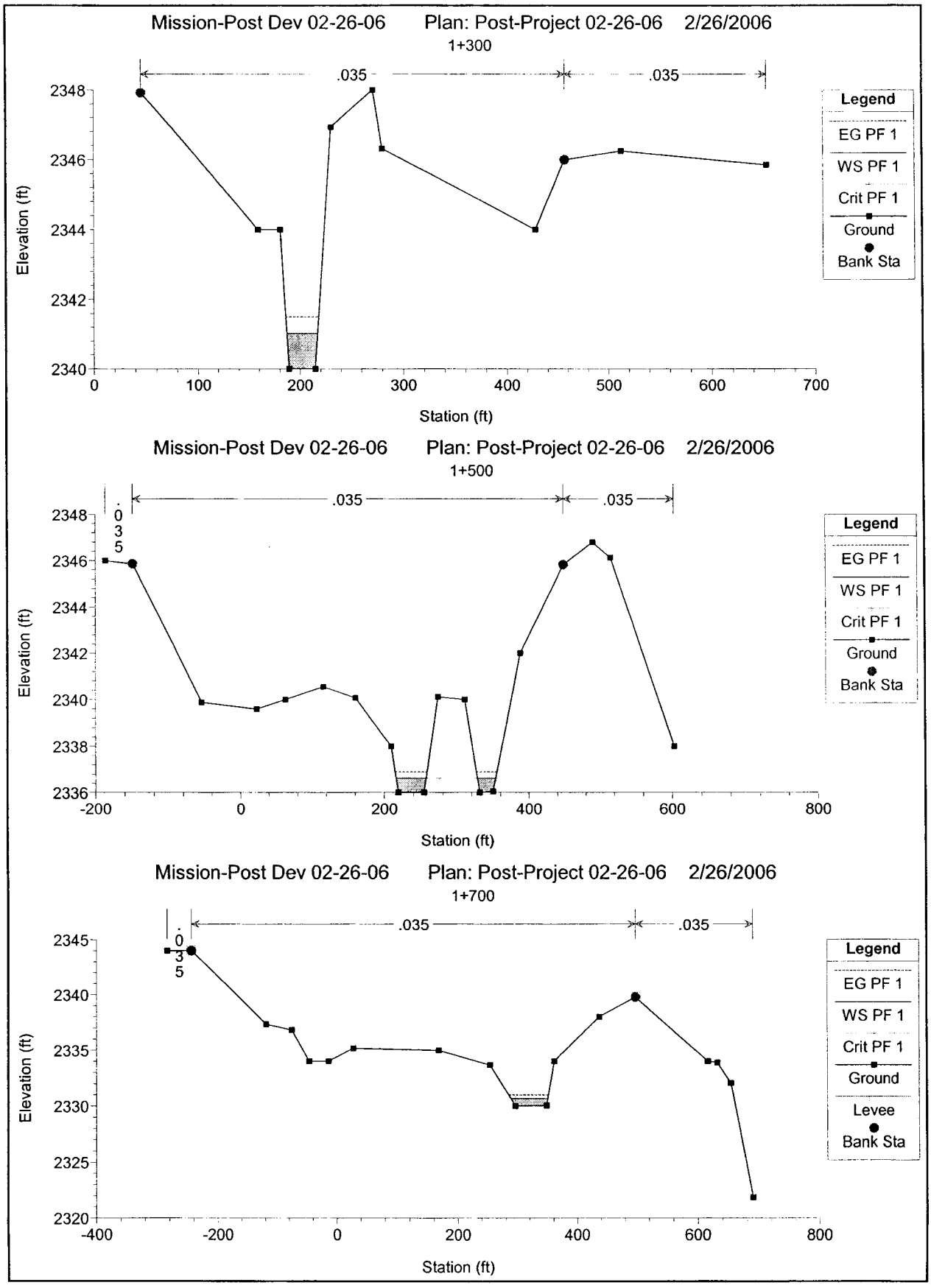
0+700
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
0+900
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
1+200
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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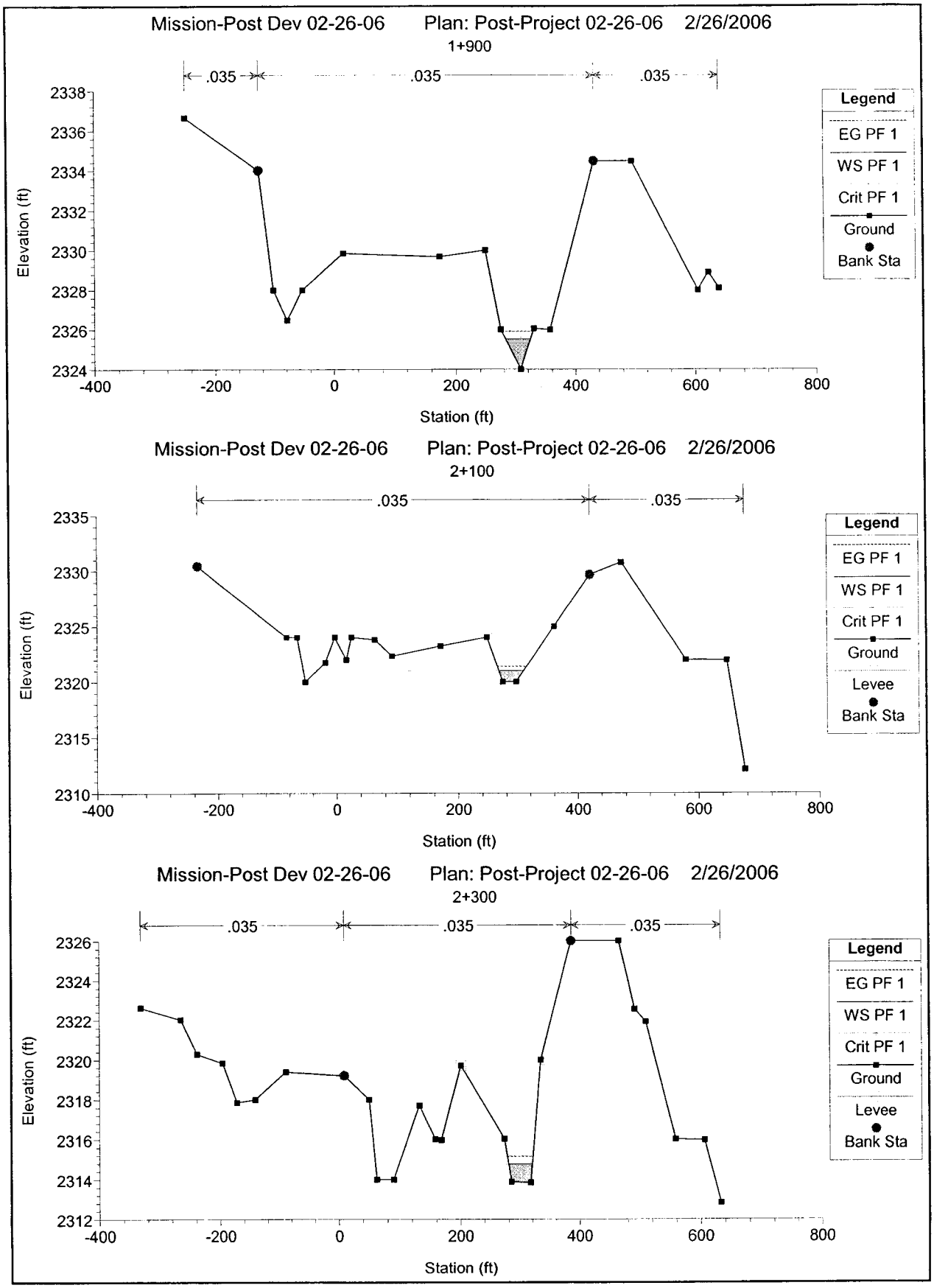
1+300
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
1+500
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
1+700
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta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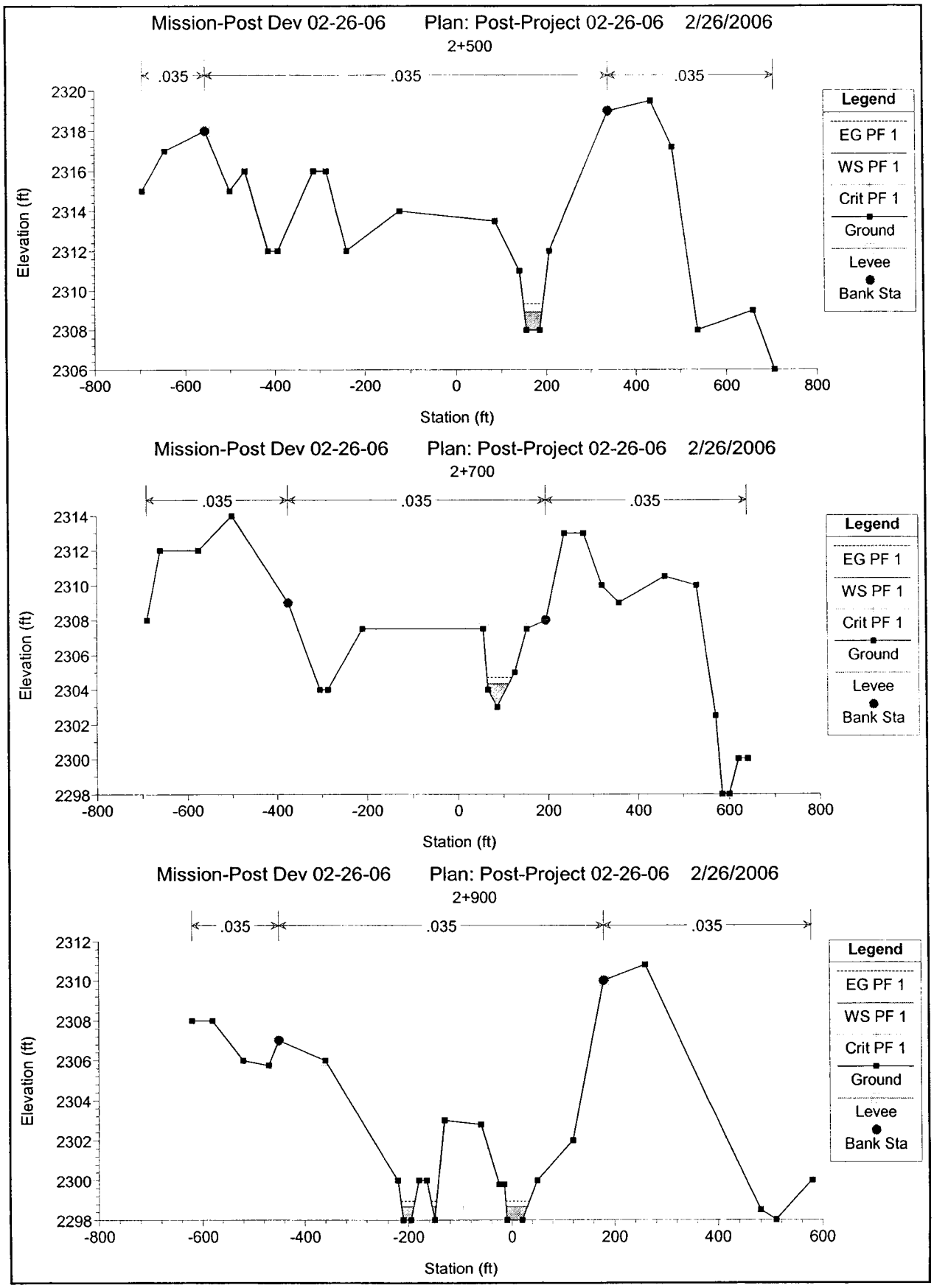
1+900
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
2+100
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
2+300
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta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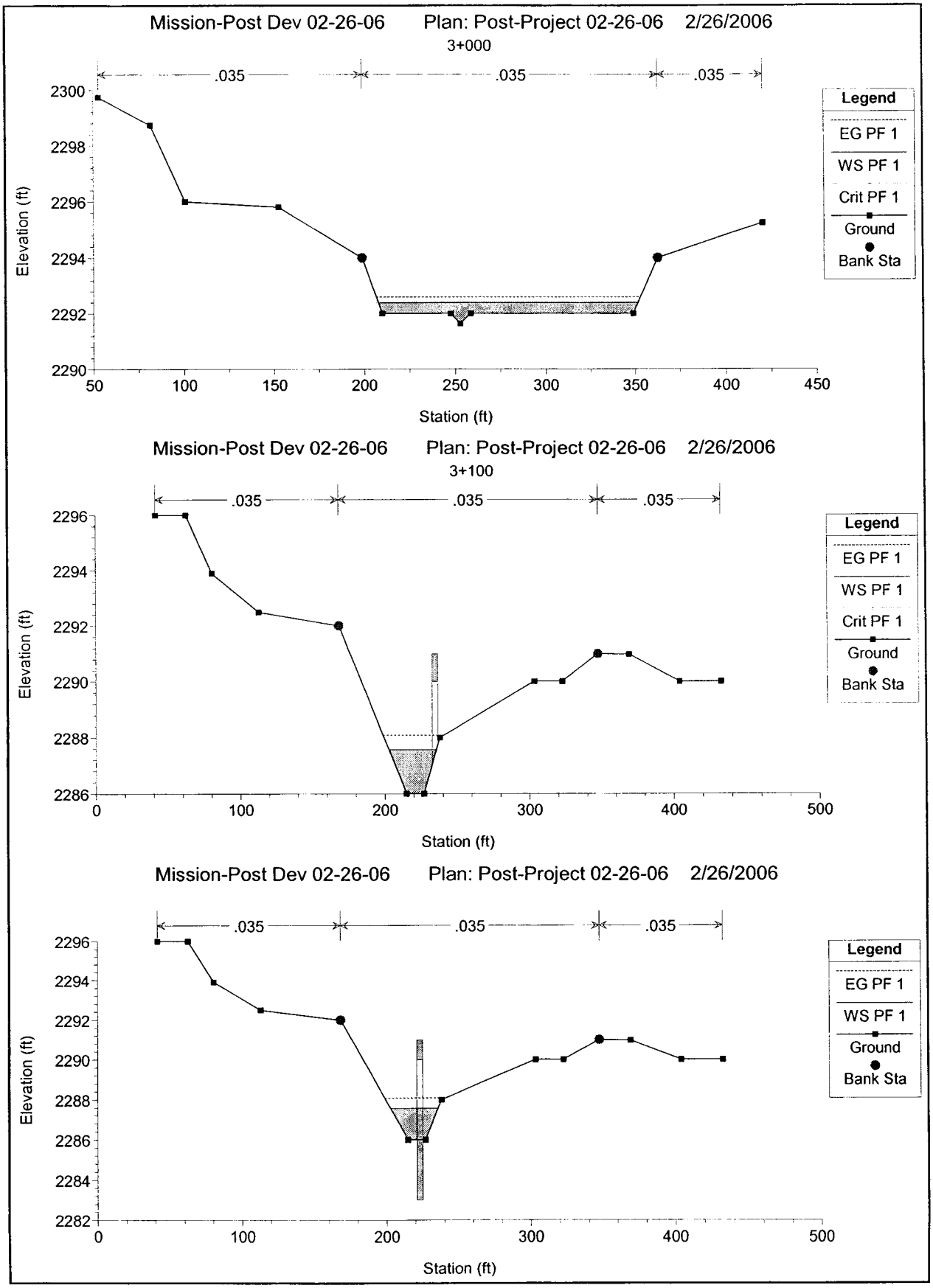
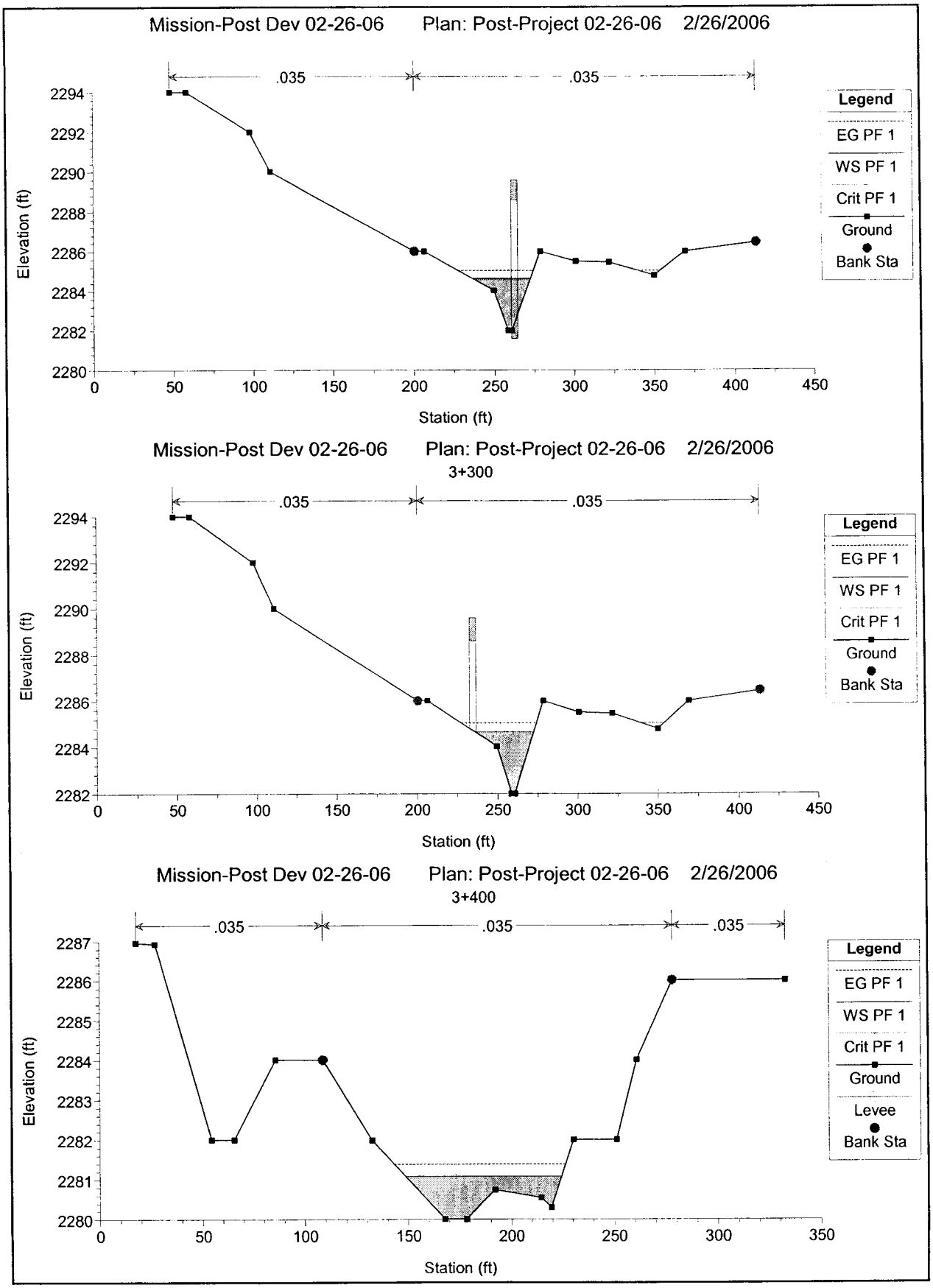
2+500
.035
.035
.035
Elevation (ft)
2320
2318
2316
2314
2312
2310
2308
2306
-800
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
2+700
.035
.035
.035
Elevation (ft)
2314
2312
2310
2308
2306
2304
2302
2300
2298
-800
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
2+900
.035
.035
.035
Elevation (ft)
2312
2310
2308
2306
2304
2302
2300
2298
-800
-600
-400
-200
0
200
400
600
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta


Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
3+000
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
3+100
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
.035
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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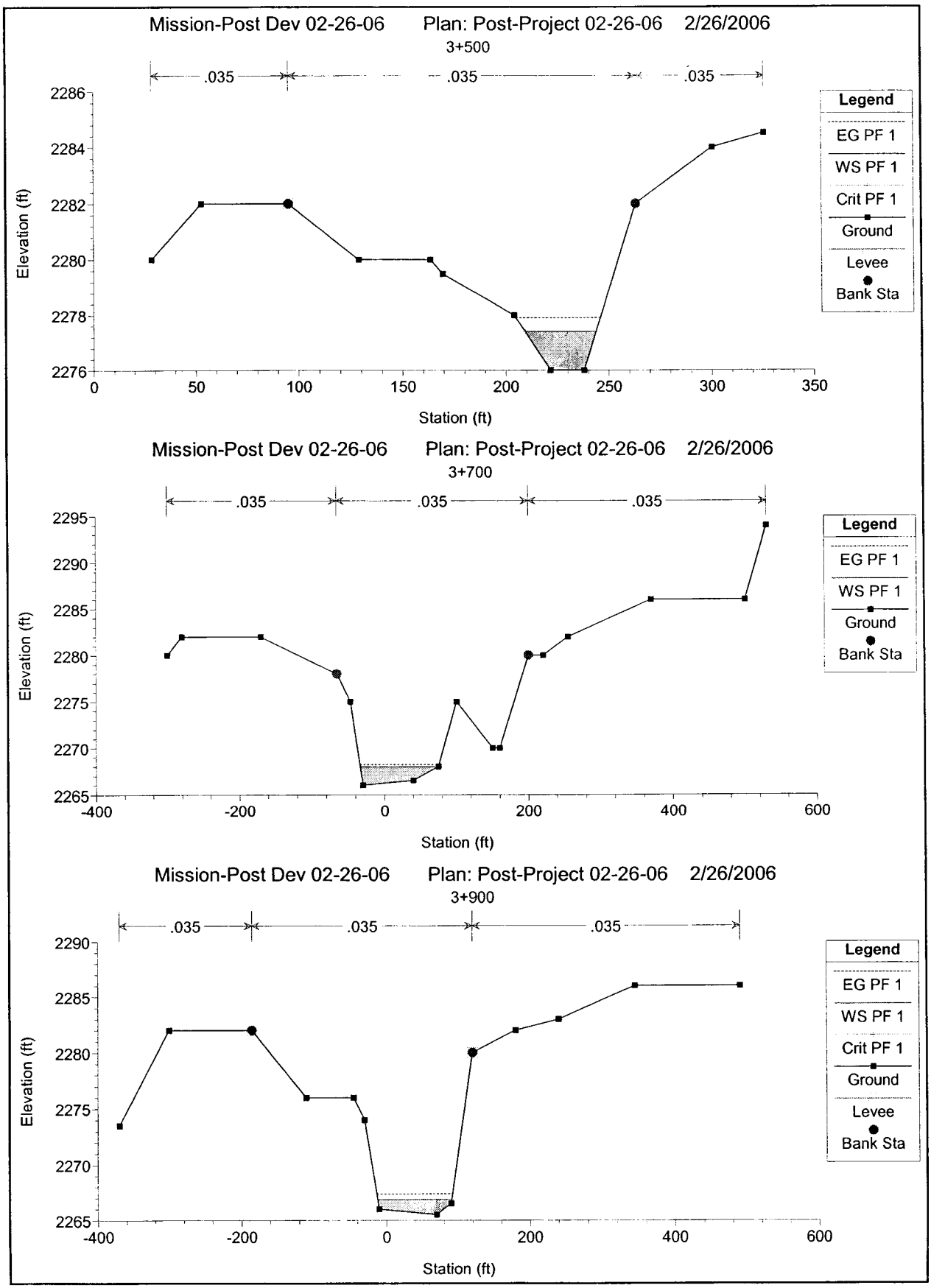
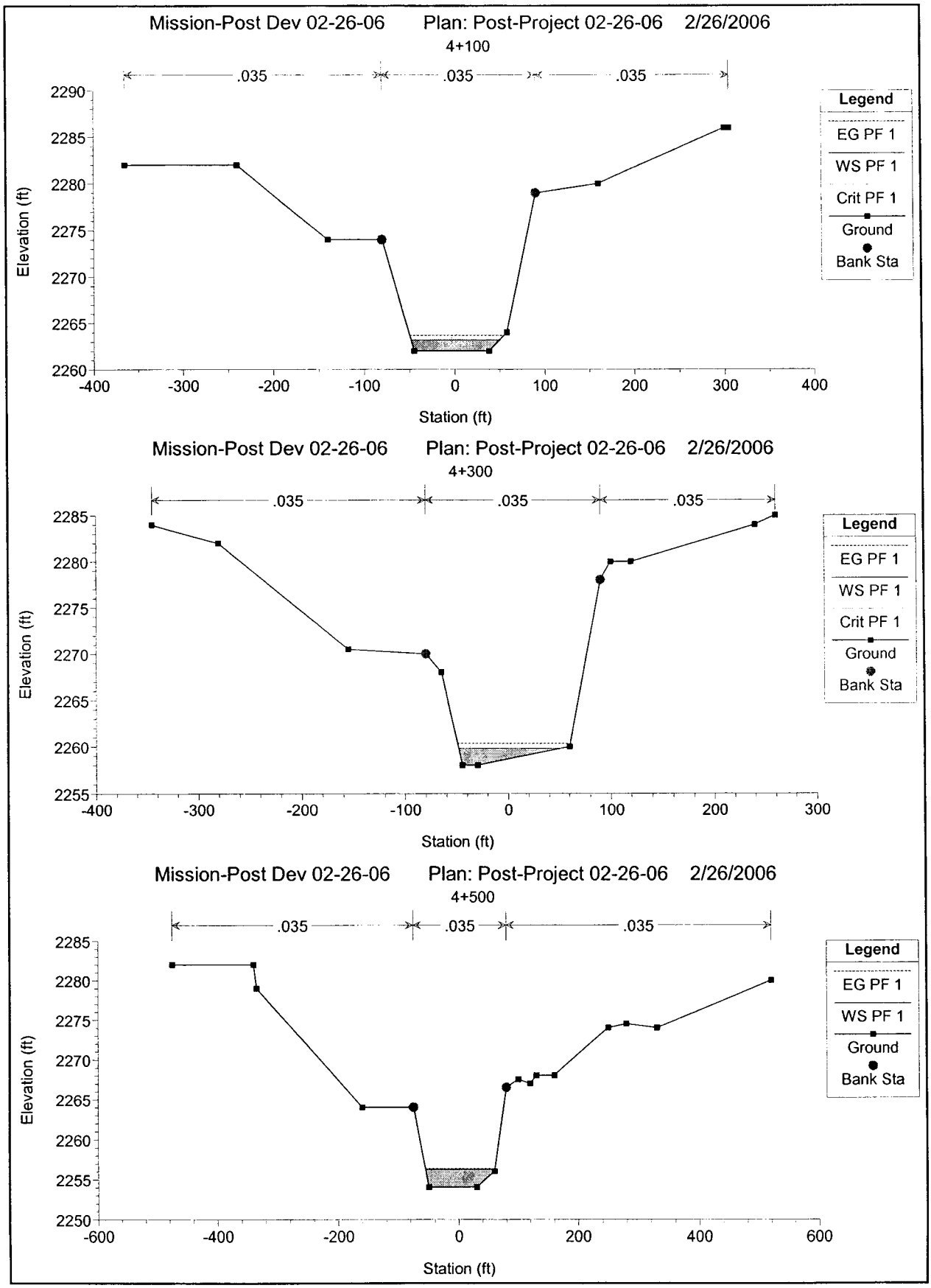
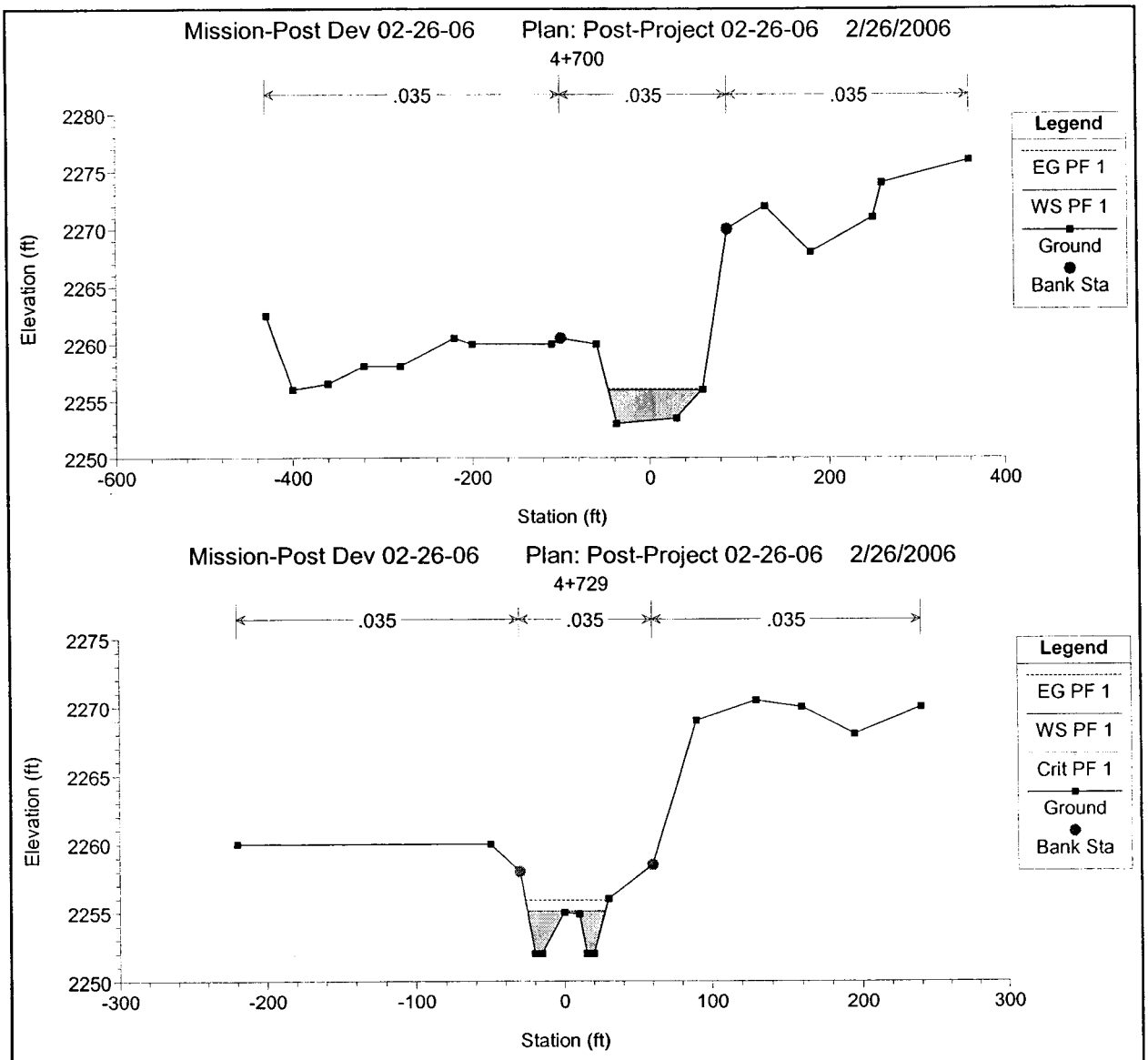
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
3+300
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
3+400
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta


Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
3+500
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
3+700
.035
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
3+900
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
4+100
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
4+300
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
4+500
.035
.035
.035
Elevation (ft)
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta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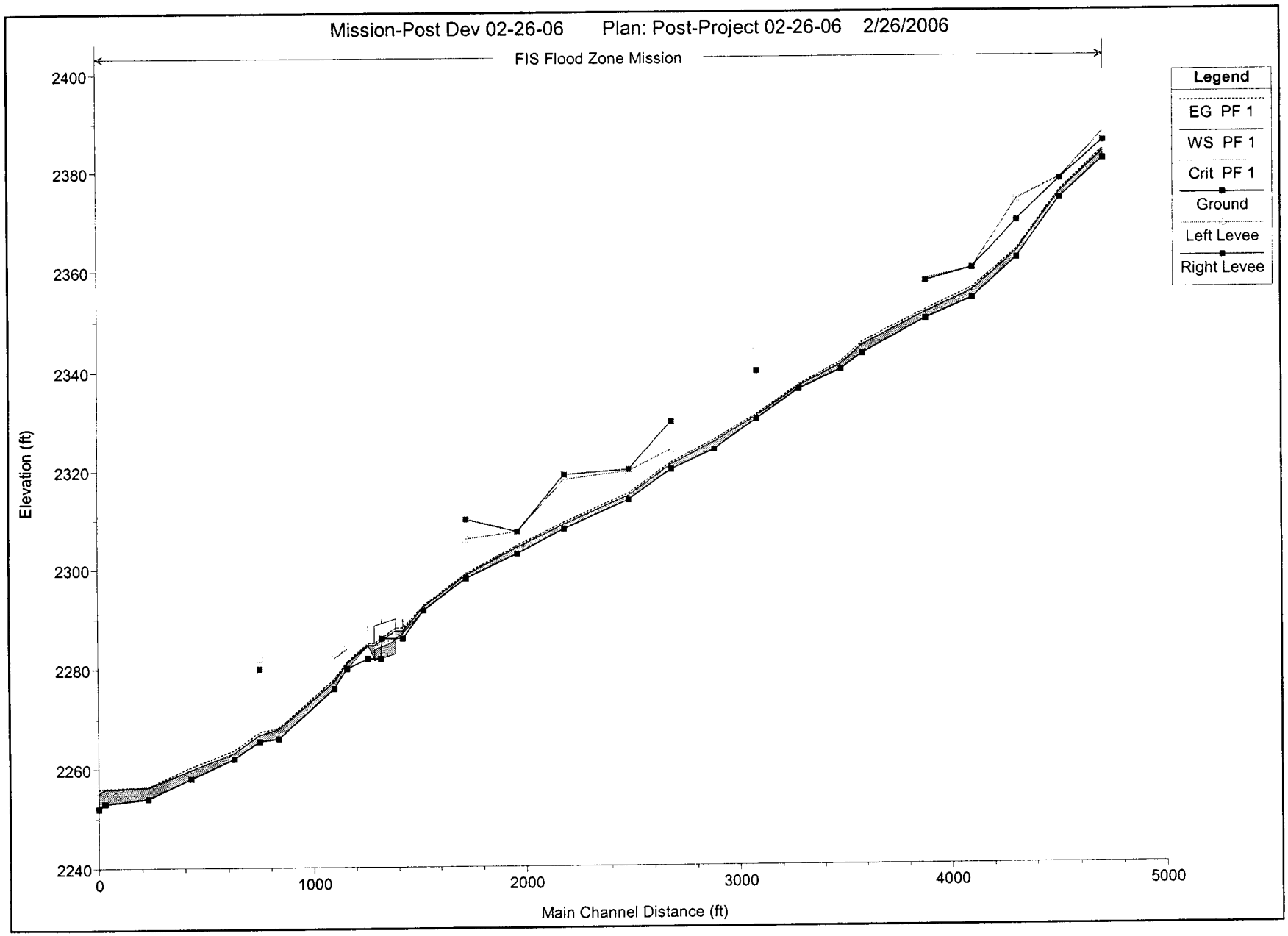
4+700
.035
.035
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
2280
2275
2270
2265
2260
2255
2250
-600
-400
-200
0
200
400
Station (ft)
Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
4+729
.035
.035
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
2275
2270
2265
2260
2255
2250
-300
-200
-100
0
100
200
300
Station (ft)


Mission-Post Dev 02-26-06 Plan: Post-Project 02-26-06 2/26/2006
FIS Flood Zone Mission
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Left Levee
Right Levee
Elevation (ft)
2400
2380
2360
2340
2320
2300
2280
2260
2240
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)

HEC-RAS Plan: 022606 River: FIS Flood Zone Reach: Mission Profile: PF 1

Reach	River Sta	Cross Section 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 # C	Hydr Depth (ft)
Mission	48	0+100	PF 1	157	2382	2383.5	2383.5	2383.94	0.018231	5.36	29.32	32.26	0.99	0.91
Mission	46	0+300	PF 1	157	2374	2375.17	2375.17	2375.54	0.019624	4.85	32.34	43.77	1	0.74
Mission	44	0+500	PF 1	157	2362	2363.31	2363.31	2363.69	0.020097	4.9	32.04	43.47	1.01	0.74
Mission	42	0+700	PF 1	157	2354	2355.5	2355.5	2355.99	0.017604	5.63	27.86	27.59	0.99	1.01
Mission	40	0+900	PF 1	157	2350	2351.26	2351.26	2351.71	0.018922	5.37	29.21	32.82	1	0.89
Mission	37	1+200	PF 1	157	2343.07	2344.78	2344.78	2345.34	0.017879	5.98	26.27	23.84	1	1.1
Mission	36	1+300	PF 1	157	2340	2341.02	2341.02	2341.5	0.018636	5.53	28.4	30.04	1	0.95
Mission	34	1+500	PF 1	157	2336	2336.62	2336.62	2336.9	0.02183	4.23	37.07	66.6	1	0.56
Mission	32	1+700	PF 1	157	2330	2330.63	2330.63	2330.94	0.023667	4.47	35.11	61.84	1.05	0.57
Mission	30	1+900	PF 1	157	2324	2325.52	2325.52	2325.91	0.020153	5.01	31.34	41.25	1.01	0.76
Mission	28	2+100	PF 1	157	2320	2320.99	2320.99	2321.37	0.0198	4.97	31.6	41.54	1	0.76
Mission	26	2+300	PF 1	166	2313.84	2314.76	2314.76	2315.16	0.018864	5.07	32.71	40.05	0.99	0.82
Mission	24	2+500	PF 1	166	2308	2308.93	2308.93	2309.34	0.018881	5.09	32.6	39.81	0.99	0.82
Mission	22	2+700	PF 1	166	2303	2304.34	2304.34	2304.69	0.019407	4.78	34.73	47.68	0.99	0.73
Mission	20	2+900	PF 1	166	2298	2298.67	2298.67	2298.94	0.022156	4.19	39.63	73.05	1	0.54
Mission	19	3+000	PF 1	204	2291.63	2292.39	2292.39	2292.59	0.024201	3.57	57.15	143.76	1	0.4
Mission	18	3+100	PF 1	204	2287.03	2287.56	2287.56	2288.09	0.017836	5.84	34.96	32.7	0.99	1.07
Mission	17	Culvert		Culvert										
Mission	16	3+300	PF 1	204	2284.62	2284.64	2284.64	2285.04	0.012747	5.08	40.18	36.29	6.07	1.11
Mission	15	3+400	PF 1	204	2280	2281.07	2281.07	2281.38	0.020877	4.41	46.27	75.83	0.99	0.61
Mission	14	3+500	PF 1	204	2276	2277.39	2277.39	2277.91	0.018013	5.77	35.35	34.43	1	1.03
Mission	12	3+700	PF 1	602	2266	2267.97		2268.22	0.005903	4.03	149.25	108.01	0.6	1.38
Mission	10	3+900	PF 1	602	2265.5	2266.85	2266.85	2267.35	0.017489	5.7	105.57	102.88	0.99	1.03
Mission	8	4+100	PF 1	602	2262	2263.19	2263.14	2263.67	0.015369	5.58	107.79	98.35	0.94	1.1
Mission	6	4+300	PF 1	602	2258	2259.8	2259.8	2260.33	0.018215	5.84	103	99.53	1.01	1.03
Mission	4	4+500	PF 1	602	2254	2256.24		2256.35	0.001717	2.71	222.47	116.05	0.34	1.92
Mission	2	4+700	PF 1	602	2253	2255.94		2256.05	0.001322	2.59	232.61	106.57	0.31	2.18
Mission	1	4+729	PF 1	602	2252	2255.07	2255.07	2255.88	0.016819	7.23	83.25	52.8	1.01	1.58

CHECK-RAS – (VTN) POST PROJECT HYDRAULIC MODEL

(022606.PRJ)

CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.prj
Plan File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.p15
Geometry File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.g11
Flow File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.f04
Report File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.nt
Selected profiles: PF 1
Date: 2/27/2006
Time: 11:46:54 AM

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP
FIS Flood Zone,Mission						
48		0.035	0.035	0.035	0.1	0.3
46		0.035	0.035	0.035	0.1	0.3
44		0.035	0.035	0.035	0.1	0.3
42		0.035	0.035	0.035	0.1	0.3
40		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
37		0.035	0.035	0.035	0.1	0.3
36		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
34		0.035	0.035	0.035	0.1	0.3
32		0.035	0.035	0.035	0.1	0.3
30		0.035	0.035	0.035	0.1	0.3
28		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
26		0.035	0.035	0.035	0.1	0.3
24		0.035	0.035	0.035	0.1	0.3
22		0.035	0.035	0.035	0.1	0.3
20		0.035	0.035	0.035	0.1	0.3
19		0.035	0.035	0.035	0.1	0.3
18		0.035	0.035	0.035	0.1	0.3
17	Culvert-Up	0.035	0.035	0.035	0.1	0.3
17	Culvert-Dn	0.035	0.035	0.035	0.1	0.3
16		0.035	0.035	0.035	0.1	0.3
15		0.035	0.035	0.035	0.1	0.3
14		0.035	0.035	0.035	0.1	0.3
12		0.035	0.035	0.035	0.1	0.3
10		0.035	0.035	0.035	0.1	0.3
8		0.035	0.035	0.035	0.1	0.3
6		0.035	0.035	0.035	0.1	0.3
4		0.035	0.035	0.035	0.1	0.3
2		0.035	0.035	0.035	0.1	0.3
1		0.035	0.035	0.035	0.1	0.3

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.035	0.035
Right Overbank n Value:	0.035	0.035
Channel n Value:	0.035	0.035
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

RS: 48
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 46
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 44
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 42
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 37
NT RC 05 The left overbank n value of 0.035 and the right overbank n value

of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 34
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 32
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 30
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 26
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 24
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 22
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 20
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 19
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 18
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 17
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 17
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 16
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 15
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 14
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 12
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 10
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 8
NT RC 05 The left overbank n value of 0.035 and the right overbank n value

```
         of 0.035 are less than or equal to the channel n value of 0.035
         The overbank n values should be reevaluated.

RS:      6
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
         of 0.035 are less than or equal to the channel n value of 0.035
         The overbank n values should be reevaluated.

RS:      4
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
         of 0.035 are less than or equal to the channel n value of 0.035
         The overbank n values should be reevaluated.

RS:      2
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
         of 0.035 are less than or equal to the channel n value of 0.035
         The overbank n values should be reevaluated.

TRANSITION LOSS COEFFICIENT CHECK
---------------------------------

RS:      19
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:      18
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:      16
NT TL 01 This is section 2
         Contraction and expansion loss coefficients are 0.1 and 0.3
         They should be equal to 0.3 and 0.5 respectively.

ROUGHNESS COEFFICIENT AT STRUCTURES
-----------------------------------

---END---
```

CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.prj
Plan File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.p15
Geometry File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.g11
Flow File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.f04
Report File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.nt
Selected profiles: PF 1
Date: 2/27/2006
Time: 11:52:31 AM

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP
FIS Flood Zone,Mission						
48		0.035	0.035	0.035	0.1	0.3
46		0.035	0.035	0.035	0.1	0.3
44		0.035	0.035	0.035	0.1	0.3
42		0.035	0.035	0.035	0.1	0.3
40		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
37		0.035	0.035	0.035	0.1	0.3
36		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
34		0.035	0.035	0.035	0.1	0.3
32		0.035	0.035	0.035	0.1	0.3
30		0.035	0.035	0.035	0.1	0.3
28		-----	0.035	0.035	0.1	0.3
		-----	0.035	-----		
26		0.035	0.035	0.035	0.1	0.3
24		0.035	0.035	0.035	0.1	0.3
22		0.035	0.035	0.035	0.1	0.3
20		0.035	0.035	0.035	0.1	0.3
19		0.035	0.035	0.035	0.1	0.3
18		0.035	0.035	0.035	0.1	0.3
17	Culvert-Up	0.035	0.035	0.035	0.1	0.3
17	Culvert-Dn	0.035	0.035	0.035	0.1	0.3
16		0.035	0.035	0.035	0.1	0.3
15		0.035	0.035	0.035	0.1	0.3
14		0.035	0.035	0.035	0.1	0.3
12		0.035	0.035	0.035	0.1	0.3
10		0.035	0.035	0.035	0.1	0.3
8		0.035	0.035	0.035	0.1	0.3
6		0.035	0.035	0.035	0.1	0.3
4		0.035	0.035	0.035	0.1	0.3
2		0.035	0.035	0.035	0.1	0.3
1		0.035	0.035	0.035	0.1	0.3

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.035	0.035
Right Overbank n Value:	0.035	0.035
Channel n Value:	0.035	0.035
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

RS: 48
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 46
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 44
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 42
NT RC 05 The left overbank n value of 0.035 and the right overbank n value of 0.035 are less than or equal to the channel n value of 0.035 The overbank n values should be reevaluated.

RS: 37
NT RC 05 The left overbank n value of 0.035 and the right overbank n value

of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 34
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 32
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 30
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 26
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 24
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 22
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 20
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 19
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 18
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 17
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 17
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 16
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 15
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 14
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 12
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 10
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
of 0.035 are less than or equal to the channel n value of 0.035
The overbank n values should be reevaluated.

RS: 8
NT RC 05 The left overbank n value of 0.035 and the right overbank n value

```
         of 0.035 are less than or equal to the channel n value of 0.035
         The overbank n values should be reevaluated.

RS:      6
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
         of 0.035 are less than or equal to the channel n value of 0.035
         The overbank n values should be reevaluated.

RS:      4
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
         of 0.035 are less than or equal to the channel n value of 0.035
         The overbank n values should be reevaluated.

RS:      2
NT RC 05 The left overbank n value of 0.035 and the right overbank n value
         of 0.035 are less than or equal to the channel n value of 0.035
         The overbank n values should be reevaluated.

TRANSITION LOSS COEFFICIENT CHECK
---------------------------------

RS:      19
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:      18
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:      16
NT TL 01 This is section 2
         Contraction and expansion loss coefficients are 0.1 and 0.3
         They should be equal to 0.3 and 0.5 respectively.

ROUGHNESS COEFFICIENT AT STRUCTURES
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---END---
```

CHECK-RAS Program, XS Check
Cross Section Location and Alignment Review

Project File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.prj
Plan File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.p15
Geometry File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.g11
Flow File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.f04
Report File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.xs
Selected profiles: PF 1
Date: 2/27/2006
Time: 11:52:43 AM

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code
FIS Flood Zone,Mission						
48	200	200	200	32.26	157	C
46	200	200	200	43.77	157	C
44	400	210	200	43.47	157	C
42	220	220	350	27.59	157	C
40	300	300	300	32.82	157	E,C
37	100	100	100	23.84	157	C
36	200	200	200	30.04	157	C
34	250	200	200	66.6	157	D,C
32	200	200	200	61.84	157	E,C
30	200	200	200	41.25	157	C
28	210	200	200	41.54	157	E,C
26	300	300	330	40.05	166	E,C
24	220	220	270	39.81	166	E,C
22	230	240	240	47.68	166	E,C
20	200	200	200	73.05	166	D,C
19	100	100	100	143.76	204	C
18	165	165	165	32.7	204	C
17	Culvert #1-Up					
17	Culvert #1-Dn					
16	100	100	110	36.29	204	C
15	60	60	60	75.83	204	C
14	240	260	390	34.43	204	C
12	140	90	120	108.01	602	
10	110	120	125	102.88	602	C
8	200	200	200	98.35	602	
6	200	200	200	99.53	602	C
4	200	200	200	116.05	602	
2	29	29	29	106.57	602	
1	0	0	0	52.8	602	C

B=blocked obstruction XS SC 05
C=critial depth XS SC 03
D=divided flow XS SC 01
E=cross section extended XS SC 02
K=known water-surface XS SC 04

DISTANCE CHECK

SPACING CHECK

INEFFECTIVE FLOW CHECK

RS: 48
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 48
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 46
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 46
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 44
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 44
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 42
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 42
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 40
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 40
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 32
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 32
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 28
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 28
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 26
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 26
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 24
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 24
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 22
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 22
XS IF 01 Right Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

RS: 20
XS IF 01 Left Levee option is used at this river station
Please investigate whether the NFIP requirements
for levees are met.

```
RS:      20
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:      15
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:      14
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:      10
XS IF 01 Left Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.

RS:      10
XS IF 01 Right Levee option is used at this river station
         Please investigate whether the NFIP requirements
         for levees are met.


DISCHARGE CHECK
---------------


LOCATION CHECK
--------------

RS:      44
XS LC 01 Lenchl Up/TopwdthAct Dn = 7.61
         MaxChlDpth Up/MaxChlDpth Dn = 1.21
         TopwdthAct Up/TopwdthAct Dn = 1.58
         This cross section is located too far upstream from the
         critical depth cross section.

RS:      40
XS LC 01 Lenchl Up/TopwdthAct Dn = 12.58
         MaxChlDpth Up/MaxChlDpth Dn = 1.91
         TopwdthAct Up/TopwdthAct Dn = 1.38
         This cross section is located too far upstream from the
         critical depth cross section.

RS:      32
XS LC 01 Lenchl Up/TopwdthAct Dn = 4.85
         MaxChlDpth Up/MaxChlDpth Dn = 5.78
         TopwdthAct Up/TopwdthAct Dn = 1.50
         This cross section is located too far upstream from the
         critical depth cross section.

RS:      19
XS LC 01 Lenchl Up/TopwdthAct Dn = 3.06
         MaxChlDpth Up/MaxChlDpth Dn = 1.43
         TopwdthAct Up/TopwdthAct Dn = 4.40
         This cross section is located too far upstream from the
         critical depth cross section.


BOUNDARY CONDITION CHECK
------------------------

XS BC 02 The name of the stream is FIS Flood Zone,Mission
         Normal S = 0.0229 is specified as the downstream boundary
         for profile PF 1

XS BC 02 The name of the stream is FIS Flood Zone,Mission
         Critical is specified as the upstream boundary
         for profile PF 1

XS BC 03 Maximum number of iterations is 0
         It should not be less than 20.


LATERAL WEIRS CHECK
-----------------------

---END---
```

CHECK-RAS Program: Structure Check

Project File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.prj
Plan File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.p15
Geometry File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.g11
Flow File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.f04
Report File: J:\JOBS\6139-CLOMR\MISSION LOMR\HEC-RAS\VTN Model - Post Project\022606.br
Selected profiles: PF 1
Date: 2/27/2006
Time: 11:52:50 AM

RS	MaxLoChord	MnTpRd	EGEL	WSEL	MinChEl	Structure
FIS Flood Zone,Mission						
48			2383.94	2383.5	2382	
46			2375.54	2375.17	2374	
44			2363.69	2363.31	2362	
42			2355.99	2355.5	2354	
40			2351.71	2351.26	2350	
37			2345.34	2344.78	2343.07	
36			2341.5	2341.02	2340	
34			2336.9	2336.62	2336	
32			2330.94	2330.63	2330	
30			2325.91	2325.52	2324	
28			2321.37	2320.99	2320	
26			2315.16	2314.76	2313.84	
24			2309.34	2308.93	2308	
22			2304.69	2304.34	2303	
20			2298.94	2298.67	2298	
19			2292.59	2292.39	2291.63	
18			2288.09	2287.56	2287.03	Lid
17	2290	2286	0	2285.96	2283	Culvert #1-Up
17	2288.6	2282	0	2283.91	2281.6	Culvert #1-Dn
16			2285.04	2284.64	2284.62	Lid
15			2281.38	2281.07	2280	
14			2277.91	2277.39	2276	
12			2268.22	2267.97	2266	
10			2267.35	2266.85	2265.5	
8			2263.67	2263.19	2262	
6			2260.33	2259.8	2258	
4			2256.35	2256.24	2254	
2			2256.05	2255.94	2253	
1			2255.88	2255.07	2252	

RIVER/REACH: FIS Flood Zone, Mission
RIVER STATION: 17
TYPE OF STRUCTURE: Culvert

Description:

Distance from Upstream XS:	100
Deck/Roadway Width:	4
Weir Coefficient:	2.6
Maximum allowable submergence for weir flow:	0.95
Elevation at which weir flow begins:	0
Weir crest shape:	Broad Crested

Sec	River Station	Length Channel	WSEL	Surch.	EGEL	TopWidth Actual	
4	19	100.00	2292.39		2292.59	143.76	
3	18	165.00	2287.56		2288.09	32.7	
	17	100.00	2285.96		0	0	Culvert #1-Up
	17	30.00	2283.91		0	0	Culvert #1-Dn
2	16	100.00	2284.64		2285.04	36.29	
1	15	60.00	2281.07		2281.38	75.83	

Ineffective Flow, Section 3			Ineffective Flow, Section 2		
Sta L	Sta R	Elev	Sta L	Sta R	Elev

Opening Type	StagStaL	StagStaR	EncStaL	EncStaR	LIfStaS	RIfStaS
Culvert Group						U
						D

CULVERT:
Culvert Name: Culvert #1
Shape: Box Rise: 7 Span: 4 Barrels: 1
FHWA Chart #: # 8 - flared wingwalls
FHWA Scale #: # 1 - Wingwall flared 30 to 75 deg.
Solution Crit:Highest U.S. EG

UpstrmDist:	35	Length:	100	n-Value:	0.014		
EntLossCoef:	0.05	ExtLossCoef:	1	CulvInvElU	2283	CulvInvElD	2281.6
LCntStaU:	223.03	RCntStaU:	223.03	LCntStaD	262.31	RCntStaD	262.31

Culvert Depth Blocked: 0

Culv Area:	28	CulvQ:	115.47	MinTopRd:	2286.01

	LAbutSt	RAbutSt	LMnTpRd	RMnTpRd	MnTpRd	MxLoCd	
Culvert #1	221.03	225.03	2286	2286	2286	2290	U
	260.31	264.31	2282	2282	2282	2288.6	D

Name	Q Total.	Q Struc	Q Weir	Selected Method	Flow Type
Culvert #1		115.47	88.53	Highest U.S. EG	Low and Weir Flow

GEOMETRIC CHECK

RS: 17
ST GD 03 The starting station of 221.03 from upstream road/weir data
is greater than the starting station of 41.32 from upstream internal
section/ secion 3.
The high chord elevation of 2291 for the starting road/weir station is
greater than the ground elevation of 2286 for the same ground station.
The road/weir profile may need to be extended.

RS: 17
ST GD 03 The end station of 225.03 from upstream road/weir data
is less than the end station of 432.4 from upstream internal
section/section 3.
The high chord elevation of 2291 for the end road/weir station is
greater than the ground elevation of 2286 for the same ground station.
The road/weir profile may need to be extended.

RS: 17
ST GD 03 The starting station of 260.31 from downstream road/weir data
is greater than the starting station of 48.08 from downstream internal
section.
The high chord elevation of 2289.6 for the starting road/weir station is
greater than the ground elevation of 2282 for the same ground station.
The road/weir profile may need to be extended.

RS: 17
ST GD 03 The end station of 264.31 from downstream road/weir data
is less than the end station of 413.53 from downstream internal
section.
The high chord elevation of 2289.6 for the end road/weir station is
greater than the ground elevation of 2282.826 for the same ground station.
The road/weir profile may need to be extended.

RS: 16
ST GD 08 'Cross Section Lid' option is used for this section.
Cross section lid data must be removed from this section,
unless the structure is modeled as culverts in series.

RS: 18
ST GD 08 'Cross Section Lid' option is used for this section.
Cross section lid data must be removed from this section,
unless the structure is modeled as culverts in series.

TYPE OF FLOW CHECK

RS: 17 This is Culvert #1
CV LW 01 Type of flow is low and weir flow because,
1. EGEL 3 of 2288.09 is greater than MinTopRd of 2286.01.
2. EGEL 3 of 2288.09 is less than MxLoCdU of 2290.00.

RS: 17 This is Culvert #1
CV LW 01 Type of flow is low and weir flow because,
1. EGEL 3 of 2288.09 is greater than MinTopRd of 2286.01.

```
          2. CulvWSIn of 2285.96 is less than MxLoCdU of 2290.00.
          3. CulvWSOut of 2283.91 is less than MxLoCdD of 2288.60.
          4. Q/AD^0.5 of 1.56 is less than 4.0.

DISTANCE CHECK
--------------

CULVERT COEFFICIENT CHECK
-------------------------

RS:       17 This is Culvert #1
CV CF 01  Culvert Chart # is 8 and Scale # is 1
          Culvert entrance shape is Wingwall flared 30 to 75 deg.
          Culvert entrance loss coefficient is 0.05 It should be equal
          to 0.4
          Please refer to Table 6.3 on page 6-22 and Tabble 6.4 on page 6-23
          of HEC-RAS Hydraulic Reference Manual, September 1998.

CULVERT CRITERIA CHECK
----------------------

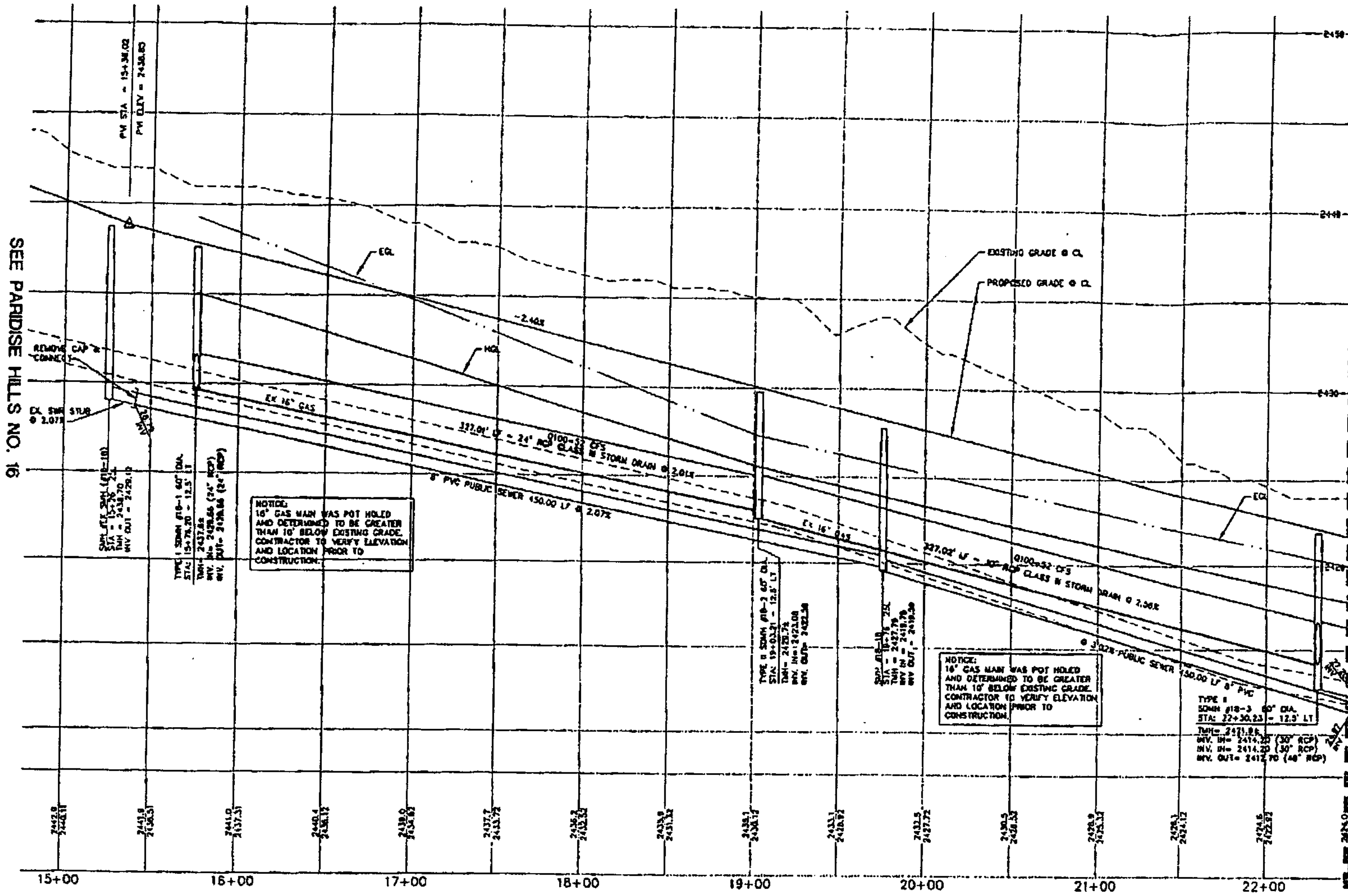
INEFFECTIVE FLOW CHECK
----------------------

RS:       18 This is section 3
ST GD 05  Weir flow occurs at Culvert Group 1
          The velocity head at Section 3 is more than 0.5 foot and more than
          the velocity head at Section 4.
          Section 3 should be recoded to represent the natural valley
          cross section.

---END
```

APPENDIX E

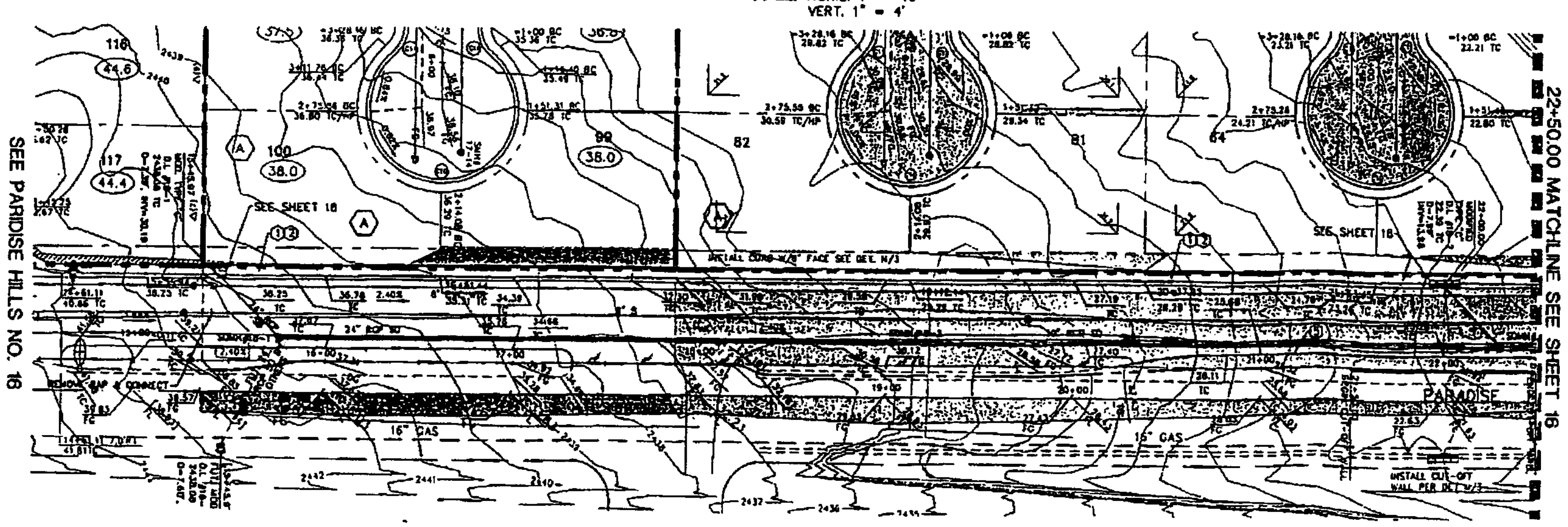
REFERENCE MATERIAL



PARADISE HILLS DRIVE

PROFILE

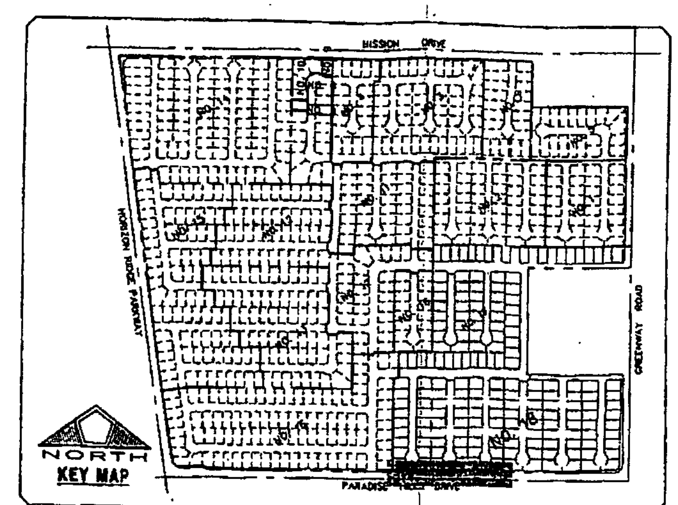
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

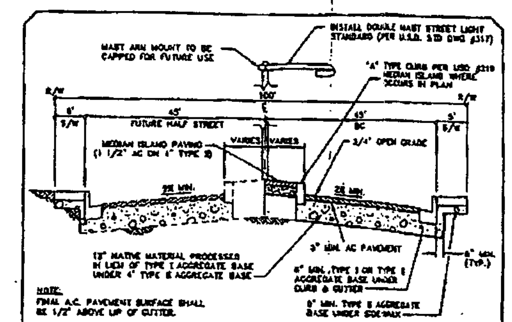


PARADISE HILLS DRIVE

PLAN

SCALE: 1" = 40'





HORIZON RIDGE PARKWAY- PARADISE HILLS DRIVE

TYPICAL 100' HALF STREET SECTION

PER USD No. 202 (NOT TO SCALE)

Unit 18 Curve Table				
No	Radius	Delta	Length	Tangent
C8	20.00	88°40'07"	44°30'03"	31.10
C9	20.00	90°18'33"	45°09'37"	31.53
C10	40.50	276°22'48"	138°11'33"	185.18
C11	19.50	46°11'21"	24°05'41"	18.40
C12	25.00	90°20'54"	45°10'27"	39.42
C13	320.50	07°24'07"	03°42'04"	41.41
C14	270.50	07°24'07"	03°42'04"	35.11
C15	30.00	89°39'11"	44°49'36"	46.94

NORTH

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

SIDEWALK RAMP TRANSITION TABLE

RAMP NO.	GRADE (%) "B" TO "A"	"A" (FT) MIN.	"B" (FT) MIN.
H1	-6 TO -5.01	4.5	21.5
H2	-5 TO -4.01	4.5	15.0
H3	-4 TO -3.01	4.5	12.0
H4	-3 TO -2.01	4.5	9.5
H5	-2 TO 2	8.0	8.0
H6	2.01 TO 3	9.5	4.5
H7	3.01 TO 4	12.0	4.5
H8	4.01 TO 5	15.0	4.5
H9	5.01 TO 6	21.5	4.5

SEE CLARK COUNTY AREA STANDARD DRAWING NO. 235

CONSTRUCTION NOTES

1. CONSTRUCT SIDEWALK PER USD No. 234
2. CONSTRUCT TYPE "L" CURB & GUTTER PER USD No. 216
3. CONSTRUCT VALLEY GUTTER PER STANDARD DWG NO. 228
4. CONSTRUCT HANDICAP RAMP PER STANDARD DWG No. 235 CASE III - SEE SW RAMP TRANISTION TABLE
5. CONSTRUCT MEDIAN ISLAND PER STANDARD DWG No. 218

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.

ELEVATION = 2272.55 FEET NGVD 29 (DATUM USED)

PROJECT DATUM = ELEVATION 693.412 METERS NAVD 88.

ADD 2.44' TO NGVD 29 DATUM = NAVD 88

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600

Avoid hitting overhead power lines. It's costly.
Call before you do Overhead
1-702-593-6111

CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW & APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON IF WORK IS NOT COMPLETED

BY:________ 20____.

APPROVED BY:

KEN Y. KOSHIRO, P.E.,
NEW DEVELOPMENT ENGINEER, C.O.H.

DATE:

NO.	BY	DATE	DESCRIPTION	DATE	APP'D

DATE :
PM :
DRAWN BY :
DESIGNED BY :
CHECKED BY :
ADA CHECKED :
JOB NO. : 0030.0528
SCALE : 1" = 40'

PENTACORE
CIVIL ENGINEERING • LAND SURVEYING • PLANNING
CONSTRUCTION MANAGEMENT • ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KAUFMAN AND BROAD OF NEVADA, INC.

PARADISE HILLS NO. 18

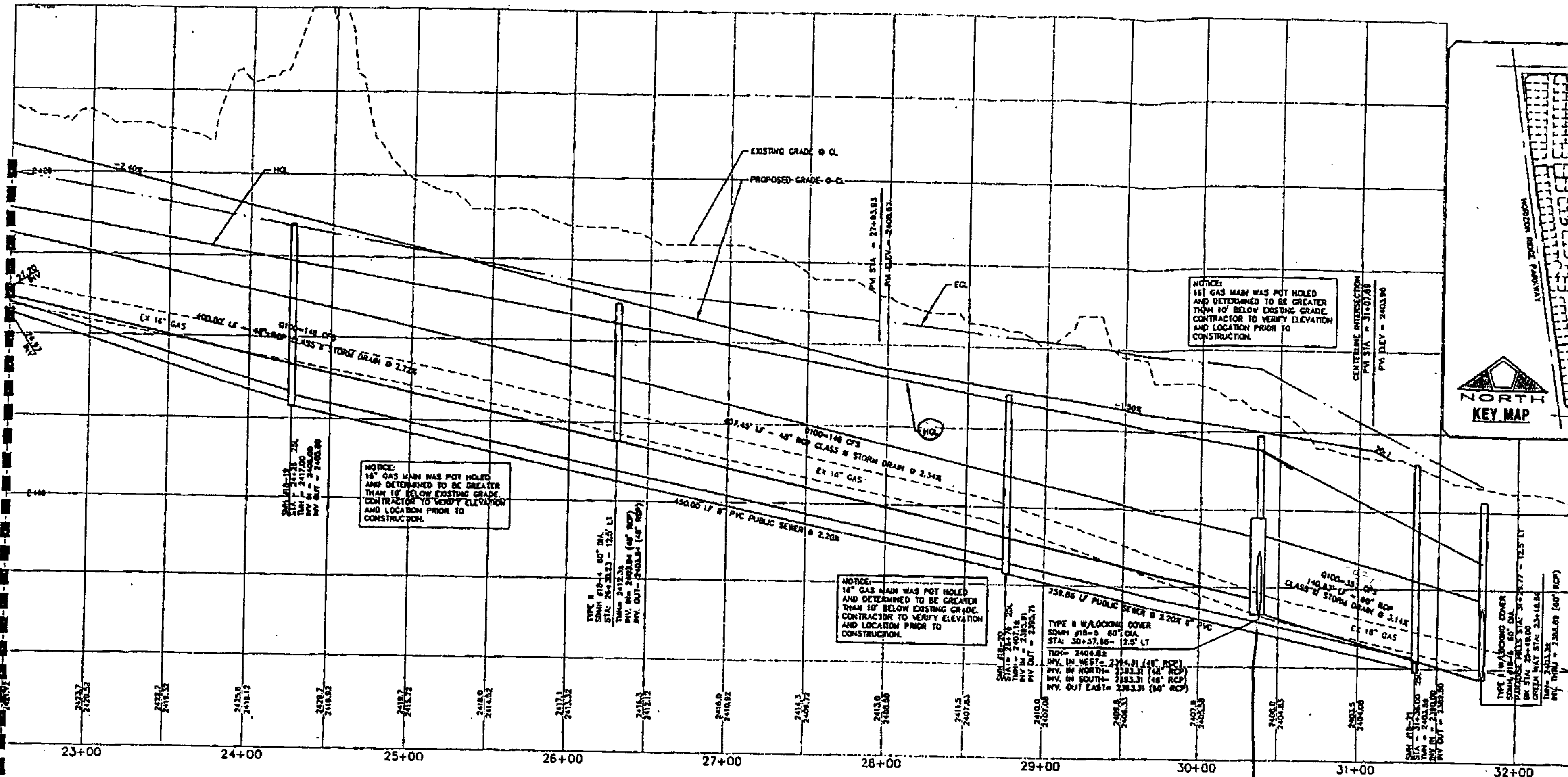
PARADISE HILLS DRIVE
PLAN & PROFILE I
STA: 15+36.02 TO 22+50.00

PROFESSIONAL ENGINEER - STATE OF NEVADA
SAMIH ALHWAYEK
CIVIL
10502

SHEET 15 OF 26

JAN 2 3 2001

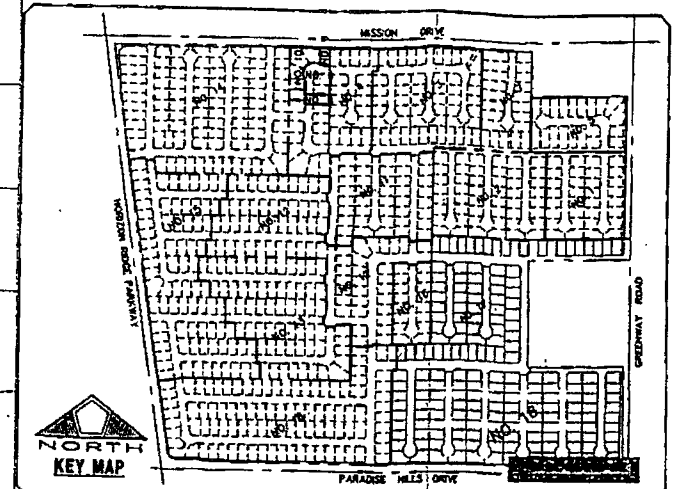
PH18PROF-08



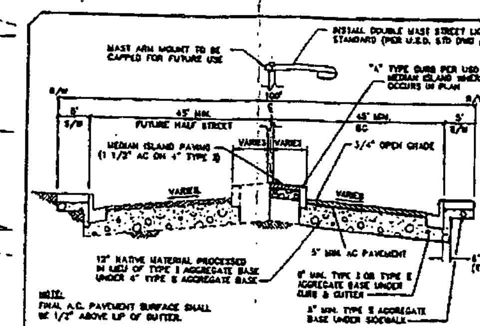
PARADISE HILLS DRIVE
PROFILE

SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

→ MATCH SHEET 11



KEY MAP



HORIZON RIDGE PARKWAY- PARADISE HILLS DRIVE
TYPICAL 100' HALF STREET SECTION
PER USD No. 202 (NOT TO SCALE)

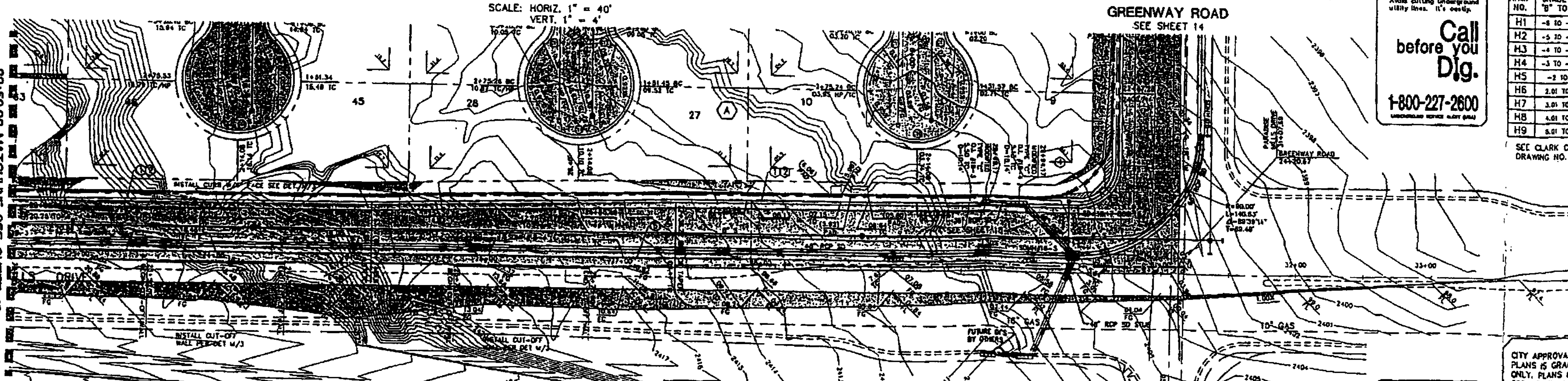
SIDEWALK RAMP TRANSITION TABLE

RAMP NO.	GRADE (%) "B" TO "A"	"A" (FT) MIN.	"B" (FT) MIN.
H1	-8 TO -5.01	4.5	21.5
H2	-5 TO -4.01	4.5	15.0
H3	-4 TO -3.01	4.5	12.0
H4	-3 TO -2.01	4.5	8.5
H5	-2 TO 2	8.0	8.0
H6	2.01 TO 3	8.5	4.5
H7	3.01 TO 4	12.0	4.5
H8	4.01 TO 5	15.0	4.5
H9	5.01 TO 6	21.5	4.5

SEE CLARK COUNTY AREA STANDARD DRAWING NO. 235

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600

GREENWAY ROAD
SEE SHEET 14



GREENWAY ROAD

PARADISE HILLS DRIVE

NORTH
GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

CONSTRUCTION NOTES

1. CONSTRUCT SIDEWALK PER USD No. 234
2. CONSTRUCT TYPE "L" CURB & GUTTER PER USD No. 216
3. CONSTRUCT VALLEY GUTTER PER STANDARD DWG NO. 228
4. CONSTRUCT HANDICAP RAMP PER STANDARD DWG No. 235 CASE III – SEE SW RAMP TRANISTION TABLE
5. CONSTRUCT MEDIAN ISLAND PER STANDARD DWG No. 218

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.

ELEVATION = 2272.55 FEET NGVD 29 (DATUM USED)
PROJECT DATUM = ELEVATION 693.418 METERS NAVD 88.

ADD 2.44' TO NGVD 29 DATUM = NAVD 88

Unit 18 Curve Table

No.	Radius	Delta	Length	Tangent
C8	20.00'	89°40'07"	44°50'03"	31.30'
C9	20.00'	90°19'53"	45°09'57"	31.53'
C10	40.50'	276°22'48"	138°11'24"	185.36'
C11	18.50'	48°11'23"	24°05'41"	18.40'
C12	25.00'	90°20'54"	45°10'27"	38.47'
C13	320.50'	07°24'07"	03°42'04"	40.41'
C14	278.50'	07°24'07"	03°42'04"	36.11'
C15	30.00'	89°39'31"	44°49'35"	18.94'

Avoid hitting overhead power lines. It's costly.
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1-702-593-6111

CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW & APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON IF WORK IS NOT COMPLETED
BY:__________ 20____

APPROVED BY:

KEN Y. KOSHIRO, P.E.,
NEW DEVELOPMENT ENGINEER, C.O.H.

DATE:

NO.	BY	DATE	DESCRIPTION	DATE	APP'D

DATE :
PM :
DRAWN BY :
DESIGNED BY :
CHECKED BY :
ADA CHECKED :
JOB NO. : 00380528
SCALE : 1" = 40'

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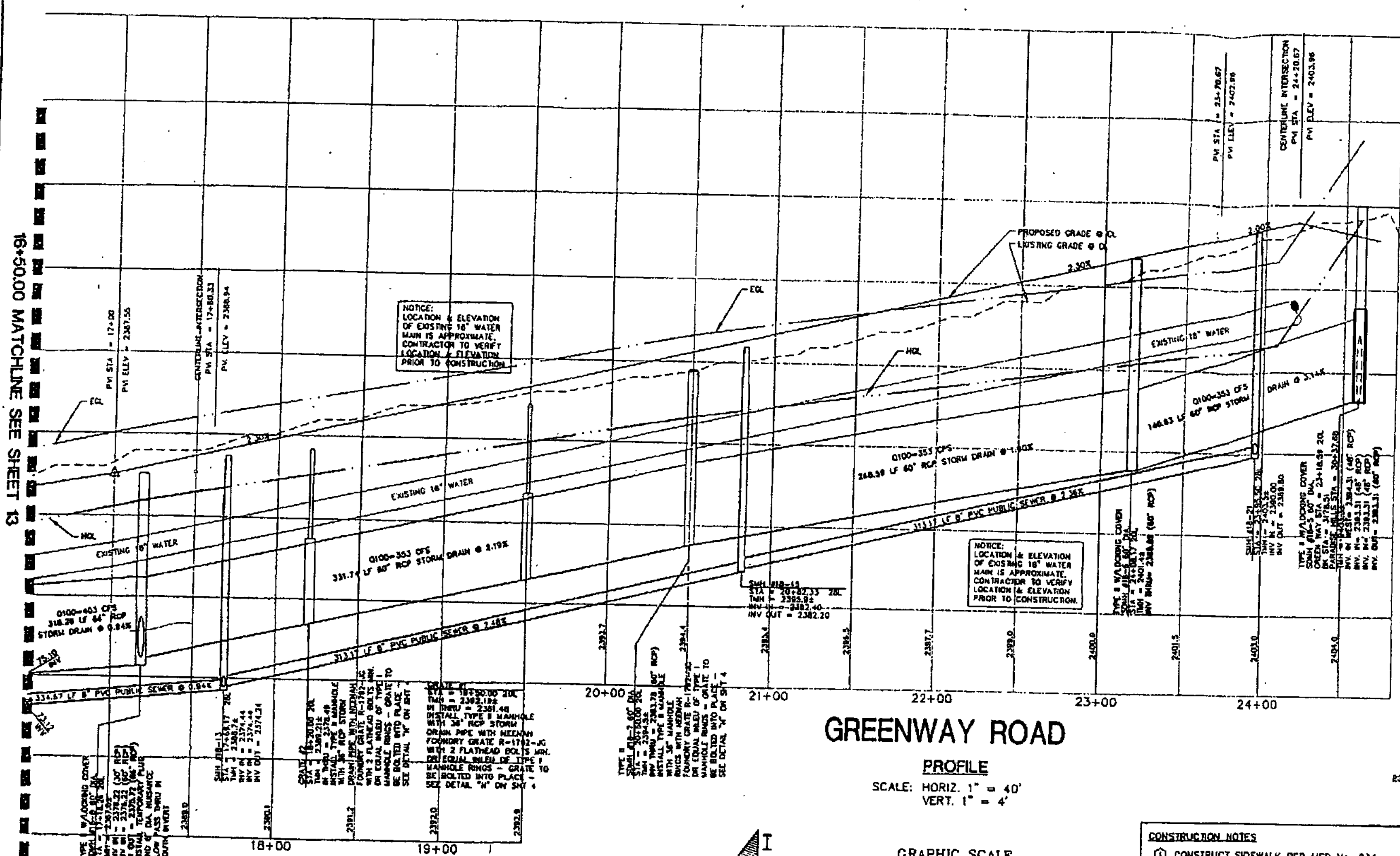
LAS VEGAS, NEVADA 89146 (702)258-0115

KAUFMAN AND BROAD OF NEVADA, INC.
PARADISE HILLS NO. 18
PARADISE HILLS DRIVE
PLAN & PROFILE
STA: 22+50.00 TO 31+07.69

PROFESSIONAL ENGINEER - STATE OF NEVADA
SAMIH ALHWAYEK
CIVIL
10602

SHEET 16 OF 26

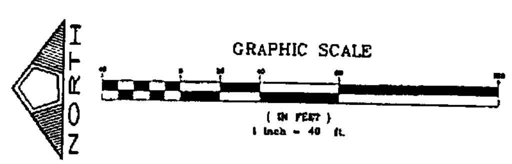
JAN 2 4 2001



GREENWAY ROAD

PROFILE

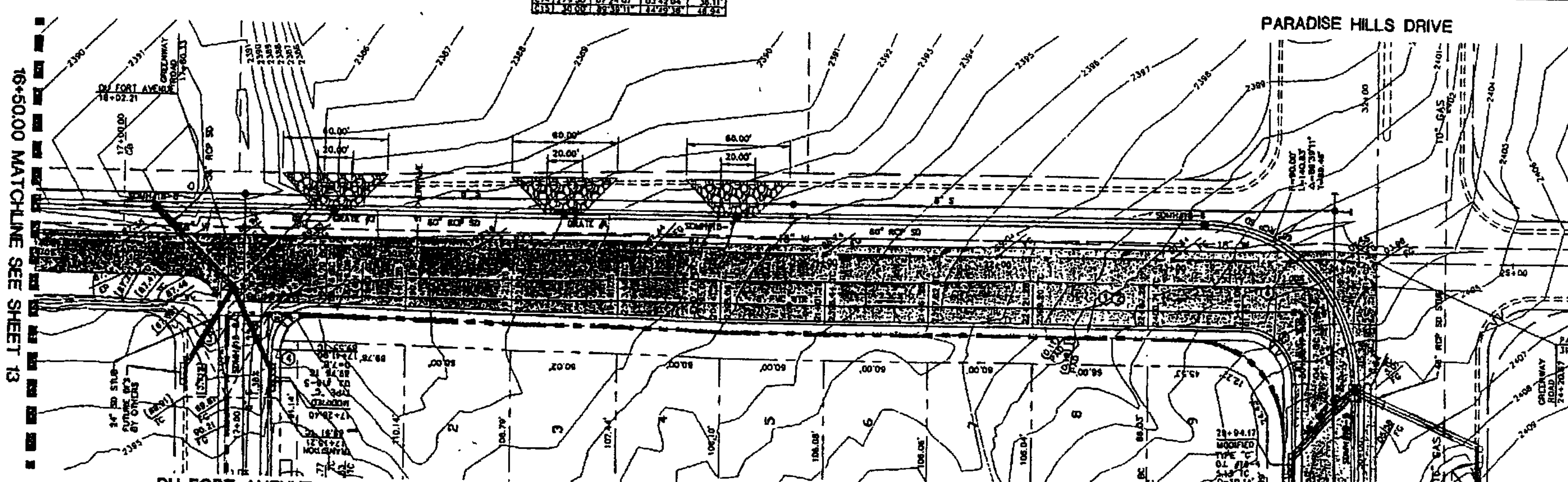
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'



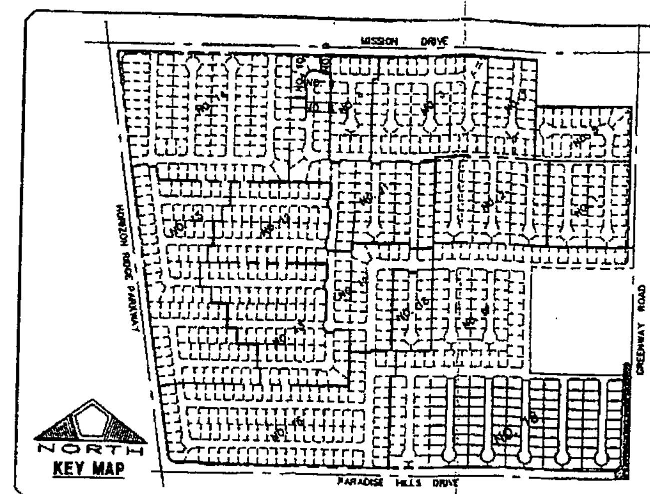
CONSTRUCTION NOTES

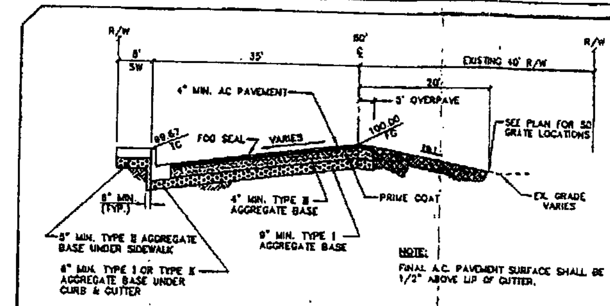
1. CONSTRUCT SIDEWALK PER USD No. 234
2. CONSTRUCT TYPE "L" CURB & GUTTER PER USD No. 216
3. CONSTRUCT VALLEY GUTTER PER STANDARD DWG NO. 228
4. CONSTRUCT HANDICAP RAMP PER STANDARD DWG No. 235 CASE III - SEE SW RAMP TRANISTION TABLE
5. CONSTRUCT MEDIAN ISLAND PER STANDARD DWG No. 218

Unit 18 Curve Table				
No.	Radius	Delta	Length	Tangent
C8	20.00'	89°40'07"	44°30'03"	31.30'
C9	20.00'	90°19'53"	45°09'57"	31.53'
C10	40.50'	276°22'46"	138°11'23"	195.36'
C11	19.50'	48°11'21"	24°05'41"	16.40'
C12	25.00'	90°20'54"	45°10'27"	39.42'
C13	320.50'	07°24'07"	03°42'04"	41.41'
C14	279.50'	07°24'07"	03°42'04"	36.11'
C15	30.00'	89°38'11"	44°49'36"	46.94'

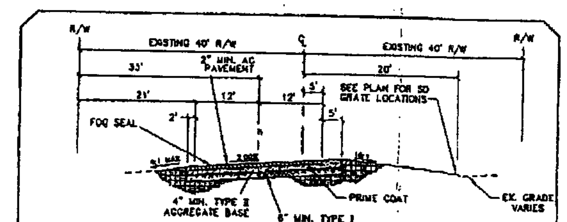


GREENWAY ROAD





TYPICAL 80' HALF STREET SECTION STA: 17+50.00 - 24+20.67
(NOT TO SCALE)



TYPICAL ACCESS ROAD SECTION STA: 16+70.00 - 17+50.00
(NOT TO SCALE) PER STD DWG. #208

SIDEWALK RAMP TRANSITION TABLE

RAMP NO.	GRADE (%) "B" TO "A"	"A" (FT) MIN.	"B" (FT) MIN.
H1	-6 TO -5.01	4.5	21.5
H2	-5 TO -4.01	4.5	15.0
H3	-4 TO -3.01	4.5	12.0
H4	-3 TO -2.01	4.5	9.5
H5	-2 TO 2	8.0	8.0
H6	2.01 TO 3	9.5	4.5
H7	3.01 TO 4	12.0	4.5
H8	4.01 TO 5	15.0	4.5
H9	5.01 TO 6	21.5	4.5

SEE CLARK COUNTY AREA STANDARD DRAWING NO. 235

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.

ELEVATION = 2272.35 FEET NGVD 29 (DATUM USED)
PROJECT DATUM = ELEVATION 693.418 METERS NAVD 88
ADD 2.44' TO NGVD 29 DATUM = NAVD 88

Avoid cutting underground utility lines. It's costly.
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1-702-593-6111

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BY: ________ 20____

APPROVED BY:

KEN Y. KOSHIRO, P.E.
NEW DEVELOPMENT ENGINEER, C.O.H.

DATE: ________

NO.	BY	DATE	DESCRIPTION	DATE	APP'D

DATE :
PM :
DRAWN BY :
DESIGNED BY :
CHECKED BY :
ADA CHECKED :
JOB NO. : 0030.0578
SCALE : 1" = 40'

PENTACORE
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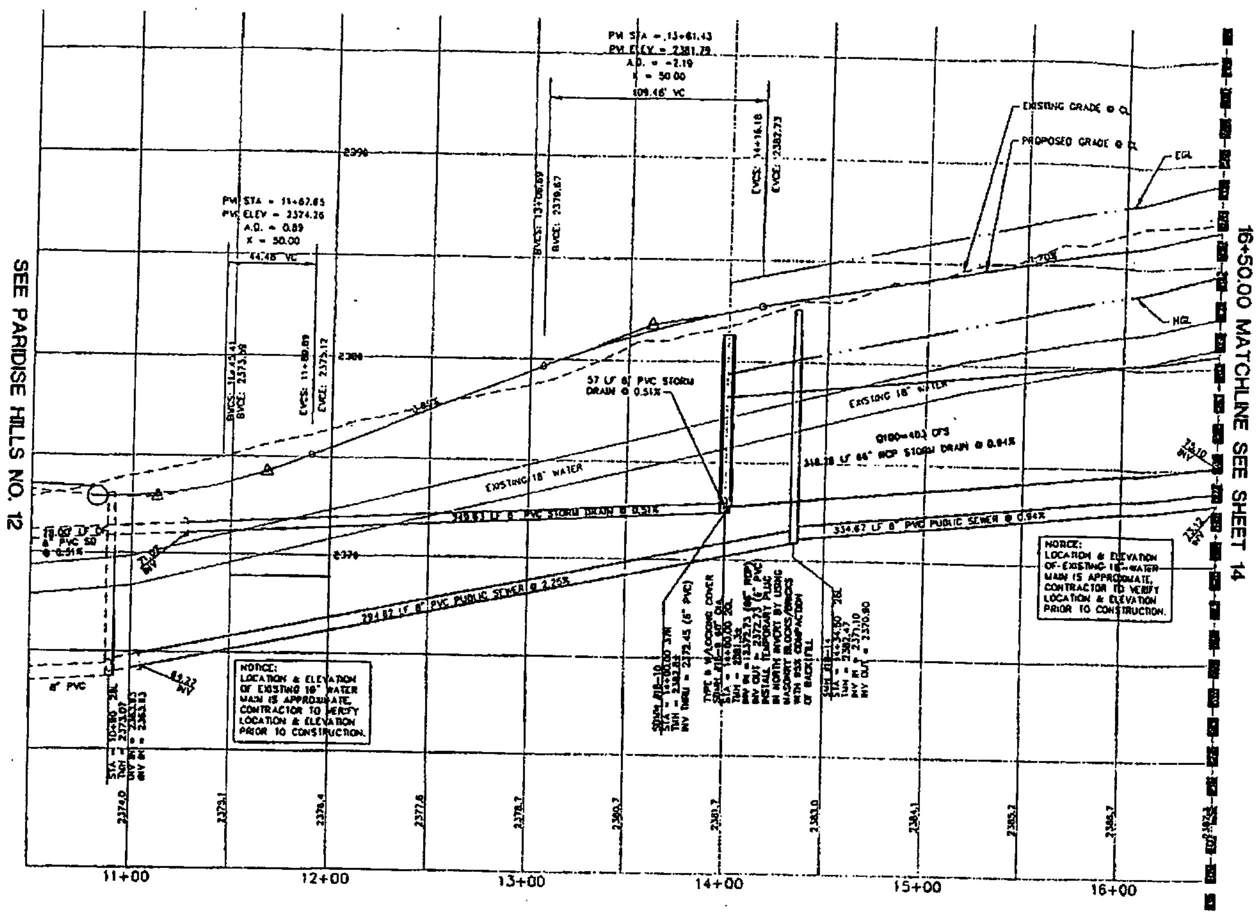
CONSTRUCTION MANAGEMENT - ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KAUFMAN AND BROAD OF NEVADA, INC.
PARADISE HILLS NO. 18
GREENWAY ROAD
PLAN & PROFILE II
STA: 16+50.00 TO 24+20.67

PROFESSIONAL ENGINEER - STATE OF NEVADA
SAMIH ALHWAYEK
CIVIL
10502

SHEET
14
OF 25

JAN 2 3 2001



SIDEWALK RAMP TRANSITION TABLE

RAMP NO.	GRADE (%) "B" TO "A"	"A" (FT) MIN.	"B" (FT) MIN.
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H2	-5 TO -4.01	4.5	15.0
H3	-4 TO -3.01	4.5	12.0
H4	-3 TO -2.01	4.5	9.5
H5	-2 TO 2	8.0	8.0
H6	2.01 TO 3	9.5	4.5
H7	3.01 TO 4	12.0	4.5
H8	4.01 TO 5	15.0	4.5
H9	5.01 TO 6	21.5	4.5

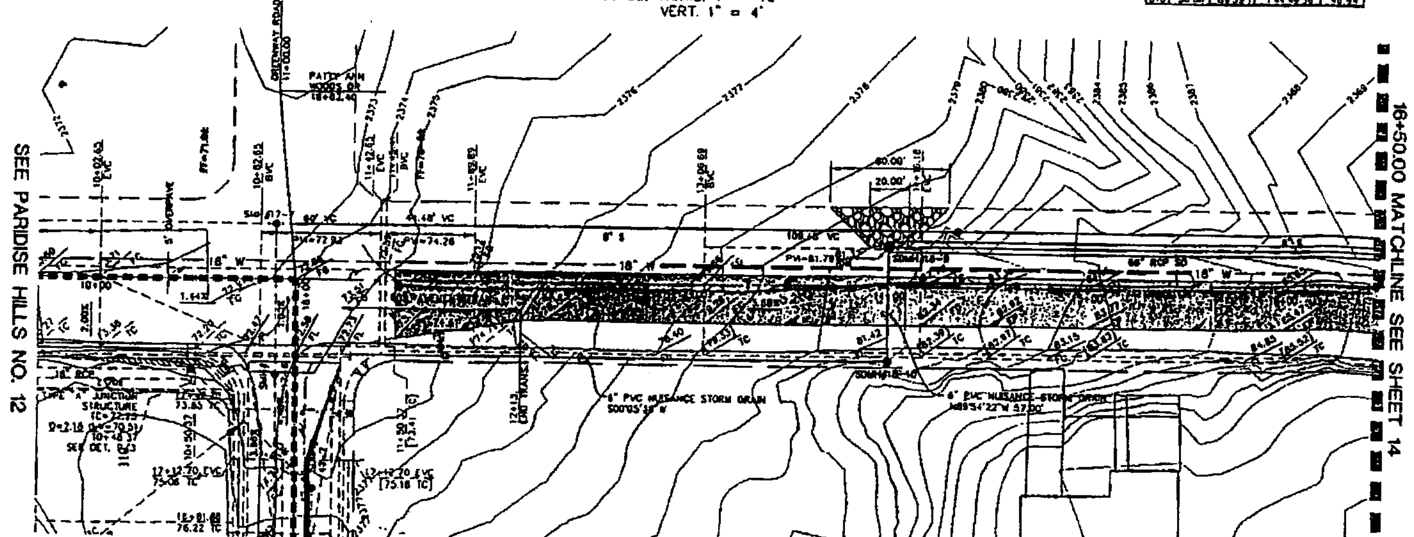
SEE CLARK COUNTY AREA STANDARD DRAWING NO. 235

GREENWAY ROAD

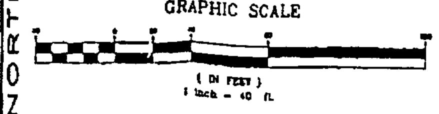
PROFILE

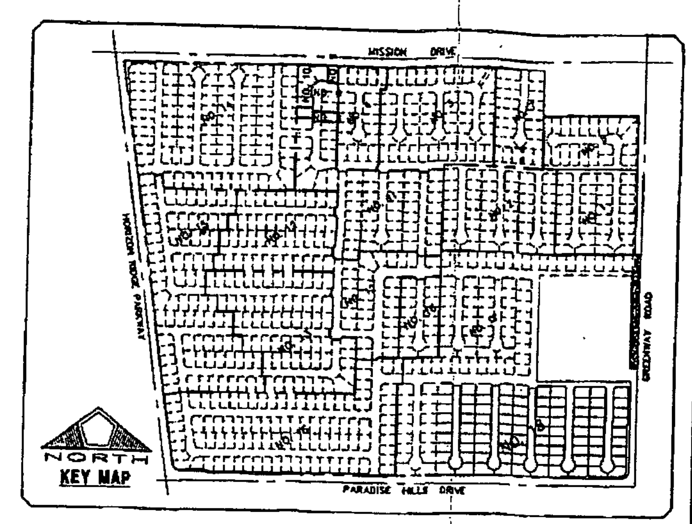
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

Unit 18 Curve Table				
No.	Radius	Delta	Length	Tangent
C8	20.00'	89°40'07"	44°58'03"	31.30'
C9	20.00'	90°19'53"	45°09'57"	31.53'
C10	40.50'	276°22'46"	138°11'23"	195.36'
C11	18.20'	48°11'23"	24°05'41"	18.40'
C12	25.00'	90°20'54"	45°10'27"	35.42'
C13	320.50'	07°24'07"	03°42'04"	41.41'
C14	225.50'	07°24'07"	03°42'04"	36.11'
C15	30.00'	89°39'11"	44°49'36"	48.94'

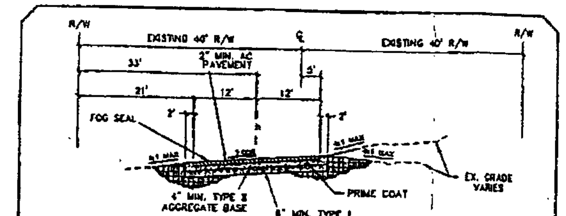


GREENWAY ROAD

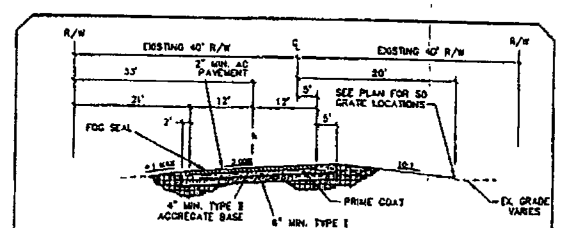




KEY MAP



TYPICAL ACCESS ROAD SECTION STA: 11+50.37 - 13+70.00
(NOT TO SCALE) PER STD DWG #209



TYPICAL ACCESS ROAD SECTION STA: 13+70.00 - 16+50.00
(NOT TO SCALE) PER STD DWG #209

CONSTRUCTION NOTES

1. CONSTRUCT SIDEWALK PER USD No. 234
2. CONSTRUCT TYPE "L" CURB & GUTTER PER USD No. 218
3. CONSTRUCT VALLEY GUTTER PER STANDARD DWG NO. 226
4. CONSTRUCT HANDICAP RAMP PER STANDARD DWG No. 235 CASE III - SEE SW RAMP TRANSITION TABLE
5. CONSTRUCT MEDIAN ISLAND PER STANDARD DWG No. 218

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1-800-227-2600

Avoid hitting overhead power lines. It's costly.
Call before you do Overhead
1-702-593-6111

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.

ELEVATION = 2273.55 FEET NGVD 29 (DATUM USED)
PROJECT DATUM = ELEVATION 693.418 METERS NAVD 88.
ADD 2.44' TO NGVD 29 DATUM = NAVD 88

CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW & APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON IF WORK IS NOT COMPLETED
BY:__________ 20____

APPROVED BY:

KEN Y. KOSHIRO, P.E.,
NEW DEVELOPMENT ENGINEER, C.O.H.

DATE:

NO.	BY	DATE	DESCRIPTION	DATE	APP'D

DATE :
PM :
DRAWN BY :
DESIGNED BY :
CHECKED BY :
ADA CHECKED :
JOB NO. : 0320.0528
SCALE : 1" = 40'

PENTACORE
CIVIL ENGINEERING · LAND SURVEYING · PLANNING
CONSTRUCTION MANAGEMENT · ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KAUFMAN AND BROAD OF NEVADA, INC.
PARADISE HILLS NO. 18
GREENWAY ROAD
PLAN & PROFILE I
STA: 11+50.37 TO 16+50.00

PROFESSIONAL ENGINEER - STATE OF NEVADA
SAMIH ALHWAYEK
CIVIL
No. 10502

PROFESSIONAL ENGINEER - STATE OF NEVADA
SAMIH ALHWAYEK
CIVIL
10502

SHEET
13
OF 26

JAN 2 9 2001

APPENDIX F

DATA CD

Addendum to the Mission Drive Conveyance System LOMR

Case No.: 06-09-B663P

(Mission Drive)

Clark County, Nevada

MAY 2006

vtn nevada

2727 S. Rainbow Boulevard, Las Vegas, Nevada 89146

Addendum to the
Mission Drive Conveyance System LOMR
Case No.: 06-09-B663P (Mission Drive)
Clark County, Nevada

Prepared for:

CITY OF HENDERSON
240 Water Street
Henderson, Nevada 89009

Prepared by:

VTN Nevada
2727 S. Rainbow Boulevard
Las Vegas, Nevada 89146
(702) 247-4020

vtn nevada

May 2006

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

April 14, 2006

Mr. Jeremy Leavitt, P.E.
VTN Nevada
2727 South Rainbow Boulevard
Las Vegas, NV 89146

IN REPLY REFER TO:
Case No.: 06-09-B663P
Community: City of Henderson, NV
Community No.: 320005

316-AD

Dear Mr. Leavitt:

This responds to your request dated March 3, 2006, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Clark County, Nevada and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Mission Drive
Flooding Source:	C-1 Channel
FIRM Panel(s) Affected:	32003C2955 E

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

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

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

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

If you have general questions about your request, FEMA policy, or the NFIP, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please call the Revisions Coordinator for your State, Mr. Sacha Tohme, CFM, who may be reached at (703) 960-8800, ext. 3028.

Sincerely,

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

Enclosures

cc: Mr. Curt Chandler, P.E., CFM
Land Development Manager
Department of Public Works
City of Henderson

Mr. Joseph Damiani, P.E.
Project Manager
City of Henderson

Mr. Kevin Eubanks, P.E., CFM
Assistant General Manager
Clark County Regional Flood Control District

NATIONAL FLOOD INSURANCE PROGRAM

FEMA NATIONAL SERVICE PROVIDER

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

Case No.: 06-09-B633P

Requester: Mr. Jeremy Leavitt, P.E.

Community: City of Henderson, NV

Community No.: 320005

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

1. The submitted plans entitled "Storm Drain Plan and Profile," prepared by your firm, dated September 9, 2004, are not certified as representing as-built conditions. Please submit "as-built" plans or a letter stating that the submitted plans represent as-built conditions. The plans or letter must be certified by a registered professional engineer or licensed land surveyor.

2. Our preliminary review revealed that "as-built" plans for the culvert upstream of Patti Ann Woods Drive were not submitted in the report entitled "LOMR Mission Drive Conveyance System," prepared by your firm, dated March 3, 2006. Please submit "as-built" plans for the culvert upstream of Patti Ann Woods Drive, certified by a registered professional engineer or licensed land surveyor.

3. Our preliminary review revealed that the submitted undated topographic work maps entitled "Mission-Greenway Work Map," prepared by your firm. were not certified by a registered professional engineer. Please submit topographic work maps with the proposed conditions floodplain boundary delineated, certified by a registered professional engineer or licensed land surveyor.

4. Our preliminary review revealed that the submitted report entitled "LOMR Mission Drive Conveyance System," prepared by your firm, dated March 3, 2006, did not include a work map for the submitted WSPG hydraulic analysis model for the culvert and channel along Greenway Road and Mission Drive. Please submit a work map showing the locations and alignments of all cross sections used in the WSPG hydraulic analysis. The scale of the map must be sufficient to provide reasonable accuracy and it must be certified by a registered professional engineer.

5. Please submit a digital copy of the input and output files for the WSPG model entitled "VTN3.dat" and the HEC-1 models entitled "SDN3.dat" and "missiond.dat." Digital copies of these files were omitted from the original submittal.

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

Federal Emergency Management Agency

Washington, D.C. 20472

FEE SCHEDULE FOR PROCESSING REQUESTS FOR MAP CHANGES

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

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

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

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

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

Fee Schedule for Requests for CLOMRs

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

Fee Schedule for Requests for LOMRs and PMRs

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

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

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

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

Payment Submission Requirements

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

nevada

CONSULTING ENGINEERS • PLANNERS • SURVEYORS

PROVIDING QUALITY PROFESSIONAL
SERVICES SINCE 1960

May 10, 2005
File: 6139-LOMR

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

Federal Emergency Management Agency
3601 Eisenhower Avenue
Alexandria, VA 22304-6425

Reference: Case No.: 06-09-B663P (Mission Drive)
Community: City of Henderson, NV
Community No.: 320005

Dear Ms. Norlin:

The enclosed addendum is being provided in response to the comment letter dated April 14, 2006 for the Mission Drive LOMR Case No.: 06-09-B663P. The comments that you provided for the specified project are addressed within the following response summary.

RESPONSE TO COMMENTS

Comment 1: The letter of completion for the Storm Drain Plan & Profile along with "as-Built" plans were submitted with Mission Drive Conveyance System LOMR dated March 2006. It can be found in Appendix D, titled Storm Drain Plan & Profile for Mission Drive/Greenway Rd Improvements (WSPG run from Mission Drive/ Greenway Road Improvements Final Drainage Report February 2004)

Comment 2: As-built plans for culvert upstream of Patti Ann Woods Drive on Greenway Road were obtained at City of Henderson and are included in the addendum report. It can be found in Appendix E, under Mission-Greenway: As-Built Plans Reference (Paradise Hills No. 18-PENTACORE) for culvert upstream of Patti Ann Woods

2727 SOUTH RAINBOW BOULEVARD LAS VEGAS, NEVADA 89146-5148
TEL. (702) 873-7550 FAX: 362-2597

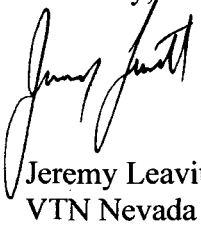
Comment 3: Topographic Work Maps entitled Annotated Flood Zone Map (Figure 2.3), Pre-Project Conditions "Effective Work Map" (Figure 2.4), Post-Project Conditions "Post Project Work Map" (Figure 2.5), and Mission-Greenway Culvert & Channel "Hydraulic Work Map" (Figure 2.6) have been certified by a registered professional engineer or licensed land surveyor.

Comment 4: Work Maps titled Mission-Greenway Culvert & Channel "Hydraulic Work Map" (Figure 2.6) for use with culvert and channel along Greenway Road and Mission Drive have been included in the addendum & have been certified by a registered professional engineer or licensed land surveyor. A Hydraulic Summary for Mission Drive/Greenway Road Improvements for the system VTN3.dat has been included.

Comment 5: A digital Copy of WSPG models VTN3.dat & HEC-1 Models "SDN3.dat and missiond.dat are included in the addendum along with the updated work maps under Updated Data CD (HEC-1, WSPG, Work Maps & figures)

If you have any questions or require additional information, do not hesitate to contact us.

Sincerely,

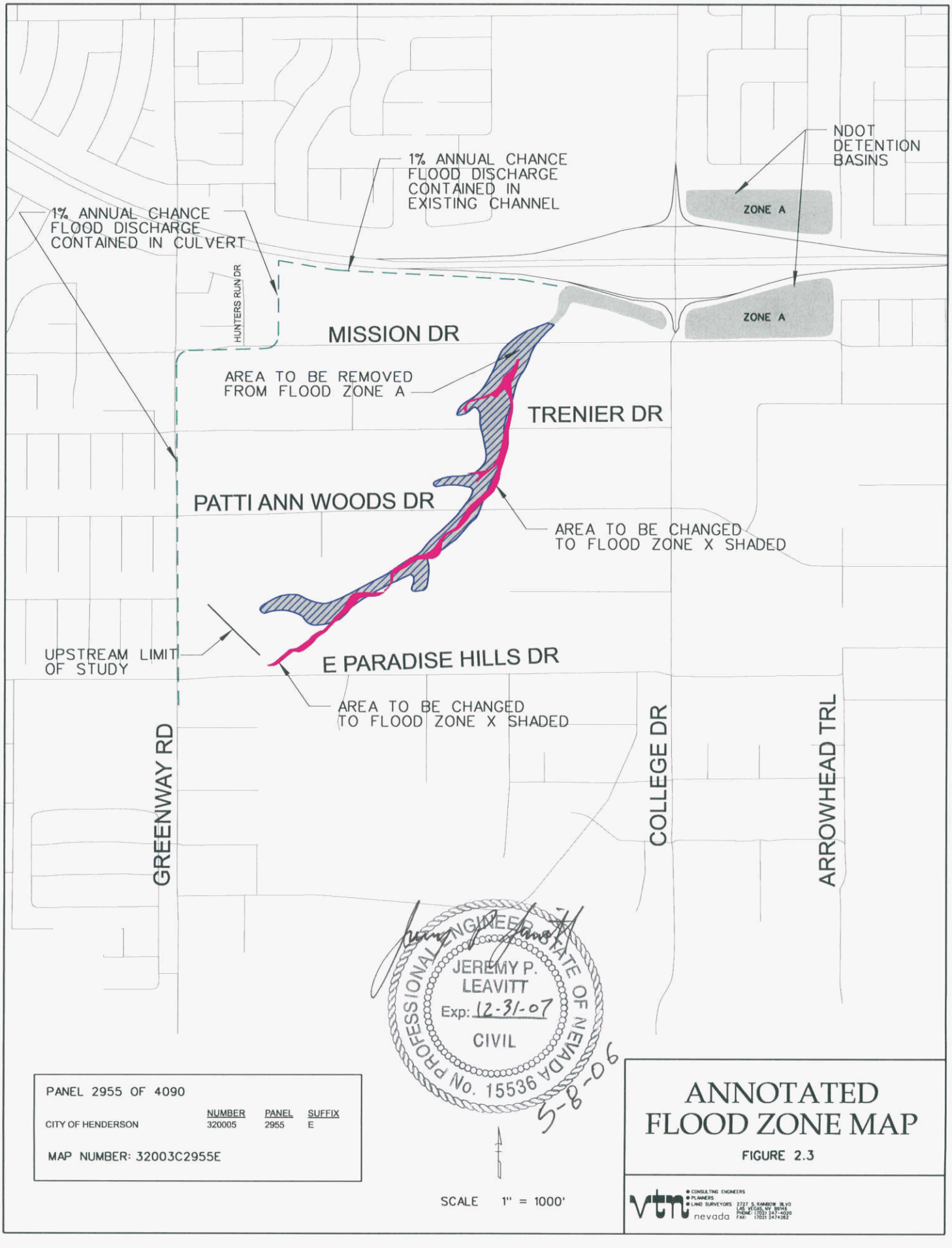


Jeremy Leavitt, P.E.
VTN Nevada
2727 South Rainbow Boulevard
Las Vegas, NV 89146
jeremyl@vtnnv.com
(702) 253-2359

APPENDIX B

FIGURES

VTN POST-PROJECT
ANNOTATED FLOOD ZONE MAP
-FIGURE 2.3



ANNOTATED FLOOD ZONE MAP

FIGURE 2.3

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PLANNERS
LAND SURVEYORS
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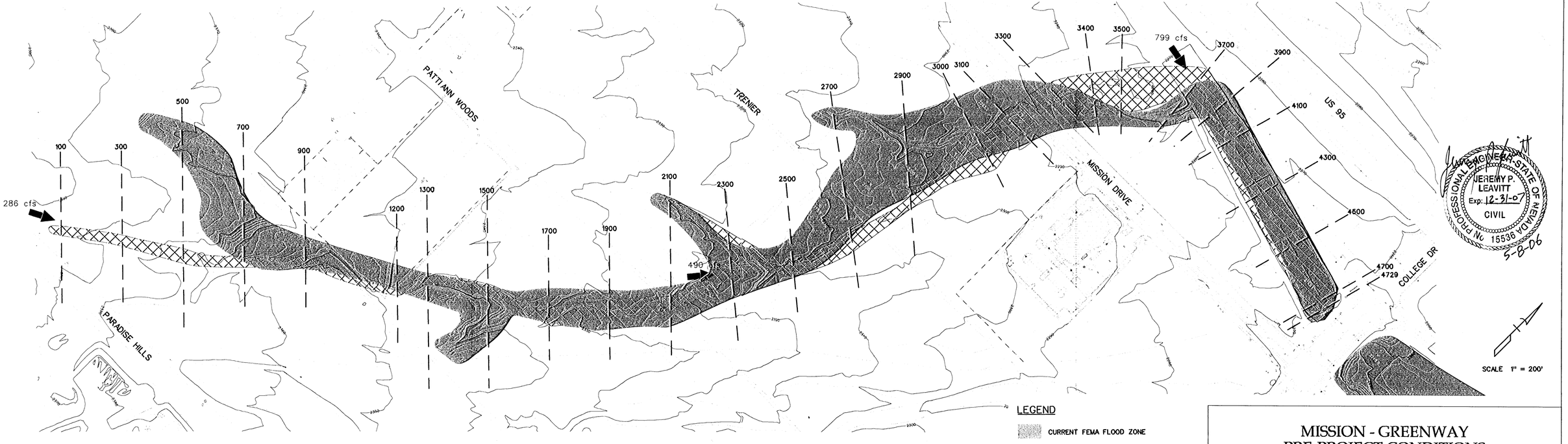
LAS VEGAS, NV 89146
PHONE: (702) 247-4220
FAX: (702) 247-4282

MISSION-GREENWAY: PRE-PROJECT CONDITIONS
(EFFECTIVE WORK MAP)
-FIGURE 2.4



LEGEND

- CURRENT FEMA FLOOD ZONE
- EFFECTIVE 100-YEAR FLOOD PLAIN
- 100 YEAR FLOW

PROFESSIONAL ENGINEER - STATE OF NEVADA
JEREMY P. LEAVITT
Exp: 12-31-07
CIVIL
No 15536
5-8-06

MISSION - GREENWAY
PRE-PROJECT CONDITIONS
(EFFECTIVE WORK MAP)

vtn nevada
CONSULTING ENGINEERS
PLANNERS
LAND SURVEYORS
222 LAKEVIEW AVE
SUITE 160
WEST PALM BEACH
FAX (561) 811-1283

MISSION-GREENWAY: POST-PROJECT CONDITIONS
(POST PROJECT WORK MAP)
-FIGURE 2.5

157 cfs
166 cfs
204 cfs
602 cfs
100
300
500
700
900
1200
1300
1500
1700
1900
2100
2300
2500
2700
2900
3000
3100
3300
3400
3500
3700
3900
4100
4300
4500
4700
4729
PATTI ANN WOODS
TRENIER
MISSION DRIVE
US 95
COLLEGE DR
PARADISE HILLS
PROFESSIONAL ENGINEER STATE OF NEVADA
JEREMY P. LEAVITT
Exp: 12-31-07
CIVIL
No. 15536
5-8-06
SCALE 1" = 200'
LEGEND
FLOOD WAY - ZONE A
FLOOD WAY - ZONE X SHADED
100 YEAR FLOW
vtn nevada

MISSION - GREENWAY
POST-PROJECT CONDITIONS
(POST PROJECT WORK MAP)

MISSION-GREENWAY: CULVERT & CHANNEL
(HYDRAULIC WORK MAP for WSPG - VTN3.OUT)
-FIGURE 2.6

NOTE:
SEE MISSION DRIVE/GREENWAY RD IMPROVEMENT
WSPG HYDRAULIC SUMMARY.

MISSION - GREENWAY CULVERT AND CHANNEL HYDRAULIC WORK MAP

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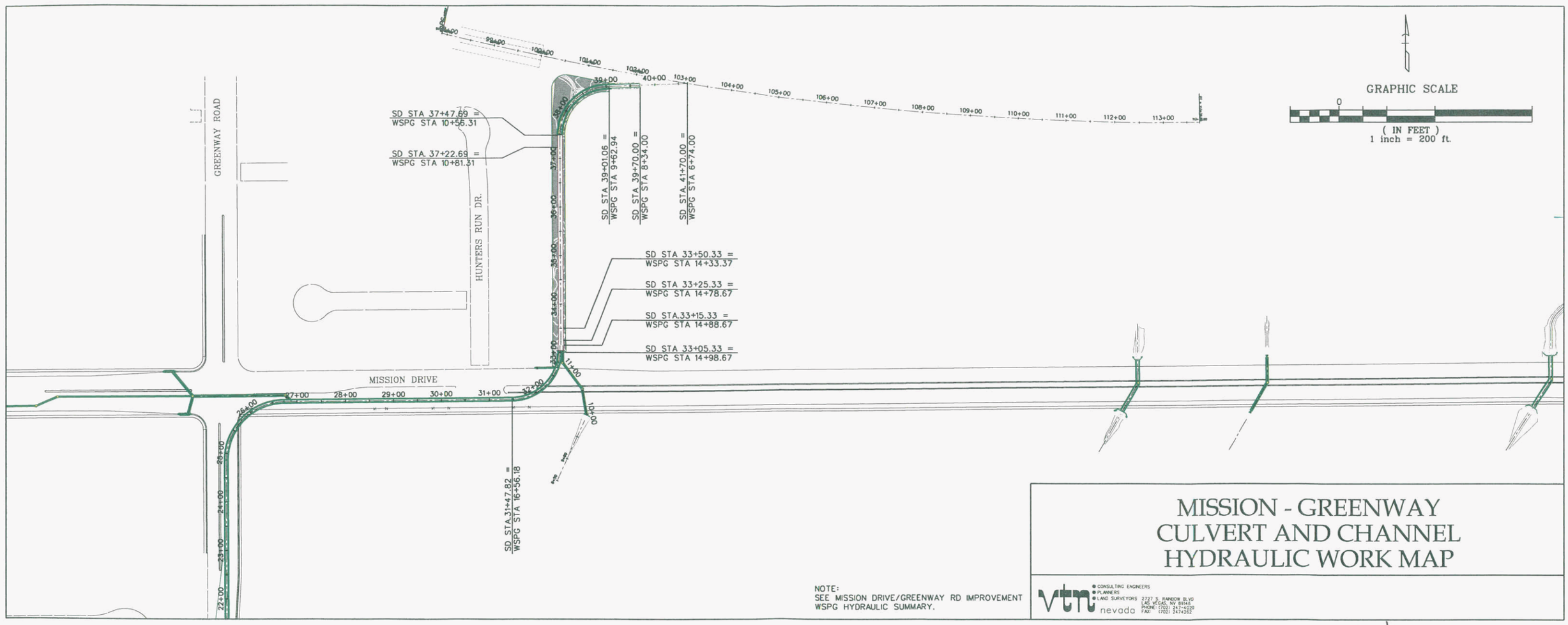
CONSULTING ENGINEERS
PLANNERS
LAND SURVEYORS
2727 S. RAINBOW BLVD.
LAS VEGAS, NV 89146
PHONE: (702) 247-4220
FAX: (702) 247-4282

PROFESSIONAL ENGINEER - STATE OF NEVADA
JEREMY P. LEAVITT
Exp: 12-31-07
CIVIL
No. 15536
5-8-06



NOTE:
SEE MISSION DRIVE/GREENWAY RD IMPROVEMENT WSPG HYDRAULIC SUMMARY.

MISSION - GREENWAY CULVERT AND CHANNEL HYDRAULIC WORK MAP

vtn nevada
CONSULTING ENGINEERS
PLANNERS
LAND SURVEYORS
2727 S. RAINBOW BLVD
LAS VEGAS, NV 89146
PHONE: (702) 247-4220
FAX: (702) 247-4262

PROFESSIONAL ENGINEER-STATE OF NEVADA
JEREMY P. LEAVITT
Exp: 12-31-07
CIVIL
No. 15536
9-8-06

HYDRAULIC SUMMARY FOR MISSION DRIVE/GREENWAY ROAD IMPROVEMENTS

(For use with WSPG Model - VTN3.OUT)

MISSION DRIVE/GREENWAY ROADWAY IMPROVEMENT

For use with Mission/Greenway Storm Drain Plan & Profile/ WSPG

WSPG HYDRAULIC SUMMARY WITH 100YR FLOW CONDITION

WSPG STATION	SD PROFILE STATION	LENGTH IN WSPG	DESIGN FLOW	INVERT ELEV	SLOPE	DEPTH OF FLOW[1]	DEPTH OF FLOW	VELOCITY	H.G.L.	E.G.L.	CHANNEL TYPE	BASE WIDTH	Z	FROUDE NUMBER	DESIGN WALL H.T.	FREEBOARD	COMMENTS
		(ft)	(cfs)	(ft)	(ft/ft)	y"(ft)	y(ft)	V(fps)	H(ft)	E(ft)		b(ft)		Fr	(ft)	(ft)	
574.00			819.1	2303.54		2.119	2.119	9.37	2305.659	2307.02	EX. TRAP.	37	2	1.13	5	2.88	TEMP. RIPRAP
674.00	41+70.00	100.00	819.1	2305.64	0.021	2.101	2.101	9.46	2307.741	2309.13	EX. TRAP.	37	2	1.15	5	2.90	TEMP. RIPRAP
774.00	40+70.00	100.00	819.1	2307.74	0.021	1.124	0.982	21.40	2308.722	2315.83	EX. TRAP.	37	2	3.81	5	4.02	TEMP. RIPRAP
834.00	39+70.00	60.00	630.1	2309.00	0.021	3.590	3.473	22.68	2312.473	2320.46	RCB	8	0	2.14	6	2.53	OK
868.47	39+35.53	34.47	630.1	2309.80	0.023	3.642	3.536	22.27	2313.336	2321.04	RCB	8	0	2.09	6	2.46	OK
902.94	39+01.06	34.47	630.1	2310.61	0.023	3.710	3.617	21.77	2314.227	2321.59	RCB	8	0	2.02	6	2.38	OK
979.63	38+24.37	76.69	630.1	2312.39	0.023	3.928	3.877	20.31	2316.267	2322.67	RCB	8	0	1.82	6	2.12	OK
1056.31	37+47.69	76.68	630.1	2314.18	0.023	4.429	4.429	17.78	2318.609	2323.52	RCB	8	0	1.49	6	1.57	OK
1081.31	37+22.69	25.00	630.1	2314.76	0.023	4.667	4.667	16.87	2319.427	2323.85	RECT	8	0	1.38	6.5	1.83	REQ. FREEBOARD=1.70', OK
1453.67	33+50.33	372.36	630.1	2318.49	0.010	4.145	4.133	19.06	2322.623	2328.26	RECT	8	0	1.65	6.5	2.37	REQ. FREEBOARD=1.76', OK
1478.67	33+25.33	25.00	630.1	2318.74	0.010	4.063	4.037	19.51	2322.777	2328.69	RECT	8	0	1.71	11	6.96	OK
1488.67	33+15.33	10.00	630.1	2318.84	0.010	2.993	2.871	21.94	2321.711	2329.19	RECT	10	0	2.28	11	8.13	OK
1498.67	33+05.33	10.00	606.1	2318.94	0.010	5.441	5.441	18.57	2324.381	2329.74	RCB	6	0	1.40	6	0.56	OK
1656.18	31+47.82	157.51	606.1	2320.51	0.010	5.212	5.212	19.38	2325.722	2331.55	RCB	6	0	1.50	6	0.79	OK
2116.18	26+87.82	460.00	606.1	2325.12	0.010	4.092	3.923	25.75	2329.043	2339.34	RCB	6	0	2.29	6	2.08	OK
2119.68	26+84.32	3.50	580.7	2325.15	0.009	3.756	3.542	27.32	2328.692	2340.28	RCB	6	0	2.56	6	2.46	OK
2130.51	26+73.49	10.83	580.7	2325.26	0.010	3.725	3.504	27.62	2328.764	2340.61	RCB	6	0	2.60	6	2.50	OK
2318.25	24+85.75	187.74	580.7	2331.23	0.032	3.767	3.556	27.22	2334.786	2346.29	RCB	6	0	2.54	6	2.44	OK
2704.00	21+00.00	385.75	580.7	2343.53	0.032	4.187	4.067	23.80	2347.597	2356.39	RCB	6	0	2.08	6	1.93	OK
2804.00	20+00.00	100.00	580.7	2347.74	0.042	5.601	5.601	17.28	2353.341	2357.98	RCB	6	0	1.29	6	0.40	OK
2825.15	19+78.85	21.15	580.7	2348.12	0.018	6.000	6.000	16.24	2354.120	2358.22	RCB	6	0	1.17	6	0.00	OK
2830.15	19+73.85	5.00	494.9	2348.21	0.018	8.204	8.204	13.84	2356.414	2359.39	RCB	6	0	0.85	6	0.00	OK
2890.01	19+07.99	59.86	494.9	2349.28	0.018	7.650	7.650	13.84	2356.930	2359.90	RCB	6	0	0.88	6	0.00	OK
2892.01	19+05.99	2.00	480.6	2349.32	0.020	7.926	7.926	13.44	2357.246	2360.05	RCB	6	0	0.84	6	0.00	OK
2978.61	18+19.39	86.60	480.6	2350.87	0.018	7.131	7.131	13.44	2358.001	2360.81	RCB	6	0	0.89	6	0.00	OK
2978.61	18+19.39	0.00	480.6	2350.87	N/A	4.000	3.953	20.26	2354.823	2361.20	RCB	6	0	1.80	6	2.05	OK
3138.08	16+65.91	159.47	480.6	2353.72	0.018	4.231	4.226	18.96	2357.946	2363.53	RCB	6	0	1.63	6	1.77	OK
3144.08	16+59.91	6.00	458.3	2353.83	0.018	3.750	3.681	20.75	2357.511	2364.20	RCB	6	0	1.91	6	2.32	OK
3467.42	13+36.58	323.34	458.3	2359.63	0.018	4.092	4.086	18.69	2363.716	2369.14	RCB	6	0	1.63	6	1.91	OK
3473.42	13+30.58	6.00	360.0	2359.93	0.050	3.382	3.209	25.01	2363.139	2372.85	RCP	0	0	2.46	5.5	2.29	OK
3558.73	12+45.27	85.31	360.0	2363.44	0.041	3.589	3.469	22.80	2366.909	2374.98	RCP	0	0	2.16	5.5	2.03	OK
3563.73	12+40.27	5.00	330.3	2363.65	0.042	3.137	2.948	25.47	2366.598	2376.67	RCP	0	0	2.61	5.5	2.55	OK
3785.46	10+00.00	221.73	330.3	2372.79	0.041	3.966	3.966	18.01	2376.756	2381.79	RCP	0	0	1.59	5.5	1.53	OK
3809.00	EXISTING FACILITY	23.54	330.3	2373.76	0.041	4.933	4.933	14.70	2378.693	2382.05	RCP	0	0	1.17	5.5	0.57	OK
4122.26		313.26	330.3	2375.72	0.006	6.393	6.393	13.90	2382.113	2385.11	RCP	0	0	0.97	5.5	0.00	OK
4126.26		4.00	288.1	2375.82	0.025	3.267	3.151	22.10	2378.971	2386.56	RCP	0	0	2.19	5	1.85	OK
4454.00		327.74	288.1	2383.78	0.024	3.423	3.343	20.65	2387.123	2393.74	RCP	0	0	1.99	5	1.66	OK
4719.59		265.59	288.1	2388.89	0.019	3.344	3.246	21.35	2392.136	2399.21	RCP	0	0	2.09	5	1.75	OK
4860.42		140.83	288.1	2393.31	0.031	4.241	4.241	16.23	2397.551	2401.64	RCP	0	0	1.39	5	0.76	OK
4864.42		4.00	226.1	2394.31	0.250	3.461	3.399	19.87	2397.709	2403.84	RCP	0	0	1.90	4	0.60	OK
5267.87		403.45	226.1	2403.84	0.024	3.681	3.652	18.79	2407.492	2412.97	RCP	0	0	1.73	4	0.35	OK
5667.87		400.00	226.1	2412.70	0.022	3.906	3.904	18.11	2416.604	2421.70	RCP	0	0	1.62	4	0.10	OK
5671.87	EXISTING FACILITY	4.00	73.9	2414.20	0.375	2.467	2.452	15.12	2416.652	2420.20	RCP	0	0	1.70	2.5	0.05	OK
5998.89		327.02	7.4	2422.58	0.026	4.887	4.887	15.05	2427.467	2430.98	RCP	0	0	1.20	2.5	0.00	OK
6002.89		4.00	23.4	2423.08	0.125	7.131	7.131	7.45	2430.211	2431.07	RCP	0	0	0.49	2	0.00	OK
6329.90		327.01	23.4	2429.66	0.020	4.050	4.050	7.45	2433.710	2434.57	RCP	0	0	0.65	2	0.00	OK

(1) DEPTH WITH AIR ENTRAINMENT

APPENDIX E

REFERENCE MATERIAL

MISSION-GREENWAY: AS-BUILT PLANS REFERENCE

(Paradise Hills No.18 - PENTACORE)

For culvert upstream of Patti Ann Woods

PARADISE HILLS NO. 18

FOR

KBHOME SM

750 PILOT ROAD, SUITE F, LAS VEGAS, NEVADA 89119, (702) 614-2500, CONTACT PERSON: RANDY TARR

"APPROVAL OF THESE PLANS BY THE CITY OF HENDERSON IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIFICALLY IDENTIFIED AS "DEVIATIONS FROM STANDARDS". THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN "DEVIATIONS FROM STANDARDS" IN FAVOR OF THE UNIFORM STANDARDS DRAWINGS AND SPECIFICATIONS CLARK COUNTY AREA NEVADA".

BASIS OF BEARING

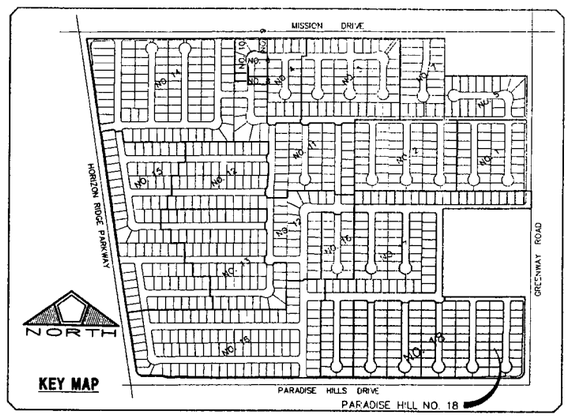
NORTH 89°44'49" EAST, BEING THE BEARING OF THE SOUTH LINE OF THE NORTH HALF (N1/2) OF SECTION 31, TOWNSHIP 22 SOUTH, RANGE 63 EAST, M.D.M., AS SHOWN BY A MAP ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE AS FILE 18, PAGE 70 OF PARCEL MAPS.

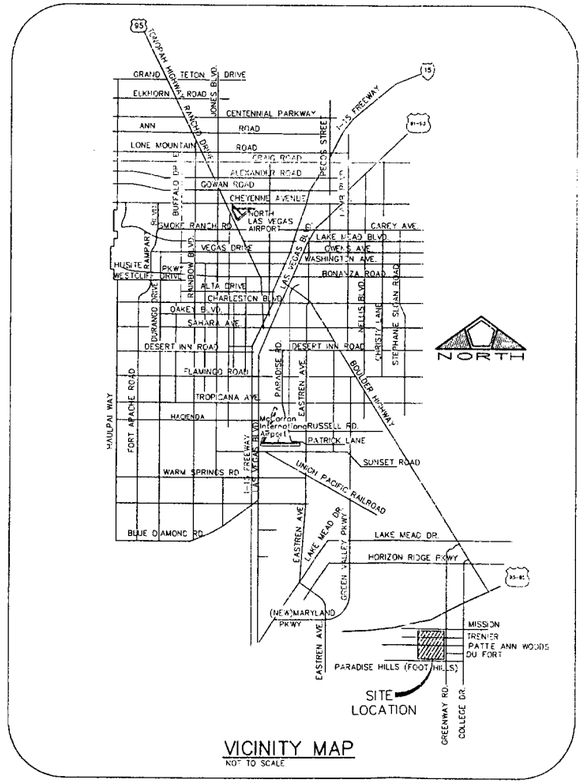
BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.
PROJECT DATUM = 2274.99
ELEVATION 2272.55 FEET NGVD 29 (DATUM USED)
ELEVATION 693.418 METERS NAVD 88.
ADD 2.44' TO NGVD 29 = NAVD 88

NO.	BY	DATE	DESCRIPTION
1	KJW	09/26/01	CHANGED STREET NAME

DATE: 9-11-01
DRAWN BY: PM
DESIGNED BY:
CHECKED BY:
ADA CHECKED:
JOB NO.: 00301.05
SCALE: NONE





INDEX OF DRAWINGS

APPROVALS

CITY OF HENDERSON — DATE 7/17/01
TRAFFIC ENGINEER
JOHN E. MARTIN, P.E.

CITY OF HENDERSON — DATE 9/11/01
UTILITIES SERVICE DIRECTOR
KURT SEGLER, P.E.

CITY OF HENDERSON — DATE 7-18-01
FIRE MARSHAL
JAMES MADDEN

CITY OF HENDERSON — DATE 7/18/01
MICHAEL W. BOUSE
DIRECTOR, BUILDING AND SAFETY

CITY OF HENDERSON — DATE 7-19-01
FLOOD CONTROL COORDINATOR
CURT CHANDLER, P.E.

NEVADA POWER COMPANY — DATE 7-20-01

SOUTHWEST GAS CORPORATION — DATE 7-12-01

SPRINT CENTRAL TELEPHONE - NEVADA — DATE 7-12-01

LEGAL DESCRIPTION

LAND DESCRIPTION
A PORTION OF THE NORTH HALF (N 1/2) OF SECTION 31, TOWNSHIP 22 SOUTH, RANGE 63 EAST, M.D.M., CITY OF HENDERSON, CLARK COUNTY, NEVADA

CONTAINING 21.09 ACRES, AS DETERMINED BY COMPUTER METHODS.

BY

PENTACORE
CIVIL ENGINEERING • LAND SURVEYING • PLANNING
CONSTRUCTION MANAGEMENT • ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115
CONTACT PERSON: JAMES PEARCE

THIS SET OF PLANS IS CERTIFIED TO CONFORM TO THE REQUIREMENTS OF THE TRAFFIC STUDY ACCEPTANCE LETTER.

SAMIH ALHWAYEK, P.E. 10502 — DATE 7-10-01

CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW & APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON IF WORK IS NOT COMPLETED BY: July 2020 02

APPROVED BY:

REN Y. KOSHIRO, P.E., NEW DEVELOPMENT ENGINEER, C.O.H.

DATE: 7-20-01

PENTACORE
CIVIL ENGINEERING • LAND SURVEYING • PLANNING
CONSTRUCTION MANAGEMENT • ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KBHOME

PARADISE HILLS NO. 18

COVER SHEET

PROFESSIONAL ENGINEER - STATE OF NEVADA - SAMIH ALHWAYEK - 7-10-01 - CIVIL - 10502

SHEET 1 REV 1 OF 26

PH18-CV

2001004696 (05848)

ABBREVIATIONS

AC	ASPHALTIC CONCRETE	MVC	MIDDLE OF VERTICAL CURVE
BC	BACK OF CURB	N	NORTH
BCR	BACK OF CURB RETURN	OC	ON CURVE
BFE	BASE FLOOD ELEVATION	PB	PULL BOX
BK	BACK STATION	PC	POINT OF CURVATURE
BVC	BEGIN VERTICAL CURVE	PI	POINT OF INTERSECTION
℄	CENTERLINE	℗	PROPERTY LINE
℄ INT	CENTERLINE INTERSECTION	PVI	POINT OF VERTICAL INTERSECTION
DI	DROP INLET	PT	POINT OF TANGENCY
E	EAST	PZ	PRESSURE ZONE
EA	EACH	R/W	RIGHT OF WAY
ECR	END CURB RETURN	S	SOUTH OR SEWER
EVC	END VERTICAL CURVE	SD	STORM DRAIN
FC	FACE OF CURB	SDMH	STORM DRAIN MANHOLE
FF	FINISH FLOOR	SF	SQUARE FEET
FG	FINISH GRADE	SS	SANITARY SEWER
FH	FIRE HYDRANT	SSMH	SANITARY SEWER MANHOLE
FL	FLOW LINE	STLT	STREET LIGHT
GA	GAUGE	SW	SIDE WALK
GB	GRADE BREAK	SY	SQUARE YARD
GV	GATE VALVE	TB	TOP OF BANK
HP	HIGH POINT	TC	TOP OF CURB
INV	INVERT	TMH	TOP OF MANHOLE
KNKL	KNUCKLE	W	WEST OR WATER
LF	LINEAR FEET	VC	VERTICAL CURVE
LP	LOW POINT	VG	VALLEY GUTTER
MH	MANHOLE		

CITY OF HENDERSON TRAFFIC NOTES

1. ANY EXISTING TRAFFIC CONTROL DEVICES AND/OR SIGNS SHALL BE MAINTAINED DURING THE PERIOD OF CONSTRUCTION SHALL BE REPOSITIONED, AS REQUIRED, PER M.U.T.C.D. AND CITY STANDARDS, UPON COMPLETION OF THE PROJECT.

2. DEVELOPERS/CONTRACTORS ARE RESPONSIBLE FOR SUBMITTING TRAFFIC CONTROL/BARRICADING PLANS NOT LESS THAN THREE (3) WORKING DAYS BEFORE OBSTRUCTING AND BEGINNING OF CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING SIDEWALKS. BEFORE ANY WORK IS STARTED IN THE RIGHT OF WAY, THE CONTRACTOR WILL INSTALL ALL ADVANCE WARNING SIGNS FOR THE CONSTRUCTION ZONE. THE CONTRACTOR WILL INSTALL TEMPORARY GROUND MOUNTED STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING CITY STREET IMMEDIATELY AFTER FIRST GRADING WORK IS ACCOMPLISHED, AND WILL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED.

3. LOCATION AND DESCRIPTION OF NEW AND EXISTING TRAFFIC CONTROL DEVICES, STREET STRIPING, MEDIAN ISLANDS, DRIVEWAYS AND TRAFFIC SIGNALS MUST BE SHOWN ON PLANS SUBMITTED TO THE CITY FOR APPROVAL. ALL NEW TRAFFIC SIGNS WILL BE FABRICATED WITH HIGH INTENSITY GRADE (CLASS 4) REFLECTIVE SHEETING. ALL NEW TRAFFIC SIGNS, EXCEPT STREET NAME SIGNS, WILL HAVE "3-CAL" OR 3M SERIES 1160 OR APPROVED EQUIVALENT ANTI-GRAFFITI PROTECTIVE FILM.

4. LOCATION AND DESCRIPTION OF NEW AND EXISTING STREET NAME SIGNS MUST BE SHOWN ON PLANS SUBMITTED TO THE CITY FOR APPROVAL. STREET NAME SIGNS WILL COMPLY WITH CLARK COUNTY STANDARD DRAWINGS NO. 249, 250 AND 251. ALL STREET NAME SIGNS WILL BE FABRICATED WITH DIAMOND GRADE VIP (CLASS 6) REFLECTIVE SHEETING. ALL INTERSECTIONS WITH 100' OR GREATER R/W ROADWAYS WILL HAVE THE CITY OF HENDERSON LOGO ON BOTH STREET NAME PANELS. CONTACT CITY OF HENDERSON TRAFFIC SHOP THREE (3) WORKING DAYS IN ADVANCE, MONDAY THROUGH THURSDAY, AT 565-2148 TO RECEIVE LOGO TO BE APPLIED BY THE CONTRACTOR TO THE STREET NAME PANELS PER CITY OF HENDERSON STANDARD DETAIL.

5. BLUE REFLECTORIZED PAVEMENT MARKINGS MUST BE INSTALLED AND CURB MUST BE PAINTED AT EVERY FIRE HYDRANT LOCATION PER CITY OF HENDERSON FIRE DEPARTMENT STANDARDS.

6. ALL CONSTRUCTION SIGNING, BARRICADING AND PAVEMENT MARKINGS WILL CONFORM TO THE NEVADA WORK ZONE TRAFFIC CONTROL HANDBOOK - 1986 AND TO THE M.U.T.C.D. LATEST EDITION WITH ANY ADDENDA AND REVISIONS.

7. WHERE STREETS END AT THE PROJECT BOUNDARY, THREE (3) 18" DIAMOND (MINIMUM), REFLECTORIZED, RED PANELS SHALL BE INSTALLED AT THE END OF THE ROADWAY AND MAINTAINED UNTIL ADJOINING PROJECT IS BUILT.

8. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL, OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING WILL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.

FIRE DEPARTMENT GENERAL NOTES:

FIRE HYDRANTS:

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE UNIFORM FIRE CODE APPENDIX III-B, FIRE HYDRANT LOCATIONS AND DISTRIBUTIONS, AS AMENDED.

2. FIRE HYDRANTS SHALL BE IN MAINTAINED IN AN OPERATIVE CONDITION AT ALL TIMES WITH THE REQUIRED WATER SUPPLY AND SHALL BE ACCEPTED BY PUBLIC WORKS DEPARTMENT.

3. FIRE HYDRANT SHALL HAVE PERMANENT MARKINGS IDENTIFYING: MANUFACTURER, SIZE OF THE MAIN VALVE OPENING, YEAR OF MANUFACTURE, MODEL NUMBER, DIRECTION OF OPENING AND BURY DEPTH. ALL HYDRANTS SHALL MEET THE REQUIREMENTS OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS.

4. ALL PUBLIC FIRE HYDRANTS SHALL HAVE A SIX DIGIT NUMBER (AS DESGINATED BY PUBLIC WORKS) PAINTED ON THE BARREL BY THE HYDRANT INSTALLER. THE NUMBER SHALL BE IN 1" HIGH BLOCK NUMBERS USING BLACK ENAMEL PAINT. ALL NUMBERS SHALL MATCH APPROVED PLANS.

5. ALL FIRE DEPARTMENT CONNECTIONS (FDC) FOR FIRE SPRINKLER OR STANDPIPE SYSTEMS SHALL BE LOCATED WITHIN 100 FEET OF A FIRE HYDRANT. THE 100 FEET SHALL BE MEASURED BY AN APPROVED UNOBSTRUCTED ROUTE. THE FDC SHALL BE LOCATED IN AN APPROVED LOCATION ON THE STREET OR FIRE LANE SIDE OF THE BUILDING BEING PROTECTED.

6. FIRE HYDRANTS SHALL BE IN CONFORMANCE WITH THE FIRE PREVENTION DIVISIONS UNIFORM GUIDELINE.

UNDERGROUND PIPING & VALVES:

7. PRIOR TO CLOSING ANY WATER SUPPLY CONTROL VALVE OR PLACING ANY FIRE HYDRANT OUT OF SERVICE, THE HENDERSON FIRE DEPARTMENT DISPATCH CENTER (565-1214) SHALL BE CONTACTED.

8. ALL SECTIONAL CONTROL VALVES CONTROLLING WATER SUPPLIES ON PRIVATE FIRE SERVICE MAINS SHALL BE LISTED POST INDICATING VALVES (PIV).

EXCEPTION: APPROVED DEBRIS "LOCKOUT" CAPS MAY BE USED WHEN THE VALVE IS LOCATED WITHIN A ROADWAY.

9. A POST INDICATING VALVE (PIV) SHALL BE PROVIDED, FOR ALL SPRINKLER SYSTEMS, A MINIMUM OF 5 FEET FROM THE BUILDING FOOTING.

10. ALL VALVES THAT CONTROL THE WATER SUPPLY TO FIRE SPRINKLER SYSTEMS SHALL BE LISTED, INDICATING AND ELECTRICALLY SUPERVISED. THIS INCLUDES ALL VALVES STARTING FROM THE BACKFLOW ASSEMBLIES UNTIL THE WATER LINE ENTERS THE BUILDING.

11. ALL PIPING AND VALVES SUPPLYING FIRE SPRINKLER SYSTEMS SHALL BE PROTECTED FROM FREEZING WHEN EXPOSED TO TEMPERATURES LESS THAN 40°F. FREEZE PROTECTION SHALL BE APPROVED, DURABLE, AND PERMANENT.

12. ALL BACKFLOW OR CROSS CONNECTION REQUIREMENTS OF THE PUBLIC WORKS UTILITY DIVISION SHALL BE INSTALLED UPSTREAM OF THE FIRE SPRINKLER OR STANDPIPE SYSTEM "POST INDICATOR VALVE".

13. ALL REQUIRED TESTING AND FLUSHING OF THE UNDERGROUND FIRE SPRINKLER/STANDPIPE WATER SUPPLY PIPING SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION (AHJ). THE INSTALLING COMPANY SHALL FURNISH A "CONTRACTOR'S MATERIAL AND TESTING CERTIFICATE" (CM&T) COUNTERSIGNED BY THE PROPERTY OWNER OR REPRESENTATIVE. THE CM&T SHALL BE FILLED OUT COMPLETELY WITH THE AHJ'S INITIALS, WITNESSING EACH TEST. WRITTEN APPROVAL SHALL BE OBTAINED FROM THE FIRE DEPARTMENT PREVENTION DIVISION BEFORE THE UNDERGROUND SUPPLY IS CONNECTED TO THE FIRE SPRINKLER SYSTEM.

FIRE LANES:

14. FIRE APPARATUS ACCESS ROADS AND FIRE HYDRANTS INSTALLED FOR FIRE PROTECTION SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING THE TIME OF CONSTRUCTION.

15. ACCESS TO BUILDINGS FOR THE PURPOSE OF FIREFIGHTING SHALL BE PROVIDED. CONSTRUCTION MATERIAL SHALL NOT BLOCK FIRE LANES, ACCESS TO BUILDINGS, HYDRANTS OR FIRE APPLIANCES.

16. FIRE LANES SHALL BE IN CONFORMANCE WITH THE FIRE PREVENTION DIVISION'S UNIFORM GUIDELINE.

GATES:

17. SHOP DRAWINGS FOR ALL GATES AND OPENERS SHALL BE SUBMITTED SEPARATELY FOR REVIEW AND APPROVAL.
OBTAIN A COPY OF THE UNIFORM GUIDELINE FOR DETAILS.

UPDATED 06/23/00
SUPERSEDES 11/04/99

GENERAL NOTES

STANDARD GENERAL NOTES (REV. 3-99) (UPDATE 4-99)

1. ALL CONSTRUCTION SHALL CONFORM TO THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, OFFSITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, 1988.

2. APPLICATION FOR INSPECTION BY THE CITY OF HENDERSON PUBLIC WORKS SHALL BE MADE BY THE CONTRACTOR AT LEAST 24 HOURS BEFORE THE INSPECTION SERVICES WILL BE REQUIRED, 616-3965.

3. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE PROSECUTED TO COMPLETION WITHOUT DELAY SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC.

4. THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR FROM STORM WATER RUNOFF AND/OR DEPOSITION OF DEBRIS RESULTING FROM ANY AND ALL WORK IN CONNECTION WITH SUBDIVISION CONSTRUCTION.

5. PRIOR TO FINAL ACCEPTANCE, BOND RELEASES, AND A CERTIFICATE OF OCCUPANCY, A CERTIFIED LEGIBLE AS-BUILT DRAWING MUST BE SUBMITTED TO THE CITY OF HENDERSON. AS-BUILT MUST SHOW ALL CHANGES AND ACTUAL FIELD LOCATIONS. IN THE ABSENCE OF CHANGES, A COPY OF APPROVED DRAWINGS WILL BE REQUIRED STATING "INSTALLED AS PER DRAWINGS" AND CERTIFIED AS SUCH BY THE DEVELOPER'S ENGINEER.

6. APPROVAL OF THESE PLANS IS FOR THE CONSTRUCTION OF OFFSITE IMPROVEMENTS ONLY. ALL ONSITE IMPROVEMENTS, AS DEFINED BY CITY OF HENDERSON, INCLUDING BLOCK WALLS, MUST BE APPROVED BY THE BUILDING AND PLANNING DIVISIONS OF THE CITY OF HENDERSON.

7. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITION BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND OF INGRESS AND EGRESS TO SAID CONSTRUCTION. EXTENT OF TRANSITIONS TO BE DETERMINED BY THE CITY ENGINEER.

8. EXISTING UTILITIES ARE LOCATED ON PLANS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR THE PROTECTION OF UTILITIES AND THE ENGINEER BEARS NO RESPONSIBILITY FOR UTILITIES NOT SHOWN ON THE PLANS OR NOT IN THE LOCATION SHOWN ON THE PLANS. THIS INCLUDES ALL SERVICE LATERALS OF ANY KIND.

9. 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 CITY OF HENDERSON.

10. WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING NO. 235. EXACT LOCATION OF RAMPS SHALL BE DETERMINED IN THE FIELD BY A CITY INSPECTOR, OR AS SHOWN ON PLAN.

11. CURB AND GUTTER WITH A GRADE OF LESS THAN FIVE-TENTHS 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.

12. ALL GRADING SHALL CONFORM TO THE SOILS REPORT:

ENGINEER: CONVERSE CONSULANTS SOUTHWEST, INC.
DATE: JULY 19, 1994
JOB NUMBER: CCSW PROJECT NO. 94-3368-01

13. EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PRELIMINARY GEOTECHNICAL REPORT.

14. ALL STREET STRUCTURAL SECTIONS SHALL BE PER THE RECOMMENDATIONS OF THE SOILS ENGINEER. BASED ON CBR OR R-VALUES, NO PAVING OR BASE WORK SHALL COMMENCE UNTIL A STREET STRUCTURAL SECTION IS APPROVED BY THE CITY ENGINEER, CITY OF HENDERSON.

15. BEFORE ANY WORK IS STARTED IN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS FOR THE CONSTRUCTION ZONE. THE CONTRACTOR SHALL INSTALL TEMPORARY STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING PUBLIC STREETS IMMEDIATELY AFTER THE FIRST GRADING WORK IS ACCOMPLISHED AND SHALL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE "NEVADA TRAFFIC CONTROL MANUAL" - CURRENT EDITION AND TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" - CURRENT EDITION AND BE APPROVED BY THE CITY OF HENDERSON BEFORE CONSTRUCTION BEGINS.

16. WHERE EXISTING PAVEMENT IS CUT TO INSTALL UTILITY SERVICE LINES, BACKFILL AND PAVEMENT REPLACEMENT SHALL BE DONE PER STANDARD DRAWING S502 AND SECTION 206, 207, AND 208 OF THE STANDARD SPECIFICATION ISSUE, 1986.

17. ALL STATIONING IS REFERENCED TO CENTERLINE.

18. EXACT LOCATION OF ALL SAWCUT LINES SHALL BE DETERMINED IN THE FIELD BY A CITY OF HENDERSON INSPECTOR.

19. PROTECTION AND REPLACEMENT OF SURVEY MONUMENTS OR PROPERTY STAKES NOT DELINEATED ON THE CONTRACT DRAWINGS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. REPLACEMENT OF SURVEY MONUMENTS OR PROPERTY STAKES SHALL BE DONE TO THE COH SURVEY SECTION'S SATISFACTION.

20. AFFECTED UTILITY COMPANIES SHALL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

21. CALL BEFORE YOU DIG, 1-800-227-2600.

22. MODIFICATIONS TO EXISTING UTILITES SHALL CONFORM TO THE OWNER'S UTILITY STANDARDS AND SPECIFICATIONS.

23. THE CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE AND ALL SUCH IMPROVEMENTS DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED OR RECONSTRUCTED TO THE ENGINEER'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.

24. CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW AND APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON, IF WORK IS NOT COMPLETED BY _____ 20____

25. ALL OFFSITE AND ONSITE WATER AND SEWER FACILITIES UP TO WITHIN 5 FEET OF BUILDINGS SHALL BE CONSTRUCTED TO PUBLIC WORKS STANDARDS.

26. IF SEWER OR WATER LINES WITHIN THE PUBLIC UTILITY EASEMENTS REQUIRE REPAIRS, ALL SUCH REPAIRS WILL BE DONE IN ACCORDANCE WITH PUBLIC WORKS DEPARTMENT STANDARDS. CURBS AND GUTTERS AND SPECIAL PAVING REPAIRS SHALL BE THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION.

27. IF SIGNS ARE PRESENT ON THIS CONSTRUCTION SITE, PLEASE CONTACT THE SIGN COMPANY LISTED ON THE SIGN 24 HOURS PRIOR TO COMMENCING CONSTRUCTION IN THE SIGN'S LOCATION. CITY OWNED AND CITY SPONSORED SIGNS (HOOKED) SHALL BE REMOVED AND REPLACED FOLLOWING CONSTRUCTION IN THEIR ORIGINAL LOCATION IN LIKE-NEW CONDITION AT CONSTRUCTION CONTRACTOR'S EXPENSE. ANY CONTRACTOR HAVING TO REMOVE A SIGN WHICH WAS DAMAGED PRIOR TO THE CONTRACTOR OCCUPYING THE SITE SHALL ARRANGE FOR VERIFICATION OF THE SIGN'S CONDITION BY A CITY INSPECTOR PRIOR TO REMOVAL. ALL SIGNS NOT PREVIOUSLY VERIFIED BY A CITY INSPECTOR SHALL BE ASSUMED TO BE IN LIKE-NEW CONDITION PRIOR TO REMOVAL.

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.
PROJECT DATUM = 2274.99
ELEVATION 2272.55 FEET NGVD 29 (DATUM USED)
ELEVATION 693.418 METERS NAVD 88.
ADD 2.44' TO NGVD 29 = NAVD 88

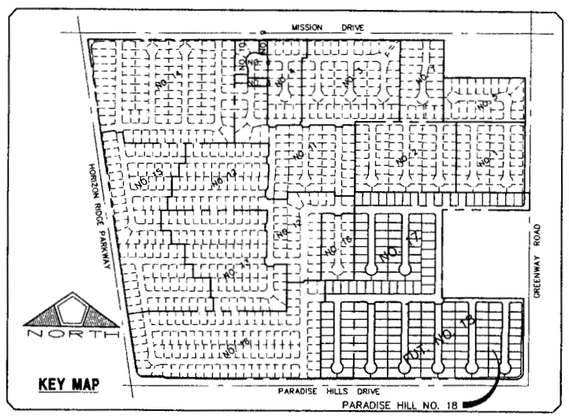
Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE ALERT (USA)

Avoid hitting overhead power lines. It's costly.
Call before you do Overhead
1-702-593-6111

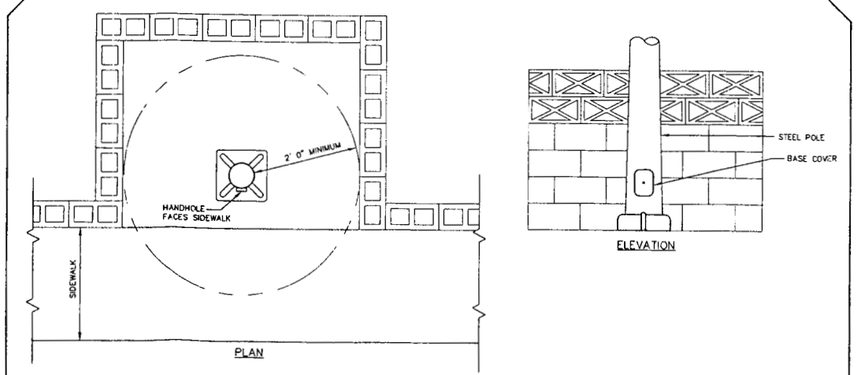
ESTIMATE OF QUANTITIES

ESTIMATE OF QUANTITIES FOR PERMITTING PURPOSES ONLY.

	NO.	DESCRIPTION		UNIT
STREET IMPROVEMENTS	1	2" Asphalt Paving	14,109	sy
	2	3" Asphalt Paving	0	sy
	3	4" Asphalt Paving	4,586	sy
	4	5" Asphalt Paving	7,178	sy
	5	Type I and/or Type II Base	8,531	cy
	6	3/4" Open Grade	7,178	sy
	7	Excavation & Embankments in row	10,442	cy
	8	A Curb, Drainage Curb, L Type C&G	11,303	lf
	9	Driveway	9,000	sf
	10	Concrete Valley Gutter	1,738	sf
	11	Conc. Sidewalk & Rad. Island	33,718	sf
STREET LIGHTS	12	Service Point for lights	1	ea
	13	Light Standard (single lum.)	23	ea
	14	Light Standard (double lum.)	11	ea
SEWER	15	4" pvc Sewer Lateral	4,621	lf
	16	8" pvc Sewer	6,192	lf
	[illegible]			lf
	18	Sewer Manhole Adjustment	0	lf
	19	Sewer Manhole under 6'	0	ea
	20	Sewer Manhole over 6'	21	ea
	21	Sewer Back Water Valves	40	ea
WATER QUANTITIES	22	Water Services to lot (3/4" meter)	90	ea
	23	6" pvc Water	572	lf
	24	8" pvc Water	4,870	lf
	[illegible]			lf
	[illegible]			lf
	[illegible]			lf
	28	Fire Hydrant	9	ea
	[illegible]			ea
	30	Utility Trench (st. light conduit)	5,025	lf
	31	Street & Stop Signs	57	ea
	32	Survey Monuments	11	ea
	[illegible]			lf
	[illegible]			lf
	[illegible]			lf
STORM DRAIN	36	Storm Drain Junction Structure	1	ea
	37	60" Diameter Storm Drain Manhole	11	lf
	38	66" rcp storm drain	318	lf
	39	60" rcp storm drain	740	lf
	40	48" rcp storm drain	874	lf
	41	36" rcp storm drain	80	lf
	42	30" rcp storm drain	370	lf
	43	24" rcp storm drain	441	lf
	44	6" nuisance storm drain	331	lf
	45	16' modified type "C" drop inlet	1	ea
	46	14.5' modified type "C" drop inlet	1	ea
	47	12' type "C" drop inlet	1	ea
	48	6' type "C" drop inlet	1	ea
	49	4' type "C" drop inlet	1	ea
	50	Pressure Reducing Valves	77	ea



KEY MAP



MINIMUM CLEARANCE
FOR STEEL STREET
LIGHT POLES PER STD. 320A MODIFIED

NOTE TO CONTRACTOR:
QUANTITIES SHOWN ARE APPROXIMATIONS ONLY AND ARE INTENDED TO ILLUSTRATE SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT QUANTITIES INVOLVED.

CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW & APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON IF WORK IS NOT COMPLETED
BY: July 20 2002

APPROVED BY:

KEN Y. KOSHIRO, P.E.,
NEW DEVELOPMENT ENGINEER, C.O.H.

DATE: 7-20-01

05848

NO.	BY	DATE	DESCRIPTION	DATE	APP'D

DATE:
PM:
DRAWN BY
DESIGNED BY:
CHECKED BY:
ADA CHECKED
JOB NO. 1051070328
SCALE: NONE

PENTACORE
CIVIL ENGINEERING • LAND SURVEYING • PLANNING
CONSTRUCTION MANAGEMENT • SURVEY MAPPING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KBHOME
PARADISE HILLS NO. 18
GENERAL NOTES & QUANTITIES

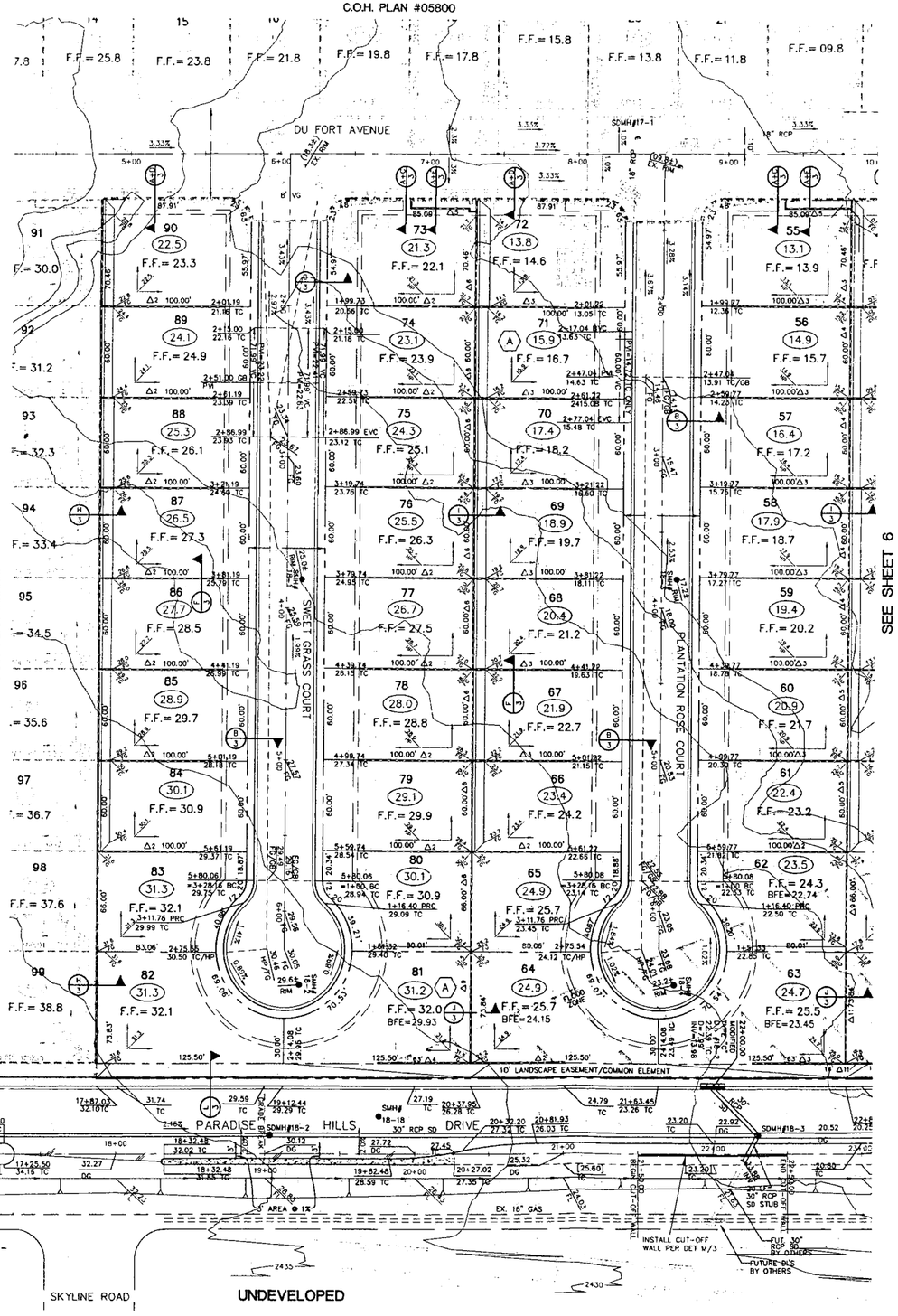
PROFESSIONAL ENGINEER SAMIH ALHWAYEK 7-11-01 CIVIL 10502

SHEET 2 OF 26

PH18-NOT

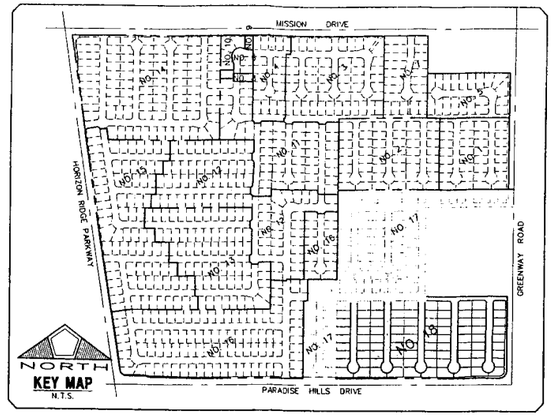
EXISTING PARADISE HILLS NO. 17

C.O.H. PLAN #05800



EXISTING PARADISE HILLS NO. 17
C.O.H. PLAN #05800

EXISTING PARADISE HILLS NO. 16
C.O.H. PLAN #05696



EX. FEMA FLOOD ZONE "A"

SOLID GROUTING NOTE

SOLID GROUT FIRST 3 COURSES WHERE FF IS LESS THAN 1.5' HIGHER THAN ADJACENT TC.

Avoid hitting overhead power lines. It's costly.
Call before you do Overhead
1-702-593-6111

Avoid cutting underground
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE ALERT (USA)

NORTH

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.
PROJECT DATUM = 2274.99
ELEVATION 2272.55 FEET NGVD 29 (DATUM USED)
ELEVATION 693.418 METERS NAVD 88.
ADD 2.44' TO NGVD 29 DATUM = NAVD 88

NOTE:
ALL PERIMETER WALLS ARE TO BE 6' IN HEIGHT WITH ADDITIONAL RETAINING AS SHOWN ON PLANS.

RETAINING WALL CONVERSION TABLE	
△1	0.67'
△2	1.33'
△3	2.00'
△4	2.67'
△5	3.33'
△6	4.00'
△7	4.67'
△8	5.33'
△9	6.00'
△10	6.67'
△11	7.37'

I CERTIFY THAT THIS GRADING PLAN CONFORMS TO THE APPROVED DRAINAGE STUDY FOR THIS SITE ON FILE AT THE CITY OF HENDERSON. PERMIT NO. 2001000596

SAMIH ALHWAYEK, P.E. NO. 10502 DATE: 7-11-02

05848

NO	BY	DATE	DESCRIPTION	DATE	APP'D

DATE :
PM :
DRAWN BY :
DESIGNED BY :
CHECKED BY :
ADA CHECKED :
JOB NO. : 00330528
SCALE : 1" = 40'

PENTACORE
CIVIL ENGINEERING • LAND SURVEYING • PLANNING
CONSTRUCTION MANAGEMENT • ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KBHOME
PARADISE HILLS NO. 18
GRADING PLAN I

PROFESSIONAL ENGINEER
SAMIH ALHWAYEK
7-11-02
CIVIL
10502
STATE OF NEVADA

SHEET
5
OF 26

Ph1B-GRADE

EXISTING PARADISE HILLS NO. 17

C.O.H. PLAN #05800

UNDEVELOPED APN: 179-31-601-005

FOR ACCESS ROAD GRADING SEE SHEET 13

DU FORT AVENUE

SILVER STAR STREET

SAPPHIRE SKY COURT

REED POINT COURT

PARADISE HILLS DRIVE

GREENWAY ROAD

UNDEVELOPED

UNDEVELOPED

SEE SHEET 5

SEE SHEET 3

PH18-GRADE

05848

KEY MAP

N.T.S.

MISSION DRIVE

HORIZON RIDGE PARKWAY

GREENWAY ROAD

PARADISE HILLS DRIVE

NORTH

SOLID GROUTING NOTE

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UNDERGROUND SERVICE ALERT (USA)

NORTH

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

BENCHMARK

CITY OF HENDERSON BM # 101. BRASS CAP IN THE TOP 0" CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.
PROJECT DATUM = 2274.99
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ADD 2.44' TO NGVD 29 DATUM = NAVD 88

EX. FEMA FLOOD ZONE "A"

NOTE:
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RETAINING WALL CONVERSION TABLE	
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△3	2.00'
△4	2.67'
△5	3.33'
△6	4.00'
△7	4.67'
△8	5.33'
△9	6.00'
△10	6.67'

I CERTIFY THAT THIS GRADING PLAN CONFORMS TO THE APPROVED DRAINAGE STUDY FOR THIS SITE ON FILE AT THE CITY OF HENDERSON. PERMIT NO. 2001C00596

SAMIH ALHWAYEK, P.E. NO. 10502 — DATE: 06-01

NO.	BY	DATE	DESCRIPTION
3	KJW	04/26/01	CHANGED STREET NAME
2	KJW	4/01/01	REVISE 60" SD IN GREENWAY
1			

DATE: 4-11-01
DRAWN BY: KJW
DESIGNED BY: PM
CHECKED BY: SA
ADA CHECKED: SA
JOB NO.: 05800
SCALE: 1" = 40'

PENTACORE
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CONSTRUCTION MANAGEMENT • ADA CONSULTING
2470 ST. ROSE PARKWAY, SUITE 305, HENDERSON, NEVADA 89074
LAS VEGAS, NEVADA 89146 (702)258-0115

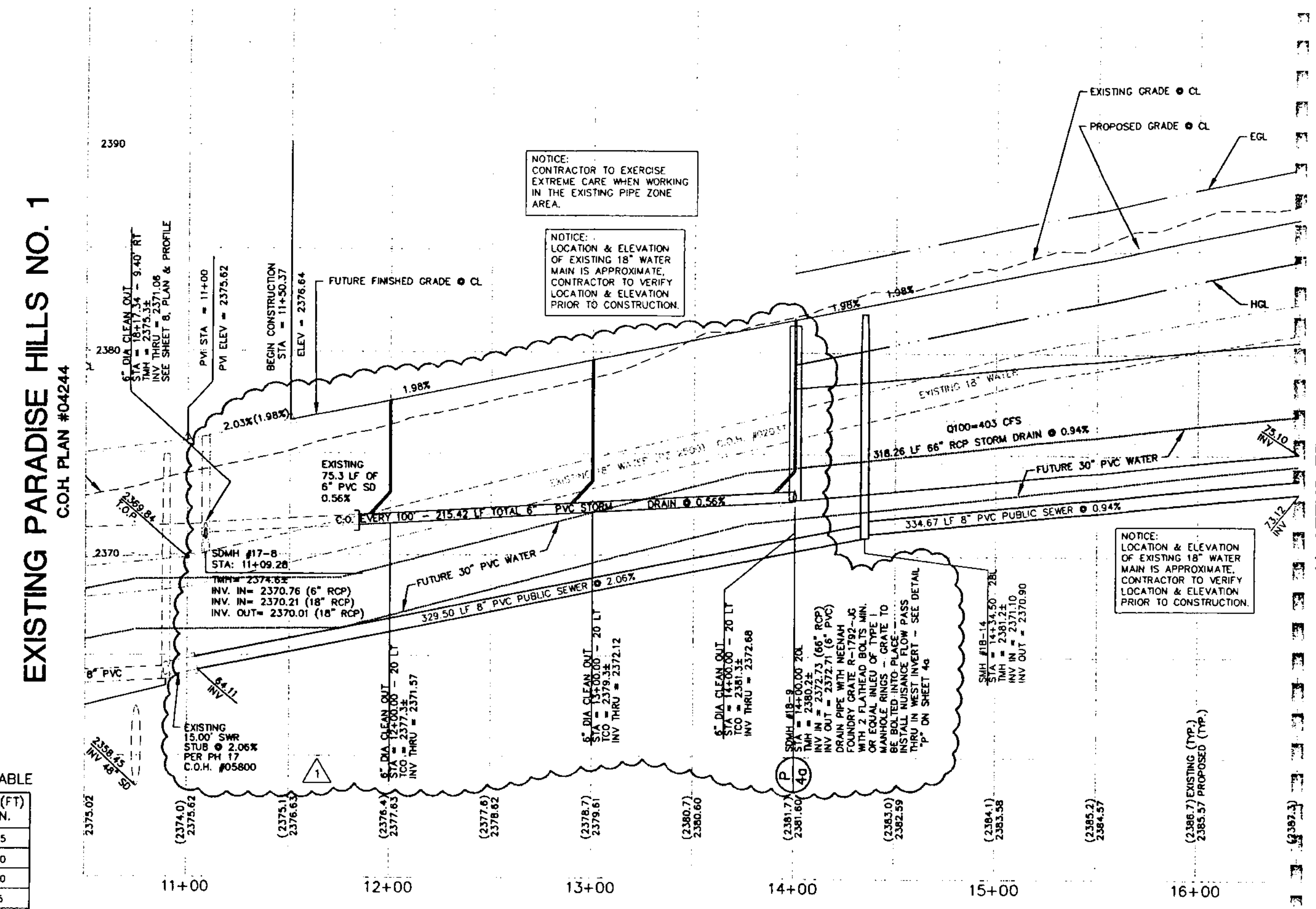
KBHOME

PARADISE HILLS NO. 18

GRADING PLAN II

PROFESSIONAL ENGINEER — SAMIH ALHWAYEK — 6-6-01 — CIVIL — 10502

SHEET 6 REV2 OF 26



GREENWAY ROAD

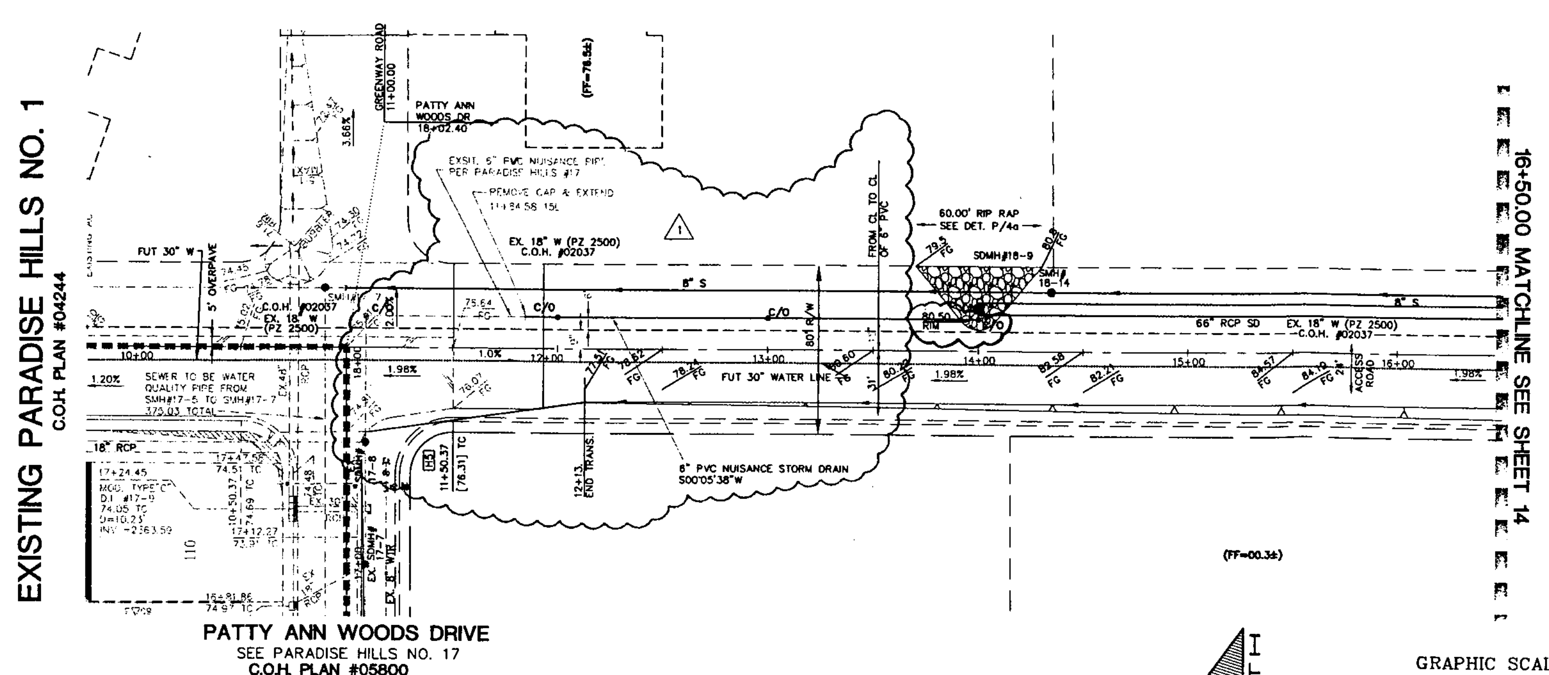
PROFILE

SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

SIDEWALK RAMP TRANSITION TABLE

RAMP NO.	GRADE (%) "B" TO "A"	"A" (FT) MIN.	"B" (FT) MIN.
H1	-6 TO -5.01	4.5	21.5
H2	-5 TO -4.01	4.5	15.0
H3	-4 TO -3.01	4.5	12.0
H4	-3 TO -2.01	4.5	9.5
H5	-2 TO 2	8.0	8.0
H6	2.01 TO 3	9.5	4.5
H7	3.01 TO 4	12.0	4.5
H8	4.01 TO 5	15.0	4.5
H9	5.01 TO 6	21.5	4.5

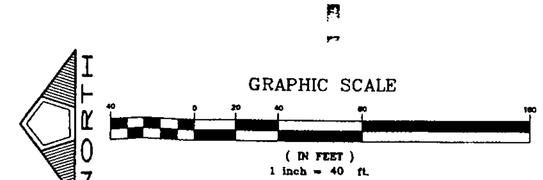
SEE CLARK COUNTY AREA STANDARD DRAWING NO. 235 CASE III

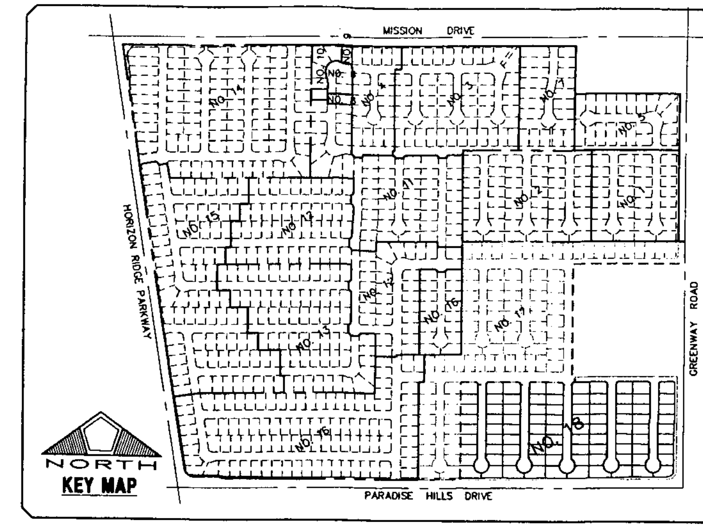


GREENWAY ROAD

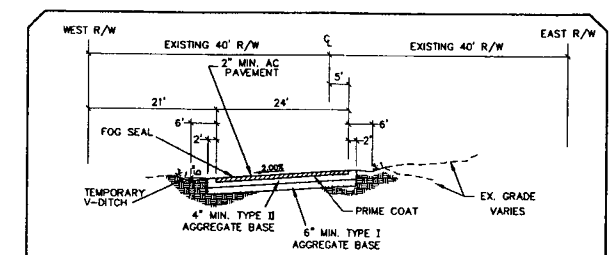
PLAN

SCALE: 1" = 40'

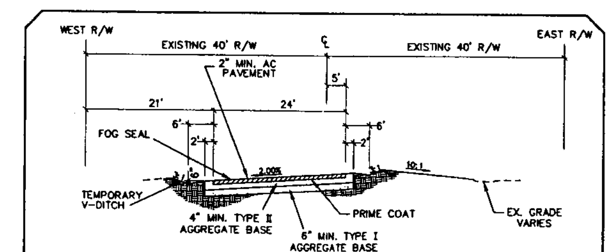




KEY MAP



TEMPORARY ACCESS ROAD SECTION STA: 11+50.37-13+70.00
(NOT TO SCALE) PER STD DWG. #209



TEMPORARY ACCESS ROAD SECTION STA: 13+70.00-17+50.00
(NOT TO SCALE) PER STD DWG. #209

CONSTRUCTION NOTES

1. CONSTRUCT SIDEWALK PER USD No. 234
2. CONSTRUCT TYPE "L" CURB & GUTTER PER USD No. 216
3. CONSTRUCT VALLEY GUTTER PER STANDARD DWG NO. 228
4. CONSTRUCT HANDICAP RAMP PER STANDARD DWG No. 235 CASE III – SEE SW RAMP TRANISTION TABLE
5. CONSTRUCT MEDIAN ISLAND PER STANDARD DWG No. 218

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.
PROJECT DATUM = 2274.99
ELEVATION 2272.55 FEET NGVD 29 (DATUM USED)
ELEVATION 693.418 METERS NAVD 88.
ADD 2.44' TO NGVD 29 DATUM = NAVD 88

05848

CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW & APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON IF WORK IS NOT COMPLETED
BY: July 20 2002.

APPROVED BY:
Gilbert Medina for
KEN Y. KOSHIRO, P.E.,
NEW DEVELOPMENT ENGINEER, C.O.H.
11-27-01 (9-20-01)
DATE:

NO	BY	DATE	DESCRIPTION	DATE	APP'D

DATE :
PM :
DRAWN BY :
DESIGNED BY :
CHECKED BY :
ADA CHECKED :
JOB NO. : 0030.0528
SCALE : 1" = 40'

PENTACORE
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CONSTRUCTION MANAGEMENT • ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KBHOME
PARADISE HILLS NO. 18
GREENWAY ROAD
PLAN & PROFILE I
STA: 11+50.37 TO 16+50.00

PROFESSIONAL ENGINEER – STATE OF NEVADA
ALHWAYEK
11-20-01
CIVIL
10502

SHEET 13 REV 1 OF 26

PH18-PROF08

Avoid cutting underground utility lines. It's costly.

Call before you Dig.

1-800-227-2600

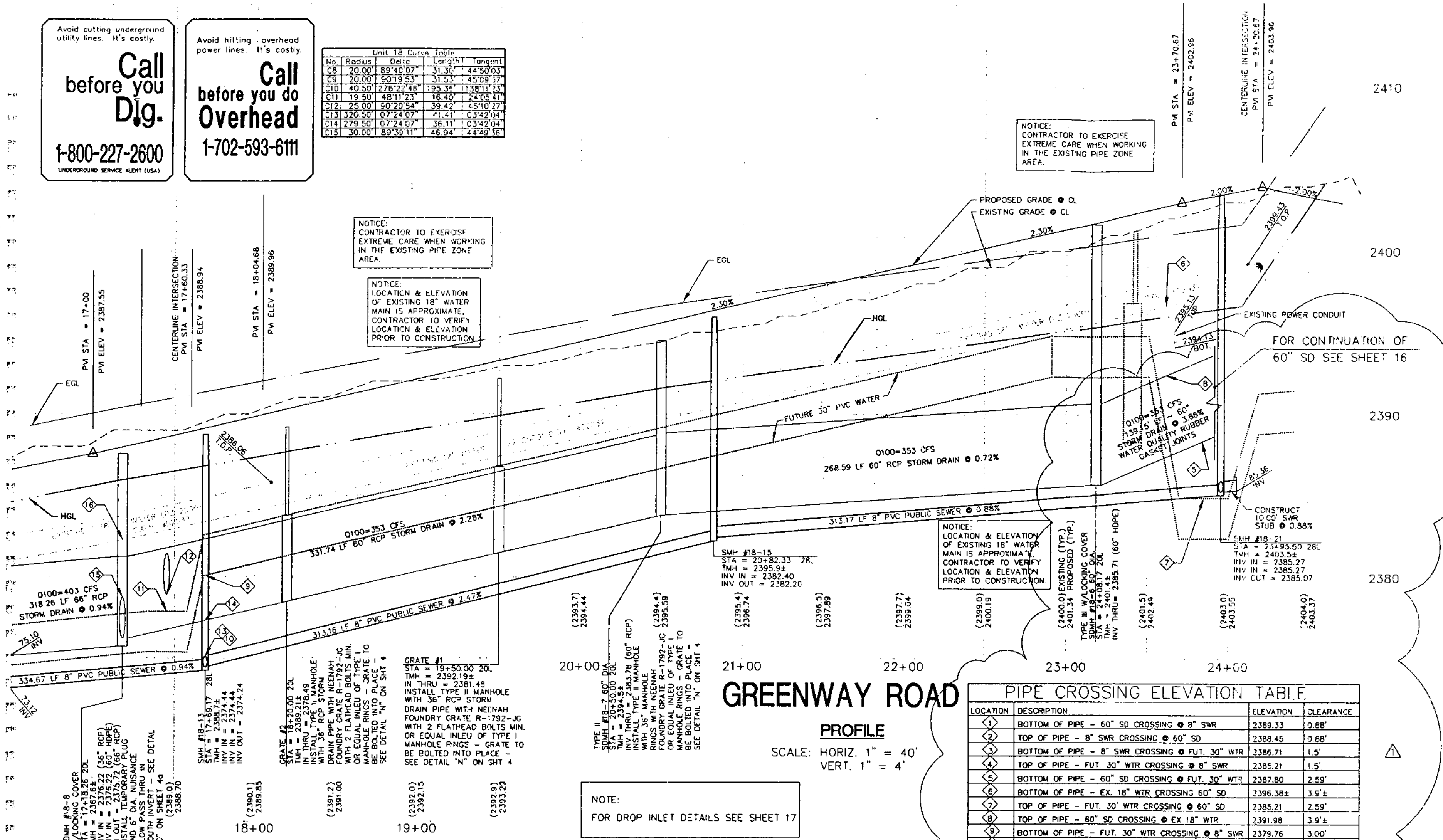
UNDERGROUND SERVICE ALERT (USA)

Avoid hitting overhead power lines. It's costly.

Call before you do Overhead

1-702-593-6111

Unit 18 Curve Table				
No.	Radius	Delta	Length	Tangent
C8	20.00'	89°40'07"	31.30'	44°50'03"
C9	20.00'	90°19'53"	31.53'	45°09'57"
C10	40.50'	276°22'46"	195.36'	138°11'23"
C11	19.50'	48°11'23"	16.40'	24°05'41"
C12	25.00'	90°20'54"	39.42'	45°10'27"
C13	320.50'	07°24'07"	41.41'	03°42'04"
C14	279.50'	07°24'07"	36.11'	03°42'04"
C15	30.00'	89°39'11"	46.94'	44°49'36"



GREENWAY ROAD

PROFILE

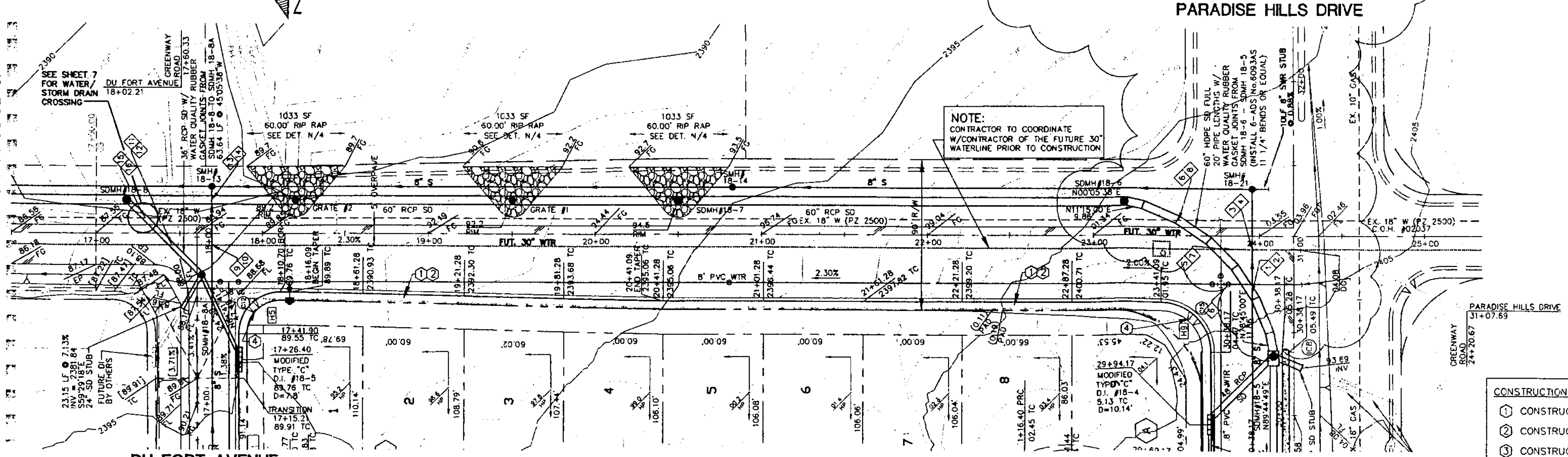
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

NOTE:
FOR DROP INLET DETAILS SEE SHEET 17

PIPE CROSSING ELEVATION TABLE			
LOCATION	DESCRIPTION	ELEVATION	CLEARANCE
1	BOTTOM OF PIPE - 60" SD CROSSING @ 8" SWR	2389.33	0.88'
2	TOP OF PIPE - 8" SWR CROSSING @ 60" SD	2388.45	0.88'
3	BOTTOM OF PIPE - 8" SWR CROSSING @ FUT. 30" WTR	2386.71	1.5'
4	TOP OF PIPE - FUT. 30" WTR CROSSING @ 8" SWR	2385.21	1.5'
5	BOTTOM OF PIPE - 60" SD CROSSING @ FUT. 30" WTR	2387.80	2.59'
6	BOTTOM OF PIPE - EX. 18" WTR CROSSING 60" SD	2396.38±	3.9'±
7	TOP OF PIPE - FUT. 30' WTR CROSSING @ 60" SD	2385.21	2.59'
8	TOP OF PIPE - 60" SD CROSSING @ EX 18" WTR	2391.98	3.9'±
9	BOTTOM OF PIPE - FUT. 30" WTR CROSSING @ 8" SWR	2379.76	3.00'
10	TOP OF PIPE - 8" SWR CROSSING @ FUT. 30" WTR	2376.76	3.00'
11	TOP OF PIPE - FUT. 30" WTR CROSSING @ 36" SD	2377.53	1.05'
12	BOTTOM OF PIPE - 36" SD CROSSING @ FUT. 30" WTR	2378.58	1.05'
13	TOP OF PIPE - 8" SWR CROSSING @ 60" SD	2375.41	1.46'
14	BOTTOM OF PIPE - 60" SD CROSSING @ 8" SWR	2376.87	1.46'
15	TOP OF PIPE - 36" SD CROSSING @ EX. 18" WTR	2381.04	1.45'±
16	BOTTOM OF PIPE - EX. 18" WTR CROSSING @ 30" SD	2382.49±	1.45'±

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.



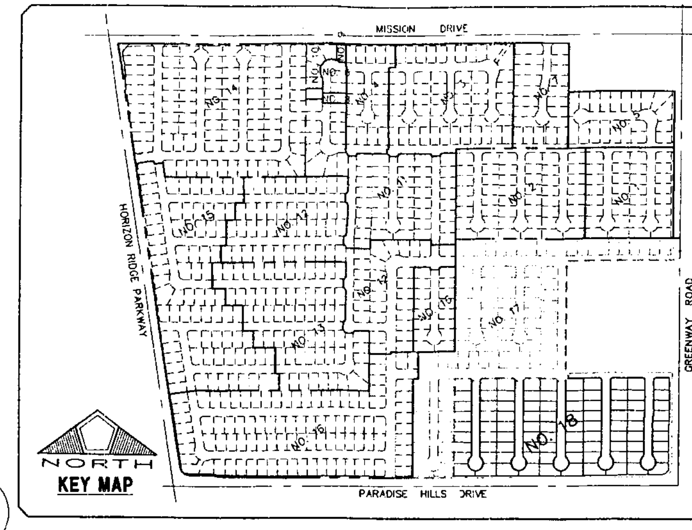
GREENWAY ROAD

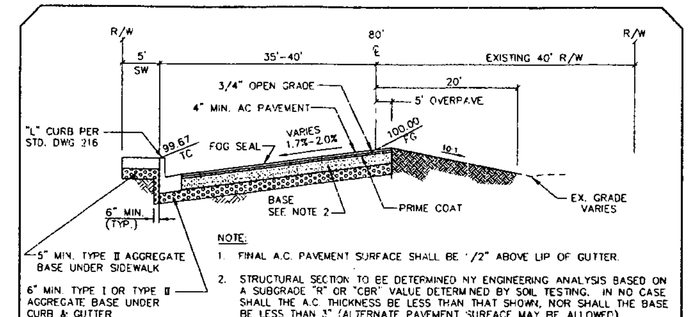
PLAN

SCALE: 1" = 40'

DU FORT AVENUE
SEE SHEET 7

PARADISE HILLS DRIVE
SEE SHEET 16

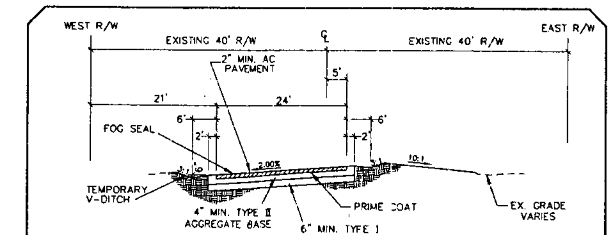




NOTE:
1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/2" ABOVE LIP OF GUTTER.
2. STRUCTURAL SECTION TO BE DETERMINED NY ENGINEERING ANALYSIS BASED ON A SUBGRADE "R" OR "CBR" VALUE DETERMINED BY SOIL TESTING. IN NO CASE SHALL THE A.C. THICKNESS BE LESS THAN THAT SHOWN, NOR SHALL THE BASE BE LESS THAN 3" (ALTERNATE PAVEMENT SURFACE MAY BE ALLOWED).

TYPICAL 80' HALF STREET SECTION STA: 17+50.00 - 24+20.67

(NOT TO SCALE) PER STD DWG #204



TEMPORARY ACCESS ROAD SECTION STA: 13+70.00-17+50.00

(NOT TO SCALE) PER STD DWG. #209

SIDEWALK RAMP TRANSITION TABLE

RAMP NO.	GRADE (%) "B" TO "A"	"A" (FT) MIN.	"B" (FT) MIN.
H1	-6 TO -5.01	4.5	21.5
H2	-5 TO -4.01	4.5	15.0
H3	-4 TO -3.01	4.5	12.0
H4	-3 TO -2.01	4.5	9.5
H5	-2 TO 2	8.0	8.0
H6	2.01 TO 3	9.5	4.5
H7	3.01 TO 4	12.0	4.5
H8	4.01 TO 5	15.0	4.5
H9	5.01 TO 6	21.5	4.5

SEE CLARK COUNTY AREA STANDARD DRAWING NO. 235 CASE III

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.
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ELEVATION 693.418 METERS NAVD 88.
ADD 2.44' TO NGVD 29 DATUM = NAVD 88

CONSTRUCTION NOTES

1. CONSTRUCT SIDEWALK PER USD No. 234
2. CONSTRUCT TYPE "L" CURB & GUTTER PER USD No. 216
3. CONSTRUCT VALLEY GUTTER PER STANDARD DWG NO. 228
4. CONSTRUCT HANDICAP RAMP PER STANDARD DWG No. 235 CASE III - SEE SW RAMP TRANISTION TABLE
5. CONSTRUCT MEDIAN ISLAND PER STANDARD DWG No. 218

CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW & APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON IF WORK IS NOT COMPLETED
BY: August 9th 2002.

APPROVED BY:
Gilbert Medina
KEN Y. KOSHIRO, P.E.,
NEW DEVELOPMENT ENGINEER, C.O.H.

8-9-01
DATE:

05848

NO.	BY	DATE	DESCRIPTION	DATE	APP'D
1	KJW	8/01/01	REVISE 60" SD IN GREENWAY	8-9-01	Sam

DATE :
PM :
DRAWN BY :
DESIGNED BY :
CHECKED BY :
ADA CHECKED :
JOB NO. : 0030.0528
SCALE : 1" = 40'

PENTACORE
CIVIL ENGINEERING • LAND SURVEYING • PLANNING
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6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

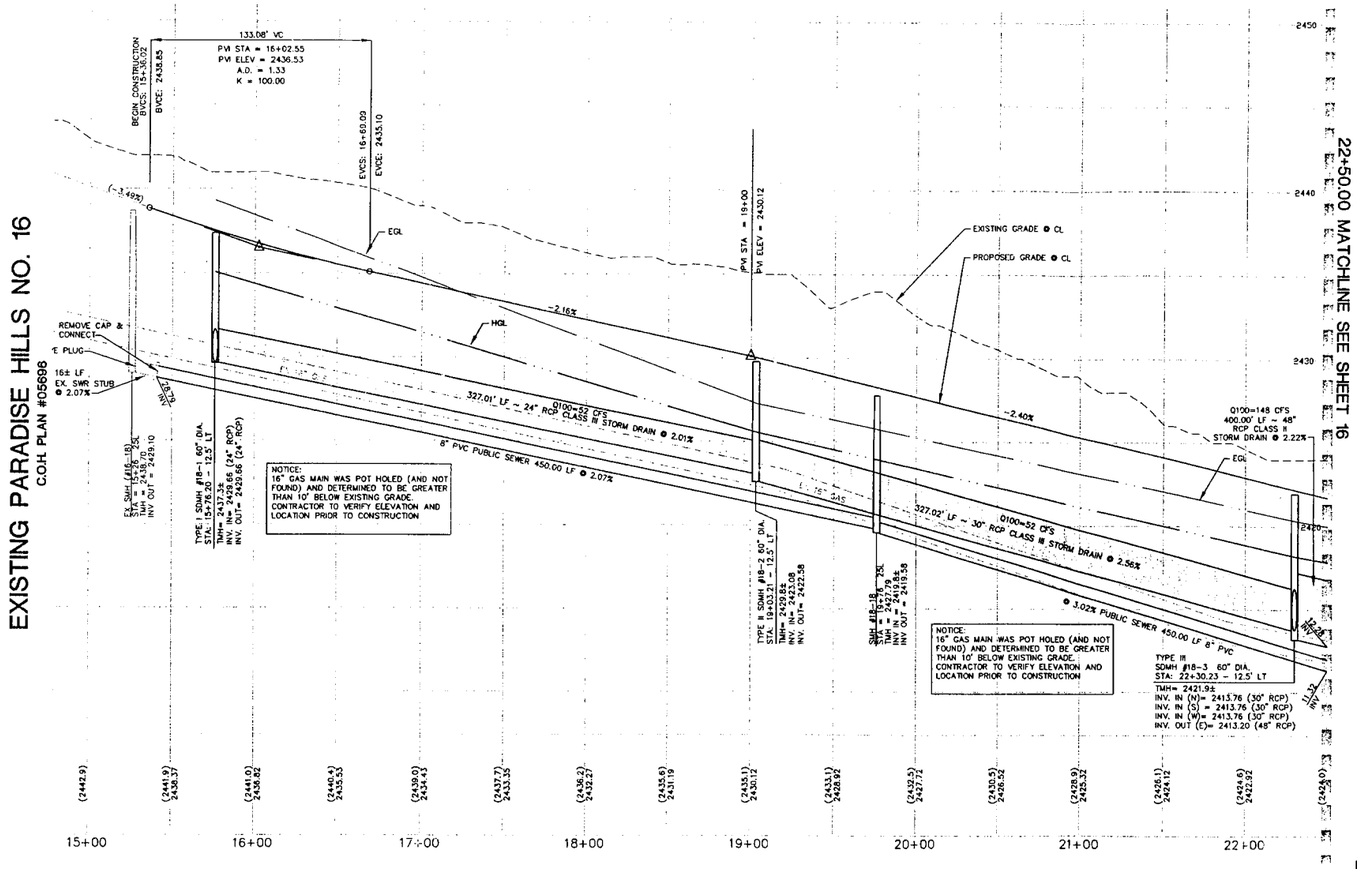
KBHOME
PARADISE HILLS NO. 18
GREENWAY ROAD
PLAN & PROFILE II
STA: 16+50.00 TO 24+20.67

PROFESSIONAL ENGINEER STATE OF NEVADA
SAMIH ALHWAYEK
8-6-01
CIVIL
10502

SHEET
14 REV 1
OF 26

PH18-PROF08

EXISTING PARADISE HILLS NO. 16
C.O.H. PLAN #05698

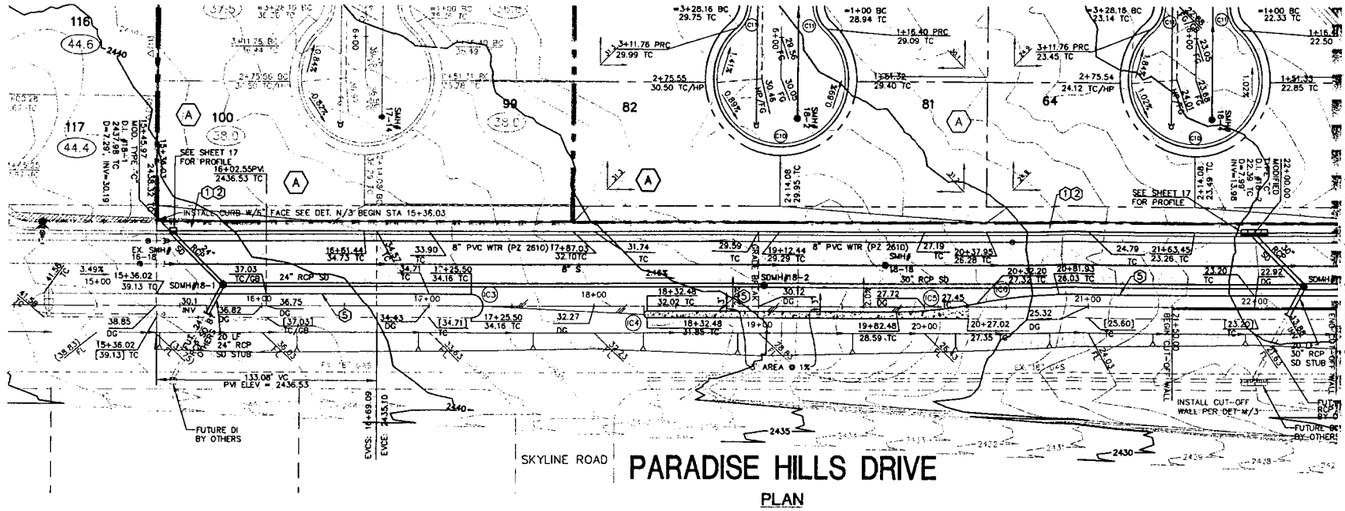


PARADISE HILLS DRIVE
PROFILE
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

NOTE:
FOR DROP INLET DETAILS SEE SHEET 17

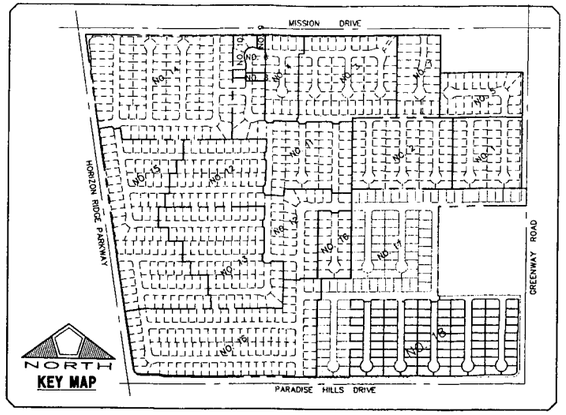
SEE PARIDISE HILLS NO. 17

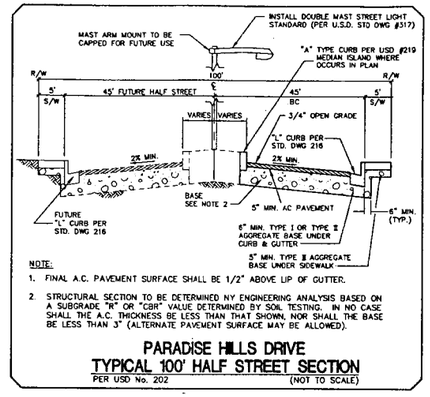
EXISTING PARADISE HILLS NO. 16
C.O.H. PLAN #05698



PARADISE HILLS DRIVE
PLAN
SCALE: 1" = 40'

22+50.00 MATCHLINE SEE SHEET 16





NOTE:
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2. STRUCTURAL SECTION TO BE DETERMINED NY ENGINEERING ANALYSIS BASED ON A SUBGRADE "R" OR "CBR" VALUE DETERMINED BY SOIL TESTING. IN NO CASE SHALL THE A.C. THICKNESS BE LESS THAN THAT SHOWN, NOR SHALL THE BASE BE LESS THAN 3" (ALTERNATE PAVEMENT SURFACE MAY BE ALLOWED).

PARADISE HILLS DRIVE
TYPICAL 100' HALF STREET SECTION
PER USD No. 202 (NOT TO SCALE)

ISLAND CURB CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
IC3	21.99	7.00	180°00'00"	<INFINITE>
IC4	6.28	2.00	180°00'00"	<INFINITE>
IC5	50.06	250.00	11°28'20"	25.11
IC6	50.06	250.00	11°28'20"	25.11
IC7	44.78	250.00	10°15'47"	22.45
IC8	6.28	2.00	180°00'00"	<INFINITE>

NORTH
GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

CONSTRUCTION NOTES
1. CONSTRUCT SIDEWALK PER USD No. 234
2. CONSTRUCT TYPE "L" CURB & GUTTER PER USD No. 216
3. CONSTRUCT VALLEY GUTTER PER STANDARD DWG NO. 228
4. CONSTRUCT HANDICAP RAMP PER STANDARD DWG No. 235 CASE III - SEE SW RAMP TRANISTION TABLE
5. CONSTRUCT MEDIAN ISLAND PER STANDARD DWG No. 218

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H4	-3 TO -2.01	4.5	9.5
H5	-2 TO -2	8.0	8.0
H6	2.01 TO 3	9.5	4.5
H7	3.01 TO 4	12.0	4.5
H8	4.01 TO 5	15.0	4.5
H9	5.01 TO 6	21.5	4.5

SEE CLARK COUNTY AREA STANDARD DRAWING NO. CASE III

BENCHMARK
CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET.
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ELEVATION 2272.55 FEET NGVD 29 (DATUM USED)
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BY: July 20 2002

APPROVED BY:

KEN Y. KOSHIRO, P.E.,
NEW DEVELOPMENT ENGINEER, C.O.H.
DATE: 7-20-01
05848

NO.	BY	DATE	DESCRIPTION	DATE	APP'D

DATE:
PM:
DRAWN BY:
DESIGNED BY:
CHECKED BY:
ADA CHECKED:
JOB NO.: 00302528
SCALE: 1" = 40'

PENTACORE
CIVIL ENGINEERING + LAND SURVEYING - PLANNING
CONSTRUCTION MANAGEMENT - ADA CONSULTING
6763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KB HOME

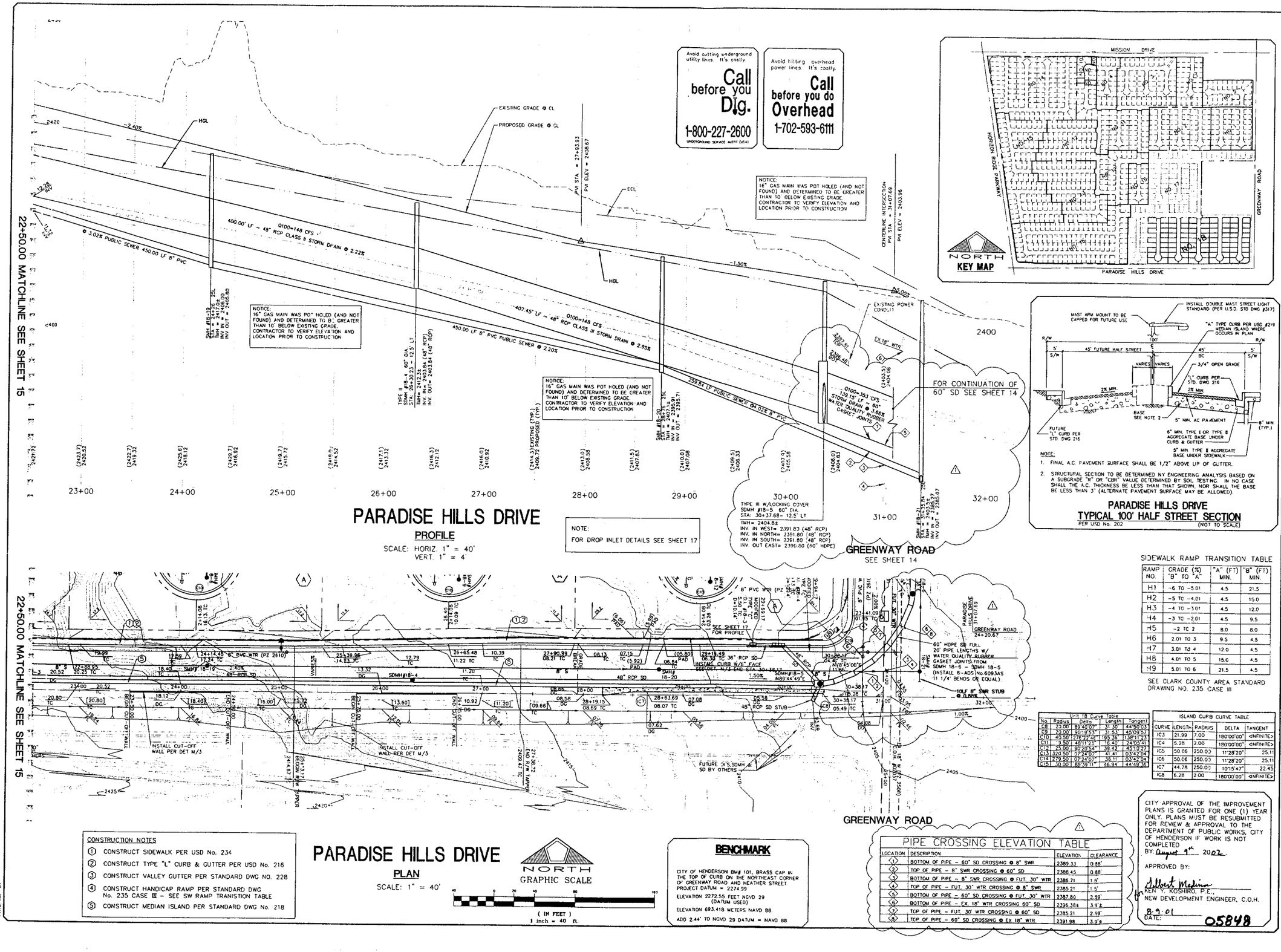
PARADISE HILLS NO. 18

PARADISE HILLS DRIVE
PLAN & PROFILE I
STA:15+36.02 TO 22+50.00

PROFESSIONAL ENGINEER STATE OF NEVADA ALHWAYEK 10502

SHEET 15 OF 26

PHDPROF-07



PARADISE HILLS DRIVE

PROFILE

SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

NOTE:
FOR DROP INLET DETAILS SEE SHEET 17

PARADISE HILLS DRIVE

PLAN

SCALE: 1" = 40'

NORTH
GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

CONSTRUCTION NOTES

1. CONSTRUCT SIDEWALK PER USD No. 234
2. CONSTRUCT TYPE "L" CURB & GUTTER PER USD No. 216
3. CONSTRUCT VALLEY GUTTER PER STANDARD DWG NO. 228
4. CONSTRUCT HANDICAP RAMP PER STANDARD DWG No. 235 CASE III – SEE SW RAMP TRANISTION TABLE
5. CONSTRUCT MEDIAN ISLAND PER STANDARD DWG No. 218

BENCHMARK

CITY OF HENDERSON BM# 101, BRASS CAP IN THE TOP OF CURB ON THE NORTHEAST CORNER OF GREENWAY ROAD AND HEATHER STREET
PROJECT DATUM = 2274.99
ELEVATION 2272.55 FEET NGVD 29 (DATUM USED)
ELEVATION 693.418 METERS NAVD 88
ADD 2.44' TO NGVD 29 DATUM = NAVD 88

PIPE CROSSING ELEVATION TABLE

LOCATION	DESCRIPTION	ELEVATION	CLEARANCE
1	BOTTOM OF PIPE – 60" SD CROSSING @ 8" SWR	2389.33	0.86'
2	TOP OF PIPE – 8" SWR CROSSING @ 60" SD	2388.45	0.88'
3	BOTTOM OF PIPE – 8" SWR CROSSING @ FUT. 30" WTR	2386.71	1.5'
4	TOP OF PIPE – FUT. 30" WTR CROSSING @ 8" SWR	2385.21	1.5'
5	BOTTOM OF PIPE – 60" SD CROSSING @ FUT. 30" WTR	2387.80	2.59'
6	BOTTOM OF PIPE – EX. 18" WTR CROSSING 60" SD	2396.38±	3.5'±
7	TOP OF PIPE – FUT. 30" WTR CROSSING @ 60" SD	2385.21	2.59'
8	TOP OF PIPE – 60" SD CROSSING @ EX 18" WTR	2391.98	3.9'±

NOTE:
1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/2" ABOVE LIP OF GUTTER.
2. STRUCTURAL SECTION TO BE DETERMINED NY ENGINEERING ANALYSIS BASED ON A SUBGRADE "R" OR "CBR" VALUE DETERMINED BY SOIL TESTING. IN NO CASE SHALL THE A.C. THICKNESS BE LESS THAN THAT SHOWN, NOR SHALL THE BASE BE LESS THAN 3" (ALTERNATE PAVEMENT SURFACE MAY BE ALLOWED).

PARADISE HILLS DRIVE
TYPICAL 100' HALF STREET SECTION
PER USD No. 202 (NOT TO SCALE)

SIDEWALK RAMP TRANSITION TABLE

RAMP NO.	GRADE (%) "B" TO "A"	"A" (FT) MIN.	"B" (FT) MIN.
H1	-6 TO -5.01	4.5	21.5
H2	-5 TO -4.01	4.5	15.0
H3	-4 TO -3.01	4.5	12.0
H4	-3 TO -2.01	4.5	9.5
H5	-2 TO 2	8.0	8.0
H6	2.01 TO 3	9.5	4.5
H7	3.01 TO 4	12.0	4.5
H8	4.01 TO 5	15.0	4.5
H9	5.01 TO 6	21.5	4.5

SEE CLARK COUNTY AREA STANDARD DRAWING NO. 235 CASE III

Unit 18 Curve Table

No.	Radius	Delta	Length	Tangent
C8	23.00'	89°40'07"	31.30'	44'50.03
C9	23.00'	90°18'53"	31.53'	45'09.97
C10	40.50'	276°22'46"	195.36'	1.38'11.23
C11	2.50'	48°11'23"	16.40'	24'00.40
C12	25.00'	90°20'54"	39.42'	45'10.27
C13	320.50'	57°24'07"	41.41'	03'42.04
C14	279.50'	57°24'07"	36.11'	03'14.01
C15	10.00'	89°39'11"	66.94'	44'39.56

ISLAND CURB CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
IC3	21.99	7.00	180°00'00"	<INFINITE>
IC4	6.28	2.00	180°00'00"	<INFINITE>
IC5	50.06	250.00	11°28'20"	25.11
IC6	50.06	250.00	11°28'20"	25.11
IC7	44.78	250.00	10°15'47"	22.45
IC8	6.28	2.00	180°00'00"	<INFINITE>

CITY APPROVAL OF THE IMPROVEMENT PLANS IS GRANTED FOR ONE (1) YEAR ONLY. PLANS MUST BE RESUBMITTED FOR REVIEW & APPROVAL TO THE DEPARTMENT OF PUBLIC WORKS, CITY OF HENDERSON IF WORK IS NOT COMPLETED
BY: August 9th 2002.

APPROVED BY:

Albert Medina
for KEN Y. KOSHIRO, P.E.,
NEW DEVELOPMENT ENGINEER, C.O.H.

8-9-01
DATE:

05848

NO.	BY	DATE	DESCRIPTION	APP'D
1	K.W	8/01/01	REVISE 60" SD IN GREENWAY	

DATE:
PM:
DRAWN BY:
DESIGNED BY:
CHECKED BY:
ADA CHECKED:
JOB NO.: 00305.0528
SCALE: 1" = 40'

PENTACORE
CIVIL ENGINEERING • LAND SURVEYING • PLANNING
CONSTRUCTION MANAGEMENT • ROOFING
8763 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89146 (702)258-0115

KB HOME

PARADISE HILLS NO. 18

PARADISE HILLS DRIVE
PLAN & PROFILE
STA: 22+50.00 TO 31+07.69

PROFESSIONAL ENGINEER
SAMIR ALHWAYEK
8-6-01
CIVIL
10502
NEVADA

SHEET
16 REV 1
OF 25

PH18PROF-07

APPENDIX F

DATA CD

UPDATED DATA CD
(HEC-1, WSPG, Work Maps & Figures)